City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New section Manual Applicability	Added language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Preface Manual Applicability subheading and text	NA	Manual Applicability All new development and redevelopment projects within the City of Tacoma intending to use the Presumptive Approach shall meet the requirements…	ii-22 Pink
New section NPDES Phase I Permit	Added language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Preface NPDES Phase I Permit subheading and text	NA	NPDES Phase I Permit The Environmental Protection Agency (EPA), created the Clean Water Act to help eliminate the discharge of untreated wastewater into receiving waters therby…	ii-22 & ii-23 Pink
Added heading Relationship to Phase I Permit	Updated layout for clarity/readability	City of Tacoma Stormwater Management Manual	Preface Relationship to Phase I Permit subheading	NA	Relationship to Phase I Permit	ii-23 Purple
Updated text under heading Relationship to Phase I Permit	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Preface Relationship to Phase I Permit First and third sentence of first paragraph	The most recent National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit (NPDES Permit) became effective August 1, 2013. This manual is designed to be equivalent to Ecology's 2012 Stormwater Management Manual for Western Washington in order to meet the permit requirement.	The most recent National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit (NPDES Permit) became effective August 1, 2019. This manual is designed to be equivalent to Ecology's 2019 Stormwater Management Manual for Western Washington in order to meet the NPDES Permit requirement.	ii-23 Pink & Purple
Added text under heading Relationship to Phase I Permit	Added language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Preface Relationship to Phase I Permit All text under first paragraph	NA	There are two approaches that a project proponent may use to document the technical basis for their stormwater BMP designs: the Presumptive Approach…	ii-23 Pink
Added text under heading Objective	Added language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Preface Objective Last sentence of first paragraph	NA	Projects that comply with this manual will apply reasonable, technology-based BMPs and water quality-based BMPs to reduce the adverse impacts of stormwater.	ii-24 Pink

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Updated text under heading Objective	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Preface Objective Second and sixth paragraph	This manual is applicable to all types of land development – including residential, commercial, industrial, and roads. This manual also contains requirements for stormwater mitigation and stormwater design for projects that are not considered development and redevelopment sites. Environmental Services will advise the applicant which sections of the manual may apply to their project.	This manual is applicable to all new development, redevelopment, and construction activities – including work both on private property and within the public Right-of-Way. This manual also contains requirements for stormwater mitigation and stormwater design for projects that are not considered new development and redevelopment sites.	ii-24 Purple
Deleted text under heading Objective	Information not needed	City of Tacoma Stormwater Management Manual	Preface Objective Third and fifth paragraph	Volume 4 of this manual is used for source control of new and ongoing operations as well as everyday activities. This manual can also be helpful in identifying options for retrofitting BMPs at existing development sites where appropriate. In such situations, application of BMPs from this manual is encouraged. The City recognizes, however, that there can be site constraints that make the strict application of these BMPs difficult in retrofit applications.	This manual can also be helpful in identifying options for retrofitting BMPs at existing development sites where appropriate. In such situations, application of BMPs from this manual is encouraged.	ii-24 Grey
Added text under heading Manual Content	Added language for clarity/readability	City of Tacoma Stormwater Management Manual	Preface Manual Content Heading and all text under heading	NA	Manual Content This manual includes the following: • Guidance for Applying Minimum… • Guidance for designing and maintaining… • Guidance on how to prepare and…	ii-24 Purple
Deleted text and heading How to Use this Manual	Information included in other sections/ not needed	City of Tacoma Stormwater Management Manual	Preface How To Use this Manual Heading and all text under heading	How to Use this Manual This manual is designed for a variety of users. • Project proponents should start… • City staff will use this manual… • The Director shall have authority… • Other permittees (e.g, Industrial… Where requirements in this manual…	NA	ii-25 Purple
Added heading Manual Corrections and Updates	Added for readability	City of Tacoma Stormwater Management Manual	Preface Manual Corrections and Updates	NA	Manual Corrections and Updates	ii-25 Purple

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Deleted headings, and text under Development of Best Management Practices (BMPs) for Stormwater Management	Information not needed	City of Tacoma Stormwater Management Manual	Preface Development of Best Management Practices for Stormwater Management All headings, subheadings and text	Development of Best Management Practices (BMPs) for Stormwater Management This manual contains Best Management Practices, that when properly designed and implemented, control the adverse impacts of development and redevelopment. Best Management Practices (BMPs) Best Management Practices are defined as schedules of activities, prohibitions...	NA	ii-26 Grey
Updated text under heading Related Documentation	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Preface Related Documentation Department of Ecology's Stormwater Management Manual, First sentence and last sentence under subheading	This manual was modeled after the Stormwater Management Manual for Western Washington, published by the Department of Ecology in August 2012.	This manual was modeled after the Stormwater Management Manual for Western Washington, published by the Department of Ecology in July 2019. This Manual is designed to be equivalent to Ecology's 2019 SWMMWW.	ii-26 Pink

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Change of Volume title	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Purpose Minimum Requirements and Additional Protective Measures	Stormwater Site Planning	Minimum Requirements and Additional Protective Measures	1-1 Purple
Change of heading title	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Purpose How to Use this Volume	Purpose of this Volume	How to Use the Volume	1-1 Purple
Edited text under How to Use this Volume	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 1 Purpose First paragraph	This volume provides a discussion of the Minimum Requirements…	Use this volume to determine the Minimum Requirements that apply to project. The Minimum…	1-1 Purple
Text deletion of heading and text under Content and Organization	Information not needed. Chapter titles/descriptions have been updated	City of Tacoma Stormwater Management Manual	Volume 1 Purpose Content and Organization of this Volume All text under subheading	Content and Organization of this Volume Volume 1 addresses key information to consider for Stormwater Site Planning….	NA	1-1 Grey

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Removed language from intro	Language no longer needed	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2	This chapter identifies and describes the watersheds, basins and sub-basins within the City of Tacoma, and the requirements that are specific to each. Where requirements have been developed for a particular geographic area, these requirements shall be in addition to the Minimum Requirements found in Chapter 3 of this volume unless the text in this chapter specifically indicates that the area-specific requirement supersedes or replaces a Minimum Requirement.	This chapter identifies and describes the watersheds, basins and sub-basins within the City of Tacoma	1-3 Grey
Update heading 2.1	Update language to expand on title	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.1 City of Tacoma Watersheds and Special Districts	City of Tacoma Watersheds	City of Tacoma Watersheds and Special Districts	1-3 Purple
Deletion of all text on page 1-5	Information no longer needed - information will be incorporated into City of Tacoma Watershed Planning Documentation	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.2 Land Use 2.2.1 Comprehensive Planning 2.3 Impaired Water Bodies 2.4 Floodplains	The City shares watersheds with both Pierce and King Counties, and with various municipalities within these counties. 2.2 Land Use One of the factors determining the... 2.2.1 Comprehensive Planning The Growth Management Act (GMA)... 2.3 Impaired Water Bodies Section 305(b) of the Federal Clean... 2.4 Floodplains Floodplains are not regulated through...	NA	1-5 Gray
Deletion of Heading for section 2.5	Updated for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5 Tacoma's Watersheds and Other Basins – Summary Descriptions (deleted heading)	2.5 Tacoma's Watershed and Other Basins - Summary Descriptions	NA	1-6 Purple
Update of text under section 2.5.1 Fleet Creek	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.1 Flett Creek All text under subheading	This watershed is 7,153 acres and is the second largest watershed in the City. The area is …	The Flett Creek Watershed is approximately 7,100 acres and is located predominately…	1-6 Purple

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Update of text under section 2.5.1.1 Wapato Lake	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.1.1 Wapato Lake First and third paragraph under subheading	Wapato Lake is a 30-acre urban lake and is the central feature of Wapato Park. This park is an 80-acre facility owned by Metro Parks Tacoma. The surrounding land uses are predominantly residential but include commercial uses and portions of Interstate 5. The lake's valued uses... Two major drainage basins (approximately 900 acres total), including stormwater from Interstate 5 discharge into the north cell of the lake. For overflow...	NA	1-7 Purple
Update of text under section 2.5.1.2 Snake Lake	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.1.2 Snake Lake All text under subheading	Snake Lake is a 17-acre urban lake and wetland. It is the central feature of the Tacoma Nature Center, a 54-acre facility dedicated to nature education, research and appreciation, operated by Metro Parks Tacoma. Approximately 100,000 people visit the… The lake drains an urban residential watershed of approximately... Snake Lake sustains large seasonal fluctuations in its surface... Also located in this drainage basin (northeast of Snake Lake) is the Delong Pond wetland. It currently is an isolated water body (in the past it had a pumped outlet...	Snake Lake is a 17-acre urban lake and wetland. It is the central feature of the Tacoma Nature Center, a 54-acre facility dedicated to nature education, research and appreciation, operated by Metro Parks Tacoma. Also located in this drainage basin (northeast of Snake Lake) is the Delong Pond wetland. It currently is an isolated waterbody.	1.7 Purple
Update of text under section 2.5.2 Leach Creek	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.2 Leach Creek All text under subheading	Tacoma's portion of this watershed covers 1,728 acres and comprises… Leach Creek is a little over 2 miles long. Salmonid spawning…	The Leach Creek Watershed is approximately 1,700 acres and is located predominately in the… China Lake and the South Tacoma Groundwater Protection… Projects within the Leach Creek Basin discharge to freshwater…	1-7 & 1-8 Purple
Deletion of section 2.5.2.1 Leach Creek Basin	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.2.1 Leach Creek Holding Basins (deleted subheading) Subheading and all text under subheading	Stormwater within the watershed is piper to the Leach Creek Holding Basin… The Leach Creek Holding Basin was constructed by the City of Tacoma in 1961…	NA	1-8 Purple

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Update of text under section 2.5.3 Northeast Tacoma	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.3 Northeast Tacoma All text under subheading	The watershed covers 2,641 acres and consists primarily of residential development with open spaces… Most of the stormwater from this watershed is…	The Northeast Tacoma Watershed is approximately… Dry Gulch, an intermittent stream, is located… Projects that discharge directly or indirectly to any…	1-8 & 1-9 Purple
Update of text under section 2.5.4 Joe's Creek	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.4 Joe's Creek All text under subheading	The watershed covers 157 acres and is the smallest of the City's nine watersheds. It is boarded…	The Joe's Creek Watershed is approximately 150 acres and is… Projects that discharge directly or indirectly to any creek...	1-9 Purple
Update of text under section 2.5.5 North Tacoma	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.5 North Tacoma All text under subheading	The watershed covers 4,766 acres and is location in the northern portion of Tacoma. The area includes… Water bodies within this watershed include Commencement Bay, Ruston Creek, Asarco Creek, Puget Creek, Mason Creek…	The North Tacoma Watershed is approximately 4,700 acres and is located predominately in the North End and West End Neighborhood Council Districts… Ruston Creek, Asarco Creek, Puget Creek, Mason Creek, and Garfield Gulch are located within the City of Tacoma boundaries... Projects that discharge directly or indirectly to Ruston Creek, Asarco Creek, Puget Creek, Mason Creek, and Garfield Gulch...	1-9 Purple
Partial text deletion under section 2.5.5.1 Puget Creek	Information no longer needed. Additional information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.5.1 Puget Creek Second sentence of first paragraph under subheading	Several community groups have worked to reintroduce salmon to Puget Creek by improving fish access and vegetative cover in Puget Creek. A fish ladder was installed in 1997 to provide fish access to the creek.	NA	1-10 Grey
Update of text under section 2.5.6 Thea Foss Way	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.6 Thea Foss Waterway All text under subheading	This watershed covers approximately 5,751 acres and is comprised of drainage basins located in the south central..	The Thea Foss Watershed is approximately 5,700 acres and is located predominately in the… Portion of the South Tacoma Groundwater Protection District… Projects that discharge to the Thea Foss Waterway discharge to a marine waterbody.	1-10 Purple
Update of text under section 2.5.7 Tideflats	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.7 Tideflats All text under subheading	This watershed covers 2,112 acres and is the most highly industrialized and commercialized portion of the City…	The Tideflats Watershed is approximately 2,100 acres and is located predominately in the… The Sitcum Waterway, the Blair Wateway, the Hylebos… Projects that discharge directly or indirectly to Hylebos…	1-10 Purple

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Update of text under section 2.5.8 Lower Puyallup	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.8 Lower Puyallup All text under subheading	This watershed covers 2,971 acres and is located in the southeast portion of Tacoma. The area borders the Foss Waterway Watershed on the west and the Tideflats..	The Lower Puyallup Watershed is approximately 2,900 acres… The Puyallup River, Swan Creek, and First Creek are located… Projects that discharge directly or indirectly to First Creek…	1-11 Purple
Deletion of text under section 2.5.8.1 Puyallup River	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.8.1 Puyallup River (deleted subheading) Subheading and all text under subheading	The Puyallup River is of area-wide significance. The associated drainage basin occupies approximately 972 square miles in the Puget Lowlands. Its two…	NA	1-11 Purple
Partial text deletion under section 2.5.8.2 Swan Creek	Shortened section because more comprehensive information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.8.2 Swan Creek Last two sentences of first paragraph under subheading, and all text in second paragraph.	Clear Creek then flows into the Puyallup River. This discharge point is located in unincorporated Pierce County. This creek is used by salmonids. The Swan Creek drainage basin is large, encompassing hundreds of acres. Most of the area is located in unincorporated Pierce County. A small...	NA	Page 1-11 & 1-12 Purple
Deletion of text under section 2.5.8.3 First Creek (formerly T-Street Gulch)	Shortened section because more comprehensive information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.8.3 First Creek (formerly T-Street Gulch) (deleted subheading) Subheading and all text under subheading	First Creek (formerly T-Street Gulch) The First Creek drainage basin encompasses approximately 2,500 acres of residential/commercial area. The majority of the basin is within the City of Tacoma, although approximately 600 acres lie within unincorporated Pierce County.	NA	Page 1-12 Purple
Update of text under section 2.5.9 Western Slopes Watershed	Shortened section because information about watersheds will be located in the City of Tacoma Watershed Plan.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.9 Western Slopes Watershed All text under subheading	This watershed covers 2,090 acres, is located in the northwest portion of Tacoma and drains to the Tacoma Narrows. The watershed…	The Western Slopes Watershed is approximately 2,000 acres and is located in the West End… Gold Creek, Narrows Creek, Crystal Creek, Crystal Springs Creek, Marinera Creek, and Titlow Park Gulch Creek… Projects that discharge directly or indirectly to any creek system...	Page 1-12 Purple
Update of section 2.5.10 South Tacoma Groundwater Protection District	Text updated for readability and updates of references to other sections in the manual	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 2 2.5.10 South Tacoma Groundwater Protection District Last two paragraphs under subheading	The City of Tacoma Public Works Department and Tacoma-Pierce County Health Department developed a guidance…	Projects that infiltrate pollution generating surfaces in the South Tacoma Groundwater Protection District must provide treatment as specified in Volume 3, Section XX. A project's location…	Page 1-13 Purple

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Update of chapter title	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 Chapter 3 Minimum Requirements and Additional Protective Measures	Chapter 3 Minimum Requirements for New Development and Redevelopment	Chapter 3 Minimum Requirements and Additional Protective Measures	1-17 Purple
Update of text 'runoff' to 'stormwater'	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.1 Overview of the Minimum Requirements text under 6.	6. Runoff Treatment	6. Stormwater Treatment	1-17 Purple
Update text under subheading 3.1	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.1 Overview of the Minimum Requirements Second, third and fourth paragraphs under subheading	The City also has one additional requirement beyond those required in Ecology's 2012 manual: Depending on the type and size of the proposed project, different combinations of these Minimum Requirements apply. Section 3.4 provides additional information on applicability of the Minimum Requirements.	The City also has one additional Protective Measure that may apply to a given project. Depending on the type and size of the proposed project, different combinations of the Minimum Requirements and Protection Measure apply. Section 3.4 provides guidance on applicability of the Minimum Requirements.	1-17 Purple
Update reference to Ecology's Stormwater Management Manual	Update to most recent manual/ to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.1 Overview of the Minimum Requirements Fifth paragraph under subheading	This manual is designed to be equivalent to Ecology's 2012 Stormwater Management Manual for Western Washington.	This manual is designed to be equivalent to Ecology's 2019 Stormwater Management Manual for Western Washington.	1-17 Pink
Update of text under 3.2 Exemptions	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.2 Exemptions First sentence under subheading	The following are exempt from complying with the Minimum Requirements	The following are exempt from complying with the Minimum Requirements even if the practices meet the definition of new development or redevelopment.	1-17 Purple
Update of text under 3.2 Exemptions	Additional text added for clarity of exemptions/ language updated to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.2 Exemptions Last two sentences under subheading	NA	All projects are encouraged to implement and maintain Best Management Practices to minimize erosion and control sediment during and after construction activities to help ensure protection of surface water quality during storm events. Exemptions apply to projects whose sole goal is one of the following actions.	1-18 Pink

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New section 'Forest Practices, Commercial Agriculture, Oil and Gas Field Activities or Operations'	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.2.1 Forest Practices, Commercial Agriculture, Oil and Gas Field Activities or Operations, subheading and all text under subheading	NA	3.2.1 Forest Practices, Commercial Agriculture, Oil and Gas Field Activities or Operations • Forest practices regulated under Title 222 WAC… • Commercial agriculture practices... • Construction of drilling sites…	1-18 Pink
Update of language under section 3.2.2 Pavement Maintenance	Update language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.2.2 Pavement Maintenance First bullet point under third paragraph under subheading	• Removing and replacing a paved surface to base course or lower, or repairing the roadway base.	• Removing and replacing asphalt or concrete to top of base course or lower, or repairing the roadway base.	1-18 Purple
Update of language under section 3.2.2 Pavement Maintenance	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 Second and third bullet point under fourth paragraph of subheading	• Resurfacing by upgrading from dirt to gravel, asphalt, or concrete, • Resurfacing by upgrading from gravel to asphalt or concrete; or	• Resurfacing by upgrading from dirt to gravel, bituminous surface treatment, asphalt, or concrete, • Resurfacing by upgrading from gravel to bituminous surface treatment, asphalt or concrete; or	1-19 Pink
Update of language under section 3.2.2 Underground Utility Projects	Update language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.2.2 Underground Utility Projects First sentence under subheading	Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are only subject to Minimum Requirement #2, Construction Stormwater Pollution Prevention.	Underground utility projects, including catch basin maintenance and pipe maintenance projects, that replace the ground surface with in-kind material or materials with similar runoff characteristics are only subject to Minimum Requirement #2, Construction Stormwater Pollution Prevention.	1-19 Purple
Update of heading 3.2.4	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.2.4 Minor Land Disturbing Activities	Minor Clearing and Grading	3.2.4 Minor Land Disturbing Activities	1-19 Purple

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Update of text under subheading 3.2.4	Update language for clarity/readability and deleted text where information is not needed	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.2.4 Minor Land Disturbing Activities First sentence under subheading and bullet points 1, 2 & 5	The following minor clearing and grading activities are only subject to Minimum Requirement #2; unless located within a critical or sensitive area governed by the City's Critical Areas Preservation Ordinance. • Excavation for wells, except fill composed of the material from such excavation shall not be exempt; • Exploratory excavations under the direction of soil engineers or engineering geologists, except fill composed of the material from such excavation shall not be exempt; • Minor clearing and grading associated with cemetery graves;	The following minor clearing and grading land disturbing activities are only subject to Minimum Requirement #2; unless located within a critical or sensitive area governed by the City's Critical Areas Preservation Ordinance. • Excavation for wells • Subsurface exploratory excavations for completing Soils Reports • Minor clearing, grading, and excavation associated with individual cemetery graves;	1-19 Purple & Grey
Update of heading 3.3	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3 Applicability of the Minimum Requirements and Additional Protective Measures	Applicability of the Minimum Requirements	3.3 Applicability of the Minimum Requirements and Additional Protective Measures	1-20 Purple
Deletion of text under section 3.3 Applicability of the Minimum Requirements	Updated language for readability (incorporated later in section)	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3 Applicability of the Minimum Requirements and Additional Protective Measures First paragraph under subheading	The Minimum Requirements shall apply to all applications submitted after January 7, 2016; and…	NA	1-20 Purple
New text under section 3.3 Applicability of the Minimum Requirements	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3 Applicability of the Minimum Requirements and Additional Protective Measures Third paragraph under subheading	NA	Plat and short plat applications must complete a full Stormwater Site Plan for the entire project…	1-20 Pink

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New text under section 3.3 Applicability of the Minimum Requirements	Updated text for clarity when certain MR apply.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3 Applicability of the Minimum Requirements and Additional Protective Measures Fifth paragraph under subheading	NA	Minimum Requirement #2 - Construction Stormwater Pollution Prevention applies to all new…	1-20 Purple
New section 3.3.1 Vesting	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.1 Vesting Subheading and all text under subheading	NA	3.3.1 Vesting The Minimum Requirements contained in this SWMM shall apply to:…	1-20 & 1-21 Pink
New Section 3.3.2 Cumulative Impact Mitigation	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.2 Cumulative Impact Mitigation Page 1-20	NA	3.3.2 Cumulative Impact Mitigation The determination of thresholds for a project site shall be based on the total increase or replacement of…	1-21 Purple
New Section 3.3.3 Change of Use	Brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.3 Change of Use Subheading and all text under subheading	NA	3.3.3 Change of Use The City of Tacoma may require Minimum Requirements be applied to project sites where the project scope causes a change of use that may affect downstream receiving waterbodies. Environmental Services will make the final determination of requirements.	1-21 Orange
Updated text in section 3.3.3 New Development	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.4 New Development Third sentence of first paragraph and second bullet point under subheading.	Minimum Requirement #10 may apply to projects that increase the amount of stormwater runoff to the downstream stormwater system. • Results in 2,000 square feet, or greater, of new, replaced, or new plus replaced hard surface area, or	Additional Protective Measure - Infrastructure Protection may apply to projects that increase the amount of stormwater runoff to the downstream stormwater system. • Results in 2,000 square feet, or greater, of new, plus replaced hard surface area, or	1-21 Purple
Updated heading	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.5.1 Road-Related Redevelopment	Roads and Redevelopment	3.3.5.1 Road-Related Redevelopment	1-23 Purple

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Updated text under subheading 3.3.5.1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.5.1 Road-Related Redevelopment First paragraph under subheading	In addition to meeting Minimum Requirements #1 through #10 for the new and converted surfaces, the following road-related redevelopment projects shall comply with all the Minimum Requirements for the new and replaced hard surfaces and converted vegetation areas:	In addition to meeting Minimum Requirements #1 through #9 for the new hard surfaces and converted vegetated areas, the following road-related redevelopment projects shall comply with all the Minimum Requirements for the new and replaced hard surfaces and converted vegetation areas:	1-23 Pink
Updated text in section 3.3.5.1	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.5.1 Road-Related Redevelopment Second paragraph under subheading	The total of the new hard surfaces is 5,000 square feet or more and total 50% or more of the existing hard surfaces within the project limits.	• The total of new hard surfaces is 5,000 square feet or more, and • The total of new hard surfaces totals 50% or more of the existing hard surfaces within the Site.	1-23 Pink
Updated text in section 3.3.5.1 Roads and Redevelopment	Updated language for clarity/readability and text deleted where information is not needed	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.5.1 Road-Related Redevelopment All text from fourth paragraph through end of section	The project limits shall be defined by the length of the project and the width of the right-of-way. Public road improvements… The following road maintenance practices are subject to the… The following affected surfaces would be considered… • Removing and replacing a paved... The following affected surfaces would be considered new hard surfaces: • Extending the pavement edge... • Paving graveled shoulders; • Resurfacing by upgrading from dirt... • Resurfacing by upgrading from gravel... • Resurfacing by upgrading from a...	NA	1-23 Purple
Deletion of section 3.3.6 Cumulative Impact Mitigation Requirement and Vesting	Section moved.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.7 Cumulative Impact Mitigation Requirement and Vesting (deleted subheading) Subheading and all text under subheading	3.3.6 Cumulative Impact Mitigation Requirement and Vesting The determination of thresholds for a project shall be based on the…	NA	1-24 Purple

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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of section 3.3.7 Grade and Fill Projects	Information not needed - not an Ecology requirement.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.8 Grade and Fill Project (deleted subheading) Subheading and all text under subheading	3.3.7 Grade and Fill Projects For the purpose of this manual grade and fill projects…	NA	1-24 Gray
Deletion of section 3.3.9 Separation of Public and Private Water Quality and Flow Control	No longer required. Incorporated elsewhere in manual	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.9 Separation of Public and Private Water Quality and Flow Control (deleted subheading) Subheading and all text under subheading	3.3.9 Separation of Public and Private Water Quality and Flow Control Typically, private and public stormwater are separated for purposes of water quality treatment and flow control… • For commercial new development... • Under certain circumstances... • For residential new development and...	NA	1-24 & 1-25 Purple
Deletion of section 3.3.10 Watershed Specific Requirements	No longer required. Incorporated elsewhere in manual	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.10 Watershed Specific Requirements All text and subheadings under heading	3.3.10 Watershed Specific Requirements The stormwater requirements outlined… 3.3.10.1 Flett Creek In the Flett Creek watershed… 3.3.10.2 Leach Creek In the Leach Creek watershed... 3.3.10.3 Northeast Tacoma In the Northeast Tacoma watershed... 3.3.10.4 Joe's Creek In the Joe's Creek watershed... 3.3.10.5 North Tacoma In the North Tacoma watershed... 3.3.10.6 Thea Foss Watershed In the Thea Foss watershed... 3.3.10.8 Lower Puyallup Watershed In the Lower Puyallup watershed... 3.3.10.9 Western Slopes Watershed In the Western Slopes watershed...	NA	1-25 - 1-30 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update text boxes for Figure 1-5 New Development Flowchart	Updated for clarity and readability and to align with previous sections	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.11 Flowcharts Figure 1-5 New Development Flowchart	Comply with Minimum Requirements #1 - #5 and #10 for all new plus replaced hard surfaces; and the land disturbed. Continue to next questions. See Figure 1-8. Review Minimum Requirements #1-10 and comply with applicable requirements. Requirements apply to new plus replaced hard surfaces; and converted vegetation surfaces. Continue to the Flow Control Flowchart. See Figure 1-9. No additional requirements.	Comply with Minimum Requirements #1 - #5 for all new plus replaced hard surfaces; and the land disturbed. Review Minimum Requirements #1-9 and comply with applicable requirements. Requirements apply to new plus replaced hard surfaces; and converted vegetation surfaces. No additional requirements.	1-31 Purple
Updates to notes on Figure 1-5	Update for clarity and readability and to align with previous sections	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.11 Flowcharts Figure 1-5 New Development Flowchart NOTES, numbers 5 & 7	5. For road-related projects, use the road-related flowchart (Fig. 1-7). the redevelopment flowchart (Figure 1-6) is not used.	5. For road-related projects, use the road-related flowchart (Fig. 1-7). 7. Infrastructure Protection may apply to any project	1-31 Purple
Update text boxes for Figure 1-6 Development Flowchart	Updated for clarity and readability and to align with previous sections	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.11 Flowcharts Figure 1-6 New Development Flowchart	Comply with Minimum Requirements #1 - #5 and #10 for all new plus replaced hard surfaces; and the land disturbed. Continue to next questions. See Figure 1-8 Review Minimum Requirements #1-10 and comply with applicable requirements. Requirements apply to new hard surfaces; and converted vegetation areas. Continue to the next question and continue to Flow Control Flowchart (Fig. 1-9). Review Minimum Requirements #1-10 and comply with applicable requirements. Requirements apply to new and replaced hard surfaces and converted vegetation areas. Continue to Flow Control Flowchart (Fig. 1-9).	Comply with Minimum Requirements #1 - #5 for all new plus replaced hard surfaces; and the land disturbed. Review Minimum Requirements #1-9 and comply with applicable requirements. Requirements apply to new hard surfaces; and converted vegetation areas. Review MRs #1-9, comply with applicable MRs. MRs apply to new plus replaced hard surfaces and converted vegetation surfaces. Continue to MR #5 Flowchart (Fig. 1-8) and Flow Control Flowchart (Fig 1-9).	1-32 Purple
Updates to notes on Figure 1-6	Updated for clarity and readability and to align with previous sections	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.11 Flowcharts Figure 1-6 New Development Flowchart, Note 6	NA	6. Infrastructure Protection may apply to any project	1-32 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update text boxes for Figure 1-7 Road-Related Redevelopment Flowchart	Updated for clarity and readability and to align with previous sections	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.11 Flowcharts Figure 1-7 Road-Related Redevelopment Flowchart	Comply with Minimum Requirements #1 - #5 and #10 for all new plus replaced hard surfaces; and the land disturbed. Continue to the next questions. See Figure 1-8. Review Minimum Requirements #1-10 and apply the applicable requirements to new hard surfaces; and converted vegetation areas. Continue to the next question. Review Minimum Requirements #1-10 and apply the applicable requirements to new and replaced surfaces and converted vegetation. Continue to flow control flowchart (Fig. 1-9). No additional requirements. Comply with Minimum Requirements #1 - #5 and #10 No additional requirements.	Comply with Minimum Requirements #1 - #5 for all new plus replaced hard surfaces; and the land disturbed. Review Minimum Requirements #1-9 and apply the applicable requirements to new hard surfaces and converted vegetation areas. Review MRs #1-9, comply with applicable MRs. MRs apply to new plus replaced hard surfaces and converted vegetation surfaces. Continue to MR #5 Flowchart (Fig. 1-8) and Flow Control Flowchart (Fig 1-9). No additional requirements. Continue to MR#5 Flowchart (Fig. 1-8) No additional requirements. Continue to MR#5 Flowchart (Fig. 1-8) and Flow Control Flowchart (Fig 1-9)	1-33 Purple
Updates to notes on Figure 1-7	Updated for clarity and readability and to align with previous sections	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.11 Flowcharts Figure 1-7 Road-Related Redevelopment Flowchart, Notes 1 & 6	1. Road related projects are these projects whose objective is the construction or maintenance of a road. Roads built as a requirement for permit issuance are not included in this category.	1. New development projects should utilize the New Development Flowchart 6. Infrastructure Protection may apply to any project	1-33 Purple
Deletion of figure 1-8 & 1-9	Deleted as information is no longer required	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.3.11 Flowcharts Figure 1-8 & Figure 1-9	Figure 1 - 8 Minimum Requirement #5 Flowchart Figure 1 - 9 Flow Control Flowchart	NA	1-34 & 1-35 Purple
Update heading title 3.4.1	Update language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.1 Minimum Requirement #1: Stormwater Site Plan Preparation	3.4.1 Minimum Requirement #1: Preparation of a Stormwater Site Plan	3.4.1 Minimum Requirement #1: Stormwater Site Plan Preparation	1-36 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update text under heading 3.4.1	Moved language to glossary for readability.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.1 Minimum Requirement #1: Stormwater Site Plan Preparation Third sentence of first paragraph and second paragraph under subheading	The following principles should be used where feasible: minimization of land disturbances by fitting development to the natural terrain; minimization of land disturbance by confining construction to the smallest area feasible and away from critical areas; preservation of natural vegetation; locating impervious surfaces over less permeable soils; clustering buildings; and minimizing impervious surfaces. A Stormwater Site Plan consists of an assessment of both temporary and permanent stormwater and drainage impacts.	NA	1-36 Purple
Updated of text under 3.4.1.1 Objective	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.1.1 Objective	To outline the existing and post-developed conditions of the project site, describe the proposed stormwater facilities, and present the stormwater analysis.	To describe the existing conditions of the project site and present how stormwater will be managed for the proposed conditions.	1-36 Purple
Update heading title 3.4.3	Updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.3 Minimum Requirement #3: Source Control	3.4.3 Minimum Requirement #3: Source Control of Pollution	3.4.3 Minimum Requirement #3: Source Control	1-38 Purple
Update of text under heading 3.4.3	Updated language for clarity and to meet Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.3. Minimum Requirement #3: Source Control of Pollution First paragraph under subheading	All known, available and reasonable source control BMPs shall be applied to all projects. Source control BMPs shall be selected, designed, and maintained according to this manual. Structural source BMPs shall be identified in the stormwater site plan and shall be shown on construction plans submitted for City review.	All known, available and reasonable source control BMPs shall be applied to all projects. Source control BMPs shall be selected, designed, and maintained according to Volume 4 of this manual. Structural and operational source control BMPs shall be identified in the stormwater site plan and shall be shown on construction plans submitted for City review.	1-38 Purple & Pink
Deletion of text under 3.4.3	No longer needed/language was moved.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.3. Minimum Requirement #3: Source Control of Pollution Second paragraph under subheading	Source Control BMPs include Operational BMPs and Structural Source Control BMPs. See Volume 4 for design details of these BMPs. For construction sites, see Volume 2, Chapter 3.	NA	1-38 Gray

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Update of heading title 3.4.4 Minimum Requirement #4	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.4 Minimum Requirement #4: Preserving Drainage Patterns and Outfalls	3.4.4 Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls	3.4.4 Minimum Requirement #4: Preserving Drainage Patterns and Outfalls	1-38 Purple
Update of text under heading 3.4.4	Updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.4 Minimum Requirement #4: Preserving Drainage Patterns and Outfalls First two paragraphs under subheading	For all projects, the natural drainage patterns shall be maintained, and discharges from the project site…	For all projects, the natural or existing condition drainage patterns shall be maintained and discharges from the project site…	1-38 Purple
Added text under heading 3.4.4	Updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.4 Minimum Requirement #4: Preserving Drainage Patterns and Outfalls Fourth, fifth & sixth paragraph under subheading	NA	Stormwater shall discharge to the… All outfalls shall have energy… Stormwater shall not cause… • Stormwater that has not been… • Concentrated stormwater and/or… • Concentrated stormwater and/or… • For all discharge scenarios… • Environmental Services will...	1-38 & 1-39 Purple
Deleted subheading and text under 3.4.4.2	Updated language for clarity/readability. Text moved to new section	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.4.2 Supplemental Guidelines Subheading and all text under subheading	3.4.4.2 Supplemental Guidelines Where stormwater must be discharged offsite, an applicant may discharge surface flow onto neighboring properties if the surface flow has not been concentrated or increased as a result of the project development... a. Conveyance to the City system... b. If the 100-year return period... c. If the 100-year return period flowrate... d. If the 100-year return period flowrate...	NA	1-39 Purple/Orange
Update of Minimum Requirement #6 title	Updated for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6 Minimum Requirement #6: Stormwater Treatment	Minimum Requirement #6: Water Quality Treatment	3.4.6 Minimum Requirement #6: Stormwater Treatment	1-47 Purple
Update of text under section 3.4.6.1 Thresholds	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6.1 Thresholds First paragraph under subheading	When assessing a project against the following thresholds, only consider those hard and pervious surfaces…	When assessing a project against the following thresholds, only consider those surfaces…	1-47 Pink

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Updated language using 'TDAs'	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6.1 Thresholds First and second bullet points	• Projects in which the total of pollution-generating... • Projects in which the total of pollution-generating pervious surfaces (PGPS) - not including permeable pavements - is three-quarters (3/4) of an acre or more in a threshold discharge area, and from which there will be a surface discharge in a natural or manmade conveyance system from the site.	• TDAs in which the total of pollution-generating... • TDAs in which the total of pollution-generating pervious surfaces (PGPS) - not including permeable pavements - is three-quarters (3/4) of an acre or more in a threshold discharge area, and from which there will be a surface discharge in a natural or manmade conveyance system from the TDA.	1-47 Pink
Added text under 3.4.6.1 Thresholds	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6.1 Thresholds Paragraph under second bullet point	NA	Projects that infiltrate stormwater runoff in the South Tacoma Groundwater Protection District have additional and/or different thresholds and requirements…	1-47 Purple
Deletion of text under 3.4.5.1	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6.1 Thresholds Last paragraph under subheading	Minimum Requirement #8 - Wetlands Protection per Volume 1, Section 3.4.8 may apply…	NA	1-48 Pink
Added subheading and text under 3.4.6.2	Updated for additional clarity and guidance	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6.2 Treatment Type Requirements Subheading and all text under subheading	NA	3.4.6.2 Treatment Type Requirements The type of stormwater treatment… Oil Control Oil Control BMPs are required… Phosphorus Treatment Phosphorus treatment is required… Enhanced Treatment Enhanced treatment is required… Basic Treatment Areas that provide phosphorus...	1-48 & 1-49 Purple
Update of text in section 3.4.6.2 Pretreatment	Update language to match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6.2 Treatment Type Requirements Last italic heading under subheading	NA	Pretreatment Pretreatment best management practices are required: • When utilizing the following… • Where the basic, phosphorus…	1-49 Pink
Update text in section 3.4.6.3	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6.3 Treatment Facility Selection, Design, and Maintenance All bullet points under subheading	• Selected in accordance with the… • Designed in accordance with the… • Sized for the entire area that drains… • Maintained in accordance with the...	• Selected in accordance with the Treatment Type.. • Designed in accordance with criteria in Volume 5… • Maintained in accordance with the maintenance standards in Volume 5.	1-50 Purple

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Update of text under 3.4.6.4 Additional Requirements	Updated for readability/Information moved to earlier section.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6.4 Additional Requirements Third and fourth bullet points under subheading	• Direct discharge of untreated stormwater from pollution-generating hard surfaces to groundwater is prohibited, except for the discharge achieved by infiltration or dispersion of runoff through the use of Onsite Stormwater Management BMPs, designed in accordance with this manual; or by infiltration through soils meeting the soil suitability criteria of Volume 5, Chapter 7. • The City of Tacoma and Tacoma-Pierce County Health Department developed a guidance document that provides the circumstances and requirements for approval of infiltration facilities for managing pollution-generating stormwater runoff in the South Tacoma Groundwater Protection District...	• Direct discharge of untreated stormwater from pollution-generating hard surfaces to groundwater is prohibited, except as allowed by dispersion and infiltration through Onsite Stormwater Management BMPs or Infiltration Stormwater Treatment BMPs where the native soils meet the Soil Suitability Criteria. Certain projects in the South Tacoma Groundwater Protection District require stormwater treatment regardless of project size. See the South Tacoma Groundwater Protection Distriction Infiltration Policy available at www.cityoftacoma.org/stormwatermanual.	1-50 Purple
Partial deletion of text under 3.4.6.6	Information not needed	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.6.6 Objective Last sentence under subheading	When site conditions are appropriate, infiltration can potentially be the most effective BMP for runoff treatment.	NA	1-51 Grey
Partial deletion of text under 3.4.7.1 Flow Control Applicability	Update language to match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.7.1 Flow Control Applicability Second and third paragraph under subheading	If the discharge is to a stream that leads to a wetland, or to a wetland that has an outfall to a stream, both Minimum Requirement #7 and Minimum Requirement #8 apply. When assessing a project against flow control thresholds, only consider those hard and pervious surfaces that are subject to this Minimum Requirement as determined in Volume 1, Section 3.3	When assessing a project against flow control thresholds, only consider those surfaces that are subject to this Minimum Requirement as determined in Volume 1, Section 3.3.	1-51 Pink
Update text under subheading 3.4.7.2	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.7.2 Flow Control Exempt Waterbodies All text under subheading	If all of the following requirements are met, Flow Control – Freshwater Protection Requirement is not required for projects that discharge… • Flow splitting devices or drainage… • The project site must discharge… • The conveyance system between… Any erodible elements of the manmade...	Flow Control is not required for TDAs that discharge directly or indirectly through an MS4 to a flow control exempt waterbody.	1-51 & 1-52 Orange

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of language under 3.4.7.2.1 Thresholds	Update language to match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.7.3.1 Thresholds – Freshwater Protection Requirement All text and bullet points under subheading	Projects that meet or exceed any of the following thresholds and discharge stormwater directly or indirectly through a conveyance system into a freshwater body require compliance with Minimum Requirement #7, and shall provide mitigation per Section 3.4.7.2.2. • Projects in which the total of effective impervious surfaces is 10,000 square feet or more in a threshold discharge area, or • Projects that convert ¾ acres or more of vegetation to lawn/landscape, or convert 2.5 acres or more of native vegetation to pasture in a threshold discharge area, and from which there is a surface discharge in natural or man-made conveyance systems from the site, or • Projects that, through a combination of hard surfaces and converted vegetation areas, cause a 0.15 cfs or greater increase in the 100-year return period flowrate from a threshold discharge area as estimated using...	Threshold Discharge Areas (TDAs) within a project that meet or exceed any of the following thresholds and discharge stormwater directly or indirectly through a conveyance system into a freshwater body require compliance with Minimum Requirement #7, and shall provide mitigation per Section 3.4.7.3.2. • TDAs in which the total of effective impervious surfaces is 10,000 square feet or more, or • TDAs that convert ¾ acres or more of vegetation to lawn, and from which there is a surface discharge in natural or man-made conveyance systems from the TDA, or • TDAs that convert 2.5 acres or more of native vegetation to pasture and... • TDAs that, through a combination of effective hard surfaces and converted vegetation areas, cause a 0.15 cfs or greater increase in the 100-year return period flowrate as estimated...	1-52 Purple & Pink
Updated text under 3.4.7.3.2.2	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.7.3.2.2 Mitigation - Existing Condition First paragraph under subheading	The Existing Condition mitigation shall apply to those projects meeting or exceeding the threshold of Section 3.3.7.4.1 and with discharges to freshwater bodies located in the North Tacoma, Thea Foss Waterway, Tideflats, and Lower Puyallup Watersheds (except as noted in Section 3.4.7.4).	The Existing Condition mitigation shall apply to those projects meeting or exceeding the threshold of Section 3.3.10.4.1 and with discharges to freshwater bodies located in the North Tacoma, Thea Foss Waterway, Tideflats, and Lower Puyallup Watersheds (except discharges to First Creek and the Puyallup River shall comply with requirements for Flow Control Exempt Waterbodies and discharges to Swan Creek shall comply with Mitigation - Forested Conditions.).	1-53 Purple

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Deletion of section 3.4.7.4 Infrastructure Protection Requirement	Updated language now part of new Additional Protective Measure - Infrastructure Protection.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.7.4 Infrastructure Protection Requirement All subheading and text under heading	3.4.7.4 Infrastructure Protection Requirement 3.4.7.4.1 Thresholds– Infrastructure Protection Projects that discharge stormwater… 3.4.7.4.2 Mitigation - Infrastructure Protection Projects required to comply with…	NA	1-53 & 1-54 Purple
Update heading title 3.4.7.5 Modeling Requirements	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.7.5 Flow Control Facility Selection, Design, and Maintenance	Modelling Requirements	3.4.5.7 Flow Control Facility Selection, Design, and Maintenance	1-54 Purple
Update of text under heading 3.4.7.5	Updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.7.5 Flow Control Facility Selection, Design, and Maintenance All text under subheading	To meet the Freshwater Protection Requirement in Section 3.4.7.3 or if proposing…	Flow control facilities shall be: • Selected in accordance with... • Designed in accordance with… • Maintained in accordance with…	1-54 Purple
Deletion of section 3.4.7.6 Flow Control Design, Offsite Inflow, and By Pass	Incorporated in flow control volume	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.7.6 Flow Control Design, Offsite Inflow, and Bypass (deleted subheading) Subheading and all text under subheading	3.4.7.6 Flow Control Design, Offsite Inflow, and By Pass Flow control facilities shall be sized for the entire flow that is directed to them; however, bypass may be allowed as described in Volume 3, Section 1.5.	NA	1-54 Purple & Yellow
Partial deletion of text under 3.4.7.7 Objective	Text no longer needed	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.7.7 Objective Last sentence under subheading	The purpose of flow control for infrastructure protection is to prevent downstream flooding that may be caused by increased runoff to existing City infrastructure.	NA	1-54 Grey
Update of text under 3.4.8.1	Updated with brand new language	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.8.1 Applicability Second paragraph under subheading	Stormwater discharges to wetlands may require a wetland permit as detailed under the City's Critical Areas Preservation Ordinance (TMC 13.11).	Stormwater discharges to wetlands may require a Critical Area Verification, Minor Development Permit, and/or Development Permit as detailed under the City's Critical Areas Preservation Ordinance (TMC 13.11).	1-55 Orange
Partial text deletion under 3.4.8.1 Applicability	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.8.1 Applicability Fourth paragraph under subheading	Streams may also be regulated under this requirement…	NA	1-55 Pink

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Added Figure 1 - 10	Added flow chart to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.8.2 Thresholds and Requirements Figure 1 - 10. Determining Wetland Levels Required	NA	Figure 1 - 10. Determining Wetland Levels Required	Pink 1-57
Updated text under 3.4.9 Minimum Requirement #9:	Updated language for clarity and readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.9 Minimum Requirement #9: Operation and Maintenance First paragraph under subheading	An Operation and Maintenance (O&M) Manual that is consistent with the provisions in Chapter 4 of this Volume shall be provided for all proposed stormwater BMPs at the time construction plans are submitted for review. The party (or parties) responsible for maintenance and operation shall be identified.	An Operation and Maintenance (O&M) Manual shall be provided for all proposed permanent stormwater BMPs at the time construction plans are submitted for review.	1-58 Purple & Pink
Added text under 3.4.9 Minimum Requirement #9:	Updated language to match Ecology's intent and with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.9 Minimum Requirement #9 Second paragraph and bullet points under subheading	NA	The Operation and Maintenance Manual shall be a stand-alone document that includes: • A narrative description of the... • A description of each permanent… • A site plan with the locations… • The name and phone number… • A description of where the… • A description of all maintenance... • A sample maintenance activity... • A cost estimate for maintenance...	1-58 & 1-59 Pink & Orange
Added text under 3.4.9 Minimum Requirement #9:	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.9 Minimum Requirement #9 Last paragraph under subheading	NA	An applicant does not have to submit an Operation and Maintenance Manual for stormwater BMPs that will be maintained by the City of Tacoma. City of Tacoma staff develop the documents internally.	1-59 Orange
Deletion of 5.4.9.2 Supplemental Guidelines	No longer needed. Language did not add clarity to section.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.9.2 Supplemental Guidelines Subheading and all text under subheading	5.4.9.2 Supplemental Guidelines Inadequate maintenance is a common cause of failure for stormwater control facilities. The description of each BMP in Volumes 2, 3, 5 and 6 includes a section on maintenance. Appendix C of Volume 1 includes a schedule of maintenance standards for drainage facilities.	NA	1-59 Gray

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Update of heading and deletion of text for Minimum Requirement 10	Text no longer needed/update with new language/ new layout	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.4.10 Minimum Requirement #10: Offsite Analysis and Mitigation (deleted subheading) 3.5 Additional Protective Measure - Infrastructure Protection 3.5.1 Qualitative Analysis headings and all text under headings	3.4.10 Minimum Requirement #10: Offsite Analysis and Mitigation As required by the Minimum Requirements of this Chapter and the… 3.4.10.1 Qualitative Analysis All project applicants required to submit a Stormwater Site Plan…	3.5 Additional Protective Measure - Infrastructure Protection	1-59 & 1-60 Orange
Added text and subheading 3.5.0.2	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.5.2 Thresholds Subheading and text under subheading	NA	3.5.0.2 Thresholds This additional protective measure applies to any project that increases the amount of stormwater runoff to the downstream stormwater conveyance system.	1-60 Purple
Added text under subheading 3.5.0.3	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.5.0.3 Quantitative Analysis Last sentence under subheading	Environmental Services may require different or additional analyses than those represented in Table 1 - 2 based upon project impacts such as conversions from pervious surfaces to hard surfaces, underdrained facilities, and/or lined facilities.	Environmental Services may require different or additional analyses than those represented in Table 1 - 2 based upon project impacts such as conversions from pervious surfaces to hard surfaces, underdrained facilities, and/or lined facilities or known issues with the existing stormwater system.	1-60 Orange
Updated text in table 1-2	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.5.3 Quantitative Analysis Table 1 - 2 Column 2, row 1 Column 3, rows 3, 4 & 5	Pipe Size within ¼ mile downstream of the project Single Segment Capacity Analysis (Vol. 3, Sec. 9.3.2) and Inlet and Gutter Capacity Analyses (Vol. 3, Sec. 9.4 and 9.5) (as applicable), OR City-Wide Capacity Model* (Vol. 1… Single Segment Capacity Analysis (Vol. 3, Sec. 9.3.2) and Inlet and Gutter Capacity Analyses (Vol. 3, Sec. 9.4 and 9.5) (as applicable), OR City-Wide Capacity Model... Full Backwater Analysis (Vol. 3, Sec. 9.3.3) and Inlet and Gutter Capacity Analyses (Vol. 3, Sec. 9.4 and 9.5), OR City-Wide Capacity Model...	Smallest Pipe Size within ¼ mile downstream of the project site Single Segment Capacity Analysis (Vol. 3, Sec. 9.3.2) and Inlet and Gutter Capacity Analyses (Vol. 3, Sec. 9.4 and 9.5) (as applicable) Single Segment Capacity Analysis (Vol. 3, Sec. 9.3.2) and Inlet and Gutter Capacity Analyses (Vol. 3, Sec. 9.4 and 9.5) (as applicable) Full Backwater Analysis (Vol. 3, Sec. 9.3.3) and Inlet and Gutter Capacity Analyses (Vol. 3, Sec. 9.4 and 9.5)	1-61 Orange & Purple

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Updated footnote	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 Table 1 - 2	*For City Owned Pipes Only	Comparison shall be made between existing land cover conditions and proposed land cover conditions	1-61 Purple
Deletion of 3.4.10.3 City-Wide Capacity Modeling	No longer needed. City-wide capacity modeling is no longer an option.	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.5.0.4 City-Wide Capacity Modeling (deleted subheading) Subheading and all text under subheading	3.4.10.3 City-Wide Capacity Modeling The City of Tacoma, Environmental Services is currently…	NA	1-61 Gray
Updated language under 3.5.0.5	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.5.0.5 Mitigation – Infrastructure Protection Subheading and text under subheading	Applicants required to complete a… • To a conveyance system... • To a capacity problem downstream... • To a manmade conveyance system…	3.5.0.5 Mitigation – Infrastructure Protection Projects that discharge stormwater… • To a conveyance system… • To a capacity problem... • To any other problem, such... The type of mitigation is dependent upon Environmental Services review of the project impacts.	1-62 Orange
Deleted text under subheading 3.5.0.6	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.5.0.6 Objective All text after first sentence under subheading	Aggravating shall mean increasing the frequency of occurrence and/or severity of a problem. Some of the most common and potentially destructive impacts of land development are erosion of downgradient properties, localized flooding, and slope failures. These can be caused by increased surface water volumes and changed runoff patterns. The applicant shall also evaluate types and locations of surface run-on to the project site. These must be safely conveyed across the project site.	NA	1-62 Grey
Update heading 3.6	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.6 Exceptions, Adjustments, and Modifications	Exceptions/Adjustments	3.6 Exceptions, Adjustments, and Modifications	1-62 Purple
Deleted text under 3.6.1	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.6.1 Exceptions to the Minimum Requirements Last sentence of first paragraph	Public notice of application for an exception, decision and written findings that document the determination to grant an exception will be published in accordance with TMC 12.08.095, with an opportunity for public comment.	Public notice of application for an exception, decision and written findings that document the determination to grant an exception will be published in accordance with TMC 12.08.095.	1-62 Grey

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Update heading 3.6.2	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.6.2 Adjustments to Minimum Requirements	Adjustments	3.6.2 Adjustments to Minimum Requirements	1-63 Purple
Updated text under heading 3.5.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.5.2 Adjustments to Minimum Requirements Last sentence of first paragraph under subheading	Applications for an adjustment to a Minimum Requirement shall include documentation that outlines how:	Applications for an adjustment to a Minimum Requirement shall be made in writing and include documentation that outlines how:	1-63 Pink
Updated subheading and text under 3.6.3	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 3 3.6.3 Modifications	Other Exceptions Exceptions to other requirements in this manual, including project specific…	3.6.3 Modifications Modifications to design standards and other requirements in this manual may be requested in writing to Environmental Services…	1-64 Orange

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Deletion of Chapter	Updated for readability/ contents moved to new section in Volume 13	City of Tacoma Stormwater Management Manual	Volume 1 Chapter 4	Chapter 4 Preparation of Stormwater Site Plans	NA	1-65 - 1-81 Purple

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Deletion of Appendix A	Stormwater Site Plan - Both Short and Long Form will be available as separate templates available on the City website.	City of Tacoma Stormwater Management Manual	Volume 1 Appendix A	Appendix A Stormwater Site Plan Report Short Form	NA	1-82 to 1-90 Purple
Deletion of Appendix B	This information will be part of Stormwater Site Plan Template which will be available on the City's website.	City of Tacoma Stormwater Management Manual	Volume 1 Appendix B	Appendix B Hydraulic Analysis Worksheet	NA	1-91 to 1-93 Purple
Deletion of Appendix C	Updated for readability/ contents moved to new section in Volume 9	City of Tacoma Stormwater Management Manual	Volume 1 Appendix C	Appendix C Maintenance Standards for Drainage Facilities	NA	1-94 - 1-213 Purple

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Updated heading title	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Purpose How to Use this Volume	Purpose of this Volume	How to Use this Volume	2-1 Purple
Update of text under How to Use this Volume	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Purpose How to Use this Volume All text under subheading	This volume of the Stormwater Management Manual discusses stormwater impacts and controls associated with construction activities….	Use the information in this volume to ensure compliance with Minimum Requirement #2 – Construction Stormwater Pollution Prevention…	2-1 Purple
Delete section content and organization of this volume	Information not needed	City of Tacoma Stormwater Management Manual	Volume 2 Purpose Content and Organization of this Volume Subheading and all text under subheading	Content and Organization of this Volume Volume 2 consists of three chapters and three appendices that address the preparation and implementation of Construction Stormwater…	NA	2-1 & 2-2 Grey

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Update title of Element #1	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 1 Chapter 1 The 13 Elements of Construction Stormwater Pollution Prevention First bullet point under heading	• Element 1 – Mark Clearing Limits	• Element 1 – Preserve Vegetation and Mark Clearing Limits	2-3 Pink
Update text under Element #1	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 1 Element #1: Preserve Vegetation and Mark Clearing Limits	• Plastic, metal, or fabric fence may be used to mark the clearing limits.	• Plastic, metal, fabric fence, or other physical barriers may be used to mark the clearing limits.	2-3 Pink
Updated text for Element #3	Text no longer relevant Updated with brand new language	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 1 Element #3 Control Flow Rates First bullet point under subheading, second and third sentence.	Requirements of the City of Tacoma Critical Areas Protection Ordinance (TMC 13.11) must be followed during construction as applicable.	A quantitative downstream analysis may be required to ensure no damage to the downstream system during construction. See Volume 1, Additional Protection Measure - Infrastructure Protection.	2-4 Gray & Orange
Updated text under Element #3	Language updated to match Ecology's intent (no longer needed in with removal of minimum requirement #10)	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 1 Element #3 Control Flow Rates Second bullet point under subheading	• Conduct a downstream analysis if changes to offsite flows could impair or alter conveyance systems, stream banks,…	NA	2-4 Pink
Updated text under Element #3	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 1 Element #3 Control Flow Rates Last sub bullet of last bullet point under subheading	NA	◦ BMP C253: Portable Sediment Tank	2-5 Orange
Update text 'drain' to 'stormwater system'	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 1 Element #5: Stabilize Soils Fifth bullet point under subheading	• Stabilize soil stockpiles from erosion, protect stockpiles with sediment trapping measures, and where possible, locate piles away from storm drain inlets…	• Stabilize soil stockpiles from erosion, protect stockpiles with sediment trapping measures, and where possible, locate piles away from stormwater system inlets,	2-6 Purple
Update text 'drain' to 'stormwater system'	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 1 Element #7: Protect Stormwater System Inlets Title, first, and third bullet points of subheading	Element #7: Protect Drain Inlets • Protect all storm drain… • Keep all approach roads clean. Do not allow sediment to enter storm drains	Element #7: Protect Stormwater System Inlets • Protect all stormwater system • Keep all approach roads clean. Do not allow sediment to enter the stormwater system.	2-8 & 2-9 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removed entire chapter	Information moved into new Documentation Volume	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (deleted chapter)	Chapter 2 Developing a Construction Stormwater Pollution Prevention Plan (SWPPP)	NA	2-17 - 2-26 Purple

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Update of chapter title	Updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) Chapter 2 Construction Stormwater Pollution Prevention Best Management Practices (BMPs)	Standards and Specifications for Best Management Practices (BMPs)	Chapter 2 Construction Stormwater Pollution Prevention Best Management Practices (BMPs)	2-27 Purple
Updated text under Chapter heading	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) Chapter 2 Construction Stormwater Pollution Prevention Best Management Practices (BMPs) Second, third, and fourth paragraph under chapter title	NA	An applicant can elect to utilize experimental BMPs or make modifications… Ecology has approved products as able to meet the requirements… Table 2 - 1: shows how each Construction Stormwater Pollution Prevention BMP in this manual relates to the associated SWPP Element.	2-27 Pink
Deletion of text under Chapter 2 heading	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) Chapter 2 Construction Stormwater Pollution Prevention Best Management Practices (BMPs) All text after fourth paragraph under chapter title	Section 2.1 contains the standards and specifications for Source Control BMPs… Section 2.2 contains the standards and specifications for Runoff Conveyance… The standards for each individual BMP are divided into four sections:… Note that the "Conditions of Use" always... Information on stream bank stabilization...	NA	2-27 Grey
Deletion of text and update of table under 2.1 Source Control BMP	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1 Source Control BMPs (deleted subheading) Subheading, all text and tables under subheading	2.1 Source Control BMPs Table 3, below shows the relationship of some… Table 3: Source Control BMPs by SWPPP Element	Table 2 - 1: Construction Stormwater BMPs by SWPPP Element	2-27 - 2-33 Pink
Text deletion under BMP C101: Preserving Natural Vegetation	Information no longer needed, contained in other standards	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.1.3 Design and Installation Specifications Third paragraph under subheading	Trees and vegetation should be protected during construction per Tacoma Municipal Code 9.18.030, according to industry standards (ANSI A300 Part 5) and…	NA	2-36 Grey
Updated text under BMP C102: Buffer Zone	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.2.2 Conditions of Use First sentence under subheading	Natural buffer zones are used along streams, wetlands and other bodies of water that need protection from erosion and sedimentation.	Buffer zones are used along streams, wetlands and other bodies of water that need protection from erosion and sedimentation.	2-36 Pink
Deletion of text under BMP C102: Buffer Zone	Information no longer needed/does not add clarity to this section. Information about modifications included in other section.	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.2.2 Conditions of Use Last sentence under subheading	The City may expand the buffer widths temporarily to allow the use of the expanded area for removal of sediment.	NA	2-32 Grey
Updated text under BMP C102: Buffer Zone	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.2.3 Design and Installation Specifications Last sentence of third bullet point under subsection	Flagging alone is typically not effective and will not be allowed.	Flagging alone is not allowed.	2-36 Pink

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Updated text under BMP C102: Buffer Zone	Update language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.2.4 Maintenance Standards All text under subheading	• Inspect the area frequently to make sure flagging and fencing remains in place and the area remains undisturbed.	• Inspect the area frequently to make sure fencing remains in place and the area remains undisturbed. Fix or replace damaged fencing immediately.	2-32 Pink
Update text under BMP C103: High Visibility Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.3.2 Conditions of Use First sentence under subheading	To establish clearing limits, plastic or metal fence may be used:	To establish clearing limits, plastic, fabric, or metal fence may be used:	2-33 Pink
Update of text under BMP C105: Stabilized Construction Entrance/Exit	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.4.3 Design and Installation Specification Bullet points 1 - 5 (including sub-bullets)	• See Figure 2 - 1 and Figure 2 - 2 for details. Reduce the length of the entrance to the.. • Construct stabilized construction entrance with a 12-inch thick pad of 4-inch to 8-inch…	• The stabilized construction entrance shall be:... • Construct stabilized construction entrance with a pad that is:… • Do not use crushed concrete, cement or asphalt rubble for the stabilized construction entrance.	2-38 & 2-39 Pink
Update of text under BMP C105: Stabilized Construction Entrance/Exit	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.4.4 Maintenance Standards First, second & eighth bullet points under subheading	• Add quarry spalls if the pad is no longer in accordance with the specifications. • If the entrance is not preventing sediment from being tracked onto pavement, then alternative measures to keep the streets free of sediment shall be used. This may include street sweeping, an increase in the dimensions of the entrance, or the installation of a wheel wash. • Immediately remove any quarry spalls that are loosened from the pad and end up on the roadway.	• Add quarry spalls or additional permeable ballast if the pad is no longer in accordance with the specifications. • If the entrance is not preventing sediment from being tracked onto pavement, alternative measures to keep the streets free of sediment shall be used. This may include replacement of the stabilized construction entrance, street sweeping, an increase in the dimensions of the entrance, or the installation of a wheel wash. • Immediately remove any materials that are loosened from the pad and end up on the roadway.	2-39 Pink
Deletion of figure 2-2	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.4.4 Maintenance Standards Figure 2-2 Small Site Stabilized Construction Entrance	Figure 2-2 Small Site Stabilized Construction Entrance	NA	2-41 Grey
Update of text under BMP C106: Wheel Wash	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.5.1 Purpose All text under subheading	Wheel washes reduce the amount of sediment transported onto paved roads by motor vehicles	Wheel washes reduce the amount of sediment transported onto paved roads by washing sediment from the wheels of motor vehicles prior to the motor vehicle leaving the construction site.	2-42 Pink
Added text under BMP C106: Wheel Wash	Updated to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.5.2 Conditions of Use Fifth bullet point, under subheading	NA	• Consider using a closed-loop recirculation system to conserve water.	2-42 Pink

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Updated text under BMP C106: Wheel Wash	Updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.5.3 Design and Installation Specifications Bullet points four and six (including sub-bullets)	• Design wheel wash systems with a small grade change, 6 to 12 inches for a 10-foot-wide pond, to allow sediment to flow to the low side of pond to help prevent re-suspension of sediment. A drainpipe with a 2- to 3-foot riser should be installed on the low side of the pond to allow for easy cleaning and refilling. Polymers may be used to promote coagulation and flocculation in a closed-loop system. Polyacrylamide (PAM) added to the wheel wash water at a rate of 0.25 - 0.5 pounds per 1,000 gallons of water increases effectiveness and reduces cleanup time. If PAM is already being used for dust or erosion control and is being applied by a water truck, the same truck can be used to change the wash water.	• Figure 2-3 provides a potential detail for a design of a wheel wash. The applicant is not required to construct the wheel wash per this detail… • Polymers may be used to promote coagulation and flocculation in a closed-loop system. Polyacrylamide (PAM) added to the wheel wash water at a rate of 0.25 - 0.5 pounds per 1,000 gallons of water increases effectiveness and reduces cleanup time. If PAM is already being used for dust or erosion control and is being applied by a water truck, the same truck can be used to change the wash water.	2-42 & 2-43 Purple
Update text under BMP C120 Temporary and Permanent Seeding	Update for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.7.2 Conditions of Use Last bullet point under subheading	• At final site stabilization, seed and mulch all disturbed areas not otherwise vegetated or stabilized. Final stabilization means the completion of all soil disturbing activities at the site and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as pavement, riprap, gabions or geotextiles) which will prevent erosion.	• At final site stabilization, seed and mulch all disturbed areas not otherwise vegetated or stabilized.	2-46 Purple
Update text under BMP C120 Temporary and Permanent Seeding	Updated language to match Ecology's intent and deletion of text no longer relevant	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.7.3 Design and Installation Specifications First bullet point (third sub-bullet) & second bullet point	◦ Seeding that occurs between October 1 and March 30 will require a mulch or straw cover until 75 percent grass cover is established. • Deviation from these specifications will be allowed if alternatives are developed by a licensed Landscape Professional and approved by the City.	◦ Seeding that occurs between October 1 and March 30 will require a mulch or an erosion control blanket until 75 percent grass cover is established.	2-47 Pink and Gray
Update text under BMP C120 Temporary and Permanent Seeding	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.7.4 Maintenance Standards First bullet point under subheading	• Reseed any seeded areas that fail to establish at least 80 percent cover within 6 weeks from the…	• Reseed any seeded areas that fail to establish at least 75 percent cover within 6 weeks from the…	2-49 Pink
Update text under BMP C121: Mulching	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.8.2 Conditions of Use Last two bullet points	NA	• Tackifiers shall be plant-based, such as guar or alpha plantago, or chemical-based such as poly-acrylamide or polymers. • Install mulch or tackifier products per manufacturer's recommendations.	2-52 Pink

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Update text under BMP C121: Mulching	Update language for clarity and readability. Some information contained in other areas of SWMM.	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.8.3 Design and Installation Specifications First bullet point under subheading	•Mulch shall be compost, chipped site vegetation, hydro-mulch, wood-based mulch or wood straw, wood strand mulch, or straw. The City of Tacoma may also accept products approved as equivalent by the Washington State Department of Ecology - http://www.ecy.wa.gov/programs/wq/stormwater/newtech/ and those listed on the WSDOT Qualified Product List that meet the specifications below. See Table 2 - 8 for specifications, application rates, and additional information.	•Mulch shall be compost, chipped site vegetation, hydro-mulch, wood-based mulch or wood straw, wood strand mulch, or straw. See Table 2 - 8 for specifications, application rates, and additional information.	2-52 Purple
Update text in Table 2 - 8 Mulch Standards and Guidelines	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.8.4 Maintenance Standards Table 2 - 8 Mulch Standards and Guidelines Third section of table 'Hydro-mulch', last bullet point	◦Be applied at 25-30 pounds per ft2 or 1500-2000 pounds per acre with a hydromulcher.	◦Be applied at 35-45 pounds per 1,000 sf or 1500-2000 pounds per acre with a hydromulcher.	2-54 Pink
Added text under BMP C122: Nets and Blankets	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.9.2 Conditions of Use First paragraph under subheading	NA	Erosion control netting and blankets shall be made of natural plant fibers unaltered by synthetic materials.	2-56 Pink
Deletion of text under BMP C123: Plastic Covering	Updated to match Ecology's intent/ text no longer required	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.10.2 Conditions of Use Fourth bullet point under subheading	• Clear plastic sheeting can be used over newly-seeded areas to create a greenhouse effect and encourage grass growth if the hydroseed was installed too late in the season to establish 75 percent grass cover, or if the wet season started earlier than normal. Clear plastic should not be used for this purpose during the summer months because the resulting high temperatures can kill the grass.	NA	2-61 Pink
Update of text under heading BMP C124: Sodding	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.11.1 Purpose First paragraph under subheading	The purpose of sodding is to establish permanent turf for immediate erosion protection and to stabilize drainage ways where concentrated overland flow will occur.	The purpose of sodding is to establish turf for immediate erosion protection and to stabilize drainage ways where concentrated overland flow will occur.	2-63 Pink
Update of text under heading BMP C124: Sodding	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.11.3 Design and Installation Specifications First bullet point under subheading	• Shape and smooth the surface to final grade in accordance with the approved grading plan. Overexcavate the swale 4 to 6 inches below design elevation to allow room for placing soil amendment and sod.	• Shape and smooth the surface to final grade in accordance with the approved grading plan. Overexcavate areas as needed to allow room for placing soil amendment and sod.	2-63 Pink

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Deletion of text under BMP C127: Polyacrylamide for Soil Erosion Protection	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.14.3 Design and Installation Specifications Fifth bullet point under Benefits and Limitations subheading	• Areas less than 5 acres shall drain to sediment control BMPs, such as a minimum of 3 check dams per acre. The total number of check dams used shall be maximized to achieve the greatest amount of settlement of sediment prior to discharging from the site. Each check dam shall be spaced evenly in the drainage channel through which stormwater flows are discharged offsite.	• Areas less than 5 acres shall drain to sediment control BMPs.	2-70 Grey
Update of text under BMP C140: Dust Control	Updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.17.3 Design and installation Specifications Sixth bullet point under subheading	• Spray exposed soil areas with a dust palliative, following the manufacturer's instructions and cautions regarding handling and application. Used oil is prohibited from use as a dust suppressant. The City may approve other dust palliatives such as calcium chloride or PAM.	• Spray exposed soil areas with a dust palliative, following the manufacturer's instructions and cautions regarding handling and application. Used oil is prohibited from use as a dust suppressant.	2-76 Purple
Update of text under BMP C151: Concrete Handling	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.19.1 Purpose Second and third sentence under subheading	This BMP is intended to minimize and eliminate concrete, concrete process water and concrete slurry from entering waters of the state.	Concrete spillage or concrete discharge to waters of the State is prohibited. Use this BMP to minimize and eliminate concrete, concrete process water, and concrete slurry from entering waters of the State.	2-79 Pink
Added text under BMP C151: Concrete Handling	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.19.2 Conditions of Use Paragraph under bullet points, under subheading	NA	Disposal options for concrete, in order of preference are: 1. Offsite disposal 2. Concrete washout areas 3. De minimus washout to formed areas awaiting concrete	2-79 Pink
Update of text under BMP C151: Concrete Handling	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.19.3 Design and Installation Specifications All text under subheading	• Concrete trucks, chutes, pumps, and internals... • Unused concrete remaining in... • Hand tools shall be washed off only... • Equipment that cannot be easily moved, such... • Washdown from areas such as concrete... • Do not wash out concrete trucks onto... • Always use forms or solid barriers for... • Refer to BMPs C252 and C253... • Refer to the Construction Stormwater General Permit... ◦ Significant concrete work (greater than 1,000 cubic yards poured concrete or recycled concrete used over the life of a project).	• Wash concrete truck drums at an approved offsite… • Do not wash out concrete trucks onto… • Wash small concrete handling equipment… • At no time shall concrete be washed off… • Wash equipment difficult to move, such as… • Do not allow washwater from areas, such as... • Contain washwater and leftover product in a lined... • Always use forms or solid barriers for... • Refer to BMPs C252 and C253... • Refer to the Construction Stormwater General Permit... ◦ Significant concrete work (as defined in the Construction Stormwater General Permit).	2-79 & 2-80 Pink
Added text under BMP C153: Material Delivery, Storage and Containment	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) Subsection 2.1.21.5 Maintenance Standards Second paragraph under subheading	NA	Restock spill kit materials as needed	2-83 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C160: Erosion and Sediments Control Lead	Update language to match Ecology's intent/ text no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.23.2 Conditions of Use Second bullet point; sub bullet points 2-5	◦Construction activity that disturbs less than... ◦Heavy construction of roads, bridges... ◦Projects near wetlands and sensitive... ◦Projects in or over water…	NA	2-90 Pink
Update of text under BMP C160: Erosion and Sediments Control Lead	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.1.23.3 Specifications First bullet point; first sub bullet point under subheading	◦ Have a current certified erosion and sediment control lead (CESCL) certificate proving attendance in an erosion and sediment control training course that meets the minimum ESC training and certification requirements established by Ecology. Ecology will maintain a list of ESC training and certification providers at: www.ecy.wa.gov/programs/wq/stormwater.	◦ Have a current certified erosion and sediment control lead (CESCL) certificate proving attendance in an erosion and sediment control training course that meets the minimum ESC training and certification requirements established by Ecology.	2-90 Pink
Deletion of BMP C161: payment of Erosion Control Work	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (Chapter 3) 2.1.24 BMP C161: Payment of Erosion Control Work 2.1.24.1 Purpose As with any construction operation, the contractor…	2.1.24 BMP C161: Payment of Erosion Control Work 2.1.24.1 Purpose… As with any construction operation, the contractor should be paid for erosion control work. Address payment for erosion control during project development and design. Identify the method of payment in the SWPPP. Erosion control work should never be “incidental” to the contract as it is extremely difficult for the contractor to bid the work.	NA	2-92 Gray
Deletion of 2.2 Runoff, Conveyance and Treatment BMPS Table 2-10	Information moved.	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2 Runoff, Conveyance and Treatment BMPs Heading, all text, and table under heading.	2.2 Runoff, Conveyance and Treatment BMPS Table 2 - 10, below shows the relationship of the BMPs in Section 2.2 to the 13 Elements of a SWPPP. Table 2 -10: Source Control BMPs by SWPPP Element	NA	2-92 - 2-94 Purple
Update of text under BMP C200: Interceptor Dike and Swale	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.1.1 Purpose First sentence under subheading	Provide a ridge of compacted soil, or a ridge with an upslope swale, at the top or base of a disturbed slope or along the perimeter of a disturbed construction area to convey stormwater.	Provide a dike or swale, at the top or base of a disturbed slope or along the perimeter of a disturbed construction area to convey stormwater.	2-95 Pink
Update of text under BMP C200: Interceptor Dike and Swale	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.1.3 Design and Installation Specifications Second, third and ninth bullet points under subheading	• If the design velocity of a channel to be vegetated by seeding exceeds 2 ft/sec, a temporary channel liner is required. See Figure 2 - 11. • Design capacity for the peak flow from a 10-year, 24-hour storm event assuming a Type 1A rainfall distribution (3-inches) for temporary facilities. Alternatively, use the 10-year return period flowrate, indicated by WWHM assuming a 15 minute timestep. Design capacity for the peak flow from a 25-year, 24-hour storm for permanent facilities.	• Steep grades require channel protection and check dams. • Design capacity for the peak flow from a 10-year, 24-hour storm event assuming a Type 1A rainfall distribution (3-inches) for temporary facilities. Alternatively, use the 10-year return period flowrate, indicated by WWHM assuming a 15 minute timestep. Design capacity for the peak flow from a 25-year, 24-hour storm for permanent facilities. Design for worst-case land cover conditions.	2-95 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Insert new heading under BMP C200: Inspector Dike and Swale	Update for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.1.3 Design and Installation Specifications Maintenance Standards	NA	Maintenance Standards	2-96 Purple
Update text under BMP C201: Grass-Lined Channels	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.2.3 Design and Installation Specifications Bullet point 4 (including sub-bullets)	• Base the maximum design velocity on soil conditions, type of vegetation, and method of revegetation, but at no times shall velocity exceed 5 feet/second. The channel shall not be overtopped by the peak runoff from a 10-year, 24–hour storm event, assuming a type 1A rainfall distribution (3.0-inches). Alternatively, use the 10-year return period flowrate, indicated by WWHM assuming a 15 minute timestep to determine a flow rate which the channel must contain.	• Base the maximum design velocity on soil conditions, type of vegetation, and method of revegetation, but at no times shall velocity exceed 5 feet/second. Size the channel to contain the flowrate calculated by one of the following methods using the worst-case land cover: ◦ Single Event Hydrograph Method: The peak runoff from a 10-year, 24-hour storm event assuming a Type 1A rainfall distribution (3.0 inches). OR ◦ Continuous Simulation Method: The 10-year return period flowrate assuming a 15 minute timestep.	2-97 Pink
Update title for BMP C202	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.3 BMP C202: Rip Rap Channel Lining	BMP C202: Channel Lining	BMP C202: Rip Rap Channel Lining	2-101 Pink
Deletion of text under BMP C202 Rip Rap Channel Lining	Update language to match Ecology's intent/ text no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.3.2 Conditions of Use, bullet point three, page 2-98	• In almost all cases, synthetic and organic coconut blankets are more effective than riprap for protecting channels from erosion…	NA	2-101 Pink
Deletion of text under BMP C202 Rip Rap Channel Lining	Update language to match Ecology's intent/ text no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.3.3 Design and Installation Specifications, sixth bullet point, page 2-98	• Rubble concrete may be used, provided it has a density of at least 150 pounds per cubic foot and otherwise meets the requirement of this standard and specification.	NA	2-101 Pink
Update of text under BMP C202 Rip Rap Chanel Lining	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.3.4 Maintenance Standards Subheading and all text under subheading	NA	2.2.3.4 Maintenance Standards • Replace riprap as needed.	2-101 Pink
Update of text under BMP C204: Pipe Slope Drains	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.5.2.2 Conditions of Use First paragraph under subheading	Pipe slope drains should be used when a temporary or permanent stormwater conveyance is needed to move the water down a steep slope to avoid erosion (Figure 2-13).	Pipe slope drains can be used when a temporary or permanent stormwater conveyance is needed to move the water down a steep slope to avoid erosion (Figure 2-13).	2-105 Pink
Deletion of text under BMP C204: Pipe Slope Drains	Information no longer needed - did not add clarity.	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.5.2 Conditions of Use Second and third paragraph under subheading	On highway projects, pipe slope drains should be used at bridge… Water can be collected; channeled with sand bags, Triangular Silt Dikes, berms, or other material; and piped to temporary sediment ponds.	NA	2-105 Grey
Update of text under BMP C204: Pipe Slope Drains	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.5.2 Conditions of Use Last bullet point under subheading	NA	• Pipe slope drains can be used as bridge ends to collect runoff and convey it to the base of the fill slopes along the bridge approaches.	2-105 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C204: Pipe Slope Drains	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.5.3 Design and Installation Specifications Last sentence of first paragraph under subheading	Size permanent pipe slope drains using the guidance in Volume 3, Chapter 3.	Size temporary pipe slope drains using the worst-case land cover condition..	2-105 Pink
Deletion of text under BMP C204: Pipe Slope Drains	Information no longer needed/did not add clarity so was removed.	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.5.3 Design and Installation Specifications Last bullet point under subheading	• Materials specifications for any permanent piped system shall conform to Volume 3, Chapter 3.	NA	2-106 Grey
Update of text under BMP C205: Surface Drains	Update language to match Ecology's intent/ relocate to relevant subsections	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.6.3 Design and Installation Specifications, Depth and spacing considerations for interceptor drains Sub bullets 3-5 and first bullet (solid) under subheading	◦ An adequate outlet for the drainage system... ◦The quantity and quality of discharge needs... ◦This standard does not apply to subsurface... • The capacity of an interceptor drain is determined...	NA	2-108 Pink
Update of subheading under BMP C205: Surface Drains	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.6.3 Design and Installation Specifications Subsurface Drain Sizing and Placement	• Drain sizing considerations	Subsurface Drain Sizing and Placement	2-109 Pink
Update of text under BMP C205: Surface Drains	Update language to match Ecology's intent/ relocate to relevant subsections	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.6.3 Design and Installation Specifications Subsurface Drain Sizing and Placement Bullet points 4, 9, & 10 under subheading	• Empty the outlet of the subsurface drain into a sediment pond or other appropriate sediment removal device. If free of sediment, it can empty into a receiving channel, swale, or stable vegetated area adequately protected from erosion and undermining.	• The quantity and quality of discharge needs to be accounted for in the receiving stream (additional detention may be required). • The capacity of an interceptor drain is determined by calculating the maximum rate of groundwater flow to be intercepted. Therefore, it is good practice to make complete subsurface investigations, including hydraulic conductivity of the soil, before designing a subsurface drainage system.	2-109 Pink
Update of subheading under BMP C205: Surface Drains	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.6.3 Design and Installation Specifications Subsurface Drain Outlets	• Outlet considerations	Subsurface Drain Outlets	2-109 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C205: Surface Drains	Update language to match Ecology's intent/ relocate to relevant subsections	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.6.3 Design and Installation Specifications Subsurface Drain Outlets Bullet points 2 & 3	NA	• An adequate outlet for the drainage system must be available either by gravity or pumping. • Empty the outlet of the subsurface drain into a sediment removal device. If free of sediment, it can empty into a receiving channel, swale, or stable vegetated area adequately protected from erosion and undermining.	2-109 Pink
Update of text under BMP C206 Level Spreader	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.7.1 Purpose Second sentence of first paragraph under subheading	To convert concentrated runoff to sheet flow and release it onto areas stabilized by existing vegetation or an engineered filter strip.	To convert concentrated runoff to sheet flow and release it onto stabilized areas.	2-111 Pink
Deletion of text under BMP C206 Level Spreader	Update language to match Ecology's intent/ information no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.7.2 Conditions of Use Second bullet point; third and fourth sub bullet points, under subheading	◦Most of the flow should be as groundwater and not as surface flow. ◦Is there an unstable area downstream that cannot accept additional groundwater?	NA	2-111 Pink
Update of text under BMP C206 Level Spreader	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.7.3 Design and Installation Specifications Bullet points 2 & 12 under subheading	• If the level spreader has any low points, flow will concentrate, create channels and may cause erosion. • Level spreaders, when installed every so often in grassy swales, keep the flows from concentrating. Materials that can be used include sand bags, lumber, logs, concrete, and pipe. To function properly, the material needs to be installed level and on contour.	• Do not allow low points in the level spreader. If the level spreader has any low points, flow will concentrate, create channels and may cause erosion. • Materials that can be used include sand bags, lumber, logs, concrete, and pipe. To function properly, the material needs to be installed level and on contour.	2-111 Pink
Update text under BMP C208: Triangular Silt Dike (Geotextile-Encased Check Dam)	Update language to match Ecology's intent/ information no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.9.3 Design and Installation Specifications Last six bullet points under subheading	• Check dams should be located and installed as soon as construction will allow. • Check dams should be placed perpendicular to the flow of water. • When used as check dams, the leading edge must be secured with rocks, sandbags, or a small key slot and staples.	When used as check dams: • TSDs should be located and installed as soon as construction will allow. • TSDs should be placed perpendicular to the flow of water. • The leading edge of the TSD must be secured with rocks, sandbags, or a small key slot and staples.	2-116 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of text under BMP C209: Outlet Protection	Information no longer needed - did not add clarity.	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.10.3 Design and Installation Specifications Last bullet point under subheading	• New pipe outfalls can provide an opportunity for low-cost fish habitat improvements. For example, an alcove of low-velocity water can be created by constructing the pipe outfall and associated energy dissipater back from the stream edge and digging a channel, over-widened to the upstream side, from the outfall. Overwintering juvenile and migrating adult salmonids may use the alcove as shelter during high flows. Bank stabilization, bioengineering, and habitat features may be required for disturbed areas. See Volume 3 for more information on outfall system design.	NA	2-119 Grey
Update of BMP title	Updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11 BMP C220: Inlet Protection	BMP C220: Storm Drain Inlet Protection	BMP C220: Inlet Protection	2-120 Purple
Update of text under BMP C220: Inlet Protection	Updated to match Ecology's text/information no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11.2 Conditions of Use, second bullet point, page 2-116	• Provide protection for all storm drain inlets downslope and within 500 feet of a disturbed or construction area, unless the runoff that enters the catch basin will be conveyed to a sediment pond or trap. Inlet protection may be used anywhere to protect the drainage system. It is likely that the drainage system will still require cleaning.	• Provide protection for all storm drain inlets downslope and within 500 feet of a disturbed or construction area, unless those inlets are preceded by another sediment trapping device.	2-120 Pink & Grey
Update of text under BMP C220: Inlet Protection	There are scenarios where other options make sense for use in ROW so removed this requirement.	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11.2 Conditions of Use, third bullet point, page 2-116	• Only bag filter type catch basin filters (per Section 3.2.11.3) are allowed within the right of way.	NA	2-120 Grey
Update of table title for Table 2-11	Updated language to match BMP title	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11.2 Conditions of Use Table 2-11: Inlet Protection	Table 2 - 11: Storm Drain Inlet Protection	Table 2 - 11: Inlet Protection	2-120 Grey
Update of text under BMP C220: Inlet Protection	Updated to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11.3 Design and Installation Specifications Excavated Drop Inlet Protection First and fifth bullet points under subheading	• An excavated impoundment around the storm drain. Sediment settles out of the stormwater prior to entering the storm drain. • Shape basin to fit site with longest dimension oriented toward the longest inflow area.	• An excavated impoundment around the inlet. Sediment settles out of the stormwater prior to entering the inlet. • Shape excavation to fit site with longest dimension oriented toward the longest inflow area.	2-120 & 2-121 Purple & Pink
Update of text under BMP C220: Inlet Protection	Update text to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11.3 Design and Installation Specifications Block and Gravel Filter Bullet 9 under subheading	• An alternative design is a gravel donut.	• An alternative design is a gravel berm surrounding the inlet with the following characteristics:	2-121 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C220: Inlet Protection	Update text to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11.3 Design and Installation Specifications Gravel and Wire Filter Second and third bullet points under subheading	NA	• Use a hardware cloth or comparable wire mesh with 1/2-inch openings. ◦Place wire mesh over the drop inlet so that the wire extends a minimum of 1-foot beyond each side of the inlet structure. ◦Overlap the strips if more than one strip of mesh is necessary. • Place coarse aggregate over the wire mesh. ◦Provide at least a 12-inch depth of aggregate over the entire inlet opening and extend at least 18-inches on all sides.	2-121 & 2-122 Pink
Deleted text under BMP C220: Inlet Protection	There are scenarios where other options make sense for use in ROW so removed this requirement.	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11.3 Design and Installation Specifications Catch Basin Filters Last bullet under subheading	• Only bag filter type catch basin filters are allowed in the City right-of-way.	NA	2-122 Grey
Deletion of text under BMP C220: Inlet Protections	Update text to match Ecology's intent/ text no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11.3 Design and Installation Specifications Curb and Gutter Sediment Barrier Last bullet point under subheading	• Sandbag must be gravel filled.	NA	2-128 Pink
Update of text under BMP C220: Inlet Protection	Update text to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.11.4 Maintenance Standards First bullet point under subheading	• Inspect catch basin filters frequently, especially after storm events. If the insert becomes clogged, clean or replace it.	• Inspect inlet protection frequently, especially after storm events. If the insert becomes clogged, clean or replace it.	2-128 Pink
Update of text in BMP C232: Gravel Filter Berm	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.13.1 Purpose All text under subheading	A gravel filter berm is constructed on rights-of-way or traffic areas within a construction site to retain sediment by using a filter berm of gravel or crushed rock.	A gravel filter berm retains sediment by filtering runoff through a berm of gravel or crushed rock.	2-132 Pink
Update of text in BMP C232: Gravel Filter Berm	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.13.2 Conditions of Use All text under subheading	Where a temporary measure is needed to retain sediment from rights-of-way or in traffic areas on construction sites.	Use a gravel filter berm where a temporary measure is needed to retain sediment from construction sites. Do not place gravel filter berms in traffic areas; gravel filter berms are not intended to be driven over. Place gravel filter berms perpendicular to the flow of runoff, such that the runoff will filter through the berm prior to leaving the site.	2-132 Pink
Update of text in BMP C232: Gravel Filter Berm	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.13.3 Design and Installation Specifications First and second bullet points, third bullet point (first sub-bullet) under subheading	• Berm material shall be ¾ to 3 inches in size, washed well-graded gravel or crushed rock, with less than 5 percent fines. • Space berms:... • Berm dimensions: ◦ 1 foot high with 3:1 side slopes	• Berm material shall be ¾ to 3 inches in size, washed well-graded gravel or crushed rock, with less than 5 percent fines. Do not use crushed concrete. • Spacing of berms:... • Berm dimensions: ◦1 foot high with 3H:1V side slopes	2-132 Pink

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text in BMP C232: Gravel Filter Berm	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.13.4 Maintenance Standards All text under subheading	Regular inspection is required. Remove sediment and replace filter material as needed.	Regular inspection is required. Sediment shall be removed and filter material replaced as needed.	2-132 Pink
Update of text BMP C233: Silt Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.14.1 Purpose All text under subheading	Use of a silt fence reduces the transport of coarse sediment from a construction site by providing a temporary physical barrier…	Silt fence reduces the transport of coarse sediment from a construction site...	2-133 Pink
Update of text under BMP C233: Silt Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.14.2 Conditions of Use Bullet points 2-6 under subheading	• Silt fence shall prevent soil carried by... • Silt fence is not intended to treat concentrated... • Do not construct silt fences in streams or use them in V-shaped ditches. They are not an adequate method of silt control for anything deeper than sheet or overland flow.	• Silt fence shall prevent sediment carried by runoff from going beneath, through, or over the top of the silt fence, but shall allow the water to pass through the fence. • Silt fence is not intended to treat concentrated flows, nor is it intended to treat substantial amounts of overland flow. Convey any concentrated flows through the drainage system to a sediment trapping BMP. • Do not construct silt fences in streams or use them in V-shaped ditches. Silt fences do not provide an adequate method of silt control for anything deeper than sheet or overland flow.	2-133 Pink
Update of text under BMP C233: Silt Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.14.3 Drainage and Installation Specification All bullet points before Table 2-12	• Drainage area of 1 acre or less or in combination with appropriate sediment removal BMPs on larger sites. • Maximum slope steepness (perpendicular to fence line) 1H:1V. • Maximum sheet or overland flowpath length to the fence of 100 feet. • No flows greater than 0.5 cubic feet per second. • The geotextile used shall meet the following standards...	• Use in combination with other construction... • Maximum slope steepness (perpendicular to the silt fence line) 1H:1V. • Maximum sheet or overland flow path length to the silt fence of 100 feet. • Do not allow flows greater than 0.5 cfs. • Use geotextile fabric that meets the following…	2-132 & 133 Pink
Update of table title under BMP C233: Silt Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (Chapter 3) 2.2.14.3 Drainage and Installation Specification Table 2 -12 Geotextile Fabric Standards for Silt Fence	Table 2 - 12: Geotextile Standards	Table 12: Geotextile Fabric Standards for Silt Fence	2-134 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C233: Silt Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.14.3 Drainage and Installation Specification All bullets under Table 2 - 12 on page 2-134	• Support standard strength fabrics with wire mesh, chicken wire, 2-inch x 2-inch wire, safety fence, or jute mesh to increase the strength of the fabric. Silt fence materials are available that have synthetic mesh backing attached. • Silt fence material shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0° to 120° Fahrenheit. • 100 percent biodegradable silt fence is available that is strong and long lasting. • The following are standard design and installation methods. Refer to Figure 2 - 24 for standard silt fence details. ◦ Install and maintain temporary silt fences at the locations shown... ◦ The minimum height of the top of silt fence shall be 2 feet and the maximum height shall be 2½ feet above the original ground surface. ◦ Sew the silt fence fabric together at the point...	• Support standard strength fabrics with wire mesh, chicken wire, 2-inch x 2-inch wire, safety fence, or jute mesh to increase the strength of the geotextile. Silt fence materials are available that have synthetic mesh backing attached. • Silt fence material shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0° F to 120° F. • Refer to Figure 2-24: Silt Fence for standard silt fence details. Include the following Standard Notes for silt fence on construction plans and specifications: ◦Construct silt fences in areas of clearing, grading, or drainage prior to starting those activities.	2-134 Pink
Update of text under BMP C233: Silt Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.14.3 Drainage and Installation Specification All sub bullets under subheading on page 2-135	◦ Attach the silt fence fabric on the up-slope side of the posts and support system with staples, wire, or in accordance with the manufacturer's recommendations. Attach the silt fence fabric to the posts… ◦ Bury the fabric at the bottom of the fence in a trench to a minimum depth of 4 inches below the ground surface. Backfill the trench... ◦ Drive fence posts in to a minimum depth of 18 inches. A minimum depth of 12 inches is allowed if topsoil or other soft subgrade soil is not present and a minimum depth of 18 inches cannot be reached. Increase fence...	◦ The geotextile fabric shall be sewn together at the point of manufacture to form fabric lengths as required. Locate all sewn… ◦ Attach the geotextile fabric on the up-slope side of the posts and secure with staples, wire, or in… ◦ Support the geotextile fabric with wire or plastic mesh, dependent on the properties of the geotextile selected for use. If wire... ◦ Mesh support, if used, shall consist of steel wire with a maximum mesh spacing of 2-inches, or a prefabricated polymeric mesh. The strength... ◦ Bury the bottom of the geotextile fabric 4-inches min. below the ground surface. Backfill and tamp soil in place over the buried portion of the geotextile fabric, so that no... ◦ Drive or place the silt fence posts into the ground 18-inches min. A 12–inch min. depth is allowed...	2-135 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C233: Silt Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.14.3 Drainage and Installation Specification All bullets and sub bullets under subheading on page 2-136	◦ Locate the silt fences on contour as much as possible, except at the ends of the fence, where… ◦ If the fence must cross contours, with the exception of the ends of the fence, place gravel check dams perpendicular to the back of the fence to minimize concentrated flow and erosion along the back of the fence. ◦ Use wood, steel or equivalent posts. Wood posts shall have minimum dimensions of 2 inches by 2... ◦ Fence back-up support, if used, shall consist... • Specification details for silt fence installation using the slicing method follow. Refer to Figure 2 - 25 for slicing method details.	◦ Use wood, steel or equivalent posts. The spacing of the support posts shall be a maximum of 6-feet. Posts shall consist of either:… ◦ Locate the silt fences on contour as much as possible, except at the ends of the fence, where… ◦ If the fence must cross contours, with the exception of the ends of the fence, place check dams perpendicular to the back of the fence to minimize concentrated flow and erosion. The slope of the fence line where contours must be crossed shall not be steeper than 3H:1V... • .Refer to Figure 2-25: Silt Fence Installation by Slicing Method for slicing method details. The following are specifications for silt fence installation using the slicing method:	2-136 Pink
Update of text under BMP C233: Silt Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.14.3 Drainage and Installation Specification All bullets and sub bullets under subheading on page 2-137	◦ The base of both end posts must be at least 2 to 4 inches above the top of the silt fence fabric… ◦ Install posts 3 to 4 feet apart in critical retention areas and a maximum of 6 feet apart in standard applications. If wire... ◦ Install posts 24 inches deep on the downstream side of the silt fence, and as close as possible to the fabric, enabling... ◦ Install posts with the nipples facing away from the silt fence fabric. ◦ Attach the fabric to each post with three ties, all spaced within the top 8 inches of the fabric... ◦ Wrap approximately 6 inches of fabric around the end posts and secure with 3 ties. ◦ No more than 24 inches of a 36-inch fabric... ◦ The installation should be checked... ◦ Compaction is vitally important for effective results. Compact the soil immediately next to the silt fence fabric with the front wheel of a tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first and then each side twice for a total of four trips.	◦ The base of both end posts must be at least 2 to 4 inches above the top of the geotextile fabric… ◦ Install posts 3 to 4 feet apart in critical retention areas and a maximum of 6 feet apart in standard applications. ◦ Install posts 24 inches deep on the downstream side of the silt fence, and as close as possible to the geotextile fabric, enabling... ◦ Install posts with the nipples facing away from the geotextile fabric. ◦ Attach the geotextile fabric to each post with three ties, all spaced within the top 8 inches of the fabric... ◦ Wrap approximately 6 inches of geotextile fabric around the end posts and secure with 3 ties. ◦ No more than 24 inches of a 36-inch geotextile fabric... ◦ Compact the soil immediately next to the geotextile fabric with the front wheel of a tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first and then each side twice for a total of four trips. Check and correct the silt fence installation for any...	1-37 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C233: Silt Fence	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.14.4 Maintenance Standards Bullets 2 - 4 and 6 under subheading	• If concentrated flows are evident uphill of the fence, intercept and convey them to a sediment pond. • It is important to check the uphill side of the fence for signs of the fence clogging, acting as a barrier to flow, and then causing channelization of flows parallel to the fence. If this occurs, replace the fence or remove the trapped sediment. • If the filter fabric (geotextile) has deteriorated due to ultraviolet breakdown, replace it.	• Intercept and convey all evident concentrated flows uphill of the silt fence to a sediment trapping BMP. • Check the uphill side of the fence for signs of the fence clogging and, acting as a barrier to flow, and then causing channelization of flows parallel to the fence. If this occurs, replace the fence and remove the trapped sediment. • Replace geotextile fabric that has deteriorated due to ultraviolet breakdown.	2-138 Pink
Update of text under BMP C235: Wattles	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.16.1 Purpose All text under subheading	Wattles are temporary erosion and sediment control barriers consisting of straw, compost or other material that is wrapped in biodegradable tubular plastic or similar encasing material. They reduce the velocity and can spread the flow of rill and sheet runoff, and can capture and retain sediment. Wattles are typically 8 to 10 inches in diameter and 25 to 30 feet in length. The wattles are placed in shallow trenches and staked along the contour of disturbed or newly constructed slopes. See Figure 2-26 for typical construction details	Wattles are temporary erosion and sediment control barriers consisting of straw, compost or other material that is wrapped in netting made of natural plant fiber or similar encasing material. They reduce the velocity and can spread the flow of rill and sheet runoff, and can capture and retain sediment.	2-142 Pink
Update of text under BMP C235: Wattles	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) Bullet points 1 , 3-6 and sub-bullet two of bullet 2	• Wattles are typically effective for one to two seasons. ◦ On exposed soils during the period of short construction delays. • If conditions are appropriate, wattles can be staked to the ground using live cuttings for added revegetation.	• Wattles shall consist of cylinders of plant material such as weed-free straw, coir, wood chips, excelsior, or wood fiber or shavings encased within netting made of natural plant fibers unaltered by synthetic materials. ◦ On exposed soils during the period of short construction delays, or over winter months. • The material used dictates the effectiveness period of the wattle. Generally, wattles are effective for one to two seasons. • Prevent rilling beneath wattles by entrenching and overlapping wattles to prevent water from passing between them.	2-142 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C235: Wattles	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.16.3 Design Criteria Bullets 1-8, 11 & 13	• It is critical that wattles are installed… • Dig narrow trenches across the slope… • Start building trenches and installing… • Construct trenches at contour intervals of 3 to 30 feet apart depending on the steepness of the slope, soil type, and rainfall. The steeper the slope, the closer together the trenches shall be. • Install the wattles snugly into the trenches and abut tightly end to end. Do not overlap the ends... • At a minimum, wooden stakes should be approximately 3/4 x 3/4 x 24 inches, minimum. Live cuttings or 3/8-inch rebar can also be used for stakes. • Compost wattles shall comply with...	• See Figure 2-26 for typical construction details. • Wattles are typically 8 to 10 inches in diameter and 25 to 30 feet in length. • Install wattles perpendicular to the flow direction and parallel to the slope contour. • Place wattles in shallow trenches, staked along the contour of disturbed or newly constructed slopes. Dig narrow trenches across... • Start building trenches and installing wattles from the base of the slope and work up. Spread excavated material... • Construct trenches at contour intervals of 10 to 25-feet apart depending on the steepness of the slope, soil type, and rainfall. The steeper the slope, the closer together the trenches. • Install the wattles snugly into the trenches and overlap the ends of adjacent wattles 12 inches behind one another. • Wooden stakes should be approximately 0.75 x x 0.75 x 24 inches min. Live cuttings or 3/8-inch rebar can also be used for stakes.	2-141 & 2-142 Pink
Update of text under BMP C236: Vegetative Filtration	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.17.1 Purpose All text under subheading	Vegetative Filtration may be used in conjunction with BMP C241 Temporary Sediment Ponds, BMP C206 Level Spreader and a pumping…	Vegetative filtration as a BMP is used in conjunction with detention storage in the form of portable tanks or BMP C241: Sediment Pond…	2-145 Pink
Added text under BMP C236: Vegetative Filtration	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.17.2 Conditions of Use Last bullet under subheading	NA	• On large projects that phase the clearing of the site, areas retained with native vegetation may be used as a temporary vegetative filtration area.	2-145 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under BMP C236: Vegetative Filtration	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.17.3 Design Criteria Bullets 3, 5, 6, & 8-13	• Install a pump and downstream distribution manifold depending on the project size. Generally, the main distribution line should reach 100 to 200-feet long (many large… • Install several branches of 4" schedule 20, swaged-fit common septic tight-lined sewer line, or 6" fire hose,... • Determine the branch length based on the field area geography and number of branches. Typically, branches stretch from 200-feet to several thousand feet. Always, lay branches on contour with the slope. • On relatively even surfaces, a level spreader using 4-inch perforated pipe may be used as an alternative option to the sprinkler head setup. Install drain pipe at the highest point on the field and at various lower elevations to ensure full coverage of the filtration area. Pipe should be placed... • To prevent the over saturation of the field area, rotate the use of branches or spray heads... • Monitor the spray field on a... • Since the operator is handling... • Monitoring usually needs to take place... • Ecology strongly recommends that...	• Install a pump and downstream distribution manifold depending on the project size. Generally, the main distribution line should reach 100 to 200-feet long (many... • Install several branches of 4"-inch diameter schedule 20 polyvinyl chloride (PVC), swaged-fit common septic tight-lined sewer line, or 6"-inch fire hose... • Determine the branch length based on the field area geography and number of branches. Typically, branches stretch from 200-feet to several thousand feet. Lay branches on contour with the slope. • On relatively even surfaces, a level spreader using 4-inch perforated pipe may be used as an alternative option to the sprinkler head setup. Install drain pipe at the highest point on the field and at various lower elevations to ensure full coverage of the filtration area. Place the pipe... • To prevent over saturating of the vegetative filtration area, rotate the use of branches or spray heads. Repeat as needed based on monitoring the spray field.	2-145 & 2-146 Pink
Updated text under BMP C236: Vegetative Filtration. Move table from subsection 2.2.17.4 to 2.2.17.3	Updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.17.3 Design Criteria Table 2 - 14 Flowpath Guidelines for Vegetative Filtration	NA	Table 2 - 14: Flowpath Guidelines for Vegetative Filtration	2-146 Purple
Updated text under BMP C236: Vegetative Filtration	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.17.4 Maintenance Standards First four bullets under subheading	NA	• Monitor the spray field on a daily basis... • Monitor the vegetated spray field all… • Do not exceed water quality standards for turbidity. • It is recommended that a separate inspection…	2-142 & 2-143 Pink
Updated text under BMP C236: Vegetative Filtration	Information not needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.17.4 Maintenance Standards Table 2 - 15 Flowpath Guidelines for Vegetative Filtration	Table 2 - 15 Flowpath Guidelines for Vegetative Filtration	NA	2-147 Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update text under BMP C240: Sediment Trap	Update language to match Ecology's intent/remove no longer needed information	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.18.2 Conditions of Use Bullet points 1, 3-6 under subheading	• Prior to leaving a construction site… • Sediment traps and ponds are only… • Whenever possible, discharge sediment-laden water into onsite, relatively level, vegetated areas (see BMP C234 – Vegetated Strip). Do not use vegetated wetlands for this purpose. All projects that are constructing permanent detention facilities for runoff quantity control should use the rough-graded or final-graded permanent facilities for traps and ponds. This includes combined facilities and infiltration facilities. When permanent facilities are used as temporary sedimentation facilities, the surface area requirement of a sediment trap or pond must be met. If the surface area requirements are larger than the surface area of the permanent facility, then the trap or pond shall be enlarged to comply with the surface area requirement. The permanent pond shall also be divided into two cells as required for sediment ponds. • Use of infiltration facilities for... • Either a permanent control structure or...	• Sediment traps and ponds are only effective… • When permanent facilities are used as temporary sedimentation facilities, the surface area requirement of a sediment trap must be met. If the surface area requirements are larger than the surface area of the permanent facility, then the trap or pond shall be enlarged to comply with the surface area requirement.	2-147 Pink
Update text under BMP C240: Sediment Trap	Information not needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.18.2 Conditions of Use Last bullet point under subheading	• A skimmer may be used for the sediment trap outlet if approved by the City.	• A skimmer may be used for the sediment trap outlet.	2-147 Grey
Move paragraph from section 2.2.20.3 up to 2.2.20.2	Update for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.2 Conditions of Use Second paragraph under subheading	2.2.20.2 Conditions of Use Formal written approval from Ecology and the City is required for the use of chemical treatment regardless of site size...	2.2.20.2 Conditions of Use Formal written approval from Ecology and the City is required for the use of chemical treatment regardless of site size… Chemically treated stormwater discharged from construction sites must be nontoxic to aquatic organisms. The Chemical Technology Assessment...	2-155 Purple
Deleted text under subheading 2.2.20.3	Updated language for clarity, to match Ecology's intent and to delete text where information is not needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications First paragraph under subheading and subheading 'Criteria for Chemical Treatment Product Use' and text under subheading	See Appendix B for background information on chemical treatment. Criteria for Chemical Treatment Product Use Chemically treated stormwater discharged from construction sites must be…	NA	2-159 Pink & Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C250: Construction Stormwater Chemical Treatment.	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications Treatment System Design Considerations Bullets 1 - 10 & 12 - 13 under subheading	• The design and operation of a chemical treatment… • Only Ecology approved chemicals may… • The pH of the stormwater must be in… • The coagulant must be mixed rapidly… • A flocculation step is important to increase... • Too little energy input into the water during... • Care must be taken in the design of the...	• Chemically treated stormwater must be nontoxic... • Only chemicals approved by Ecology through... • Care must be taken in the design of the withdrawal… • The following equipment should be located onsite... • There are two types of systems for applying...	2-159 & 2-160 Pink
Update of subheading under BMP C250: Construction Stormwater Chemical Treatment.	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications Third italic heading Polymer Batch Treatment Process Description	Polymer Batch Treatment Process Description	Design and Installation of Batch Chemical Treatment Systems	2-160 Pink
Update of text under BMP C250: Construction Stormwater Chemical Treatment.	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications Third italic heading Polymer Batch Treatment Process Description Second paragraph, last sentence of fourth paragraph, fifth paragraph & sixth	The batch treatment system shall use a minimum of two lined treatment cells in addition to the untreated stormwater storage pond. Multiple treatment cells allow for clarification of treated water while other cells are being filled or emptied. Treatment cells may be ponds or tanks. Ponds with constructed earthen embankments greater than six feet high require special engineering analyses. Once the stormwater is within the desired pH range (dependant on polymer being used), the stormwater is pumped from the untreated stormwater storage pond to a treatment cell as polymer is added. The polymer is added... After polymer addition, the water is kept in a lined treatment cell for clarification of the sedimentfloc. In a batch mode process, clarification typically takes from 30 minutes to several hours. Prior to discharge samples are withdrawn for analysis of pH and turbidity. If both are acceptable, the treated water is discharged.	The batch treatment system shall use a storage pond for untreated stormwater followed by minimum of two lined treatment cells. Multiple treatment cells allow for clarification of treated water while other cells are being filled or emptied. Treatment cells may be ponds or tanks. Ponds with constructed earthen embankments greater than six feet high or which impound more than 10 acre-feet are subject to the Washington Dam Safety Regulations (Chapter 173... See BMP C252: Treating and Disposing of High pH Water for more information on pH adjustment. Once the stormwater is within the desired pH range (dependant on coagulant being used), the stormwater is pumped from the untreated stormwater storage pond to a lined treatment cell as coagulant is added. The coagulant... After coagulant addition, the water is kept in a lined treatment cell for clarification. In a batch mode process, clarification typically takes from 30 minutes to several hours. Prior to discharge, samples are withdrawn for analysis of pH, coagulant concentration, and turbidity. If levels are acceptable, the treated water is withdrawn, filtered, and discharged.	2-160 & 2-161 Pink
Deletion of figure 2-34	Figure no longer needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications Figure 2 - 34 Floating Platform with Struts	Figure 2 - 34 Floating Platform with Struts	NA	2- 161 Grey

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of text under BMP C250: Construction Stormwater Chemical Treatment	Text moved to new section/ updated for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications Italic headings: Polymer Flow Through Treatment Process, Equipment, & System Sizing, and all text under subheadings	*Polymer Flow-Through Treatment Process Description* At a minimum, a flow-through chemical… *Equipment* For batch treatment and flow-through… *System Sizing* Certain sites are required to implement…	NA	2-162 Purple & Pink
Update of subheading under BMP C250: Construction Stormwater Chemical Treatment.	Update for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications Italic heading: Sizing Criteria for Batch Treatment Systems for Flow Control Exempt Water Bodies	Sizing Criteria for Batch Treatment Systems for Flow Control Exempt Water Bodies	Sizing Criteria for Batch Chemical Treatment Systems	2-162 Purple
Update of text under BMP C250: Construction Stormwater Chemical Treatment.	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications Italic heading: Sizing Criteria for Batch Chemical Treatment Systems First bullet point, fourth sentence of bullet 2, & bullets 5-7	Calculate runoff volumes using the methods in Volume 3, Chapter 3. • If the discharge is directly to a lake, flow control exempt receiving water, or to an infiltration system, there is no discharge flow limit. • Ponds sized for flow control water bodies must be sized accoding to the Sizing Criteria for Flow Control Water Bodies below. If the sizing criteria shows a smaller pond size than required for Sizing Criteria for Flow Control Water Bodies, use the larger pond size.	• Chemical treatment systems must be designed to control the velocity and peak volumetric flowrate discharged from the system and project site per Element #3 - Control Flow Rates. • If the chemical treatment system does not allow you to discharge at the rates as required by Element #3 - Control Flowrates, and if the site has a permanent Flow Control BMP that will serve the project, the discharge from the chemical treatment system may be directed to the permanent Flow Control BMP to comply with Element #3 - Control Flowrates.	2-162 & 2-163 Pink & Grey
Added text under BMP C250L Construction Stormwater Chemical Treatment.	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 3 (now 2) 2.2.20.3 Design and Installation Specifications Italic heading: Design and Installation of Flow-Through Chemical Treatment Systems Subheading and all text under subheading	NA	Design and Installation of Flow-Through Chemical Treatment Systems At a minimum, a flow-through chemical treatment system consists… Stormwater is collected at interception point(s) on the project site… Stormwater is then pumped from the untreated stormwater...	2-163 Pink
Update of subheading under BMP C250: Construction Stormwater Chemical Treatment.	Update for clarity and readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications Italic heading Sizing Criteria for Flow-Through Chemical Treatment Systems: Subheading and text under subheading	Criteria for Flow-Through Treatment for Flow Control Exempt Water Bodies: • When sizing storage ponds or tanks for flow-through systems for flow control exempt water bodies, the…	Sizing Criteria for Flow-Through Chemical Treatment Systems: • Refer to BMP C251: Construction Stormwater Filtration for sizing requirements of flow-through chemical treatment systems.	2-163 & 2-164 Purple & Pink

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of text under BMP C250: Construction Stormwater Chemical Treatment.	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.3 Design and Installation Specifications Italic heading Sizing Criteria for Flow Control Water Bodies: Subheading and all text under subheading	Sizing Criteria for Flow Control Water Bodies: • Sites that must implement flow… • The following is how WWHM can… • It should be noted that the above… • If the discharge is to a municipal storm… • If system design does not allow…	NA	2-164 & 2-165 Pink
Update of text under BMP C250: Construction Stormwater Chemical Treatment.	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.4 Monitoring Fourth bullet point under operational monitoring & first bullet point under compliance monitoring	• Quantity of chemical used for treatment • Influent and effluent pH and turbidity must be continuously monitored and recorded at not greater than 15-minute intervals.	• Type and amount of coagulant used for treatment • Influent and effluent pH, flocculant chemical concentration, and turbidity must be continuously monitored and recorded at not greater than 15-minute intervals.	2-166 Pink
Rearrangement of text under BMP C250: Construction Stormwater Chemical Treatment.	Update for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.4 Monitoring Fourth and fifth bullet point under Compliance Monitoring and Discharge Compliance section	NA	• Prior to discharge, treated stormwater must be sampled and tested for compliance with pH and turbidity limits. These limits may be established by the Construction Stormwater General Permit, or a site-specific discharge permit… • Treated stormwater samples and measurements shall be taken from the discharge pipe or another location representative of the nature of the treated stormwater discharge. Compliance with the water quality standards is determined in the receiving water.	2-166 Purple
Update of text under BMP C250: Construction Stormwater Chemical Treatment.	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.4 Monitoring Italic heading: Operator Training, all text under subheading	• Each contractor who intends to use chemical treatment shall be trained by an experienced contractor. Each site using chemical treatment must have an operator trained and certified by an organization approved by Ecology.	• Each project using chemical treatment must have a trained operator who is certified for operation of an Enhanced Chemical Treatment System. The operator must be trained and certified by an organization approved by Ecology. Organizations approved for operator training can be found here: https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Contaminated-water-on-construction-sites	2-166 Pink
Deletion of text under BMP C250: Construction Stormwater Chemical Treatment.	Information no longer needed - did not add clarity	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.4 Monitoring Italic heading: Standard BMPS, subheading and all text under subheading	Standard BMPs • Surface stabilization BMPs should be implemented on site to prevent significant erosion. All sites shall use a truck wheel wash to prevent tracking of sediment off site.	NA	2-166 Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of subheading under BMP C250: Construction Stormwater Chemical Treatment.	Update language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.20.4 Monitoring Italic heading: Sediment Removal and Disposal	Sediment Removal and Disposal:	Maintenance Standards	2-167 Purple
Update of text under BMP C251: Construction Stormwater Filtration	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.21.2 Conditions of Use Second paragraph under subheading	The use of construction stormwater filtration does not require approval from Ecology as long as treatment chemicals are not used. Filtration in conjunction with polymer treatment requires testing under the Chemical Technology Assessment Protocol – Ecology (CTAPE) before it can be initiated. Approval from the appropriate regional Ecology office must be obtained at each site where polymers use is proposed prior to system start-up...	The use of construction stormwater filtration does not require approval from Ecology as long as treatment chemicals are not used. Filtration in conjunction with BMP C250: Construction Stormwater Chemical Treatment requires testing under the Chemical Technology Assessment Protocol – Ecology (CTAPE) before it can be initiated. Approval from the appropriate regional Ecology office must be obtained at each site where chemical use is proposed prior to treatment...	2-168 Pink
Deletion of text under BMP C251: Construction Stormwater Filtration	Information not needed	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.21.3 Background Information Subheading and all text under subheading	Background Information Filtration with sand media has been used for over a century to treat water and wastewater. The use of sand filtration for treatment of stormwater has developed recently, generally to treat runoff from streets, parking lots, and residential areas. The application of filtration to construction stormwater is currently under development.	NA	2-168 Grey
Update of text under BMP C251: Construction Stormwater Filtration	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.21.4 Design and Installation Specifications First paragraph under subheading	Two types of filtration systems may be applied to construction stormwater treatment: rapid and slow. Rapid sand filters are the typical system used for water and wastewater treatment. They can achieve relatively high hydraulic flow rates, on the order of 2 to 20 gpm/sf, because they have automatic backwash systems to remove accumulated solids. In contrast, slow sand filters have very low hydraulic rates, on the order of 0.02 gpm/sf, because they do not have backwash systems. To date, slow sand filtration has generally been used to treat stormwater. Slow sand filtration is mechanically simple in comparison to rapid sand filtration but requires a much larger filter area.	Two types of filtration systems may be applied to construction stormwater treatment: rapid and slow. Rapid filtration systems are the typical system used for water and wastewater treatment. They can achieve relatively high hydraulic flow rates, on the order of 2 to 20 gpm/sf, because they have automatic backwash systems to remove accumulated solids. In contrast, slow filtration systems have very low hydraulic rates, on the order of 0.02 gpm/sf, because they do not have backwash systems. Slow filtration systems are generally used to treat stormwater. Slow sand filtration is mechanically simple in comparison to rapid sand filtration but requires a much larger filter area.	2-168 Pink
Update of text under BMP C251: Construction Stormwater Filtration	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.21.4 Design and Installation Specifications Italic heading: Treatment Process Description First paragraph, second and third sentence of paragraph under subheading	The untreated stormwater is pumped from the trap, pond, or tank through the filtration system in a rapid sand filtration system. Slow sand filtration systems are designed as flow through systems using gravity.	The untreated stormwater is pumped from the trap, pond, or tank through the filtration system in a rapid filtration system. Slow filtration systems are designed as flow through systems using gravity.	2-168 & 169 Pink

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C251: Construction Stormwater Filtration	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.21.4 Design and Installation Specifications Italic heading: Sizing Criteria for Flow-Through Treatment Systems First three sentences under subheading	When sizing storage ponds or tanks for flow-through systems for flow control exempt water bodies, the treatment system capacity should be a factor.	Filtration treatment systems must be designed to control the velocity and peak volumetric flowrate that is discharged from the system and consequently the project site. See Element #3: Control Flowrates.	2-169 Pink
Deletion of text under BMP C251: Construction Stormwater Filtration	Update language to match Ecology's intent/information not required	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.21.4 Design and Installation Specifications Italic heading sizing criteria for Flow Control Waters Subheading and all text under subheading	Sizing Criteria for Flow Control Waters: Sites that must implement flow control for the developed site condition must also control stormwater release rates during construction…	NA	2-169 - 2-171 Pink
Update of text under BMP C251: Construction Stormwater Filtration	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.21.5 Maintenance Last sentence of first bullet point under subheading	However, land application or another means of treatment and disposal may be necessary.	However, other means of treatment and disposal may be necessary.	2-171 Pink
Update name of BMP C252: High pH Neutralization using CO2	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.22 BMP C252: Treating and Disposing of High pH Water	BMP C252: High pH Neutralization using CO2	2.2.22 BMP C252: Treating and Disposing of High pH Water	2-172 Pink
Update of subheading under BMP C252: Treating and Disposing of High pH Water	Update language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 3 (now 2) 2.2.22.1 Purpose	Description	2.2.22.1 Purpose	2-172 Purple
Update of text under BMP C252: Treating and Disposing of High pH Water	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.22.1 Description All text under subheading	When pH levels in stormwater rise above 8.5 it is necessary to lower the pH levels to the acceptable range of 6.5 to 8.5, this process is called pH neutralization prior to discharge to surface or groundwater. pH neutralization involves the use of solid or compressed carbon dioxide gas in water requiring neutralization. Neutralized stormwater may be discharged to surface waters under the General Construction NPDES permit but...	When pH levels in stormwater rise above 8.5 it is necessary to lower the pH levels to the acceptable range of 6.5 to 8.5. A pH level range of 6.5 to 8.5 is typical for most natural waterbodies and is required for the survival of aquatic organisms. Fish and other aquatic organisms may become stressed and die if the pH drops out of this range.	2-172 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added heading and text under BMP C252: Treating and Disposing of High pH Water	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.22.2 Conditions of Use Subheading and all bullets under subheading	NA	2.2.22.2 Conditions of Use • The water quality standard for pH in Washington State is in the range of 6.5 to 8.5... • Neutralized process water such as concrete truck wash-out, hydro-demolition, or saw-cutting slurry must be managed to prevent discharge to surface waters... • The process used for neutralizing and/or disposing of high pH stormwater must be documented in the Construction Stormwater Pollution Prevention Plan.	2-172 Pink
Deletion/reorder of text under BMP C252: Treating and Disposing of High pH Water	Update for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.22.2 Conditions of Use Italic heading: Reason for pH neutralization Subheading and all text under subheading	Reason for pH neutralization A pH level range of 6.5 to 8.5 is typical for most natural watercourses, and this neutral pH is required for the survival of aquatic organisms... Calcium hardness can contribute to high pH values and cause toxicity that is associated with high pH conditions... The water quality standard for pH in Washington State is in the range of 6.5 to 8.5. Groundwater standard for calcium and other dissolved solids in Washington State is less than 500 mg/l.	NA	2-172 Purple
Update of text under BMP C252: Treating and Disposing of High pH Water	Update language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.22.2 Conditions of Use Italic heading: Causes of high pH Second paragraph under subheading	NA	Calcium hardness can contribute to high pH values and cause toxicity that is associated with high pH conditions. A high level of calcium hardness in waters of the state is not allowed. Groundwater standard for calcium and other dissolved solids in Washington State is less than 500 mg/l.	2-172 & 2-173 Purple
Added heading under BMP C252: Treating and Disposing of High pH Water	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.22.3 Treating High pH Stormwater by Carbon Dioxide Sparging	NA	2.2.22.3 Treating High pH Stormwater by Carbon Dioxide Sparging	2-173 Pink
Update of headings under BMP C252: Treating and Disposing of High pH Water	Update language to match Ecology's intent and for clarity	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.22.3 Treating High pH Stormwater by Carbon Dioxide Sparging Italic headings: The Chemical Process of CO2 Sparging & Treatment Procedures of CO2 Sparging	The Chemical Process Treatment Procedures	The Chemical Process of CO2 Sparging Treatment Procedures of CO2 Sparging	2-173 Pink & Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP C252: Treating and Disposing of High pH Water	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.22.3 Treating High pH Stormwater by Carbon Dioxide Sparging Italic heading: Treatment Procedures of CO2 Sparging Bullet points 4, 5, 6, 7 & 10 and last paragraph under subheading	• Transfer water to be treated to the treatment structure. Ensure that treatment structure size is sufficient to hold the amount of water that is to be treated. Do not fill tank completely, allow at least 2 feet of freeboard. • The operator samples the water for pH and notes the clarity of the water. As a rule of thumb, less CO2 is necessary for clearer water. This information should be recorded. • In the pH adjustment structure, add CO2 until the pH falls in the range of 6.9-7.1. Remember that pH water quality standards apply so adjusting pH to within 0.2 pH units of receiving water (background pH) is recommended... • Slowly release the water to discharge making sure water does not get stirred up in the process. Release about 80% of the water from the structure leaving any sludge behind... Sites that must implement flow control for the developed site must also control stormwater release rates during construction...	• Transfer water to be treated for pH to the pH treatment structure. Ensure that treatment structure size is sufficient to hold the amount of water that is to be treated. Do not fill pH treatment structure completely, allow at least 2 feet of freeboard. • The operator samples the water within the pH treatment structure for pH and notes the clarity of the water. As a rule of thumb, less CO2 is necessary for clearer water. The results of the samples and water clarity observations should be recorded. • In the pH adjustment structure, add CO2 until the pH falls in the range of 6.9-7.1. Adjusting pH to within 0.2 pH units of receiving water (background pH) is recommended... • Slowly to discharge the water making sure water does not get stirred up in the process. Release about 80% of the water from the pH treatment structure leaving any sludge behind. • Dispose of sludge per applicable local, state, and federal regulations.	2-173 & 2-175 Pink
Added heading and text under BMP C252: Treating and Disposing of High pH Water	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.22.3 Treating High pH Stormwater by Carbon Dioxide Sparging Italic heading: Treating High pH Stormwater using Food Grade Vinegar Subheading and all text under subheading	NA	2.2.22.3 Treating High pH Stormwater by Carbon Dioxide Sparging Food grade vinegar that meets FDA standards may be used to neutralize high pH water. Food grade vinegar is only 4% to 18% acetic acid… This treatment option for high pH stormwater does not apply to anything but food grade vinegar. Acetic acid is not vinegar...	2-174 Pink
Added heading and text under BMP C252: Treating and Disposing of High pH Water	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) Italic heading: Disposal of High pH Stormwater Subheadings and all text under subheadings	NA	Disposal of High pH Stormwater Wastewater System Disposal Discharges to the wastewater system are only allowed if approved per BMP xxx - Discharge to Wastewater System Concrete Batch Plant Disposal • Only permitted facilities may accept high pH water. • Contact the facility to ensure they can accept high pH water	2-174 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of BMP C253: pH Control for High pH Water	Update language to match Ecology's intent/information not required	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) BMP C253: pH Control for High pH Water, Heading and all subheadings and text under heading	2.2.23 BMP C253: pH Control for High pH Water 2.2.23.1 Description When pH levels in stormwater rise above 8.5 it is necessary to lower the pH levels to the acceptable range of 6.5 to 8.5, this process is called pH neutralization… 2.2.23.2 Disposal Methods Infiltration • Infiltration is only allowed if soil type allows all water to infiltrate (no surface runoff) without causing or contributing to a violation of surface or groundwater quality standards...	NA	2-175 & 2-176 Pink
Added BMP 2.2.24 Portable Sediment Tank	Brand new BMP	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.24 BMP C253: Portable Sediment Tank Heading and all subheadings and text under heading	NA	2.2.24 BMP C253: Portable Sediment Tank 2.2.24.1 Purpose A portable sediment tank is used during construction to remove sediment from runoff originating from disturbed areas of the site… 2.2.24.2 Conditions of Use • Sediment tanks shall be placed on level, even ground... 2.2.24.3 Design and Installation Specifications • Sediment tanks shall be a minimum of 2 feet deep... 2.2.24.2 Maintenance Standards • Follow manufacturer or vendor specifications for maintenance...	2-177 Orange
Added BMP 2.2.25 Discharge to Wastewater System	Brand new BMP	City of Tacoma Stormwater Management Manual	Volume 2 Chapter 2 (was Chapter 3) 2.2.25 BMP Discharge to Wastewater Systems Heading and all text under heading	NA	2.2.25 New BMP - Discharge to Wastewater System The City of Tacoma may allow stormwater runoff to be directed the wastewater system on a limited and case by case basis. Only stormwater that cannot be adequately cleaned by Best Management Practices will be allowed to be discharged to the City of Tacoma wastewater system. A Special Approved Discharge (SAD) Permit must be obtained before discharge into the wastewater system is allowed...	2-178 Orange

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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of Appendix A	Information to be moved to separate document.	City of Tacoma Stormwater Management Manual	Volume 2 Appendix A	Appendix A Standard Notes for Temporary Erosion and Sedimentation Control Plans	NA	2-179 & 2-180 Purple
Partial deletion of Appendix B	Updated information will be available as separate document.	City of Tacoma Stormwater Management Manual	Volume 2 Appendix B	Appendix B Construction SWPPP Short Form	NA	2-181 - 2-207 Purple

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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of heading 'Purpose of this Volume'	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Purpose First heading under volume title	Purpose of this Volume	How to Use this Volume	3-1 Purple
Update of text under 'How to use this Volume'	Updated language to Match Ecology's Intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Purpose How to Use this Volume Text under subheading	This volume was designed to help businesses, homeowners and public agencies in Tacoma implement source control best management practices (BMPs) to prevent pollutants from contaminating stormwater runoff and entering our rivers, lakes, and streams.	Minimum Requirement #3 - requires that all known, available, and reasonable source control BMPs are used to help prevent stormwater from contacting pollutants. Source control BMPs are both operational and structural BMPs related to the use of the property and the potential pollutant sources of the property.	3-1 Pink
Additional text under 'How to use this Volume'	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Purpose How to Use this Volume Second and third paragraph under subheading	NA	Source Control BMPs, contained in this Volume, shall be used in all areas in the City of Tacoma to reduce pollutants in stormwater. The use of the BMPs in this Volume also help to ensure compliance with Minimum Requirement #3 - Source Control… There is a worksheet available on www.cityoftacoma.org/stormwatermanual_shortforms to help ensure appropriate BMPs are used on the site...	3-1 Purple
Delete text Content and Organization of this Volume	Information not needed - Chapter has been reorganized	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Purpose Content and Organization of this Volume Subheading and all text under subheading	Content and Organization of this Volume Volume 4 contains five chapters and four appendices…	NA	3-1 & 3-2 Gray

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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Chapter deleted	Information no longer needed/ included in other sections of manual	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1	Chapter 1 Frequently Asked Questions	NA	3-3 - 3-5 Grey

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update Chapter title	Reorganization of chapter, update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1 (new)	NA	Chapter 1 Source Control BMPS Applicable to All Sites	3-6 Pink
Update text under chapter title	Reorganization of chapter, update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1 (new) Chapter 1 Source Control BMPs Applicable to All Sites All pink text under chapter title	NA	The following Best Management Practices shall be used at all sites, as applicable: BMP S100: Correcting Illicit Discharges to the Stormwater System BMP S102: Formation of a Pollution Prevention Team BMP S103: Preventative Maintenance / Good Housekeeping BMP S104: Spill Prevention and Cleanup BMP S105: Employee Training BMP S106: Inspections BMP S107: Record Keeping	3-6 Pink
New BMP S100	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1 (new) 1.1 BMP S100: Correcting Illicit Discharges to the Stormwater System Subheading and all text under subheading	NA	1.1 BMP S100: Correcting Illicit Discharges to the Stormwater System 1.1. Applicability This BMP applies to all properties… 1.1.2 Required BMPs: • For all real properties… 1.1.3 Recommended Additional BMPs: At commercial and industrial…	3-6 & 3-7 Pink
New BMP S102	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1 (new) 1.3 BMP S102: Formation of a Pollution Prevention Team Subheading and all text under subheading	NA	1.3 BMP S102: Formation of a Pollution Prevention Team 1.3.1 Applicability This BMP applies to commercial… 1.3.2 Required BMPs: The pollution prevention team…	3-10 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New BMP S103	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1 (new) 1.4 BMP S103: Preventive Maintenance / Good Housekeeping Subheading and all text under subheading	NA	1.4 BMP S103: Preventive Maintenance / Good Housekeeping 1.4.1 Applicability: This BMP applies to properties and… 1.4.2 Required BMPs: • Prevent the discharge of… 1.4.3 Recommended Additional BMPs: • Where feasible, store potential…	3-11 & 3-12 Pink
New BMP S104	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1 (new) 1.5 BMP S104: Spill Prevention and Cleanup Subheading and all text under subheading	NA	1.5 BMP S104: Spill Prevention and Cleanup 1.5.1 Applicability This BMP applies to all spills and… 1.5.2 Required BMPs: Spill Prevention • Clearly label or mark all…	3-13 & 3-14 Pink
New BMP S105	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1 (new) 1.6 BMP S105: Employee Training Subheading and all text under subheading	NA	1.6 BMP S105: Employee Training 1.6.1 Applicability This BMP applies to commercial… 1.6.2 Required BMPs: Train all employees that work in…	3-15 Pink
New BMP S106	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1 (new) 1.7 BMP S106: Inspections Subheading and all text under subheading	NA	1.7 BMP S106: Inspections 1.7.1 Applicability This BMP applies to commercial… 1.7.2 Required BMPs Qualified personnel shall conduct…	3-16 Pink
New BMP S107	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 1 (new) 1.8 BMP S107: Record Keeping Subheading and text under subheading	NA	1.8 BMP S107: Record Keeping 1.8.1 Applicability This BMP applies to commercial… 1.8.2 Required BMPs See the applicable permit for… 1.8.3 Recommended Additional BMPs Maintain records of all related…	3-17 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of chapter	Information not needed - this will be a separate document available on the web	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (deleted chapter)	Chapter 2 Worksheet for Commercial and Industrial Activities	NA	3-18 - 3-20 Grey

NOTE: Chapter 4 has been moved within the volume and is now Chapter 2. The contents of the chapter have been reorganized. Strikethrough text with no highlight has been moved to a new section within the chapter and shows as underline text (also with no highlight).

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of text under chapter title	Moved to new chapter within volume, updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) Chapter 2 BMPs for Commercial and Industrial Activities All subheadings and text under chapter title	This chapter coordinates with the worksheet completed in Chapter 2. That worksheet… 2.1 BMPs for All Activities 2.1.1 Mandatory Operational BMPs The following operational BMPs are… 2.1.2 Mandatory Good Housekeeping BMPs • Recycle materials, such as oils... 2.1.3 Mandatory Preventive Maintenance BMPs: • Minimize use of toxic cleaning... 2.1.4 Additional Recommended BMPs: • Maintain records of all related...	NA	3-21 & 3-22 Pink
Headings update	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2 Cleaning and Washing BMPs Heading and subheading	BMP W100: Washing Best Management Practices	2.2 Cleaning and Washing BMPs 2.2.1 BMP S108: Washing Best Management Practices for All Activities	3-23 Purple
Update text under BMP S108: 2.2.1.1 Applicability	Update language for readability, text deleted as information no longer needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.1.1 Applicability All text under subheading	These BMPs encompass washing practices related to various commercial washing activities. Typically, all washwater must be discharged to the sanitary sewer system, collected for off-site disposal, or recycled. Some washing practices may discharge their washwater into nearby landscaped areas or into the stormwater system with proper pretreatment. Table 4 - 1 shows the allowable discharge location for various washing activities. Following the table are required and recommended BMPs for specific washing activities. Below are the required and recommended BMPs that apply to all washing practices. BMPs for homeowners can be found in Chapter 3.	Washington BMPs encompass washing practices related to various commercial washing activities. Table 1 shows the allowable discharge location for various washing activities.	3-23 Purple, Blue & Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP S109: 2.2.1.2 Required BMPs for all washing activities:	Update language to match Ecology's intent, for readability, and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.1.2 Required BMPs for all washing activities: Bullets 1, 3, 6 & 7 under subheading	• Follow Table 4 - 1 to determine the required discharge location based upon washing activity. • Employees must be educated to control washing operations to prevent stormwater contamination. • If any washing of vehicle or equipment that contains oils is to be conducted on the wash pad an oil/water separator will be required. See the Environmental Services Oil Water Separator Policy for Discharges to the Sanitary Sewer at www.cityoftacoma.org/ stormwater for additional guidance.	• Sweep or wipe surfaces prior to cleaning to remove excess sediment and pollutants before washing.	3-23 Purple, Pink, Grey & Blue
Updated text under BMP S109: 2.2.1.3 Recommended BMPs for all washing activities, and deletion of table	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.1.3 Recommended BMPs for all washing activities Third bullet point and table under subheading	• If soaps and detergents are used, use the least toxic cleaner capable of doing the job. Select non-phosphate detergents when possible. Table 1: Discharge Options for Businesses	• If soaps and detergents are allowed and used, use the least toxic cleaner capable of doing the job. Select non-phosphate detergents when possible.	3-23 - 3-24 Purple
Update of subheading heading title	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.2 BMP S109 Cleaning or Washing of Tools, Equipment,	Cleaning or Washing of Tools, Equipment, and Machinery	2.2.2 BMP S109 Cleaning or Washing of Tools, Equipment, and Machinery	3-26 Purple
Update of text under 2.2.2 BMP S109	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.2.1 Applicability First paragraph under subheading	This activity applies to businesses and public agencies that clean manufacturing equipment such as saws, grinders, screens, and other processing devices outside of buildings, and to businesses engaged in pressure washing of engines, equipment, and portable objects.	This activity applies to sites that clean any tools, equipment, or machinery such as saws, grinders, screens, lawn mowers, and other processing devices outside of buildings, and to sites engaged in pressure washing of engines, equipment, and portable objects.	3-26 Purple
Update of subheading and text under subheading 2.2.2.2	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.2 2 Required BMPs Subheading and first three bullets under subheading	• All washwater shall either: ◦ Be discharged to the sanitary sewer, ◦ Be temporarily stored before proper disposal, or ◦ Be recycled.	• All washwater shall be discharged to the wastewater system. ◦Washwater may be used in a closed loop recycle system before ultimate disposal in the wastewater system. ◦Washwater can be temporarily stored before it is ultimately discharged to the wastewater system. • Washwater shall not discharge to the stormwater system.	3-26 Purple
Update of subheading title	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.3 BMP S110: Cleaning or Washing of Cooking Equipment	Cleaning or Washing of Cooking Equipment	2.2.3 BMP S110: Cleaning or Washing of Cooking Equipment	3-27 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under 2.2.3 BMP S110	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.3.1 Applicability First paragraph under subheading	This activity applies to businesses that clean cooking equipment such as grills, vent filters, exhaust hoods, grease traps, floors and floor mats. Washing the outside of buildings, sidewalks, and paved areas is covered in the Building Structures and Related Equipment section below.	This activity applies to businesses that clean cooking equipment such as grills, vent filters, exhaust hoods, grease traps, floors and floor mats.	3-27 Grey
Update of text under 2.2.3 BMP S110	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.3.2 Required BMPs for cleaning or washing of cooking equipment All bullet points under subheading	• Cleaning and washing of cooking... • If washing cannot be accomplished... • Washwater shall not be discharged… • Washwater from cleaning roof-top... • Paved washing areas must be swept... • Greasy buildup on cooking equipment... • See BMP S103 for detailed drainage... • If a holding tank is used for storage...	• Clean and wash cooking equipment... • If washing cannot occur indoors... • Washwater shall not discharge to... • Remove greasy buildup on cooking…	3-27 Purple
Update of text under 2.2.3 BMP S110	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.3.3 Recommended Additional BMPs Third bullet point under subheading	• If washing must take place outdoors, provide a cover over the designated wash area to keep rain from falling on dirty equipment and producing contaminated runoff.	• If washing must take place outdoors, provide a cover over the designated wash area to limit discharges to the wastewater system.	3-28 Purple
Update of heading Building Structures and Related Equipment	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.4 BMP S111: Cleaning Building Structures and Related Equipment	Building Structures and Related Equipment	2.2.4 BMP S111: Cleaning Building Structures and Related Equipment	3-29 Purple
Update of subheading title	Updated as information no longer needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.4.2 Required BMPs	Required BMPs for washing building structures and related equipment	2.2.4.2 Required BMPs	3-29 Grey

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Update of text under 2.2.4 BMP S111	Update language for clarity/readability and added text to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.4.2 Required BMPs All italic headings and bullet points under subheading	*General:* • Pressure washing of buildings… • Washwater shall be discharged… • If runoff does not contain pollutants… *Buildings:* • Washwater from building washing… • If only cold water is used to remove… Rooftop Equipment: • Washwater from cleaning rooftop... *Parking Lots:* • Wastewater generated from washing... • Alternatively, the water can be captured... *Sidewalks:* • Sweep, shovel, or scrape up large... • If soaps or other cleaning agents are... • If using only cold water, the water... *Graffiti* • Wastewater generated from graffiti... • If removing graffiti with a cleaner only...	*Exterior Building Walls and Windows:* • All washwater that may contain oils… • Washwater shall not discharge… *Rooftop Equipment* Rooftop equipment includes... • All washwater shall be discharged…. *Parking Lots* • Because vacuum sweeping of... • Sweep before washing • All washwater shall be discharged... *Sidewalks* • Sweep before washing • All washwater that may contain oils... • Washwater shall not discharge to.... *Graffiti* • All washwater that may contain oils... • Washwater shall not discharge to... • Consider removal options...	3-29 - 3-31 Purple & Pink
Deletion of section Interior Washing Operations	Information no longer needed. Interior washing is not related to stormwater management.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.5 Interior Washing Operations (deleted subheading) Subheading and all text under subheading	2.2.5 Interior Washing Operations Applicability: This activity applies to…	NA	3-31 & 3-32 Grey
Update of heading Washing, Pressure Washing and Steam Cleaning of Vehicles	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.6 BMP S112: Washing, Pressure Washing and Steam Cleaning of Vehicles	Washing, Pressure Washing and Steam Cleaning of Vehicles	2.2.6 BMP S112 Washing, Pressure Washing and Steam Cleaning of Vehicles	3-33 Purple
Update of text under BMP S112.	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.6.1 Applicability First sentence of first paragraph under subheading	Applicability: This activity includes the washing of vehicles, aircraft, vessels/boats and grocery carts, by low or high pressure water or steam and includes hand washing, scrubbing, sanding, etc.	2.2.6.1 Applicability: This activity includes the washing of vehicles, aircraft, vessels/boats and construction vehicles such as backhoes, by low or high pressure water or steam and includes hand washing, scrubbing, sanding, etc.	3-33 Purple
Update of subheading under BMP S112	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.6.2 Required BMPs	Required BMPs for washing, pressure washing and steam cleaning vehicles:	2.2.6.2 Required BMPs	3-33 Purple

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Update of text under BMP S112	Update language to match Ecology's intent, for readability, and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.6.2 Required BMPs All bullets under italic headings 'General' and 'New and Used Car Dealer Lots:'	*General* • Washwater shall be discharged to the sanitary sewer unless otherwise noted below. • If heavy accumulations of solids... • Two-step (acid – alkaline) washing may be allowed at all facilities discharging to the sanitary sewer. Provisions must be in place to neutralize the washwater rinsate prior to discharge to the sanitary sewer system. • See the City of Tacoma Source Control Policy on Discharges from Vehicle and other Washing Activities for additional information. • Contact City of Tacoma Source Control at 253-591-5588 for more information. *New and Used Car Dealer Lots:* • If washing previously cleaned vehicles... • If soaps or detergents are to be used...	*General* • Washwater shall be discharged to the sanitary sewer unless otherwise noted below. • Two-step (acid – alkaline) washing is allowed if washwater rinsate is neutralized prior to discharging to the wastewater system. • Contact City of Tacoma Source Control at 253-591-5588 for more information. *New and Used Car Dealer Lots:* • All washwater shall be discharged... • Washwater shall not discharge to the stormwater system. • Wash cars on a designated wash...	3-33 & 3-34 Purple, Grey & Pink
Update of text under BMP S112	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.6.2 Required BMPs All bullets under italic headings 'Events Where Vehicle Washing May Occur', 'RV, Truck, Auto Detailing, and Engine Washing Facilities' and 'Boat Washing Facilities'	*Other Washing Events:* • Identify types of washing events and their... • Charity car washes shall wash only the... *RV, Truck, Auto Detailing, and Engine Washing Facilities:* • Wash on a dedicated pad. See the City... *Boat Washing Facilities:* • Wash on a dedicated pad. See the City... • For cleaning activities while boats...	*Events Where Vehicle Washing May Occur:* This section applies to events where vehicles are being displayed and charity car washes. • Evaluate the need to wash vehicles. • All washwater shall be discharged... • Washwater shall not discharge to... • Wash vehicles on a designated wash... *RV, Truck, Auto Detailing, and Engine Washing Facilities* • All washwater shall be discharged... • Washwater shall not discharge... • Wash vehicles on a designated... *Boat Washing Facilities* • All washwater shall be discharged... • Washwater shall not discharge to... • Wash vehicles on a designated... • Visit Ecology's Green Boating...	3-34 & 3-35 Purple & Pink
Update of text under BMP S112	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.2.6.2 Required BMPs All bullets under italic headings 'Mobile Vehicle Washing' and 'Automatic and Manual Car Wash'	*Mobile Vehicle Washers:* This section applies to mobile vehicle and grocery cart washers doing work in the City of Tacoma. Detailed requirements and procedures may be found in The City of Tacoma Source Control Interim Policy for Mobile Vehicle Washers. • Mobile vehicle washers shall capture... *Automatic and Manual Car Wash:* • See the City of Tacoma Source...	*Mobile Vehicle Washing* This section applies to mobile vehicle and grocery cart washers conducting business in the City of Tacoma. • Contact the City of Tacoma at... • All washwater shall be discharged... • Washwater shall not discharge... • Wash vehicles/shopping carts on...	3-35 & 3-36 Pink & Purple

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Update of heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3 Loading/Unloading and Storage of Materials	Transfer of Liquid or Solid Materials	2.3 Loading/Unloading and Storage of Materials	3-39 Purple
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.1 BMP S114: Loading and Unloading Areas for Liquid or Solid Material	BMP A201: Loading and Unloading Areas for Liquid or Solid Material	2.3.1 BMP S114: Loading and Unloading Areas for Liquid or Solid Material	3-39 Purple
Update subsection heading and text of BMP S114	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.1.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.3.1.1 Applicability This BMP applies to commercial and industrial facilities that load/unload materials.	3-39 Purple
Update of text under BMP S114	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.1.2 Required BMPs Italic heading: At All Loading/ Unloading Areas: Bullets 3, 6 & 7 under subheading	• Washing loading/unloading areas must be conducted in such a way that all the runoff is collected for proper disposal. Refer to Volume 4, Section 4.2. • Place curbs along the edge, or slope the edge such that the stormwater can flow to an internal storm drain system that leads to an approved treatment BMP... • Pave and slope loading/unloading areas to prevent the pooling of water. The use of catch basins and drain lines within the interior of the paved area must be...	• Washing loading/unloading areas must be conducted in such a way that all the runoff is collected for proper disposal. Refer to cleaning and washing BMPs for additional information. • Place curbs along the edge, or slope the edge such that the stormwater can flow to an internal stormwater system that leads to an appropriate, approved treatment BMP... • Pave and slope loading/unloading areas to prevent the pooling of water. The use of catch basins and stormwater lines within the interior of the paved area must be...	3-40 Purple
Update of text under BMP S114	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.1.2 Required BMPs Italic heading At Tanker Truck and Rail Second bullet point under subheading	• Report spills of reportable quantities to Ecology Southwest Regional Office (refer to Chapter 1 for telephone number).	• Report spills of reportable quantities to the Washington State Department of Ecology. Visit: https://ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue/Report-a-spill for additional information on how to support spills.	3-40 Purple
Deletion of subheading and text update under BMP S114	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.1.2 Required BMPs Italic heading: At Rail Transfer Areas to Above/Below-ground Storage Tanks: (deleted) First sentence under subheading	*At Rail Transfer Areas to Above/Below-ground Storage Tanks:* Install a drip pan system as illustrated (see Figure 4 - 2) within the rails to collect spills/leaks from tank cars and hose connections, hose reels, and filler nozzles.	At rail transfer areas, install a drip pan system as illustrated (see Figure 4 - 2) within the rails to collect spills/leaks from tank cars and hose connections, hose reels, and filler nozzles.	3-40 Purple

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Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.2 BMP S115: Storage or Transfer (Outside) of Solid Raw Materials, By-Products or Finished Products	BMP A401: Storage or Transfer (Outside) of Solid Raw Materials, By-Products or Finished Products	2.3.2 BMP S115: Storage or Transfer (Outside) of Solid Raw Materials, By-Products or Finished Products	3-43 Purple
Update of subheading and text under BMP S115	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.2.1 Applicability Subheading and first sentence of paragraph under subheading	Description of Pollutant Sources	2.3.2.1 Applicability This BMP applies to properties that store or transfer materials.	3-43 Purple
Update of text under BMP S115	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.2.2 Required BMPs All bullet points under subheading	• Do not hose down the contained stockpile area to a storm drain or other conveyance leading to a storm drain or receiving water. • Choose one or more of the source control BMP options listed below for stockpiles greater than 5 cubic yards of erodible or...	2.3.2.2 Required BMPs • Do not hose down the contained stockpile area to the street, into a stormwater inlet, or receiving water.	3-43 Purple
Update of subheading and deletion of text and figure under BMP S115	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.2.3 Recommended Additional BMPs Subheading, first bullet point and figure 3-5	Recommended BMPs • Maintain drainage areas in and around storage of solid materials with a minimum slope… Figure 3 - 5: Covered Storage Area for Bulk Solids (including berm if needed)	2.3.2.3 Recommended Additional BMPs	3-43 & 3-44 Purple
Update of BMP Heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.4 BMP S117: Storage of Solid Wastes and Food Wastes	BMP A404: Storage of Solid Wastes and Food Wastes	2.3.4 BMP S117: Storage of Solid Wastes and Food Wastes	3-46 Purple
Update of subheading and text under BMP S117	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.4.1 Applicability Subheading and first three paragraphs under subheading	Description of Pollutant Sources This activity applies to facilities such as hospitals, restaurants, meat and seafood markets, veterinarian clinics, schools, grocery stores, assisted living centers, and group assembly halls that store solid wastes and food wastes outdoors... Certain Food Service establishments are required to obtain a permit from the Tacoma/Pierce County Health Department, which may include inspection of the garbage facilities... NOTE: Dangerous solid wastes must be stored and handled under special guidelines...	2.3.4.1 Applicability This activity applies to all properties in the City of Tacoma that store solid waste outdoors, including ordinary garbage.	3-46 Purple

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Update of text under BMP S117	Text updated for clarity/ readability and deleted where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.4.2 Required BMPs First paragraph under subheading and bullet points 1-6 & 8-9	The following BMPs are required of all businesses and public agencies engaged in storage of non-dangerous solid wastes or food wastes: • All solid and food wastes must be stored in suitable containers. Piling of wastes without any cover is prohibited. • Waste storage areas and trash… • Trash compactors or dumpsters for food… • Storage containers and compactors must be checked for leaks and broken seals and replaced if they are leaking, corroded, or otherwise deteriorating. If storage containers contain liquid wastes of any kind, then the container shall be located on a pad equipped with a drainage system connected to the City sanitary sewer. • Storage containers must have leak-proof lids or be covered by some other means. Lids must be kept closed at all times. This is especially important for dumpsters, as birds can pick out garbage and drop it, promoting rodent, health, and stormwater problems. OR • If lids cannot be provided...	• Per Tacoma Municipal Code 12.09, the collection and disposal of solid waste within the City of Tacoma is compulsory and universal... • Call or email Solid Waste Management with any questions regarding Solid Waste Management at (253) 502-2100 or solidwaste@cityoftacoma.org... • All solid and food wastes must be stored in suitable containers. Piling of wastes without any cover is prohibited. Containers are either… • Store containers inside, under cover, or in a designated area (such as trash enclosure). • For new development and redevelopment commercial and/or industrial projects... • For existing commercial and/or industrial properties.. • Trash compactors and dumpsters… • Storage containers and compactors must be checked for leaks and broken seals and replaced if they are leaking, corroded, or otherwise deteriorating. • Storage containers must have leak-proof lids or be covered by some other means. Lids must be kept closed at all	3-46 & 3-47 Purple & Grey
Update of text under BMP S117	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.4.3 Recommended Additional BMPs Subheading and all bullet points under subheading	4.5.4.3 Recommended BMPs The following BMPs are not… • Provide a backup storage container if… • Locate drain to sanitary sewer at one… • In enclosures with drains to the sanitary sewer, provide… • Designate a storage area, pave the… • Compost appropriate wastes. Contact... • Recycle solid wastes. Contact City...	2.3.4.3 Recommended Additional BMPs The following BMPs are not required… • Upsize the storage container if… • Locate drain to the wastewater system at one… • In enclosures with drains to the wastewater system… • Recycle and use the food waste…	3-46 & 3-47 Purple
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.5 BMP S118: Storage of Liquid, Food Waste or Dangerous Waste Containers	BMP A408: Storage of Liquid, Food Waste or Dangerous Waste Containers	2.3.5 BMP S118: Storage of Liquid, Food Waste or Dangerous Waste Containers	3-49 Purple
Update of subheading and text under BMP S118	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.5.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.3.5.1 Applicability This BMP applies to properties that store waste containers.	3-49 Purple

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Update of text under BMP S118	Update language to match Ecology's intent, for readability, and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.5.2 Required BMPs Bullets 2, 5, 6, 9, 11, 17 & 18	• Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code. • Drain dumpsters and/or dumpster pads to sanitary sewer. Keep dumpster lids closed. Install waterproof liners. • For stormwater in a containment area… • Another option for discharge of…	• Label all containers appropriately… • Empty drums containing residues… • Store containers that do not… • Storage of reactive, ignitable, or flammable liquids must comply with the strictest local zoning code, local fire code, the Uniform Fire Code (UFC), UFC standards, or the National Electric Code. •Drain dumpsters and/or dumpster pads to the wastewater system. Keep dumpster lids closed. Install waterproof liners.	3-49 & 3-50 Purple, Pink & Grey
Update of BMP Heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.6 BMP S119: Storage of Liquids in Above-Ground Tanks	BMP A409: Storage of Liquids in Above-Ground Tanks	2.3.6 BMP S119: Storage of Liquids in Above-Ground Tanks	3-53 Purple
Update of subheading and text under BMP S119	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.6.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.3.6.1 Applicability This BMP applies to sites that store liquids in above-ground tanks.	3-53 Purple
Update of text under BMP S119	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.6.2 Required BMP, 2.3.6.3 Required BMPs for All Tanks, 2.3.6.4 Required BMPs for Single-walled Tanks, 2.3.6.5 Required BMPs for Double-walled Tanks Subheadings and all text under subheadings	4.5.9.2 Required BMPs for All Tanks • Install secondary containment or a… 4.5.9.3 Required BMPs for Single-walled Tanks • The containment volume shall be 100%… 4.5.9.4 Required BMPs for Double-walled Tanks • Tank pads and the fuel delivery area…	2.3.6.2 Required BMPs • Locate tanks on an impervious… • Feed and return lines from… • Secondary containment must… • Slope the secondary containment… • Inspect the containment area… • Develop a spill plan per… • Place drip pans beneath all… • Sweep and clean tank storage... • All installations shall comply... • Protect tanks that might be... • Include tank overfill protection... • Provide at least 5 feet of space... • Tank water and condensate... • Loading racks and transfer...	3-53 - 3-55 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.7 BMP S120: Temporary Storage or Processing of Fruits or Vegetables	BMP A403: Temporary Storage or Processing of Fruits or Vegetables	2.3.7 BMP S120: Temporary Storage or Processing of Fruits or Vegetables	3-58 Purple
Update of subheading under BMP S120	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.7.1 Applicability	Description of Pollutant Sources	2.3.7.1 Applicability	3-58 Purple

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Update of text under BMP S120	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.7.2 Required BMPs All text under subheading	Businesses that store or process fruits and vegetables are required to be covered under an Individual NPDES Permit and may require an Industrial Wastewater Discharge Permit from the City of Tacoma. Contact the Washington State Department of Ecology for information on BMPs related to fruit and vegetable processing and storing. Additional permitting may be required from the Tacoma/Pierce County Health Department.	• Educate employees on the… • Keep fruits, vegetables, and grains… • Dispose of torren fruit, vegetables… • Make sure all outside materials… • Minimize the use of water… • Sweep or shovel storage… • Keep cleanup materials, such… • If a holding tank is used for storage... • Enclose the processing area in a...	3-58 Pink
Added text under BMP S120	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.7.3 Recommended Additional BMPs	NA	2.3.7.3 Recommended Additional BMPs • Cover outdoor storage areas.	3-58 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.8 BMP S121: : Parking and Storage for Vehicles and Equipment	BMP A410: Parking and Storage for Vehicles and Equipment	2.3.8 BMP S121: : Parking and Storage for Vehicles and Equipment	3-59 Purple
Update of subheading and text under BMP S121	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.8.1 Applicability First sentence under subheading	Description of Pollutant Sources	2.3.8.1 Applicability This BMP applies to properties where cars are parked.	3-59 Purple
Update of text under BMP S121	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.8.2 Required BMPs All bullet points under subheading	• If washing of a parking lot is conducted, discharge the washwater to a sanitary sewer (if… • Do not hose down the area to a storm drain or receiving water… • An oil removal system such as an API or… • Covered floors of parking garages with drains must drain to the sanitary sewer through an approved oil/water separator. Uncovered floors must be routed to the storm drainage system through an approved treatment device...	• If washing of a parking lot is conducted, discharge the washwater to the wastewater system (if… • Do not hose down the area to a the stormwater system or… • Clean vehicle and equipment leaks… • Place drip plans below leaking… • New and redevelopment sites... • Covered floors of parking garages with drains must drain to the wastewater system through an approved oil/water separator. Uncovered floors must be routed to the stormwater system through an approved treatment device.	3-59 Purple & Pink
Added text under BMP S121	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.3.8.3 Recommended Additional BMPs Subheading and all text under subheading	NA	2.3.8.3 Recommended Additional BMPs • Encourage employees to repair... • Encourage employees to carpool... • Encourage customers to use public…	3-59 Pink

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Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.4.1 BMP S122: Fueling at Dedicated Stations	BMP A202: Fueling at Dedicated Stations	2.4.1 BMP S122: Fueling at Dedicated Stations	3-60 Purple
Update of subheading and text under BMP S122	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.4.1.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.4.1.1 Applicability This BMP applies to facilities that have onsite fueling areas.	3-60 Purple
Update of text under BMP S122	Update language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.4.1.2 Required BMPs All bullet points under subheading	*General Requirements* • Fuel islands shall not drain into the... • Fuel islands may provide blind sumps... • Follow the City of Tacoma Source…	• Stormwater from fuel islands shall… • Follow the City of Tacoma Source… • Prepare an emergency spill… • Train employees on the proper… • Have a designated trained person… • If the fueling station is unattended… • The person conducting the fuel... • Keep suitable cleanup materials... • Do not use dispersants to clean... • Post signs in accordance with the... • Ensure the automatic shit-off on...	3-60 Purple & Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.4.2 BMP S123: Mobile Fueling of Vehicles and Heavy Equipment	BMP A204: Mobile Fueling of Vehicles and Heavy Equipment	2.4.2 BMP S123: Mobile Fueling of Vehicles and Heavy Equipment	3-61 Purple
Update of subheading and text under BMP S123	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.4.2.1 Applicability Subheading and first two sentences under subheading	Description of Pollutant Sources	2.4.2.1 Applicability This BMP applies to activities where mobile fueling may occur. This may occur on individual properties or within the ROW. Mobile fueling, also known as fleet fueling, wet fueling, or wet hosing, is the practice of filling fuel tanks of vehicles by tank trucks that are driven to the yards or sites where the vehicles to be fueled are located.	3-61 Purple

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Update of text under heading BMP S123	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.4.2.2 Required BMPs Bullet points 1, 3, 4 (last paragraph under bullet and first sub bullet), 14 & 15	• Ensure that all mobile fueling operations are approved and permitted by Tacoma Fire Prevention Bureau and comply with local and Washington State fire codes. Contact the Tacoma Fire Prevention Bureau at 253-591-5740 to obtain the annual permit. • Ensure compliance with all 49 CFR 178 requirements for DOT 406 cargo tanker... • Ensure the presence and the constant... Storm drains that convey the inflow to a spill control separator approved by the City of Tacoma, including the Tacoma Fire Department, need not be covered.... ◦ Place a drip pan or an absorbent pad under each fueling location prior to and during all dispensing operations. The pan (must be liquid tight) and the absorbent pad must have a capacity of 3 gallons.	• Ensure that all mobile fueling operations are approved and permitted by Tacoma Fire Prevention Bureau and comply with local and Washington State fire codes. Visit https://www.cityoftacoma.org/government/city_departments/fire/divisions/fire_prevention_div/operational_permits for additional information. • Ensure compliance with all 49 CFR 178 requirements for all fuel delivery vehicles or containers. • Ensure the presence and the... A cover is not needed if there is an approved City of Tacoma (including Tacoma Fire Department) spill control separator... ◦ Place a drip pan or an absorbent pad under each fueling location prior to and during all dispensing operations. The pan (must be liquid tight) and the absorbent pad must have a capacity of 3 gallons. • Immediately remove and properly... • Do not use dispersants to...	3-61 - 3-63 Purple & Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.1 BMP S125: Vehicle Maintenance Activities	BMP A203: Vehicle Maintenance Activities	2.5.1 BMP S125: Vehicle Maintenance Activities	3-67 Purple
Update of subheading and text deletion under BMP S125	Updated language for clarity/ readability and deleted text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.1.1 Applicability Last sentence of first paragraph and table under subheading	Description of Pollutant Sources Related vehicle maintenance activities are covered under the following activity headings in this manual, and other BMPs provided in this manual: BMP W100 Washing, Pressure Washing, and Steam Cleaning…	2.5.1.1 Applicability	3-67 Purple & Gray

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP S125	Update language to match Ecology's intent, for readability, and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.1.2 Required BMPs Bullet points 2, 4, 5, 7, 10 & 13	• Remove batteries and liquids from vehicles and equipment in designated areas designed to prevent stormwater contamination. Store cracked batteries in a covered non-leaking secondary containment system. • Empty fuel and fuel filters before disposal. • Floor drains inside buildings shall connect to sanitary sewer, be... • If this activity occurs at a stationary... • Convey contaminated stormwater...	• Conduct all maintenance and repair… • Remove batteries and liquids from vehicles and equipment in designated areas designed to prevent stormwater contamination. Store cracked batteries in a covered non-leaking secondary containment system. Do not pour any liquids into stormwater inlets. • Empty fuel and fuel filters before disposal. Ensure no fuel enters stormwater inlets. • Floor drains inside buildings shall connect to the wastewater system...	3-67 & 3-68 Purple & Pink
Update of BMP heading	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.2 BMP S126: Demolition	BMP A502: Demolition of Buildings	2.5.2 BMP S126: Demolition	3-69 Purple
Update of text under BMP S126	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.2.2 Required BMPs Bullet points 2-7	• If directed to keep water out of the… • Utilize storm drain inlet protection…	• Identify, remove, and properly… • Cover stormwater inlets to… • Use dust control methods as… • See City of Tacoma Policy ESD16-1…	3-69 Pink
Update of text under BMP S126	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.2.3 Recommended Additional BMPs Subheading and first and second bullet points	Recommended BMPs • Use dust control methods... • If possible, a wall should be constructed to prevent stray building materials and dust from escaping the area during demolition.	2.5.2.3 Recommended Additional BMPs The following BMPs are not required... • If possible, a screen or wall should be constructed to prevent stray building materials and dust from escaping the area during demolition.	3-69 & 3-70 Purple and Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.3 BMP S127: Building, Repair, Remodeling and Construction	BMP A503: Building, Repair, Remodeling and Construction	2.5.3 BMP S127: Building, Repair, Remodeling and Construction	3-71 Purple
Update of heading and text under BMP S127	Updated language for clarity/ readability and deleted text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.3.1 Applicability Subheading and first paragraph below subheading heading	Description of Pollutant Sources This activity refers to activities associated with construction of buildings and other structures, remodeling of existing buildings and houses, and general exterior building repair work. Washing of buildings is covered under Volume 4, Section 4.2.3. Painting of buildings is covered under A307 Painting, Finishing, and Coating of Vehicles, Boats, Buildings, and Equipment. Concrete pouring is covered under A302 Concrete Pouring and Asphalt Application at Temporary Sites.	2.5.3.1 Applicability This activity refers to activities associated with construction of buildings and other structures, remodeling of existing buildings and houses, and general exterior building repair work.	3-71 Purple & Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP S127	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.3.2 Required BMPs Bullet points 5, 7, 9 & 10. Page 3-66	• Absolutely no substance can be dumped on pavement, the ground, or in or toward storm drains, regardless of its content, unless it is only uncontaminated water. • Inlet protection as described in Volume 2, BMP C220: Storm Drain Inlet Protection must…	• Absolutely no substance can be dumped on pavement, the ground, or in or toward stormwater inlets, curbs, or receiving waterbodies, regardless of its content, unless it is only uncontaminated water. • Cover stormwater inlets to prevent dirty stormwater from entering... • Use dust control methods as described in BMP A601:...	3-71 Purple & Pink
Update of subheading and text under BMP S127	Update language to match Ecology's intent, for readability, and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.3.3 Recommended Additional BMPs Subheading and bullet points 2 -4	Recommended BMPs • Use dust control methods as described in Volume 2... • Activities such as tool cleaning should occur over a ground cloth or within a containment device such as a tub.	2.5.3.3 Recommended Additional BMPs • Perform work in dry weather when possible. If work must take place in wet weather, provide cover for activities when possible.	3-72 Purple, Grey, & Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.4 BMP S128: Roofs and Building Drains	BMP A708: Roof and Building Drains at Manufacturing and Commercial Buildings	2.5.4 BMP S128: Roofs and Building Drains	3-73 Purple
Update of subheading and text under BMP S128	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.4.1 Applicability Subheading and first two sentences under subheading	Description of Pollutant Sources	2.5.4.1 Applicability This BMP applies to roofs and their associated gutters and downspouts. This BMP applies to commercial (including multi-family such as apartment buildings) and industrial buildings and roofed structures.	3-73 Purple
Update of text under BMP S128	Updated language to match Ecology's intent and delete text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.5.4.2 Required BMPs Last sentence of first bullet & bullets 2 & 4	• If leachates and/or emissions from buildings are suspected sources of stormwater pollutants, these surfaces are considered pollution-generating impervious surfaces and may require treatment per Volume 1, 3.4.6 Minimum Requirements #6. • Water quality treatment BMPs are found in Volume 5 of this manual.	Review the Washington State Department of Ecology Publication: Suggested Practices to Reduce Zinc Concentrations in Industrial Stormwater Discharges (Ecology, 2008) • If leachates and/or emissions from buildings are suspected sources of stormwater pollutants, sample and analyze the stormwater from the building to determine the pollutants of concern. Use the information to help determine the most appropriate BMP.	3-73 Pink & Grey

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Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.1 BMP S130: Manufacturing Operations – Outside	BMP A309: Manufacturing Operations – Outside	2.6.1 BMP S130: Manufacturing Operations – Outside	3-78 Purple
Update of subheading and text under BMP S130	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.1.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.6.1.1 Applicability This BMP applies to any property where manufacturing operations take place outside, have taken place outside, or where operations inside may affect outside areas.	3-78 Purple
Update of text under BMP S130	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.1.2 Required BMPs Bullet 4 under subheading	• Cover the activity and connect floor drains to a sanitary sewer, if approved by the City of Tacoma. Berm or slope the floor as needed to prevent drainage of pollutants to outside areas (see Figure 4 - 6).	• Cover the activity and connect floor drains to the wastewater system, if approved by the City of Tacoma. Berm or slope the floor as needed to prevent drainage of pollutants to outside areas (see Figure 4 - 6).	3-78 Purple
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.2 BMP S131: Manufacturing and Post-Processing of Metal Products	BMP A303: Manufacturing and Post-Processing of Metal Products	2.6.2 BMP S131: Manufacturing and Post-Processing of Metal Products	3-80 Purple
Update of subheading under BMP S131	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.2.1 Applicability	4.4.3.1 Description of Pollutant Sources	2.6.2.1 Applicability	3-80 Purple
Update of text under BMP S131	Update language for clarity/readability and deleted text where information is not needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.2.2 Required BMPs Second and third bullet points	• Process wastewater (including contact cooling water, filter backwash, cooling tower blowdown, etc.), and stormwater runoff from activity areas, must discharge to a sanitary sewer, holding tank, or process treatment system before discharge to surface water or storm drain. Contact the City of Tacoma Source Control at 253-591-5588 to obtain permits for discharge to the sewer. See BMP S103 for detailed requirements. • Employees must be educated to control their work with metal products to minimize pollution.	• Process wastewater (including contact cooling water, filter backwash, cooling tower blowdown, and stormwater from activity areas. See BMP S103 for detailed requirements.	3-80 Purple & grey
Update of subheading and text under BMP S131	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.2.3 Recommended Additional BMPs Subheading and second bullet point	Recommended BMPs • Cover the activity area to prevent rain from contacting the process and reduce the amount of runoff that has to be detained or treated.	2.6.2.3 Recommended Additional BMPs • Cover the activity area to prevent rain from contacting the process and reduce the amount of contaminated stormwater.	3-80 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.3 BMP S132: Painting, Finishing and Coating of Vehicles, Boats, Buildings and Equipment	4.4.7 BMP A307: Painting, Finishing and Coating of Vehicles, Boats, Buildings and Equipment	2.6.3 BMP S132: Painting, Finishing and Coating of Vehicles, Boats, Buildings and Equipment	3-82 Purple
Update of subheading and text under BMP S132	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.3.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.6.3.1 Applicability This BMP applies to properties and instances in the ROW that involve painting, finishing, and coating of vehicles, boats, buildings, and equipment.	3-82 Purple
Update of text under BMP S132	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.6.3.2 Required BMPs Bullet points 4, 5, 8, & 12.	• On marine dock areas, sweep or vacuum rather than hose down debris. Collect any hose water generated and convey to appropriate treatment and disposal. • Use a storm drain cover, filter fabric, or similarly effective runoff control device if dust, grit, washwater, or other pollutants may escape the work area and enter a catch basin… • Clean paintbrushes and tools covered...	• On dock areas, sweep or vacuum rather than hose down debris. Collect any hose water generated and convey to appropriate treatment and disposal. • Use stormwater inlet protection if dust, grit, washwater, or other pollutants may escape the work area and enter a stormwater inlet… • Clean brushes and tools covered with…	3-82 Purple
Update of BMP heading	Update language for clarity/readability and deleted text where information is not needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.7 Production and Application Activities (deleted) 2.7.1 BMP S133: Concrete and Asphalt Mixing and Production at Stationary Sites	Production and Application Activities BMP A301: Concrete and Asphalt Mixing and Production at Stationary Sites	2.7.1 BMP S133: Concrete and Asphalt Mixing and Production at Stationary Sites	3-84 Purple
Update of subheading and text under BMP S133	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.7.1.1 Applicability Subheading and first paragraph under subheading	Description of Pollutant Sources This activity applies to businesses and agencies that mix raw materials onsite to produce concrete or asphalt. It also applies to subsequent uses such as pouring concrete structures and making other concrete or asphalt products. Mobile concrete pouring and asphalt application are covered under BMP A302. Requirements for stockpiling of raw materials are covered under BMP A401 Storage or Transfer (Outside) of Solid Raw Materials, By-products or Finished Products.	2.7.1.1 Applicability This activity applies to businesses and agencies that mix raw materials onsite to produce concrete or asphalt. It also applies to subsequent uses such as pouring concrete structures and making other concrete or asphalt products. Requirements for stockpiling of raw materials are covered under BMP S115: Storage or Transfer (Outside) of Solid Raw Materials, By-Products or Finished Products.	3-84 Purple & Blue

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Update of text under BMP S133	Updated language for clarity/ readability and deleted text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.7.1.2 Required BMPs First paragraph and third bullet point.	The following BMPs or equivalent measures are required of all businesses and public agencies active in concrete and asphalt mixing and production: • A BMP maintenance schedule must be established, maintenance documented, and employees educated about the need to prevent stormwater contamination through the use and proper maintenance of BMPs.	The following BMPs or equivalent measures are required of sites active in concrete and asphalt mixing and production:	3-84 Purple & Grey
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.1 BMP S134: De-Icing and Anti-Icing Operations	BMP A707: De-Icing and Anti-Icing Operations for Streets & Highways	2.8.1 BMP S134: De-Icing and Anti-Icing Operations	3-86 Purple
Update subheading and text under BMP S134	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.1.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.8.1.1 Applicability This BMP applies to any property or ROW that uses de-icers or anti-icers.	3-86 Purple
Update of text under BMP S134	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.1.2 Required BMPs First bullet under subheading	• Select de-icers and anti-icers that cause the least adverse environmental impact. Apply only as needed using minimum quantities.	• Select de-icers and anti-icers that cause the least adverse environmental impact. Apply only as needed using minimum quantities. Consider the Pacific Northwest Snowfighters Qualified Product List when selecting roadway de-icers and anti-icers.	3-86 Pink
Update of BMP heading	Updated language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.2 BMP S135: Streets	BMP A709: Urban Streets	2.8.2 BMP S135: Streets	3-87 Purple & Pink
Update of subheading and text under BMP S135	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.2.1 Applicability Subheading and first paragraph under subheading	4.8.9.1 Description of Pollutant Sources Streets can be sources of vegetative debris, paper, fine dust…	2.8.2.1 Applicability This BMP applies to the general and enhanced maintenance of all streets…	3-87 Pink
Update of text under BMP S135	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.2.2 Required BMPs All bullet points under subheading	• Conduct efficient street sweeping where and when appropriate to minimize the contamination of stormwater. Do not wash street debris into storm drains.	• Conduct efficient street sweeping to minimize… • If washing must be conducted… • Use drip pans or absorbents… • Cover and contain nearby… • Collect and contain all solids, slurry… • Designate an area onsite for… • Do not use diesel fuel… • Store all fuel, paint... • Conduct paint striping operations...	3-87 Pink

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Deletion of text under BMP S135	Information no longer needed/ updated heading for consistency	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.2.3 Recommended Additional BMPs Subheading and bullet points 1-5 & 8	Recommended BMPs • For maximum stormwater pollutant… • High-efficiency street sweepers utilize... • For moderate stormwater pollutant… • A tandem sweeping operation involves… • For minimal stormwater pollutant… • Street sweeping shall be…	2.8.2.3 Recommended Additional BMPs	3-87 & 3-88 Grey & Purple
Update of BMP heading	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.3 S136: Utility Corridors and Utility Vaults	BMP A711: Maintenance of Utility Vaults	2.8.3 S136: Utility Corridors and Utility Vaults	3-89 Purple & Pink
Update of subheading and text under BMP S136	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.3.1 Applicability Subheading and first paragraph under subheading	Description of Pollutant Sources Utility vaults can be a source of debris, oils and grease, or other contaminants.	2.8.3.1 Applicability This BMP applies to the construction and maintenance of utility corridors such as pipeline and overhead power corridors and associated facilities. This BMP also applies to the maintenance of utilities including both above ground and utility vaults. Utility corridors and vaults may be source of sediment, oil and grease, BOD, organics, PCBs, pesticides, and heavy metals. Utility vaults can be a source of debris, oils and grease, or other contaminants.	3-87 Purple & Pink
Update of text under BMP S136	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.3.2 Required BMPs Bullet points 3--9	NA	• Minimize the amount of herbicides… • When removing water or sediments… • Clean all spills immediately. • Stabilize access roads or areas… • Provide maintenance practices to… • Maintain ditches and culverts... • Apply the appropriate BMPs in...	3-88 & 3-89 Pink
Update of text under BMP S136	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.3.3 Recommended Additional BMPs Subheading and all bullets under subheading	NA	2.8.3.3 Recommended Additional BMPs • When selecting utility poles for a... • As soon as practicable remove all litter from wire cutting/replacing operations. • Implement temporary erosion and sediment control in areas cleared of trees and vegetation and during the construction of new roads.	3-90 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.4 S137: Maintenance of Ditches and Culverts	BMP A712: Maintenance of Roadside Ditches and Culverts	2.8.4 S137: Maintenance of Ditches and Culverts	3-91 Purple

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Update of subheading and text under BMP S137	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.4.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources Common road debris including litter, eroded soil, oils, vegetative particles, and heavy metals can be sources of stormwater pollutants.	4.8.4.1 Applicability This BMP applies to the maintenance of all ditches and culverts that are specifically designed for or that can transport stormwater. Common road debris including litter, eroded soil, oils, vegetative particles, and heavy metals can be sources of stormwater pollutants.	3-91 Purple
Update of text under BMP S137	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.4.2 Required BMPs Last three bullet points under subheading	• Street waste shall be disposed of in accordance with Volume 4, Appendix D.	• Do not apply fertilizers or herbicides in ditches. • Use temporary erosion and sediment control BMPs and revegetated are necessary when performing ditch maintenance.	3-91 Purple & Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.5 BMP S138: Water Reservoir, Transmission Mainline, Wellhead, and Hydrant Flushing Activities	BMP A714: Water Reservoir, Transmission Mainline, Wellhead, and Hydrant Flushing Activities	2.8.5 BMP S138: Water Reservoir, Transmission Mainline, Wellhead, and Hydrant Flushing Activities	3-93 Purple
Update of subheading and text under BMP S138	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.5.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.8.5.1 Applicability This BMP applies to properties or locations in the ROW that handle operations of water infrastructure.	3-93 Purple
Update of text under BMP S138	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.5.2 Required BMPs Bullet points 1-5	• Discharges of untreated hyperchlorinated… • Alternatively, non-emergency discharges of de-chlorinated potable water such as hydrant flushing may go to the storm drainage system at prior approved flow rates provided the following limits are met: ◦ Chlorine residual 0.1 ppm ◦ pH 6.5 – 8.5 ◦ Turbidity 10 NTU Coordinate with the City of Tacoma Sewer Transmission section at 253-591-5585. The receiving storm pipe shall be monitored for the duration of the discharge.	• Remove solids from associated curbs… • Do not over apply dechlorination… • Conduct flushing on dry days… • Untreated hyperchlorinated water… • Alternatively, non-emergency discharges of de-chlorinated potable water such as hydrant flushing may go to the stormwater system at prior approved flow rates provided the following limits are met: ◦ Chlorine residual 0.1 ppm ◦ pH 6.5 – 8.5 ◦ Turbidity 10 NTU	3-93 Pink & Purple
Update of BMP heading	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.6 BMP S139: Stormwater System Maintenance	BMP S109: Cleaning Catch Basins	2.8.6 BMP S139: Stormwater System Maintenance	3-95 Purple & Pink

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Updated text under BMP S139	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.8.6.1 Applicability & 2.8.6.2 Required BMPs Subheadings and all text under subheadings	Cleaning catch basins regularly is one… For additional information on the… It should be apparent that the use… Use of catch basin inserts such as filter socks, absorbent pillows, and filter baskets require an increased inspection frequency to prevent plugging and flooding. For a list of cleaning and sweeping services, go to www.cityoftacoma.org/stormwater. Dispose of street waste in accordance with Appendix D of this volume.	2.8.6.1 Applicability This BMP applies to all properties... 2.8.6.2 Required BMPs • Properly maintain all portions of… • Maintain stormwater treatment… • Inspect and clean treatment BMPs… • Promptly repair any deterioration… • Ensure adequacy of storm sewer… • Regularly remove debris and sludge… • Clean catch basins when the depth… • Properly dispose of all solids, polluted... • Clean woody debris in a catch basin... • Post warning signs; "Dump no Waste... • Dispose of sediment and liquids...	3-95 & 3-96 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.1 BMP S140: Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots	BMP A601: Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots	2.9.1 BMP S140: Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots	3-97 Purple
Update subheading and text under BMP S140	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.1.2 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.9.1.2 Applicability This BMP applies to all properties and ROW in the City of Tacoma with unpaved driving surfaces.	3-96 Purple
Update of text under BMP S140	Update language to match Ecology's intent, for readability, and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.1.2 Required BMPs Bullet points 2, 4, 6, 7, 8 & 9.	• Use only local and/or state government approved dust suppressant chemicals such as those listed in Ecology Publication #96-433, "Techniques for Dust Prevention and Suppression." See BMP C127, Polyacrylamide for Soil Erosion Protection, in Volume 2, Chapter 3 of this manual. • Use stormwater containment to prevent the conveyance of solids by stormwater into storm drains or receiving waters. • Consult with the Ecology Southwest Regional Office at 360-407-6300 on discharge permit requirements if the dust suppression process results in a wastewater discharge to the ground, groundwater, storm drain, or surface water.	• Use only local and/or state government approved dust suppressant chemicals such as those listed in Ecology Publication #96-433, "Techniques for Dust Prevention and Suppression." • Use stormwater containment to prevent the conveyance of solids sediment into the stormwater system or receiving waters. • Consult with the Ecology Southwest Regional Office at 360-407-6300 on discharge permit requirements if the dust suppression process results in a wastewater discharge to the ground, groundwater, stormwater system, or surface water. • Contact the Puget Sound Clean Air... • Protect stormwater inlets during... • Install inlet protection in stormwater...	3-97 Grey, Purple & Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of subheadings under BMP S140	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.1.3 Recommended Additional BMPs for Roadways and Other Trafficked Areas 2.9.1.4 Recommended Additional BMPs for Dust Generating Areas First bullet under subheading	Recommended BMPs for Roadways and Other Trafficked Areas Recommended BMPs for Dust Generating Areas • Prepare a dust control plan. Helpful references include Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures (EPA-450/2-92-004).	2.9.1.3 Recommended Additional BMPs for Roadways and Other Trafficked Areas 2.9.1.4 Recommended Additional BMPs for Dust Generating Areas • Prepare a dust control plan. Helpful references include Control of Open Fugitive Dust Sources (Cowherd et al., 1988) and Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures (EPA-450/2-92-004).	3-97 & 3-98 Purple
Update of text under BMP S140	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) first bullet point under subheading 2.9.1.4, page 3-94	• Prepare a dust control plan. Helpful references include Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures (EPA-450/2-92-004).	• Prepare a dust control plan. Helpful references include Control of Open Fugitive Dust Sources (Cowherd et al., 1988) and Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures (EPA-450/2-92-004).	3-92 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.2 BMP S141: Dust Control at Manufacturing Sites	BMP A602: Dust Control at Manufacturing Sites	2.9.2 BMP S141: Dust Control at Manufacturing Sites	3-99 Purple
Update of subheading and text under BMP S141	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.2.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.9.2.1 Applicability This BMP applies to properties where product manufacturing or other processes may create dust.	3-99 Purple
Added text under BMP S141	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.2.2 Required BMPs Bullets 3-5	NA	• Contact the Puget Sound Clean Air... • Use dust filtration/collection systems... • Maintain dust collection devices on a regular basis.	3-99 Pink
Update of subheading and text under BMP S141	Update language to match Ecology's intent, for readability, and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.2.3 Recommended Additional BMP Subheading and bullet points 2, 3 & 4	Recommended BMPs • Use dust filtration/collection systems such as bag house filters, cyclone separators, etc. to control vented dust emissions that could contaminate stormwater... • Use approved dust suppressants such as those listed in Ecology Publication "Techniques for Dust Prevention and Suppression," #96-433. (Ecology, 2003)... • Additional information on dust control can	2.9.2.3 Recommended Additional BMPs • Use approved dust suppressants such as those listed in Methods for Dust Control (Ecology, 2016b). Some products cannot be used in close proximity to receiving waters. Ensure only appropriate products are used.	3-99 Purple, Pink & Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of BMP Heading	Update heading with brand new language, and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.3 BMP S142: Soil Erosion and Sediment Control at Commercial and Industrial Sites	BMP A603: Soil Erosion and Sediment Control at Industrial Sites	2.9.3 BMP S142: Soil Erosion and Sediment Control at Commercial and Industrial Sites	3-99 Purple & Orange
Update subheading and text under BMP S142	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.3.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.9.3.1 Applicability This BMP applies to properties whose operations may cause erosion.	3-100 Purple
Update of text under BMP S142	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.9.3.2 Required BMPs All text and bullet points under subheading	Permanently stabilize areas not being worked. Apply temporary cover to areas not immediately being worked. Refer to Volume 2 for additional information concerning temporary erosion protection measures.	• Limit the exposure of erodible soil. • Stabilize entrances/exits to prevent… • Stabilize or cover erodible soil to… • If stabilizing or covering the erodible…	3-100 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.1 BMP S143: Landscaping and Lawn/Vegetation Management	BMP A306: Landscaping and Lawn/Vegetation Management	2.10.1 BMP S143: Landscaping and Lawn/Vegetation Management	3-100 Purple
Update of subheading and text under BMP S143	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.1.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.10.1.1 Applicability This BMP applies to all properties and areas of the ROW that have landscaping and/or lawn areas.	3-101 Purple
Update of text under BMP S143	Updated language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.1.2 Required BMPs Bullet points 2 - 11	• Do not dispose of collected vegetation into wetlands, waterways or storm drainage systems.	• Do not dispose of collected vegetation into wetlands, waterways or the stormwater system. • Select the right plants for the… • Ensure that plants selected for… • Do not blow vegetation or… • Dispose of collected vegetation... • Use manual and/or mechanical... • Use at least an 8" topsoil layer... • Select the appropriate turfgrass... • Use the following seeding and... • Adjusting the soil properties of the...	3-101 & 3-102 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of subheading and text under BMP S143	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.1.3 Recommended Additional BMPs Subheadings and bullet points under subheading	Recommended BMPs for Landscaping • Conduct mulch-mowing whenever practicable. • Dispose of grass clippings, leaves, sticks... • Collect all clippings, leaves, bark, and... • Use mulch or other erosion control… • If oil or other chemicals are handled... • Test soil before applying fertilizer... • Till a topsoil mix or composted organic... • Use manual and/or mechanical... • Target irrigation water on vegetated... • Plant growing trees. For more information...	2.10.1.3 Recommended Additional BMPs for Landscaping • Conduct mulch-mowing whenever practicable. • Use native plants in landscaping… • Till a topsoil mix or composted… • Apply an annual topdressing… • Disinfect gardening tools after… • Prune trees and shrubs in a manner... • If specific plants have a high... • When working around and below... • Monitor tree support systems... • When continued, regular pruning... • Make reasonable attempts to... • Reseed bare turf areas until the... • Watch for and respond to new... • Plant and protect trees. • Aerate lawns regularly in areas... • Set the mowing height at the...	3-102 - 3-104 Purple & Pink
Deletion of text under BMP S143	Update language to match Ecology's intent/ information no longer needed in this section	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.1.4 Required BMPs for the Use of Pesticides 2.10.1.5 Recommended BMPs for the use of Pesticides 2.10.1.6 Required BMPs for Vegetation Management 2.10.1.7 Required BMPs for the Use of Fertilizers Subheadings and all text under subheadings	Required BMPs for the Use of Pesticides • Develop and implement an integrated pest management system (IPM) (See BMP S108) and use pesticides only as a last resort... Recommended BMPs for the use of Pesticides • Consider alternatives to the use of pesticides such as covering or harvesting weeds, substitute vegetative growth, and manual weed control/moss removal... Required BMPs for Vegetation Management • Use at least an eight-inch topsoil layer with at least 8 percent organic matter to provide a sufficient vegetation–growing medium. Required BMPs for the Use of Fertilizer • Fertilization needs vary by site depending on plant, soil, and climatic conditions...	NA	3-104 - 3-106 Pink
Update of BMP heading	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.2 BMP S144 Pesticides and Integrated Pest Management	BMP S108: Implement Integrated Pest Management Measures	2.10.2 BMP S144 Pesticides and Integrated Pest Management	3-107 Purple & Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added subheading and text under BMP S144	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.2.1 Applicability Subheading and all text under subheading	NA	2.10.2.1 Applicability This BMP applies to any property or ROW that may be required to use pesticides. Pesticides include herbicides, rodenticides, insecticides, and fungicides. Pesticides are used for weed control, insect control, rodent control, and moss removal among other things. Pesticides can be a source of pentachorophenol, carbamates, organometallics, and sediment.	3-107 Pink
Added subheading and text under BMP S144	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.2.2 Required BMPs Subheading and all bullet points under subheading	NA	2.10.2.2 Required BMPs • Train employees on proper… • Follow manufacturers' application… • Do not apply pesticides in quantities… • Conduct spray applications during… • Clean up any spilled pesticides… • Remove weeds/vegetation in… • Flag all sensitive areas including... • Post notices and delineate the... • Refer to S411 BMPs for Landscaping... • Conduct any pest control activity... • Mix pesticides and clean the... • The pesticide application equipment... • Implement a pesticide-use plan... • Develop and implement an Integrated...	3-106 - 3-109 Pink
Added subheading and text under BMP S144	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.2.3 Recommended Additional BMPs:	NA	2.10.2.3 Recommended Additional BMPs: • Choose the least toxic pesticide… • Choose pesticides categorized by EPA… • When possible, apply pesticides… • If possible, do not spray pesticides… • Use manual pest control strategies… • Consider alternatives to the use of... • Consider the use of soil amendments... • Once a pesticides is applied... • Follow the FIFRA label requirements... • Develop an and adaptive...	3-109 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added subheading and text under BMP S144	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.2.4 Additional Information Subheading and all text under subheading	NA	2.10.2.4 Additional Information • For more information, refer to the Pesticide Information Center Online (PICOL) Databases at http://cru66.cahe.wsu.edu/LabelTolerance.html. • Washington pesticide law requires…	3-110 Pink
Deletion of text under BMP S144	Updated language to match Ecology's intent/ deletion of text no longer needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.10.2.4 Additional Information All text after first two bullet points under subheading	Use of herbicides, fungicides, and… Commercial, agricultural, municipal, and… IPM is a preventive measure aimed at… Monitoring of pest populations is a key to… Additional concerns are storage, equipment… More information on IPM is available from…	NA	3-110 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.11.1 BMP S147: Commercial Animal Handling Areas	BMP A701: Commercial Animal Handling Areas	2.11.1 BMP S147: Commercial Animal Handling Areas	3-115 Purple
Update of subheading and text under BMP S147	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.11.1.1 Applicability Subheading and first two sentences under subheading	Description of Pollutant Sources	2.11.1.1 Applicability This BMP applies to properties that handle animals as part of their business practice. These may include businesses such as kennels, animal day care services, and veterinarians.	3-115 Purple
Update of text under BMP S147	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.11.1.2 Required BMPs Bullet points 2-4 & 7-10	• Do not hose down to storm drains or receiving... • Contaminated water must go to the sanitary sewer. An animal fur/hair ... • Do not allow any wash water to be... • Uncovered outdoor runs shall not be connected to the sanitary sewer system unless approved by Environmental Services. No contaminated runoff may enter... • Unused pet pharmaceuticals shall not be discharged to the municipal sewer system. They shall be returned to the animal's...	• Do not hose down to the stormwater system or receiving… • Contaminated water, including washwater, must go to the wastewater system. An animal fur/hair… • Uncovered outdoor runs shall not be connected to the sanitary sewer system unless approved by Environmental Services. Cover outdoor areas when... • Unused pet pharmaceuticals shall not be discharged to the stormwater system or wastewater system. See https://www.tpchd.org/healthy... • Where areas need to be disinfected... • Do not stockpile animal waste...	3-115 Purple & Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added text under BMP S149 BMPs for Pet Waste	Update text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.11.3.3 Recommended BMPs for Recreation Areas and Multi-Family Properties Last bullet point under subheading	NA	• See BMP S167: Rooftop Dog Runs for properties with rooftop dog areas.	3-118 Orange
Added BMP S167	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.11.4 BMP S167: Rooftop Dog Runs All subheadings and text under heading	NA	2.11.4 BMP S167: Rooftop Dog Runs 2.11.4.1 Applicability This BMP applies to properties that… 2.11.4.2 Required BMPs • Prevent stormwater from the dog run from discharging into the stormwater system…	3-119 Orange
Update of BMP Heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.1 BMP S150: Log Sorting and Handling	BMP A702: Log Sorting and Handling	2.12.1 BMP S150: Log Sorting and Handling	3-120 Purple
Update of subheading and text under BMP S150	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.1.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.12.1.1 Applicability This BMP applies to businesses that store, sort, and handle logs for production into wood or paper products.	3-120 Purple
Update of subheading and text under BMP S150	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.1.2 Washington State Department of Ecology Industrial Permit Requirements: Subheading and text in paragraph under subheading	Ecology's Baseline General Permit Requirements: Industries with log yards are required to obtain coverage under the baseline General Permit for Discharges of Stormwater Associated with Industrial Activities to Surface Water. The permit requires preparation and on-site retention of Stormwater Pollution Prevention Plans (SWPPP). The SWPPP must identify operational, source control, erosion and sediment control, and, if necessary, treatment BMPs. Required and recommended operational, source control, and treatment BMPs are presented in detail in Ecology's Guidance Document: Industrial Stormwater General Permit Implementation Manual for Log Yards, Publication # 04-10-031. It is recommended that all log yard facilities obtain a copy of this document.	2.12.1.2 Washington State Department of Ecology Industrial Permit Requirements: Industries with log yards or areas where logs are sorted or loaded are required to obtain coverage under the baseline General Permit for Discharges of Stormwater Associated with Industrial Activities to Surface Water. The permit requires preparation and on-site retention of Stormwater Pollution Prevention Plans (SWPPP). The SWPPP must identify operational, source control, erosion and sediment control, and, if necessary, treatment BMPs. Required and recommended operational, source control, and treatment BMPs are presented in detail in Industrial Stormwater General Permit Implementation Manual for Log Yards (Ecology, 2016c). It is recommended that all log yard facilities obtain a copy of this document.	3-120 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of BMP Heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.2 BMP S151: Wood Treatment Areas	BMP A304: Wood Treatment Areas	2.12.2 BMP S151: Wood Treatment Areas	3-121 Purple
Update of text under BMP S151	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.2.2 Required BMPs All text and bullet points under subheading	All wood treating facilities in Washington State are required to be covered under an Individual NPDES Permit and may require an Industrial Wastewater Discharge Permit from the City of Tacoma. The individual NPDES Permit will describe the BMPs applicable to the site.	Wood treatment facilities are required to obtain either an Industrial Stormwater… • Use dedicated equipment for… • Eliminate non-process traffic on the… • Immediately remove, contain, and… • If incidental drippage is discovered… • Cover and/or enclose, and contain… • Cover storage areas for freshly… • Seal any holes or cracks in the… • Elevate stored and/or treated… • Place dipped lumber over the drip… • Freshly treated lumber from dip…	3-121 Pink
Updated text under BMP S151	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.2.3 Recommended Additional BMPs Subheading and text under subheading	NA	2.12.2.3 Recommended Additional BMPs • Consider using preservative chemicals that do not adversely affect receiving waters.	3-122 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.4 BMP S153: Farmer's Markets	BMP A405: Farmer's Markets	2.12.4 BMP S153: Farmer's Markets	3-125 Purple
Update of subheading and text under BMP S153	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.4.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.12.4.1 Applicability This BMP applies to farmer's markets.	3-125 Purple
Update of BMP Heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.6 BMP S155: Recyclers and Scrap Yards	4.5.6 BMP A406: Recyclers and Scrap Yards	2.12.6 BMP S155: Recyclers and Scrap Yards	3-128 Purple
Update of subheading and text under BMP S155	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.6.1 Applicability Subheading and first sentence under subheading	4.5.6.1 Description of Pollutant Sources Includes businesses that reclaim various materials for resale or for scrap, such as vehicles and vehicle/ equipment parts, construction materials, metals, computers, appliances, beverage containers, and papers.	2.12.6.1 Applicability This BMP applies to businesses that reclaim various materials for resale or for scrap, such as vehicles and vehicle/ equipment parts, construction materials, metals, computers, appliances, beverage containers, and papers.	3-128 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP S155	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.6.2 Required BMPs All text and bullet points under subheading	For facilities subject to Ecology's Industrial Stormwater General Permit... Contact the City of Tacoma Source Control Unit at 253-591-5588 if contact stormwater or process wastewater is to be discharged from your site.	• For facilities subject to Ecology's… • Check incoming scrap materials… • Drain and transfer fluids from vehicles… • Remove batteries and store on the… • Cover and raise any materials that… • Cover and contain stockpiles of any… • All containers used to store fluids... • Inspect storage areas regularly... • Sweep scrap storage areas as needed... • Keep spill cleanup materials in a...	3-128 & 3-129 Pink
Update of subheading and text under BMP S155	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.6.3 recommended Additional BMPs: Subheading and all bullets under subheading	NA	2.12.6.3 recommended Additional BMPs: • Install catch basin inserts to collect… • Conduct automobile/vehicle metal…	3-129 Purple
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.7 BMP S156: Commercial Composting	BMP A305: Commercial Composting	2.12.7 BMP S156: Commercial Composting	3-130 Purple
Update of subheading and text under BMP S156	Updated language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.7.1 Required BMPs Subheading and first sentence under subheading and bullets 2-14	Required BMPs for Commercial Composting • Develop a plan of operations as outlined in the Composting Facility Standards (WAC 173-350-220) and in the Individual NPDES Permit.	2.12.7.1 Required BMPs This BMP applies to commercial composting facilities. • See Siting and Operating… • See Ecology's Organic Materials… • All composting facilities shall… • Visit tacomapermits.org for... • Visit https://ecology.wa... • Visit the Tacoma-Pierce County... • Screen incoming wastes for... • Locate composting areas on... • Drain all leachate from composting... • Collect the leachate with a dike... • Do not allow runon into the... • Clean up debris from yard areas...	3-130 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of subheading and text under BMP S156	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.7.3 Recommended Additional BMPs Subheading and bullets 3 & 4	Recommended BMPs for Commercial Composting	2.12.7.3 Recommended Additional BMPs • Install catch basin inserts to collect excess sediment and debris if necessary. Inspect and maintain catch basin inserts to ensure they are working correctly. • Locate stored residues in areas designed to collect leachate and limit storage time to prevent degradation and generation of leachate.	3-130 & 3-131 Purple & Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.8 BMP S157: Commercial Printing Operations	BMP A308: Commercial Printing Operations	2.12.8 BMP S157: Commercial Printing Operations	3-132 Purple
Update of subheading and text under BMP S157	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.8.1 Applicability Subheading and first sentence under subheading	Description of Pollutant Sources	2.12.8.1 Applicability This BMP applies to commercial printing businesses…	3-132 Purple
Update of text under BMP S157	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.8.2 Required BMPs Bullet points 1 & 2	• Discharge process wastewaters to a sanitary sewer (if approved… • Do not discharge process wastes or wastewaters into storm drains or surface water…	• Discharge process wastewaters to the wastewater system (if approved… • Do not discharge process wastes or wastewaters into the stormwater system…	3-132 Purple
Update of subheading and text under BMP S157	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.8.3 Recommended BMPs (deleted subheading) Subheading and last paragraph under subheading	Recommended BMPs For additional information on pollution prevention the following Washington Department of Ecology publications are recommended: A Guide for Screen Printers, Publication #94-137 and A Guide for Lithographic Printers, Publication #94-139.	For additional information see the Washington Start Department of Ecology publication: Environmental Management and Pollution Prevention: A Guide for Lithographic Printers (Publication 94-139) - available at https://ecology.wa.gov/About-us/Online-tools-publications/Publications-forms.	3-132 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.9 BMP S158: Boat Building, Mooring, Maintenance and Repair	4.8.3 BMP A703: Boat Building, Mooring, Maintenance and Repair	2.12.9 BMP S158: Boat Building, Mooring, Maintenance and Repair	3-133 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of subheading and text under BMP S158	Update language to match Ecology's intent, for readability, and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.9.1 Applicability Subheading and first sentence and last sentence of first paragraph, table, italic heading: 'Washington State Department of Ecology Permitting Requirements' and text under heading	Description of Pollutant Sources Related activities are covered under the following activity headings in this manual, and other BMPs provided in this manual: A103 Washing, Pressure Washing, and Steam Cleaning of Vehicles/Equipment/Building Structures. A202 Fueling at Dedicated Stations A407 Storage of Liquid, Food Waste or Dangerous Waste Containers A714 Spills of Oil and Hazardous Substances	2.12.9.1 Applicability This BMP applies to properties that build, moor, and maintain boats. *Washington State Department of Ecology Permitting Requirements* Ecology's statewide Boatyard General Permit applies to boatyards that discharge stormwater from areas with industrial activities to the ground, a surface waterbody, or a stormwater system...	3-133 Purple, Grey & Pink
Update of text under BMP S158	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.9.2 Required BMPs First paragraph and bullet points 2 - 17, 23, 25 & 26 under subheading	Required BMPs The following BMPs or equivalent measures are required of all businesses, public agencies, and private boat owners engaged in boat building, mooring, maintenance and repair that are not covered by the NPDES permit for boatyards: • Blasting and spray painting activities must… • Bermed ground cloths must be used for… • Sewage from sanitary holding tanks on ships must be approved for discharge to the sanitary sewer… • Maintenance yard areas must be swept and cleaned, without hosing down the area, at least once per week or as needed... • Docks and boat ramps must be swept at least once per week or as needed and the collected materials must be disposed of properly.	2.12.9.2 Required BMPs • Do not perform extensive repair… • Use plastic or tarpaulin barriers… • Enclose, cover, or contain blasting… • Direct deck drainage to a collection… • Store cracked batteries in covered… • Immediately repair or replace… • Use drip pains, drop cloths... • Maintain automatic bilge pumps to... • Do not dump or pour waste... • Uncontained spray painting, blasting... • Outside spray painting, blasting, and... • Do not burn paint and/or use spray... • Immediately clean all spills... • Locate spill kits so they are readily... • Sewage from sanitary holding tanks on ships must be approved for discharge to the wastewater system... • Maintenance yard areas must be swept and cleaned, without hosing down the area regularly... • Docks and boat ramps must be swept regularly, and the collected materials must be disposed of properly. Dry docks must be swept before flooding.	3-133 - 3-135 Purple & Pink
Update of subheading and text under BMP S158	Updated language for clarity/ readability and deleted text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.9.3 Recommended Additional BMPs Subheading and bullet points 7 & 10	Recommended BMPs • Citizens for a Healthy Bay, a local… • Check the Resource Manual for Pollution…	2.12.9.3 Recommended Additional BMPs	3-135 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of BMP heading	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.10 BMP S159: Swimming Pools, Spas, Hot Tubs, and Fountains	BMP A706: Swimming Pool and Spa Cleaning and Maintenance	2.12.10 BMP S159: Swimming Pools, Spas, Hot Tubs, and Fountains	3-136 Purple & Pink
Update of text under BMP S159	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.10.1 Applicability First paragraph under subheading	This activity applies to all municipal and commercial swimming pools and spas, including Tacoma-Pierce County Health Department (TPCHD) regulated facilities. Pools and spas at hotels, motels, and apartment and condominium complexes are covered here. Pools at single-family residences are covered in Chapter 3 of this volume. Commercial pool and spa cleaning services must follow the required BMPs for all pools serviced.	This activity applies to all swimming pools, spas, hot tubs, and fountains used for recreational and/or decorative purposes that may use chemicals and/or are heated including Tacoma-Pierce County Health Department (TPCHD) regulated facilities. Pools at single-family residences are covered in Chapter 3 of this volume. Commercial pool and spa cleaning services must follow the required BMPs for all pools serviced.	3-136 Purple & Pink
Update of text under BMP S159	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.10.2 Required BMPs Bullet points 1-10	• The preferred method of pool or spa water disposal is to the sanitary sewer... • If discharge to the sanitary sewer is not possible, pool and spa water may be discharged to a ditch or storm drainage system, provided that the water has been dechlorinated first... • State law allows discharges of pool water to the ground, not to a water body or storm drainage system, with a chlorine level of up to 3 parts per million...	• Clean the pool, spa, hot tub, or fountain regularly... • Store chemicals inside. • Properly dispose of spent chemicals... • When the facility needs to be drained, drain all water to the wastewater system when feasible... • If discharge to the wastewater system is not possible, discharge to the stormwater system may be possible provided discharge water is: • Ensure the pool, spa, hot tub, or fountain system is free of leaks and operates within the design parameters. • Do not connect the pool, spa, hot tub, or fountain system to the stormwater system.	3-136 & 3-137 Purple
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.11 BMP S160: Railroad Yards	BMP A710: Railroad Yards	2.12.11 BMP S160: Railroad Yards	3-138 Purple
Update subheading and text under BMP S160	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.11.1 Applicability Subheading and first sentence under subheading.	Description of Pollutant Sources	2.12.11.1 Applicability This BMP applies to railroad yards.	3-138 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP S160	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.11.2 Required BMPs Bullet points 5-18 & paragraph under bullet 18	In areas subject to leaks/spills of oils or other chemicals, convey the contaminated stormwater to appropriate treatment such as a CP or API oil/water separator for floating oils, or other appropriate treatment BMP (as approved by the City of Tacoma). See Volume 5. Prior to disposal, certain areas may require discharge to sanitary sewer.	• When undergoing routine… • During maintenance, do not discard… • Handle wastes generated from large… • Store any metal scrap generated… • Do not dump, drain, or allow the… • Place track mats under each rail/… • Select cost-effective rail/flange… • Inspect and replace track mats, as... • Install spill containment pans/trays... • During locomotive fueling operations... • Install track mats at designated... • Do not conduct heavy/major... • Store creosote-treated railroad ties... • In areas subjected to leaks/spills of...	3-138 & 3-139 Pink & Purple
Update of text under BMP S160	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.11.2 Required BMPs Bullet points 20 - 33	NA	• When undergoing routine… • During maintenance, do not… • Handle wastes generated from… • Store any metal scrap… • Do not dump, drain… • Place track mats under… • Select cost-effective rail/flange… • Inspect and replace track… • Install spill containment... • During locomotive fueling… • Install track mats at... • Do not conduct heavy/major... • Store creosote-treated... • In areas subjected to...	3-139 & 3-140 Pink
Update of text under BMP S160	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.12.11.3 Recommended Additional BMPs Subheading and all text under subheading	NA	2.12.11.3 Recommended Additional BMPs • At each rail/flange lubricator that is in service use rain sensors to adjust the lubrication cycle accordingly to limit the amount of lubricant exposed to stormwater.	3-140 Pink
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.13.1 BMP S162: Proper Disposal	BMP S102: Dispose of Contaminated Stormwater and Waste Materials Properly	2.13.1 BMP S162: Proper Disposal	3-143 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of subheadings and text under BMP S162	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.13.1.1 Applicability 2.13.1.2 Required BMPs Subheadings and all text under subheadings	Every business and residence in Tacoma must dispose of solid… • Sanitary sewer and septic systems • Recycling facilities • Municipal or private, permitted solid… • Permitted hazardous waste treatment… Many liquid wastes and contaminated… If wastes cannot be legally discharged to... Solid wastes that cannot be recycled and... Maintain records for all materials that... Appendix A of this volume has a list of...	2.13.1.1 Applicability This BMP applies to anyone disposing of any liquid or solid waste. 2.13.1.2 Required BMPs • Do not dispose of any waste into… • Limit activities that produce waste… • Categorize waste and dispose of… *Liquid Wastes* • Non-hazardous liquid wastes... • Certain liquids can also... • There may be cases when... *Solid Wastes* • See BMP S117: Storage of Solid Wastes and Food Wastes • Hazardous wastes must be managed…	3-143 & 1-44 Purple
Update of section and BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.14 Structural BMPs 2.14.1 BMP S163: Cover the Activity with a Roof or Awning	Cover and Surround Activities BMP S104: Cover the Activity with a Roof or Awning	2.14 Structural BMPs 2.14.1 BMP S163: Cover the Activity with a Roof or Awning	3-145 Purple
Update of text under BMP S163	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.14.1 BMP S163: Cover the Activity with a Roof or Awning Last two sentences of first paragraph. Second sentence of second paragraph	Contact the Tacoma Planning and Development Services at 253-591-5030 to obtain permits. The installation of sumps or sanitary sewer drains may also be necessary.	Visit tacomapermits.org for additional information. The area of the roof cover shall be sufficient to prevent any precipitation from reaching the covered materials. Provisions shall be made to prevent stormwater run-on into the covered area. The installation of sumps or drains to the wastewater system may also be necessary.	3-145 Purple
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.14.2 BMP S164: Cover the Activity with an Anchored Tarp or Plastic Sheet	BMP S105: Cover the Activity with an Anchored Tarp or Plastic Sheet	2.14.2 BMP S164: Cover the Activity with an Anchored Tarp or Plastic Sheet	3-146 Purple
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.14.3 BMP S165: Pave the Activity Area and Slope to a Sump, Holding Tank, or Oil/Water Separator	BMP S106: Pave the Activity Area and Slope to a Sump, Holding Tank, or Oil/Water Separator	2.14.3 BMP S165: Pave the Activity Area and Slope to a Sump, Holding Tank, or Oil/Water Separator	3-147 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under BMP S165	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.14.3 BMP S165: Pave the Activity Area and Slope to a Sump, Holding Tank, or Oil/Water Separator Last three sentences of first paragraph under subheading	NA	Discharge to the wastewater system may be appropriate in some instances. A Utility Connection Permit with approval from the City of Tacoma Environmental Services is required before connecting any areas to the private wastewater system or the public wastewater system. See tacomapermits.org for additional information.	3-147 Purple
Update of BMP heading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.14.4 BMP S166: Surround the Activity Area with a Curb, Dike, or Berm or Elevate the Activity	BMP S107: Surround the Activity Area with a Curb, Dike, or Berm or Elevate the Activity	2.14.4 BMP S166: Surround the Activity Area with a Curb, Dike, or Berm or Elevate the Activity	3-148 Purple
Update of text under BMP S166	Update language to match Ecology's intent, for readability, and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.14.4 BMP S166: Surround the Activity Area with a Curb, Dike, or Berm or Elevate the Activity First sentence of first paragraph, second paragraph, and last sentence of fifth paragraph	This set of BMP options can be an effective means for prevention of stormwater run-on to an activity area. In addition, a curb, berm, or dike can be used for containment of spills in the activity area, or for containment of contaminated activity runoff. If a curb, berm, or dike is used for runoff containment, and other containment sizing regulations (such as fire codes, Environmental Protection Agency, Department of Ecology or Tacoma-Pierce County Health Department restrictions) do not apply, the containment volume shall be 100% of the volume of the largest tank plus the volume of stormwater runoff from rain events up to the 25-year, 24-hour storm within the containment area is contained or 110% of the volume of the largest tank, whichever is greater. See BMP A714. For permanent storage facilities see BMP A202, A401, A407, and A408.	This set of BMP options can be an effective means for prevention of stormwater run-on to an activity area. In addition, a curb, berm, or dike can be used for containment of spills in the activity area, or for containment of contaminated activity stormwater. If a curb, berm, or dike is used for runoff containment, and other containment sizing regulations (such as fire codes, Environmental Protection Agency, Department of Ecology or Tacoma-Pierce County Health Department restrictions) do not apply, the containment volume shall be 100% of the volume of the largest tank within the containment area is contained or 110% of the volume of the largest tank, whichever is greater.	3-148 Purple, Pink & Grey
Deletion of BMP A302	Removing BMP because information is part of Volume 2.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.14.5 BMP A302: Concrete Pouring, Concrete Cutting, and Asphalt Application at Temporary Sites (deleted) Heading, subheadings and all text	BMP A302: Concrete Pouring, Concrete Cutting, and Asphalt Application at Temporary Sites	NA	3-150 & 3-151 Purple

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Deletion of BMP A402	Deleted language incorporated into new S115.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.15.2 BMP A402: Storage and Treatment of Contaminated Soils Heading, subheadings and all text	4.5.2 BMP A402: Storage and Treatment of Contaminated Soils	NA	3-162 & 3-163 Purple
Deletion of BMP A407	Language incorporated into new S115.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.15.7 BMP A407: Treatment, Storage or Disposal of Dangerous Wastes Heading and all text under heading	BMP A407: Treatment, Storage or Disposal of Dangerous Wastes	NA	3-166 Purple
Deletion of BMP A501	Information no longer needed. Information is part of Volume 2.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.16 . Construction and Demolition Activities 2.16.1 BMP A501: Clearing, Grading and Preparation of Construction Sites Headings and all text under headings	Construction and Demolition Activities BMP A501: Clearing, Grading and Preparation of Construction Sites	NA	3-174 Grey
Deletion of BMP A704	Information no longer needed. Information is part of Volume 2.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.18.4 BMP A704: Logging Headings and all text under headings	BMP A704: Logging	NA	3-183 - 3-185 Grey
Deletion of BMP A713	Updated language for clarity/ readability and deleted text where information is no longer required. Information is part of new S104.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.18.13 BMP A713: Spills of Oil and Hazardous Substances Headings and all text under headings	BMP A713: Spills of Oil and Hazardous Substances	NA	3-190 - 3-192 Purple
Deletion of BMP S101	Update language to match Ecology's intent/ information no longer needed in this section. Information is part of new S100.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.18.15 BMP S101: Eliminate Illicit Storm Drainage System Connections	BMP S101: Eliminate Illicit Storm Drainage System Connections	NA	3-193 Pink
Deletion BMP S103	Information no longer needed. Information is part of Volume 3.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 2 (was Chapter 4) 2.18.17 BMP S103: Discharge Process Wastewater to a Sanitary Sewer, Holding Tank, or Water Treatment System	BMP S103: Discharge Process Wastewater to a Sanitary Sewer, Holding Tank, or Water Treatment System	NA	3-194 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update chapter title	Update for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 3 Chapter 3 BMP S167: BMPs for Homeowners	Chapter 3 BMPs for Homeowners	Chapter 3 BMP S167: BMPs for Homeowners	3-202 Purple
Deletion of text in Chapter 3	Update for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 3 Chapter 3 BMP S167: BMPs for Homeowners All text under subheading	Actions taken each day in and around homes have a profound effect on surface water quality and fish habitat in this region… A general list of best management practices (BMPs) for homeowners is described in this chapter…	NA	3 - 202 Purple
Added text under BMP S167: BMPs for Homeowners	Brand New Language City Only	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 3 3.1 Applicability Heading, subheadings, and all text under subheadings	NA	3.1 Applicability 3.1.1 Washing… 3.1.2 General Home Maintenance… 3.1.3 Automobile and Bicycle Maintenance… 3.1.4 Solid Waste, Recycling, and Yard Waste 3.1.5 Vegetation Management 3.1.6 Swimming Pools, Hot Tubs, and Fountains 3.1.7 Material Storage 3.1.8 Roofs and Building Drains	3-202 - 3-205 Orange
Deletion of text in Chapter 3	Update for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Chapter 3 3.1.8 Roofs and Buildings Drains All text under bullet point	3.2 Automobile Washing (for Single-Family Residences) 3.3 Automobile Maintenance 3.4 Storage of Solid Wastes and Food Wastes 3.5 Composting 3.6 Yard Maintenance and Gardening 3.7 Swimming Pool and Spa Cleaning 3.8 Household Hazardous Material Use 3.9 General Home Maintenance 3.10 Pet Waste	NA	3-205 - 3-211 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of Appendix A	Information no longer needed. Phone numbers change often so inclusion is not appropriate.	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Appendix A	Appendix A Quick Reference Phone Numbers	NA	3-212 Grey
Deletion of Appendix B	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Appendix B	Appendix B Recycling/Disposal of Vehicle Fluids and Other Wastes	NA	3-213 & 3-214 Grey
Deletion of Appendix C	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Appendix C	Appendix C Example of an Integrated Pest Management Program	NA	3-215 - 3-217 Grey
Deletion of Appendix D	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 3 (was Volume 4) Appendix D	Appendix D Management of Street Wastes	NA	3-218 & 3-219 Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New volume/ section	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 4 Purpose	NA	Preserving Drainage Patterns and Outfalls How to Use this Volume Use the information in this volume to ensure compliance with Minimum Requirement #4 - Preserving Drainage Patterns and Outfalls. This volume describes how to ensure compliance with the intent of Minimum Requirement #4 by designing appropriate outfall systems to protect downstream discharge locations.	4-1 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

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New Chapter	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 4 Chapter 1 Preserving Drainage Patterns and Outfalls	NA	Chapter 1 Preserving Drainage Patterns and Outfalls The intent of this Minimum Requirement is to help ensure that stormwater is generally following similar drainage patterns before and after project completion…	4-2 & 4-3 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Original Volume 3, Chapter 11, was moved to this chapter	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 4 Chapter 2	Volume 3 Chapter 11 Outfall Systems	Volume 4 Chapter 2, BMP A400: Outfall Systems	4-4 Purple
Updated text under 2.1.1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 4 Chapter 2 2.1.1 Energy dissipation	• For freshwater outfalls with a… • In marine waters, rock splash... • Engineered energy dissipaters… • Alternate mechanisms may.. • Mechanisms that reduce... Stormwater outfalls submerged in a marine environment can be subject to plugging due to biological growth and shifting debris and sediments... The in-stream sample gabion mattress energy dissipater may not be acceptable within the ordinary high water mark of fish-bearing waters or where gabions will be subject to abrasion from upstream channel sediments...	• State, federal and local permits.. • Outfall structures should be… • Energy dissipaters shall be… • Bank stabilization, bioengineering, and habitat features… • For marine outfalls:… • Gabion outfall and engineered… • The flow dispersion trenches… • Flow dispersion trenches shall:... • Alternative outfall protection... • Piped conveyance systems... • Mechanisms that reduce...	4-5 - 4-7 Pink
Deleted text under subheading 2.1.2, 2.2 & 2.3	Information not needed - now included in subsection 2.1.1	City of Tacoma Stormwater Management Manual	Volume 4 Chapter 2 2.1.2 Flow Dispersion 2.2 Tightline Systems 2.3 Habitat Considerations Headings and all text under headings (excluding figures)	2.1.2 Flow dispersion • The flow dispersal trenches shown in Figure 3 - 38 and Figure 3 - 39 shall not be used unless both criteria below are met:… 2.2 Tightline Systems • Outfall tightlines may be installed in trenches with standard bedding on slopes up to 20%... 2.3 Habitat Considerations • New pipe outfalls can provide an opportunity for low-cost fish habitat improvements...	NA	4-7 - 4-14 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New volume/ section	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 5 Purpose	NA	Onsite Stormwater Management How to Use this Volume Use the information in this volume and design standards for BMPs from the BMP Library to ensure compliance with Minimum Requirement #5 - Onsite Stormwater Management.	5-1 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

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Update of Volume title	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Purpose Stormwater Treatment	Water Quality Treatment BMPs	Stormwater Treatment	6-1 Purple
Update of subheading and text	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Purpose How to Use this Volume Subheading and all text under subheading	Purpose of this Volume This volume focuses on treatment of runoff to remove pollutants at developed sites… Content and Organization of this Volume Volume 5 contains 10 chapters and 4 appendices:…	How to Use this Volume Use the information and design standards for BMPs from the BMP Library to ensure compliance with Minimum Requirement #6 - Stormwater Treatment.	6-1 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of Chapter 1	Updated for clarity/readability. Information no longer needed or is included elsewhere in the manual	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (deleted)	Chapter 1 Treatment Facility Selection Process	NA	6-2 - 6-5 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update Chapter title	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) Chapter 1 Minimum Requirement #6	Chapter 2 Treatment Facility Menus	Chapter 1 Minimum Requirement #6	6-6 Purple
Update of text and subheadings	Updated layout of chapter and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) Chapter 1 Minimum Requirement #6 Text under chapter title	This chapter identifies the treatment facility menus. The menus in this chapter are as follows: • Oil Control Menu, Volume 5, Section 2.1… Performance goals apply to the water quality design storm volume or flowrate, whichever is applicable…	NA	6-6 Purple
New subheading and text	Updated layout of chapter and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.1 Stormwater Treatment Thresholds: Subheading and text under subheading	NA	1.1 Stormwater Treatment Thresholds: Threshold Discharge Areas within projects that trigger the thresholds for Minimum Requirement #6 (See Volume 1 - Minimum Requirements) must install stormwater treatment BMPs… Projects that infiltrate stormwater runoff in the South Tacoma Groundwater Protection District have additional and/or different treatment type requirements…	6-6 Purple
New subheading and text	Updated layout of chapter and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2 Stormwater Treatment Type Heading, subheading and text	NA	1.2 Stormwater Treatment Type The type of stormwater treatment required is based upon the project impacts and receiving waterbody… Projects that infiltrate stormwater runoff in the South Tacoma Groundwater Protection District have additional and/or different treatment type requirements…	6-6 Purple
New subheading and text	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.1 Oil Control 1.2.1.1 When is Oil Control Required? Subheadings and text under subheadings	Oil Control Menu The facilities in this menu are required in addition to facilities required by other treatment menus.	1.2.1 Oil Control 1.2.1.1 When is Oil Control Required? Oil Control BMPs are required for areas within a project site that generate high concentrations of oil due to high traffic turnover or the frequent transfer of oil…	6-6 & 6-7 Purple
Update of subheading and text	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.1.3 Oil Control BMP Options Subheading and text/bullet points, page 6-7	2.1.2 Options Oil control options include facilities that are… • API-Type Oil/Water Separator... • Coalescing Plate Oil/Water Separator... • Linear Sand Filter... • Emerging Stormwater Treatment Technologies…	1.2.1.3 Oil Control BMP Options The following are options that can be used… • BMP T1110: API Separator • BMP T1111: Coalescing Plate Separator • BMP T820: Linear Sand Filter… • BMP xxx - Proprietary Devices Approved…	6-7 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New subheading and text	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.2.1 When is Phosphorus Treatment Required? Subheading and all text under subheading	NA	1.2.2.1 When is Phosphorus Treatment Required? Phosphorus treatment is required for projects within watersheds that are sensitive to phosphorus and are being managed to control phosphorus. Direct and indirect discharges to Wapato Lake require phosphorus treatment when thresholds area met.	6-8 Purple
Update of text under subheading	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.2.2 Performance Goal Last two sentences of text under subheading	The phosphorus menu facility choices must achieve basic treatment goals in addition to phosphorus.	The phosphorus treatment BMPs also provide basic treatment.	6-8 Pink
Update of subheading and text	Updated language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.2.3 Phosphorus Treatment BMP Options Subheading and bullet points under the subheading, bottom half of page 6-8	2.2.2 Options Any one of the following options may be... • Infiltration with appropriate pretreatment... ◦ Infiltration Treatment - If infiltration is... ◦ Infiltration Preceded by Basic Treatment... ◦ Infiltration Preceded by Phosphorus... • Large Sand Filter – See Volume 5... • Large Wetpond – See Volume 5, Chapter 11 • Emerging Stormwater Treatment... • Two-Facility Treatment Trains – See... • Media Filter Drain - See Volume 5...	1.2.2.3 Phosphorus Treatment BMP Options • BMP T809: Large Sand Filter • BMP T1110: Large Wetpond • BMP xxx - Proprietary Devices Approved for Phosphorus Treatment • The two-facility treatment train combines two facilities. The first treatment BMP shall be placed upstream from the second treatment BMP. • BMP T900: Media Filter Drain	6-8 & 6-9 Purple & Pink
Update of table and text under table	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.2.3 Phosphorus Treatment BMP Options Table 6-1 and paragraph under table	<u>First Basic Treatment Facility</u> Biofiltration Swale Filter Strip Linear Sand Filter Basic Wetpond Wetvault Stormwater Treatment Wetland Basic Combined Detention and Wetpool <u>Second Treatment Facility</u> Basic Sand Filter or Sand Filter Vault Linear Sand Filter (no presettling needed) Filter Strip Basic Sand Filter or Sand Filter Vault Basic Sand Filter or Sand Filter Vault Basic Sand Filter or Sand Filter Vault Basic Sand Filter or Sand Filter Vault	<u>First Treatment</u> One of the Following BMPs: • BMP T1010: Basic Biofiltration Swale • BMP T1020: Wet Biofiltration Swale • BMP T1030: Continuous Inflow... • BMP T1110: Basic Wetpond • BMP T1120: Wetvaults • BMP T1130: Stormwater Treatment... • BMP Txxx: Combined Detention and... BMP T1040: Vegetated Filter Strip BMP T820: Linear Sand Filter <u>Second Treatment BMP</u> One of the Following BMPs: • BMP T808: Basic Sand Filter • BMP T810: Sand Filter Vault BMP T820: Linear Sand Filter (no... BMP T1040: Vegetated Filter Strip Some BMPs provide both Enhanced Treatment...	6-9 Pink

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added subheading and text	Updated layout of chapter and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.3 When is Enhanced Treatment Required? Subheading and text under subheading	NA	1.2.3 When is Enhanced Treatment Required? Enhanced treatment is required for industrial, commercial, multi-family, and/or high AADT roads that:…	6-10 Purple
Update of text under subheading	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.3.2 Performance Goal Last sentence of first paragraph under subheading	Enhanced treatment facilities must achieve basic treatment goals in addition to enhanced treatment goals.	Enhanced treatment BMPs also provide basic treatment.	6-10 Pink
Update of subheading and text	Updated language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.3.3 Enhanced Treatment BMP Options Subheading and bullet points under subheading	2.3.2 Options Any one of the following options may be... • Infiltration with appropriate pretreatment... ◦ Infiltration Treatment - If infiltration is... ◦ Infiltration Preceded by Basic... ◦ Infiltration Preceded by Enhanced... • Large Sand Filter – See Volume 5... • Stormwater Treatment Wetland – See... • Two Facility Treatment Trains – See Volume... • Compost-Amended Vegetated Filter Strip... • Bioretention – See Volume 5, Volume 6 • Media Filter Drain - See Volume 5... • Emerging Stormwater Treatment...	1.2.3.3 Enhanced Treatment BMP Options The following BMPs can be used to provide… • BMP T710: Stormwater Treatment... • BMP T723: Stormwater Treatment... • BMP xxx: Stormwater Treatment Drywell • BMP T809: Large Sand Filter • BMP T1130: Stormwater Treatment Wetland • Two Facility Treatment Trains – See Volume 5, Table 2. The two-facility treatment... • BMP T1050: Compost-Amended Vegetated... • BMP T1050: Compost-Amended Vegetated... • BMP T900: Media Filter Drain • BMP xxx - Proprietary Devices Approved...	6-10 & 6-11 Pink & Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of table and text under table	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.3.3 Enhanced Treatment BMP Options Table 6-2 and paragraph under table	First Basic Treatment Facility Biofiltration Swale Filter Strip Linear Sand Filter Basic Wetpond Wetvault Basic Combined Detention/Wetpool Basic Sand Filter or Sand Filter Vault with a... Second Treatment Facility Basic Sand Filter or Sand Filter Vault or Media... Linear Sand Filter with no presettling cell needed Filter Strip Basic Sand Filter or Sand Filter Vault or Media... Basic Sand Filter or Sand Filter Vault or Media... Basic Sand Filter or Sand Filter Vault or Media... Media Filter a. The media filter must be of a type...	First Treatment BMP One of the Following BMPs: • BMP T1010: Basic Biofiltration Swale • BMP T1020: Wet Biofiltration Swale • BMP T1030: Continuous Inflow Biofiltration... • BMP T1110: Basic Wetpond • BMP T1120: Wetvaults • BMP Txxx: Combined Detention and... BMP T1040: Vegetated Filter Strip BMP T820: Linear Sand Filter... One of the Following BMPs: • BMP T808: Basic Sand Filter • BMP T810: Sand Filter Vault Second Treatment BMP One of the Following BMPs: • BMP T808: Basic Sand Filter • BMP T810: Sand Filter Vault • BMP xxx: Proprietary Devices Approved... BMP T820: Linear Sand Filter (no presettling... BMP T1040: Vegetated Filter Strip BMP xxx: Proprietary Devices Approved for Basic... Some BMPs provide both Enhanced Treatment...	6-12 & 6-13 Pink
Added subheading and text	Updated layout of chapter and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.4.1 When is Basic Treatment Required? Subheading and text under subheading	NA	1.2.4.1 When is Basic Treatment Required? Areas that provide phosphorus treatment or enhanced treatment do not have to provide additional basic treatment. Phosphorus and enhanced treatment best management practices provide basic treatment. Basic treatment is required for all areas within a project site that meet the stormwater treatment thresholds but are not required to provide enhanced treatment and/or phosphorus treatment. For threshold discharge areas within a project site with a mix of land use types, basic treatment is required when the runoff from the areas subject to basic treatment compromise 50% or more of the total runoff from the threshold discharge area.	6-13 Purple

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Update of subheading and text	Updated language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 1 (was Chapter 2) 1.2.4.3 subheading and bullet points under subheading, bottom of page 6-13 through top half of page 6-14	2.4.2 Options Any one of the following options may... • Infiltration – See Volume 5, Chapter 7 • Sand Filters – See Volume 5, Chapter 8 • Biofiltration Swales – See Volume 5... • Vegetated Filter Strips – See Volume 5... • Compost Amended Vegetated Filter Strips... • Basic Wetpond – See Volume 5, Chapter 11 • Wetvault – See Volume 5, Chapter 11 A wetvault may be used for commercial... • Stormwater Treatment Wetland – See Volume... • Combined Detention and Wetpool Facilities... • Bioretention – See Volume 6 • Emerging Stormwater Treatment... • Media Filter Drain - See Volume 5, Chapter 9	1.2.4.3 Basic Treatment BMP Options Any one of the following options may... • BMP T710: Stormwater Treatment... • BMP T723: Stormwater Treatment... • BMP xxx: Stormwater Treatment Drywells • BMP T808: Basic Sand Filter • BMP T809: Large Sand Filter • BMP T810: Sand Filter Vault • BMP T820: Linear Sand Filter • BMP T900: Media Filter Drain • BMP T1010: Basic Biofiltration Swale • BMP T1020: Wet Biofiltration Swale • BMP T1030: Continuous Inflow... • BMP T1040: Vegetated Filter Strip • BMP T1050: Compost-Amended... • BMP T1110: Basic and Large Wetpond • BMP T1120: Wetvaults • BMP T1130: Stormwater Treatment Wetlands • BMP Txxx: Combined Detention and... • BMP L633: Permeable Pavements • BMP L630: Bioretention • BMP xxx: Proprietary Devices Approved...	6-13 & 6-14 Pink
Added heading, subheadings & text	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 6 (Volume 5) Chapter 1 (was Chapter 2) 1.2.5 Pretreatment Heading, all subheadings and text under heading	NA	1.2.5 Pretreatment 1.2.5.1 When is Pretreatment Required? Pretreatment best management practices are required:... 1.2.5.2 Performance Goal Pretreatment BMPs are intended to achieve 50% removal of total suspended solids for influent concentrations that are greater 100 mg/L but less than 200 mg/L... 1.2.5.3 Pretreatment Options Any of the following BMPs can be used to satisfy the pretreatment requirement...	6-14 & 6-15 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Deletion of Chapter 3	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 3	Chapter 3 General Requirements for Stormwater Facilities	NA	6-16 - 6-19 Purple
Deletion of Chapter 4	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 4	Chapter 4 Facility Liners	NA	6-20 - 6-23 Purple
Deletion of Chapter 5	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 5	Chapter 5 Hydraulic Structures	NA	6-24 - 6-32 Purple
Deletion of Chapter 6	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 6	Chapter 6 Pretreatment	NA	6-33 Purple
Deletion of Chapter 7	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 7	Chapter 7 Infiltration Treatment Facilities	NA	6-34 - 6-52 Purple
Deletion of Chapter 8	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 8	Chapter 8 Sand Filtration Treatment Facilities	NA	6-53 - 6-66 Purple
Deletion of Chapter 9	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 9	Chapter 9 Media Filter Drain (previously Ecology Embankment) – BMP T900	NA	6-67 Purple
Deletion of Chapter 10	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 10	Chapter 10 Biofiltration Treatment Facilities	NA	6-68 - 6-94 Purple
Deletion of Chapter 11	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 11	Chapter 11 Wetpool Facilities	NA	6-95 - 6-121 Purple
Deletion of Chapter 12	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 12	Chapter 12 Oil Water Separators	NA	6-122 - 6-131 Purple
Deletion of Chapter 13	Contents of chapter are being moved to other sections of manual for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 6 (was Volume 5) Chapter 13	Chapter 13 Emerging Technologies	NA	6-132 - 6-134 Purple

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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New volume/ section	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 7 Purpose Flow Control All text in chapter	NA	Flow Control How to Use this Volume Use the information and design standards for BMPs from the BMP Library to ensure compliance with Minimum Requirement #7 - Flow Control.	7-1 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

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New volume/ section	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 7 Chapter 1 1.3 Flow Control BMP Options Subheading and all text under subheading	NA	1.3 Flow Control BMP Options The following BMPs may be used to help ensure compliance with Minimum Requirement #7 - Flow Control. Many BMPs are also used to help ensure compliance with Minimum Requirement #5 - Onsite Stormwater Management…	7-2 & 7-3 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

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New volume/ section	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 8 Purpose	NA	Wetland Protection How to Use this Volume Use the information and design standards for BMPs from the BMP Library to ensure compliance with Minimum Requirement #8 - Wetlands Protection.	8-1 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New volume/ section	New layout. Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 9 Purpose	NA	Operation and Maintenance How to Use this Volume Use the information in this manual to help ensure compliance with Minimum Requirement #9 - Operation and Maintenance.	9-1 Purple
New volume/ chapter	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 1	NA	Chapter 1 Minimum Requirement #9 - Operation and Maintenance	9-2 Purple
Added text in Chapter 1	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 1 Second bullet point, first sub bullet under chapter heading	NA	◦BMP number and name	9-2 Orange
Revised intro paragraph	New language (City only)	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 2 (was Volume 1 Appendix C) Last six sentences of first paragraph under chapter heading	Stormwater facilities and components should be inspected as specified in the applicable maintenance standards.	The Maintenance Standard includes recommended timeframes for inspection. Maintenance frequency is project site specific depending on factors such as use of the site and traffic volumes. Maintenance frequencies shall be based upon inspections. It is recommended to conduct monthly inspections during the first few years after installation to develop maintenance frequencies. At a minimum, inspections of all components of the stormwater system shall occur yearly.	9-3 Orange
Deleted paragraph under chapter heading	Information not required/ has been updated	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 2 (was Volume 1 Appendix C) Second paragraph under chapter heading	The maintenance standards can be used as inspection forms for the system and associated components. Record the date each time an inspection is completed and note any problems and actions taken. Keep completed forms with the Operations and Maintenance Manual. City staff may request to review the maintenance forms as a part of their inspection process. Some components or facilities do not need to be looked at every time an inspection is conducted. Use the suggested frequency at the left of each item as a guideline for activities to be completed with each inspection.	NA	9-3 Grey
Deleted paragraph under chapter heading	Information not needed	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 2 (was Volume 1 Appendix C) Fourth paragraph under subheading	The Western Washington Low Impact Development Operation and Maintenance Guidance Document can be used for developing an operation and maintenance manual for stormwater systems that contain low impact development BMPs. The document can be found at: http://www.ecy.wa.gov/programs/wq/stormwater/municipal/LID/TRAINING/OperationsAndMaintenance.html.	NA	9-3 Grey
Deleted text under chapter heading	Information not needed	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 2 (was Volume 1 Appendix C) Second paragraph of NOTE: under chapter heading	The City of Tacoma has developed specific template checklists to be used for City maintained facilities. These template checklists shall be used for all City maintained facilities. Do not include the Maintenance Standards contained in Volume C in the Operation and Maintenance Manual - the completed checklist satisfies the maintenance standard requirement.	NA	9-3 Grey

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Update table titles	Updated to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 2 (was Volume 1 Appendix C) Table headings for tables 1 through 27 and table 31	#1 - #27 Maintenance Checklist #30 - Maintenance Checklist	#1 - #27 Maintenance Standard #31 - Maintenance Standard	9-5, 9, 13, 15, 17, 19, 22, 23, 27, 30, 32, 34, 37, 43, 45, 47, 50, 52, 54, 56, 57, 59, 80, 88, 90, 94, 100, 117 Pink
Update of column headings in tables	Updated to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 2 (was Volume 1 Appendix C) Fourth column of all table headers	Conditions to Check For	Condition When Maintenance is Required	9-6 - 9-126, Pink
Added table #28	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 2 (was Volume 1 Appendix C) Table #28 - Ballasted Sidewalk Operation and Maintenance	NA	#28 - Maintenance Standard for Ballasted Sidewalk	9-113 Orange
Added table #33	Updated language to match Ecology's intent and with new language (City only)	City of Tacoma Stormwater Management Manual	Volume 9 Chapter 2 (was Volume 1 Appendix C) Table #33 - Maintenance Standard for Media Filter Drains	NA	#33 - Maintenance Standard for Media Filter Drains	9-125 & 9-126 Pink & Orange

NOTE: Portions of Volume 1. Chapter 3. MR #10, and Volume 3. Chapter 2, 9, 10, and 12 have been moved within the manual and are now found in Volume 10 and show as underlined text with no highlights.

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New Volume/ Purpose	Updated language and layout for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Purpose	NA	Stormwater Conveyance Design and Protection How to Use this Volume Use the information in this volume to ensure compliance with Additional Protective Measure - Infrastructure Protection. This volume shall also be used for analyzing and designing stormwater conveyance systems. Stormwater conveyance systems include pipes, culverts, open channels, and pumps. Information on system outfalls can be found in Volume 4.	10-1 Purple

NOTE: Portions of Volume 1. Chapter 3. MR #10, and Volume 3. Chapter 2, 9, 10, and 12 have been moved within the manual and are now found in Volume 10 and show as underlined text with no highlights.

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New Chapter and new language and table under heading	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 1 Chapter 1 Additional Protective Measure - Infrastructure Protection Chapter heading and all text and table under heading	NA	Chapter 1 Additional Protective Measure - Infrastructure Protection Additional Protective Measure - Infrastructure Protection applies to any project that increases the amount of stormwater runoff to the downstream stormwater conveyance system. Certain projects shall complete a Quantitative Analysis of the existing downstream system before additional stormwater can be added to that system. Table 10-1 Quantitative Analysis Determination Quantitative Analyses shall extend downstream for the entire flowpath from the project site to the receiving waterbody or ¼ mile, whichever is less.	10-2 Purple
New table and language under subheading 1.1	Brand new language	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 1 1.1 Quantitative Analysis for Discharges to the Cleveland Way Pump Station Subheading and all text and tables udner subheading	NA	1.1 Quantitative Analysis for Discharges to the Cleveland Way Pump Station The Cleveland Way Pump Station and portions of the conveyance system leading up to the Cleveland Way Pump Station act as a wet well from which stormwater is pumped... The analysis shall start at the following manholes based upon project site discharge location. Working upstream from the manholes listed below, the tailwater elevation will be set at 90% full pipe elevation... Table 10 -2: 1.1.1 Quantitative Analysis Mitigation Projects that discharge stormwater directly or indirectly to any of the following may have to provide mitigation for Infrastructure Protection:... The type of mitigation is dependent upon Environmental Services review of the project impacts...	10-2 & 10-3, Orange

NOTE: Portions of Volume 1. Chapter 3. MR #10, and Volume 3. Chapter 2, 9, 10, and 12 have been moved within the manual and are now found in Volume 10 and show as underlined text with no highlights.

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Revised chapter title	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 2 Chapter 2 - Collect and Convey - Connections to the City of Tacoma System	Collect and Convey	Chapter 2 - Collect and Convey - Connections to the City of Tacoma System	10-4 Purple
Removed language	Information not needed	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 2 Chapter 2 - Collect and Convey - Connections to the City of Tacoma System First sentence of first paragraph under chapter title	Where it can be demonstrated that infiltration and dispersion are not feasible for roof downspout controls, it may be allowable to collect and convey stormwater to the City stormwater system.	Where it can be demonstrated that infiltration and dispersion are not feasible for, it may be allowable to collect and convey stormwater to the City stormwater system.	10-4 Grey
Revised language	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 2 Chapter 2 - Collect and Convey - Connections to the City of Tacoma System Second paragraph under chapter title	Conveyance to the curb will only be allowed if a catch basin is located within 350 feet downstream of the discharge point. If a catch basin is not located within 350 feet of the discharge location, a storm main extension shall be required.	Conveyance to the curb will only be allowed if a catch basin or other inlet to the stormwater conveyance system is located within 350 feet downstream of the discharge point. If a catch basin or other inlet to the stormwater conveyance system is not located within 350 feet of the discharge location, a storm main extension shall be required.	10-4 Purple

NOTE: Portions of Volume 1. Chapter 3. MR #10, and Volume 3. Chapter 2, 9, 10, and 12 have been moved within the manual and are now found in Volume 10 and show as underlined text with no highlights.

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Revised language	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 3 Chapter 3 Conveyance System Analysis Methods First paragraph under chapter title	Single event modeling shall be used for designing conveyance systems. Continuous simulation modeling is not accepted.	Single event modeling shall be used for designing conveyance systems and analyzing existing conveyance systems for capacity. Continuous simulation modeling is not accepted.See Hydrologic Analysis under BMP Resources for specific modeling criteria that shall be used.	10-5 Purple
Revised language	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 3 3.0 Full Backwater Analysis indented text under 'a.'	For discharges to tidally influenced areas, the tailwater elevation shall be the mean high tide which is 4.64 feet using current City of Tacoma datum.	a. For discharges to tidally influenced areas, the tailwater elevation shall not be lower than 4.64 feet (which is a conservative estimate of the mean high tide) using current City of Tacoma datum.	10-6 Purple
Revised language	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 3 3.0.3.2 Pipe System Design Events Third paragraph under subheading	For discharges to tidally influenced areas, the tailwater elevation shall be the mean high tide which is 4.64 feet using current City of Tacoma datum.	For discharges to tidally influenced areas, the tailwater elevation shall not be lower than 4.64 feet (which is a conservative estimate of the mean high tide) using current City of Tacoma datum.	10-6 Purple
Revised language	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 3 3.1.4 Capacity of Inlets in Sag Locations Third paragraph under subheading	Any section of roadway located in a sag should be designed according to the criteria described below. To aid the designer in sag analysis, a copy of the sag worksheet is located on the WSDOT Hydraulic web page at http://www.wsdot.wa.gov/publications//fulltext/Hydraulics/Programs/SagWorksheetud.xls. The 25-year, 24-hour storm event as predicted from a single event model shall be used in the analysis.	Any section of roadway located in a sag should be designed according to the criteria described below. WSDOT created a spreadsheet to aid in the design. The City of Tacoma manipulated the spreadsheet to provide information specific to City of Tacoma requirements. The spreadsheet shall be used and is available at www.cityoftacoma.org/stormwatermanual_shortforms The 25-year, 24-hour storm event as predicted from a single event model shall be used in the analysis.	10-14 Purple

NOTE: Portions of Volume 1. Chapter 3. MR #10, and Volume 3. Chapter 2, 9, 10, and 12 have been moved within the manual and are now found in Volume 10 and show as underlined text with no highlights.

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Revised Chapter Title	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 4 Chapter 4 Conveyance System Specifications	Materials Specifications	Conveyance System Specifications	10-19 Purple
Revised language under subheading 4.4	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 4 4.4 Structures Bullet #2	• The maximum surface run between catch basins shall not exceed 350 feet. Catch basins locations shall be based upon the quantitative downstream analysis when required (see Minimum Requirement #10)	• The maximum surface run between catch basins shall not exceed 350 feet.Catch basins shall be installed when the Inlet Capacity Analysis shows additional catch basins are needed. Environmental Services may also require catch basin installations based upon existing system knowledge.	10-27 Purple
Revised language under section 4.4	Brand new language	City of Tacoma Stormwater Management Manual	Volume 10 Chapter 4 4.4 Structures Bullet #5	• Catch basins shall be Type 1, Type 1L, or Type 2 catch basins conforming to WSDOT Standard Plans B.5.2-01, B.5.4-01, or B.10.20-01.	• Catch basins shall be Type 1, Type 1L, or Type 2 catch basins conforming to WSDOT Standard Plans B.5.2-01, B.5.4-01, or B.10.20-01. Other catch basins types such as larger vault structures may be necessary to ensure stormwater is appropriately captured.	10-27 Orange
Revised language section 4.4. bullet	Brand new language	City of Tacoma Stormwater Management Manual	Volume 10, Chapter 4 4.4 Structures Bullet #9	• Catch basin grates shall be vaned grates per WSDOT Standard Plans B-30.30-01 or WSDOT Standard Plan B-30.40.01.	• Catch basin grates shall be vaned grates per WSDOT Standard Plans B-30.30-01 or WSDOT Standard Plan B-30.40.01. Catch basins to be maintained by the City of Tacoma shall have combination inlets per WSDOT Standard Plan B-25.20-01 whenever feasible.	10-27 Orange

NOTE: Volume 11 Best Management Practices Library contains both new text and text from other volumes in the 2016 Stormwater Management Manual.
When text is relocated to this volume but has not had any edits made the text appears as underline (with no highlights).

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New section: Introduction	Updated for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 1 1.1 Introduction	NA	1.1 Introduction Site Design BMPs should be used for all projects. Site Design BMPs include suggestions on how to design a project to limit hard surfaces and preserve site vegetation. Site Design help ensure compliance with Minimum Requirements by minimizing the effects of stormwater on receiving waters.	11-2 Purple
Updated subsection 1.2.2 Applications heading and text	Updated for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 1 1.1.2 Applications and Limitations	Applications and Limitations On lots that are one acre or greater, preservation of 65 percent or more of the site in natural vegetation will allow the use of full dispersion techniques presented in BMP L614 (Volume 3, Section 3.3). Sites that can fully disperse are not required to provide runoff treatment or flow control facilities.	1.2.2 Applications Preserving native vegetation helps to ensure compliance with Minimum Requirement by limiting the amount of new and replaced hard surfaces, land disturbances, and vegetation conversions. Native vegetation preservation should be a consideration for every project.	11-2 Purple
Added text under 1.2.3 Design Criteria	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 1 1.2.3 Design Criteria First bullet point	NA	• Preserve native vegetation and maintain tree canopy to the maximum extent practicable.	11-2 Pink
Added section 1.3.2 Applications	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 1 1.3.2 Applications	NA	1.3.2 Applications Better Site Design helps to ensure compliance with Minimum Requirement by limiting the amount of new and replaced hard surfaces, land disturbances, and vegetation conversions.	11-3 Pink

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When text is relocated to this volume but has not had any edits made the text appears as underline (with no highlights).

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New chapter	Updated volume layout for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 Chapter 2 Onsite Stormwater Management BMPs	NA	Chapter 2 Onsite Stormwater Management BMPs	11-5 Purple
Heading title update	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.3 Lawn and Landscaped Areas	Chapter 4 Soil Quality BMPs	2.3 Lawn and Landscaped Areas	11-5 Purple
Updated text under section 2.3.1.2	Updated language for clarity/readability and to remove text no longer relevant	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.3.1.2 Applications and Limitations All bullet points under subheading	• Soil amendments are required for the disturbed areas of sites subject to Minimum Requirement #5. • Where Minimum Requirement #5 does not apply, and the site is proposing a traditional lawn installation, compost-amended lawn soil is strongly encouraged. • Use soil amendments in areas that... • Soil organic matter can be attained... • Imported topsoils shall not have an excessive percent of fines.	• Soil amendments are required for the disturbed areas of sites subject to Minimum Requirement #5 that will not be covered by an impervious surface, incorporated into a drainage facility, or engineered as structural fill or slope. • Where Minimum Requirement #5 does not apply, it is recommended to incorporate soil amendments into all disturbed areas of the site.	11-5 Purple
Update of text under section 2.3.1.3	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.3.1.3 Infeasibility Criteria for Soil Quality BMPs Second and third bullet points and sub bullets	• If any of the competing needs criteria are met (Vol 1, Sec 3.4.5.7).	• If there are any conflicts with any of the following competing needs criteria: ◦Requirements of the following federal or state laws...	11-5 & 11-6 Purple
Update of text under section 2.3.1.4.2	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.3.1.4.2 Soil Quality Bullet points 2-8	• To meet the organic content requirements above use either ◦ A compost meeting the definition... 1. Compost applied at the... ◦Meet the definition for... ◦Have no visible water or dust... ◦Have soil organic matter content... ◦Have a carbon to nitrogen ratio... ◦Compost specifications can also... 2. Compost applied at a Calculated... • Meet the definition for "composted... • Have no visible water or dust... • Have soil organic matter content... • Have a carbon to nitrogen ratio... • City of Tacoma TAGRO mix can... • Compost specifications can also...	• To meet the organic content requirements above using one of the following: 1. Compost applied at the Preapproved Rate (see Table 3 - 1) meeting the compost specifications in Volume 12. 2. Compost applied at a Calculated Rate (see Table 3 - 2) meeting the compost specifications in Volume 12.	11-6 & 11-7 Purple

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Added text under section 2.3.1.5	Brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.3.1.5 Implementation Options: Last paragraph of section	NA	Project proponents shall provide a completed soils management plan worksheet (available at www.cityoftacoma.org/stormwatermanual_shortforms). If using the Calculated Rate, include the complete calculations sheet.	11-8 Orange
Updated text in table 11-1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.3.1.5 Implementation Options Table 11-2, section A. Planting Beds, last bullet point in cell	• Mulch planting beds with 2 inches of organic mulch or stockpiled duff.	• Mulch planting beds with 2 inches of organic mulch.	11-9 Pink
Updated subheading	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.3.1.7 Post Construction Soil Quality and Depth Modeling	Flow Reduction Credits for BMP L613	2.3.1.7 Post Construction Soil Quality and Depth Modeling	11-13 Purple
Update of subheading and text under 2.4.1.1	Update language for readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.1 Purpose, subheading and text under subheading	Purpose and Definition This BMP allows for "fully dispersing" runoff from impervious surfaces and cleared areas of development sites that preserve at least 65% of the site (or a threshold discharge area on the site) in a forest or native condition. Native conditions are comprised of native vegetation.	2.4.1.1 Purpose This BMP allows for "fully dispersing" runoff from impervious surfaces and cleared areas of project sites into areas preserved as forest, native vegetation, or cleared area.	11-13 Purple & Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of subheading and text under 2.4.1.2	Update language for clarity, to match Ecology's intent, and delete text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.2 Applications, subheading and bullet points under subheading	Applications and Limitations • For residential development projects… • Other types of development that retain… • Wetlands, streams, and lakes do not… • A covenant and easement agreement or separate recorded tract of land will be required to protect the preserved area. • Show the preserved area on all maps... • Retain all trees within the preserved area (except as allowed in the bullet below for passive recreation),... • The preserved area may contain utilities and utility easements, but not septic systems.	2.4.1.2 Applications • This BMP can be used to ensure… • The area of the project site that… ◦The dispersion area may… ◦Situate the dispersion area to… ◦A covenant and easement agreement or separate recorded tract of land will be required to protect the dispersion area. ◦Show the dispersion area on... ◦Retain all trees within the dispersion area... ◦The dispersion area may... ◦The dispersion area may contain utilities and utility easements, but not on-site sewage disposal systems such as septic tanks or septic fields. • The dispersion of stormwater must not create flooding or erosion impacts.	11-13 & 11-14 Pink, Grey & Purple
New Section 2.4.1.3 Infeasibility Criteria	Update language to match Ecology' intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.3 Infeasibility Criteria subheading and text under heading	NA	2.4.1.3 Infeasibility Criteria The BMP is infeasible if any of the following criteria are met: • If the design criteria cannot be met. • If the setback criteria cannot be met… • If there are any conflicts with any of the following competing needs criteria:... • If dispersion of stormwater is likely to create flooding or erosion problems...	11-14 & 11-15 Pink
New section 2.4.1.4	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.4 Elements of a Full Dispersion System Subheading and all text under subheading	NA	2.4.1.4 Elements of a Full Dispersion System The area of the project site that applies full dispersion consists of the following elements: • An impervious (or cleared area)… • A flow spreader… • A dispersion area… • A flowpath through the dispersion area...	11-15 & 11-16 Pink
Updated subheading	Updated language for clarity	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.5 Design Criteria for Residential Projects	Design Guidelines for Residential Projects	Design Criteria for Residential Projects	11-16 Purple

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Added subheading and updated text under 2.4.1.5.1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.5.1 Full Dispersion for Impervious Surfaces in Residential Projects, subheading and all bullet points through to last bolded bullet point on page 11-19	• Where a development has less than… • The portion of the developed area… • Runoff must be dispersed into the… • The dispersion of runoff shall not… • **Roof Downspouts** - Roof surfaces are… • **Driveway Dispersion** - Driveway… • **Roadway Dispersion BMPs** - Roadway...	2.4.1.4.1 Full Dispersion for Impervious Surfaces in Residential Projects • Impervious surfaces within… • The lawn and landscaped areas… • The dispersion area must be… • The dispersion area shall have… • The flowpath from the impervious… • Full dispersion from roof surfaces: Stormwater... • Full dispersion from driveway surfaces: Stormwater... • Full dispersion from roadway surfaces: Stormwater...	11-16 - 11-18 Pink
Removed text under 2.4.1.5.1	Information no longer needed / updated to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.4.1 Full Dispersion for Impervious Surfaces in Residential Projects, text under subheading, last two bullet points on page 11-19 and first three bullet points on page 11-20	• Ditch discharge points shall be... • Dispersion trenches shall be designed... • After being dispersed with rock... • Flowpaths from adjacent discharge... • Where the City determines there is…	NA	11-18 Pink & Grey
New section 2.4.1.5.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.5.2 Full Dispersion from Cleared Areas in Residential Projects, subheading and text under subheading	NA	2.4.1.4.2 Full Dispersion from Cleared Areas in Residential Projects Stormwater from cleared areas of residential projects that are comprised of bare soil, non-native landscaping, lawn, and/or pasture is fully dispersed if it meets all of the following criteria: • Cleared areas must comply with... • The dispersion area must... • The flowpath through the... • The minimum flowpath from... • The topography of the cleared... • The width of the dispersion...	11-18 & 11-19 Pink

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Update of heading, subheading and text under 2.4.1.6/2.4.1.6.1	Update language to match Ecology's intent, for clarity and readability and to deleted information no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.6 Design Criteria for Road-Related Projects, 2.4.1.6.1 Full Dispersion by Sheet Flow from Uncollected, Unconcentrated Stormwater into the Dispersion Area, subheading and text under subheading	Design Guidelines for Road-Related Projects Uncollected or Natural Dispersion into Adjacent Vegetated Areas The runoff will be considered fully… • Outwash Soils (Type A- Sand… • Other Soils (Type C and D… The following criteria must be met for… • The minimum depth... • Impervious surface flowpaths shall... • Pervious surface flowpaths shall be less than 150 feet. Pervious surface flowpaths are considered those... • Lateral slope of impervious... • Road side slopes shall... • Road shoulders that are paved... • Longitudinal slope of road shall... • Length of dispersion area shall... • Average longitudinal (parallel... • Average lateral slope of...	2.4.1.6 Design Criteria for Road-Related Projects 2.4.1.6.1 Full Dispersion by Sheet Flow from Uncollected, Unconcentrated Stormwater into the Dispersion Area The stormwater shall be considered… • The minimum flowpath lengths… ◦Outwash Soils (Type A… • Other Soils (Type C… • The dispersion area must be... • The slope of the flowpath must... • The flowpaths from adjacent flow... • The minimum depth to the... • The flowpath through any... • The flowpath through any... • Lateral slope of impervious... • Road side slopes shall be less... • Road shoulders that are paved... • Longitudinal slope of road... • The width of the dispersion... • Average longitudinal (parallel... • Average lateral slope of...	11-19 & 11-20 Pink, Purple and Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of subheading and text under 2.4.1.6.2	Update language to match Ecology's intent, for clarity and readability and to deleted information no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.6.2 Full Dispersion of Channelized (Collected and Re-dispersed) Stormwater into the Dispersion Area, all unbulleted text and bullets #2, 6, 8, 10, & 11-14	Channelized Dispersion This section describes the criteria for… The runoff will be considered fully… • Other Soils (Type C and D and Type B not meeting the criteria above) ◦ Provide a 6.5-foot-wide vegetated flowpath for every 1 foot width The following criteria must be met to… • Flows shall be dispersed using... • Length of dispersion area shall...	2.4.1.6.2 Full Dispersion of Channelized (Collected and Re-dispersed) Stormwater into the Dispersion Area The stormwater from road-related projects that… The minimum flowpath length… • Other Soils (Type C and D and Type B not meeting the criteria above) ◦Provide a 6.5-foot-wide vegetated flowpath for every 1 foot width of impervious surface draining to it. The minimum flowpath length through the dispersion area shall be 100 feet. • Ditch discharge points with up to 0.2 cfs discharge... • The width of the dispersion... • The slopes of any flowpath... • The dispersion area must... • Limit onsite flows. • The slope of the flowpath must... • The flowpaths from adjacent...	11-20 & 11-21 Pink, Grey & Purple
Update of subheading and text under 2.4.1.6.3	Update language to match Ecology's intent, for clarity and readability and to deleted information no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.6.3 Full Dispersion by Engineered Dispersion, subheading, all unbulleted text and bullets #1, #3, #8	Engineered Dispersion This section describes the criteria... The runoff will be considered fully… • Other Soils (Type C and D and Type B… ◦ Provide a dispersion area meeting… The following criteria must be met to… • A covenant and easement agreement or separate recorded tract of land will be required to protect the preserved area	2.4.1.6.3 Full Dispersion by Engineered Dispersion Stormwater from road-related… • The minimum flowpath lengths… • Other Soils (Type C and D and Type B… ◦ The dispersion area must be… • A covenant and easement agreement or separate recorded tract of land will be required to protect the dispersion area.	11-21 & 11-22 Pink, Grey & Purple
Update of subheading and text under subheading	Update language for clarity and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.8 Full Dispersion Modeling, subheading and text under subheading	Flow Credits for Full Dispersion Sites that can fully disperse are not required to provide water quality treatment or flow control facilities.	2.4.1.8 Full Dispersion Modeling Sites that can fully disperse are not required to provide water quality treatment or flow control facilities. No modeling is necessary.	11-23 Purple & Pink

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Added subheading and text	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.1.9 Maintenance Criteria, subheading and text bottoms of page 11-26	NA	2.4.1.9 Maintenance Criteria Per Minimum Requirement #9, an operation and maintenance plan shall be prepared for all stormwater management facilities… Facilities shall be designed and constructed to be safely and easily inspected by one person and safely and easily maintained...	11-24 Pink
Added subheading and text	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.2.1 Purpose, subheading and text	NA	2.4.2.1 Purpose Downspout full infiltration systems are trenches and drywells intended only for use in infiltrating stormwater from roof downspouts. They are not designed to infiltrate stormwater from pollution generating surfaces.	11-25 Purple
Added subheading and text	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.2.2 Application, subheading and text	NA	2.4.2.2 Application • This BMP can be utilized to… • The BMP can be used solely... • This BMP may also be used... • Where compliance with Minimum…	11-25 Purple
Updated text under section 2.4.2.3	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.2.3 Infeasibility Criteria for Downspout Full Infiltration Systems First two paragraphs under subheading	A downspout full infiltration system is considered infeasible on a site if any of the following are true. See Volume 3, Appendix B to determine if a soils report is required.	The following infeasibility criteria describe conditions that make downspout full infiltration systems infeasble when applying The List Approach for compliance with Minimum Requirement #5. The infeasibility criteria shall also be used to determine the appropriateness of installing downspout infiltration on a project site...	11-25 Purple

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Added subheading and text	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.2.4 Subsurface Characterization, subheading and text under subheading	NA	2.4.2.4 Subsurface Characterization • A soils report is required to design downspout full infiltration facilities... • The soils report shall be prepared by a Washington State Licensed Professional Engineer, Washington State Licensed Professional Geologist, a Certified Professional Soils Scientist (CPSS) certified by the Soil Science Society of America, Washington State Licensed On-Site Wastewater Treatment System Designers, or other suitable trained persons working under the professional. • The soils report shall be based on site specific explorations and:...	11-28 Pink
Updated text under subheading 2.4.2.4.1	Updated language for clarity/readability, to match Ecology's intent and to delete text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.2.5.1 Design Criteria for Downspout Infiltration Trenches, unbulleted text and bullets #1, #6, #7, #9 & #11	1. Use Figure 3 - 2 (also called Green Stormwater Infrastructure - Figure 001) which shows a typical downspout infiltration trench system, or Figure 3 - 3 which shows an alternative infiltration trench system for sites with coarse sand and cobble soils for design criteria. Applicants may use either of these... 5. Non-woven geotextile fabric shall be placed over the trench aggregate prior to backfilling. To help ensure no migration of native soil into the rock layer, a 6-inch minimum layer of sand may be used as a filter media at the bottom of the trench below the washed rock layer. Volume 5, Appendix B... 6. Distribution pipe shall be minimum 4" PVC slotted or perforated pipe placed at 0% slope placed on a minimum 12" rock... 9. Catch basin or yard drain shall have...	• Use Figure 3 - 2 (also called Green Stormwater Infrastructure - Figure 001) which shows a typical downspout infiltration trench system, or Figure 3 - 3 which shows an alternative infiltration trench system for sites with coarse sand and cobble soils for design criteria. • Non-woven geotextile fabric shall be placed over the trench aggregate prior to backing. Geotextile fabric shall not be placed on the bottom of the trench to avoid clogging. The non-woven geotextile shall conform to BMP xx: Geotextile Specifications... • Distribution pipe shall be minimum 4" PVC slotted or perforated pipe placed at 0% slope. • Place final cover measures over the rock layer. • Install a catch basin or yard drain... The catch basin or yard drain is not....	11-29 & 11-30 Pink, Purple & Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under subheading 2.4.2.5.1	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.2.6.1 Design Criteria for Downspout Infiltration Drywells, bullets # 5, #6, #7, #8, #10	• Drywells shall have a minimum of 1'… • Non-woven geotextile fabric shall be placed on the sides of the drywell and over the drain rock prior to backfilling. • Catch basin or yard drain…	• Distribution pipe shall be a… • Mark the center of the drywell… • Place a minimum 12" lawn… • Non-woven geotextile fabric shall be placed on the sides of the drywell and over the drain rock prior to backfilling. Geotextile fabric shall… • Install a catch basin or yard...	11-31 Purple
Update of subheading and text under 2.4.3.1	Update language for clarity and deleted text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.1 Purpose, subheading and last sentence of paragraph under subheading	Purpose and Definition Volume 6, Appendix B of this manual contains several rain garden figures.	2.4.3.1 Purpose	11-35 Purple and Grey
Added subheading and text	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.2 Application, subheading and text	NA	2.4.3.2 Application • This BMP can be utilized to ensure… • Where compliance with Minimum…	11-35 Purple
Update of text under subheading 2.4.3.3	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.3 Infeasibility Criteria, Text under subheading before bullets, Bullet points #1 and last 7 bullet points	A rain garden is not required if any of…. These criteria are in addition to setback… These criteria are in addition to any… • Where the field testing indicates...	The following infeasibility criteria… The infeasibility criteria shall also… A site characterization study… • If there are any conflicts with… • Where the field testing indicates… • Where the minimum vertical… • Within 10 feet of a… • Within 5 feet of any other… • Within 50 feet from the top… • Where rain gardens designed…	11-35 - 11-37 Purple
Added subheading an text	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.4 Subsurface Characterization, subheading and text under subheading	NA	2.4.3.4 Subsurface Characterization • A soils report is required to design a rain garden… • The soils report shall be prepared… • The soils report shall be based on site specific explorations and:…	11-37 & 11-38 Pink
Updated subheading and text	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.5.1 Rain Garden Siting, subheading and first paragraph of text under subheading	Other Site Suitability Factors The following factors should be considered when siting the rain garden facility.	2.4.3.5.1 Rain Garden Siting Project design shall consider the following for siting the rain garden.	11-38 Purple
Deleted text	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.5.2 Flow Entrance/Presettling, last bullet point	• Based upon project site characteristics, Environmental Services may require a presettling facility per Volume 5.	NA	11-39 Grey

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Deleted text	Information not longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.5.3 Cell Ponding Area, second bullet point	• See section 2.2.2.1.3 for rain garden sizing and geometry.	NA	11-39 Grey
Added text under section 2.4.3.5.5	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.5.5 Rain Garden Soil Mix, Second bullet point, third sub bullet	NA	◦Compost shall not include biosolids or manure	11-40 Pink
Added subheading and text	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.5.6 Underdrain, subheading and text	NA	2.4.3.5.6 Underdrain Do not use underdrains in rain gardens.	11-41 Pink
Updated text under subheading 2.4.3.5.9	Updated language with new language and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.5.9 Sizing and Geometry, first bullet under subheading and sentence under Table 11-6	• The top of the ponded surface area below the overflow shall be at least 5% of the total hard surface area draining to it. If lawn/landscaped area will also be draining to the bioretention facility, it is recommended that the top of the ponded surface area below the overflow be increased by 2% of the lawn/landscaped area. For sites proposing an underdrain, an engineered design will be required. Refer to Volume 6, BMP L630 (Section 2.4.4) for sizing guidance.	• The top of the ponded surface area below the overflow shall be at least 5% of the total hard surface area draining to it. If lawn/landscaped area will also be draining to the rain garden, that the top of the ponded surface area below the overflow be increased by 2% of the lawn/landscaped area.	11-42 Blue, Orange & Pink
Updated subheading and text under subheading	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.3.7 Rain Garden Modeling, subheading and first bullet point under subheading	Flow Credit No flow credits are allowed for rain gardens.	2.4.3.7 Rain Garden Modeling No flow credits are allowed for rain gardens and therefore rain gardens are not represented in modeling.	11-43 Purple
Updated subheading and text deletion under subheading	Text deleted where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.1 Purpose, subheading and last two sentences of first paragraph under subheading, top of page 11-45	Purpose and Definition Bioretention Standard Plans can be found at govme.org under Standard Plans. These Standard Plans can be used for projects in the public ROW and on private property.	2.4.4.1 Purpose	11-44 Grey
Added subheading and text	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.2 Application, subheading and text under subheading	NA	2.4.4.2 Application • This BMP can be utilized to… • This BMP may also be used... • Where compliance with Minimum…	11-44 Purple

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Updated text under subheading	Update language for clarity/readability and deletion of text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.3 Infeasibility Criteria, all text under subheading	A bioretention facility is not required… These criteria are in addition to setback... These criteria are in addition to any… Setback distances are measures.... A site characterization study must be completed in order to determine if the following infeasibility criteria apply.	The following infeasibility criteria… The infeasibility criteria shall also… Setback distances are measures… A site characterization study (see Volume xx - Documentation) must be completed in order to determine if the following infeasibility criteria apply and to determine appropriateness of installing a bioretention facility.	11-45 Purple & Grey
Added subheading and text	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.3.1 Infeasibility Criteria for All Bioretention Facilities (with or without underdrains) Subheading and first paragraph and bullet points #1-#8 (including sub bullets)	NA	2.4.4.3.1 Infeasibility Criteria for All Bioretention Facilities (with or without underdrains) The following criteria can be sited… • If there are any conflicts… • Where the minimum vertical… • Where the minimum vertical… • Within 10 feet of a building… • Within 5 feet of any other… • Within 50 feet from the top… • Where bioretention facilities… • Where bioretention facilities...	11-45 & 11-46 Purple
Added subheading and text	Updated language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.3.2 Infeasibilty Criteria Specific to Facilities Designed to Infiltrate, last four bullet points	• Where the field testing indicates potential bioretention sites have a…	• Where the field testing indicates potential bioretention locations… • Bioretention facilities installed… • If the measured soil infiltration… • If an elevated underdrain is...	11-47 & 11-48 Purple & Pink
Update of text under subheading 2.4.4.4	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.4 Subsurface Characterization, all text under subheading beginning top of page 11-49	See Volume 3, Appendix B for soils report requirements. • Conduct pit/hole explorations... • Subsurface explorations (test… • Subsurface characterization shall… • The professional can exercise… • On single, smaller commercial… • On larger commercial and industrial... • On multi-lot residential... • For linear bioretention facilities,... • If the site subsurface characteristics... • If a bioretention area will serve a...	• A soils report is required to… • The soils report shall be based on… • The soils report shall be prepared… • The soils report shall be based…	11-48 - 11-51 Purple
Updated subheading and text under subheading	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.1 Bioretention Siting, subheading and first line of text under subheading	Other Site Suitability Factors Project design should consider the following for siting the bioretention facility.	2.4.4.5.1 Bioretention Siting Project design shall consider the following for siting the bioretention facility.	11-51 Purple

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Update of text under subheading 2.4.4.5.2	Updated language with brand new language, to match Ecology's intent, for readability, and to delete text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.2 Flow Entrance/Presettling, bullet point #2, sub bullet #2, #3. #4, #5 & #6, and last bullet point	◦ Dispersed or sheet flow across pavement or gravel and past wheel stops for parking areas. · Curb cuts for roadside, driveway or... ◦ Curb cuts should include… ◦ Minimum curb cut width: 12 inches; maximum curb width: 18 inches. ◦ Flow entrance should drop 2 to 3 inches from... ◦ Curb cuts used for bioretention areas in high use parking lots or roadways require increased level of maintenance due to high coarse particulates and trash accumulation in the flow entrance and associated bypass of flows. The... ·Curb cut width: 18 inches. ·At a minimum, the flow entrance should drop 2 to 3 inches... ·Catch basins or forebays may be... ◦ Pipe flow entrance: Piped entrances should include... ◦ Catch basin: In some locations where road sanding or higher than usual sediment inputs are anticipated, catch basins can be used to settle sediment and release water... • If the catchment area exceeds 2,000...	◦ Dispersed or sheet flow across pavement or gravel and past wheel stops for parking areas. · Curb cuts for roadside, driveway or... ◦ Curb cuts shall include… ◦ Minimum curb cut width: 12 inches; ◦ Flow entrance should drop at least 3... ◦ Curb cuts used for bioretention areas in high use parking lots or roadways require increased level of maintenance due to high coarse particulates and trash accumulation... · Minimum curb cut width: 18... · At a minimum, the flow entrance should drop 3 inches... · Presettling areas may be... ◦ Pipe flow entrance: Piped entrances shall include... ◦ Catch basin: In some locations where road sanding or higher than usual sediment inputs are anticipated, catch basins can be used to settle sediment.	11-52 & 11-53 Grey, Orange, Purple & Pink
Deleted text under subheading 2.4.4.5.4	Information no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.4 Overflow, first and last bullet point	• Unless designed for full infiltration… • See Volume 3, Chapter 11…	NA	11-53 Grey
Updated text under subheading 2.4.4.5.5	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.5 Bioretention Soil Media, bullet point under subheading	• Minimum depth of bioretention soil mix shall be 18 inches.	• The depth of bioretention soil mix shall be 18". Depths greater than 18" are not recommended due to concerns about phosphorus leaching.	11-53 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under subheading 2.4.4.5.5.1 Default Bioretention Soil Media	Updated language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.5.1 Default Bioretention Soil Media Bullets 6, 7 & 8	• Meet the gradation presented in Table 6 - 3. • Produced at a composting facility that is permitted by the jurisdictional health authority. Permitted compost facilities in Washington are included on a list available at: www.ecy.wa.gov/programs/swfa/organics • The compost product must originate from a feedstock that contains a minimum of 65% by volume recycled plant waste comprised of “yard debris,” “crop residues,” and “bulking agents”. The remainder of the feedstock may contain a maximum of 35% by volume “post-consumer food waste”. Biosolids are not allowed. Terms are defined in WAC 173-350-100.	• The gradation is Table 11 - 7 is considered to be well graded. • Produced at a permitted composting facility. Permitted compost facilities in Washington are included on a list available at: http://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Organic-materials/Managing-organics-compost • The compost product must originate from a feedstock that contains a minimum of 65% by volume recycled plant waste comprised of “yard debris,” “crop residues,” and “bulking agents”. A maximum of 35% by volume of "post-consumer food waste" may be substituted for recycled plant waste. Biosolids and/or manure are not allowed. Terms are defined in WAC 173-350-100.	11-54 & 11-55 Purple & Pink
Update of text under subheading 2.4.4.5.7	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.7 Underdrain, bullet #5, first sub bullet	◦ The estimated initial infiltration rate of the underlying native soils is between 0.3 and 0.6 inches.	◦ The estimated Ksat rate of the underlying native soils is between 0.3 and 0.6 inches.	11-56 Pink
Updated text under subheading 2.4.4.5.10	Update language for clarity/readability and deletion of text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.10 Hydraulic Restrictions Layer. Last sentence of first paragraph and both bullet points	• Clay (bentonite) liners are low permeability liners. Where clay liners are used underdrain systems are necessary. See Volume 5, Chapter for guidelines. • Geomembrane liners completely block infiltration to subgrade soils and are used for groundwater protection when bioretention facilities are installed to filter storm flows from pollutant hotspots or on sidewalls of bioretention areas to restrict lateral flows to roadbeds or other sensitive infrastructure. Where geomembrane liners are used to line the entire facility underdrain systems are necessary. The liner should have a minimum thickness of 30 mils and be ultraviolet (UV) resistant.	Underdrain systems are necessary where a liner is used. • Clay (bentonite) liners are low permeability liners. See Volume 5, Chapter for guidelines. • Geomembrane liners completely block infiltration. They may line the entire facility or may be used to line sidewalls to restrict lateral flows. Where geomembrane liners are used to line the entire facility underdrain systems are necessary. The liner should have a minimum thickness of 30 mils and be ultraviolet (UV) resistant.	11-58 Purple & Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update text under subheading 2.4.4.5.12	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.12 Mulch Layer Third bullet point (including sub bullets and table) & last bullet point	◦ Coarse compost in the bottom of the... · Meet the definition for… · Be coarse compost meeting… · Have no visible water or…	• Medium compost in the bottom of the facility, placed a minimum of 3" deep... • Where higher flow velocities are anticipated, aggregate mulch may be used…	11-59 Pink
Update of subheading and text under 2.4.4.5.13	Update language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.13 Bioretention Modeling Subheading and first paragraph under subheading	Modeling and Sizing The top of the ponded surface area below the overflow shall be at least 5% of the total impervious surface area draining to it. If lawn/landscaped area will also be draining to the bioretention facility, it is recommended that the top of the ponded surface area below the overflow be increased by 2% of the lawn/landscaped area.	2.4.4.5.13 Bioretention Modeling The top of the ponded surface area below the overflow shall be at least 5% of the total impervious surface area draining to it. If lawn/landscaped area will also be draining to the bioretention facility, increase the top of the ponded surface area below the overflow be increased by 2% of the lawn/landscaped area.	11-58 Purple & Pink
Update of text in table 11-8	Update language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.13 Bioretention Modeling, Table 11-, Cells 4, 5, 7, 8 & 10 under table heading Assumptions	Default Bioretention Soil Media: WWHM assumes a default infiltration rate of 12 inches per hour. Choose the soil layer SMMWW and... Custom Bioretention Soil Media" Use ASTM D2434 – "Standard Test Method… Minimum of 18 inches Measured infiltration rate. See Volume 3 for more… Model as riser outlet structure	Default Bioretention Soil Media: WWHM assumes a default infiltration rate of 12 inches per hour. Choose the soil layer SMMWW - 12 in/hr and… Custom Bioretention Soil Media" Enter the Design Saturated… 18 inches Design Infiltration Rate of the… Dependent on Design.	11-59 - 11-61 Purple & Pink
Update of text under subheading 2.4.4.5.14	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.4.5.14 General Construction Criteria:, third bullet point	• If equipment must be operated within the facility, use lightweight, low ground pressure equipment and scarify the base to reduce compaction upon completion.	• If equipment must be operated within the facility, use lightweight, low ground pressure equipment and scarify the base at least 12" to reduce compaction upon completion.	11-61 Pink
Added heading and updated text under 2.4.5.1	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.5.1 Purpose Subheading and text under subheading	Downspout dispersion systems are splash blocks or dispersion facilities that spread roof runoff over vegetated pervious areas. Dispersion attenuates peak flows by slowing entry of the runoff into the conveyance system, allowing for some infiltration, and providing some water quality benefits.	2.4.5.1 Purpose Downspout dispersion systems are splash blocks or dispersion facilities that spread roof runoff over vegetated pervious areas. Dispersion attenuates peak flows by slowing stormwater.	11-63 Purple
Updated text under subheading 2.4.5.2	Updated language for clarity/readability and deleted text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.5.2 Application, all text under subheading	Application See section 2.2 for selection of roof runoff controls	2.4.5.3 Application • This BMP can be utilized… • This BMP may also be… • Where compliance with Minimum…	11-63 Purple & Grey

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Updated text under subheading 2.4.5.3	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.5.3 Infeasibility Criteria for Roof Downspout Dispersion, first and second paragraphs and bullet points 1-4 under subheading, and Second bullet point under subheading 'Both'	A downspout dispersion system is considered infeasible on a site if any of the following are true. • If any of the competing needs criteria are met (Vol 1, Sec 3.4.5.7). • The setback criteria per Volume 3, Section 2.4.3 or the design standards per BMP L603a – Dispersion Trenches (Volume 3, Section 2.4.5) or BMP L603b - Splashblocks (Volume 3, Section 2.4.5) cannot be met.	The following infeasibility criteria describe conditions that make downspout dispersion infeasible when applying The List Approach for compliance with Minimum Requirement #5. The infeasibility criteria shall also be used to determine… • The design standards per BMP L603b - Dispersion Trenches or BMP L603b - Splashblocks cannot be met. • The setback criteria below cannot be met... • If there are any conflicts with any of the following competing needs criteria:...	11-63 & 11-64 Purple
Updated text under subheading 2.4.5.4	Update language to match Ecology's intent and delete text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.5.4 General Design Criteria for Roof Downspout Dispersion Bullet points 1-3 (and sub bullet point) under subheading	• Downspout dispersion trenches designed as shown in Figure or Figure 3 - 7 (also called Green Stormwater Infrastructure Figure 003 and Figure 004 available on govme.org under Standard Plans) should be used for all downspout dispersion applications except where splash blocks are allowed.	• Downspout dispersion trenches designed as shown in Figure or Figure 11 - 7 (also called Green Stormwater Infrastructure Figure 003 and Figure 004 shall be used for all downspout dispersion applications except where splash blocks are allowed. • The vegetated flowpath must consist of well-established lawn... • Install a catch basin or yard drain... ◦Catch basin or yard drain shall...	11-65 Pink
Updated text under subheading 2.4.5.4.1	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.5.4.1 BMP L603a: Design Criteria for Dispersion Trenches Bullet #6	• Rock layer shall be ¾" to 1½" washed rock or rock meeting WSDOT Specification 9-03.12(5). A minimum 12" layer of rock shall be placed under the perforated or slotted pipe.	• Rock layer shall be ¾" to 1½" washed rock or rock meeting WSDOT Specification 9- 03.12(5) Gravel Backfill for Drywells. A minimum 12" layer of rock shall be placed under the perforated or slotted pipe. Wrap rock layer in a non-woven geotextile fabric. The non-woven geotextile shall conform to BMP xx: Geotextile Specifications, Geotextile for Underground Drainage - Low Survivability, Class C.	11-65 & 11-66 Purple

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added text under subheading 2.4.5.4.2	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.5.4.2 BMP L603.b: Design Criteria for Splashblocks Last bullet point under subheading	• A splashblock or a pad of cobbles or ballast (2 feet wide by 3 feet long by 6 inches deep) shall be placed at each downspout discharge point.	• A splashblock or a pad of cobbles or ballast (2 feet wide by 3 feet long by 6 inches deep) shall be placed at each downspout discharge point. Cobbles shall conform to 2020 WSDOT Standard Specification 9-03.11(2) - Streambed Cobbles. Ballast shall conform to 2020 WSDOT Standard Specification 9-03.9(1) - Ballast.	11-66 Orange
Added subheading 2.4.5.5 and text under subheading	Updated language for clarity and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.5.5 Downspout Dispersion Modeling, subheading and text under subheading	Flow Credit for Roof Downspout Dispersion If the roof runoff is dispersed according… WWHM Modeling Guidance: Use…	2.4.5.5 Downspout Dispersion Modeling Use one of the following options… • When dispersion trenches or… • When dispersion trenches or…	11-66 & 11-67 Pink
Added subheading and updated test under 2.4.6.1	Updated language for clarity/readability and deleted text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.6.1 Purpose, subheading and text under subheading, bottom of page 11-69	A perforated stub-out connection is a length of perforated pipe within a washed rock-filled trench that is placed between roof downspouts and a stub-out to the City stormwater system. See Volume 3, Section 2.6 and Volume 3, Section 10.5 for allowable connections to the City system. Figure 3 - 9 (also known as Green Stormwater Infrastructure Figure 007) provides design criteria for a perforated stub-out connection. These systems are...	2.4.6.1 Purpose A perforated stub-out connection is a length of perforated pipe within a washed rock-filled trench that is placed between roof downspouts and a stub-out to the City stormwater system. These systems are…	11-71 Purple & Grey
Updated of text under subheading 2.4.6.2	Updated language for clarity/readability and deleted text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.6.2 Application, bullet points under subheading	• See Section 2.2 for Selection of Roof Runoff Controls.	• This BMP can be utilized to ensure... • Where compliance with Minimum…	11-71 Purple & Grey
Update of text under subheading 2.4.6.3	Updated language for clarity/readability and deleted text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.6.3 Infeasibility Criteria for Perforated Stub-Out Connections All unbulleted text under subheading and bullet points 1 & 3-5	A perforated stub-out connection is… • The setback criteria and design standards per BMP L604 (Volume 3, Section 2.5.3) cannot be met. • If any of the competing needs criteria are met (Vol 1, Sec 3.4.5.7).	The following infeasibility criteria… • The setback criteria and design standards cannot be met. • If there are any conflicts with any of the following competing needs criteria:... • The following are minimum setbacks:...	11-71 & 11-72 Purple & Grey
Added subheading and text under 2.4.6.4	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.6.4 Subsurface Characterization Subheading and all text under subheading	NA	2.4.6.4 Subsurface Characterization • A soils report is required… • The soils report shall be prepared… • The soils report shall be based…	11-72 & 11-73 Pink

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Update of text under subheading 2.4.6.5	Update text with brand new language and delete text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.6.5 Design Criteria, bullets #6 & #8	• Non-woven geotextile fabric shall be placed over the trench aggregate prior to backfilling. To help ensure no mitigation of native soil into the rock layer, a 6-inch minimum layer of sand may be used as a filter media at the bottom of the trench below the washed rock layer. Volume 5, Appendix B contains specifications for geotextile fabric. • Rock layer shall be ¾" to 1½" washed rock or rock meeting WSDOT Specification 9-03.12(5). A minimum 12" layer of rock shall be placed under the perforated or slotted pipe.	• Non-woven geotextile fabric shall be placed over the trench aggregate prior to backfilling. The non-woven geotextile shall conform to BMP xx: Geotextile Specifications, Geotextile for Underground Drainage - Low Survivability, Class C. • Rock layer shall be ¾" to 1½" washed rock or rock meeting WSDOT Specification 9-03.12(5) - Gravel Backfill for Drywells. A minimum 12" layer of rock shall be placed under the perforated or slotted pipe.	11-73 Grey & Orange
Update subheading title	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.4.6.6 Perforated Stub-Out Modeling	Flow Credit for Perforated Stubouts	2.4.6.6 Perforated Stub-Out Modeling	11-73 Purple
Updated subheading and text under 2.5.2.2	Updated language for clarity/readability and deletion of text where information is no longer required	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.2.2 Applications, subheading and all text under subheading	Applications and Limitations Flat or moderately sloping (<15% slope) surfaces such as driveways, sport courts, patios, and roofs without gutters; non-native landscaping, lawn, and/or pasture; or any situation where concentration of flows can be avoided.	2.5.2.2 Applications • This BMP can be utilized to ensure… • This BMP may also be used… • Where compliance with Minimum…	11-75 Purple
Updated text under subheading 2.5.2.3	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.2.3 Infeasibility Criteria for Sheet Flow Dispersion and all text under subheading	• Concentrated flow dispersion is considered… • If any of the competing needs criteria…	The following infeasibility criteria… The infeasibility criteria shall also… Sheet flow dispersion is considered… • If the design criteria below… • If the setback criteria cannot… • If there are any conflicts with…	11-75 & 11-76 Purple
Updated text under subheading 2.5.2.4	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.2.4 Design Criteria fourth bullet point	• Provide a vegetated flowpath width of 25 feet for up to 150 feet…	NA	11-76 Pink
Update of subheading title	Update language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.2.5 Sheet Flow Dispersion Modeling	Flow Credits for Sheet Flow Dispersion	2.5.2.5 Sheet Flow Dispersion Modeling	11-77 Purple

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Update of subheading and text under 2.5.3.1	Update language for clarity and readability and deletion of text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.3.1 Purpose, subheading and text under subheading	Purpose and Definition Dispersion of concentrated flows from driveways or other pavement through a vegetated pervious area attenuates peak flows by slowing entry of the runoff into the conveyance system, allows for some infiltration, and provides some water quality benefits.	2.5.3.1 Purpose Dispersion of concentrated flows from driveways or other pavement through a vegetated pervious area attenuates peak flows by slowing stormwater.	11-77 Grey & Purple
Update of subheading and text under subheading 2.5.3.2	Update language for clarity and readability and deletion of text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.3.2 Applications, subheading and bullet points #2-5	Applications and Limitations • Any situation where concentrated flow can be dispersed through vegetation.	2.5.3.1 Applications • Any situation where concentrated flow can be dispersed through vegetation. • This BMP can be utilized to ensure compliance… • This BMP may also be used… • Where compliance with Minimum…	11-77 Grey & Purple
Updated text under subheading 2.5.3.3	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.3.3 Infeasibility Criteria for Concentrated Flow Dispersion First bullet point and first two paragraphs under first bullet point, and all text under fifth bullet point	• Concentrated flow dispersion… • If any of the competing needs…	The following infeasibility criteria… The infeasibility criteria shall also… Concentrated flow dispersion is... • If the design criteria below… • If the setback criteria cannot… • If there are any conflicts with… • If erosion or flooding of downstream properties might occur as the result of using concentrated flow dispersion...	11-78 & 11-79 Purple & Blue
Updated subheading and text under 2.5.3.5	Updated language for clarity and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.3.5 Concentrated Flow Dispersion Modeling, subheading and all text under subheading	Flow Credits for Concentrated Flow Dispersion If the runoff is dispersed according to the requirements of this section into an undisturbed native landscape area or an area amended to meet BMP L613 and the vegetated flowpath is 50 feet in length, model the connected area using the lateral flow element to send the impervious area onto the lawn/landscaped area that will be used for dispersion. The deduction cannot be applied to pollutant-generating surfaces. If the thresholds for water quality treatment are met, water quality treatment is required.	2.5.3.5 Concentrated Flow Dispersion Modeling If the runoff is dispersed according to the requirements of this section into an undisturbed native landscape area or an area amended to meet BMP L613 model the connected area using the lateral flow element to send the impervious area onto the lawn/landscaped area that will be used for dispersion. Where multiple concentrated flow... • When a pad of crushed rock... • When dispersion trenches are...	11-80 Purple & Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under subheading 2.5.4.2	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.2 Permeable Pavements - Applications Subheading and last three bullets under subheading	Permeable Pavements - Applications and Limitations	2.5.4.3 Permeable Pavements - Infeasibility Criteria • This BMP can be utilized to ensure compliance with Minimum Requirement #5... • This BMP may also be used to help ensure compliance with Minimum Requirement #6, Minimum Requirement #7 - Flow Control and Minimum Requirement #8 - Wetland Protection. • Where compliance with Minimum Requirements is not required, where feasible, this BMP is recommended to be used to help protect receiving waterbodies from the effects of stormwater.	11-81 & 11-82 Purple
Update of text under subheading 2.5.4.3	Updated language for clarity and readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.3 Permeable Pavements - Infeasibility Criteria Paragraphs 1, 2 4 & 5. Last bullet point on page 11-81,First bullet point (second and fourth sub bullet & unbulleted text) & Bullets 2, 3, & 5 on page 11-82. Bullets 2-7 on page 11-83	Permeable pavements are not required… These criteria are in addition to setback… These criteria are in addition to any… • Where the site cannot reasonably… ◦ Depth of soil used for infiltration treatment must be a minimum of 12 inches ◦ A measured (initial) saturated hydraulic conductivity greater than 9 inches/hour. If the applicant wishes to use permeable pavement but the criteria above for treatment are not met, they can elect to use a 6” layer of media meeting the soil suitability criteria or a 6”... • Where appropriate field testing... • Where the road receives more than very low traffic volumes and more than very low truck traffic. Very low traffic volumes are those with a projected average daily traffic volume of 400 vehicles or less (AASHTO... • At sites defined as “high-use sites”.	The following infeasibility criteria… The infeasibility criteria shall… • Where the subgrade slope… ◦ Depth of soil used for infiltration treatment must be a minimum of 18 inches. This depth may be reduced... ◦ A measured (initial) saturated hydraulic conductivity of 12... If the applicant wishes to use permeable pavement but the criteria above for treatment are not met, they can elect to use a 6”... • Where the field testing indicates... • Where the road receives more than very low traffic volumes and more than very low truck traffic. Very low traffic volumes are those with a projected average daily traffic volume of 400 vehicles or less and very low volume roads (AASHTO... • On project sites that require... • If there are any conflicts with... • Where the minimum vertical... • Within 10 feet of a building... • Within 5 feet of any other... • Within 50 feet from the top... • Where the project site design...	11-82 - 11-85 Purple & Pink

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Update of text under subheading 2.5.4.4	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.4 Permeable Pavement Subsurface Characterization All text under subheading	See Volume 3, Appendix 1 for soils... • Conduct pit/hole explorations… • Perform tests in the soil profile… • Subsurface explorations (test… • Subsurface characterization shall… • The professional can exercise… • Conduct a Small-Scale PIT Test… • On multi-lot residential developments... • If the site subsurface characteristics... • If a permeable pavement will serve...	• A soils report is required to… • The soils report shall be based… • The soils report shall be prepared… • The soils report shall be based on… 1. Classify the underlying soils of… 2. Identify the hydraulic restriction… 3. Identify the native soil… 4. If subsurface characteristics... 5. A groundwater mounding...	11-85 - 11-88 Pink
Update of text under subheading 2.5.4.5.1	Update language to match Ecology' intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.5.1 Subgrade First sentence of second paragraph	Compact the subgrade to the minimum necessary for structural stability and at a minimum be "firm and unyielding".	Compact the subgrade to the minimum necessary for structural stability and at a minimum be "firm and unyielding" and be 90-92% Standard Proctor.	11-88 Pink
Update of text under subheading 2.5.4.3.3	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.5.3 Geotextile and GeoGrids (Optional), last two sentences of paragraph text	NA	The non-woven geotextile shall conform to BMP xx: Geotextile Specifications, Geotextile for Underground Drainage - Low Survivability, Class C.	11-89 Pink
Update of text under subheading 2.5.4.5.3.1	Update language with brand new language	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.5.3.1 Permeable Ballast Base Course, Second paragraph, last three sentences	Commercial projects where runon from adjacent surfaces may reach the permeable pavement surface shall submit WWHM calculations. Single/family duplex projects are not required to submit calculations unless the permeable pavement surface is being used to meet Minimum Requirement #6, 7, or 8.	The City of Tacoma may require other projects, such as installations that receive runon to submit calculations.	11-89 Orange
Update of text under subheading 2.5.4.5.5	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.5.5 Wearing Layer, third bullet point	• The maximum slope for porous asphalt and permeable concrete shall be 10%.	• The maximum slope for porous asphalt and permeable concrete shall be 6%.	11-90 Pink

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Update of text under subheading 2.5.4.5.5.1	Update text with brand new language, for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.5.5.1 Permeable Pavement - Underdrain	If an underdrain is placed at or near the bottom of the aggregate base in a permeable pavement design, the permeable pavement is not considered a low impact development technique and cannot be used to satisfy Minimum Requirement #5. Elevated underdrains that are placed within the aggregate base course to protect the pavement wearing course from saturation can be used to satisfy Minimum Requirement #5 though an underdrain is not required.	Underdrains are not recommended. Underdrains placed at or near the bottom of the aggregate base should not be used and if used, the permeable pavement is not considered a low impact development technique and cannot be used to satisfy List Approach of Minimum Requirement #5 and cannot be used to satisfy flow control requirements. Elevated underdrains that are placed within the aggregate base course to protect the pavement wearing course from saturation can be used to satisfy the List Approach of Minimum Requirement #5 though an underdrain is not required and not recommended. The underdrain perforations or slots shall only be located on the lower half of the pipe.	11-90 Orange, Purple & Pink
Added subheading and text under 2.5.4.5.6	Updated text with brand new language	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.5.6 Underground Utilities, subheading and all text under subheading	NA	2.5.4.5.6 Underground Utilities • Permeable pavement installations… • Permeable pavement proposed…	11-91 Orange
Added text under subheading 2.5.4.5.7	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.5.7 Drainage Conveyance, first sentence under subheading	NA	Permeable roads should be designed with a conveyance system to ensure safe driving conditions in the event of an intense storm event and to account for potential clogging.	11-91 Pink

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Updated text under subheading 2.5.4.6	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 All text under subheading 2.5.4.6 Ballasted Sidewalks		Ballasted sidewalks can be used as an alternative to permeable pavement sidewalks on private property and in the City right-of-way. Ballasted sidewalks shall be designed per City of Tacoma Standard Plan SU-04a with a minimum 6" permeable ballast section below the sidewalk. Limit run-on to permeable pavement surfaces to the maximum extent practicable. Run-on shall only be allowed from fully stabilized areas. See Volume 1, Appendix C for specific maintenance requirements for ballasted sidewalks. Modeling with an Ecology approved continuous simulation model is required to obtain flow credits. Model the facility using the gravel trench bed element.	11-91 & 11-92 Orange
Update of subheading and text under subheading 2.5.4.8	Update language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 2.5.4.8 Permeable Pavement Modeling, subheading and all text under subheading	Permeable Pavements – Sizing Criteria and Flow Credits Modeling in WWHM is required to obtain flow credits and required for all projects except single/family duplex and sidewalks that are only required to comply with Minimum Requirements #1-#5. Model the facility using the Permeable Pavement element.	2.5.4.8 Permeable Pavement Modeling Use the permeable pavement… The models allow for specifying… • Use a value of zero for the… • For grades less thank 2%, no… • For grades greater than 2%... 1. Permeable pavement surfaces… 2. The dimensions of the… 3. If an underdrain is elevated... • For roads on a slope with... 1. Each stretch of permeable... 2. Specify the dimensions of each... 3. Each cell should have its own... • The runoff modeling, similar... • In WWHM, in the Permeable...	11-92 & 11-93 Purple and Pink

NOTE: Volume 11 Best Management Practices Library contains both new text and text from other volumes in the 2016 Stormwater Management Manual.
When text is relocated to this volume but has not had any edits made the text appears as underline (with no highlights).

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New heading and text under 3.1	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.1 Introduction Subheading and text under heading	NA	3.1 Introduction Stormwater treatment BMPs are used to ensure compliance with Minimum Requirement #6 - Stormwater Treatment. The BMPs…	11-96 Purple
New subheading and text under 3.2.1	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.1 Applicability Subheading and text under subheading	NA	3.2.1 Applicability The design criteria contained in this section applies…	11-96 Purple
New subheading and text under 3.2.2	New language added to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.2 Site Suitability Subheading heading 3.2.2.1 and text under subheading	NA	3.2.2 Site Suitability 3.2.2.1 Site Characterization Site characterization is necessary to help determine the appropriateness of siting stormwater treatment facilities on a project site….	11-96 Pink
Update of subheading and text under subheading 3.2.2.2	Updated language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.2.2 Sequencing Subheading and text under subheading	Sequence of Facilities Treatment facilities can be placed in a variety of configurations. Some are required to be upstream from detention facilities while…	3.2.2.2 Sequencing • Stormwater treatment facilities may be placed… • Stormwater facilities used as part of a Treatment Train…	11-97 Purple & Pink
Update of text under subheading 3.2.2.4	Update of language for clarity/readability and deletion of text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.2.4 Setbacks First sentence of second bullet point, second sentence of third, full fourth bullet points and last sentence of section.	All systems shall be at least 10 feet from any building structure and at least 5 feet from any other structure or property line unless approved in writing by Environmental Services. A geotechnical analysis must be prepared addressing impacts to slopes when facilities are proposed within 50 feet of a steep (greater than 15%) slope. Additional setbacks for specific stormwater facilities will be noted in the appropriate section.	All systems shall be at least 10 feet from any building structure and at least 5 feet from any other structure or property line. • At least 10 feet from any building and at least 5 feet from any property line or structure. If necessary, setbacks shall be increased from the minimums in order to maintain a 1:1 side slope for future excavation and maintenance.	11-98 Purple & Grey
New subheading and text under 3.2.2.5	Updated volume with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.2.5 Underground Utilities, all text under subheading	NA	3.2.2.5 Underground Utilities • Stormwater facility installation must carefully consider impacts… • Stormwater facilities proposed to be located over shallow City….	11-98 Orange
New subheading and text under 3.2.2.6	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.2.6 Buoyancy subheading and all text under subheading	NA	3.2.2.6 Buoyancy Consideration shall be given to placing stormwater facilities where buoyancy is a concern…	11-99 Pink

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Updated text under subheading 3.2.2.7	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.2.7 Easements, Access, and Dedicated Tracts, all text under subheading	See Volume 3, Chapter 13 for access and easement requirements. Table 11-3: Treatment Facility Placement in Relation to Detention Facilities…	See Volume 14: Easements, Access, and Dedicated Tracts.	11-99 Purple
Update of text under subheading 3.2.3.1	Update language for clarity/readability and with brand new text (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.3.1 Flows Requiring Treatment First sentence of first paragraph and second and third sentence of second paragraph	Runoff from pollution-generating hard or converted vegetation areas exceeding the thresholds outlined in Minimum Requirement #6 (Volume 1, Chapter 2) must be treated using one or more of the water quality facilities in this manual. In WWHM, model these areas using the permeable pavement element. A default porosity of 0.3 may be used for all layers or an applicant can provide supporting materials to justify WWHM inputs.	Runoff from pollution-generating hard or converted vegetation areas exceeding the thresholds outlined in Minimum Requirement #6 (Volume 1, Chapter 2) must be treated using one or more of the stormwater treatment facilities in this manual. In an Ecology approved continuous simulation model, model these areas using the permeable pavement element. A default porosity of 0.3 may be used for all layers or an applicant can provide supporting materials to justify continuous simulation model inputs.	11-99 Purple & Orange
Added subsection 3.2.3.1.1	Updated volume with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.3.1.1 De Minimis Provisions Subheading and all text under subheading	NA	3.2.3.1.1 De minimis Provisions • The City will allow up to 5% of a surface area required to comply…	11-100 Orange
Added text under 3.2.3.4	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 Last sentence under subheading 3.2.3.4 Materials	NA	Painted metal parts shall not be used because of poor longevity.	11-102 Pink
Added subsection 3.2.3.5	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.2.3.5 Construction and Acceptance Subheading and all text under subheading	NA	3.2.3.5 Construction and Acceptance • Construction debris and sediment… • A Washington State Licensed... • Stormwater facilities require a…	11-102 Pink
Added subsection 3.3.1	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.3.1 Applicability subheading and text under subheading	NA	3.3.1 Applicability The design criteria contained in this section applies to all stormwater treatment facilities designed to infiltrate. The design criteria…	11-102 Purple

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Deleted text under 3.3.2	Text removed for readability as no longer required with new volume layout	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.3.2 Site Suitability All text under subheading	Site Suitability The following site suitability criteria must be considered as well as the above… For site selection and design decisions a…	3.3.2 Site Suitability	11-103 Purple
Added subsection 3.3.2.1	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.3.2.1 Site Characterization, subheading and text under subheading	NA	3.3.2.1 Site Characterization Site characterization is necessary to help determine the appropriateness of siting stormwater treatment facilities on a project site. The following project site…	11-103 Purple
Deleted text under subheading 3.3.2.1.1	Information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.3.2.1.2 Groundwater Protection Areas Last paragraph under subheading	See Chapter 2 of Volume 1 for geographic-specific requirements.	NA	11-103 Grey
Updated text under subheading 3.3.2.1.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.3.2.1.2 High Vehicle Traffic Areas, all text under subheading	An infiltration BMP may be considered for runoff from areas of industrial activity and the high vehicle traffic areas described… High Vehicle Traffic Areas are: • Commercial or industrial sites… • Road intersections with an ADT…	An infiltration BMP may be considered for stormwater from areas that require Oil Control. For those areas, ensure the oil control BMP is placed upstream of the infiltration BMP.	11-103 Pink
Deleted text under 3.3.2.1.3	Information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.3.2.1.3 Cold Climate and Impact of Roadway Deicers, first paragraph under subheading	For cold climate design criteria (snowmelt/ice impacts) refer to D. Caraco and R. Claytor, "Stormwater BMP Design Supplement for Cold Climates", Center for Watershed Protection, 1997.	NA	11-103 Grey
Updated text under subheading 3.3.2.2	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.3.2.2 Setback Criteria, first & second paragraph under subheading	Typical setbacks are outlined in Section 3.5. Setback criteria for the various infiltration and dispersion facilities can be found in the design criteria for each BMP in this chapter. Below are conditions that the soils professional must evaluate to determine the need for additional or more stringent setbacks than outlined in this manual.	Setback criteria for stormwater treatment facilities designed to infiltrate can be found in the Design Criteria for All Stormwater Facilities and within each BMP (as applicable). Below are conditions that must be evaluated to determine the need for additional or more stringent setbacks specific to the project.	11-104 Purple & Blue
Deleted text under subheading 3.4.1	Information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1 Purpose, last sentence of first paragraph	This chapter provides a discussion of their application and design criteria. BMPs are described for baffle type and coalescing plate separators.	NA	11-105 Grey

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Updated text under 3.4.1.1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.1 Description, all text under subheading	Oil water separators are typically the American Petroleum Institute (API) (also called baffle type) (American Petroleum Institute, 1990) or the coalescing plate (CP) type using a gravity…	This section provides design criteria for two common types of oil water… • The American Petroleum Institute… • The Coalescing Plate (CP) Oil…	11-105 Pink
Updated subheading and text under 3.4.1.2	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.2 Applications, all text under subheading	Applications/Limitations This BMP is specific for discharges to the stormwater system…	3.4.1.2 Applications • Oil water separators can be... • Oil water separators may also... • API and CP separators shall... • Oil water separators perform best…	11-105 & 11-106 Purple
Updated subheading and text under 3.4.1.3	Updated language for clarity/readability and new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.3 Design Criteria Applicable to Both API and CP Separators, subheading and text under subheading	Design Criteria 12.5.1 General Considerations The following are design criteria applicable to API and CP oil/water separators: • If practicable, determine oil/grease…	3.4.1.3 Design Criteria Applicable to Both API and CP Separators The following are design criteria applicable to API and CP oil/water separators: • Comply with Design Criteria for All Stormwater Facilities.	11-109 & 11-110 Purple & Orange
Added subheading and text under 3.4.1.3.3	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.3.3 Inlet and Outlet Subheading and all text under subheading	NA	3.4.1.3.3 Inlet and Outlet • The inlet shall be submerged… • The inlet shall be extended… • The inlet and outlet pipe shall… • The outlet shall be sized to… • The outlet shall a tee extending… • The outlet shall tee shall extend…	11-110 Purple
Added subheading and text under 3.4.1.3.4	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.3.4 Material Subheading and all text under subheading	NA	3.4.1.3.4 Materials • Acceptable materials for other... • Vault baffles shall be concrete…	11-110 Purple
Added subheading and text under 3.4.1.3.5	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.3.5 Access Subheading and all text under subheading	NA	3.4.1.3.5 Access • Provide access to each separator... • Access points for the forebay and…	11-110 Purple
Added subheading and text under 3.4.1.3.6	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.3.6 Recommended Criteria, and all text under subheading	NA	3.4.1.3.6 Recommended Criteria • Use absorbents in the afterbay if necessary. • For areas likely to produce larger amounts of oil, install a bleed-off pipe which discharges to a separate waste oil tank.	11-111 Purple

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Updated subheading and text under 3.4.1.4	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.4 Sizing - Stoke's Law, subheading and all text under subheading	Sizing Criteria • Determine the oil rise rate, Vt, in… Stokes Law equation for rise rate, Vt (cm/sec):… Where:… Use:… For Stormwater Inflow from Drainages under 2 Acres… For Stormwater Inflow from Drainages > 2 Acres:…	3.4.1.4 Sizing - Stoke's Law Gravity oil water separators are… Stokes Law equation for rise rate, Vt (cm/sec):… Where:… Oil water separators should… Where… The time required for the oil… The oil droplet rises to the… Substituting and simplifying:…	11-111 - 11-113 Purple
Updated text under subheading 3.4.1.5.1	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.5.1 Design Criteria, first paragraph, bullets #3-8, #10 & #12.	• A removable flow-spreading baffle... • A removable baffle (sediment… • A removable oil retaining baffle… • Baffle separator vaults shall… • Baffle separator vaults shall…	The design criteria below are in… • A removable flow spreading… • A removable sediment retaining… • A removable oil retaining baffle… • API Separator vaults shall have a… • API shall have a design water…	11-113 - 11-115 Purple
Added subheading and text under 3.4.1.5.2	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.5.2 Sizing Criteria for API separators Subheading and all text under subheading	NA	3.4.1.5.2 Sizing Criteria for API separators Use the following steps for sizing an API Separator: Step 1: Calculate the Water Quality… Step 2: Calculate the Adjusted Water… Step 3: Calculate the Minimum Vertical… Step 4: Calculate the Width and Depth… Step 5: Calculate the Length of the Vault Step 6: Check the Length to Width Ratio Step 7: Compute and Check that the... Step 8: Compute and Check that the... Step 9: Design the flow splitter and...	11-115 - 11-117 Purple

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Update of text under subheading 3.4.1.6.1	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.6.1 Design Criteria, bullets #3 & #7 (last two sub bullets)	• An oil-retaining baffle shall be provided. For large units, a baffle position of 0.25 L from the outlet wall is recommended. The oil-retaining baffle… ◦ Design plates for ease of removal and cleaning with high-pressure rinse or equivalent.	• An oil-retaining baffle shall be provided. For large units, a baffle position of 0.25 L from the outlet wall is recommended. The distance from the outlet shall consider the ability to inspect and maintain the separator. The oil-retaining baffle… ◦ Design plates for ease of removal (by bundling securely) and cleaning with high-pressure rinse or equivalent. ◦ Plate packs shall be stainless steel or polypropylene.	11-117 & 11-118 Orange & Purple
Update of text under 3.4.1.6.2	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.4.1.6.2 Sizing Criteria, all text under subheading	Calculate the projected (horizontal) surface area of plates needed using the following equation; based on an oil droplet size of 60 microns: Ah = Q/Vt = [Q] / [(.00386) * ((Sw - So)/(μw))] Where…	Coalescing plate separators are… Step 1: Calculate the Water… Step 2: Calculate the Adjusted… Step 3: Calculate the plate… Step 4: Calculate the collective… Step 5: Choose a Separator Step 6: Design the flow splitter…	1-118 & 1-119 Purple & Orange
Added text under subheading 3.5	Updated language for new layout	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.5 Phosphorus Treatment BMPs 3.5.1 Treatment Train Options Headings and all text and tables under headings	NA	3.5 Phosphorus Treatment BMPs 3.5.1 Treatment Train Options • BMP T700: Infiltration for Stormwater Treatment… 3.5.1 Treatment Train Options Table 11 - 10 Treatment Trains for Phosphorous Removal	11-120 Purple
Added text under subheading 3.6	Updated language for new layout	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.6 Enhanced Treatment BMPs 3.6.1 Treatment Train Options Headings and all text and tables under headings	NA	3.6 Enhanced Treatment BMPs • BMP T700: Infiltration for Stormwater Treatment... 3.6.1 Treatment Train Options Table 11 - 11 Treatment Trains for Enhanced Treatment	11-121 Purple
Added text under subheading 3.7.1.1	Updated text with new language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.1 Purpose Last line of indented paragraph/list	NA	BMP T730: Drywells	11-122 Pink

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Update of text under subheading 3.7.1.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.2 Application All text under subheading	These infiltration treatment measures are capable of achieving…	• Depending on how the… • Infiltration basins, trenches,… • Infiltration basins trenches, and… • Pretreatment is required before…	11-122 Purple & Pink
Update of text under subheading 3.7.1.3.1	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.3.1 Infiltration Rates: Measured (initial) and Design (long-term), first paragraph under subheading	For treatment purposes, the measured (initial) soil infiltration rate shall be 9 inches/hour or less. Design (long-term) infiltration rates up to 3 inches/hour can be considered if the infiltration receptor is not a sole-source aquifer, and in the judgment of the site professional the treatments soil has characteristics comparable to Section 7.6.6.	Refer to Infiltration Rate Determination for the allowable methods for determining infiltration rates. For treatment purposes, the measured (initial) soil infiltration rate shall be 9 inches/hour or less. Design (long-term) infiltration rates up to 3 inches/hour can be considered if the infiltration receptor is not a sole-source aquifer, and the treatment soils meet the physical and chemical.	11-123 Purple
Update of text under subheading 3.7.1.3.2	Updated language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.3.2 Drawdown Time, first sentence of first paragraph under subheading and first two bullet points	Refer to Section 7.5 for infiltration rate determination. • Restore hydraulic capacity to receive runoff from a new storm, • Maintain infiltration rates,	Refer to Infiltration Rate Determination for the allowable methods for determining infiltration rates.	11-123 Purple & Pink
Deleted text under subheading 3.7.1.3.3	Information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.3.3 Soil Physical and Chemical Suitability for Treatment, last paragraph under subheading	Engineered soils may be used to meet the design criteria in this chapter and the performance goals in Chapter 2 and Chapter 3. The treatment soils must not leach pollutants into the groundwater table or underground piping. Pollutants can include but not be limited to high or low pH, phosphorus and heavy metals. Environmental Services may require that additional testing be conducted on the treatment soils.	Engineered soils may be used to meet the design criteria.	11-123 Grey
Update of text under subheading 3.7.1.4	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.4 Subsurface Characterization, all text under subheading	• Conduct pit/hole explorations… • Subsurface explorations (test holes… • Continuous sampling (representative… • For basins, at least one test… • For trenches, at least one test pit… • For large infiltration facilities serving… The depth and number of test holes or... Prepare detailed logs for each test pit...	• A soils report is required to… • The soils report shall be based on… • The soils report shall be prepared… • If subsurface characteristics… • If subsurface characteristics… • Subsurface exploration does not… • The soils report shall be based on... 1. Classify the underlying soils of... 2. Identify the hydraulic restriction... 3. If the hydraulic restriction layer... 4. Identify the native soil...	11-124 - 11-127 Pink

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Update of text under subheading 3.7.1.5.1	Update language for clarity/readability, to match Ecology's intent, and with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.5.1 Sizing Last sentence of first paragraph and all text under section (A) and (B)	Overflows from an infiltration facility designed for flow control must comply with the Minimum Requirement #7. NOTE: Infiltration facilities… In order to determine compliance… (A) For 100% infiltration Using the output files from WWHM… (B) For 91% infiltration (water quality treatment volume) Using the output file from... (C) To meet the flow duration standard Using the output files from WWHM... (D) To meet the LID performance standard Using the output files from WWHM...	Infiltration facilities can be sized… In the Ecology approved continuous… • The pond element to represent… • The trench element to represent... • The trench element of SSD Table... The maximum ponded depth... (A) For 100% infiltration Using the output files from WWHM… (B) For 91% infiltration (stormwater treatment) Use the same steps as used when…	11-127 - 11-128 Purple, Pink & Orange
Update of text under subheading 3.7.1.6.2	Update text with brand new language and delete text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.6.2 Design Criteria Specific to Infiltration Basins, all text under subheading	Design Criteria Specific for Basins • Access should be provided for vehicles to easily maintain the forebay (presettling basin) area and not disturb vegetation, or resuspend sediment any more than is absolutely necessary.	3.7.1.6.2 Design Criteria Specific to Infiltration Basins Comply with Design Criteria for All Stormwater Facilities and Design Criteria Specific to All Stormwater Treatment Facilities Designed to Infiltrate	11-129 Orange & grey
Update of text under subheading 3.7.1.6.2.1	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.6.2.1 Geometry Last two bullet points under subheading	• Erosion protection of inflow points to the basin must also be provided (e.g., riprap, flow spreaders, energy dissipators (See Volume 3, Chapter 3). Select suitable vegetative materials for the basin floor and side slopes to be stabilized. Refer to Volume 5, Chapter 7 for recommended vegetation.	• Maximum ponding depth shall be between 2 and 6 feet.	11-129 Purple
Added subheading and text under 3.7.1.6.2.2	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.6.2.2 Inlet and Outlet, all text under subheading	NA	3.7.1.6.2.2 Inlet and Outlet • Provide erosion protection for... • Provide a primary overflow structure... • In addition to the primary overflow... • Armor the emergency overflow... • Design the overflow spillway as a… • The minimum width shall be 6 feet • Infiltration basins regulated as... • Where an emergency overflow...	11-129 & 11-130 Purple
Updated text under subheading 3.7.1.6.2.3	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.6.2.3 Lining, second sentence of first paragraph	A nonwoven geotextile should be selected that will function sufficiently without plugging (see geotextile specifications in Appendix B of Volume 5).	The non-woven geotextile shall conform to BMP xx: Geotextile Specifications, Geotextile for Underground Drainage - Low Survivability, Class C.	11-130 & 11-131 Pink

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under subheading 3.7.1.6.2.4	Update language with brand new language (City only) and deleted text where information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.6.2.4 Vegetation, all bullet points under subheading	• Vegetation – The embankment, emergency spillways, spoil... • Ponds shall have a sign placed for maximum visibility...	• Sod or seed exposed earth on the pond bottom and interior side slopes with an appropriate seed mixture…	11-131 Orange & Grey
Added subheading and text under 3.7.1.6.2.5	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.6.2.5 Access, all text under subheading	NA	3.7.1.6.2.5 Access • Provide maintenance access... • Place manhole lids in or at the... • The access ramp must be... • The internal berm may be used... • Access should be limited by... • The access road shall be…	11-131 Purple
Added subheading and text under 3.7.1.6.2.6	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.6.2.6 Fencing, all text under subheading	NA	3.7.6.2.6 Fencing A fence is required at the… It is recommended that fences… Access road gates should be… Pedestrian access gates should be…	11-131 Purple
Added subheading and text under 3.7.1.6.2.7	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.6.2.7 Signage, all text under subheading, bottom of page 11-131	NA	3.7.1.6.2.7 Signage Provide a sign and place for maximum visibility. The City of Tacoma has a template that can be used for both public and private stormwater ponds.	11-132 Purple
Updated subheading and text under 3.7.1.7.2	Update language for clarity/readability and added brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.7.2 Design Criteria Specific to Infiltration Trenches, first paragraph under subheading	Design Criteria	3.7.1.7.2 Design Criteria Specific to Infiltration Trenches Comply with Design Criteria for All Stormwater Facilities and Design Criteria Specific to All Stormwater Treatment Facilities Designed to Infiltrate.	11-133 Purple & Orange
Updated text under subheading 3.7.1.7.5	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.7.5 Geotextile Fabric Liner Last sentence of first paragraph	(see Appendix B of Volume 5)	The non-woven geotextile shall conform to BMP xx: Geotextile Specifications, Geotextile for Underground Drainage - Low Survivability, Class C.	11-133 Pink
Updated subheading and text under 3.7.1.7.9	Update language for clarity/readability and added brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.7.9 Distribution Pipe Subheading and first, fourth and fifth bullet points	Pipe • Distribution pipe shall be level and shall be either perforated or slotted pipe. • Distribution pipe shall be a minimum of 8 inches in diameter.	3.7.1.7.9 Distribution Pipe • Distribution pipe (if used) shall be level and shall be either perforated or slotted pipe. • Distribution pipe shall be a minimum of 8 inches in diameter but shall be sized based upon contributing area. • Pipe length shall not be so long that flow cannot be even distributed...	11-134 & 11-135 Purple & Orange

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added heading/ New BMP under 3.7.1.9	Updated language/ new BMP to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.1.9 BMP T730: Stormwater Treatment Drywells, all text and subheadings under BMP heading	NA	3.7.1.9 BMP T730: Stormwater Treatment Drywells 3.7.1.9.1 Description Drywells are subsurface concrete structures that convey stormwater into the underlying soil. 3.7.1.9.2 Design Criteria Specific to Drywells • See Figure xx and Figure xx which… • Comply with Design Criteria for... • The base of the drywell shall be... • Drywells area typically 48" in... • Depending on local soil... • Multiple drywells shall not be...	11-135 & 11-136 Pink
Updated subheading and text under 3.7.2.3	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.2.3 Applications Subheading and all text under subheading	Applications and Limitations Sand filtration can be used in most residential… Pretreatment is necessary to reduce…	3.7.2.3 Applications • Sand filters can be used to ensure compliance with Minimum Requirement #6. • Pretreatment is required for BMP T808: Basic Sand Filter, BMP T809: Large Sand Filter, and BMP T810: Sand Filter Vault.	11-142 Purple
Update subheading and text under 3.7.2.4	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.2.4 Design Criteria for All Sand Filtration BMPs, subheading and text under numbers 1 & 4	Design Criteria Sand Filter Design Criteria and Sizing 3. Online sand filters must NOT be placed upstream of a detention facility. This is to prevent exposure of the sand filter surface to high flow rates that could cause loss of media and previously removed pollutants.	3.7.2.4 Design Criteria for All Sand Filtration BMPs 1. Hydraulic head of 4 feet from inlet to outlet is required. 4. Online sand filters must be placed downstream of a detention facility. This is to prevent exposure of the sand filter surface to high flow rates that could cause loss of media and previously removed pollutants.	11-142 Purple
Update of text under 3.7.2.4	Update text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.2.4 Design Criteria for All Sand Filtration BMPs, text under subheading	NA	Comply with Design Criteria for All Stormwater Facilities.	11-142 Orange

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under 3.7.2.4	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.2.4 Design Criteria for All Sand Filtration BMPs, text under numbers 8, 9, 10 (sub bullet 3), 11 (sub bullet 1 & 4), 14 (last sentence of both sub bullet 1 & 3)	7. Include an overflow in the design. The overflow height shall be at the maximum hydraulic head of the water above the sand bed. ◦ Provide erosion protection along the first foot of the sand bed adjacent to the flow spreader. Methods for this... ◦ Upstream of detention, underdrain... ◦ A geotextile fabric (specifications in Appendix B) must be used between the sand layer and drain rock or gravel and placed so that 1-inch of drain rock/gravel is above the fabric. Drain rock shall...	8. For online sand filters, an overflow in the design. The overflow height shall be at the maximum hydraulic head of the water above the sand bed. Online sand filters… ◦Provide erosion protection along the first foot of the sand bed adjacent to the flow spreader. The geotextile shall conform to BMP xx: Geotextile Specifications, Geotextile for Underground Drainage - Moderate Survivability, Class A. Methods for this... ◦Size the underdrain piping... ◦A geotextile fabric (specifications in Appendix B) must be used between the sand layer and drain rock or gravel and placed so that 1-inch of drain rock/gravel is above the fabric. The geotextile shall conform to BMP xx: Geotextile Specifications, Geotextile for Underground Drainage - Low Survivability, Class C. Drain rock shall... The non-woven geotextile shall... The non-woven geotextile shall...	11-142 - 11-145 Pink
Deletion of text under 3.7.2.4	Text removed as information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.2.4 Design Criteria for All Sand Filtration BMPs Text under number 11 (sub bullet two, last sentence), and 14 (sub bullet three, first sentence)	Drain piping could be installed in basin and trench configurations. Other equivalent underdrains can be used. ◦ If an impermeable liner is not required then a geotextile fabric liner shall be installed that retains the sand and meets the specifications listed in Appendix B unless the basin has been excavated to bedrock	◦ If an impermeable liner is not required then a geotextile fabric liner shall be installed that retains the sand unless the basin has been excavated to bedrock.	11-143 & 11-145 Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under subheading 3.7.2.10.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.2.10.2 Design Criteria for Sand Filter Vaults, bullet points 1-3, 6, 13-16	• Provide erosion protection along the first foot of the sand bed adjacent to the spreader. Geotextile fabric secured on the surface of the sand bed, or equivalent method, may be used. • A geotextile fabric over the entire sand bed may be installed that is flexible, highly permeable, three-dimensional matrix, and adequately secured. This is useful in trapping trash and litter.	• Comply with the Design Criteria… • Sand filter vaults may be… • The sand filter bed shall consist of… • Provide erosion protection along the first foot of the sand bed adjacent to the spreader. Geotextile fabric secured on the surface of the sand bed, or equivalent method, may be used. The non-woven geotextile shall conform to BMP xx: Geotextile Specifications, Geotextile for Underground Drainage - Moderate... • A geotextile fabric over the entire sand bed may be installed that is flexible, highly permeable, three-dimensional matrix, and adequately secured. This is useful in trapping trash and litter. A geotextile may be used though may not be the best product. A polyethylene... • Access shall be provided for... • The maximum depth from... • The minimum internal height...	11-146 -& 11-148 Pink
Updated text under subheading 3.7.3	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 2 3.7.3 Design Criteria for Linear Sand Filters Fifth bullet point under subheading	• The drainpipe must be 6-inch diameter minimum and be wrapped in geotextile and sloped a minimum of 0.5 percent to promote positive drainage.	• The drainpipe must be 6-inch diameter minimum and be wrapped in geotextile and sloped a minimum of 0.5 percent to promote positive drainage. The non-woven geotextile shall conform to BMP xx: Geotextile Specifications, Geotextile for Underground Drainage - Low Survivability, Class C.	11-150 Pink
Update of subheading and text under 3.7.4	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4 BMP T900: media Filter Drain, all text under subheading	Media Filter Drain (previously Ecology Embankment) – BMP T900 The media filter drain (MFD), previously referred to as the ecology embankment… The media filter drain can achieve… Design and sizing criteria can be…	3.7.4 BMP T900: Media Filter Drain Per Minimum Requirement #9, an… Any standing water removed… Facilities shall be designed and…	11-152 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added subheading and text under 3.7.4.1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.1 General Description Subheading and all text under subheading + images	NA	3.7.4.1 General Description The media filter drain (MFD), previously... Figure 11 - 16 Media filter drain Type 1: Side slope application with underdrain Figure 11 - 17 Dual media filter drain Type 2: Median application Figure 11 - 18 Media filter drain Type 3: Side slope application without underdrain Figure 11 - 19 Media filter drain Type 4: End-of-pipe application with underdrain Figure 11 - 20 Media filter drain Type 5: End-of-pipe application without underdrain Figure 11 - 21 Media filter drain Type 6: End-of-pipe application with underdrain Figure 11 - 22 Media filter drain Type 7: End-of-pipe application without underdrain	11-152 - 11-159 Pink
Added subheading and text under 3.7.4.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.2 Functional Description, all text under subheading	NA	3.4.7.2 Functional Description The MFD removes suspended… Stormwater runoff is conveyed… The underdrain trench is an option… It is critical to note that water…	11-160 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added subheading and text under 3.7.4.3	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.3 Applications and Limitations Subheading and all text under subheading	NA	3.7.4.3 Applications and Limitations • Media filter drains can be used... • MFD Type 1 and Type 3 - Ideal... • Dual MFD for Highway Medians... • MFD Type 4 and Type 5 – Ideal... • MFD Type 6 and Type 7 – Ideal... Limitations • Ensure lateral MFD side slopes... • Where the MFD is built away... • Ensure longitudinal MFD slopes... • Ensure the longest flow path... • Do not construct in wetlands... • Shallow groundwater – Determine... • Unstable slopes – In areas where... • Narrow roadway shoulders – In... • Ensure the upstream conveyance...	11-160 & 11-161 Pink
Added subheading and text under 3.7.4.4	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.4 Design Criteria Subheading and all text under subheading	NA	3.7.4.4 Design Criteria Comply with Design Criteria for All Stormwater Facilities.	11-161 Pink
Added subheading and text under 3.7.4.4.1	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.4.1 Facility Geometry, all text under subheading	NA	3.7.4.4.1 Facility Geometry 3.7.4.4.1.1 Components • **No-Vegetation Zone** - The... • **Grass Strip** - The width of the... • **Media Filter Drain Mix Bed** - The... • **3-Inch Medium Compost Blanket**... • **Conveyance System Below Media**...	11-161 & 11-162 Pink
Added subheading and text under 3.7.4.4.1.2	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.4.1.2 Length, all text under subheading	NA	3.7.4.4.1.2 Length • The length of the MFD (Type 1... • The length of the MFD (Type 4...	11-162 Pink
Added subheading and text under 3.7.4.4.1.3	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.4.1.3 Cross Section, all text under subheading	NA	3.7.4.4.1.3 Cross Section • The surface of the MFD (Type 1... • The surface of the MFD (Type 4...	11-162 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added subheading and text under 3.7.4.4.1.4	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.4.1.4 Tributary Area, all text under subheading	NA	3.7.4.4.1.4 Tributary Area For MFD (Type 1 - Type 3), the resultant slope from the contributing drainage area should be less than or equal to 9.4%, calculated using Equation 2910 in Section 5-4.2.2.	11-162 Pink
Added subheading and text under 3.7.4.5	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.5 Materials, all text under subheading	NA	3.7.4.5 Materials The MFD mix consists of the… These materials should be used… • Gravel Backfill for Drains... • Underdrain Pipe... • Construction Geotextile for... • Crushed Surfacing Base… If the MFD is configured to allow...	11-162 & 1-163 Pink
Added subheading and text under 3.7.4.6	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.6 Sizing 3.7.4.6.1 Media Filter Drain Mix Bed Sizing Procedure for MFD Type 1 - Type 3 All text and table under subheadings	NA	3.7.4.6 Sizing 3.7.4.6.1 Media Filter Drain Mix Bed Sizing Procedure for MFD Type 1 - Type 3 The width of the MFD mix bed… The MFD mix bed should be a… For runoff treatment, base… For western Washington, QHighway is the water quality design flowrate calculated by an Ecology approved continuous simulation model. Base the long-term infiltration... Assuming that the length of the... Western Washington project... Table 11-14 Western Washington design widths for media filter drains (Type 1 and Type 3)	11-163 & 11-164 Pink
Added subheading and text under 3.7.4.6.2	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.6.2 Media Filter Drain Mix Bed Sizing Procedure for MFD Type 4 and Type 5, all text under subheading	NA	3.7.4.6.2 Media Filter Drain Mix Bed Sizing Procedure for MFD Type 4 and Type 5 The length (perpendicular to the direction…	11-164 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added subheading and text under 3.7.4.6.3	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.6.3 Media Filter Drain Mix Bed Sizing Procedure for MFD Type 6 and Type 7 All text under subheading	an	3.7.4.6.3 Media Filter Drain Mix Bed Sizing Procedure for MFD Type 6 and Type 7 MFD Type 6 and Type 7 are… 1. Determine the appropriate flow spreader option using guidance in Volume xx. 2. Determine the MFD mix bed… 3. The number of flow spreaders	11-164 & 11-165 Pink
Added subheading and text under 3.7.4.6.4	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.6.4 Underdrain Design All text, tables and figures under subheading	NA	3.7.4.6.4 Underdrain Design Underdrain pipe can provide a… Figure 11 - 23 Media filter drain underdrain installation. The following describes the… 1. Calculate the flow rate per foot from the contributing basin to the MFD. 2. Calculate the MFD flow rate… 3. Size the underdrain pipe to… 4. Determine the underdrain... 5. Given the underdrain design flow... Table 11-10 Media Filter Drain...	11-165 - 11-167 Pink
Added subheading and text under 3.7.4.6.5	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.6.5 Landscaping All text under subheading	NA	3.7.4.6.5 Landscaping Landscape the grass strip the same as Basic Biofiltration Swales (BMP T1010)	11-167 Pink
Added subheading and text under 3.7.4.6.6	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.6.6 Construction Criteria, all text under subheading	NA	3.7.4.6.6 Construction Criteria Keep effective erosion and sediment control measures in place until grass strip is established. Do not allow vehicles or traffic on the MFD, to minimize rutting and maintenance repairs.	11-167 Pink
Added subheading and text under 3.7.4.6.7	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.6.7 Signage All text under subheading		3.7.4.6.7 Signage If MFD is in a critical aquifer recharge area for drinking water supplies, provide signage prohibiting the use of pesticides. Provide a sign and place for maximum visibility. The City of Tacoma has a template that can be used for both public and private stormwater ponds.	11-168 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added subheading and text under 3.7.4.6.8	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.4.6.8 Maintenance Criteria, all text under subheading	NA	3.7.4.6.8 Maintenance Criteria Per Minimum Requirement #9, an operation and maintenance…	11-168 Pink
Updated text under subheading 3.7.5.1	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.5.1 Description, all text under subheading	Biofiltration swales are typically shaped as a trapezoid or a parabola in cross section as shown in Figure 5 - 1 and Figure 5 - 2.	3.7.5.1 Description Basic biofiltration swales are vegetation-lined channels designed to remove suspended solids from stormwater. The shallow, concentrated flow allows for filtration of stormwater by the vegetation.	11-169 Purple
Added subheading and text under 3.7.5.2	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.5.2 Applications and Limitations, all text under subheading	NA	3.7.5.2 Applications and Limitations • Basic biofiltration swales can… • The performance of biofiltration…	11-169 Purple
Added text under subheading 3.7.6 Design Criteria	Updated for clarity/readability and with brand new text (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.6 Design Criteria All text under subheading	Design Criteria	3.7.6 Design Criteria Comply with all Design Criteria for All Stormwater Facilities in addition to the criteria below. Basic biofiltration swales may be located upstream or downstream of detention facilities. If placed downstream from detention, prolonged flows may reduce grass survival and a wet biofiltration swale or other BMP may be more appropriate. The biofiltration swale shall be designed using the design criteria in Table 5-9.	11-169 & 11-170 Purple and Orange
Deleted text under subheading 3.7.6.1	Updated text for clarity/readability where information is not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.6.1 Sizing Procedure for Biofiltration Swales, Preliminary Steps, sub heading and text	***Preliminary Steps*** P.1. Determine the water quality design… P.2.Establish the longitudinal... P.3.Select an appropriate	NA	11-169 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under subheading 3.7.6.1	Update language for clarity and readability and deletion of text where information is not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.6.1 Sizing Procedure for Biofiltration Swales, Design Steps subheading, D1, D2, D3 & D7	D.3.Select swale shape. D.4.Use Manning's equation and first… Where: Q = Water quality design flowrate per… Because the depth of flow in most biofiltration swales is shallow relative to the bottom width, channel side slopes can be ignored in the calculation of bottom width. Use the following equation to estimate the swale bottom width for a trapezoidal swale. For other swale shapes, substitute R and A into Equation 1 to solve for b. Where:... A minimum 2-foot bottom width is required. If the calculated bottom width is less than 2 feet, increase the width to 2 feet... Where Q, n, and... Next, compute the top... If b for a swale is greater than 10 ft,...	D.1. Determine the water quality… D.2. Determine the biofiltration… D.3. Establish the longitudinal slope… Where: Biofiltration design flowrate,… Because the depth of flow in most biofiltration swales is shallow relative to the bottom width, channel side slopes can be ignored in the calculation of bottom width. Use the following equation to estimate the swale bottom width for a trapezoidal swale. Where: A minimum 2-foot bottom width is required. If the calculated bottom width is less than 2 feet, use 2 for the remainder of the equations.	11-170 & 11-171 Purple & Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under subheading 3.7.6.1	Update language for clarity and readability and deletion of text where information is not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.6.1 Sizing Procedure for Biofiltration Swales, Design Steps subheading, D8, D9, D10 & D11	D.5.Compute A Where:... T = top width of trapezoid or width of… D.6.Compute the flow velocity at design… Q = water quality design flow rate per… If V >1.0 ft/sec (or V>0.5 ft/sec for a filter strip), repeat steps D-1 to D-6 until the condition is met. A velocity greater than 1.0 ft/sec was found to flatten grasses, thus reducing filtration. A velocity lower than this maximum value will allow a 9-minute hydraulic residence time criterion in a shorter biofilter. If the value of V... D.7.Compute the swale length (L, ft) L = Vt (60 sec/min) Where: t = hydraulic residence time (min) V = flow velocity Use t = 9 minutes for this calculation (use t = 18 minutes for a continuous inflow biofiltration swale). If a biofilter length is greater than the space permits, follow the advice in step 6. If a length less than 100... D.8.If there are space constraints,... 1. Divide the site drainage to flow to multiple biofilters...	D.8. Compute A Where:... D.9. Compute the flow velocity (Vbiofil) Biofiltration design flowrate, calculated in D2. If V >1.0 ft/sec alter design and repeat calculations repeat steps D-1 to D-6 until the condition is met. A velocity greater than 1.0 ft/sec was found to flatten grasses, thus reducing filtration. A velocity lower than this maximum value will allow a 9-minute hydraulic residence time criterion in a shorter biofilter. D.10. Compute the swale length (L, ft) L = VbiofilVt (60 sec/min) Where: t = hydraulic residence time (min) See Table 5-1. Vbiofil = velocity at Qbiofil (ft/sec) If a biofilter length is greater than the space permits, follow the advice in D.11. D.11. If there are space constraints... 1. Divide the contributing area into multiple biofiltration swales.	11-171 & 11-172 Purple & Grey
Updated text under subheading 3.7.6.1	Brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.6.1 Sizing Procedure for Biofiltration Swales, Design Steps subheading, D12 & D13	NA	D.12. Note the Final Calculated Biofiltration Swale Dimensions. D.13. Calculate the total final swale depth (yswale) For offline facilities:…	11-173 Orange

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Update text under subheading 3.7.6.1	Brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.6.1 Sizing Procedure for Biofiltration Swales, Freeboard Check subheading, first sentence in first paragraph, F.1., and all text, images and tables below.	Stability Check Steps The stability check must be performed for the combination of highest expected flow and least vegetation coverage and height. S.1 Perform the stability check for the 100-year, return frequency flow using 15-minute time steps using WWHM. S.2 Estimate the vegetation coverage... S.3 Estimate the degree of retardance... Table 5 - 10: Stability Check Steps (SC)... S.4 Select a trial Manning's n for the... S.5 Refer to Figure 5 - 3 to obtain a... S.6 Compute hydraulic radius, R,... Figure 5 - 18. The Relationship... Table 5 - 11: Guide to Selecting... S.7 Use Manning's equation... S.8 Compare the actual VR... S.9 Compute the actual V for... S.10 Check to be sure V < Vmax. S.11 Compute the required swale... S.12 Compare the A, computed in... S.13 Calculate the depth of flow... S.14 Compare the depth from step S.13... S.15 Recalculate the hydraulic radius:... S.16 Make a final check for capacity...	Freeboard Check The freeboard check must be performed for the combination of highest expected flow and least vegetation coverage and height. F.1 Determine Qconvey which is the 100-year, return frequency flow using an Ecology approved continuous simulation model. F.2 Calculate the flow depth at Qconvey... F.3 Calculate total required swale depth (yswale)...	11-173 - 11-176 Purple & orange
Added subheading and text under 3.7.6.2	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.6.2 Level Spreaders and Energy Dissipators, all text under subheading	NA	3.7.6.2 Level Spreaders and Energy Dissipators • Construct level spreaders and… • Install level spreaders (minimum… • Use energy dissipaters (such as…	11-179 Purple
Deleted text under 3.7.6.3	Information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.6.3 Soil Criteria, First bullet point	• Use the following list as a guide for choosing appropriate soils for the biofiltration swale. Use at least 8-inches of the following top soil mix:	• Use the following list as a guide for choosing appropriate soils for the biofiltration swale.	11-179 Grey
Deleted text under 3.7.6.5	Information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.6.7 Construction Criteria, last line	Grade biofilters to attain uniform longitudinal and lateral slopes.	NA	11-180 Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated subheading and text under 3.7.7.2	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.7.2 Applications, subheading and first two bullet points	Applications/Limitations	3.7.7.2 Applications • Wet biofiltration swales can be used to help ensure compliance with Minimum Requirement #6. • The performance of wet biofiltration swales is variable between storm events and is therefore not a consistent treatment BMP.	11-184 Purple
Updated text under subheading 3.7.7.3	Update language for clarity/readability, to match Ecology's intent and to delete text where information is not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.7.3 Design Criteria, all text in paragraphs 1-3 plus 1. (both bullets), 2.(second bullet), 3. & 4. (second bullet)	Use the same sizing and criteria as for basic biofiltration swales except for the... ◦ If the swale will be downstream of a detention pond or vault providing flow control, multiply the treatment area (bottom width times length) of the swale by 2, and readjust the swale length, if desired. Maintain... ◦ If longitudinal slopes are greater than 2 percent, the wet swale must be stepped so that the slope within the stepped sections averages 2 percent. Steps may be made of retaining walls, log check dams, or short riprap sections. No underdrain or low flow drain is required. ◦ A high-flow bypass (i.e., an offline design) is required for flows greater than the offline water quality design flow that has been increased by 3.5. The bypass may... ◦ No underdrains or low-flow drains...	Wet biofiltration swales may be located upstream or downstream of detention facilities. ◦If the swale will be downstream of a detention pond or vault providing flow control, multiply the treatment area (bottom width times length) of the swale by 2, and readjust the swale length, as necessary. Maintain... ◦The increase in treatment area is needed to ensure pollutant... ◦If longitudinal slopes are greater than 2 percent, the wet swale must be stepped so that the slope within the stepped sections averages 2 percent. Steps may be made of retaining walls, log check dams, or short riprap sections. ◦A high-flow bypass (i.e., an offline design) is required for flows greater than the Qbiofil. The bypass...	11-184 & 11-185 Purple & Grey
Updated BMP heading	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.9 BMP T1040 Vegetated Filter Strip	BMP T1040 Basic Filter Strip	3.7.9 BMP T1040 Vegetated Filter Strip	11-186 Pink
Updated text under subheading 3.7.9.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.9.2 Applications/Limitations, all text under subheading	The basic filter strip is typically used online and adjacent and parallel to a paved area such as parking lots, driveways, and roadways.	The vegetated filter strip is typically used online and adjacent and parallel to a paved area such as parking lots, driveways, and roadways.	11-186 Pink

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated subheading and text under 3.7.9.3	Update language to match Ecology's intent, with brand new language (City only) and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.9.3 Design Criteria for Vegetated Filter Strip, subheading and first two bullet points	Design Criteria for Filter strips	3.7.9.3 Design Criteria for Vegetated Filter strips • Comply with Design Criteria for All Stormwater Facilities. • Vegetated filter strips shall not be located downstream of detention facilities.	11-186 & 1-187 Pink, Orange & Purple
Updated text under Table 11-17	Update language to match Ecology's intent, to delete text where information is not needed, and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.9.3 Design Criteria for Vegetated Filter Strip Table 11-22 Sizing Criteria	Column Header: Design Parameter Column Header: BMP T1010 - Basic Biofiltration Swale	Column Header: Design Parameter Column Header: BMP T1010 - Basic Biofiltration Swale Column Header: BMP T1020: Wet Biofiltration Swale Column Header: BMP T1030: Continuous Inflow Biofiltration Swale	11-189 & 11-190 Pink, Orange, Purple & Grey
Added text under subheading 3.7.9.3.1	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.9.3.1 Sizing Procedure, second paragraph/subheading Design steps	NA	Design Steps Project proponents may utilize the… D.1. Determine the water quality… D.2. Determine the vegetated…	11-191 Purple
Updated text under subheading 3.7.10.1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.10.1 Description First sentence under subheading	CAVFS are a variation of the vegetated filter strip that includes soil amendments.	CAVFS are a variation of the vegetated filter strip that includes soil amendments.	11-192 Pink
Updated text under 3.7.10.2	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.10.2 Applications, all text under subheading	CAVFS can be used for basic and enhanced water quality treatment.	CAVFS can be used to help ensure compliance with Minimum Requirement #6 - Stormwater Treatment. CAVFS provide basic and enhanced treatment.	11-192 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under 3.7.10.3	Updated text with brand new language (City only), for clarity and readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.10.3 Design Criteria First and third line of text under subheading (page 11-191), second bullet point (second and third sub bullet points) (page 11-192)	Filter strips shall only receive sheet flow. ◦ Be produced at a composting facility that is permitted by the jurisdictional health authority. Permitted compost facilities in Washington are included on a list available at: www.ecy.wa.gov/programs/swfa/organics ◦ The compost product must originate from a feedstock that is contains a minimum of 65% by volume recycled plant waste comprised of “yard debris,” “crop residues,” and “bulking agents”. The remainder of the feedstock may contain a maximum of 35% by volume “post-consumer food waste”. Biosolids are not allowed. Terms are defined in WAC 173-350-100.	Comply with Design Criteria for All Stormwater Facilities. CAVFS shall only receive sheet flow. ◦Be produced at a permitted composting facility. Permitted compost facilities in Washington are included on a list available at: shttp://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Organic-materials/Managing-organics-compost ◦The compost product must originate from a feedstock that is contains a minimum of 65% by volume recycled plant waste comprised of “yard debris,” “crop residues,” and “bulking agents”. A maximum of 35% by volume of "post-consumer food waste" may be substituted for recycled plant waste.. Biosolids and/or manure are not allowed. Terms are defined in WAC 173-350-100.	11-192 & 11-193 Orange, Purple & Pink
Added subheading and text under 3.7.11.2	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.2 Application, subheading and all text under subheading	NA	3.7.11.2 Application • Basic wetponds and large… • Basic and large wetponds… • Large wetponds provide… • When used as part of a treatment…	11-195 & 11-196 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under subheading 3.7.11.3	Updated text for clarity/readability and added brand new text (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3 Design Criteria First five paragraphs under subheading	For a basic wetpond, the wetpool volume provided shall be equal to or greater than the total volume of runoff from the water quality design storm, which is the 6-month, 24-hour storm event. Alternatively, the water quality design storm volume shall be equal to the simulated daily volume indicated by WWHM that represents the upper limit of the range of daily volumes that accounts for 91% of the entire runoff volume over a multi-decade period of record. A large wetpond requires a wetpool volume at least 1.5 times larger than the total volume of runoff from the 6-month, 24-hour storm event.	Comply with Design Criteria for All Stormwater Facilities. Basic and large wetponds may be located upstream or downstream of detention facilities. When located downstream of detention, performance and aesthetics may be increased.	11-196 Purple & Orange
Updated text under subheading 3.7.11.3.1	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.1 Sizing Procedure, text under number 2	NA	2. For large wetponds only. Calculate the wetpool volume required for a large wetpond (Vlarge)...	11-199 Purple
Added subheading and text under 3.7.11.3.2	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.2 Efficiency, all text under subheading	NA	3.7.11.3.2 Efficiency The primary design factor that determines a wetpond's efficiency is the wetpool volume. The larger the wetpool volume, the greater the potential for pollutant removal. Also important are the avoidance…	11-199 & 11-200 Pink
Added text under subheading 3.7.11.3.4	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.4 Berms, Baffles, and Slopes, last bullet point of subsection	NA	• Interior side slopes may be retaining walls. Retaining walls require design and stamp by a Washington State Licensed Professional Engineer.	11-201 Pink
Updated text under subheading 3.7.11.3.5	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.5 Embankments, second sentence of paragraph	If the impoundment has a storage capacity (including both water and sediment storage volumes) greater than 10 acre-feet (435,600 cubic feet or 3.26 million gallons) above natural ground level, then dam safety design and review are required by the Department of Ecology.	If the impoundment has a storage capacity (including both water and sediment storage volumes) greater than 10 acre-feet (435,600 cubic feet or 3.26 million gallons) above natural ground level, or has an embankment height of greater than 6' at the downstream toe, then dam safety design and review are required by the Department of Ecology.	11-201 Pink

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Updated text under subheading 3.7.11.3.6	Update language to match Ecology's intent, delete text where information is not needed, update language for clarity/readability, and to add brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.6 Inlet and Outlet, bullet points 2, 6-12, & 15.	• Provide an outlet structure. Either a Type 2 catch basin with a grated opening ("jail house window") or a manhole with a cone grate ("birdcage") may be used (see Figure 3 - 17 for an illustration). • Provide an emergency spillway and design it according to the requirements for detention ponds (see Volume 3, Section 7.1.3). • All metal parts shall be corrosion-resistant. Do not use zinc coated (galvanized) materials.	• Provide an outlet structure. Either a Type 2 catch basin with a grated opening ("jail house window") or a manhole with a cone grate ("birdcage") may be used (see Figure 3 - 17 for an illustration). A sump is not required in the outlet structure. • Provide an emergency spillway • In addition to the primary... • Armor the emergency overflow... • Design the overflow spillway... • The minimum width shall be 6 feet • Wetponds regulated as dams... • Where an emergency overflow... • Acceptable materials for other...	11-201 - 11-203 Pink, Grey, Purple & Orange
Updated text under subheading 3.7.11.3.7	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.7 Access and Setbacks, bullet points 2-10	• All facilities shall be a minimum of 50 feet from any slope greater than 15 percent. A geotechnical report must address the potential impact of a wetpond on a slope steeper than 15% or if closer than 50 feet. • Access is the same as for detention ponds (Volume 3). • If the dividing berm is also used for access, it should be built to sustain loads of up to 80,000 pounds.	• All facilities shall be a minimum of 50 feet from any slope greater than 15 percent. A geotechnical report stamped and prepared by a Washington State Licensed Professional Engineer or Washington State Professional Geologist must address the potential impact of a wetpond on a slope steeper than 15% or if closer than 50 feet. • Provide maintenance access... • Place manhole lids in or at... • The access ramp must be... • The internal berm may be... • Access should be limited... • The access road shall be...	11-204 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Update of text under 3.7.11.3.8	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.8 Planting Requirements, first paragraph under subheading and last sentence of fourth bullet	Planting requirements for detention ponds also apply to wetponds.	Sod or seed exposed earth on the pond bottom and interior side slopes with an appropriate seed mixture. Plant all remaining areas around the wetpond with grass or landscape and mulch with a 3" cover of shredded wood mulch. The mulch should be free of garbage and weeds and should not contain excessive resin, tannin, or other material detrimental to plant growth. Do not use construction materials, wood debris, or wood treated with preservatives for producing wood mulch. No planting on berms or banks is allowed if the wetpond is regulated as a dam.	11-204 Purple
Update of text under subheading 3.7.11.3.9	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.9 Landscaping, first bullet point at top of page 11-205	• Evergreen trees and trees which produce relatively little leaf-fall are preferred in areas draining to the pond.	• Evergreen or columnar deciduous trees along the west and south sides of ponds are recommended to reduct thermal heating. Evergreen trees and trees which produce relatively little leaf-fall are preferred in areas draining to the pond.	11-206 Pink
Added subheading and text under 3.7.11.3.10	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.10 Fencing, all text under subheading	NA	3.7.11.3.10 Fencing A fence is required at the… It is recommended that fences… Access road gates should be… Pedestrian access gates should…	11-206 & 11-207 Purple
Added subheading and text under 3.7.11.3.11	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.11 Signage, and all text under subheading	NA	3.7.11.3.11 Signage Provide a sign and place for maximum visibility. The City of Tacoma has a template that can be used for both public and private stormwater ponds. The template is required to be used for public detention ponds. It is available at www.cityoftacoma.org/stormwatermanual.	11-207 Purple
Updated of subheading and deletion of text under subheading 3.7.11.3.12	Update language for clarity/readability and to delete text where information is not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.11.3.12 Aesthetics, subheading and first two bullet points	Recommended Design Features • A flow length-to-width ratio greater… • The access and maintenance road…	3.7.11.3.12 Aesthetics	11-207 Purple & Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under subheading 3.7.12.2	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.12.2 Applications and Limitations, first sentence and last sentence under subheading	NA	Wetvaults can be used to help ensure compliance with Minimum Requirement #6 - Stormwater Treatment. Below-ground structures like wetvaults are more difficult to inspect and maintain.	11-210 Purple
Updated text under subheading 3.7.12.3	Updated language with brand new text (City only) and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.12.3 Design Criteria, all text under subheading	NA	Comply with Design Criteria for All Stormwater Facilities. Wetvaults may be located upstream or downstream of detention facilities.	11-210 Orange & Purple
Update of subheading and text under 3.7.12.3.1	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.12.3.1 Sizing, and all text under subheading	***Sizing Procedure*** The wetpool volume for the wetvault shall be equal to or greater than the total volume of runoff from the 6-month, 24-hour storm event. Alternatively, the water quality design storm volume shall be equal to the simulated daily volume indicated by WWHM that represents the upper limit of the range of daily volumes that accounts for 91% of the entire runoff volume over a multi-decade period of record. Typical design details and...	3.7.12.3.1 Sizing The wetpool volume shall be equal to or greater than the water quality design storm volume. The wetpool volume shall be calculated using either: a. An Ecology approved continuous simulation model to obtain the water quality design volume. b. A single event model to obtain the total volume of runoff from the 6-month, 24-hour storm event, assuming a Type 1A distribution, using the SBUH method. The 6-month, 24-hour storm event in the City of Tacoma is 1.44" Typical design details and...	11-210 Purple
Update of text under subheading under 3.7.12.3.3	Update language for clarity/readability and to delete information no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.12.3.3 Vault Structure, last three bullet points under subheading	• Wetvaults shall conform to the… • Where pipes enter and leave… • All metal parts must be corrosion…	NA	11-212 Purple
Added subheading and text under 3.7.12.3.5	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.12.3.5 Materials, subheading and all text under subheading	NA	3.7.12.3.5 Materials • Minimum 3,000 psi structural… • Acceptable materials for other…	11-213 Purple
Added subheading and text under 3.7.12.3.6	New language added for readability/ new lay out	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.12.3.6 Structural Stability, subheading and all text under subheading	NA	3.7.12.3.6 Structural Stability • All vaults must meet structural… • Design cast in place wall… • Structural design for cast in place… • Place vaults on stable, well…	11-213 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under subheading 3.7.12.3.7	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.12.3.7 Access Requirements, all text under subheading	Same as for detention vaults (see Volume 3, Section 7.4.1.4), except for the following additional requirement for wetvaults: • Provide a minimum of 50 square…	• Provide access opening over… • Position access opening a... • For vaults greater than 1,250 ft2... • For vaults under roadways... • All access openings, except... • Vaults with widths 10 feet… • The maximum depth from... • Provide internal structural walls... • The minimum internal height... • Vaults must comply with the... • Provide ventilation pipes... • Provide a minimum of 50 square... *Access Roads* • Access roads are needed... *Setbacks* • Wetvaults shall be a minimum... • All wetvaults shall be a minimum...	11-213 & 11-214 Purple
Updated text under subheading 3.7.12.2	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.13.2 Applications and Limitations, first two bullet points under subheading	NA	• Stormwater treatment wetlands… • Stormwater treatment wetlands…	11-216 Purple
Updated text under subheading 3.7.13.3	Update language for clarity/readability and to add brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.13.3 Design Criteria, second and third paragraph under subheading	NA	Comply with Design Criteria for All Stormwater Facilities. Stormwater treatment wetlands may be located upstream or downstream of detention facilities. Stormwater treatment wetlands located downstream from detention may have better plant diversity.	11-216 Orange & Purple
Updated text under subheading 3.7.13.3.1	Update language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.13.3.1 Sizing Procedure, text under numbers 1-4.	1. The design volume is the total volume… 2. Calculate the surface area of the… 3. Determine the surface area of the first… 4. Determine the surface area of the…	1. Calculate the design volume (V)…. 2. Calculate the surface area (A)… 3. Determine the surface area of… 4. Determine the surface area…	11-216 & 11-217 Purple
Updated text under subheading 3.7.12.3.3	Update language to match Ecology's intent and for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.13.3.3 Lining Requirements, first and last sentence under subheading	The criteria for liners given in Chapter 4 must be observed.	Stormwater treatment wetlands are not intended to infiltrate. See BMP xxx: Liners for additional information.	11-219 Pink & Purple

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Updated text under subheading 3.7.13.4	Updated language for readability/consistency	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.13.4 Inlet and Outlet, all text under subheading has been replaced with language used in Wetponds BMP	Same as for wetponds (see BMP T1010).	See Figure 11 - 32 and Figure 11 - 33 for details on the following requirements:…	11-219 - 11-221 Purple
Updated text under subheading 3.7.13.5	Updated language for readability/consistency	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.13.4 Access and Setbacks, all text under subheading has been replaced with language used in Wetponds BMP	Access shall be the same as for detention ponds.	• All facilities shall be a minimum… • All facilities shall be a minimum… • Place manhole lids in or at the… • The access ramp must be… • The internal berm may be… • Access should be limited… • The access road shall be…	11-221 & 11-222 Purple
Added subheading and text under 3.7.13.6.1	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.13.6.1 Signage, subheading and all text under subheading	NA	3.7.13.6.1 Signage Provide a sign and place for maximum visibility. The City of Tacoma has a template that can be used for both public and private stormwater ponds. The template is required to be used for public detention ponds. It is available at www.cityoftacoma.org/stormwatermanual.	11-222 Orange
Updated text under subheading 3.7.13.7	Updated language for readability/consistency	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.13.7 Construction Criteria, all text under subheading. Text has been updated to be consistent with language used in Wetponds BMP	Construction Criteria • Construction and maintenance… • Construction of the naturalistic alternative…	3.7.13.7 Construction Criteria • Remove sediment that has… • Sediment that has accumulated… • Construction of the naturalistic…	11-222 Purple
Deletion of text under 3.7.14.1	Information is no longer needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.14.1 Description, last sentence under subheading	See Chapter 3 for more information about treatment performance goals.	NA	11-226 Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under subheading 3.7.14.2	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.14.2 Application and Limitations, first paragraph and first two sentences of second paragraph under subheading	Combined detention and water quality facilities are efficient for sites that also have detention requirements. The water quality facility may often be placed beneath the detention facility without increasing the facility surface area.	Combined detention and waterpool facilities can be used to help ensure compliance with Minimum Requirement #5 - Onsite Stormwater Management for Meeting the LID Performance Standard Only, Minimum Requirement #6 - Stormwater Treatment, Minimum Requirement #7 - Flow Control, and Minimum Requirement #8 - Wetlands Protection. Combined detention and stormwater treatment facilities are efficient for sites that also have detention requirements. The stormwater treatment facility may often be placed beneath the detention facility without increasing the facility surface area.	11-226 Purple
Updated text under subheading 3.7.14.3.1	Update text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.14.3.1 Design Criteria, last sentence under subheading	NA	Comply with Design Criteria for All Stormwater Facilities	11-226 Orange
Updated text under subheading 3.7.14.3.1.1	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.14.3.1.1 Sizing, all text under subheading	The sizing for combined detention and wetponds are identical to those for wetponds and for detention facilities. The wetpool volume for a combined facility shall be equal to or greater than the total volume of runoff from the 6-month, 24-hour storm event or the water quality design storm volume estimated by WWHM. Follow the standard procedure specified in Volume 3 to size the detention portion of the pond.	The sizing for combined detention and wetponds are identical to those for wetponds and for detention facilities. Refer to Guidance in BMP T1110: Basic and Large Wetponds for sizing the wetpond portion and BMPxxx: Detention Ponds for sizing the detention portion.	11-226 Purple
Updated text under subheading 3.7.17.2	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.7.17.2 Emerging Technology Use in the City of Tacoma, all text under subheading	Proprietary devices are approved on a case-by-case basis. See the "City of Tacoma Policy Regarding Proprietary Stormwater Treatment Devices" located on the City of Tacoma website for more information on preapproval requests.	• All proprietary devices must be… • For privately maintained facilities:… • For publically maintained facilities:…	11-233 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated subheading and text under 3.8.1.1	Updated language for clarity/readability and deleted text for consistency	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.8.1.1 Purpose, subheading and text under subheading	Purpose and Definition A presettling basin provides pretreatment of runoff in order to remove suspended solids, which can impact other runoff treatment BMPs.	3.8.1.1 Purpose A presettling basin provides pretreatment of runoff in order to remove suspended solids, which can impact other stormwater treatment BMPs.	11-235 Grey & Purple
Updated subheading and text under 3.8.1.2	Update language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.8.1.2 Application, subheading and all text under subheading	Application and Limitations Runoff treated by a presettling basin may not be discharged directly to a receiving water; it must be further treated by a basic, enhanced, or phosphorus runoff treatment BMP.	3.8.1.2 Application • Pretreatment basins can be used… • Pretreatment basins may also be…	11-234 Purple
Updated text under 3.8.1.3	Updated language for clarity and readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 3 3.8.1.3 Design Criteria First two bullet points under subheading	• A presettling basin shall be designed using analysis techniques for a wetpool or using WWHM. The treatment volume shall be at least 30 percent of the total volume of runoff from the 6-month, 24-hour storm event	• Presettling basins shall follow the Design Criteria for All Stormwater Treatment Facilities. • Presettling basins shall be installed upstream of other stormwater treatment or flow control BMPs.	11-253 Purple

NOTE: Volume 11 Best Management Practices Library contains both new text and text from other volumes in the 2016 Stormwater Management Manual.
When text is relocated to this volume but has not had any edits made the text appears as underline (with no highlights).

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New introduction language for section 4.1	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.1 Introduction	NA	4.1 Introduction	11-237 Purple
Section updated exactly like Chapter 3 Stormwater Treatment		City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 Section 4.2 - 4.2.1.2.6 and 4.2.1.4 - 4.2.5.9	This section and associated edits are a complete replica of Volume 11, Chapter 3 Stormwater Treatment Section, with sections renamed to have "flow control" replace "stormwater treatment" see Volume 11, Chapter 3 associated sections for list of revisions.		11-237 -11-255
New section title	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.1.3 Sizing	NA	4.2.1.3 Sizing	11-240 Purple
Revised language in section 4.2.1.3.1	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.1.3.1 Flows Requiring Treatment	Additional Sizing Considerations	Flows Requiring Treatment	11-240 Purple
New language in section 4.2.1.3.1.2	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.1.3.1.2 Offsite Inflow	NA	4.2.1.3.1.2 Offsite Inflow	11-241 Purple
Added subheadings and text under BMP F100	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.6 BMP F100 - Detention Facilities 4.2.6.1 Purpose 4.2.6.2 Applications Headings and all text under headings	NA	4.2.6 BMP F100 - Detention Facilities 4.2.6.1 Purpose Detention facilities include detention ponds (BMP F110), detention tanks (BMP F120), and detention vaults (BMP F130) that are used to capture stormwater, store it, and slowly release the flows to help mimic predeveloped or existing conditions... 4.2.6.2 Applications BMP F110: Detention Ponds, BMP F120: Detention Tanks, and BMP F130: Detention Vaults can be used to help ensure compliance with Minimum Requirement #5 - Onsite Stormwater Management for Meeting the LID Performance Standard Only, Minimum Requirement #7 - Flow Control, and Minimum Requirement #8 - Wetlands Protection...	11-256 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New language in Section 4.2.6.3.1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.6.3.1 Sizing All text under subheading	NA	4.2.6.3.1 Sizing The volume and outflow design for detention ponds, detention tanks, and detention vaults must be sized using an Ecology approved continuous simulation model, using the design criteria in BMP F200: Control Structures, and using Sizing Criteria in Design Criteria for All Flow Control Facilities... • Minimum Requirement #5 - LID Performance... • Minimum Requirement #7 - Freshwater... • Minimum Requirement #7 - Existing... • Minimum Requirement #8 - Wetlands...	11-256 Pink
New language in section 4.2.6.3.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.6.3.2 Detention Facility Access Bullet #3	NA	• Place manhole lids in or at the edge of the access road when possible.	11-257 Pink
Removed language in section 4.2.6.3.2	Information no longer needed/ deleted for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.6.3.2 Detention Facility Access Last bullet under subheading	• Additional easements or modifications to proposed lot boundaries may be required to provide adequate access to detention facilities. Right-of-way may be needed for detention pond maintenance. Any tract not abutting public right-of-way shall have a 15-footwide extension of the tract to an acceptable access location.	NA	11-257 Purple
Revised language in section 4.2.6.3.3	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.6.3.3 Detention Facility Overflow First paragraph under subheading	In all ponds, tanks, and vaults, a primary overflow (usually a riser pipe within the control structure; see Section 7.5BMP xx: Control Structures) shall be provided to bypass the 100-year, 24-hour developed peak flowrate or the 100-year return period flowrate as estimated by...	In all ponds, tanks, and vaults, a primary overflow (usually a riser pipe within the control structure; see BMP F200: Control Structures) shall be provided to bypass the 100-year return period flowrate as estimated by…	11-257 Pink & purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Revised language in section 4.2.7	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7 BMP F110a. Detention Ponds	The design criteria in this section are for detention ponds. However, many of the criteria also apply to infiltration ponds (Chapter 6 and Volume 5), and water quality wetponds and combined detention/ wetponds (Volume 5). Description.	Detention ponds are depressions where stormwater is collected, stored, and slowly released.	11-257 Purple
Revised language in section 4.2.7.1	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1 Design Criteria Specific for Detention Ponds Second paragraph under subheading	NA	The Design Criteria below is in addition to the Design Criteria for All Flow Control Facilities and the Design Criteria for All Detention Facilities.	11-257 Purple
Revised language in section 4.2.7.1.1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.1 Dam Safety for Detention Ponds First sentence under subheading	Stormwater detention facilities that can impound 10 acre-feet (435,600 cubic feet; 3.26 million gallons) or more above normal, surrounding grade with the water level at the embankment crest are subject to Ecology's dam safety requirements, even if water storage is intermittent and infrequent (WAC 173-175-020).	Stormwater detention facilities that can impound 10 acre-feet (435,600 cubic feet; 3.26 million gallons) or more above the natural ground level or has an embankment height greater than 6' at the downstream tow are subject to Ecology's dam safety requirements, even if water storage is intermittent and infrequent (WAC 173-175-020).	11-258 Pink
Removed language from section 4.2.7.1.1	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.1 Dam Safety for Detention Ponds First sentence under subheading	The principal safety concern is for the downstream population at risk if the dam should breach and allow an uncontrolled release of the pond contents. Peak flows from dam failures are typically much larger than the 100-year flows which these ponds are typically designed to accommodate.	NA	11-258 Grey
Removed language from section 4.2.7.1.2	Information no longer needed/ deleted for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.2 General Bullet #4	• A geotechnical analysis and report must be prepared for slopes 20% or greater, or if located within 200 feet of the top of a slope 20% or greater or landslide hazard area. The scope of the geotechnical report shall include the assessment of impoundment seepage on the stability of the natural slope where the facility will be located within the setback limits set forth in this section.	NA	11-258 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removed language from section 4.2.7.1.3	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.3 Setbacks Bullet #1	• The 100-year water surface elevation shall be at least 10 feet from any building structure and at least 5 feet from any other structure or property line unless approved in writing by Environmental Services	• The 100-year water surface elevation shall be at least 10 feet from any building structure and at least 5 feet from any other structure or property line	11-258 Grey
Removed language from section 4.2.7.1.4	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.4 Side Slopes Bullet 3 (sub bullet 3 & 5) and last paragraph under subheading	◦At least 25% of the pond perimeter shall be a vegetated soil slope not steeper than 3H:1V. ◦The design is stamped by a licensed structural engineer or civil engineer with structural expertise Other retaining walls such as rockeries, concrete, masonry unit walls, and keystone type walls may be used if designed by a geotechnical engineer, structural engineer, or civil engineer with structural expertise	◦The design is stamped by a licensed Washington State Licensed Professional Engineer with structural expertise. Other retaining walls such as rockeries, concrete, masonry unit walls, and keystone type walls may be used if designed Washington State Licensed Professional Engineer with geotechnical expertise.	11-258 & 11-259 Grey & Purple
Revised language in section 4.2.7.1.7	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.7 Emergency Overflow Spillway First bullet point (second sentence) & second bullet point (second sentence)	For impoundments less than 10 acre-feet, ponds must have an emergency overflow spillway that is sized to pass the 100-year, 24-hour developed peak flowrate or 100-year return period flowrate as estimated by WWHM. The emergency overflow structure must be designed to pass the 100-year, 24-hour developed peak flowrate or 100-year return period flowrate as estimated using WWHM, with a minimum of 6 inches of freeboard, directly to the downstream conveyance system or another acceptable discharge point.	For impoundments less than 10 acre-feet, ponds must have an emergency overflow spillway that is sized to pass the 100-year return period flowrate as estimated by an Ecology approved continuous simulation model. The emergency overflow structure must be designed to pass the 100-year, or 100-year return period flowrate as estimated using an Ecology approved continuous simulation model, with a minimum of 6 inches of freeboard, directly to the downstream conveyance system or another acceptable discharge point.	11-263 Pink
Revised language in section 4.2.7.1.8	Deleted text where information is not needed and Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.8 Access First sentence under subheading	• An access ramp is required for pond cleaning and maintenance. The ramp must extend to the pond bottom with a maximum slope of 15 percent (see access road criteria in Section 7.1.2)	• An access ramp is required for removal of sediment with a trackhoe and truck. The ramp must extend to the pond bottom with a maximum slope of 15 percent (see access road criteria in Section 7.1.2) For small, shallow ponds, a ramp may not be required if the trackhoe can load a truck parked at the pond edge.	11-263 Pink & Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removed language from section 4.2.7.1.8	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.8 Access Second bullet under subheading	• The internal berm of the pond may be used for access if all the following apply: ◦ The internal berm is no more than 4 feet above the first wetpool cell. ◦ The first wetpool cell is less than 1,500 square feet (measured without the ramp). ◦ The internal berm is designed to support a loaded truck, considering the berm is normally submerged and saturated.	NA	11-264 Grey
Removed language from section 4.2.7.1.9	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.9 Fencing Second paragraph of first bullet under subheading	Also note that detention ponds on school sites shall comply with safety standards developed by the Department of Health (DOH) and the Superintendent for Public Instruction (SPI). These standards include what is called a 'non-climbable fence.'	NA	11-264 Grey
Revised language in section 4.2.7.1.9	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.9 Fencing Bullet 2	• Fences shall be 6 feet in height (see WSDOT Standard Plan L-2, Type 1 or Type 3 chain link fence). The fence may be a minimum of 4 feet in height if the depth of the impoundment is 5 feet or less (see WSDOT Standard Plan L-2, Type 4 or Type 6 chain link fence).	• It is recommended that fences be 6 feet in height. 4 foot high fences may be appropriate if the depth of the impoundment (measured from the lowest elevation in the bottom of the impoundment - directly adjacent to the bottom of the fenced slope, up to the emergency overflow water surface) is 5 feet or less.	11-264 Pink
Revised language in section 4.2.7.1.9	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.9 Fencing Bullet 3	• Access gates shall be 16 feet in width consisting of two swinging sections 8 feet in width.	• Access gates should be swinging and allow for access by trucks.	11-265 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removed language from section 4.2.7.1.9	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.9 Fencing Bullets 4-7	• Vertical metal balusters or 9 gauge galvanized steel fabric with bonded vinyl coating shall be used as fence material with the following aesthetic features:… • For metal baluster fences, Uniform Building Code standards apply… • Wood fences may be used in residential areas where the fence will be maintained by homeowners associations or adjacent lot owners... • Wood fences shall have pressure treated posts (ground contact rated) either set in 24-inch deep concrete footings or attached to footings by galvanized brackets...	NA	11-265 Grey
Removed language from section 4.2.7.1.9	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.9 Fencing Bullet 10	NA	• Pedestrian access gates should be a minimum 4 feet in width.	11-265 Purple
New language in section 4.2.7.1.10	Brand new language	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.10 Signage All text under subheading	Detention ponds shall have a sign placed for maximum visibility from adjacent streets, sidewalks, and paths. An example pond sign and example specifications for a permanent stormwater control pond are provided in Figure 11 - 18 and Table 3 - 9	Provide a sign and place for maximum visibility. The City of Tacoma has a template that can be used for both public and private detention ponds. The template is required to be used for public detention ponds. It is available at www.cityoftacoma.org/stormwatermanual.	11-265 Orange
Revised language in section 4.2.7.1.11	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.11 Planting Requirements Last four sentences under subheading	Multiple plantings and mulching may be required until vegetation has established itself. A bond may be required to guarantee vegetation stabilization for detention facilities. The seed mix and coverage shall be specified on the plan set.	Do not use construction materials, wood debris, or wood treated with preservatives for producing shredded wood mulch. The seed mix and coverage shall be specified on the plan set.	11-265 Purple
Revised language in section 4.2.7.1.12	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.7.1.12 Landscaping Bullet #16	• Evergreen trees and trees which produce relatively little leaf-fall are preferred in areas draining to the pond.	• Evergreen or columnar deciduous trees along the west and south sides of ponds are recommended to reduct thermal heating. Evergreen trees and trees which produce relatively little leaf-fall are preferred in areas draining to the pond.	11-266 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Revised language in section 4.2.8.2.1	Updated for clarity and readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.8.2.1 General Bullets 1 & 2	• Tanks shall be designed as flow-through systems with manholes in line (see Figure 11 - 19) to promote sediment removal and facilitate maintenance.	• Comply with Design Criteria for All Flow Control Facilities and Design Criteria for All Detention Facilities • Tanks shall be designed as flow-through systems with manholes in line (see Figure 11 - 19) to promote sediment removal and facilitate maintenance. Detention facilities may be designed as back up systems if preceded by a Stormwater Treatment BMP.	11-269 & 11-270 Pink
Deleted text under 4.2.8.2.1	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.8.2.1 General Bullet 3	• The detention tank bottom shall be located 6 inches below the inlet and outlet to provide dead storage for sediment. If arch pipe is used, the minimum dead storage is 0.5 feet.	• The detention tank bottom shall be located 6 inches below the inlet and outlet to provide dead storage for sediment.	11-270 Grey
Updated text under 4.2.8.3	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.8.3 Third sentence under subheading	NA	Painted metal parts shall not be used because of poor longevity.	11-270 Pink
Removed language from section 4.2.8.5	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.8.5 Buoyancy (deleted heading)	Buoyancy Buoyancy calculations shall be required where groundwater may induce flotation. Engineers are required to address this issue in project design documentation.	NA	11-270 Purple
Removed language from section 4.2.8.7	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.8.7 Methods of Analysis (deleted heading)	Methods of Analysis Detention Volume and Outflow 4.2.8.8 The volume and outflow design for detention tanks must be in accordance with Minimum Requirement # 7 in Volume 1 and the hydrologic analysis and design methods in Chapter 1. Restrictor and orifice design are given in Section 7.5.	NA	11-271 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Revised language in section 4.2.9.2.2	Updated language for readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.9.2.2 Materials All text under subheading	Minimum 3,000 psi structural reinforced concrete may be used for detention vaults. Acceptable materials for stormwater facilities include thermoplastics, iron, steel, aluminum, and concrete. Steel and iron shall be aluminum coated (aluminized Type 2).	Minimum 3,000 psi structural reinforced concrete may be used for detention vaults. Provide all construction joints with water stops. Acceptable materials for other parts of the detention vault system stormwater facilities include thermoplastics, iron, steel, aluminum, and concrete. Steel and iron shall be aluminum coated (aluminized Type 2). Zinc coated (galvanized) materials are prohibited. Painted metal parts shall not be used because of poor longevity.	11-273 Pink & Purple
Removed language from section 4.2.10	Text deleted for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.10 Methods of Analysis 4.2.10.1 Detention Volume and Outflow Subheadings and all text under subheadings	Methods of Analysis 4.2.10.1 Detention Volume and Outflow 4.2.11 The volume and outflow design for detention vaults must be in accordance with Minimum Requirement # 7 in Volume 1 and the hydrologic analysis and design methods in Chapter 1. Restrictor and orifice design are given in Section 7.5.	NA	11-274 Purple
New language in section 4.2.11	Brand new language	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.11 BMP F140d. Parking Lots for Additional Detention Bullet #5	NA	• A signed letter from the property owner is provided stating they understand that the Parking Lot is being proposed for detention and a covenant and easement agreement is signed and recorded and includes the parking lot as part of the detention facility.	11-275 Orange
New language in section 4.2.12	Brand new language	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.12 BMP F150 Roofs for Detention Bullet #6	NA	• A signed letter from the property owner is provided stating they understand that the Parking Lot is being proposed for detention and a covenant and easement agreement is signed and recorded and includes the parking lot as part of the detention facility.	11-275 Orange
Removed language from section 4.2.13.2.3	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.13.2.3 Access First paragraph under subheading	The following guidelines for access may be used.	NA	11-276 Grey

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removed language from section 4.2.13.2.3	Text removed for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.13.2.3 Access Last paragraph under subheading	Acceptable materials for stormwater facilities include thermoplastics, iron, steel, aluminum, and concrete. Steel and iron shall be aluminum coated (aluminized Type 2). Zinc coated (galvanized) materials are prohibited.	NA	11-276 Purple
Updated language under 4.2.13.2.4	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.2.13.2.4 Materials Last sentence under subheading	NA	Painted metal parts shall not be used because of poor longevity.	11-276 Pink
Removed language from section 4.3	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.3 Other BMPs that Provide Flow Control	NA	4.3 Other BMPs that Provide Flow Control	11-287 Purple
Revised language in section 4.3.1.2	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.3.1.2 Applications and Limitations All text under subheading	Trees are a landscape amenity with flow control benefits that can be applied in most settings. Flow control credit is given for retaining or transplanting trees.	This BMP can be used to help ensure compliance with Minimum Requirement #5 - LID Performance Standard, Minimum Requirement #7 - Flow Control and/or Minimum Requirement #8 - Wetlands Protection. The degree of flow control is dependent on tree type and tree location.	11-287 Purple
Revised language in section 4.4.2.6	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.2.6 Long-term Tree Retention and Protection First sentence under subheading	Trees shall be retained, maintained and protected on the site after construction and for the life of the development or until any approved redevelopment occurs in the future.	Trees shall be retained, maintained and protected until redevelopment of the project site necessitates alternative stormwater mitigation or if alternative stormwater mitigation is proposed to replace the trees.	11-290 Purple
New language in section 4.4.2.6	Brand new language	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.2.6 Long-term Tree Retention and Protection Second sentence under subheading	Trees that are removed or die shall be replaced with like species during the next planting season (typically October to March).	Trees that are removed or die shall be replaced with like species during the next planting season window (see Planting Window).	11-290 Orange

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New language in section 4.4.3.2.4	Brand new language	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.3.2.4 Planting Window	NA	4.4.3.2.4 Planting Window Trees shall be planted between October 1 and March 1. If it is predicted to be a dry or wet planting season, the planting window may be reduced or extended as necessary to help ensure survivability. Information must be provided describing why an altered planting window is appropriate.	11-291 Orange
New language in section 4.4.3.3	Brand new language	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.3.3 Long-term Tree Retention and Protection All text under subheading	Trees shall be retained, maintained and protected on the site after construction and for the life of the development or until any approved redevelopment occurs in the future	Trees shall be retained, maintained and protected until redevelopment of the project site necessitates alternative stormwater mitigation or if alternative stormwater mitigation is proposed to replace the trees. Trees that are removed or die shall be replaced with like species during the next planting window. Trees shall be pruned according to industry standards, ANSI A300 Part 1 and International Society of Arboriculture's Best Management Practices - Tree Planting	11-291 Orange
New language in section 4.4.4.2.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.4.2.2 Applications and Limitations First two paragraphs under subheading	NA	Vegetated rooftops can be used to help ensure compliance with Minimum Requirement #5 - The LID Performance Standard, Minimum Requirement #7 - Flow Control and Minimum Requirement #8 - Wetlands Protection. It is unlikely that the use of this BMP alone will meet the Minimum Requirement compliance goals.	11-292 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New language in section 4.4.4.3.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.4.3.2 Applications and Limitations All text under subheading	Approval of the water re-use system requires approval of the appropriate state and local agencies as required for any water right.	Rainwater harvesting can be used to help ensure compliance with Minimum Requirement #5 - The LID Performance Standard, Minimum Requirement #7 - Flow Control, and Minimum Requirement #8 - Wetland Protection. It is unlikely that the use of this BMP alone will meet the Minimum Requirement compliance goals.	11-293 Pink
Revised language in section 4.4.4.4.1	Updated language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.4.4.1 Purpose and Definition All text under subheading	Minimal excavation foundation systems are those techniques that minimize disturbance to the natural soil profile within the footprint of the structure. This preserves most of the hydrologic properties of the native soil. Pin foundations are an example of a minimal excavation foundation.	Minimal excavation foundation systems are those techniques that engage intact existing soil strength with minimal or no excavation, and do not disturb or significantly compact the native soil profile. This preserves most of the hydrologic properties of the native soil. Pin pile, screw pile, and cluster pile foundations are an example of a minimal excavation foundation.	11-294 Purple & Pink
New language in section 4.4.4.4.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.4.4.2 Applications and Limitations Bullet #1 and #2	NA	• Minimal excavation foundations can be used to help ensure compliance with Minimum Requirement #5 - The LID Performance Standard, Minimum Requirement #7 - Flow Control, and/or Minimum Requirement #8 - Wetlands Protection. • It is unlikely that the use of this BMP alone will meet the Minimum Requirement compliance goals.	11-294 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New language in section 4.4.4.4.4	Updated language for clarity and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.4.4.4 Minimal Excavation Foundation Modeling Subheading and bullet #2	Flow Credits for Minimal Excavation Foundation Systems • Where roof runoff is dispersed on the up gradient side of a structure in accordance with the design criteria in "Downspout Dispersion", model the tributary roof area as pasture on the native soil.	4.4.4.4.4 Minimal Excavation Foundation Modeling • Where roof runoff is dispersed on the up gradient side of a structure in accordance with the design criteria in BMP L603: Roof Downspout Dispersion, model the tributary roof area as pasture on the native soil. If the stormwater is cut off by an embedded grade beam, wall, or skirt structure that inhibits stormwater from reaching the full flowpath, modeling for flow control purposes is not allowed.	11-294 Pink & Purple
Revised language in section 4.4.4.4.4	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.4.4.4 Minimal Excavation Foundation Modeling Last sentence of last bullet under subheading	NA	If step forming is used, the area must be reduced as shown above.	11-295 Pink
New language in section 4.4.4.5.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.4.5.2 Applications and Limitations All text under subheading	NA	4.4.4.5.2 Applications and Limitations Reverse Slope Sidewalks can be used to help ensure compliance with Minimum Requirement #5 - The LID Performance Standard, Minimum Requirement #7 - Flow Control, and/or Minimum Requirement #8 - Wetlands Protection. It is unlikely that the use of this BMP alone will meet the Minimum Requirement compliance goals.	11-295 Pink
Removed language from section 4.4.4.5.4	Updated language for readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 4 4.4.4.5.4 Reverse Slope Sidewalk Modeling Subheading and Bullet #1	Flow Credits for Reverse Slope Sidewalks • Model the sidewalk area as landscaped area over the underlying soil type.	4.4.4.5.4 Reverse Slope Sidewalk Modeling	11-295 Pink & purple

NOTE: Volume 11 Best Management Practices Library contains both new text and text from other volumes in the 2016 Stormwater Management Manual.
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New title for Chapter 5	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 Chapter 5 Accessory BMPs	NA	Chapter 5 Accessory BMPs	11-296 Purple
Revised section title	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 6 5.1 BMP A100: Liners 5.1.1 Purpose	Facility Liners	5.1 BMP XXX: Liners 5.1.1 Purpose	11-296 Purple
Revised language in section 5.1.2	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 5.1.2 General Design Criteria First bullet point under subheading	• Check each BMP to determine if a liner is required or recommended	• Check each BMP to determine if a liner is required or recommended and if there are specific liner requirements for a given BMP.	11-296 Purple
Removed language from section 5.1.2	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 5.1.2 General Design Criteria Last sentence of third bullet point	See Volume 5, Section 11.2.3.6 for liner requirements specific to wetpool facilities.	NA	11-296 Grey
Updated text under 5.1.2	Updated language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 5.1.2 General Design Criteria First sub bullet of third bullet point	◦Where the seasonal high groundwater elevation is likely to contact a low permeability liner, liner buoyancy may be a concern. A low permeability liner shall not be used in this situation unless evaluated and recommended by a geotechnical engineer.	◦Where the seasonal high groundwater elevation is likely to contact a low permeability liner, liner buoyancy evaluation and recommendation for use and possible anchoring by a Washington State Licensed Professional Engineer is required.	11-296 Purple
Removed language from section 5.1.3	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 5.1.2 General Design Criteria, fifth bullet point	• Check all liners for buoyancy stability and include calculations in project documentation. Provide anchors as needed.	NA	11-296 Grey
New purpose language for flow splitters section	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 5.1.4.1 Purpose, subheading and all text under subheading	NA	Purpose Flow splitters are typically manholes or vaults with internal baffles...is dependent on the purpose of splitting the flows.	11-300 Purple
Revised language for section 5.1.4.2	Updated or moved language for clarity/readability	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 5.1.4.2 General Design Criteria, first four bullet points under subheading	• A flow splitter must be designed… • The top of the weir must be… • The maximum head must be…	• A flow splitter must be designed to deliver flowrates as necessary for the purpose of the flow splitter installation….	11-300 & 11-301 Purple

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New language under section 5.1.4.2	Brand new language	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 5.1.5 Materials Bullet #3	• All metal parts must be corrosion resistant. Zinc coated (galvanized) materials are prohibited. Painted metals parts shall not be used because of poor longevity.	• Acceptable materials for other parts of the flow splitter include thermoplastics, iron, steel, aluminum, and concrete. Steel and iron shall be aluminum coated (aluminized Type 2). Zinc coated (galvanized) materials are prohibited. Painted metal parts shall not be used because of poor longevity.	11-302 Orange
Removed language from section 5.2	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 5.2 Flow Spreading Options, first sentence under subheading	Flow spreaders function to uniformly spread flows across the inflow portion of water quality facilities (e.g., sand filter, biofiltration swale, or filter strip)	Flow spreaders function to uniformly spread flows.	11-305 Grey
New language under section 5.2.1 dealing with flow spreading devices	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 5 5.2.1 General Design Criteria, second bullet point	NA	• Flow spreaders are difficult to maintain in a way that allows for continual even evenly distributed flow. Flow spreaders should not be used on slopes greater than 5% or areas easily accessible to the public.	11-305 Pink
Removed language from Option D for Flow Spreading Options	Information not needed	City of Tacoma Stormwater Management Manual	Volume 11 Chapter 6 6.2.1 General Design Criteria, Option D, first sentence under subheading	Unconcentrated flows from paved areas entering filter strips or continuous inflow biofiltration swalescan use curb ports or interrupted curbs (Option E) to allow flows to enter the strip or swale.	Unconcentrated flows from paved areas can use curb ports or interrupted curbs (Option E).	11-309 Grey

NOTE: Portions of Volume 3. Chapter 1, 6, App A and App B and Volume 5. Chapter 7 and App B have been moved and are now located in Volume 12. Chapter 1 and show as underlined text with no highlights.

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Updated text under 1.1.1 heading	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.1.1 Minimum Computational Standards NOTE: under subheading	NOTE: Facilities that are sized based on a water quality volume may require design based on single event modeling.	NOTE: Certain facilities may be sized using a single event model. The sizing criteria within each BMP states which model is appropriate.	12-2 Purple
Removed text under 1.1.1 heading	Information Not Needed	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.1.1 Minimum Computational Standards Second bullet point under subheading	• Other HSPF or continuous simulation models may be accepted on case-by-case basis at the discretion of the City.	NA	12-2 Grey
Removed text under 1.1.1 heading	Information Not Needed	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.1.1 Minimum Computational Standards Last sentence of fourth bullet point	See Chapter 9 for more information.	NA	12-2 Grey
Moved language from under 1.1.3.2 to 1.1.1	Moved language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.1.1 Minimum Computational Standards Las paragraph under subheading	NA	The NRCS did not map the soils within the City of Tacoma. For modeling purposes, soils within the City limits shall be assumed to fall in Hydrologic Soil Group C unless site-specific grain size distribution and/or permeability testing indicates otherwise. This assumption of soil type cannot be used to prove infeasibility for onsite infiltration, nor can it be used as a basis to design onsite infiltration facilities. Values shall typically be rounded to the nearest 100th when determining which Minimum Requirements apply to a project and for stormwater system design.	12-2 Purple

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Updated text under 1.1.3 heading	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.1.3 Single-Event Modeling Subheading and all text under subheading	Single-Event Hydrograph Single event methods are only acceptable for sizing wetpool treatment facilities or for conveyance analysis. All storm event hydrograph methods require input of parameters that describe physical drainage basin characteristics. These parameters provide the basis from which the runoff hydrograph is developed. Guidance and requirements for some of these parameters is provided in the following sections.	1.1.3 Single-Event Modeling Single event models shall use the SBUH method and utilize the City of Tacoma Design Storm as shown in Table 12 - 1 below.	12-3 Purple
Removed text under 1.1.3.1	Information Not Needed	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.1.3.1 Design Storm First paragraph and first sentence of second paragraph under subheading	The total depth of rainfall for storms of 24-hour duration and 2, 5, 10, 25, 50, and 100-year recurrence intervals are published by the National Oceanic and Atmospheric Administration (NOAA)… Based on these isopluvials, the following design storms assuming a Type 1A rainfall distribution shall be used for the City of Tacoma:	The following design storms assuming a Type 1A rainfall distribution shall be used for the City of Tacoma:	12-3 Grey
New language under 1.1.3.2	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.1.3.2 Curve Number	NA	Use the following curve numbers: • Lawn/ Landscaped Areas: 86 • Impervious Surfaces: 98 • Use Table 3-1 for other surface types	12-3 & 12-4 Purple
New title for section 1.2	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2 Determining the Design Infiltration Rate	Design Saturated Hydraulic Conductivity - Guidelines and Criteria	1.2 Determining the Design Infiltration Rate	12-6 Purple

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New title and language for sections 1.2.1 and 1.2.2	Updated language for clarity/ readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2 Determining the Design Infiltration Rate 1.2.1 Design Infiltration Rate Steps 1.2.2 Determining the Measured Saturated Hydraulic Conductivity Subheadings and all text under subheadings	Measured (initial) hydraulic saturated conductivity rates can be determined by one of the following three methods. The Soil Grain Size Analysis Method can only be used if the site soils are unconsolidated by glacial advance. • Large Scale Pilot Infiltration Test (PIT) – Section 7.5.1 • Small Scale Pilot Infiltration Test (PIT) – Section 7.5.2 • Soil Grain Size Analysis Method – Section 7.5.3	1.2.1 Design Infiltration Rate Steps For BMPs that are designed to infiltrate, facility size is based upon the design infiltration rate... 1.2.2 Determining the Measured Saturated Hydraulic Conductivity Use one of the following three methods to determine the measured saturated hydraulic conductivity...	12-6 Purple & Pink
New language under 1.2.2.2 heading	Updated language for clarity/readability and to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.2.2 Infiltration Test Method and Requirements Subheading first and second paragraph and first bullet point under subheading	Infiltration Test • Excavate the test pit to the estimated surface elevation of the proposed infiltration facility. Lay back the slopes sufficiently to avoid caving and erosion during the test. Alternatively, consider shoring the sides of the test pit.	1.2.2.2 Infiltration Test Method and Requirements Conduct testing between December 1 and April 1. The horizontal and vertical locations of the test pit shall be surveyed by a Washington State Licensed Land Surveyor with location clearly shown in the Soils Report. • Excavate the test pit to the estimated bottom surface elevation of the proposed infiltration facility where the infiltration facility meets the native soil. If the native soil has to meet subgrade compaction requirements (such as needed for BMP L633: Permeable Pavements), compact the native soil prior to testing. Lay back the slopes sufficiently to avoid caving and erosion during the test. Alternatively, consider shoring the sides of the test pit.	12-5 & 12-7 Purple & Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removed language under 1.2.2.3	Information Not Needed	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.2.3 Data Analysis Third paragraph and all text below third paragraph under subheading	Apply appropriate correction factors per Volume 3, Section 6.5.4 to determine the site-specific design infiltration rate. Example The area of the bottom of the test pit is 8.5-ft. by 11.5-ft. Water flow rate was measured and recorded at intervals ranging from 15 to 30 minutes throughout the test. Between 400 minutes and 1,000 minutes the flow rate stabilized between 10 and 12.5 gallons per minute or 600 to 750 gallons per hour, or an average of (9.8 + 12.3) / 2 = 11.1 inches per hour.	NA	12-7 & 12-8 Grey
Removed language under 1.2.3	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.3 Small Scale Pilot Infiltration Test (PIT) All text under subheading	A smaller-scale PIT can be substituted for the large-scale PIT in any of the following instances. • The drainage area to the infiltration site is less than 1 acre. • The testing is for the LID BMP's of bioretention or permeable pavement that either serve small drainage areas and /or are widely dispersed throughout a project site. The site has a high infiltration rate, making a full-scale PIT difficult, and the site geotechnical investigation suggests uniform subsurface characteristics.	NA	12-8 Purple
Revised language under 1.2.3.1	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.3.1 Infiltration Test First bullet point and second and third sub bullet points	• Excavate the test pit to the estimated surface elevation of the proposed infiltration facility… ◦Install a vertical measuring rod adequate to measure the ponded water depth and that is marked in half-inch increments in the center of the pit bottom. ◦Use a rigid pipe with a splash plate on the bottom to convey water to the pit and reduce side-wall erosion or excessive disturbance of the pond bottom...	• Use the same procedure as used for the Large Scale Pilot Infiltration Test with the following changes: ◦The rigid pipe with splash plate may be a 3 inch diameter pipe for pits on the smaller end of the recommended surface area, and a 4 inch pipe for pits on the larger end of the recommended surface area.	12-8 Pink

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removed language 1.2.3.2	Information Not Needed	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.3.2 Data Analysis Third paragraph and all text below third paragraph under subheading	Apply appropriate correction factors per Volume 3, Section 6.5.4 to determine the site-specific design infiltration rate. Example The area of the bottom of the test pit is 8.5-ft. by 11.5-ft. Water flow rate was measured and recorded at intervals ranging from 15 to 30 minutes throughout the test...	NA	12-9 Grey
New language under 1.2.4 heading	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.4 Soil Grain Size Analysis Method First, second and third paragraph under subheading	For each defined layer below the infiltration facility to a depth below the facility bottom of 2.5 times the maximum depth of water in the facility, but not less than 10 feet, estimate the saturated hydraulic conductivity in cm/sec using the following relationship (see Massmann 2003, and Massmann et al., 2003). For large infiltration facilities serving drainage areas of 10 acres or more, soil grain size analysis shall be performed on layers up to 50 feet deep (or no more than 10 feet below the water table). For bioretention facilities, analyze each defined layer below the top of the final bioretention area subgrade to a depth of at least 3 times the maximum ponding depth, but not less than 3 feet (1 meter)...	The Soil Grain Size Analysis can only be used to determine the initial Ksat if the site has soils unconsolidated by glacial advance. For each defined layer below the infiltration facility (minimum depth requirements are contained in the design criteria of each BMP) estimate the saturated hydraulic conductivity in cm/sec using the following relationship (see Massmann 2003, and Massmann et al., 2003).	12-9 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removed language under 1.2.4	Information Not Needed	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.4 Soil Grain Size Analysis Method Fifth paragraph under subheading	If greater certainty is desired, the in-situ saturated conductivity of a specific layer can be obtained through the use of a pilot infiltration test (PIT). Note that these field tests generally provide a hydraulic conductivity combined with a hydraulic gradient. In some of these tests, the hydraulic gradient may be close to 1.0; therefore, in effect, the magnitude of the test result is the same as the hydraulic conductivity. In other cases, the hydraulic gradient may be close to the gradient that is likely to occur in the full-scale infiltration facility. The hydraulic gradient will need to be evaluated on a case-by-case basis when interpreting the results of field tests. It is important to recognize that the gradient in the test may not be the same as the gradient likely to occur in the full-scale infiltration facility in the long-term (i.e., when groundwater mounding is fully developed).	If greater certainty is desired, the in-situ saturated conductivity of a specific layer can be obtained through the use of a pilot infiltration test (PIT).	2-10 Grey
New section title and language under heading under 1.2.5	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.5 Calculating the Design infiltration Rate Subheading and text under subheading	NA	1.2.5 Calculating the Design infiltration Rate Use either the Simplified Method or Detailed Method to calculate the design infiltration rate.	12-11 Pink

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Revised language under 1.2.5.1	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.5.1 Simplified Method Subheading and all text under subheading above table 12-2	Correction Factors The hydraulic saturated conductivity obtained from the PIT test or Soil Grain Size Analysis Method is an initial rate. This initial rate shall be reduced through correction factors that are appropriate for the design situation to produce a design infiltration rate. Use the correction factors from Table 3-9 below or alternative values can be proposed based upon the professional judgment of the licensed engineer or site professional. Justification for alternate values must be provided to Environmental Services.	1.2.5.1 Simplified Method The simplified approach will generally produce more conservative values for design infiltration rates. This method can be used for infiltration facilities with contributing areas less than 1 acre. Facilities with larger contribution areas shall use the Detailed Approach. The Simplified Method adjusts the measured Ksat value using correction factors. Correction factors account for site variability, number of tests conducted, uncertainty of test method, and potential for long-term clogging. Table 12 - 2 provides a range of correction factors...	12-11 Pink
New language in table 12-2	Brand new language	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.5.1 Simplified Method Table 12-2 Column two, row two	CFv = 0.33 to 1.0	CFv - Uniform Soils - 0.7 CFv - Variable Soils - 0.5	12-11 Orange
Language removed under 1.2.5.1.1	Language not needed	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.5.1 Site variability and number of locations tested (CFv) Second and third paragraphs under subheading	If the level of uncertainty is high, a partial correction factor near the low end of the range may be appropriate… A partial correction factor near the low end of the range could be assigned where conditions have a more typical variability, but few explorations and only one pilot infiltration test (or one grain size analysis location) is conducted...	NA	12-12 Orange
New language under heading 1.2.5.2	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.2.5.2 Detailed Method Subheading and all text under subheading	NA	1.2.5.2 Detailed Method This detailed approach was obtained fro m (Massman, 2003). Using the detailed approach, estimate th e design (long-term) infiltration rate as follows:...	12-12 - 12-14 Pink

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Added text under subheading 1.3	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.3 City of Tacoma Standard Plans and Green Stormwater Infrastructure Typical Details First paragraph under subheading	NA	The City of Tacoma maintains many Standard Plans and Typical Details. All projects can use the City of Tacoma Standard Plans and Green Stormwater Infrastructure Typical Details as appropriate for the project. Stormwater facilities that will be maintained by the City of Tacoma shall utilize the City of Tacoma Standard Plans. Plans can be found at:...	12-15 Orange
Removed language under subheading 1.4 & 1.5	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 1.4 Tacoma Design Storm 1.5 Soils Reports Headings, subheadings and all text under headings	1.4 Tacoma Design Storm 1.5 Soils Reports 1.5.1 All Projects 1.5.2 BMP L602: Downspout Full Infiltration Systems 1.5.2.1 Soils Report Requirements for Downspout Full Infiltration 1.5.3 BMP L604: Perforated Stubouts 1.5.3.1 Soils Report Requirements for Perforated Stubouts 1.5.4 BMP L633: Permeable Pavement 1.5.4.1 Soils Report Requirements for Permeable Pavement Infeasibility for MR #5 – List #1 1.5.5 Bioretention 1.5.6 Soils Report Requirements for Infiltration Facilities for Stormwater Flow Control or Treatment and Infeasibility for Permeable Pavement to Meet Minimum Requirement #5 – List #2	NA	12-15 - 12-19 Purple
Removed text under 0.1 Applications	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Volume 12 Chapter 1 0.1 Applications Subheading and all text under subheading	0.1 Applications 1. For sand filter drain strip between the sand and the drain rock or gravel layers specify Geotextile Properties for Underground Drainage, moderate survivability, Class A, from Table 12 - 18 and Table 12 - 19 in the Geotextile Specifications...	NA	12-21 Purple

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Volume title	New Volume - Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Purpose	NA	Documentation - Stormwater Site Plan (SSP), Construction Stormwater Pollution Prevention Plan (SWPPP) & Other Required Documents	13-1 Purple

NOTE: Volume 13 contains both new text and text from other volumes in the 2016 Stormwater Management Manual.
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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
New language comprising section 1.1, 1.2 & 1.3	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 1 1.1 Documentation Requirements 1.2 Stormwater Site Plan Overview 1.3 Construction Stormwater Pollution Prevention Plan Overview Headings and all text under headings	NA	Documentation overview 1.1 Documentation Requirements • Project proponents shall document how stormwater mitigation measures were chosen for a project... 1.2 Stormwater Site Plan Overview • Minimum Requirement #1 - Stormwater Site Plan Preparation requires new development and redevelopment projects that trigger the thresholds (see Applicability of the Minimum Requirements) prepare a Stormwater Site Plan... 1.3 Construction Stormwater Pollution Prevention Plan Overview • Minimum Requirement #2 - Construction Stormwater Pollution Prevention requires new development and redevelopment projects that trigger the thresholds to prepare a Construction Stormwater Pollution Prevention Plan...	13-2 & 13-3 Purple
Revised language section 1.4	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 1 1.4 Who Can Prepare an SSP and/or SWPPP? All text under subheading	State law requires that engineering work be performed by or under…	• State law (Chapter 18.43) requires engineering work be performed by or under direct supervision of a Washington State Licensed Professional Engineer... ◦ Generally, projects that trigger Minimum Requirement #6… • Certain components of the SSP and SWPPP may require…	13-3, Purple
New language under section 1.5	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 1 1.5 Resources for Stormwater Site Plan Development Subheading and all text under subheading	NA	1.5 Resources for Stormwater Site Plan Development The following is a list of potential resources to help develop the Stormwater Site Plan. This list is not comprehensive:…	13-3 & 13-4 Orange

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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated text under section 2.1	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.1 Title Pages All text under subheading	• Provide applicant, engineer and property owner information including name, address, telephone number and email address for all parties. • Provide date of document preparation.	• Ensure the Title describes the project and uses the word Stormwater Site Plan (ex: Yellow Submarine Development Stormwater Site Plan) • Include contact information for the individual or team members completing the Stormwater Site Plan: • Washington State Licensed Professional Engineer certification and seal (per RCW 18.43) • Date of Preparation • Identify Project Location including address and parcel number(s) • City of Tacoma Permit Number(s) associated with Stormwater Site Plan	13-5 Purple
Revised language in sections 2.1-2.4	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.2 Table of Contents 2.3 List of Figures 2.4 Numbering Subheadings and all text under subheadings	Table of Contents • Include a table of contents List of Figures • Include a list of figures Numbering • Number all pages, figures, maps and appendices.	2.2 Table of Contents • Include a table of contents to aid in development and review. 2.3 List of Figures • Include a list of figures to aid in development and review. 2.4 Numbering • Provide page numbers, table numbers, and figure numbers.	13-5 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Added text under section 2.5	Updated text with brand new language (City only)	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.5 Project Information Subheading and all text under subheading	NA	2.5 Project Information • Include the following:… • City of Tacoma Permit Number • Associated City of Tacoma Permit Numbers: • Any other associated permits such as NPDES Industrial, Sand and Gravel, or individual permits relevant to the project site. • City of Tacoma Stormwater Management Manual used for SSP Development...	13-6 Orange
Updated text under section 2.6	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.6 Project Overview All text under subheading	Project Overview The project overview must provide a general description of the project including the existing condition of the site, the proposed developed condition of the site, the site area, and the extent of the improvements. • Identify type of permit requested by the City and all associated permit numbers...	2.6 Project Overview • Provide a brief description of the proposed project.	13-6 Purple
Updated text under section 2.7	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.7 Exiting Project Site Conditions All text under subheading	Existing Project Site Conditions The Existing Condition Summary is intended to provide a complete understanding of the project site in its existing condition and must be based on thorough site research and investigation. • Describe, discuss and identify the following for the project site in its existing condition... • State whether the project... • Identify any Superfund areas... • Identify any specific... • Include references to relevant... • Include a Grading Plan • Include a soil report... • Soil reports should be... • Describe the location.... • Other information as....	2.7 Existing Project Site Conditions • Describe the existing project site conditions… • Describe the following:… • Provide an existing conditions basin map(s) that shows the following:… • Provide a map showing the… • Include any additional information as necessary to fully describe the existing project site conditions and surroundings.	13-7 & 13-8 Purple

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Added section 2.8	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.8 Proposed Project Site Conditions All text under subheading	NA	2.8 Proposed Project Site Conditions • Describe the proposed project site conditions… • Describe the following:… • Provide a proposed conditions basin map(s) that shows the following:… • Provide a map showing the... • Include any additional information as necessary to fully describe the proposed project site conditions and surroundings	13-8 & 13-9 Purple
New language under section 2.9	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.9 Project Thresholds and Minimum Requirement Determination All text under subheading	NA	2.9 Project Thresholds and Minimum Requirement Determination • Include the Project Threshold Table… • Define all receiving waters... • Describe any watershed specific requirements. • Complete and include applicable... • Clearly state which Minimum Requirements apply to the project.	13-9 & 13-10 Orange
New language comprising minimum requirements #1-#4 in section 2.10, subsection 2.10.1 - 2.10.4	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.10 Discussion of Minimum Requirements All text and subheadings under heading	NA	2.10 Minimum requirements 2.10.1 Minimum Requirement #1 - Stormwater Site Plan • State how this Minimum Requirement is being met... 2.10.2 Minimum Requirement #2 - Construction Stormwater Pollution Prevention • State that the Construction Stormwater Pollution Prevention Plan is available as a stand-alone document. 2.10.3 Minimum Requirement #3 - Source Control • Describe the types of activities and potential pollutants that are likely to occur on the site... 2.10.4 Minimum Requirement #4 - Preserving Drainage Patterns and Outfalls • Describe how the natural or existing drainage patterns are maintained...	13-10 Orange

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Revised language comprising section 2.10.5	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.10.5 Minimum Requirement #5 - Onsite Stormwater Management All text under subheading	Summarize results of onsite stormwater management feasibility results… Identify type and size of proposed onsite stormwater facility. Include calculations for all onsite stormwater management BMPs as applicable… Provide a drawing of the proposed onsite facility and its appurtenances, including:... Location and type of soil amendment used to meet BMP L613	• State which approach is being used for compliance:… • If using the List Approach:… • If using the LID Performance Standard…	13-10 & 13-11 Purple
Revised language comprising section 2.10.6	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.10.6 Minimum Requirement #6 - Stormwater Treatment All text under subheading	NA	2.10.6 Minimum Requirement #6 - Stormwater Treatment • Describe why this BMP is required for the project. • Describe treatment type required. • State the BMP(s) being used... • Provide a stormwater treatment basin map clearly showing surfaces requiring treatment and surfaces receiving treatment (facility drainage basins)...	13-11 Orange
Revised language comprising section 2.10.7	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.10.7 Minimum Requirement #7 - Flow Control All text under subheading	Provide as much detailed information as possible to describe the proposed flow control system… Identify sizing used. Summarize model results… Describe proposed flow control… Provide a drawing of the… Include Hydraulic Analysis… Include all WWHM model… Provide all applicable manufacturer information in Appendix E of the SSP.	• Describe why this BMP is required for the project. • Describe flow control type required (ex. Freshwater Mitigation - Forested or Freshwater Mitigation - Existing). • State the BMP(s) being used... • Provide a flow control basin map clearly showing surfaces requiring flow control and surfaces receiving flow control (facility drainage basins)...	13-12 Purple
Revised language comprising section 2.10.8	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.10.8 Minimum Requirement #8 - Wetlands Protection All text under subheading	NA	2.10.8 Minimum Requirement #8 - Wetlands Protection • Describe why this BMP is required for the project. • Describe Level of Protection Required... • State the BMP(s) being used for mitigation…	13-12 & 13-3 Orange

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Revised language comprising section 2.10.9	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.10.9 Minimum Requirement #9 - Operation and Maintenance Manual Subheading and first paragraph under subheading	Minimum Requirement #9 - The Operation and Maintenance Manual shall be a stand-alone document for the project owner once the project is complete. Please see Volume 1, Appendix C of the SWMM for additional information. The Operation and Maintenance Manual must include:	2.10.9 Minimum Requirement #9 - Operation and Maintenance Manual The Operation and Maintenance Manual shall be a stand-alone document for the project owner once the project is complete. If the stormwater facilities will be maintained by the City of Tacoma, it is not necessary to include an Operation and Maintenance Manual. The City develops its own O&M Manual. The Operation and Maintenance Manual must include:	13-13 Purple & Orange
Deleted text under section 2.10.9	Updated Language for Clarity/ Readability (information not needed)	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.10.9 Minimum Requirement #9 - Operation and Maintenance Manual last sentence of bullets: 3, 4, 5 & 8	Not required to be included in the Operation and Maintenance Manual for City owned facilities. For facilities that will be maintained by the City and located in the City right-of-way, the responsible party shall be the City of Tacoma - Environmental Services - (253) 591-5585. For facilities that will be maintained by the City of Tacoma located in the public right of way - the operation and maintenance manual is kept at the City of Tacoma Wastewater Treatment Plant.	NA	13-13 Purple
Revised language section 2.11	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.11 Additional Protective Measure - Infrastructure Protection All text under subheading	Quantitative Analysis See Volume 1, Section 3.4.7 to determine when a quantitative analysis is required and type of analysis…	• Include the complete Single Segment Capacity Analysis, Inlet and Gutter Capacity Analysis, or Full Backwater Analysis (as required by the project thresholds). Include:…	13-14 Purple

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

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New language comprising sections 2.12 - 2.18	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 2 2.12 Conveyance System Design 12.13 Soils Report 12.14 Wetland Delineation Report 12.15 Modeling Reports 12.16 Emerging Technology Use Level Designations 12.17 Relevant Historical Reports 12.18 Access and Easement Documentation All subheadings and text under subheadings	NA	2.12 Conveyance System Design • Include the complete Full Backwater Analysis, including:... 12.13 Soils Report • Include the soils report as a separate stand-alone document... 12.14 Wetland Delineation Report • Include the Wetland Delineation Report as a separate stand-alone document... 12.15 Modeling Reports • Include the complete continuous... 12.16 Emerging Technology Use Level Designations • Include the Use Level Designation... 12.17 Relevant Historical Reports • Include relevant historical reports... 12.18 Access and Easement Documentation • Access and easement documents shall be separate stand-alone documents...	13-14 & 13-15, Orange

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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Revised language under chapter heading	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 3 Chapter 3 Components of the Construction Stormwater Pollution Prevention Plan All text under chapter heading	The Construction SWPPP consists of two parts: a narrative and the drawings. This section describes the contents of the narrative and the drawings. This section is formatted as a checklist to aid the applicant and reviewer in development and review of the plan...	Below are the required components of a Construction Stormwater Pollution Prevention Plan Report. Many components are identical to information contained in the Stormwater Site Plan, because the SWPPP is a stand-alone document, information shall be included separately on both documents. Because each project is unique, all components may not apply to every project and additional items may be requested by Environmental Services in order to fully understand the project...	13-16 Purple
New language comprising sections 3.1, 3.2, 3.3, 3.4, 3.5	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 3 3.1 Title Page(s) 3.2 Table of Contents 3.3 List of Figures 3.4 Numbering 3.5 Project Information All text under subheadings	NA	3.1 Title Page(s) • Ensure the Title describes the... 3.2 Table of Contents • Include a table of contents to aid in development and review. 3.3 List of Figures • Include a list of figures to aid in development and review. 3.4 Numbering • Provide page numbers, table numbers, and figure numbers. 3.5 Project Information • Include the following:...	13-16 & 13-17 Orange
Updated language under subheading 3.6	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 3 3.6 Project Overview Subheading and text under subheading	Project Description • Nature and purpose of project • Total project area • Total proposed impervious area • Total proposed area to be disturbed • Total volumes of proposed cut and fill • Note if a NPDES Construction Stormwater…	3.6 Project Overview • Provide a brief description of the proposed project	13-17 Purple

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Revised language for section 3.7	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 3 3.7 Existing Project Site Conditions Subheading and all text under subheading	Existing Site Conditions • Describe the existing topography • Describe the existing vegetation • Describe the existing drainage, including runon and runoff • Describe any existing development, including all structures and existing impervious • Description of any easments or other encumbrances that may affect construction.	3.7 Existing Project Site Conditions • Describe the existing project site conditions. Description may be a combination or written words and figures or drawings. Conditions must be based upon site-specific investigations. • Describe the following:… • Include any additional information necessary to fully describe the existing project site conditions and surroundings as related to construction stormwater pollution prevention.	13-17 & 13-18, Purple
Updated language under section 3.8	Updated for clarity/readability and deleted text where information no longer needed	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 3 3.8 13 Elements of Construction Stormwater Pollution Prevention Bullet point 4 (including sub bullets)	13 Required Elements - Construction Stormwater Pollution Prevention Plan: ◦1. Preserve Vegetation and Mark Clearing Limits…	• Provide design calculations (including all assumptions and variables used) for BMPs such as sediment ponds, interceptor swales, and detention that require engineering calculations.	13-18 & 13-19 Purple & Grey
Added text under section 3.9	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 3 3.9 Construction Schedule Second bullet point	NA	• Describe any proposed phasing or sequencing.	13-19 Purple
New language comprising section 3.10	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 3 3.10 Modeling Report	NA	3.10 Modeling Report • Include the complete continuous simulation model and/or single event model reports as a separate appendix/attachment to the Construction Stormwater Pollution Prevention Plan.	13-19 Orange

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New language comprising chapter 4	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Required Drawings First bullet box (including sub bullets) and second bullet box (was volume 1, chapter 4)	Project drawings shall be provided and include the following as applicable for the project. The drawings are not required to be included in the Stormwater Site Plan Report. They are typically submitted as separate documents. □ The first sheet or cover sheet shall… □ Legend, if symbols are used that are not labeled on the plan.	Project drawings shall be provided and include the following as applicable for the project. The drawings shall be stand-alone documents and shall not be included in the Stormwater Site Plan Report or Construction Stormwater Pollution Prevention Report. See tacomapermits.org for information about required format and minimum standards for drawings. Drawings shall include all information necessary to fully understand existing project site conditions and provide enough information to construct the required improvements. Below are items that may be needed in addition to those provided at tacomapermits.org.	13-20 Purple
Revised language for chapter 4 checklist	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Required Drawings bullet box 4 & 5 (was volume 1, chapter 4)	□ All sheets shall contain a scale and north arrow. □ The overall plan view shall be no smaller than 1" = 100' (horizontal). Recommended scales for individual sheets are 1" = 20' (Horizontal); 1" = 5' or 1" = 10' (Vertical).	NA	13-20 Purple
Revised language for chapter 4 checklist	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Required Drawings bullet box 7 (was volume 1, chapter 4)	□ Identify FEMA flood zones	NA	13-20 Purple
Revised language for chapter 4 checklist	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Required Drawings Bullet box ten , sub bullet box 4:	□ Proposed drainage structures, including all flow control and water quality devices. Details shall be provided for all proposed drainage structures for which there is insufficient information in the plan view.	NA	13-21 Purple

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Revised language for chapter 4 checklist	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Required Drawings Bullet box 11 and sub bullet boxes	NA	Permanent Stormwater Mitigation Facilities - Both Above and Below Ground (onsite stormwater management, stormwater treatment, flow control) Clearly show with dimension… Show all components of the… Clearly show setback distances… Clearly show dimensions... Provide facility details... For BMP L613: Clearly hatch...	13-21 & 13-22, Purple
Revised language for chapter 4 checklist	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Required Drawings Bullet box 12 & 13	Location of and details associated with all stormwater mitigation facilities including onsite stormwater management BMPs. For dispersion systems, clearly label the vegetated flowpath. For BMP L613, clearly hatch or otherwise label the location and type of amendment. If the predesigned systems from the SWMM are used, the details from the SWMM shall be included.	A planting plan (which may be part of the landscape plan) is required.	13-23 Purple
Revised language for chapter 4 checklist	Language removed, no long needed	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Temporary Erosion and Sedimentation Drawings Bullet box 14	FEMA base flood boundaries and Shoreline Management boundaries, (if applicable).	NA	13-23 Grey
Revised language for chapter 4 checklist	Language removed, no long needed	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Temporary Erosion and Sedimentation Drawings Bullet box 16	Drainage basins and direction of flow for individual drainage areas.	NA	13-23 Grey
Revised language for chapter 4 checklist	Language removed, no long needed	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Temporary Erosion and Sedimentation Drawings Bullet box 21	Soil types, together with the location of any soil test pits or infiltration test sites.	NA	13-23 Grey

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Revised language for chapter 4 checklist	Language removed, no long needed	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 4 Temporary Erosion and Sedimentation Drawings Bullet box 30	Locations of all ESC facilities with dimensions and details as appropriate.	Locations of all ESC facilities with dimensions and details.	13-24 Grey

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New title for chapter 5	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 5 Chapter 5 Documentation Required After Approval	Plans Required After Approval	Documentation Required After Approval	13-25 Purple
Revised language in section 5.1	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 5 5.1 Revisions NOTE: and last paragraph under subheading	NOTE: Revisions shall be shown as clouded revisions to approved Drawings and Reports. See tacomapermits.org for the application process for revisions.	Revisions shall be shown as clouded revisions to approved Drawings and Reports. See tacomapermits.org for the application process for revisions.	13-25 Orange
Revised language in section 5.2	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 5 5.2 Record Drawing Submittal First three sentences under subheading	If the project included construction of conveyance systems, treatment facilities, flow control facilities, or structural source control BMPs (i.e., this does not extend to construction of Onsite Stormwater Management BMPs unless required by Environmental Services), the applicant shall submit record drawings ("as-builts") to the City when the project is completed.	All projects, except single family residence, shall submit record drawings (as-builts) to the City when the project is complete. If a single family residence has made substantial changes to design, as-builts shall be submitted to the City.	13-25 Purple
Revised language in section 5.2	New language	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 5 5.2 Record Drawing Submittal Last sentence under subheading	Contact Environmental Services, Site Development Group for submittal format	Drawings shall be submitted as both GIS files and .pdf files.	13-25 Orange
Updated language under section 5.3	Updated Language for Clarity/ Readability	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 5 5.3 Engineer's Certification First sentence under subheading	NA	All projects, except single family residence, that install stormwater facilities shall submit an engineer's certification to the City when the project is complete.	13-25 Purple

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Reference removed from section 5.3	Language removed	City of Tacoma Stormwater Management Manual	Volume 13 Chapter 5 5.3 Engineer's Certification Text under 2. Statements to attest: b.	b. Record drawings have been provided to the City electronically. See 5.2 for record drawing requirements	b. Record drawings have been provided to the City electronically.	13-26 Grey

NOTE: Volume 3, Chapter 13 is now Volume 14, Chapter 1. The contents of the chapter have been reorganized and show as underlined text with no highlight.

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Language removed from introduction	Information not needed	City of Tacoma Stormwater Management Manual	Volume 14 Chapter 1 Chapter 1 Easements, Access, and Dedicated Tracts All text under chapter heading	All publicly owned, manmade drainage facilities and conveyances and all natural channels on the project site used for conveyance of altered flows due to development (including swales, ditches, stream channels, lake shores, wetlands, potholes, estuaries, gullies, ravines, etc.) shall be located within easements or dedicated tracts as required by the City. Easements shall contain the natural features and facilities and shall allow City access for purposes of inspection, maintenance, repair or replacement, flood control, water quality monitoring, and other activities permitted by law.	NA	14-2 Grey
Language updated under section 1.1.1	Updated language for clarity/ readability and deleted text where information not needed	City of Tacoma Stormwater Management Manual	Volume 14, Chapter 1 1.1.1 Public First paragraph under subheading	All publicly maintained conveyance systems shall be located in dedicated tracts, drainage easements, or public rights-of-way. Public storm drainage easements shall be a minimum of 20 feet in width. Consult Section 10.1.4 of this volume and the City of Tacoma Design Manual for pipe alignment requirements.	All publicly maintained conveyance systems shall be located in dedicated tracts, dedicated easements, or public rights-of-way. Table 14 - 1 provides minimum easement width requirements based upon depth of pipe.	14-2 Purple & Grey
Language removed from section 1.1.1	Information not needed	City of Tacoma Stormwater Management Manual	Volume 14, Chapter 1 1.1.1 Public Last sentenc of third paragraph under subheading	Consult with Table 3 - 22 for appropriate widths based on depth of pipe.	NA	14-2 Grey
Language removed from section 1.1.1	Information not needed	City of Tacoma Stormwater Management Manual	Volume 14 Chapter 1 1.1.1 Public Second sentence of fourth paragraph under subheading	Such approval shall be drafted as an Addendum to the easement and recorded with the Pierce County Auditor's Office	NA	14-2 Grey

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New language in section 1.1.2	Brand new language	City of Tacoma Stormwater Management Manual	Volume 14, Chapter 1 1.1.2 Private Second paragraph under subheading	NA	Private maintenance agreements are required for facilities owned by more than one property owner. All agreements shall be recorded with the Pierce County Assessor.	14-3 Orange
New language in section 1.1.2	Brand new language	City of Tacoma Stormwater Management Manual	Volume 14, Chapter 1 1.2.2 Private Third sentence of first paragraph	NA	The covenant and easement agreement is an agreement between the City of Tacoma and the property. Information about covenant and easement agreements is available at www.cityoftacoma.org/stormwatermanual_shortforms.	14-3 Orange
Language removed from section 1.1.2	Information not needed	City of Tacoma Stormwater Management Manual	Volume 14, Chapter 1 1.2.2 Private Last sentence of first paragraph	The City shall review and approve all covenant and easement agreements before they are signed and recorded.	NA	14-3 Grey
New language in section 1.2.2	Brand new language	City of Tacoma Stormwater Management Manual	Volume 14, Chapter 1 1.2.2 Private Second paragraph under subheading	NA	Additional private easements may be required if stormwater facilities are located on more than one parcel of land. Private maintenance agreements are required for facilities owned by more than one property owner. All agreements shall be recorded with the Pierce County Assessor.	14-4 Orange
Delted language under subheading 1.2.3	Information not needed	City of Tacoma Stormwater Management Manual	Volume 14 Chapter 1 1.2.3 Maintenance Access Last sentence of second paragraph	These must include a constructed access road per the requirements of Section 7.1.2 of this volume.	NA	14-4 Grey

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Revised definition for "Aquatic Life Use definition"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Aquatic Life Use	Waterbodies as defined in WAC 173-201A-600 and WAC 173-201A-602.	Aquatic life uses are based upon the presence of, or intent to provide protection for: • char spawning and rearing, • core summer salmonid habitat, • salmonid spawning, rearing, and migration, • salmonid rearing and migration only, • non-anadromous interior redband trout, • indigenous warm water species, • all indigenous fish and nonfish aquatic species. In the City of Tacoma, all freshwater bodies (unless specifically mentioned as only needing basic treatment), shall be considered to have an aquatic life use.	G-3 Orange
Revised date in "Base flood elevation" definition	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Base flood elevation	The water surface elevation of the base flood. It shall be referenced to the National Geodetic Vertical Datum of 1929 (NGVD).	The water surface elevation of the base flood. It shall be referenced to the National Geodetic Vertical Datum of 1983 (NGVD).	G-4 Pink
New definition "Cleared areas"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Cleared Areas	NA	Cleared Areas An area where vegetation has been removed by manual, mechanical, or chemical means.	G-9 Pink
New definition for "compensatory mitigation"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Compensatory Mitigation	NA	See Tacoma Municipal Code 13	G-10 Orange

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removed definition	Information not needed	City of Tacoma Stormwater Management Manual	Glossary Degraded (disturbed) wetland (community)	A wetland (community) in which the vegetation, soils, and/or hydrology have been adversely altered, resulting in lost or reduced functions and values; generally, implies topographic isolation; hydrologic alterations such as hydroperiod alteration (increased or decreased quantity of water), diking, channelization, and/or outlet modification; soils alterations such as presence of fill, soil removal, and/or compaction; accumulation of toxicants in the biotic or abiotic components of the wetland; and/or low plant species richness with dominance by invasive weedy species.	NA	G-13 Grey
New definition "depressional wetland"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Depressional wetland	NA	A wetland where the elevation of the surface within the wetland is lower than the surrounding landscape. These wetlands often pond water at the surface but they can also be saturated without surface ponding	G-13 Pink
Revised definition "erosion and sedimentation control"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Erosion and sedimentation control facility	A type of drainage facility designed to hold water for a period of time to allow sediment contained in the surface and stormwater runoff directed to the facility to settle out so as to improve the quality of the runoff.	A type of drainage facility designed to hold water for a period of time to allow sediment contained in the surface and stormwater runoff directed to the facility to settle out, filter, or change chemically so as to improve the quality of the runoff.	G-20 Pink
Revised definition Estuarine wetland	Update language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Estuarine wetland	Generally, an eelgrass bed; salt marsh; or rocky, sandflat, or mudflat intertidal area where fresh and salt water mix. (Specifically, a tidal wetland with salinity greater than 0.5 parts per thousand, usually semi-enclosed by land but with partially obstructed or sporadic access to the open ocean).	Wetlands where salt tolerant plant species dominate and the water regime is influenced by tidal action. The wetlands are usually partially enclosed by land with open, or partially obstructed access to open saline water. Salinity is greater than 0.5 ppt.	G-20 Pink
New definition "existing condition"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Existing land cover condition, also existing site condition	NA	Immediate pre-project legally permitted land cover condition, of the project site at the time of the proposed new development or redevelopment project.	G-20 Orange

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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Removal of definition Existing site condition	Information not needed	City of Tacoma Stormwater Management Manual	Glossary Existing site condition	Actual, legally permitted land coverage of the site at the time of proposed development.	NA	G-20 Grey
New definition "existing hard surfaces"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Existing hard surfaces	NA	Existing hard surfaces are surfaces that existed on the project site from the last City of Tacoma permitted development of the project site.	G-21 Orange
Revised definition "final stabilization"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Final Stabilization	The establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions, permanent impervious or hard surface) which prevents erosion.	The completion of all soil disturbing activities at the project site and the establishment of a permanent vegetative cover or equivalent permanent stabilization measure (pavement, riprap) which will prevent erosion.	G-21 Orange
New definition "flow control exempt waterbody"	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Glossary Flow Control Exempt Waterbody	NA	Stormwater runoff is considered to go to a flow control exempt waterbody if it discharges directly or indirectly to salt waterbodies, the Puyallup River, and First Creek and all the following restrictions are met:…	G-24 Purple
New definition "Groundwater Protection Area"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Groundwater Protection Area	NA	Groundwater Protection Area The area surrounding a drinking water source that includes the wellhead protection area and may also include aquifer sensitive areas, sole source aquifers, groundwater management areas, or critical aquifer recharge areas.	G-27 Pink
Revised definition "Heavy metals"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Heavy Metals	Metals of high specific gravity, present in municipal and industrial wastes, that pose long-term environmental hazards. Such metals include antimony, aresnic, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, thalium, and zinc.	Metals of high specific gravity, present in municipal and industrial wastes, that pose long-term environmental hazards. Such metals include cadmium, chromium, cobalt, copper, lead, mercury, nickel, and zinc.	G-28 Pink
Removed definition "Horton overland flow"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Horton overland flow	Horton overland flow A runoff process whereby the rainfall rate exceeds the infiltration rate, so that the precipitation that does not infiltrate flows downhill over the soil surface.	NA	G-28 Pink

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Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number and Text Color
Updated definition 'Invasive plant species'	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Glossary Invasive plant species	Invasive weedy plant species Opportunistic species of inferior biological value that tend to out-compete more desirable forms and become dominant; applied to non-native species in this manual.	Invasive plant species A plant species that has a negative environmental, economical, recreational, and/or public health impacts that overcome native plants or ornamental landscaping for resources	G-32 Purple
New definition "Lake Fringe Wetland"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Lake Fringe Wetland	NA	Lake Fringe Wetland Wetlands that are on the water side of the Ordinary High Water Mark (OHWM) of lakes where the area of open water next to a vegetated wetland is larger than 20 ac (8ha), and more than 6.6 feet deep over 20% of the open water areas.	G-33 Pink
Removed definition "Modification, modified (wetland)"	Information not needed	City of Tacoma Stormwater Management Manual	Glossary Modification, modified (wetland)	Modification, modified (wetland) A wetland whose physical, hydrological, or water quality characteristics have been purposefully altered for a management purpose, such as by dredging, filling, forebay construction, and inlet or outlet control.	NA	G-37 Grey
Revised definition "multifamily sites"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Multifamily Sites	Sites defined as multifamily in TMC 13.06.	A parcel that contains 4 or more residential dwelling units.	G-38 Pink
New definition "Native soil"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Native Soil	NA	Native Soil The soil that is present before any construction associated with the project begins on the site.	G-38 Orange
New definition "native soil infiltration rate"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Native Soil Infiltration Rate	NA	Native Soil Infiltration Rate The infiltration rate of the soil that is present before construction associated with the project begins on the site.	G-38 Orange
Revised portion of "new impervious surface" definition	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary New Impervious surface "For pavements" section, bullets 2 and 3	• Upgrading from dirt to gravel, asphalt, or concrete • Upgrading from gravel to asphalt or concrete	• Upgrading from dirt to gravel, bituminous surface treatment, asphalt, or concrete • Upgrading from gravel to bituminous surface treatment, asphalt or concrete	G-40 Pink
Revised portion of "new impervious surface" definition	Brand new language	City of Tacoma Stormwater Management Manual	Glossary New Impervious surface, "for pavements" section, bullet 4	• Upgrading from bituminous surface treatment (“chip seal”) to asphalt or concrete.	• Upgrading from bituminous surface treatment to asphalt or concrete.	G-40 Orange

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New definition "peat wetland"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Peat Wetland	NA	Peat Wetland Unique, irreplaceable bogs and fens that can exhibit pH in a wide range from highly acidic to alkaline.	G-43 Pink
New definition "perennial wetland"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Perennial Wetland	NA	Perennial Wetland Wetlands where at least a portion of their area has permanent surface water (i.e., flooded or inundated throughout the year, in a normal water year or wetter.	G-44 Pink
Revised definition "pretreatment"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Pretreatment	The removal of material such as solids, grit, grease, and scum from flows prior to physical, biological, or physical treatment processes to improve treatability. Pretreatment may include screening, grit removal, settling, oil/water separation, or application of a Basic Treatment BMP prior to infiltration.	Function performed by a BMP to remove at least 50% of total suspended solids.	G-46 Pink
New definition "Riverine impounding wetland"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Riverine impounding wetland	NA	Riverine impounding wetland Wetlands that retain surface water significantly longer than the duration of the flood event. Riverine impounded wetlands tend to hold water for more than a week after a flood event. These wetlands are found in a topographic depression on the valley floor, or in areas where natural or human made barriers to downstream flow occur.	G-52 Pink
New definition "riverine wetlands"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Riverine wetlands	NA	Riverine wetlands Riverine wetlands occur in valleys associated with streams or river channels. They lie in the active floodplains of a river, and have important hydrologic links to the water dynamics of the river or stream. The distinguishing characteristics of riverine wetlands in Washington is that they are frequently flooded by overbank flow from the stream or river.	G-52 Pink

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New definition "seasonal high groundwater"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Seasonal high groundwater	NA	Seasonal high groundwater The highest annual groundwater elevation as determined by a Washington State Licensed Engineer, Washington State Licensed Professional Geologist, a Certified Professional Soil Scientist, or a Washington State Licensed Onsite Wastewater Treatment System Designer. Refer to specific BMPs to determine which professional can be used.	G-53 Pink
New definition "site appropriate development principles"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Site appropriate development principles	NA	Also known as Low Impact Development Principles are land use management strategies that emphasize conservation, use of onsite natural features, and site planning to minimum impervious surfaces, native vegetation loss, and stormwater runoff. Site appropriate development principles include: • Minimization of land disturbance by fitting development to the natural terrain • Minimization of land disturbance by confining construction to the smallest area feasible and away from critical areas • Preservation of natural vegetation • Locating impervious surfaces over less permeable soils • Clustering buildings • Minimizing impervious surfaces	G-54 Orange
New definition "slope wetland"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Slope wetland	NA	Slope wetland Slope wetlands occur on slopes where groundwater surfaces and begins running along the surface, or immediately below the surface. Water in these wetlands flows only in one direction (down the slope) and the gradient is steep enough that the water is not impounded. The downhill side of the wetland is always the point of lowest elevation in the wetland.	G-55 Pink

City of Tacoma SWMM Table 10.2 Enforceable Document Updates Beyond Ecology's List of Significant Changes

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New definition "stage excursion"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Stage excursion	NA	Stage excursion A post-project departure, either higher or lower, from the water depth existing under a given set of conditions in the pre-development state.	G-56 Pink
Revised definition "steep slope"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Steep slope	Slopes of 40 percent gradient or steeper within a vertical elevation change of at least ten feet… The toe of a slope is a distinct topographic break in slope that separates slopes inclined at less than 40% from slopes 40% or steeper… The top of a slope is a distinct topographic break in slope that separates slopes inclined at less than 40% from slopes 40% or steeper...	Slopes of 25% or more with vertical relief of 10 or more feet . The top of a steep slope is the upper most limit of the area where the ground surface drops greater than 10 feet or more vertically within a horizontal distance of 25 feet.	G-57 Orange
Removed definition "storm drains"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Storm drains	Storm drains The enclosed conduits that transport surface and stormwater runoff toward points of discharge (sometimes called storm sewers).	NA	G-57 Orange
Removed definition "storm drain system"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Storm drain system	Refers to the system of gutters, pipes, streams, or ditches used to carry surface and stormwater from surrounding lands to streams, lakes, or Puget Sound.	NA	G-57 Orange
Removed definition "storm sewer"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Storm sewer	A conveyance system that carries stormwater and surface water, street wash and other wash waters or drainage, but excludes sewage and industrial wastes. Also called a storm drain.	NA	G-57 Orange
Revised definition "stormwater"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Stormwater	That portion of precipitation, including snowmelt, that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes and other features of a stormwater drainage system into a receiving water or stormwater facility.	That portion of precipitation, including snowmelt, that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes and other features of a stormwater system into a receiving water or stormwater facility.	G-57 Orange
Word/ title update	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Stormwater system title	Stormwater drainage system	Stormwater system	G-58 Orange

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New definition "stormwater inlet"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Stormwater Inlet	NA	Stormwater Inlet An opening that connects stormwater from the ground surface to an underground conveyance system.	G-58 Pink
Updated figure	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Threshold Discharge Area Figure G-1	Old figure	Figure G-1 image updated to match Ecology's 2019 SWMM	G-60 Pink
New definition "track-out"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Track-out	NA	Track-out Material such as dirt, mud, and other debris that is deposited on paved public streets or alleys by vehicles exiting a construction site or a commercial or industrial facility.	G-62 Orange
Revised definition "trunk main"	Updated language for clarity/ readability	City of Tacoma Stormwater Management Manual	Glossary Trunk Main	Public stormwater drainage pipes equal to or greater than 36 inches and installed at a minimum slope of 0.5%. Some 36-inch or greater mains may be installed at less than the minimum slope. These shall not be considered trunk mains.	Publicly owned stormwater pipes with inside diameters and minimum slopes as flows: • 54" and greater at a slope greater than or equal to 0.1% • 48" to less than 54" at a slope greater than or equal to 0.15% • 42" to less than 48" at a slope greater than or equal to 0.25% • 36" to less than 42" at a slope greater than or equal to 0.5%	G-63 Purple
New definition "unconsolidated by glacial advance"	Brand new language	City of Tacoma Stormwater Management Manual	Glossary Unconsolidated by glacial advance	NA	Unconsolidated by glacial advance Refers to those soil strata that were not overconsolidated (compacted by the weight of the sediment and ice) by the last glacial event. Typically, Qvr (Vashion Recessional Outwash) soils are considered to be unconsolidated by glacial advance whereas Qva (Vashon Advance Outwash) Soils are considered to be overconsolidated by glacial advance.	G-63 Orange

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Revised definition "vegetated flowpath"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Vegetated flowpath	A route with established vegetation measured from the downspout or dispersion system discharge point to the downstream property line, stream, wetland or other impervious surface. The vegetated flowpath shall be measured perpendicular to site contours. For flow credits, this path must contain undisturbed native landscape or lawn landscape installed in soils meeting BMP L613: Post Construction Soil Quality and Depth.	A flowpath consisting of well-established lawn or pasture, landscaping with well-established groundcover, native vegetation with natural groundcover, or an area that meets BMP L613: Post-Construction Soil Quality and Depth. The groundcover shall be dense enough to help disperse flows and to prevent erosion.	G-64 Pink
New definition "water level fluctuation"	Updated language to match Ecology's intent	City of Tacoma Stormwater Management Manual	Glossary Water Level Fluctuation (WLF)	NA	Water Level Fluctuation (WLF) As related to Minimum Requirement #8 - Wetlands Protection, WLF is a defining characteristics of a wetland. WLF during a monitoring interval is as follows: Average base stage = (Instantaneous stage at beginning of interval + Instantaneous stage at end of interval)/2	G-65 Pink

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Overall Reorganization of the entire Tacoma Municipal Code (TMC) Chapter 12.08. This project is in progess. The code that is being submitted is in draft form and minor wording and organizational changes may occur prior to final code adoption.	Tacoma previously had stormwater, wastewater and wastewater pretreatment code in one section, 12.08. In the past several years, the City has been undertaking a project to separate these into subsections of 12.08. The stormwater code will now be in TMC 12.08D. Some related adminstrative provisions that relate to stormwater will also be in TMC 12.08A.	Tacoma Municipal Code 12.08 The City is supplying the current 12.08 that is in effect at this time and the Draft 12.08A and 12.08D that are proposed to be in effect prior to the July 1, 2021 permit deadline.	NA - as the entire code section has been reordered and rewritten for clarity	TMC 12.08 contains current language.	Draft TMC 12.08A and TMC 12.08D contain the rewritten code sections.	NA - as the entire code section has been reordered and rewritten for clarity
Tacoma is using the term "Stormwater Treatment" instead of the Ecology term "Runoff Treatment" for MR #6. Previous versions of Tacoma code used the term "Water Quality".	Stormwater Treatment is much clearer and self explanitory.	TMC 12.08.870.C	12.08D.040 Definition of Regional Water Quality Facility	C. Regional Stormwater Facility. For purposes of this Program, the phrase "regional stormwater facility" shall mean and include (1) a single stormwater facility designed to provide water quality and/or flow control for a large region or portion of a basin or subbasin and designated by the Director to be utilized under the Program to provide mitigation capacity, and (2) multiple stormwater facilities that are designed to provide water quality and/or flow control for a large region or portion of a basin or subbasin and designated by the Director to be utilized under the Program to collectively provide mitigation capacity.	"Regional Stormwater Facility." For purposes of the payment in-lieu of construction program authorized pursuant to TMC 12.08D.260, the phrase "regional stormwater facility" shall mean and include, (1) a single stormwater BMP/facility designed to provide stormwater treatment~~water quality~~ and/or flow control for a large region or portion of a basin or subbasin and designated by the control authority to be utilized under the Program to provide mitigation capacity, and (2) multiple stormwater facilities that are designed to provide stormwater treatment ~~water quality~~ and/or flow control for a large region or portion of a basin or subbasin and designated by the control authority to be utilized under the Program to collectively provide mitigation capacity.	Page 9
Addition of Stormwater Treatment and Flow Control BMP/Facilites as a defined term	In previous code, this term was not used.	TMC 12.08	12.08D.040 Definition of Stormwater Treatment and Flow Control BMP/Facilities	In the 2014 effective code, this defintion was not used.	"Stormwater Treatment and Flow Control BMPs/Facilities." Detention Facilities, permanent treatment BMPs/facilities; and bioretention, vegetated roofs, and permeable pavement that help meet Minimum Requirement #6 (stormwater treatment), #7 (flow control), or both.	Page 10

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number
Permit Sectiion S5.C.8.b.i added of "treatment BMPs/facilites, or both"	These words were added to permit section S5.C.8.b.i in the 2019 permit	TMC 12.08.090.C	12.08D.150.C.1	Due to the extensive rewrite, there is no one analogous section to compare to. The new section is a combination of TMC 12.08.090.C.	If the control authority determines that discharges from a property or right-of-way cause or contribute to an illicit discharge, a nuisance, a threat to public health and safety, or a violation of the municipal stormwater permit or this chapter, the control authority shall require the responsible person to implement and maintain BMPs in accordance with the SWMM. Structural source control BMPs, or treatment BMPs/facilities, or both shall be required if operational source control BMPs do not prevent illicit discharges or violations of surface water, groundwater, or sediment management standards because of inadequate stormwater controls. BMPS shall be designed, operated and maintained in accordance with the SWMM.	Page 15
Permit Section S5.C.8.b.i added of "treatment BMPs/facilities, or both"	These words were added to permit section S5.C.8.b.i in the 2019 permit	TMC 12.08.090.C	12.08D.150.C.3	For permit section S5.C.8.b.i – This sentence was added to clarify Ecology's addition of "treatment BMPs/facilities, or both". This is a new sentence that was not in the previous code.	Source control activities shall be implemented to the extent necessary to prevent prohibited discharges and to prevent contaminants from coming in contact with stormwater. Source control actions include, but are not limited to, segregating or isolating wastes to prevent contact with stormwater; enclosing, covering, or containing the activity to prevent contact with stormwater; developing and implementing inspection and maintenance programs; sweeping; and taking management actions, such as training employees on pollution prevention. Source control can also include structural source control BMPs, or treatment BMPs/facilities or both.	Page 15

Brief Description of the Change	Rationale for the Change	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2014 Functionally Equivalent Enforceable Document	Proposed Text for Ecology Review and Approval	Page Number
Tacoma is using the term "Stormwater Treatment" instead of the Ecology term "Runoff Treatment" for MR #6. Previous versions of Tacoma code used the term "Water Quality".	Stormwater Treatment is much clearer and self explanitory.	TMC 12.08.870.A	TMC 12.08D.260.A	Purpose. This section establishes the Payment In-Lieu-of Construction Program ("Program"). Application for the Program is voluntary and not mandatory. This Program shall be available for qualified new development and redevelopment projects required to mitigate for stormwater impacts per Minimum Requirement #6 – Water Quality Treatment, or Minimum Requirement #7 – Flow Control, as defined in the City of Tacoma Stormwater Management Manual ("SWMM"). Property owners, or authorized persons on their behalf, may apply to the Director under this Program to pay a system development charge in-lieu-of constructing stormwater treatment and/or flow control best management practices on the project site. The available capacity of a regional stormwater facility to provide stormwater treatment and/or flow control for mitigation of stormwater impacts ("Mitigation Capacity") will be allocated to qualifying benefitted premises under this Program. A system development charge will be assessed to reimburse the City for the historic capital costs to construct or expand regional stormwater facilities to provide mitigation capacity for projects approved under the Program. A maintenance surcharge may also be applicable to offset the additional maintenance costs resulting from the new or expanded regional stormwater facilities benefitting such properties.	Purpose. This section establishes the Payment In-Lieu-of Construction Program ("Program"). Application for the Program is voluntary and not mandatory. This Program shall be available for qualified new development and redevelopment projects required to mitigate for stormwater impacts per Minimum Requirement #6 – Stormwater ~~Water Quality~~ Treatment, or Minimum Requirement #7 – Flow Control, as defined in the City of Tacoma Stormwater Management Manual (SWMM). Property owners, or persons authorized to act on their behalf, may apply to the control authority under this Program to pay a system development charge in-lieu-of constructing stormwater treatment and/or flow control best management practices on the project site. The available capacity of a regional stormwater facility to provide stormwater treatment and/or flow control for mitigation of stormwater impacts ("Mitigation Capacity") will be allocated to qualifying benefitted premises under this Program. A system development charge will be assessed to rec capital costs to construct or expand regional stormwater facilities to provide mitigation capacity for projects approved under the Program. A maintenance surcharge may also be applicable to offset the additional maintenance costs resulting from the new or expanded regional stormwater facilities benefitting such properties.ties benefitting such properties.	Page 24
The City of Tacoma SWMM layout has changed significantly.	To make document more user friendly.	July 2016 City of Tacoma SWMM	All	NA	NA	NA

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The City of Tacoma SWMM being reviewed for equivalency is a comparison between the July 2016 SWMM. The July 2016 SWMM is not the SWMM approved as equivalent in the previous permit but is the SWMM used in the City of Tacoma currently. The City compared the document and when changes were deemed significant (beyond grammar changes or typos) those changes are noted in Table 10.2.	Comparing a document that is not being used and creating a redline document for internal and external review did not make sense as the SWMM used by the City of Tacoma is not the version deemed equivalent by Ecology.	July 2016 City of Tacoma SWMM	All	NA	NA	NA