

Clark County
NPDES Phase I Municipal Stormwater Permit
Equivalent Programs for Runoff Controls from New Development, Redevelopment and Construction Sites
Functional Equivalence Determination Submittal to Ecology

Enforceable Document Updates to Match Ecology's Significant Changes
Appendix 10, Table 10.1
June 2025

<i>Item Number</i>	Significant Change Being Addressed	<i>Subtype</i>	Enforceable Document Being Updated	Section Within the Enforceable Document Being Updated	Text as Written in the 2019 Functionally Equivalent Enforceable Document	Proposed Text to Gain 2024 Functional Equivalency
1	Redevelopment Project Level Thresholds	Road redevelopment threshold	Clark County Stormwater Manual, Book 1, Applicability	Section 1.4.2.1 Additional Requirements for the Redevelopment Project Site <u>and</u> Figure 1.3	For road-related projects, runoff from the replaced and new hard surfaces (including pavement, shoulders, curbs, and sidewalks) and the converted vegetated areas shall meet Minimum Requirements #1 – #9 if the new hard surfaces total 5,000 square feet or more and total 50% or more of the existing hard surfaces within the project limits. The project limits shall be defined by the length of the project and the width of the right-of-way.	Road-related projects shall comply with all Minimum Requirements for the new and replaced hard surfaces and the converted vegetation areas if: <ul style="list-style-type: none"> • the Project adds 5,000 square feet or more of new plus replaced hard surfaces, and • the new plus replaced hard surfaces total 50% or more of the existing hard surfaces within the Site. <i>Also see proposed replacement Figure 1.3, attached</i>
2	Redevelopment Project Level Thresholds	commercial/industrial redevelopment threshold	Clark County Stormwater Manual, Book 1, Applicability	Section 1.4.2.1 Additional Requirements for the Redevelopment Project Site	Other types of redevelopment projects shall comply with Minimum Requirements #1 – #9 for the new and replaced hard surfaces and the converted vegetated areas if the total of new plus replaced hard surfaces is 5,000 square feet or more, and the valuation of proposed improvements – including interior improvements – exceeds 50% of the assessed value of the existing project site improvements for commercial and industrial projects or 50 percent of the assessed value of the existing site improvements for all other projects.	Other types of redevelopment projects shall comply with all the Minimum Requirements for the new and replaced hard surfaces and the converted vegetation areas if either of the two thresholds below are crossed: <ul style="list-style-type: none"> • Threshold 1: the Project adds 5,000 square feet or more of new plus replaced hard surfaces, and - For commercial or industrial projects: the valuation of the proposed improvements, including interior improvements, exceeds 50% of the assessed value of the existing Project Site improvements. - For all other projects: the valuation of the proposed improvements, including interior improvements, exceeds 50% of the assessed value of the existing Site improvements. • Threshold 2 (for commercial or industrial sites only): - The Project adds 5,000 square feet or more of new plus replaced hard surfaces, and - The new plus replaced hard surfaces total 50% or more of the existing hard surfaces within the Site.
3	Exemptions	Purpose and introduction to exemptions	Clark County Stormwater Manual, Book 1, Applicability	1.2 Exemptions	Some projects are exempt from the Minimum Requirements, County Requirements, or this manual.	The purpose of this section is to identify activities whose resulting surfaces may be considered “exempt” from the Minimum Requirements, even though those surfaces, per the definitions in Section 1.3. Definitions Related to Minimum Requirements, would be considered replaced hard surfaces or land disturbed. Unless otherwise indicated in this section, the surfaces that result from the activities described below are exempt from the Minimum Requirements. Exempt surfaces do not need to be included when evaluating the Project Level Thresholds or TDA Level Thresholds as described in Section 1.4. The following list further defines how these exemptions may be used: <ul style="list-style-type: none"> • A project may combine different types of exempt activities. If the project includes only exempt activities, then the whole project is exempt. • If the “exempt” activity is part of, directly related to, or caused by a new development or redevelopment project, then it is not considered an exempt activity. It is considered part of the new development or redevelopment project. • If an exempt activity requires making an ADA update per the federal Americans with Disabilities Act requirements, then the ADA update is considered part of the exempt activity, and the exemption applies to the surfaces disturbed for the ADA update. Note that this exemption does not extend to additional work, such as extending a sidewalk beyond what is necessary for the ADA update.
4	Exemptions	Purpose and introduction to exemptions	Clark County Code 40.386	40.386.010.C	Exemptions from the Requirements of this Chapter. Exemption from the requirements of this chapter shall be granted for the following activities:	No change

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5	Exemptions	pavement maintenance practices exemption	Clark County Stormwater Manual, Book 1, Applicability	1.2.2 Total Exemptions from the Minimum Requirements	The following pavement maintenance practices: o Pothole and square cut patching. o Overlaying existing asphalt or concrete pavement without expanding the area of coverage. o Shoulder grading. o Regrading/reshaping drainage systems. o Crack sealing. o Resurfacing with in-kind material without expanding the road prism. o Pavement preservation activities that do not expand the road prism. o Vegetation management.	The following pavement maintenance activities are exempt from all Minimum Requirements: o Pothole patching, square cut patching, or other targeted preservation work o Overlaying (including grinding an overlaying, so long as base coarse is not exposed) existing asphalt or concrete pavement. Examples of overlay materials include bituminous surface treatment (BST or "chip seal"), asphalt, or concrete, o Shoulder grading, o Reshaping/regrading drainage systems (including adding curb/gutter and/or wedge curbs), o Crack sealing, and o Vegetation maintenance associated with the right of way.
6	Exemptions	Pavement Maintenance Activities	Clark County Stormwater Manual, Book 1, Applicability	1.2.2.1 Clarification of Pavement Maintenance Exemptions	The following pavement maintenance practices are not categorically exempt. They are considered redevelopment. The extent to which the Minimum Requirements applies is explained for each circumstance. • Removing and replacing a paved surface to base course or lower, or repairing the pavement base: If impervious surfaces are not expanded, Minimum Requirements #1 – #5 apply. • Extending the pavement edge without increasing the size of the road prism, or paving graveled shoulders: These are considered new impervious surfaces and are subject to the Minimum Requirements that are triggered when the thresholds identified for new or redevelopment projects are met. • Resurfacing by upgrading from dirt to gravel, asphalt, or concrete; upgrading from gravel to asphalt or concrete; or upgrading from a bituminous surface treatment ("chip seal") to asphalt or concrete: These are considered new impervious surfaces and are subject to the Minimum Requirements that are triggered when the thresholds identified for new or redevelopment projects are met.	Pavement maintenance activities include only targeted pavement repairs or maintenance. The limits of the exempt surfaces include only the area that must be disturbed to repair or maintain the pavement. Pavement maintenance activities do not: •Change the characteristics of a roadway (e.g. changing a four-way intersection to a roundabout). •Increase the traffic capacity of a roadway or parking area (e.g. include restriping to add lanes or parking spaces). •Expand the area of coverage (i.e. add new hard surfaces). The following are not pavement maintenance activities, and are not exempt: • Removing and replacing a pavement to base course or lower, or repairing the pavement base (except for pothole or square cut patching) because these are considered replaced hard surfaces. • Extending the pavement edge, or paving graveled shoulders because these are considered new hard surfaces. • Upgrading from dirt to gravel, a bituminous surface treatment ("chip seal"), asphalt, concrete, or permeable pavement; upgrading from gravel to chip seal, asphalt, concrete, or permeable pavement; or upgrading from chip seal to asphalt, concrete, or permeable pavement because these are considered new hard surfaces.
7	Exemptions	pavement maintenance practices exemption	Clark County Code 40.386	40.386.010.C.6	The following pavement maintenance practices: a. Pothole and square cut patching; b. Overlaying existing asphalt or concrete pavement without expanding the area of coverage; c. Shoulder grading; d. Regrading/reshaping drainage systems; e. Crack sealing; f. Resurfacing with in-kind material without expanding the road prism; g. Pavement preservation, without expanding the road prism; and h. Vegetation management.	Pavement maintenance activities. Pavement maintenance activities include only targeted pavement repairs or maintenance. The limits of the exempt surfaces include only the area that must be disturbed to repair or maintain the pavement. Pavement maintenance activities do not change the change the characteristics of a roadway (e.g. changing a four-way intersection to a roundabout), increase the traffic capacity of a roadway or parking area (e.g. include restriping to add lanes or parking spaces), or expand the area of coverage (i.e. add new hard surfaces). The following pavement maintenance activities are exempt: a. Pothole patching, square cut patching, or other targeted preservation work; b. Overlaying (including grinding and overlaying, so long as base coarse is not exposed) existing asphalt or concrete pavement. Examples of overlay materials include bituminous surface treatment (BST or "chip seal"), asphalt, or concrete; c. Shoulder grading; d. Regrading/reshaping drainage systems (including adding curb/gutter and/or wedge curbs); e. Crack sealing; and f. Vegetation management associated with the road right-of-way.
8	Exemptions	underground utility activities exemption	Clark County Stormwater Manual, Book 1, Applicability	1.2.3	Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are subject only to Minimum Requirement #2, Construction Stormwater Pollution Prevention	Underground utility activities include installing, maintaining, and/or upgrading an underground utility. The limits of the exempt surfaces include only the area disturbed by the trench work necessary for the underground utility work (including any over excavating necessary for the utility trench). For an underground utility activity to be exempt, it cannot be part of, directly related to, or caused by a new development or redevelopment project. Underground utility activities must replace the ground surface with in-kind material or materials with similar runoff characteristics. Underground utility activities are subject to only Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan (SWPPP).

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9	Exemptions	underground utility activities exemption	Clark County Code 40.386	40.386.010.C.7	(new)	Underground utility activities. Underground utility activities include installing, maintaining, and/or upgrading an underground utility. The limits of the exempt surfaces include only the area disturbed by the trench work necessary for the underground utility work (including any over excavating necessary for the utility trench). For an underground utility activity to be exempt, it cannot be part of, directly related to, or caused by a new development or redevelopment project. Underground utility activities must replace the ground surface with in-kind material or materials with similar runoff characteristics. Underground utility activities are subject to only Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan (SWPPP).
10	Wetland Hydroperiod Protection Method 2	Volume changes	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-H - Wetland Protection Guidelines	Criteria 2. Mean Monthly Total Discharge Volumes from the Site Total volume of water into a wetland on a monthly basis should not be more than 15% higher or lower than the pre-project volumes. • Calculate the average of the monthly total discharge volumes from the site for each calendar month over the period of precipitation record in the approved model for pre- and post project scenarios. No month can exceed 15% change in volume.	Criteria 2. Mean Monthly Total Discharge Volumes from the Site Total volume of water into a wetland on a monthly basis should not be more than: - 20% higher or lower than the pre-project volumes for the months of October, November, and December. - 15% higher or lower than the pre-project volumes for all remaining months (January through September). • Calculate the average of the monthly total discharge volumes from the site for each calendar month over the period of precipitation record in the approved model for pre- and post project scenarios.
11	Wetland Hydroperiod Protection Method 2	Summer Exemption	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-H - Wetland Protection Guidelines	(none)	Summer Months Allowable Exception for Criteria 2: The exception for summer months (July, August, and September) may be an option for projects that are not able to meet the monthly basis criteria above. To utilize this exception, additional information about the wetland is necessary. It is important to note that this information may not be available, as it goes beyond what is required to complete the standard Method 2 analysis. If that is the case, then the exception will not be an option for the project being analyzed. If the only months that fail the monthly basis criteria above are July, August, and/or September, then complete the following for the failing month(s): •Obtain information about the wetland size consistent with what is described in the Contour Data or Water Storage Capacity section of I-H.5 Wetland Hydroperiod Protection Data Collection and Evaluation Procedures. •Determine the size of the entire contributing basin to the wetland. •Determine the size of the pre-project area that has been contributing to the wetland. •Calculate the ratio of the project area to the contributing basin area and multiply by the 15 cm Mean Monthly WLF Limit. The calculated value represents the Mean Monthly WLF limit for the project being analyzed. •Using the information about the wetland size and the monthly volume changes for the months that failed criteria 2, calculate the WLF for each specific month. •Compare the two values. If the limit is not surpassed by the monthly change then the month passes. If it does not pass, then the month still fails. •Repeat these steps for all months that failed the original Criteria 2 analysis.
12	Definitions Related to Minimum Requirements	ADT definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	(none)	ADT - Average Daily Traffic
13	Definitions Related to Minimum Requirements	ADT definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	(none)	ADT - Average Daily Traffic
14	Definitions Related to Minimum Requirements	Bioretention Definition	Clark County Code 40.100	40.100.700 Definitions	Bioretention facility. “Bioretention facilities” are shallow landscaped depressions, with a designed soil mix and plants adapted to the local climate and soil moisture conditions, that receive stormwater from a contributing area. (Per Department of Ecology 2012 Stormwater Management Manual for Western Washington, as Amended in December 2014 (The 2014 SWMMWW).)	Bioretention facility. “Bioretention facilities” are engineered shallow landscaped depressions, with a designed soil mix and plants adapted to the local climate and soil moisture conditions, that receive stormwater from a contributing area. (Per Department of Ecology 2024 Stormwater Management Manual for Western Washington (The 2024 SWMMWW).)
15	Definitions Related to Minimum Requirements	Bioretention Definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Bioretention – Engineered facilities that treat stormwater by passing it through a specified soil profile and either retain or detain the treated stormwater for flow attenuation.	Bioretention - Engineered stormwater facilities that provide Runoff Treatment by passing the stormwater through a specified soil profile (Bioretention Soil Mix, or BSM), and typically either retain or detain the treated stormwater for Flow Control. Bioretention facilities include a variety of plant material including trees, shrubs, grasses, and/or other herbaceous plants adapted to the local climate and soil moisture conditions. Bioretention is typically implemented as an LID practice, and as such is typically sited to receive stormwater runoff from a small contributing area.

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16	Definitions Related to Minimum Requirements	Bioretention Definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Bioretention – Engineered facilities that treat stormwater by passing it through a specified soil profile and either retain or detain the treated stormwater for flow attenuation.	Bioretention - Engineered stormwater facilities that provide Runoff Treatment by passing the stormwater through a specified soil profile (Bioretention Soil Mix, or BSM), and typically either retain or detain the treated stormwater for Flow Control. Bioretention facilities include a variety of plant material including trees, shrubs, grasses, and/or other herbaceous plants adapted to the local climate and soil moisture conditions. Bioretention is typically implemented as an LID practice, and as such is typically sited to receive stormwater runoff from a small contributing area.
17	Definitions Related to Minimum Requirements	Bioretention Definition	Clark County Stormwater Manual, Book 4, Stormwater Facility Operations and Maintenance	Bioretention System	Bioretention facilities are engineered facilities that store and treat stormwater by filtering it through a specified soil profile.	Bioretention facilities are engineered stormwater facilities that provide Runoff Treatment by passing the stormwater through a specified soil profile (Bioretention Soil Mix, or BSM), and typically either retain or detain the treated stormwater for Flow Control.
18	Definitions Related to Minimum Requirements	Common plan of development or sale definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	(none)	Common Plan of Development or Sale A site where multiple separate and distinct construction activities may be taking place at different times on different schedules and/or by different contractors, but still under a single plan. Examples include: 1. Phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g. a development where lots are sold to separate builders); 2. A development plan that may be phased over multiple years, but is still under a consistent plan for long-term development; 3. Projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility; and 4. Linear projects such as roads, pipelines, or utilities.
19	Definitions Related to Minimum Requirements	Effective Impervious Surface definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Effective Impervious Surface – Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces are considered ineffective if: 1) the runoff is dispersed through use of BMP T5.30A or T5.30B; 2) residential roof runoff is infiltrated in accordance with Downspout Full Infiltration Systems in BMP T5.10A or BMP T5:10B; or 3) modeling with an approved continuous simulation hydrologic model indicate that the entire runoff file is infiltrated.	Effective Impervious Surface – Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces are considered ineffective if: 1) the runoff is fully dispersed through use of BMP T5.30A or T5.30B; 2) residential roof runoff is infiltrated in accordance with Downspout Full Infiltration Systems in BMP T5.10A or BMP T5:10B; or 3) all runoff from the impervious surfaces is infiltrated (i.e. modeling with an approved continuous simulation hydrologic model indicates that the entire runoff file is infiltrated).
20	Definitions Related to Minimum Requirements	Effective Impervious Surface definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Effective Impervious Surface – Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces are considered ineffective if: 1) the runoff is dispersed through use of BMP T5.30A or T5.30B; 2) residential roof runoff is infiltrated in accordance with Downspout Full Infiltration Systems in BMP T5.10A or BMP T5:10B; or 3) modeling with an approved continuous simulation hydrologic model indicate that the entire runoff file is infiltrated.	Effective Impervious Surface Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces are considered ineffective if: 1. The runoff is fully dispersed in accordance with BMP T5.30: Full Dispersion; 2. Residential roof runoff is infiltrated in accordance with BMP T5.10A: Downspout Full Infiltration; or 3. All runoff from the impervious surface is infiltrated (i.e. approved continuous runoff modeling methods indicate that the entire runoff file is infiltrated).
21	Definitions Related to Minimum Requirements	Impervious Surface Definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Impervious Surface - A non-vegetated surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A non-vegetated surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether the thresholds for application of Minimum Requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling.	Impervious Surface - A surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. • For purposes of determining whether the thresholds for application of Minimum Requirements are exceeded, open, uncovered retention or detention BMPs shall not be considered as impervious surfaces. Open, uncovered retention or detention BMPs shall be considered impervious surfaces for the purposes of runoff modeling. • When an underdrain (not intended to infiltrate) is used below an artificial turf surface, that surface shall be considered (and modeled) as impervious surface.

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22	Definitions Related to Minimum Requirements	Impervious Surface Definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Impervious Surface - A non-vegetated surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A non-vegetated surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether the thresholds for application of Minimum Requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling.	Impervious Surface - A surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. • For purposes of determining whether the thresholds for application of Minimum Requirements are exceeded, open, uncovered retention or detention BMPs shall not be considered as impervious surfaces. Open, uncovered retention or detention BMPs shall be considered impervious surfaces for the purposes of runoff modeling. • When an underdrain (not intended to infiltrate) is used below an artificial turf surface, that surface shall be considered (and modeled) as impervious surface.
23	Definitions Related to Minimum Requirements	Impervious Surface Definition	Clark County Code 40.386	40.386.010.E	Impervious Surface - “Impervious surface” means a nonvegetated surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A nonvegetated surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for the purposes of determining whether the thresholds for application of minimum requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling.	Impervious Surface. "Impervious surface" means a surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. For purposes of determining whether the thresholds for application of Minimum Requirements are exceeded, open, uncovered retention or detention BMPs shall not be considered as impervious surfaces. Open, uncovered retention or detention BMPs shall be considered impervious surfaces for the purposes of runoff modeling. When an underdrain (not intended to infiltrate) is used below an artificial turf surface, that surface shall be considered (and modeled) as impervious surface.
24	Definitions Related to Minimum Requirements	New Hard Surface Definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	(none)	New Hard Surface A surface that is: • Upgraded from dirt to gravel, a bituminous surface treatment (“chip seal”), asphalt, concrete, permeable pavement, a structure with a vegetated roof, or an impervious structure; or • Upgraded from gravel to chip seal, asphalt, concrete, permeable pavement, a structure with a vegetated roof, or an impervious structure; or • Upgraded from chip seal to asphalt, concrete, permeable pavement, a structure with a vegetated roof, or an impervious structure. Note that if asphalt or concrete has been overlaid by a chip seal, the existing condition should be considered as asphalt or concrete.
25	Definitions Related to Minimum Requirements	New Hard Surface Definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	(none)	New Hard Surface A surface that is: • Upgraded from dirt to gravel, a bituminous surface treatment (“chip seal”), asphalt, concrete, permeable pavement, a structure with a vegetated roof, or an impervious structure; or • Upgraded from gravel to chip seal, asphalt, concrete, permeable pavement, a structure with a vegetated roof, or an impervious structure; or • Upgraded from chip seal to asphalt, concrete, permeable pavement, a structure with a vegetated roof, or an impervious structure. Note that if asphalt or concrete has been overlaid by a chip seal, the existing condition should be considered as asphalt or concrete.
26	Definitions Related to Minimum Requirements	On-Site Stormwater Management BMP definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	On-site Stormwater Management BMPs – As used in this manual, a synonym for Low Impact Development BMPs.	On-site Stormwater Management BMPs - Development and mitigation techniques that serve to infiltrate, disperse, and retain stormwater runoff on a project site. As used in this appendix, a synonym for Low Impact Development BMPs.
27	Definitions Related to Minimum Requirements	On-Site Stormwater Management BMP definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	On-site Stormwater Management BMPs – As used in this manual, a synonym for Low Impact Development BMPs.	On-site Stormwater Management BMPs - Development and mitigation techniques that serve to infiltrate, disperse, and retain stormwater runoff on a project site. As used in this appendix, a synonym for Low Impact Development BMPs.

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28	Definitions Related to Minimum Requirements	Pollution-generating impervious surface definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Pollution-generating impervious surface (PGIS). Those impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are subject to: vehicular use; industrial activities (as further defined in this glossary); or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall; metal roofs unless they are coated with an inert, nonleachable material (e.g., baked-on enamel coating); or roofs that are subject to venting significant amounts of dusts, mists, or fumes from manufacturing, commercial, or other indoor activities.	Pollution-Generating Impervious Surface (PGIS). Those impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are subject to: vehicular use (as further defined in this section); industrial activities (as further defined in the glossary of this manual); or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall; metal roofs unless they are coated with an inert, nonleachable material (e.g., baked-on enamel coating); or roofs that are subject to venting significant amounts of dusts, mists, or fumes from manufacturing, commercial, or other indoor activities.
29	Definitions Related to Minimum Requirements	Pollution-generating impervious surface definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Pollution-generating impervious surface (PGIS). Those impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are subject to: vehicular use; industrial activities (as further defined in this glossary); or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall; metal roofs unless they are coated with an inert, nonleachable material (e.g., baked-on enamel coating); or roofs that are subject to venting significant amounts of dusts, mists, or fumes from manufacturing, commercial, or other indoor activities.	Pollution-Generating Impervious Surface (PGIS). Those impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are subject to: vehicular use (as further defined in this glossary); industrial activities (as further defined in this glossary); or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall; metal roofs unless they are coated with an inert, nonleachable material (e.g., baked-on enamel coating); or roofs that are subject to venting significant amounts of dusts, mists, or fumes from manufacturing, commercial, or other indoor activities.
30	Definitions Related to Minimum Requirements	Pollution-generating Pervious surface definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Pollution-generating pervious surface (PGPS). Any non-impervious surface subject to vehicular use, industrial activities (as further defined in this glossary); or storage of erodible or leachable materials, wastes or chemicals, and that receive direct rainfall or run-on or blow-in of rainfall, use of pesticides and fertilizers, or loss of soil. Typical PGPS include permeable pavement subject to vehicular use, lawns and landscaped areas including: golf courses, parks, cemeteries, and sports fields (natural and artificial turf).	Pollution-Generating Pervious Surface (PGPS). Any artificial turf or any pervious surface subject to vehicular use (as further defined in this section), industrial activities (as further defined in the glossary of this manual); or storage of erodible or leachable materials, wastes or chemicals, and that receive direct rainfall or run-on or blow-in of rainfall; use of pesticides and fertilizers; or loss of soil. Typical PGPS include permeable pavement subject to vehicular use, lawns and landscaped areas including: golf courses, parks, cemeteries, and sports fields (natural and artificial turf).
31	Definitions Related to Minimum Requirements	Pollution-generating Pervious surface definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Pollution-generating pervious surface (PGPS). Any non-impervious surface subject to vehicular use, industrial activities (as further defined in this glossary); or storage of erodible or leachable materials, wastes or chemicals, and that receive direct rainfall or run-on or blow-in of rainfall, use of pesticides and fertilizers, or loss of soil. Typical PGPS include permeable pavement subject to vehicular use, lawns and landscaped areas including: golf courses, parks, cemeteries, and sports fields (natural and artificial turf).	Pollution-Generating Pervious Surface (PGPS). Any artificial turn or any pervious surface subject to vehicular use (as further defined in this glossary), industrial activities (as further defined in this glossary); or storage of erodible or leachable materials, wastes or chemicals, and that receive direct rainfall or run-on or blow-in of rainfall, use of pesticides and fertilizers, or loss of soil. Typical PGPS include permeable pavement subject to vehicular use, lawns and landscaped areas including: golf courses, parks, cemeteries, and sports fields (natural and artificial turf).
32	Definitions Related to Minimum Requirements	Project Definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Project. Any proposed action to alter or develop a site. The proposed action of a permit application or an approval, which requires drainage review.	Project. Any proposed action to alter or develop a site; or the proposed action of a permit application or an approval which requires drainage review.
33	Definitions Related to Minimum Requirements	Project Definition	Clark County Code 40.100	40.100.070 Definitions	Project. “Project” means the proposed action of a permit application or an approval which requires a drainage review.	Project. “Project” means the proposed action of a permit application or an approval which requires a drainage review. For the purposes of drainge review, see the definition in Chapter 40.386.
75	Definitions Related to Minimum Requirements	Project Definition	Clark County Code 40.386	40.386.010.E	(none)	Project. "Project" means any proposed action to alter or develop a site; or the proposed action of a permit application or an approval that requires drainage review.
34	Definitions Related to Minimum Requirements	Project Site definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Project Site – That portion of a property, properties, or right of way subject to land disturbing activities, new hard surfaces, or replaced hard surfaces.	Project Site. That portion of a property, properties, and right-of-way subject to land disturbing activities, new hard surfaces, or replaced hard surfaces.
35	Definitions Related to Minimum Requirements	Project Site definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Project site. That portion of a property, properties, or right of way subject to land disturbing activities, new hard surfaces, or replaced hard surfaces.	Project Site. That portion of a property, properties, and right-of-way subject to land disturbing activities, new hard surfaces, or replaced hard surfaces.
36	Definitions Related to Minimum Requirements	Replaced Hard Surface definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Replaced Hard Surface – For structures, the removal and replacement of hard surfaces down to the foundation. For other hard surfaces, the removal down to bare soil or base course and replacement.	Replaced Hard Surface. For structures, the removal down to (i.e. exposing the top of) the foundation and replacement. For other hard surfaces, the removal down to (i.e. exposing the top of) bare soil or base course and replacement.
37	Definitions Related to Minimum Requirements	Replaced Hard Surface definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Replaced Hard Surface – For structures, the removal and replacement of hard surfaces down to the foundation. For other hard surfaces, the removal down to bare soil or base course and replacement.	Replaced Hard Surface. For structures, the removal down to (i.e. exposing the top of) the foundation and replacement. For other hard surfaces, the removal down to (i.e. exposing the top of) bare soil or base course and replacement.

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38	Definitions Related to Minimum Requirements	Replaced Impervious Surface definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Replaced Impervious Surface – For structures, the removal and replacement of impervious surfaces down to the foundation. For other impervious surfaces, the removal down to bare soil or base course and replacement.	Replaced Impervious Surface - For structures, the removal down to (i.e. exposing the top of) the foundation and replacement. For other impervious surfaces, the removal down to (i.e. exposing the top of) bare soil or base course and replacement.
39	Definitions Related to Minimum Requirements	Replaced Impervious Surface definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Replaced Impervious Surface – For structures, the removal and replacement of impervious surfaces down to the foundation. For other impervious surfaces, the removal down to bare soil or base course and replacement.	Replaced Impervious Surface - For structures, the removal down to (i.e. exposing the top of) the foundation and replacement. For other impervious surfaces, the removal down to (i.e. exposing the top of) bare soil or base course and replacement.
40	Definitions Related to Minimum Requirements	Site Definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Site – The area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right of- way boundaries define the site.	Site – The area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site. A Site may include multiple parcels and/or sections of right-of-way, if multiple parcels and/or sections of right-of-way are subject to the new development or redevelopment project.
41	Definitions Related to Minimum Requirements	Site Definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Site – The area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right of- way boundaries define the site.	Site – The area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site. A Site may include multiple parcels and/or sections of right-of-way, if multiple parcels and/or sections of right-of-way are subject to the new development or redevelopment project.
42	Definitions Related to Minimum Requirements	Site Definition	Clark County Code 40.100	40.100.070 Definitions	“Site” means that portion of property which is directly subject to development. For the purposes of determining public notice, “site” means the lot proposed for development and all contiguous lots that are owned by the same person, partnership, association or corporation as the lot, including lots that are in common ownership, but are separated by a public or private right-of-way or easement.	“Site” means that portion of property which is directly subject to development or redevelopment. The site is the area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For the purposes of determining public notice, “site” means the lot proposed for development and all contiguous lots that are owned by the same person, partnership, association or corporation as the lot, including lots that are in common ownership, but are separated by a public or private right-of-way or easement. For road projects, the length of the project site and the right-of-way boundaries define the site. A site may include multiple parcels and/or sections of right-of-way, if multiple parcels and/or sections of right-of-way are subject to the new development or redevelopment project.
43	Definitions Related to Minimum Requirements	Threshold Discharge Area Definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	Threshold Discharge Area – An on-site area draining to a single natural discharge location or multiple natural discharge locations that combine within one-quarter mile downstream (as determined by the shortest flow path). The examples in Figure 1.1, below, illustrate this definition. The purpose of this definition is to clarify how the thresholds of this manual are applied to project sites with multiple discharge points.	Threshold Discharge Area – An on-site area draining to a single natural discharge location or multiple natural discharge locations that combine within one-quarter mile downstream (as determined by the shortest flow path). The examples in Figure 1.1, below, illustrate this definition. The purpose of this definition is to clarify how the thresholds of this manual are applied to project sites with multiple discharge points. If the project site does not currently discharge at the natural location and is such that it is impractical (as determined by Clark County) to return the discharge to the natural location, then the TDA delineation would be based on the discharge(s) at the existing location(s). An example of this case is a site in an ultra urban environment, where fully built-out conveyance systems exist and are not in the natural (i.e. historic) locations. <i>Also see replacement Figure 1.1, attached.</i>
44	Definitions Related to Minimum Requirements	Threshold Discharge Area Definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	Threshold Discharge Area – An on-site area draining to a single natural discharge location or multiple natural discharge locations that combine within one-quarter mile downstream (as determined by the shortest flow path). The purpose of this definition is to clarify how the thresholds of this manual are applied to project sites with multiple discharge points.	Threshold Discharge Area – An on-site area draining to a single natural discharge location or multiple natural discharge locations that combine within one-quarter mile downstream (as determined by the shortest flow path). The examples below, illustrate this definition. The purpose of this definition is to clarify how the thresholds of this manual are applied to project sites with multiple discharge points. If the project site does not currently discharge at the natural location and is such that it is impractical (as determined by Clark County) to return the discharge to the natural location, then the TDA delineation would be based on the discharge(s) at the existing location(s). An example of this case is a site in an ultra urban environment, where fully built-out conveyance systems exist and are not in the natural (i.e. historic) locations. <i>Also see replacement illustration (Figure 1.1), attached.</i>

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45	Definitions Related to Minimum Requirements	Vehicular Use Definition	Clark County Stormwater Manual, Book 1, Applicability	Section 1.3, Definitions Related to the Minimum Requirements	(none)	<p>Vehicular Use.</p> <p>Regular use of an impervious or pervious surface by motor vehicles. The following are subject to regular vehicular use:</p> <ul style="list-style-type: none"> • Roads, • Un-vegetated road shoulders, • Bike lanes within the traveled lane of a roadway, • Driveways, • Parking lots, • Unrestricted access fire lanes, • Vehicular equipment storage yards, • Railway lines, including light rail elevated and non-elevated guideways/tracks, and • Airport runways and other surfaces intended for movement and/or storage of aircraft. <p>The following are not considered subject to regular vehicular use:</p> <ul style="list-style-type: none"> • Sidewalks not subject to drainage from roads for motor vehicles, • Paved bicycle pathways separated from and not subject to drainage from roads for motor vehicles, • Restricted access fire lanes, and • Infrequently used maintenance access roads.
46	Definitions Related to Minimum Requirements	Vehicular Use Definition	Clark County Stormwater Manual, Book 1, Applicability	Appendix I-A Glossary	<p>Vehicular Use. Regular use of an impervious or pervious surface by motor vehicles.</p> <p>The following are subject to regular vehicular use: roads, un-vegetated road shoulders, bike lanes within the traveled lane of a roadway, driveways, parking lots, unrestricted access fire lanes, vehicular equipment storage yards, and airport runways.</p> <p>The following are not considered subject to regular vehicular use: paved bicycle pathways separated from and not subject to drainage from roads for motor vehicles, restricted access fire lanes, and infrequently used maintenance access roads.</p>	<p>Vehicular Use.</p> <p>Regular use of an impervious or pervious surface by motor vehicles. The following are subject to regular vehicular use:</p> <ul style="list-style-type: none"> • Roads, • Un-vegetated road shoulders, • Bike lanes within the traveled lane of a roadway, • Driveways, • Parking lots, • Unrestricted access fire lanes, • Vehicular equipment storage yards, • Railway lines, including light rail elevated and non-elevated guideways/tracks, and • Airport runways and other surfaces intended for movement and/or storage of aircraft. <p>The following are not considered subject to regular vehicular use:</p> <ul style="list-style-type: none"> • Sidewalks not subject to drainage from roads for motor vehicles, • Paved bicycle pathways separated from and not subject to drainage from roads for motor vehicles, • Restricted access fire lanes, and • Infrequently used maintenance access roads.
74	Definitions Related to Minimum Requirements	Common plan of development or sale definition	Clark County Stormwater Manual, Book 1, Applicability	1.4, Applicability	(none)	If the project is part of a common plan of development or sale, the disturbed area of the entire plan must be used in determining applicability of Minimum Requirements.
47	Runoff Treatment Performance Goal Thresholds	Enhanced to Metals terminology	Clark County Stormwater Manual, Book 1, Applicability	throughout Book 1	Enhanced Treatment	Metals Treatment
48	Runoff Treatment Performance Goal Thresholds	Enhanced to Metals terminology	Clark County Stormwater Manual, Book 2, BMP Design	throughout Book 2	Enhanced Treatment	Metals Treatment
49	Runoff Treatment Performance Goal Thresholds	Enhanced to Metals terminology	Clark County Stormwater Manual, Book 3, Source Control	throughout Book 3	Enhanced Treatment	Metals Treatment
50	Runoff Treatment Performance Goal Thresholds	Treatment Requirements, Phosphorus Treatment	Clark County Stormwater Manual, Book 1, Applicability	1.5.6.1 Thresolds [for MR #6]	<p>The following sites require phosphorus treatment stormwater treatment facilities:</p> <ul style="list-style-type: none"> •Projects located in the Lacamas watershed above the dam at the south end of Round Lake. 	<p>The following sites require phosphorus treatment stormwater treatment facilities:</p> <ul style="list-style-type: none"> •Projects located in the Lacamas watershed. •Projects located on any land draining either directly or through a tributary to either Vancouver Lake or Lake River. <p><i>Also see attached map of Required Phosphorous Treatment Locations (Figure number TBD).</i></p>

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51	Runoff Treatment Performance Goal Thresholds	Treatment Requirements, Phosphorous Treatment	Clark County Stormwater Manual, Book 1, Applicability	3.2.1 Step-by-Step Process for Selecting Treatment Facilities, Step 4	In Clark County, phosphorus treatment shall be provided in the Lacamas watershed above the dam at the south end of Round Lake for all project sites meeting the thresholds triggering Minimum Requirement #6. This requirement applies to stormwater conveyed to the lake by surface flow as well as to stormwater infiltrated within one-quarter mile of the lake in soils that do not meet the suitability for treatment.	In Clark County, phosphorus treatment shall be provided in the Lacamas watershed and on any land draining either directly or through a tributary to Vancouver Lake or to Lake River for all project sites meeting the thresholds triggering Minimum Requirement #6. This requirement applies to stormwater conveyed by surface flow as well as to stormwater infiltrated within one-quarter mile of Lacamas Lake in soils that do not meet the suitability for treatment.
52	Runoff Treatment Performance Goal Thresholds	Treatment Requirements, Phosphorus Treatment	Clark County Stormwater Manual, Book 2, BMP Design	Book 2 - BMP T5.14B Bioretention Facilities and BMP T9.15 Compost Amended Biofiltration Swale (CABS).	<u>BMP T5.14B:</u> Bioretention facilities constructed with imported compost materials should not be used within one-quarter mile of phosphorus-sensitive waterbodies if the underlying native soil does not meet the criteria for treatment described in Section 3.1.5.3. Bioretention should also not be used with an underdrain when the underdrain water would be routed to a phosphorus-sensitive receiving water. In Clark County, phosphorous treatment shall be provided in the Lacamas watershed above the dam at the south end of Round Lake for all project sites exceeding one (1) acre in size. <u>BMP T9.15</u> Do not install CABS in areas draining to Lacamas Lake because CABS are known to discharge phosphorus.	<u>BMP T5.14B:</u> Bioretention facilities constructed with imported compost materials should not be used within one-quarter mile of phosphorus-sensitive waterbodies if the underlying native soil does not meet the criteria for treatment described in Section 3.1.5.3. Bioretention with an underdrain routed to a phosphorus-sensitive receiving water must use High Performance Bioretention Soil Mix designed for phosphorous treatment. In Clark County, phosphorous treatment shall be provided in the Lacamas watershed and for any land draining either directly or through a tributary to either Vancouver Lake or Lake River for all project sites that trigger Minimum Requirement #6. <u>BMP T9.15</u> Do not install CABS in areas where Clark County requires phosphorous control facilities because CABS are known to discharge phosphorus.
53	Runoff Treatment Performance Goal Thresholds	Treatment Requirements, Metals	Clark County Stormwater Manual, Book 1, Applicability	3.2.1 Step-by-Step Process for Selecting Treatment Facilities, Step 5 <u>and</u> Figures 3.1 and 3.2	<ul style="list-style-type: none"> • Industrial project sites • Commercial project sites • Multi-family residential project sites • High AADT roads as follows: Within Urban Growth Management Areas: <ul style="list-style-type: none"> ▪ Fully controlled and partially controlled limited access highways with Annual Average Daily Traffic (AADT) counts of 15,000 or more ▪ All other roads with an AADT of 7,500 or greater Outside of Urban Growth Management Areas: <ul style="list-style-type: none"> ▪ Roads with an AADT of 15,000 or greater unless discharging to a 4th Strahler order stream or larger; ▪ Roads with an AADT of 30,000 or greater if discharging to a 4th Strahler order stream or larger (as determined using 1:24,000 scale maps to delineate stream order). 	<ul style="list-style-type: none"> • Sites subject to industrial activities • Commercial project sites • Multi-family residential project sites • High ADT roads as follows: Within Urban Growth Management Areas: <ul style="list-style-type: none"> ▪ Roads with an ADT of 7,500 or greater Outside of Urban Growth Management Areas: <ul style="list-style-type: none"> ▪ Roads with an ADT of 15,000 or greater • Light rail elevated and non-elevated guideways/tracks • Other project sites that are anticipated to generate high pollutant loading, including: <ul style="list-style-type: none"> o Parking areas as follows: <ul style="list-style-type: none"> • Commercial or industrial areas: all on-street parking areas • Areas other than commercial or industrial areas: On-street parking areas on streets with an expected ADT of 7,500 or greater • Parking areas with an expected trip end count of ≥ 40 vehicles per 1,000 sf of gross building area • Parking areas with ≥ 100 expected trip ends per day o Fueling stations o Transit center bus stops <p><i>Also see updated Figures 3.1 and 3.2, attached</i></p>
54	Runoff Treatment Performance Goal Thresholds	Treatment Requirements, Basic	Clark County Stormwater Manual, Book 1, Applicability	3.2.1 Step-by-Step Process for Selecting Treatment Facilities, Step 6	(none)	If Phosphorus Treatment BMPs or Metals Treatment BMPs are not provided, Basic Treatment BMPs are required.
55	Runoff Treatment Performance Goal Thresholds	Treatment Requirements	Clark County Stormwater Manual, Book 1, Applicability	3.2.1 Step-by-Step Process for Selecting Treatment Facilities, Step 6	For developments with a mix of land use types, the Basic Treatment requirement shall apply when the runoff from the areas subject to the Basic Treatment requirement comprises 50% or more of the total runoff within a threshold discharge area.	(delete)
56	Source Control BMPS - PCB edits	PCB Background	Clark County Stormwater Manual, Book 3, Source Control	S424 BMPs for Roof/Building Drains at Manufacturing and Commercial Buildings	Metals, solvents, acidic/alkaline pH, BOD, and organics are some of the pollutant constituents identified.	Metals, solvents, acidic/alkaline pH, BOD, PCBs, and organics are some of the pollutant constituents identified.

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57	Source Control BMPS - PCB edits	PCB Background	Clark County Stormwater Manual, Book 3, Source Control	S424 BMPs for Roof/Building Drains at Manufacturing and Commercial Buildings	<p>Description of Pollutant Sources: Stormwater runoff from roofs and sides of manufacturing and commercial buildings can be sources of pollutants caused by leaching of roofing materials, building vents, and other air emission sources. Research has identified vapors and entrained liquid and solid droplets/particles as potential pollutants in roof/building runoff. Metals, solvents, acidic/alkaline pH, BOD, and organics are some of the pollutant constituents identified.</p> <p>Ecology has performed a study on zinc in industrial stormwater. The study is presented in Ecology Publication 08-10-025, Suggested Practices to reduce Zinc Concentrations in Industrial Stormwater Discharges. The user should refer to this document for more details on addressing zinc in stormwater.</p>	<p>Description of Pollutant Sources: Stormwater runoff from roofs and sides of manufacturing and commercial buildings can be sources of pollutants caused by leaching of roofing materials, building vents, and other air emission sources. Research has identified vapors and entrained liquid and solid droplets/particles as potential pollutants in roof/building runoff. Metals, solvents, acidic/alkaline pH, BOD, PCBs, and organics are some of the pollutant constituents identified.</p> <p>Between 1950 and 1980, PCBs were added to a range of building materials used on the exterior of industrial, commercial, government, and larger residential buildings to increase the material's longevity. Without proper precautions, PCBs from paint, caulk and other joint materials, sealants, roofing, and other items can be released into the environment and enter stormwater conveyances during building washing activities. Recent guidance for characterizing and abating PCBs in building materials recommends against washing PCB-containing materials on a building's exterior, and provides more detailed guidance on specific stormwater BMPs to apply when PCB-containing materials are or are assumed to be present (Ecology Publication 22-04-024).</p> <p>Ecology has performed a study on zinc in industrial stormwater. The study is presented in Ecology Publication 08-10-025, Suggested Practices to reduce Zinc Concentrations in Industrial Stormwater Discharges. The user should refer to this document for more details on addressing zinc in stormwater.</p> <p>Ecology has also researched the characterization and abatement of PCBs in building materials before demolition or renovation (Ecology Publication 22-04-024). The user should refer to that guidance document for more details on preventing PCBs from entering stormwater from buildings that have, or likely have, PCB-containing materials on roofs and building exteriors like siding, joint materials (caulk), paint, and other potential sources.</p>
58	Source Control BMPS - PCB edits	PCB Background	Clark County Stormwater Manual, Book 3, Source Control	S424 BMPs for Roof / Building Drains at Manufacturing and Commercial Buildings	(none)	<ul style="list-style-type: none"> • If PCBs in external building materials are suspected, assess the building materials and report findings consistent with the guidance in How to Find and Address PCBs in Building Materials (Ecology Publication 22-04-024)
59	Source Control BMPS - PCB edits	PCB Background	Clark County Stormwater Manual, Book 3, Source Control	S424 BMPs for Roof/Building Drains at Manufacturing and Commercial Buildings	<ul style="list-style-type: none"> • If a roof/building stormwater pollutant source is identified, implement appropriate source control measures such as air pollution control equipment, selection of materials, operational changes, material recycle, process changes, etc. 	<ul style="list-style-type: none"> • If a roof/building stormwater pollutant source is identified, implement appropriate source control measures such as air pollution control equipment, selection of materials, operational changes, material recycle, process changes, removal/abatement, etc.
60	Source Control BMPS - PCB edits	PCB Background	Clark County Stormwater Manual, Book 3, Source Control	S431 BMPs for Washing and Steam Cleaning Vehicles / Equipment / Building Structures	<p>Description of Pollutant Sources: Pollutant sources include the commercial cleaning of vehicles, aircraft, vessels, and other transportation, restaurant kitchens, carpets, and industrial equipment, and large buildings with pressurized water or steam. This includes "charity" car washes at gas stations and commercial parking lots. The cleaning can include hand washing, scrubbing, sanding, etc. Washwater from cleaning activities can contain oil and grease, suspended solids, heavy metals, organics, soaps, and detergents that can contaminate stormwater.</p>	<p>Description of Pollutant Sources: Pollutant sources include the commercial cleaning of vehicles, aircraft, vessels, and other transportation, restaurant kitchens, carpets, and industrial equipment, and large buildings with pressurized water or steam. This includes "charity" car washes at gas stations and commercial parking lots. The cleaning can include hand washing, scrubbing, sanding, etc. Washwater from cleaning activities can contain oil and grease, suspended solids, heavy metals, organics, soaps, and detergents that can contaminate stormwater.</p> <p>Between 1950 and 1980, PCBs were added to a range of building materials used on the exterior of industrial, commercial, government, and larger residential buildings to increase the material's longevity. Without proper precautions, PCBs from paint, caulk and other joint materials, sealants, roofing, and other items can be released into the environment and enter stormwater conveyances during building washing activities. Recent guidance for characterizing and abating PCBs in building materials recommends against washing PCB-containing materials on a building's exterior, and provides more detailed guidance on specific stormwater BMPs to apply when PCB-containing materials are or are assumed to be present (Ecology Publication 22-04-024).</p> <p>Permitting Requirements: Obtain all necessary permits for installing, altering, or repairing onsite drainage and side sewers. Restrictions on certain types of discharges may require pretreatment before they enter the sanitary sewer. For commercial building washdown, properties served by a municipal stormwater system may be required to assess for PCB-containing building materials prior to building washing activities.</p>

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61	Source Control BMPS - PCB edits	PCB Instructions	Clark County Stormwater Manual, Book 3, Source Control	S431 BMPs for Washing and Steam Cleaning Vehicles / Equipment / Building Structures	<p>Pollutant Control Approach: The preferred approach is to cover and/or contain the cleaning activity, or conduct the activity inside a building, to separate the uncontaminated stormwater from the washwater sources. Convey washwater to a sanitary sewer after approval by the local sewer authority. Provide temporary storage before proper disposal, or recycling. Under this preferred approach, no discharge of washwater to the ground, to a storm drain, or to surface water should occur.</p> <p>The Industrial Stormwater General Permit prohibits the discharge of process wastewater (e.g., vehicle washing wastewater) to groundwater or surface water. Stormwater that commingles with process wastewater is considered process wastewater.</p>	<p>Pollutant Control Approach: The preferred approach is to cover and/or contain the cleaning activity, or conduct the activity inside a building, to separate the uncontaminated stormwater from the washwater sources. Convey washwater to a sanitary sewer after approval by the local sewer authority. Provide temporary storage before proper disposal. Under this preferred approach, no discharge of washwater to the ground, to a storm drain, or to surface water should occur.</p> <p>The Municipal Stormwater Permits (Phase I, Phase II western Washington, and Phase II eastern Washington) prohibit the discharge of building washdown water to municipal stormwater systems from structures suspected or confirmed to have PCB-containing materials.</p> <p>The Industrial Stormwater General Permit prohibits the discharge of process wastewater (e.g., vehicle, building, or equipment washing wastewater) to groundwater or surface water. Stormwater that commingles with process wastewater is considered process wastewater.</p>
62	Source Control BMPS - PCB edits	PCB instructions	Clark County Stormwater Manual, Book 3, Source Control	S431 BMPs for Washing and Steam Cleaning Vehicles / Equipment / Building Structures	<p>Conduct outside washing operation in a designated wash area with the following features:</p> <p><4 bullet items></p> <p>(none)</p> <p>Collect the washwater from building structures and convey it to appropriate treatment such as a sanitary sewer system if it contains oils, soaps, or detergents. If the washwater does not contain oils, soaps, or detergents (in this case only a low pressure, clean, cold water rinse is allowed) then it could drain to soils that have sufficient natural attenuation capacity for dust and sediment.</p>	<p>Conduct outside washing operation in a designated wash area with the following features:</p> <p>< 3 bullet items, unchanged></p> <ul style="list-style-type: none"> •Collect the washwater from building structures and convey it to appropriate treatment such as a sanitary sewer system if it contains or is suspected to contain PCBs, oils, soaps, or detergents. If the washwater does not contain PCBs, oils, soaps, or detergents (in this case only a low pressure, clean, cold water rinse is allowed) then it could drain to soils that have sufficient natural attenuation capacity for dust and sediment. •Contact the local jurisdiction's stormwater program to inform them when PCB-containing materials are, or are likely to be, present. •Assess commercial structures (including industrial facilities and multi-story residential structures) constructed or renovated between 1950-1980 for PCB-containing materials consistent with How to Find and Address PCBs in Building Materials (Ecology Publication 22-04-024) prior to building washdown. Single-family residential buildings are exempt from PCB assessment.
63	Source Control BMPS - PCB edits	PCB Background	Clark County Stormwater Manual, Book 3, Source Control	S438 BMPs for Construction Demolition	<p>Pollutants of concern include toxic organic compounds, hazardous wastes, high pH, heavy metals, and suspended solids.</p>	<p>Pollutants of concern include toxic organic compounds (such as PCBs), hazardous wastes, high pH, heavy metals, and suspended solids.</p> <p>PCBs were added to building materials before 1980 (such as caulk and other sealants, joint materials, paint, siding, roofing, and others), and now with age and weathering are at greater risk of being dislodged during demolition and renovation activities. Particles containing PCBs can be washed into the stormwater, contaminating the conveyance system and downstream water bodies, if not properly managed. PCB-containing building materials were more often used in public buildings such as schools, hospitals, universities, fire houses, police stations, government offices, military sites, as well as privately owned commercial and large multi-unit residential buildings. Recently, guidance has been developed for characterizing and abating PCBs in building materials that will undergo demolition or renovation (Ecology Publication 22-04-024). The user should refer to this document for more details on preventing PCBs from entering stormwater.</p> <p>Additional regulations regarding PCBs may apply, including but not limited to the federal Toxic Substances Control Act (TSCA). For more information, refer to the U.S. EPA's guidance for PCBs at the following web address:</p> <p>https://www.epa.gov/pcbs</p>
64	Source Control BMPS - PCB edits	PCB instructions	Clark County Stormwater Manual, Book 3, Source Control	S438 BMPs for Construction Demolition	<p>Pollutant Control Approach: Do not expose hazardous materials to stormwater. Regularly clean up debris that can contaminate stormwater. Protect the stormwater drainage system from dirty runoff and loose particles. Sweep paved surfaces daily. Educate employees about the need to control site activities.</p>	<p>Pollutant Control Approach: Do not expose hazardous materials to stormwater. Regularly clean up debris that can contaminate stormwater. Protect the stormwater drainage system from dirty runoff and loose particles. Sweep paved surfaces daily. Educate employees about the need to control site activities. While awaiting active demolition, monitor the integrity of PCB-containing materials and take actions to prevent PCB-containing dust and solids from entering stormwater and stormwater conveyances.</p>

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65	Source Control BMPS - PCB edits	PCB instructions	Clark County Stormwater Manual, Book 3, Source Control	S438 BMPs for Construction Demolition	Applicable Operational BMPs <6 first order bullet items, plus nested bullet items> (none)	Applicable Operational BMPs <6 first order bullet items, plus nested bullet items, unchanged> <add the following 3 first order bullet items, plus 4 nested bullet items:> •Follow the guidance document How to Find and Address PCBs in Building Materials (Ecology Publication 22-04-024) for PCB-containing building materials undergoing demolition or renovation. •Contact the local jurisdiction's stormwater program to inform them when PCB-containing materials are, or are likely to be, present. •To prevent PCBs in building materials from entering stormwater during the demolition planning/preparation phase (i.e. prior to active demolition), routinely visually survey the areas where PCB-containing building materials are likely to exist to check that they have remained intact. If weathering (e.g. flaking, peeling) becomes noticeably worse as demolition planning continues, consider installing BMPs to prevent runoff containing PCBs from entering the stormwater conveyance system, such as: o Install catch basin filter inserts. o Dry sweep adjacent hard surfaces. o Prevent washwater or irrigation water from coming into contact with the PCB-containing building materials. o Educate landscaping and maintenance staff about avoiding the use of leaf blowers around the building.
66	Source Control BMPS - PCB edits	PCB Background	Clark County Stormwater Manual, Book 3, Source Control	S451 BMPs for Building Repair, Remodeling, Painting, and Construction	Description of Pollutant Sources: <three bullet items and one paragraph>	Description of Pollutant Sources: <add the following bullet item and the following paragraph:> •Containment or removal of known or suspected exterior hazardous building materials. PCBs were added to building materials before 1980 (such as caulk and other sealants, joint materials, paint, siding, roofing, and others), and now with age and weathering are at greater risk of being dislodged during demolition and renovation activities. Particles containing PCBs can be washed into the stormwater, contaminating the conveyance system and downstream water bodies, if not properly managed. Prior to 1980, PCB-containing building materials were more often used in public buildings such as schools, hospitals, universities, fire houses, police stations, government offices, military sites, as well as privately owned commercial and large multi-unit residential buildings. Recently, guidance has been developed for characterizing and abating PCBs in building materials that will undergo demolition or renovation (Ecology Publication 22-04-024). The user should refer to this document for more details on preventing PCBs from entering stormwater.
67	Source Control BMPS - PCB edits	PCB instructions	Clark County Stormwater Manual, Book 3, Source Control	S451 BMPs for Building Repair, Remodeling, Painting, and Construction	Pollutant Control Approach: Educate employees about the need to control site activities. Control leaks, spills, and loose material. Utilize good housekeeping practices. Regularly clean up debris that can contaminate stormwater. Protect the drainage system from dirty runoff and loose particles.	Pollutant Control Approach: Educate employees about the need to control site activities. Control leaks, spills, and loose material. Utilize good housekeeping practices. Regularly clean up debris that can contaminate stormwater. Protect the drainage system from dirty runoff and loose particles. Prevent PCB-containing dust and solids from entering stormwater and stormwater conveyances.
68	Source Control BMPS - PCB edits	PCB instructions	Clark County Stormwater Manual, Book 3, Source Control	S451 BMPs for Building Repair, Remodeling, Painting, and Construction	Applicable Operational BMPs: Identify, remove, and properly dispose of hazardous substances from the building before beginning repairing or remodeling activities that could expose them to stormwater. Such substances could include PCBs, asbestos, lead paint, mercury switches, and electronic waste. Educate employees about the need to control site activities to prevent stormwater pollution, and also train them in spill cleanup procedures.	<insert the following 3 new bullets, and update the bullet about educating employees as follows:> •Follow Ecology's guidance document How to Find and Address PCBs in Building Materials (Ecology Publication 22-04-024) for PCB-containing building materials undergoing demolition or renovation. •When removing suspected PCB-containing materials, avoid working in high wind conditions or take extra precautions when working in wind strong enough to move dust and debris. This could include constructing a wind screen of plastic at the edge of the groundcover to keep dust and debris from spreading. •Contact the local jurisdiction's stormwater program to inform them when PCB-containing materials are, or are likely to be, present. They may be able to prioritize street sweeping and/or storm drain pipe cleaning in the area. •Educate employees about the need to control site activities to prevent stormwater pollution, and also train them in spill cleanup procedures. Employees may also include maintenance and landscaping staff working around buildings with exterior PCB-containing materials.
69	Source Control BMPS - PCB edits	PCB instructions	Clark County Stormwater Manual, Book 3, Source Control	S451 BMPs for Building Repair, Remodeling, Painting, and Construction	Operational BMPs: <4 bullet items>	Operational BMPs: <add the following bullet:> •Use tools and work methods that generate the least dust and heat. Consider using manual tools, as they generate less fine dust and heat.
70	Bioretention	High Performance Bioretention Soil Mix	Clark County Stormwater Manual, Book 2, BMP Design	BMP T5.14B Bioretention systems, Bioretention Soil Mix	(none)	Add High Performance Bioretention Soil Mix (HPBSM) language from 2024 SWMWW, V-5, BMP T7.30 after Custom BSM.

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76	Bioretention	High Performance Soil Mix	Clark County Stormwater Manual, Book 1, Applicability	Figure 3.1		Add Bioretention to list of Phosphorous Control facility options with footnote as follows, "When a Bioretention BMP is selected for Phosphorous Control, follow specifications for High Performance Bioretention Soil Mix." <i>See Figure 3.1, attached</i>
71	Bioretention	High Performance Bioretention Soil Mix	Clark County Stormwater Manual, Book 2, BMP Design	BMP T5.14B Bioretention systems, BSM Infiltration Rate	BSM Infiltration Rate, Option 1: If using the Bioretention Soil Mix recommended herein, the WWHM assumes a default infiltration rate of 12 inches per hour (15.24 cm/hr).	BSM Infiltration Rate, Option 1: If using standard Bioretention Soil Mix or High Performance Bioretention Soil Mix, the WWHM assumes a default design infiltration rate of 12 inches per hour (15.24 cm/hr).
72	Bioretention	High Performance Bioretention Soil Mix	Clark County Stormwater Manual, Book 2, BMP Design	BMP T5.14B Bioretention systems, Soil Placement	On-site soil mixing or placement shall not be performed if Bioretention Soil Mix or subgrade soil is saturated. The bioretention soil mixture should be placed and graded by machinery operating adjacent to the bioretention facility. If machinery must operate in the bioretention cell for soil placement, use light weight equipment with low ground-contact pressure. If machinery operates in the facility, subgrade infiltration rates must be field tested and compared to design rates. Failure to meet or exceed the design infiltration rate will require revised engineering designs to verify achievement of treatment and flow control benefits that were estimated in the Stormwater Site Plan. The soil mixture shall be placed in horizontal layers not to exceed 6 inches per lift for the entire area of the bioretention facility. Compact the Bioretention Soil Mix to a relative compaction of 85 percent of modified maximum dry density (ASTM D 1557). Compaction can be achieved by boot packing (simply walking over all areas of each lift), and then apply 0.2 inches (0.5 cm) of water per 1 inch (2.5 cm) of Bioretention Soil Mix depth. Water for settling should be applied by spraying or sprinkling.	Placement of bioretention media on frozen ground, in standing water, on wet or saturated soil, or within 48 hours after a ½-inch rain event is prohibited unless approved by the Clark County Inspector. The bioretention soil mixture should be placed and graded by machinery operating adjacent to the bioretention facility. If machinery must operate in the bioretention cell for soil placement, use light weight equipment with low ground-contact pressure. If machinery operates in the facility, subgrade infiltration rates must be field tested and compared to design rates. Failure to meet or exceed the design infiltration rate will require revised engineering designs to verify achievement of treatment and flow control benefits that were estimated in the Stormwater Site Plan. The contractor shall place soil mixture layers loosely and evenly, no deeper than 6 inches per lift unless otherwise approved by the Clark County Inspector, on a properly prepared subgrade. Compact the Bioretention Soil Mix to a relative compaction of 85 percent of modified maximum dry density (ASTM D 1557). After each lift, the contractor shall rake the surface to a uniform grade and consolidate the entire surface area of each lift by boot compaction or a lawn roller, then rake again to scarify before placing a subsequent lift or planting. Compaction can be achieved by boot packing (simply walking over all areas of each lift), and then apply 0.2 inches (0.5 cm) of water per 1 inch (2.5 cm) of Bioretention Soil Mix depth. Water for settling should be applied by spraying or sprinkling.
73	Bioretention	High Performance Bioretention Soil Mix	Clark County Stormwater Manual, Book 2, BMP Design	BMP T5.14B Bioretention systems, Verification	If using the standard bioretention soil media, pre-placement laboratory analysis for saturated hydraulic conductivity of the bioretention soil media is not required. Verification of the mineral aggregate gradation, compliance with the compost specifications, and the mix ratio must be provided. If using a custom bioretention soil media, verification of compliance with the minimum design criteria cited above for such custom mixes must be included in the Stormwater Plan submittal per Section 1.8 of Book 1. This will require laboratory testing of the material that will be used in the installation. Testing shall be performed by a Seal of Testing Assurance, AASHTO, ASTM or other standards organization accredited laboratory with current and maintained certification. Samples for testing must be supplied from the BSM that will be placed in the bioretention areas.	The contractor shall prepare a Blending, Delivery, Protection, and Placement plan for bioretention media and submit it to the Clark County Inspector for review. If using the standard BSM, pre-placement laboratory analysis for saturated hydraulic conductivity of the bioretention soil media is not required. Verification of the mineral aggregate gradation, compliance with the compost specifications, and the mix ratio must be provided. If using HPBSM, the HPBSM Primary Layer and HPBSM Polishing Layer media shall be mechanically blended by a vendor/contractor with soil blending experience to produce a homogeneous mix. The blending should occur on an asphalt or concrete pad or in purpose-built soil blending equipment. The blending pad or equipment shall be clean and large enough to turn and mix the media without introducing contamination. The blending pad shall be free of standing water before blending and shall be protected from stormwater run-on from adjacent areas. The contractor/vendor shall measure by dry weight on scale equipment capable of measuring within one pound or in full vessels of a known volume. Estimating volumes of partially full containers is prohibited. Prior to blending, the coconut coir fiber shall be loose and hydrated to achieve a density of 4-5 pounds per cubic foot. The contractor/vendor shall blend materials until they are in a homogenous mixed state and shall protect materials from contamination or saturation during storage, delivery, stockpiling, and placement. If using either the HPBSM or a custom BSM, verification of compliance with the minimum design criteria cited above for such mixes must be included in the Stormwater Plan submittal per Section 1.8 of Book 1. This will require laboratory testing of the material that will be used in the installation. Testing shall be performed by a Seal of Testing Assurance, AASHTO, ASTM or other standards organization accredited laboratory with current and maintained certification. Samples for testing must be supplied from the media that will be placed in the bioretention areas.