Station 1: Site History – What Happened?

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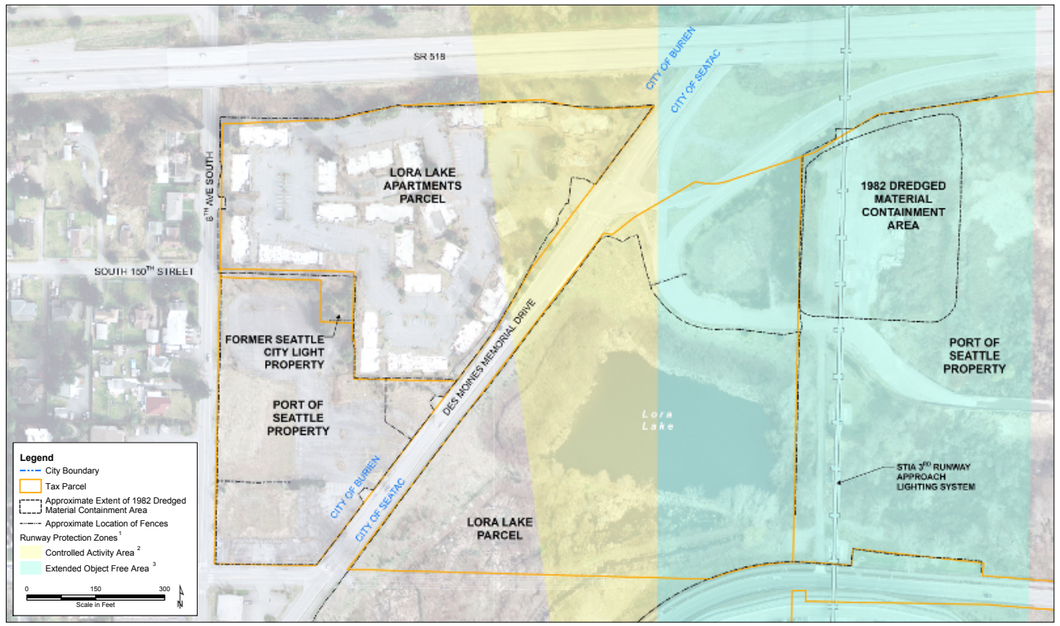
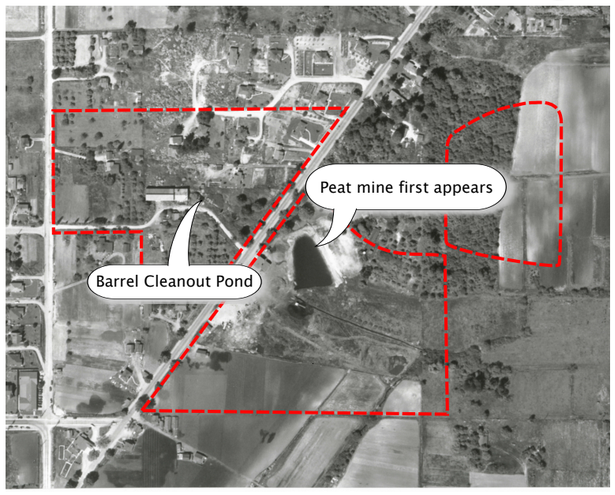
Site Area Map

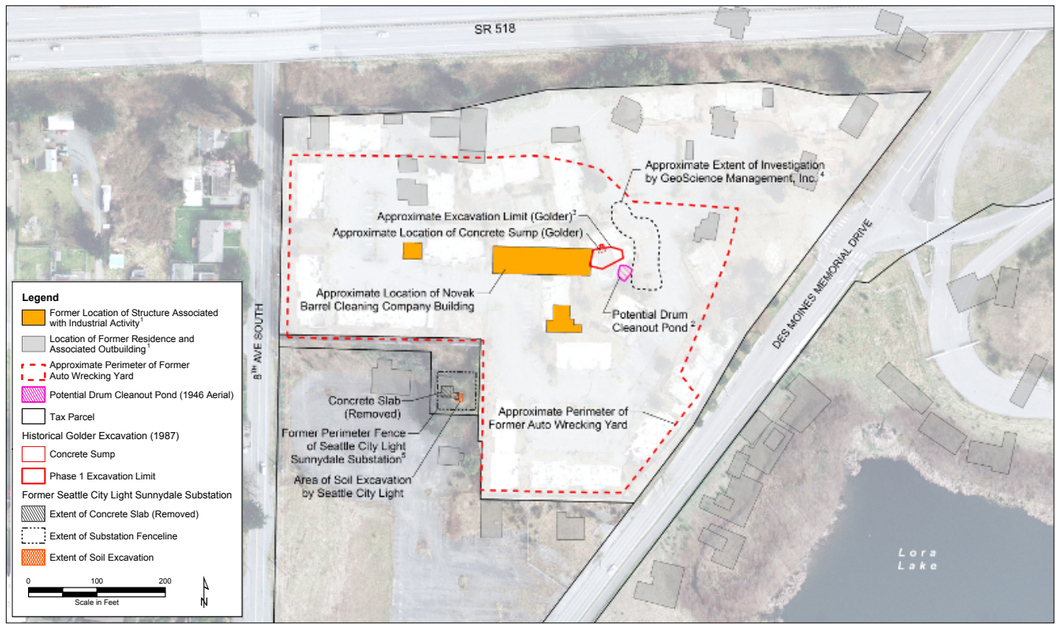


1936 – Agriculture

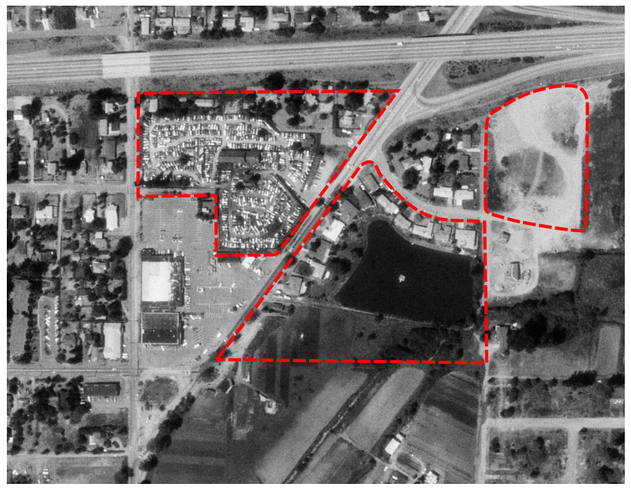
1946 – Barrel Washing



Historical Site Operations



1970 – Auto Yard



1992 – Apartments

Approximate Lora Lake Apartments Site Area

Station 2: Environmental Conditions – What We Found.

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Common Sources of Dioxins/Furans

Dioxins/Furans form when organic matter is burned in the presence of chlorine.

Natural Sources

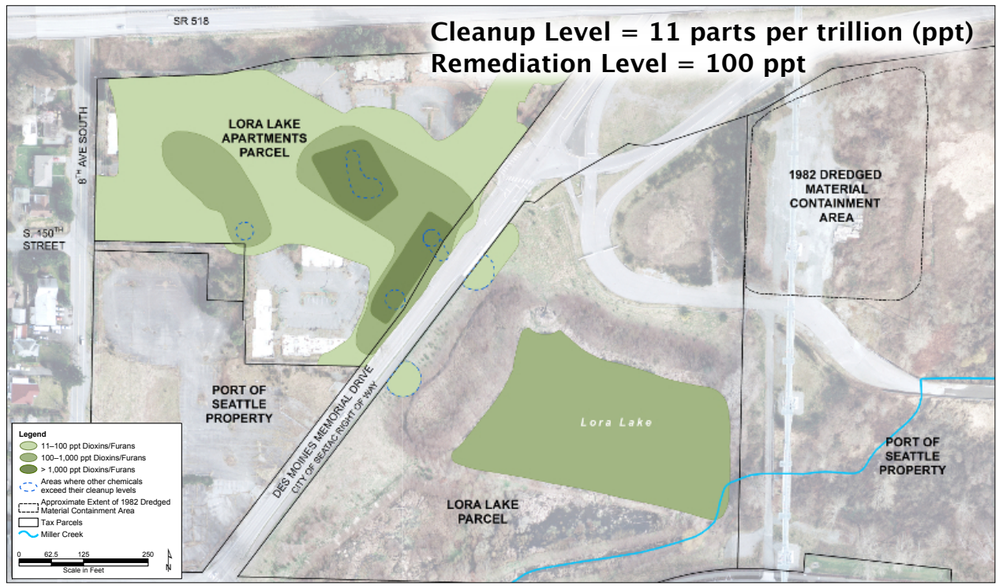
- Forest Fires

- Volcanos

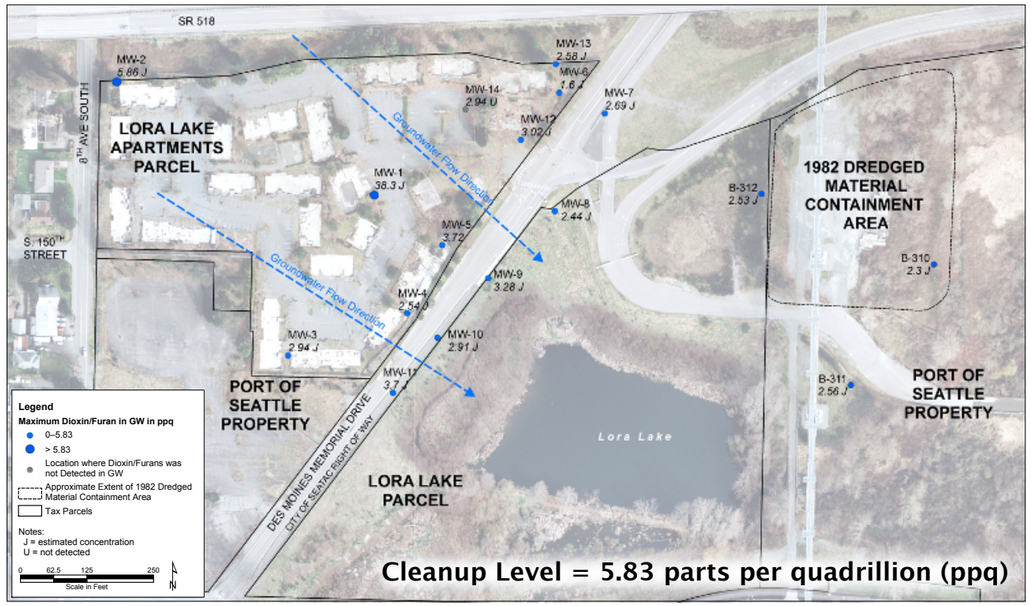
Some Man-made Sources

- Residential wood burning
- Backyard burn barrels
- Chlorinated chemical production
- Diesel exhaust
- Chlorine bleaching of pulp
- Burning salt-laden wood in hog-fuel boilers
- Waste incineration
- Cement kilns
- Crematoriums

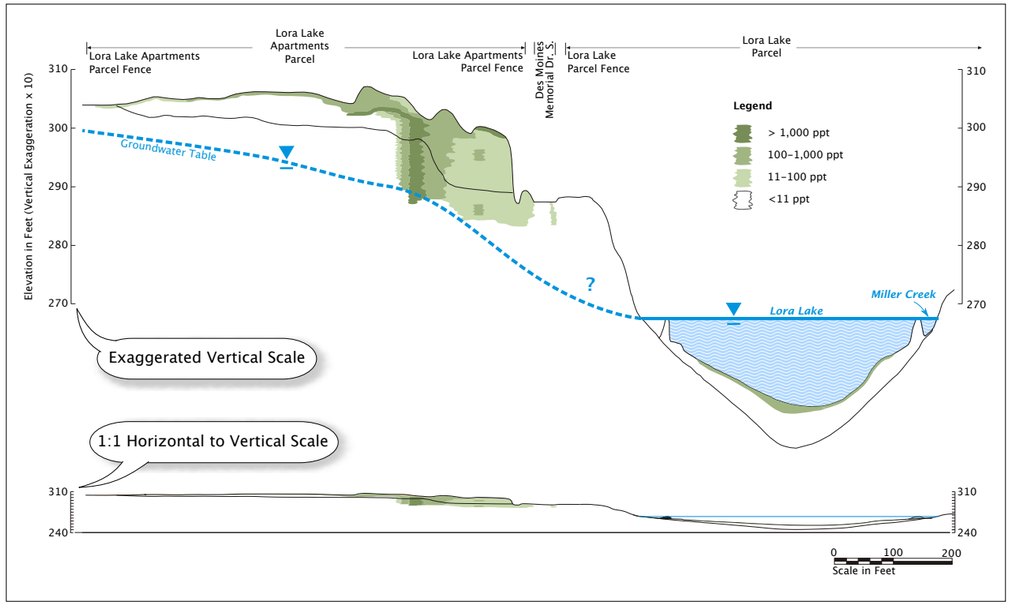
Dioxins/Furans in Soil and Sediment



Dioxins/Furans in Groundwater



Depth of Dioxins/Furans



Station 3: How Was The Remedy Selected?

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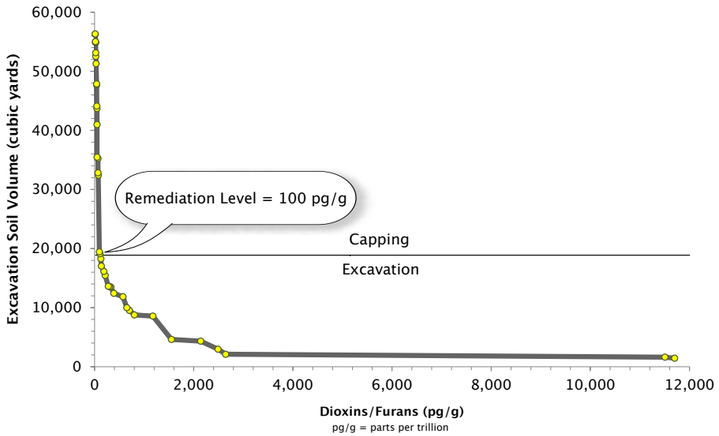
Lora Lake Apartments Parcel

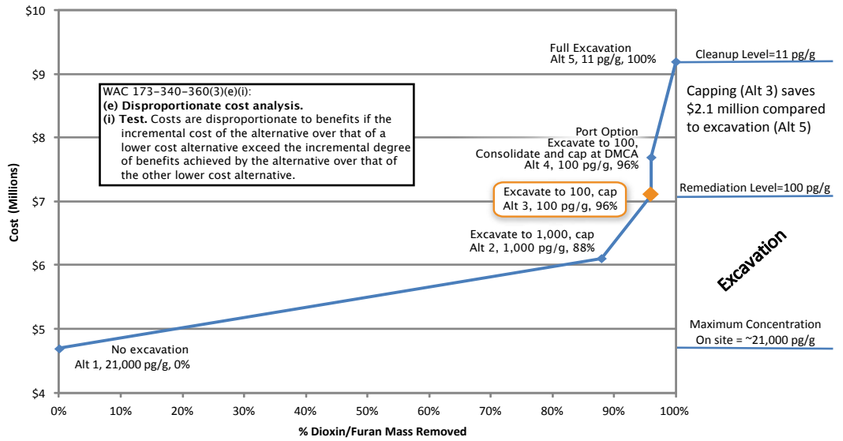
Cleanup Alternatives Considered

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
$4.7 million	$6.1 million	**$7.1 million**	$7.7 million	$9.2 million
No excavation	Excavation and off-site disposal of soil > 1,000 pg/g dioxins/furans	**Excavation and off-site disposal of soil > 100 pg/g dioxins/furans**	Excavation and off-site disposal of soil > 100 pg/g dioxins/furans. Consolidation of soil 11–100 pg/g dioxins/furans at DMCA	Excavation and off-site disposal of soil > 11 pg/g dioxins/furans
Capping all	Capping < 1,000 pg/g dioxins/furans	**Capping < 100 pg/g dioxins/furans**	Capping of consolidation area with soil < 100 pg/g dioxins/furans	Barrier to wildlife
Groundwater monitoring and management	Groundwater treatment by source removal; Groundwater monitoring			Groundwater treatment by source removal
Environmental Covenants to restrict to commercial land use and require cap maintenance				Environmental Covenants for barrier to wildlife
All alternatives include drain system improvements to prevent entry of contaminated groundwater or soil				

Remediation Level Determination



Cleanup Cost vs. Dioxin/Furan Mass Removed

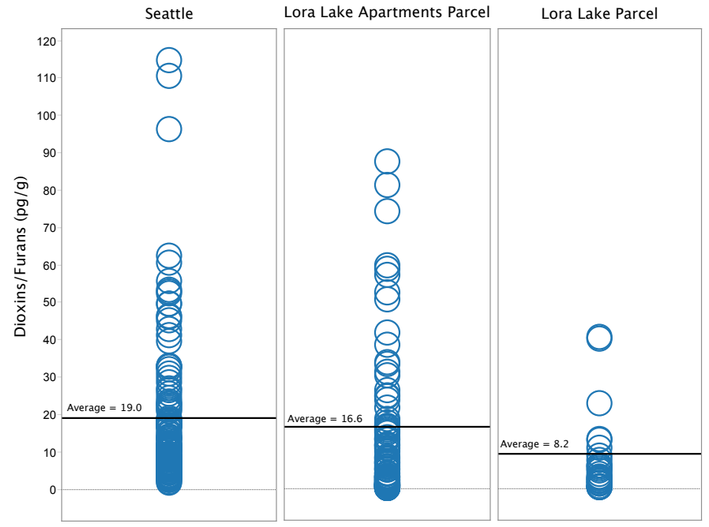


Lora Lake Parcel

Cleanup Alternatives Considered

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	$0.4 million	$3.3 million	**$4.3 million**	$7.3 million
LAKE	Engineering controls to control sediment and fish movement from Lora Lake to Miller Creek.	1.5-foot sand cap with 0.06% organic carbon content to contain contaminated sediment in place and provide a clean surface for benthic biota.	**Fill the lake and restore to a flow-through depressional wetland system similar to the one that existed before peat mining. Contain contaminated sediment in place.**	Dredging and off-site disposal of contaminated sediment.
SOIL	Control risk to workers with institutional controls.	Capping.	Excavation and off-site disposal. Excavation extent will consider resource mitigation area harm.	Excavation and off-site disposal.
	Environmental Covenants to maintain engineering controls and keep in current land use.	Environmental Covenants to maintain cap and keep in current land use.	**Environmental covenants to maintain restoration and keep in current land use.**	
SELECTION RATIONALE				
	Not sufficiently protective for the lake, **recognizes excavation of shallow soil would do more harm than good.**	Makes flow of low oxygen, high temperature water to Miller Creek in the summer worse.	**Immobilizes dioxins/furans beneath a thick cap and returns area to wetland conditions that existed prior to peat mining. Eliminates source of low oxygen, high temperature water to Miller Creek.**	Expensive and risks spreading contamination during dredging.

Comparison of Dioxins/Furans Capped On-site to Seattle Soil



Station 3: Selected Cleanup Actions

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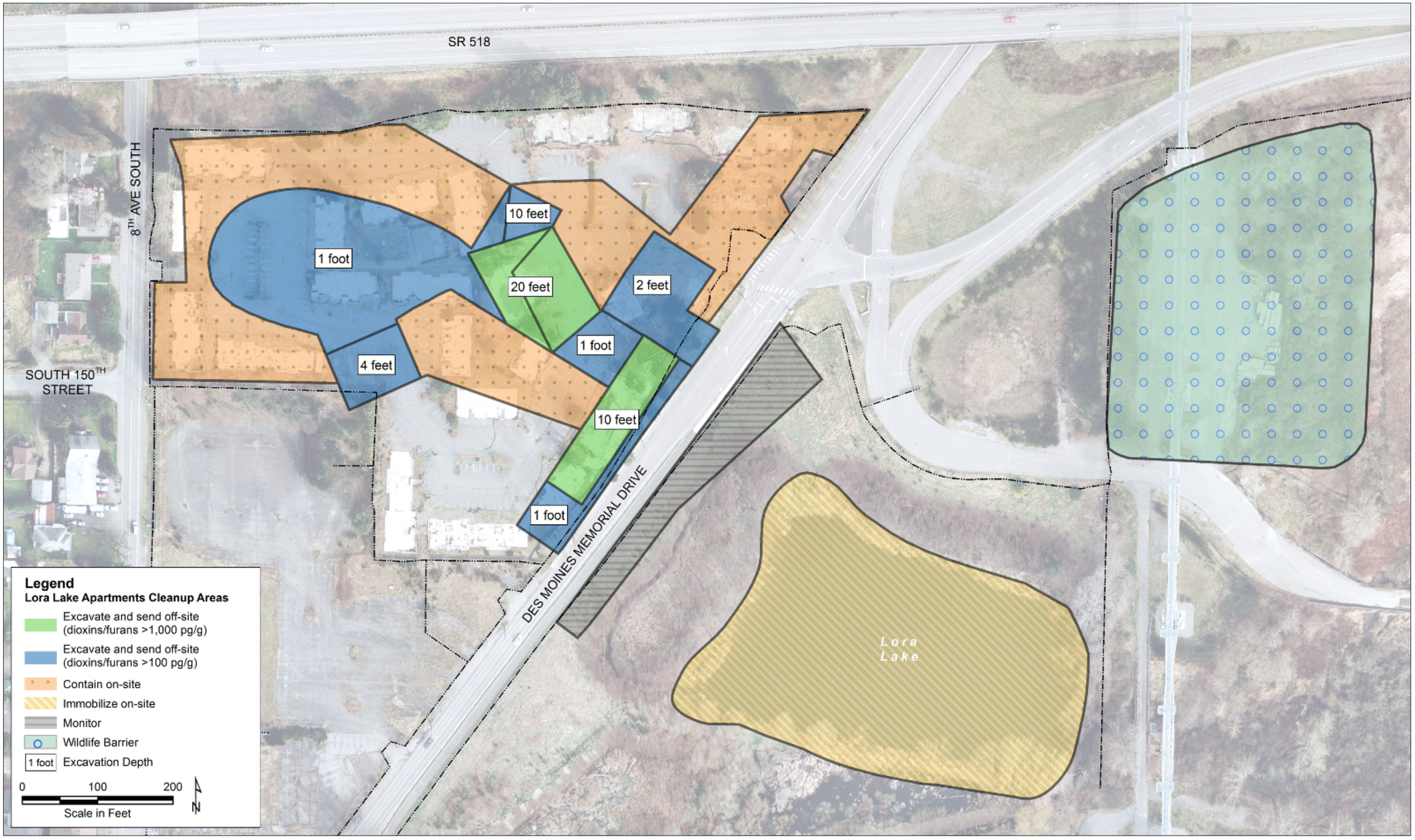

Station 4: When will this work happen?

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RIFS, CAP, CD Finalization

Remedial Design for Lora Lake Apartments Parcel and Dredged Material Containment Area

Cleanup Construction at Lora Lake Apartments Parcel and Dredged Material Containment Area

Groundwater Compliance Monitoring (5 years)

Compliance Soil Testing at Lora Lake Apartments Parcel

Bidding and Contractor Selection for Lora Lake Apartments Parcel and Dredged Material Containment Area

As-built Reporting for Lora Lake Apartments Parcel and Dredged Material Containment Area

TODAY

2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022

Permitting for In-water Work at Lora Lake

Bidding and Contractor Selection for Lora Lake

As-built Reporting for Lora Lake

First Periodic Review

Data Collection for Wetland Design at Lora Lake

Remedial Design for Lora Lake

Cleanup Construction at Lora Lake

Airport Center Runway Re-build Project Construction

SR-518 Eastbound Off-ramp to Des Moines Memorial Drive Construction

SR-518 Eastbound On-ramp Realignment Construction

Legend
- Entire Site
- Lora Lake Apartments Parcel & Dredged Material Containment Area
- Lora Lake Parcel
- Other Projects