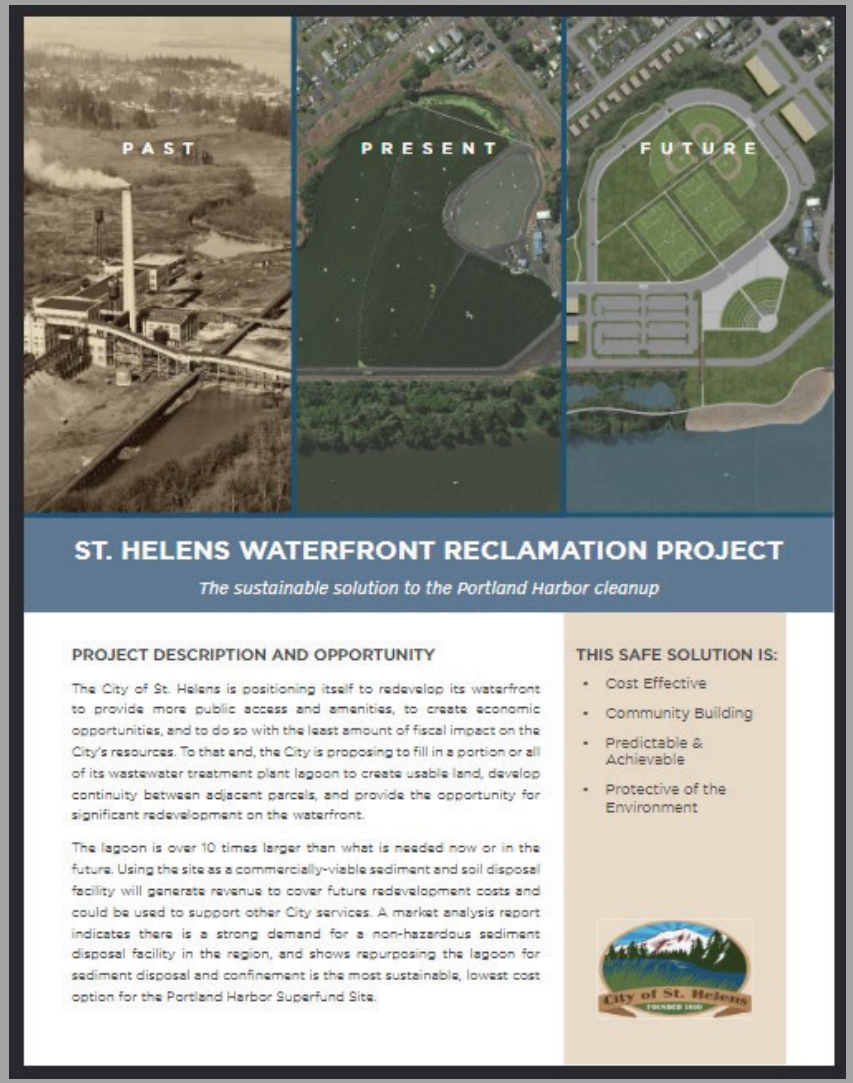
STATUS OF WASTEWATER LAGOON REPURPOSING

WHERE ARE WE GOING FROM HERE?

Steve Topaz and
Art Leskowich

October 2, 2025

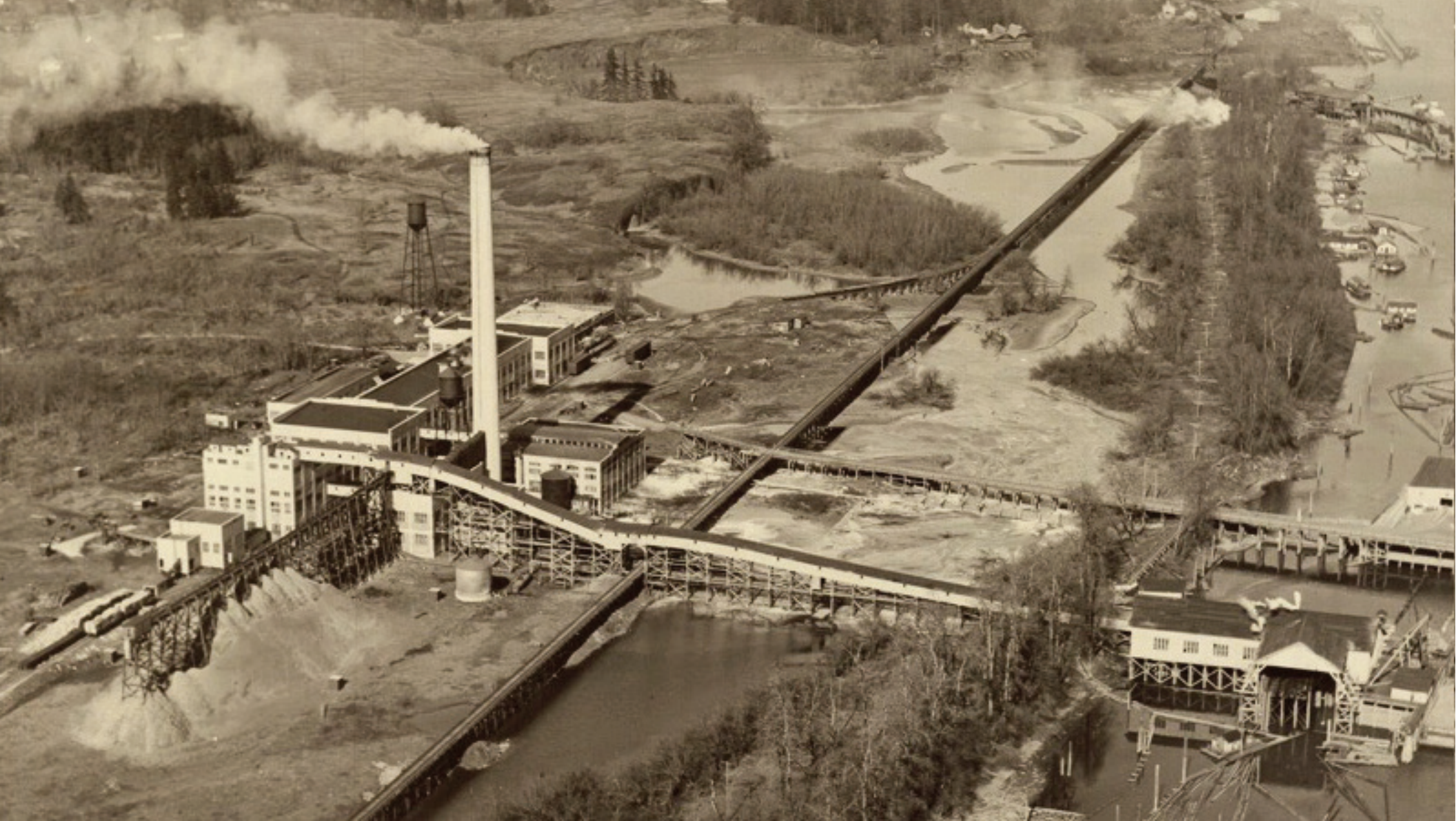


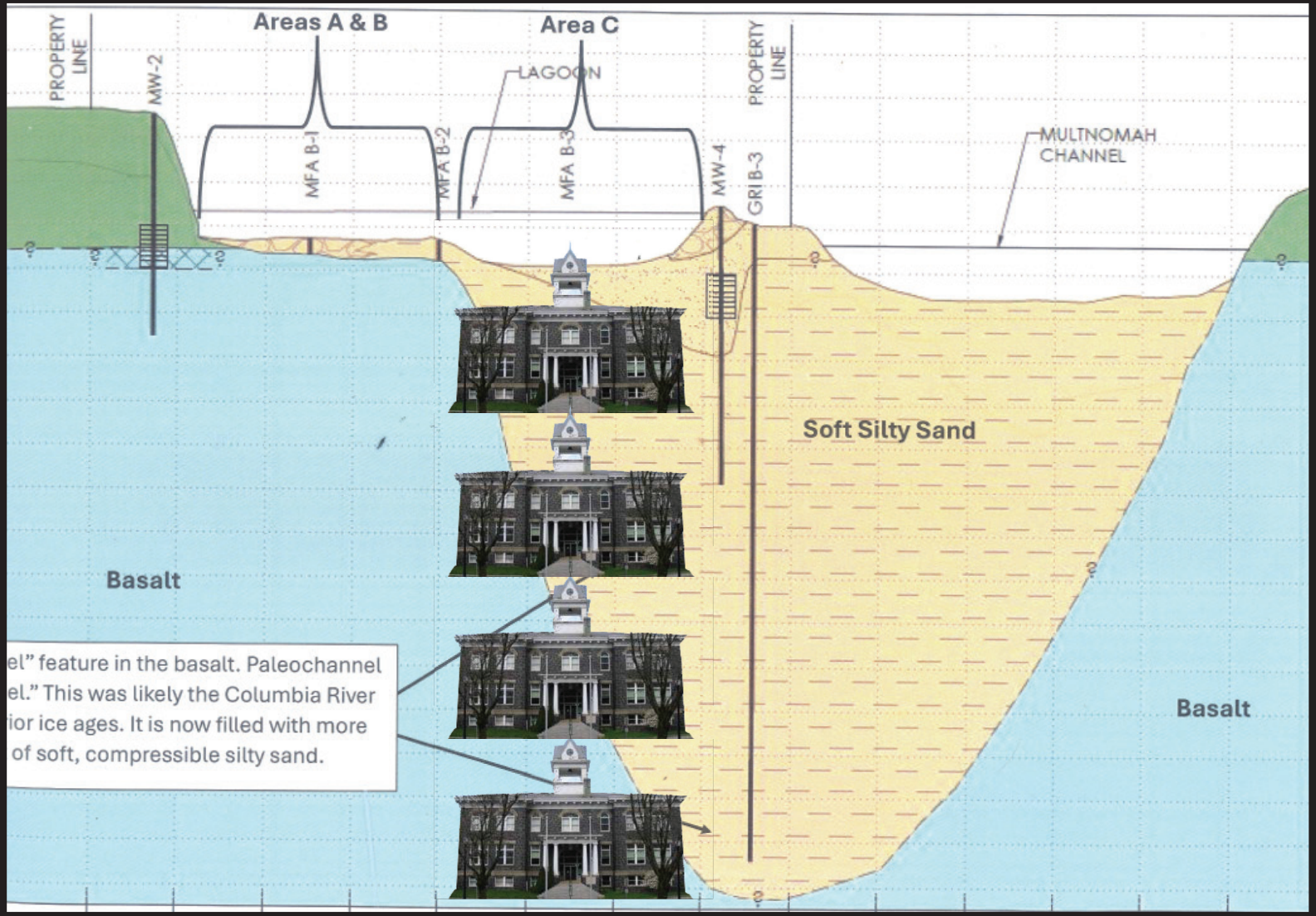
HOW DID WE GET HERE FINACIALLY (FUNDING)?

House Bill 2950 introduced by Brad Witt (Feb 16 2017) asked for 1.54.Million to fund waterfront redevelopment. (Did not pass)

Other funding via State and Federal sources approximately $1.5 Million
{City Ordinance modified to remove need for bidding below $500K}

Current funding in the budget for $400K for Permitting the landfill. What happens if the Permit process is not pursued?




PROPERTY LINE
MW-2
Areas A & B
Area C
LAGOON
MFA B-1
MFA B-2
MFA B-3
MW-4
GRI B-3
PROPERTY LINE
MULTNOMAH CHANNEL
Soft Silty Sand
Basalt
Basalt
el" feature in the basalt. Paleochannel
el." This was likely the Columbia River
ior ice ages. It is now filled with more
of soft, compressible silty sand.

MAUL FOSTER ALONGI

Water Field Sampling Data Sheet

Client Name:	St. Helens	Sample Location:	MW-3
Project #:	M0830.03.006	Staff:	C. Schweitzer
Project Name:	St. Helens Lagood Phase 1B	Sampling Date:	2/14/2023
Sampling Event:	Q1 2023	Sample Name:	MW3-20230214-GW-35
Sub Area:		Sample Depth:	~35
FSDS QA:	K. Crossley		
Easting:	Northing:	TOC:	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT -Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume
2/14/2023	9:20			15.60			

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (L)	WLE (ft)	Flowrate (l/min)	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
(2) Peristaltic Pump	9:40	2.00	-	0.25	7.00	14.5	478.2	2.79	-87.2	7.07
	9:43	2.75	15.78	0.25	6.89	14.2	538.3	0.92	-109.4	5.81
	9:46	3.50	15.78	0.25	6.89	14.3	535.6	0.67	-117.2	0.05
	9:56	6.00	15.78	0.25	6.95	14.5	478.0	0.58	-113.7	0.02
	9:59	6.75	15.79	0.25	6.98	14.1	460.0	0.75	-115.8	0.02
	10:02	7.50	15.80	0.25	7.01	14.2	459.8	0.75	-115.9	0.02
Final Field Parameters	10:05	8.25	15.80	0.25	7.02	14.3	458.1	0.70	-125.4	0.02

Purge and Sample Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: clear; colorless; slightly effervescent

Sample Information

Sampling Method	Sample Type	Sampling Time
(2) Peristaltic Pump	Groundwater	10:05

Sample Type: Groundwater, Surfacewater, Stormwater, Process Water, Grab Sample, Field Blank, or Other (specify).

Container Code/Preservative	# of Bottles	Filtered (Yes/No)
VOA-Glass	5	No
Amber-Glass	11	No
White Poly	3	No
Yellow Poly		
Green Poly		
Red Total Poly	1	No
Red Dissolved Poly		
Total Bottles	20	

General Sampling Comments

DUP collected here: MW3-20230214-GW-35-DUP
Screened from 25.0 - 45.0 feet
Final DTW: 15.79

Signature Cody Schweitzer

25-45

MAUL FOSTER ALONGI

Well Development Form

Project No. 0830.03.04	Date 7/25/19 & 7/26/19
Site Location: St. Helens, OR	Well: MW-3
Name: Phase 1 Lagoon Repurposing	Initial DTB: 45.65 Final DTB 45.63'
Development Method: Surge block, waterra pump	Initial DTW: 10.11' Final DTW 17.46'
Total Water Removed 49 gal	Pore Volume: 35.54 x 0.163 = 5.79
Water Contained	Casing Diameter: 2" (6" borehole)
Estimated Specific Capacity	Meter No. PDX waterra 1, YSI 1, turbidity meter 1

	Time	Cum. Vol Removed	Turbidity NTU	pH	Conductivity (uS/cm)	Temp °C	DO (mg/L)	Eh	Comments
7/25	1435	1.5	OR	6.11	731	23.0	0.12	1058.9	surge @ 44' began surge @ 1445
	1453	3	OR	6.74	688	21.8	0.06	1045.6	surge @ 43' began surge @ 1457
	1516	5	OR	6.72	675	21.4	0.11	1050.0	surge @ 42' began surge @ 1467
	1536	7.5	OR	6.84	678	22.3	0.11	1049.0	surge @ 41' began surge @ 1520
	1558	10	OR	6.87	670	22.7	0.07	1052.7	surge @ 40' began surge @ 1540
	1615	12	OR	6.69	645	23.0	0.06	1052.1	surge @ 39' began surge @ 1602
	1633	14	OR	6.86	645	23.9	0.05	1048.4	surge @ 38' began surge @ 1617
	1650	15	OR	6.74	649	23.6	0.06	1054.1	surge @ 37' began surge @ 1634
	1709	17	OR	6.71	649	23.9	0.05	1054.9	surge @ 36' began surge @ 1652
7/26	0901	18.5	OR	5.98	678	19.7	0.99	1090.0	surge @ 35' began surge @ 0840
	0923	22	OR	6.69	5682	18.4	0.86	1072.3	surge @ 34' began surge @ 0905
	0950	25	OR	6.76	588	18.4	0.82	1083.0	surge @ 33' began surge @ 0930
	1006	27	OR	6.93	600	19.3	0.38	1072.6	surge @ 32' begins surge @ 0957
	1024	29	OR	7.07	561	19.1	0.36	1076.6	surge @ 31' began surge @ 1010
	1043	32	OR	6.94	582	19.6	0.25	1076.3	surge @ 30' began surge @ 1026
	1104	34.5	OR	6.93	613	20.4	0.20	1075.1	surge @ 29' began surge @ 1046
	1119	36.5	OR	6.87	625	22.0	0.15	1075.8	surge @ 28' began surge @ 1105
	1137	39	OR	6.88	648	24.2	0.12	1067.7	surge @ 27' began surge @ 1122
	1157	40	OR	6.92	633	25.9	0.21	1062.4	surge @ 26' began surge @ 1140
	1218	41.5	OR	7.05	617	26.5	0.15	1057.3	surge @ 25' began surge @ 1200

HHT IIII

7/25 1746 E. Curtis offsite

7/26 0800 E. Curtis onsite

Maul Foster & Alongi, Inc.

109 East 13th Street, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1

Water Field Sampling Data Sheet

Client Name	City of St. Helens	**Sample Location**	MW-3
Project #	0830.03.04-02	**Sampler**	EMC & JRM
Project Name	St. Helens Lagoon	**Sampling Date**	8/6/2019
Sampling Event		**Sample Name**	MW-3-20190806-GW-35
Sub Area		**Sample Depth**	35
FSDS QA:		**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW (Product Thickness)	DTB-DTW (Water Column)	Pore Volume (Gallons/ft x Water Column)
				17.36			

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(5) Inertia Pump	1:50:00 PM	1.5	0.15	6.83	67.2	714	0.05	-132.9	287.9
	1:55:00 PM	2	0.15	6.89	66.9	691	0.04	-136.9	38.41
	2:00:00 PM	2.2	0.15	6.92	66.5	684	0.03	-139.7	70.76
	2:05:00 PM	2.2	0.15	6.93	66.8	677	0.02	-140.9	15.6
	2:10:00 PM	2.4	0.15	6.94	67.1	673	0.02	-142.1	15.24
	2:13:00 PM	2.4	0.15	6.95	66.8	670	0.01	-142.5	15.12
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Turbidity would not settle and continued to jump around. Eventually did settle and quite jumping.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(5) Inertia Pump	Groundwater	2:25:00 PM	VOA-Glass		
			Amber Glass		
			White Poly	1	Yes
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	Yes
			Red Dissolved Poly		
			Total Bottles	2	

General Sampling Comments

Page: 2/3

Final DTW: 17.50' bgs

COLUMBIA RIVER– AT ST HELENS

State: Oregon
County: Columbia
Latitude: 45 52' 49" North
Longitude: 122 47' 45" West
Elevation: 1 ft or 1.47 ft or 1.47 m = 4.76 ft above sea level
Record Stage: 27.1 ft Date of Record: June 14, 1948
Action Stage: 14.5 ft
Flood Stage: 15.5 ft
Moderate Flood Stage: 18 ft
Major Flood Stage: 21 ft

Bottom of lagoon is 9.0 ft below sea level or 12.76 ft below sea level

Google Earth historic snip circa 1990

7/10/2020 11:36 AM

www.ci.st-helens.or.us

City of St. Helens
COUNCIL WORK SESSION AGENDA
Wednesday, July 15, 2020
Via Zoom
See meeting options below

City Council Members
Mayor Rick Scholl
Council President Doug Morten
Councilor Keith Locke
Councilor Ginny Carlson
Councilor Stephen R. Topaz

Welcome!

All persons planning to address the Council, please sign-in at the back of the room. When invited to provide comment regarding items not on tonight's agenda, please raise your hand to be recognized, walk to the table in the front of the room, and state your name only. You are not required to give your address when speaking to the City Council. If you wish to address a specific item on the agenda, you should make your request known to the Mayor as soon as possible before the item comes up. The Council has the authority to grant or deny your request. Agenda times and order of items are estimated and are subject to change without notice.

1. 1:00 P.M. - Call Work Session to Order
2. Visitor Comments - *Limited to five (5) minutes per speaker*
3. Discussion Topics – *The Council will take a 10-minute break around 3:00 P.M.*
   a. Annual Report from Parks & Trails Commission
   b. Presentation by Wilsonville Concrete Products See at 34 minutes mark
   c. Review LOC's List of Legislative Priorities - *John*
   d. Strategic Workplan Review - *Rachael*
   e. Municipal Court Semi-Annual Report - *Matt*
   f. Judge & Prosecutor Semi-Annual Reports – *Amy & Sam*
   g. Finance Semi-Annual Report - *Matt*
   h. Building Semi-Annual Report – *Mike*
   i. Review Proposed Building Department Fee Changes - *Mike*
   j. City Administrator Report – *John*
4. Other Business
5. Adjourn

Executive Session:

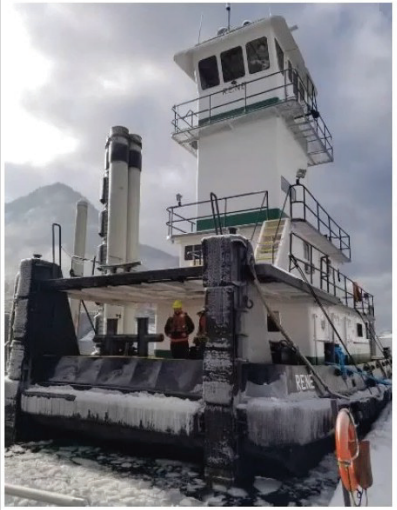
Following the conclusion of the Council Work Session, an Executive Session is scheduled to take place to discuss:

- **Real Property Transactions,** under **ORS 192.660(2)(e)**; and
- **Consult with Counsel/Potential Litigation,** under **ORS 192.660(2)(h)**.

Representatives of the news media, staff, and other persons as approved, shall be allowed to attend the Executive Session. All other members of the audience are asked to leave the Council Chambers.

WCP

Project Status



Work Accomplished

- Conducted engineering study of existing dock structures
- Updated DSL lease
- Prepared and ready to execute moorage lease agreement

Next Steps

- Moving WCP fleet to St. Helens (as soon as lease is signed)
- Services and parcelization for industrial river frontage.
- Building vibrant marine ecosystem by attracting peers and partners

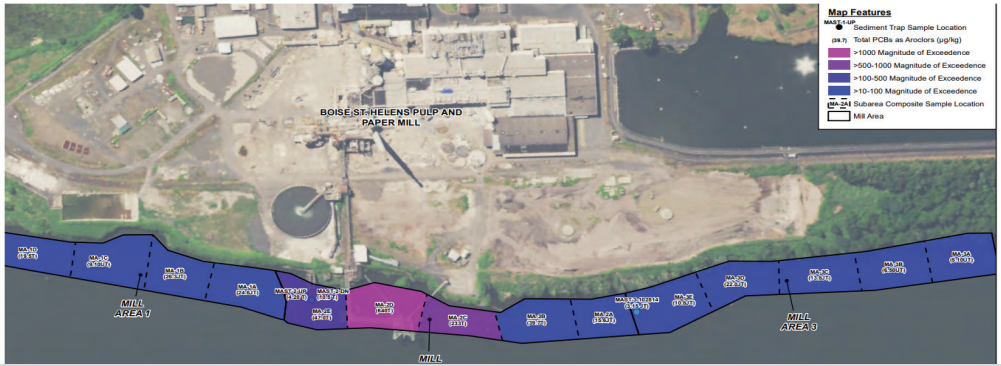
Front Page News!

KNOWN CONTAMINANTS ALONG THE WATERFRONT

Dioxane /Furans = > 100 to 500 x Exceedance

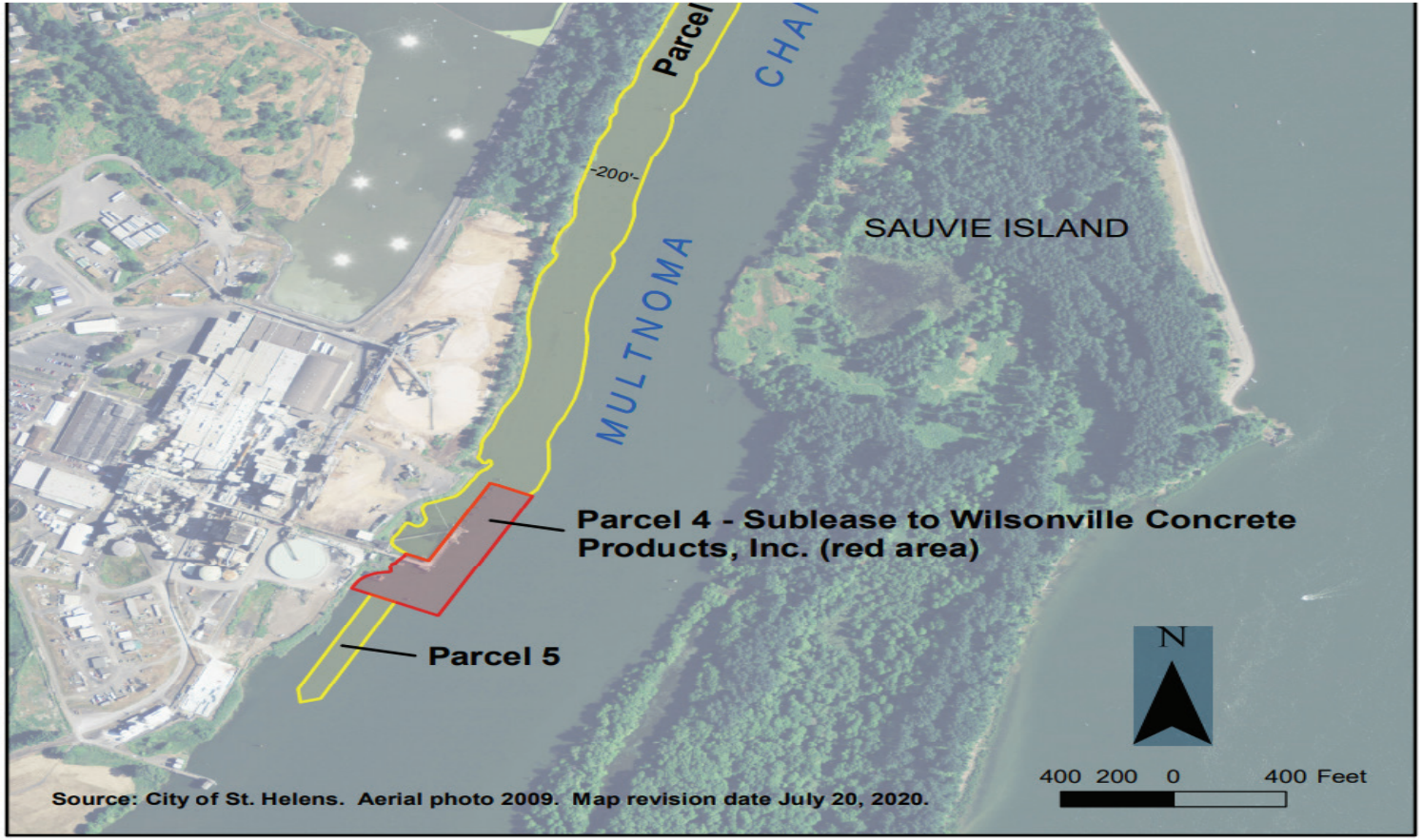
PAH’s = Petroleum Products

PCB’s= > 1000 x Exceedance

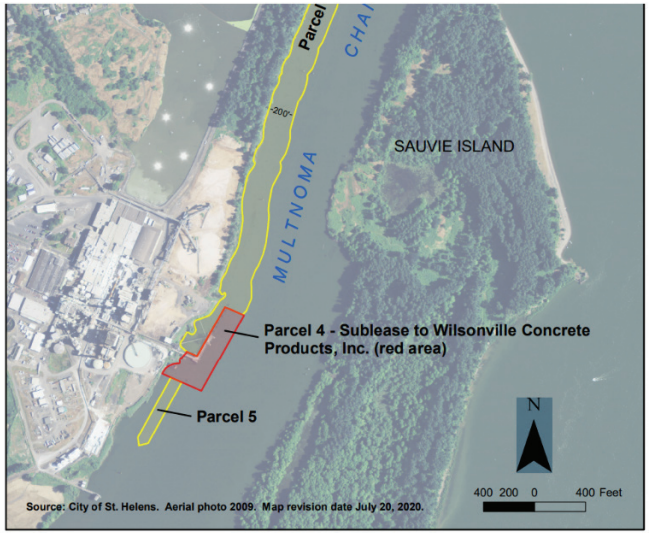


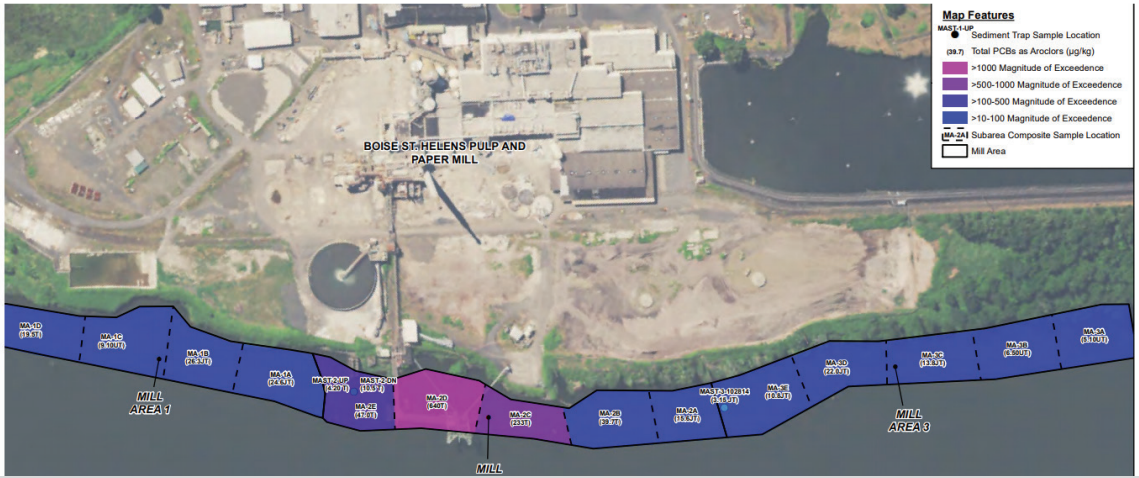
PFAS /PFOS= Testing confirms presence in the Lagoon

PROPOSED WCP MOORAGE



PROPOSED WCP MOORAGE



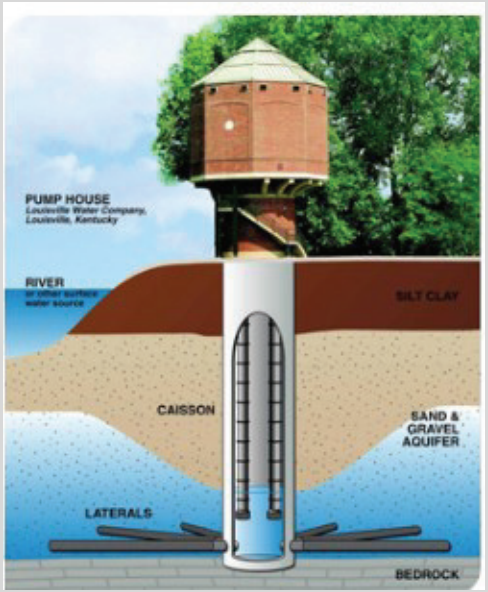


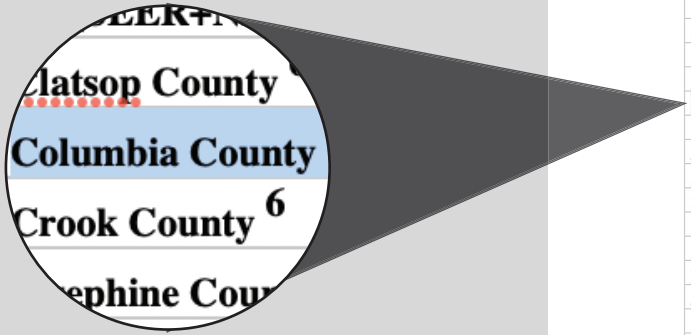
NO PRETREATMENT PROGRAM FOR AFFF

PFOS/PFAS found in Lagoon

HOW SUSTAINABLE IS OUR WATER SYSTEM?

Water Source The St. Helens Water Department supplies the city with water from a water treatment facility located in Columbia City. There are two wells on the banks of the Columbia River in Columbia City that supply water to the treatment plant. There is also one Ground Well located near Scappoose Bay Marina. The Scappoose Bay well only operates during emergencies. The water treatment facility is a membrane plant that works by running water through a series of synthetic filters that capture sediment, germs and organisms. During the summer months when usage is higher, the City produces about 2 million gallons of water per day.





Incidence Rate Report for Oregon by County

All Cancer Sites (All Stages^), 2017-2021

All Races (includes Hispanic), Both Sexes, All Ages

Sorted by Rate

County	2023 Rural-Urban Continuum Codes Φ	Age-Adjusted Incidence Rate † cases per 100,000 (95% Confidence Interval)	CI*Rank ⋔ (95% Confidence Interval)	Average Annual Count	Recent Trend	Recent 5-Year Trend ‡ in Incidence Rates (95% Confidence Interval)
Oregon [6]	N/A	417.9 (415.4, 420.4)	N/A	22,522	falling	-2.8 (-3.8, -1.3)
US (SEER+NPCR) [1]	N/A	444.4 (444.1, 444.7)	N/A	1,744,459	falling	-0.5 (-0.7, -0.3)
Clatsop County [6]	Rural	480.0 (454.0, 507.2)	1 (1, 8)	297	stable	0.1 (-0.6, 0.7)
Columbia County [6]	Urban	464.7 (442.0, 488.4)	2 (1, 12)	341	stable	-0.5 (-1.2, 0.3)
Crook County [6]	Urban	462.1 (429.8, 496.4)	3 (1, 17)	180	stable	-7.5 (-14.8, 0.0)
Josephine County [6]	Urban	459.6 (442.8, 477.0)	4 (1, 11)	679	stable	-0.5 (-1.1, 0.0)
Multnomah County [6]	Urban	457.4 (450.9, 463.9)	5 (1, 8)	4,034	falling	-0.4 (-0.7, -0.1)
Marion County [6]	Urban	444.6 (435.2, 454.1)	6 (3, 13)	1,786	falling	-0.5 (-1.0, -0.1)
Klamath County [6]	Rural	440.5 (421.2, 460.7)	7 (2, 19)	438	stable	-0.5 (-1.1, 0.1)
Clackamas County [6]	Urban	439.4 (431.3, 447.5)	8 (5, 14)	2,432	falling	-2.6 (-4.7, -0.6)
Yamhill County [6]	Urban	434.4 (418.4, 450.9)	9 (4, 19)	588	stable	-0.5 (-1.0, 0.0)
Jackson County [6]	Urban	433.8 (423.2, 444.6)	10 (5, 17)	1,423	falling	-1.0 (-1.4, -0.7)
Wheeler County [6]	Rural	433.6 (308.5, 603.6)	11 (1, 36)	12	stable	0.2 (-2.6, 3.2)
Hood River County [6]	Rural	427.3 (393.7, 463.2)	12 (2, 28)	126	stable	-0.7 (-1.7, 0.3)
Wasco County [6]	Rural	425.7 (395.0, 458.2)	13 (2, 27)	160	stable	-1.1 (-2.3, 0.1)
Polk County [6]	Urban	422.3 (404.5, 440.6)	14 (6, 23)	457	falling	-1.9 (-4.7, -1.0)
Lake County [6]	Rural	421.7 (370.9, 478.5)	15 (1, 31)	58	falling	-1.8 (-3.1, -0.5)
Coos County [6]	Rural	418.3 (399.8, 437.6)	16 (6, 25)	461	falling	-1.4 (-2.0, -0.8)
Washington County [6]	Urban	416.0 (408.8, 423.2)	17 (11, 22)	2,671	falling	-0.4 (-0.7, -0.2)
Deschutes County [6]	Urban	414.5 (403.3, 426.0)	18 (11, 24)	1,128	falling	-1.2 (-1.7, -0.7)
Linn County [6]	Urban	412.5 (398.4, 426.9)	19 (10, 25)	699	falling	-0.8 (-1.3, -0.4)
Union County [6]	Rural	400.1 (369.8, 432.4)	20 (8, 30)	145	stable	-7.3 (-18.1, 0.3)
Jefferson County [6]	Urban	399.0 (367.5, 432.6)	21 (7, 31)	131	stable	0.7 (-0.6, 2.0)
Douglas County [6]	Rural	398.2 (384.0, 412.9)	22 (15, 28)	712	falling	-1.0 (-1.7, -0.3)
Tillamook County [6]	Rural	395.3 (367.3, 425.1)	23 (9, 31)	181	falling	-0.8 (-1.6, -0.1)
Morrow County [6]	Rural	394.3 (348.7, 444.4)	24 (3, 33)	58	stable	-1.1 (-2.6, 0.3)
Curry County [6]	Rural	389.4 (360.1, 421.0)	25 (10, 31)	187	falling	-1.4 (-2.7, -0.1)
Lincoln County [6]	Rural	387.6 (367.4, 408.9)	26 (15, 30)	357	falling	-1.3 (-1.7, -0.8)
Wallowa County [6]	Rural	385.9 (334.1, 444.8)	27 (2, 34)	51	stable	-1.2 (-3.0, 0.6)
Umatilla County [6]	Rural	384.3 (366.3, 403.0)	28 (18, 31)	357	falling	-4.5 (-9.4, -1.1)
Grant County [6]	Rural	362.1 (312.3, 418.9)	29 (9, 35)	49	stable	-0.8 (-2.4, 0.7)
Malheur County [6]	Rural	350.4 (323.5, 379.1)	30 (23, 34)	131	stable	-1.4 (-3.2, 0.3)
Harney County [6]	Rural	339.2 (291.1, 394.1)	31 (16, 36)	41	stable	9.4 (-1.7, 17.7)
Benton County [6]	Urban	336.5 (320.6, 353.2)	32 (28, 35)	367	falling	-2.4 (-6.5, -1.8)
Sherman County [6]	Rural	323.2 (231.4, 444.4)	33 (2, 36)	10	stable	-0.1 (-3.6, 3.6)
Lane County [6]	Urban	322.6 (315.4, 330.0)	34 (30, 35)	1,657	falling	-13.1 (-17.5, -8.4)
Baker County [6]	Rural	298.0 (266.8, 332.3)	35 (30, 36)	81	falling	-2.2 (-4.5, -0.2)
Gilliam County [6]	Rural	226.4 (157.4, 322.9)	36 (30, 36)	8	stable	-20.3 (-56.0, 1.4)

TRANSPORT DATA

Destination	material vol	material wt	years to move	months/year dig	total months	months to unload	vol/truck	vol/barge	tons/truck	tons/barge
Hillsburo	8.4 Mcy	11.05Mtons	10	4	40	40	15yd		19.74	
St. Helens	8.4 Mcy	11.05 Mtons	10	4	40	40		1415		1862

Destination	distance one w	distance rou	Vehicle/trip	total trips	trips/month	Trips/day	Time/trip	cost /hr $	total cost transport $	
Hillsburo	23	46 mil	1	560,000	14,000	700	2.5 hr	150	210,000,000	
St. Helens	24	48 mil	5	1187	30	1.5	2hr	3,864	9,173,136	
							3		$252,000,000	

need 58.3 trucks/hr to be loaded

for 2.5 hour round trip 146 truck will be needed

travel miles	25,760,000									
fuel needed	3,220,000 gal			State tax $	1,094,800					
fuel cost	12,558,000									

Time to load or unload a truck 1.02 mins

NUMBERS FOR THE TOXIC WASTE AND COOLING LAGOON

Portland Waste volume 4.3 (40)million cubic yards toxic river bottom
Value to St. Helens $120 million, or $28 per cubic yard

Details of Cooling Lagoon.
Surface area 23 acres, depth 30 feet volume 1,113,200cubic yards 222,417,360 gallons
Sludge depth 8 feet volume 296,858 cubic yards
Frogmore Slough fill 640,000 cubic yards
Because of membrane failure the minimum amount of toxic waste in the present lagoon
Is 936,858 cubic yards. Maximum (embankment materials) 2,050,058 cubic yards. A ratio of sludge of 6.9% sludge to toxic Portland Waste.

Costs
Labor costs for a 30 men crew to move material, $2.4 million per year or $48 million for twenty-year project.
Cost of moving contaminated material and replacing with mixed Toxic waste @ $10.00per cubic yard $52,368,580
Cost of 2000 feet of caissons @ $400 per foot for a 40 depth $800,000
Cost of removing present membrane 1,001,880 square feet @ 1pound per square foot unknown??
Cost of replacement membrane at $10 per square foot $10,018,800

Received money **$120,000,000**
Expenses **$111,187,380**
Profit **$8,812,620 or $440,631 per year**
This does not include equipment costs, insurance, or overtime

Governor Tom McCall pressed environmental reforms in Oregon.

In 1962 Thomas Lawson McCall, a journalist, caught the state's attention with a television documentary, "Pollution in Paradise." In his clipped, forceful narration and with compelling photography, McCall showed what had happened to the Willamette River. Sewage, industrial wastes, garbage, abandoned docks and warehouses, tires, and hulks of automobiles befouled a once pristine, fish-filled stream. Between 1850 and 1920 the Willamette had served as western Oregon's artery of commerce and transportation. Use had bred abuse and, almost without seeing it, Oregonians had transformed the stream into an open sewer.

SUMMARY OF REPORT ON CONDITION OF GROUND UNDER LAGOON

This section summarizes the geotechnical investigation conducted to assess the physical properties of subsurface soils at the site. The complete geotechnical investigation report is provided in Appendix H. Based on the borings completed for this investigation and review of existing subsurface information, the eastern portion of the lagoon near the existing containment levee is underlain by a variable thickness of sand, in turn underlain by a significant thickness of compressible, alluvial silt. The alluvial soils are underlain by basalt, and the depth to basalt varies significantly across the site and ranges from exposed basalt outcrops at the ground surface west of the lagoon to more than 200 feet bgs at one portion of the east side of the site. Our preliminary studies indicate that the loose to medium-dense sand and silt below the groundwater level have the potential to liquefy or strain soften during a code- based seismic event. Without mitigation, the loss of soil strength would result in seismically induced settlement and a risk of lateral spreading displacements. Ground improvement could be used to sufficiently improve the seismic stability of the proposed embankment during a code-based seismic event. The native alluvial silt soils are highly compressible, and the placement of new fill could result in significant total and differential short-term (primary) and long-term (secondary) settlements; these will need to be considered as part of the planning and design process and incorporated into any permanent improvements on the site. Depending on placement and compaction methods for new fills in the lagoon, additional settlement and slope stability of the fill soils could also be a geotechnical design consideration. In a subsequent feasibility study, options identification/optimization, and fill augmentation should be assessed to address both fill settlement and slope stability, as well as the seismic stability noted above.

LIMITATIONS

The services undertaken in completing this work plan were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This work plan is solely for the use and information of our client unless otherwise noted. Any reliance on this work plan by a third party is at such party's sole risk.

Opinions and recommendations contained in this work plan apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this work plan.

QUESTIONIES FOR THE CITY:

Who is in charge?

In addition to John Walsh, who from the administration is involved in this project?

QUESTIONIES FOR THE CITY:

Who on the city council is the designated project lead?

QUESTIONIES FOR THE CITY:

Which members of the planning board are working on this project?