City of Tukwila
Transportation and Infrastructure Committee

- **Zak Idan, Chair**
- **Kate Kruller**
- **Thomas McLeod**

Distribution:	
Z. Idan K. Kruller T. McLeod K. Hougardy D. Robertson Mayor Ekberg D. Cline R. Bianchi L. Humphrey H. Hash H. Ponnekanti G. Labanara	B. Still R. Turpin A. Youn Clerk File Copy 2 Extra Place pkt pdf on Z:\Trans & Infra Agendas e-mail cover to: A. Le, C. O'Flaherty, A. Youn, B. Saxton, S. Norris, L. Humphrey, Z. Idan

AGENDA

TUESDAY, MARCH 19, 2019 – 5:30 PM

HAZELNUT CONFERENCE ROOM

(EAST ENTRANCE OF CITY HALL)

Item	Recommended Action	Page
1. PRESENTATIONS		
2. BUSINESS AGENDA		
a) 2019 Annual Small Drainage Program Design Consultant Selection and Agreement	a) Forward to 4/1/19 Consent Agenda	Pg. 1
b) NPDES Program 2018 NPDES Annual Report & 2019 SWMP Plan	b) Information Only	Pg. 15
c) King County Regional Stormwater Decant Facility Use Agreement Renewal 2019-2023	c) Forward to 4/1/19 Consent Agenda	Pg. 93
d) BNSF Intermodal Facility Access Project Update Schedule and Next Steps	d) Information Only	Pg. 109
3. SCATBd/RTC		
4. MISCELLANEOUS		
5. ANNOUNCEMENTS		
	Future Agendas:	

Next Scheduled Meeting: *Tuesday, April 2, 2019*

The City of Tukwila strives to accommodate individuals with disabilities.
*Please contact the Public Works Department at **206-433-0179** for assistance.*

City of Tukwila
Allan Ekberg, Mayor
Public Works Department - Henry Hash, Director

INFORMATIONAL MEMORANDUM

TO: **Transportation and Infrastructure Committee**
FROM: **Henry Hash, Public Works Director**
BY: **Ryan Larson, Senior Program Manager**
CC: **Mayor Allan Ekberg**
DATE: **March 15, 2019**
SUBJECT: **Surface Water Fund - 2019 Annual Small Drainage Program**
Project No. 91941201
Design Consultant Selection and Agreement

ISSUE

Approve the contract with KPG, Inc. (KPG) to design the 2019 Annual Small Drainage Program.

BACKGROUND

The Annual Small Drainage Program repairs and installs needed surface water infrastructure that is identified through maintenance activities as well as citizen complaints. For the 2019 Annual Small Drainage Program, staff is proposing the design of eight projects for possible construction in 2019.

DISCUSSION

The current MRSC Consultant Roster was reviewed and three firms were short-listed to provide design services. The firms were: KPG; Otak, and PACE Engineers Inc. The Summary of Qualifications were evaluated from each firm and KPG was selected as the firm that best met the requirements. KPG has designed the Annual Small Drainage Program since 1991 and Public Works continues to be very satisfied with their work. KPG also worked on the 2018 Annual Small Drainage Program and is knowledgeable of the sites.

Public Works staff reviewed the list of known system deficiencies and compiled a list of eight projects for design in 2019. One of the projects was substantially designed in 2017, but not constructed due to budget constraints. The design projects are:

1. Gilliam Creek & S 154th St Drainage Structure
2. 14811 42nd Ave S
3. Stairs at Gilliam Creek Control Structure (finish design)
4. Southcenter Blvd at 61st Ave S (pipe lining)
5. S 140th St at 38th Ave S (pipe lining)
6. S 152nd St at 42nd Ave S (pipe lining)
7. S 130th St at 33rd Pl S (pipe lining)
8. 40th Ave S at Southcenter Blvd (pipe lining)

FINANCIAL IMPACT

KPG's proposed fee for the 2019 Small Drainage Program's design contract is $78,984.00 and the 2019 design budget is $80,000.

RECOMMENDATION

Council is being asked to approve the design consultant agreement with KPG, Inc. in the amount of $78,984.00 for the 2019 Small Drainage Program and consider this item on the Consent Agenda at the April 1, 2019 Regular Meeting.

ATTACHMENTS

- Qualification Review
- Page 88, 2019 CIP
- KPG Consultant Agreement

2019 Small Drainage - Qualification Review (1= Top Choice, 2 = Second Choice, 3 = Third Choice)	KPG	OTAK	PACE
Relevant Project Experience	1	2	2
Experience with HPA/Creek Work	1	1	2
Small Scale Projects	1	2	1
Ability to keep project on schedule and within Budget	1	2	1
Project Team Availability of Key Team Members	2	2	2
Knowledge of City , Plan Process, Drainage System	1	2	2
TOTALS (Lowest Total Score is best)	7	11	10
Firm Rank (1 - 3, Lowest = Best)	1	3	2

CITY OF TUKWILA CAPITAL PROJECT SUMMARY

2019 to 2024

PROJECT: **Annual Small Drainage Program** Project No. 9XX41201

DESCRIPTION: Select, design, and construct small drainage projects throughout the City.

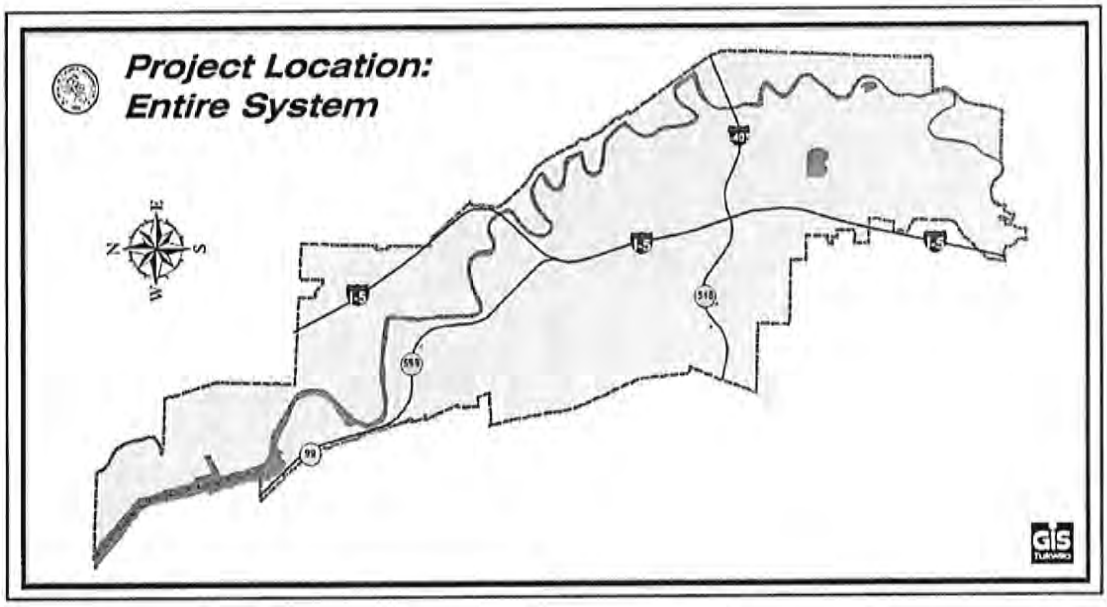
JUSTIFICATION: Provide drainage corrections for existing/ongoing drainage problems throughout the City, including culvert replacements, drain extensions, and pavement upgrades.

STATUS: Projects for this annual program are taken from Small Drainage Project List.

MAINT. IMPACT: Reduces maintenance.

COMMENT: Ongoing project, only one year shown in first column. Construction expenses may occur over two calendar years.

FINANCIAL (in $000's)	Through 2017	Estimated 2018	2019	2020	2021	2022	2023	2024	BEYOND	TOTAL
EXPENSES										
Design	50	80	80	80	80	80	80	80	80	690
Streamgages/Monitor	31	35	35	35	36	36	36	36	40	320
Const. Mgmt.	90	45	80	80	80	80	80	80	80	695
Construction	448	600	515	515	514	513	514	514	513	4,646
TOTAL EXPENSES	**619**	**760**	**710**	**710**	**710**	**709**	**710**	**710**	**713**	**6,351**
FUND SOURCES										
Awarded Grant										0
Proposed Grant		65								65
Mitigation Actual										0
Mitigation Expected										0
Utility Revenue	619	695	710	710	710	709	710	710	713	6,286
TOTAL SOURCES	**619**	**760**	**710**	**710**	**710**	**709**	**710**	**710**	**713**	**6,351**



City of Tukwila
6200 Southcenter Boulevard, Tukwila WA 98188

Contract Number:

CONSULTANT AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT is entered into between the City of Tukwila, Washington, hereinafter referred to as "the City", and KPG, Inc., hereinafter referred to as "the Consultant", in consideration of the mutual benefits, terms, and conditions hereinafter specified.

1. **Project Designation.** The Consultant is retained by the City to perform engineering services in connection with the project titled '2019 Small Drainage Program'.

2. **Scope of Services.** The Consultant agrees to perform the services, identified on Exhibit "A" attached hereto, including the provision of all labor, materials, equipment and supplies.

3. **Duration of Agreement; Time for Performance.** This Agreement shall be in full force and effect for a period commencing upon execution and ending December 31, 2019, unless sooner terminated under the provisions hereinafter specified. Work under this Agreement shall commence upon written notice by the City to the Consultant to proceed. The Consultant shall perform all services and provide all work product required pursuant to this Agreement no later than December 31, 2019 unless an extension of such time is granted in writing by the City.

4. **Payment.** The Consultant shall be paid by the City for completed work and for services rendered under this Agreement as follows:

   A. Payment for the work provided by the Consultant shall be made as provided on Exhibit "B" attached hereto, provided that the total amount of payment to the Consultant shall not exceed $78,984.00 without express written modification of the Agreement signed by the City.

   B. The Consultant may submit vouchers to the City once per month during the progress of the work for partial payment for that portion of the project completed to date. Such vouchers will be checked by the City and, upon approval thereof, payment shall be made to the Consultant in the amount approved.

   C. Final payment of any balance due the Consultant of the total contract price earned will be made promptly upon its ascertainment and verification by the City after the completion of the work under this Agreement and its acceptance by the City.

   D. Payment as provided in this section shall be full compensation for work performed, services rendered, and for all materials, supplies, equipment and incidentals necessary to complete the work.

   E. The Consultant's records and accounts pertaining to this Agreement are to be kept available for inspection by representatives of the City and the state of Washington for a period of three (3) years after final payments. Copies shall be made available upon request.

5. **Ownership and Use of Documents.** All documents, drawings, specifications and other materials produced by the Consultant in connection with the services rendered under this Agreement shall be the property of the City whether the project for which they are made is executed or not. The Consultant shall be permitted to retain copies, including reproducible copies, of drawings and specifications for information, reference and use in connection with the Consultant's endeavors. The Consultant shall not be responsible for any use of the said documents, drawings, specifications or other materials by the City on any project other than the project specified in this Agreement.

6. **Compliance with Laws.** The Consultant shall, in performing the services contemplated by this Agreement, faithfully observe and comply with all federal, state, and local laws, ordinances and regulations, applicable to the services rendered under this Agreement.

7. **Indemnification.** The Consultant shall defend, indemnify and hold the City, its officers, officials, employees and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or resulting from the acts, errors or omissions of the Consultant in performance of this Agreement, except for injuries and damages caused by the sole negligence of the City.

   Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Consultant and the City, its officers, officials, employees, and volunteers, the Consultant's liability hereunder shall be only to the extent of the Consultant's negligence. It is further specifically and expressly understood that the indemnification provided herein constitutes the Consultant's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties. The provisions of this section shall survive the expiration or termination of this Agreement.

8. **Insurance.** The Consultant shall procure and maintain for the duration of the Agreement, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Consultant, its agents, representatives, or employees. Consultant's maintenance of insurance as required by the agreement shall not be construed to limit the liability of the Consultant to the coverage provided by such insurance, or otherwise limit the City's recourse to any remedy available at law or in equity.

   A. **Minimum Amounts and Scope of Insurance.** Consultant shall obtain insurance of the types and with the limits described below:

      1. Automobile Liability insurance with a minimum combined single limit for bodily injury and property damage of $1,000,000 per accident. Automobile Liability insurance shall cover all owned, non-owned, hired and leased vehicles. Coverage shall be written on Insurance Services Office (ISO) form CA 00 01 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage.

2. Commercial General Liability insurance with limits no less than $1,000,000 each occurrence, $2,000,000 general aggregate. Commercial General Liability insurance shall be written on ISO occurrence form CG 00 01 and shall cover liability arising from premises, operations, independent contractors and personal injury and advertising injury. The City shall be named as an insured under the Consultant's Commercial General Liability insurance policy with respect to the work performed for the City.

3. Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.

4. Professional Liability with limits no less than $1,000,000 per claim and $1,000,000 policy aggregate limit. Professional Liability insurance shall be appropriate to the Consultant's profession.

B. **Other Insurance Provision.** The Consultant's Automobile Liability and Commercial General Liability insurance policies are to contain, or be endorsed to contain that they shall be primary insurance with respect to the City. Any Insurance, self-insurance, or insurance pool coverage maintained by the City shall be excess of the Consultant's insurance and shall not be contributed or combined with it.

C. **Acceptability of Insurers.** Insurance is to be placed with insurers with a current A.M. Best rating of not less than A:VII.

D. **Verification of Coverage.** Consultant shall furnish the City with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, evidencing the insurance requirements of the Consultant before commencement of the work. Certificates of coverage and endorsements as required by this section shall be delivered to the City within fifteen (15) days of execution of this Agreement.

E. **Notice of Cancellation.** The Consultant shall provide the City with written notice of any policy cancellation, within two business days of their receipt of such notice.

F. **Failure to Maintain Insurance.** Failure on the part of the Consultant to maintain the insurance as required shall constitute a material breach of contract, upon which the City may, after giving five business days notice to the Consultant to correct the breach, immediately terminate the contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the City on demand, or at the sole discretion of the City, offset against funds due the Consultant from the City.

9. **Independent Contractor.** The Consultant and the City agree that the Consultant is an independent contractor with respect to the services provided pursuant to this Agreement. Nothing in this Agreement shall be considered to create the relationship of employer and employee between the parties hereto. Neither the Consultant nor any employee of the Consultant shall be entitled to any benefits accorded City employees by virtue of the services provided under this Agreement. The City shall not be responsible for withholding or otherwise deducting federal income tax or social security or for contributing to the state industrial insurance program, otherwise assuming the duties of an employer with respect to the Consultant, or any employee of the Consultant.

10. **Covenant Against Contingent Fees.** The Consultant warrants that he has not employed or retained any company or person, other than a bonafide employee working solely for the Consultant, to solicit or secure this contract, and that he has not paid or agreed to pay any company or person, other than a bonafide employee working solely for the Consultant, any fee, commission, percentage, brokerage fee, gifts, or any other consideration contingent upon or resulting from the award or making of this contract. For breach or violation of this warrant, the City shall have the right to annul this contract without liability, or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

11. **Discrimination Prohibited.** The Consultant, with regard to the work performed by it under this Agreement, will not discriminate on the grounds of race, religion, creed, color, national origin, age, veteran status, sex, sexual orientation, gender identity, marital status, political affiliation or the presence of any disability in the selection and retention of employees or procurement of materials or supplies.

12. **Assignment.** The Consultant shall not sublet or assign any of the services covered by this Agreement without the express written consent of the City.

13. **Non-Waiver.** Waiver by the City of any provision of this Agreement or any time limitation provided for in this Agreement shall not constitute a waiver of any other provision.

14. **Termination.**

    A. The City reserves the right to terminate this Agreement at any time by giving ten (10) days written notice to the Consultant.

    B. In the event of the death of a member, partner or officer of the Consultant, or any of its supervisory personnel assigned to the project, the surviving members of the Consultant hereby agree to complete the work under the terms of this Agreement, if requested to do so by the City. This section shall not be a bar to renegotiations of this Agreement between surviving members of the Consultant and the City, if the City so chooses.

15. **Applicable Law; Venue; Attorney's Fees.** This Agreement shall be subject to, and the Consultant shall at all times comply with, all applicable federal, state and local laws, regulations, and rules, including the provisions of the City of Tukwila Municipal Code and ordinances of the City of Tukwila. In the event any suit, arbitration, or other proceeding is instituted to enforce any term of this Agreement, the parties specifically understand and agree that venue shall be properly laid in King County, Washington. The prevailing party in any such action shall be entitled to its attorney's fees and costs of suit. Venue for any action arising from or related to this Agreement shall be exclusively in King County Superior Court.

16. **Severability and Survival.** If any term, condition or provision of this Agreement is declared void or unenforceable or limited in its application or effect, such event shall not affect any other provisions hereof and all other provisions shall remain fully enforceable. The provisions of this Agreement, which by their sense and context are reasonably intended to survive the completion, expiration or cancellation of this Agreement, shall survive termination of this Agreement.

17. **Notices.** Notices to the City of Tukwila shall be sent to the following address:

City Clerk
City of Tukwila
6200 Southcenter Boulevard
Tukwila, WA 98188

Notices to Consultant shall be sent to the following address:

KPG, P.S.
3131 Elliott Avenue, Suite 400
Seattle, WA 98121

18. **Entire Agreement; Modification.** This Agreement, together with attachments or addenda, represents the entire and integrated Agreement between the City and the Consultant and supersedes all prior negotiations, representations, or agreements written or oral. No amendment or modification of this Agreement shall be of any force or effect unless it is in writing and signed by the parties.

DATED this _____ day of _____, 2019.

CITY OF TUKWILA

_____
Mayor, Allan Ekberg

CONSULTANT

By:_____

Printed Name:Nelson Davis, KPG

Title: Principal

Attest/Authenticated:

_____
City Clerk, Christy O'Flaherty

Approved as to Form:

_____
Office of the City Attorney

EXHIBIT A

City of Tukwila

2019 Small Drainage Program

Scope of Work

March 4, 2019

PROJECT DESCRIPTION

The Consultant shall prepare final Plans, Specifications and Estimates for the 2019 Small Drainage Program. The project will include the following sites:

Site 1: Gilliam Creek & S 154th Drainage Structure
Provide improved access to allow maintenance of the bird cage inlet structure at the inlet to the culvert that carries Gilliam Creek under Southcenter Boulevard. This site may require an HPA and City of Tukwila Building Permit.

Site 2: 14811 42nd Avenue South
Install a new drainage structure with bird cage inlet to reduce plugging risk and overflows onto 42nd Avenue S. This site may require an HPA.

Site 3: Stairs at Gilliam Creek Control Structure
Install new stairs for access to the debris gate. Preliminary design was completed in 2016, but Crystal Springs Emergency Repairs prevented completion at that time. It is anticipated that design will follow preliminary design work completed in 2016. This site may require an HPA and City of Tukwila Building Permit.

Sites 4-8: Cured in Place Pipe (CIPP) Lining Projects
Install CIPP liners to the following pipe segments to correct root intrusion and minor damage that has been discovered through maintenance videos:

4. *Southcenter Boulevard at 61st Avenue South (DR04298 to DR04726)*
5. *South 140th Street at 38th Avenue South (DR04742 to DR04743 to DR04724)*
6. *South 152nd Street at 42nd Avenue South (DR02222 to DR02223 to DR 01867)*
7. *South 130th Street at 33rd Place South (DR04373 to DR04372 & DR04371 to DR04370)*
8. *40th Avenue South at Southcenter Boulevard (DR01533 to DR01532)*

The Consultant shall provide necessary surveying, project design, quantity and cost estimates, and utility coordination required to complete final bid documents. It is anticipated that sites will be bid as a single bid package for the 2019 Small Drainage Program as budget or other considerations allow.

The Consultant shall provide surveyed base maps with horizontal utility locations (Sites 1-3), or base maps created from field measurements, ortho-photography, and GIS data as necessary (Sites 4-8) for each site. If necessary, surveyed base maps will include right-of-way line work based on available public records.

Project horizontal and vertical datum will be assumed on all sites. No topographic survey or right of way work is anticipated for the CIPP lining projects.

The Consultant shall prepare an easement document, legal description, and exhibit for Site 2. The City will perform negotiations to obtain signature and record the easement.

The Consultant shall prepare a SEPA checklist and HPA application where required. A building permit will be acquired for the access and safety projects if required. No additional permits are anticipated.

It is the Consultants understanding that none of the 2019 Small Drainage Program sites require biological assessments, additional permits beyond those listed, wetland delineations, geotechnical review, detention facilities, or water quality treatment facilities. The budget assumes a straightforward approval process with no special studies or extensive coordination. Aside from Site 2, all work will be completed within City rights of way or easements and no easement acquisition is anticipated.

SCOPE OF WORK

TASK 1 – 2019 Small Drainage Program Design

1.1 MANAGEMENT/COORDINATION/ADMINISTRATION

- The Consultant shall provide continuous project management and administration for the duration of the Project. (Estimate 4 months).
- Hold project coordination meetings with the City to update progress and review submittals. Assume (3) meetings.
- The Consultant shall provide monthly status reports and billings.
- The Consultant shall provide independent QA/QC reviews by senior in-house staff of all deliverables prior to submittal to the City.

1.2 Previously obtained mapping for sites 1 - 3 will be utilized for those sites and supplemented with additional topographic survey as required. Aerial base maps will be utilized for sites 4-8.

1.3 For Site 1, the Consultant shall work collaboratively with City staff to determine the preferred alternative to improve safety and access. Final structural design for the preferred alternative will be completed by a subconsultant licensed to practice structural engineering in the State of Washington. The Consultant shall include final civil and structural plans and specifications in the Bid Documents.

1.4 For Site 2, the Consultant shall prepare a 50% layout for proposed improvements as well as necessary easement and legal descriptions. The City will review the project and easement needs to obtain approval from the property owner. The Consultant shall make necessary revisions to design approach and easement needs to obtain the approval and include the final design in the Bid Documents.

1.5 The Consultant has previously prepared designs for site 3. This site shall be field reviewed to confirm no significant changes that would affect project design. Minor updates and revisions are anticipated, and will be included in the Bid Documents.

1.6 For Sites 4-8, the Consultant shall prepare maps using aerial mapping and GIS data provided by the City. Each structure will be reviewed in the field to note general size, type, and depth of structures which will require access for CIPP lining. These observations will be made from the surface, no survey or manned entry into drainage structures will be performed. The City shall provide video inspection for each pipe segment to receive CIPP lining.

1.7 The Consultant shall prepare 50% & 90% plan review submittals for all sites.

1.8 The Consultant shall prepare a SEPA checklist for the 2019 Small Drainage Program containing information on all sites requiring SEPA review. This is anticipated to be Sites 1-3 only.

1.9 The Consultant shall prepare a JARPA and coordinate with Washington Department of Fish and Wildlife to obtain HPA where required. This is anticipated to be Sites 1-3.

1.10 The Consultant shall develop plans to the 90% design level and prepare and submit building permit applications for Sites 1 & 3, if required. Specifications will be shown on the plan sheets and reference WSDOT specifications as applicable. It is anticipated that detailed fabrication shop drawings will be provided by the contractor and may be required for final building permit approval.

1.11 The Consultant shall prepare the Contract Specification per 2018 WSDOT Standard Specifications for the 90% Review Submittal and the Bid Documents

1.12 The Consultant shall calculate quantities and prepare Engineers Estimate of Probable Construction Cost for each review submittal and the Bid Documents.

1.13 The Consultant shall distribute 50% review submittals to franchise utility owners to identify potential conflicts within the Project limits.

1.14 The Consultant shall prepare final Bid Documents for the proposed improvements including the following:

- Plans shall be prepared with such provisions in such detail as to permit field layout and construction within a degree of accuracy acceptable to the City and per industry standards.
- Details will be prepared for items not available as standard details from the City, State, or WSDOT standard drawings.
- The plans shall illustrate complete details of construction of the proposed improvements including limits of construction and removals, proposed invert elevations, rim elevations and required construction materials.
- Drainage designs will be determined through consultation with City staff and from previous experience rather than detailed basin modeling.

1.15 The Consultant shall provide bid period services to include responses to bidder inquiries, preparation of addenda, attendance at bid opening, preparation of bid tabulation, and recommendation to award or reject the apparent low bidder. The budget assumes a straight forward review process with the low bidder receiving the contract award.

- *Assumptions*
  - No federal funding is anticipated for the Project engineering or construction.
  - No utility upgrades are anticipated in the project design.
  - Drainage & Water Quality Reports will not be required.
  - Geotechnical Engineering services will not be required.
  - Environmental Documentation will not be required.
  - Potholing of existing underground utilities will not be required.
  - Any fees for City Building Permit will be paid by the City.
  - City to provide video inspection results for Sites 4-8.
  - City to obtain easement approval and record easement for Site 2.
  - Any fees for BXWA.com will be paid by the City.

- *Deliverables*
  - SEPA Checklist for Sites 1-3.
  - JARPA form for Sites 1-3.
  - Building permit applications to City for Sites 1 & 3.
  - 50% review submittal with Plans and Estimate (6 sets + pdf).
  - 90% review submittal with Plans, Specifications, and Estimate (6 sets + pdf).
  - Bid Documents and Engineer's Estimate (10 sets ½ size plans, specs, and estimate)
  - Coordinate upload of Plans and Specifications to Builders Exchange.

Additional Services

The City of Tukwila may require other services of the consultant. These services could include additional design, right of way, utility potholing, environmental documentation, construction phase services, or other work tasks not included in the scope of work. At the time these services are required, the Consultant will provide the City with a detailed scope of work and an hour and fee estimate. The Consultant will not proceed with the work until the City has authorized the work and issued a Notice to Proceed.

HOUR AND FEE ESTIMATE

EXHIBIT B

Project: **City of Tukwila**

2019 Small Drainage Program

KPG
Architecture
Landscape Architecture
Civil Engineering

Task	Description	Labor Hour Estimate									Total Fee
		Project Manager $ 210.00	Senior Engr $ 184.00	Senior Arch $ 150.00	Project Engr/Surv $ 140.00	Design Engineer $ 117.00	Engr/Surv Technician $ 100.00	Survey Crew $ 166.00	Senior Admin $ 115.00	Office Admin $ 92.00	Fee
Task 1 - 2019 Small Drainage Program Design											
1.1	Management/Coordination/Administration	4	0	0	0	0	0	0	4	8	$ 2,036.00
1.2	Survey and Base Maps	0	0	0	8	16	24	20	0	0	$ 8,712.00
1.3	Site 1 Design	2	2	2	24	16	8	0	0	0	$ 7,120.00
1.4	Site 2 Design and legal descriptions	2	0	0	24	8	8	0	4	0	$ 5,976.00
1.5	Site 3 field review and minor updates	2	0	2	8	4	8	0	0	0	$ 3,108.00
1.6	Site 4-8 CIPP lining design	2	0	0	24	24	8	0	0	0	$ 7,388.00
1.7	50%, 90%, and Bid Submittals	0	0	0	6	12	24	0	6	0	$ 5,334.00
1.8	Prepare SEPA Checklist	2	0	0	8	0	4	0	0	2	$ 2,124.00
1.9	Prepare JARPA / WDFW coordination	2	0	0	4	0	4	0	0	2	$ 1,564.00
1.10	Prepare building permit applications for sites 1 and 3	0	0	8	2	0	0	0	0	2	$ 1,664.00
1.11	Prepare Specifications	2	2	0	8	8	0	0	0	4	$ 3,212.00
1.12	Quantity and Cost Estimating	2	2	0	8	8	0	0	0	0	$ 2,844.00
1.13	Utility coordination	0	0	0	4	0	0	0	0	2	$ 744.00
1.14	Finalize Bid Documents	2	2	0	8	8	8	0	2	2	$ 4,058.00
1.15	Bid Period Services	2	0	0	4	8	0	0	0	2	$ 2,100.00
	Reimbursable - Mileage										$ 200.00
	Reimbursable - Reproduction										$ 800.00
	Reimbursable - Structural Allowance										$ 20,000.00
	Task 1 Total	**24**	**8**	**12**	**140**	**112**	**96**	**20**	**16**	**24**	**$ 78,984.00**

Total Estimated Fee: $ 78,984.00

INFORMATIONAL MEMORANDUM

TO: **Transportation and Infrastructure Committee**
FROM: **Henry Hash, Public Works Director**
BY: **Greg Villanueva, NPDES Coordinator**
CC: **Mayor Allan Ekberg**
DATE: **March 15, 2019**
SUBJECT: **Surface Water Fund - NPDES Program**
Project No. 99341210
2018 NPDES Annual Report & 2019 Stormwater Management Program Plan

ISSUE

Review the City's 2018 National Pollutant Discharge Elimination System (NPDES) Annual Report and 2019 Stormwater Management Program (SWMP) Plan.

BACKGROUND

The NPDES Program requires that the City implement a comprehensive SWMP Plan that complies with the requirements outlined in the City's NPDES Phase II Permit. The City's NPDES Phase II Permit became effective August 1, 2013 and currently has an expiration date of July 31, 2019. A new NPDES Phase II permit will be issued on August 1, 2019 for a five-year term. The Phase II Permit requires the City submit an annual report and SWMP Plan by March 31st of each year to the Department of Ecology (DOE). The annual report outlines the City's progress in meeting permit requirements.

The SWMP Plan forecasts activities that are relevant to the NPDES Phase II Permit. The SWMP Plan is updated annually to reflect any changes and timelines of the Permit and to provide greater detail as various components of the permit are developed. The Annual Report reflects the activities completed in the previous year. Once the 2018 Annual Report and the 2019 SWMP Plan are submitted to DOE, it will be used to determine whether permit obligations are being met.

ANALYSIS

City staff has completed the 2018 NPDES Annual Report and updated the 2019 SWMP Plan. All updates to the SWMP Plan are printed in blue for reference. The 2018 NPDES Annual Report must be signed by the City Administrator and both documents electronically submitted to DOE by the reporting deadline of March 31, 2019.

FINANCIAL IMPACT

The program elements listed in the 2019 SWMP Plan required by the NPDES Phase II Permit have been budgeted and have no direct financial impact.

RECOMMENDATION

Information only.

ATTACHMENTS

- 2018 NPDES Annual Report
- 2019 Stormwater Management Program Plan

Annual Report

Number	Permit Section	Question
1	S5.A.2	Attach updated annual Stormwater Management Program Plan (SWMP Plan). (S5.A.2)
2	S9.D.5	Attach a copy of any annexations, incorporations or boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period per S9.D.5. **Not Applicable**
3	S5.A.3	Implemented an ongoing program to gather, track, and maintain information per S5.A.3, including costs or estimated costs of implementing the SWMP. **Yes**
4	S5.A.5.b	Coordinated among departments within the jurisdiction to eliminate barriers to permit compliance. (S5.A.5.b) **Yes**
5	S5.C.1.a.i and ii	Attach description of public education and outreach efforts conducted per S5.C.1.a.i and ii. **Saved Document Name: 2018 Education and Outreach Ef_5_03042019082505**
6	S5.C.1.b	Created stewardship opportunities (or partnered with others) to encourage resident participation in activities such as those described in S5.C.1.b. **Yes** Comment: The City developed a Habitat Program within its Surface Water Division. Stewardship programs include promoting Shoreline Workshops, Better Volunteer Carwash Practices, Increase Public Awareness about What Healthy Streams and Rivers Look Like. Also, the ongoing Green City Partnership program where Tukwila partners with Forterra, EarthCorps, Friends of Duwamish Hill Preserve, Boeing Employee Credit Union and the Student Conservation Association to provide stewardship training and restoration activities in Tukwila
8	S5.C.2.a	Describe the opportunities created for the public to participate in the decision making processes involving the development, implementation and updates of the Permittee's SWMP. (S5.C.2.a) **Opportunities are provided at Transportation and Infrastructure Committee meetings, Committee of the Whole, Council Regular meetings and open house workshops. Opportunities are also encouraged through the year on the City's NPDES website: www.tukwila.gov/pubwks/npdes.html. Notices are also posted in the City Tukwila Reporter and on notice boards at key locations within the City.**
9	S5.C.2.b	Posted the updated SWMP Plan and latest annual report on your website no later than May 31. (S5.C.2.b) **Yes**
9b	S5.C.2.b	List the website address. **http://www.tukwilawa.gov/departments/public-works/npdes**
10	S5.C.3.a.i - vi	Maintained a map of the MS4 including the requirements listed in S5.C.3.a.i.-vi.

Number	Permit Section	Question
		Yes
11	S5.C.3.b.v	Implemented a compliance strategy, including informal compliance actions as well as enforcement provisions of the regulatory mechanism described in S5.C.3.b. (S5.C.3.b.v) **Yes**
12	S5.C.3.b.vi	Updated, if necessary, the regulatory mechanism to effectively prohibit illicit discharges into the MS4 per S5.C.3.b.vi. (Required no later than February 2, 2018) **Yes**
12b		Cite the Prohibited Discharges code reference **Tukwila Municipal Code 14.31**
13	S5.C.3.c.i	Implemented procedures for conducting illicit discharge investigations in accordance with S5.C.3.c.i. **Yes**
13b	S5.C.3.c.i	Cite methodology **The City uses its GIS Surface Water mapping, enforces its IDDE ordinance, conducts annual stream monitoring, uses local laboratory services, has an active education and outreach program. Fire Department response to hazardous waste spills and illicit discharges. O&M available for IDDE, ongoing storm pipe video detection, maintains neighboring jurisdiction contact list and provide annual hazardous waste collection site.**
14	S5.C.3.c.i	Percentage of MS4 coverage area screened in reporting year per S5.C.3.c.i. (Required to screen 40% of MS4 no later than December 31, 2017 (except no later than June 30, 2018 for the City of Aberdeen) and 12% on average each year thereafter. (S5.C.3) **28**
15	S5.C.3.c.ii	List the hotline telephone number for public reporting of spills and other illicit discharges. (S5.C.3.c.ii) **206-431-1860**
15b	S5.C.3.c.il	Number of hotline calls received. **1**
16	S5.C.3.c.iii	Implemented an ongoing illicit discharge training program for all municipal field staff per S5.C.3.c.iii. **Yes**
17	S5.C.3.c.iv	Informed public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste. (S5.C.3.c.iv) **Yes**
17b	S5.C.3.c.iv	Describe the information sharing actions. (S5.C.3.c.iv) **The City meets weekly with staff where appropriate Phase II permit information is shared. Information sharing is also conducted during commercial and residential inspections (during/post construction. Tukwila partners with ECOSS which also supports the City's IDDE education and outreach program. Stormwater information is mailed to 5,300 City addresses. Staff also educates the general public while investigating illicit discharges and spills.**
18	S5.C.3.d	

Number	Permit Section	Question
		Implemented an ongoing program to characterize, trace, and eliminate illicit discharges into the MS4 per S5.C.3.d. **Yes**
19	S5.C.3.d.iv	Number of illicit discharges, including illicit connections, eliminated during the reporting year. (S5.C.3.d.iv) **25**
20	S5.C.3.d.iv	Attach a summary of actions taken to characterize, trace and eliminate each illicit discharge found by or reported to the permittee. For each illicit discharge, include a description of actions according to required timeline per S5.C.3.d.iv **Saved Document Name: 2018 IDDE Tracking Summary 1-4_20_02282019074109**
21	S5.C.3.e	Municipal illicit discharge detection staff are trained to conduct illicit discharge detection and elimination activities as described in S5.C.3.e. **Yes**
22	S5.C.4.a	Implemented an ordinance or other enforceable mechanism to address runoff from new development, redevelopment and construction sites per the requirements of S5.C.4.a. **Yes**
24	S5.C.4.a.i	Number of exceptions granted to the minimum requirements in Appendix 1. (S5.C.4.a.i., and Section 6 of Appendix 1) **0**
25	S5.C.4.a.i	Number of variances granted to the minimum requirements in Appendix 1. (S5.C.4.a.i., and Section 6 of Appendix 1) **0**
26	S5.C.4.b.i	Reviewed Stormwater Site Plans for all proposed development activities that meet the thresholds adopted pursuant to S5.C.4.a.i. (S5.C.4.b.i) **Yes**
26b	S5.C.4.b.i	Number of site plans reviewed during the reporting period. **122**
27	S5.C.4.b.ii	Inspected, prior to clearing and construction, permitted development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 Determining Construction Site Sediment Damage Potential, or alternatively, inspected all construction sites meeting the minimum thresholds adopted pursuant to S5.C.4.a.i. (S5.C.4.b.ii) **Yes**
27b	S5.C.4.b.ii	Number of construction sites inspected per S5.C.4.b.ii. **37**
28	S5.C.4.b.iii	Inspected permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. (S5.C.4.b.iii) **Yes**
28b	S5.C.4.b.iii	Number of construction sites inspected per S5.C.4.b.iii. **79**

Number	Permit Section	Question
29	S5.C.4.b.ii, iii and	Number of enforcement actions taken during the reporting period (based on construction phase inspections at new development and redevelopment projects). (S5.C.4.b.ii, iii and v) **3**
30	S5.C.4.b.iv	Inspected all permitted development sites that meet the thresholds in S5.C.4.a.i upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities. (S5.C.4.b.iv) **Yes**
31	S5.C.4.b.ii-iv	Achieved at least 80% of scheduled construction-related inspections. (S5.C.4.b.ii-iv) **Yes**
32	S5.C.4.b.iv	Verified a maintenance plan is completed and responsibility for maintenance is assigned for projects. (S5.C.4.b.iv) **Yes**
33	S5.C.4.c	Implemented provisions to verify adequate long-term operation and maintenance (O&M) of stormwater treatment and flow control BMPs/facilities that are permitted and constructed pursuant to S5.C.4. a and b. (S5.C.4.c) **Yes**
35	S5.C.4.c.iii	Annually inspected stormwater treatment and flow control BMPs/facilities per S5.C.4.c.iii. **Yes**
35b	S5.C.4.c.iii	If using reduced inspection frequency for the first time during this permit cycle, attach documentation per S5.C.4.c.iii **Not Applicable**
36	S5.C.4.c.iv	Inspected new residential stormwater treatment and flow control BMPs/facilities and catch basins every 6 months per S5.C.4.c.iv to identify maintenance needs and enforce compliance with maintenance standards. **Yes**
37	S5.C.4.c.v	Achieved at least 80% of scheduled inspections to verify adequate long-term O&M. (S5.C4.c.v) **Yes**
38	S4.C.4.c.vi	Verified that maintenance was performed per the schedule in S5.C.4.c.vi when an inspection identified an exceedance of the maintenance standard. **Yes**
38b	S5.C.4.c.vi	Attach documentation of any maintenance delays. (S5.C.4.c.vi) **Not Applicable**
39	S5.C.4.d	Provided copies of the Notice of Intent for Construction Activity and Notice of Intent for Industrial Activity to representatives of proposed new development and redevelopment. (S5.C.4.d) **Yes**
40	S5.C.4.e	All staff responsible for implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including permitting, plan

Number	Permit Section	Question
		review, construction site inspections, and enforcement are trained to conduct these activities. (S5.C.4.e) **Yes**
42	S5.C.4.g	Participated and cooperated with the watershed-scale stormwater planning process led by a Phase I county. (S5.C.4.g) **Not Applicable**
43	S5.C.5.a	Updated and implemented maintenance standards as protective, or more protective, of facility function as those specified in Chapter 4 of Volume V of the Stormwater Management Manual for Western Washington (as amended 2014). (Required no later than December 31, 2016, except no later than June 30, 2017 for Permittees in Lewis and Cowlitz counties, and no later than June 30, 2018 for the City of Aberdeen, S5.C.5.a). **Yes** Comment: Tukwila adopted the 2016 KCSWDM and updated Tukwila Municipal Code Titles 14,16, 8.25 & 18.
44	S5.C.5.a	Applied a maintenance standard that is not specified in the Stormwater Management Manual for Western Washington. **No**
45	S5.C.5.a.ii	Performed timely maintenance per S5.C.5.a.ii. **Yes**
46	S5.C.5.b	Annually inspected all municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities. (S5.C.5.b) **Yes**
46b	S5.C.5.b	Number of known municipally owned or operated stormwater treatment and flow control BMPs/facilities. (S5.C.5.b) **75**
46c	S5.C.5.b	Number of facilities inspected during the reporting period. (S5.C.5.b) **75**
46d	S5.C.5.b	Number of facilities for which maintenance was performed during the reporting period. (S5.C.5.b) **4**
47	S5.C.5.b	If using reduced inspection frequency for the first time during this permit cycle, attach documentation per S5.C.5.b. **Not Applicable**
48	S5.C.5.c	Conducted spot checks and inspections (if necessary) of potentially damaged stormwater facilities after major storms as per S5.C.5.c. **Yes**
49	S5.C.5.d	Inspected all municipally owned or operated catch basins and inlets as per S5.C.5.d, or used an alternative approach. (Required once no later than August 1, 2017 and every two years thereafter, except once no later than June 30, 2018 and every two years thereafter for the City of Aberdeen) **Yes**

Number	Permit Section	Question
49b	S5.C.5.d	Number of known catch basins. **5625**
49c	S5.C.5.d	Number of catch basins inspected during the reporting period. **1608**
49d	S5.C.5.d	Number of catch basins cleaned during the reporting period. **563**
50	S5.C.5.d.i-ii	Attach documentation of alternative catch basin cleaning approach, if used. (S5.C.5.d.i or ii) **Not Applicable**
51	S5.C.5.f	Implemented practices, policies and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the Permittee, and road maintenance activities under the functional control of the Permittee. (S5.C.5.f) **Yes**
52	S5.C.5.g	Implemented an ongoing training program for Permittee employees whose primary construction, operations or maintenance job functions may impact stormwater quality. (S5.C.5.g.) **Yes**
53	S5.C.5.h	Implemented a Stormwater Pollution Prevention Plan for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit that are not required to have coverage under an NPDES permit that covers stormwater discharges associated with the activity. (S5.C.5.h) **Yes**
54	S7.A	Complied with the Total Maximum Daily Load (TMDL)-specific requirements identified in Appendix 2. (S7.A) **Not Applicable**
55	S7.A	For TMDLs listed in Appendix 2: Attach a summary of relevant SWMP and Appendix 2 activities to address the applicable TMDL parameter(s). (S7.A) **Not Applicable**
56	S8.A	Attach a description of any stormwater monitoring or stormwater-related studies as described in S8.A. **Saved Document Name: 2018 Q1 Boeing Z Line Sampling_56_03042019101234**
57	S8.B.1	Participated in cost-sharing for the regional stormwater monitoring program (RSMP) for status and trends monitoring. (S8.B.1) **Yes**
58	S8.C.1	Participated in cost-sharing for the regional stormwater monitoring program (RSMP) for effectiveness studies. (S8.C.1) (Required to begin no later than August 15, 2014) **Yes**
59	S8.D.1	Contributed to the RSMP for source identification and diagnostic monitoring information repository in accordance with S8.D.1. (Required to begin no later than August 15, 2014) **Yes**

Number	Permit Section	Question
60	G3	Notified Ecology in accordance with G3 of any discharge into or from the Permittees MS4 which could constitute a threat to human health, welfare or the environment. (G3) **Yes**
61	G3	Number of G3 notifications provided to Ecology. **25**
62	G3.A	Took appropriate action to correct or minimize the threat to human health, welfare, and/or the environment per G3.A. **Yes**
63	S4.F.1	Notified Ecology within 30 days of becoming aware that a discharge from the Permittee's MS4 caused or contributed to a known or likely violation of water quality standards in the receiving water. (S4.F.1) **Not Applicable**
64	S4.F.3.a	If requested, submitted an Adaptive Management Response report in accordance with S4.F.3.a. **Not Applicable**
65	S4.F.3.d	Attach a summary of the status of implementation of any actions taken pursuant to S4.F.3 and the status of any monitoring, assessment, or evaluation efforts conducted during the reporting period. (S4.F.3.d) **Not Applicable**
66	G20	Notified Ecology of the failure to comply with the permit terms and conditions within 30 days of becoming aware of the non-compliance. (G20) **Not Applicable**
67	G20	Number of non-compliance notifications (G20) provided in reporting year. **0**
67b	G20	List the permit conditions described in non-compliance notification(s). **Not Applicable**

Attachments:

View Files Attached to Submission

	DocDescr	DocName	DocExt	DocID	SubID	AppName
View	WAR045544_5_03042019082505	2018 Education and Outreach Ef_5_03042019082505	.pdf	782146	1663689	wqwebportal
View	WAR045544_20_02282019074109	2018 IDDE Tracking Summary 1-4_20_02282019074109	.pdf	781461	1663689	wqwebportal
View	WAR045544_56_03042019101234	2018 Q1 Boeing Z Line Sampling_56_03042019101234	.pdf	782255	1663689	wqwebportal

Back

2018
Education and Outreach Efforts

The City of Tukwila has an active public educational and outreach program, regarding general impacts of stormwater on surface waters, using the following approaches and target audiences:

- Twice a year stormwater information is mailed to approximately 5,300 addresses. For 2018, the public was reminded of the new Low Impact Development regulatory stormwater changes that went effect.
- The City used the findings of the 2017 Stormwater Survey and Assessment to target City residents and businesses by informing them of a priority 1 & 2 issues regarding impervious pavement, sediment, pesticides, fertilizers, weed control chemicals, car wash soapy water runoff and infiltration trenches.
- Posted on the City's web page the LID course training catalog, 2016 King County Surface Water Design Manual and 2016 King County Stormwater Pollution Prevention Manual. Also posted an Illicit Discharge Detection & Elimination video that is available in English and Spanish and a Lost and (Puget) Sound stormwater video directed at school aged children.
- Provided an NPDES Inspection Van that included interactive stormwater testing at a City sponsored Touch a Truck event that is held annually. Interactive water sample testing was conducted with the public to promote water quality in Gilliam Creek, Riverton Creek, Southgate Creek, Johnson Creek, cottage Creek and the Green/Duwamish River. Bilingual IDDE posters were installed to reach non-English-speaking citizens.
- Provided a SWMP booth at the annual Backyard Wildlife Festival. Staff promoted low impact development by demonstrating how pervious concrete works and conducted a children's hands-on water sampling demonstration using a turbidity meter and pH test kits. Also, staff engaged with the children using a Child Passport Questionnaire regarding stormwater quality. Bilingual IDDE posters were installed to reach non-English-speaking citizens.

- A variety of brochures are made available, and are handed out during residential and business storm drainage inspections, i.e. Low Impact Development, Protecting Washington's Waters from Stormwater Pollution, Local Recycling Center for Used Oil, Spills-Who do you call? Natural Lawn Care, Small Business Hazardous Waste Disposal and Good Business Practices for Carpet Cleaning & Wastewater Disposal.
- Continue with residential and commercial inspections where one on one discussions of pollution and its impact to our creeks and rivers is conveyed.
- Continue to educate Illicit discharge violators.
- The City's Habitat Program supports NPDES goals by promoting better volunteer carwash practices, increasing public awareness about what healthy streams and rivers look like, increase use of low impact development and porous concrete.

2018 ILLICIT DISCHARGE, DETECTION & ELIMINATION

DATE RECEIVED	DATE RESPONDED	LOCATION NAME	RFA ERTS	ILLICIT DISCHARGE	ACTION TAKEN	FINAL
1/30/2018	1/30/2018	I-405 South Bound between	678873	Due to an auto accident,	1/30 Tukwila Fire Dept. responds to stop release.Everything	
		West Valley Hwy. & I-5		5-10 gallon release of diesel and DEF,	has been mitigated except what is in the tube. No water	
				mostly diesel going to storm drain.	currently running. 1/30 Greg V/Tukwila notifies ECY/ERTS	
					that spill was in WSDOT jurisdiction. NFA/Tukwila	1/30/2018
2/9/2018	2/9/2018	1020 Andover Park West	679204	Private watermain break, sediment to	2/9 Tukwila Fire Dept & Water Dept responded and used	
		Nordstrom Warehouse		APW to Minkler to P-17 ditch.	street sweeper to cleanup mud. Archer Const. onsite to	
					respond for owner. 2/12 Archer completed isolation of sed.	
					and cleaned up all discharges. BMPs in place. Unable to	
					determine amount of volume.Approx.2 yards soils remove	
					from cleanup. NFA	2/12/2018
2/14/2018	2/14/2018	14225 42nd Ave S		Sewage in crawl space.	City Code Enforcement aware. Valley View Sewer Dist.	
		Normandy Court Apartments	679271		determined faulty interior pipe. Plumber sched for fix. NFA	2/14/2018
2/20/2018	2/20/2018	10230 E Marg Wy S		Storm drainage & grading work without	City of Seattle was notified and support requested. Will	
		Prologics	679362	permit. Half of work is in Seattle	need to provide ongoing site vistis.	3/20/2018
				impacting Tukwila storm drain.		
2/28/2018	2/28/2018	3301 South Norfolk St	679507	One-gallon discharge of multiple auto	See ERTS. Due to the nature of discharge, City employee	
				petrol products from towing operation	was advised to call 911 & Tukwila Police Dept. for follow up	
					NFA	3/12/2018
3/8/2018	3/8/2018	12400 51st Pl S	679711	Hostler truck malfunction released	Cleanup crew enroute.	
				hydraulic fluid onto concrete and in cb	NFA	3/8/2018
	3/19/2018	15310 Macadam Rd S	679959	Release of sewage from failed private	Flow Hawk in process of keeping lift station from	
		Condominium		force main/lift station draining into	overflowing.	
				nearby cb. Flow Hawk on site for		
				repair and clean up.	NFA	5/19/2018

2018 ILLICIT DISCHARGE, DETECTION & ELIMINATION

DATE RECEIVED	DATE RESPONDED	LOCATION NAME	RFA ERTS	ILLICIT DISCHARGE	ACTION TAKEN	FINAL
3/22/2018	3/22/2018	6810 S 180th St	680066	Reported as 1/2 gallon spill mechanical		
		Home Depot		disinfectant into sewer drain. Follow up		
				call indicating misunderstanding that		
				none of facility reached outside and		
				there was no drain impacts.	NFA	3/22/2018
7/24/2018	7/24/2018	415 Baker Blvd	682801	Reported as pavement being cut and	7/24 City Inspector/Scott M. requested eductor truck clean	
				dust waste going into storm drain in	impacted cb. Request completed.	
				liquid and mud form.	NFA	7/24/2018
7/28/2018	7/30/2018	17275 Southcenter Parkway	None	Floor grinding, wet sanding wastes to	7/30 Call received from anonymous reporter, visited site	
		Kasala Furniture		storm drain.	and requested TI Superintendent to vactor wastes from	
					storm system before next rainfall, to develop new waste	
					management for the life of project. Darren complied. NFA	7/30/2018
8/3/2018	8/3/2018	17900 West Valley Hwy	683064	Reported as caustic materials dumped	8/3 Russell B/NPDES Inspector emailed JeremyBNSF to	
		NC Machinery		into the sewer system and overflowed to	confirm there was no discharge of caustic soda to storm-	
				a wetland area.	water. NFA	8/3/2018
9/25/2018	9/25/2018	NB I-5 MP157	684225	5-10 gallons of diesel spilled to roadway	WSDOT Jurisdiction. Spill contained. WSDOT on scene to	
		WSDOT		with 5 gal going to sd on NB I-5.	clean up. NFA	9/25/2018
9/28/2018	9/28/2018	14550 Interurban Ave S	684296	Garbage being dumped along bank of	9/28 Greg V. visited site. Garbage is old construction debris	
				Green River	left over from recent original build of bldg. Issue referred to	
					City Code Enforcement. Non NPDES issue. NFA	9/28/2018
10/5/2018	10/5/2018	12525 E Marg Wy S	684456	Soil & fill material dumping next to	10/5 Russell B./NPDES Inspector visited site, researched	
				creek.	site history. Fill material not new consequently found no	
					illicit discharge to stream. Not an NPDES concern at this	
					time. Will continue to monitor. NFA	10/9/2018
10/8/2018	10/8/2018	48th Ave Macadam Rd S	684487	Approx. 2 gallons of transmission fluid	PierceCounty requested assistancefrom Tukwila O&M. Tuk	
				was released from Pierce Transit bus	unable to respond at that time. P.C. responds to clean up.	
				onto street with possible impact to SD.	Coordinated cleanup w/Bill Serenbetz Pierce County NFA	10/8/2018

2018 ILLICIT DISCHARGE, DETECTION & ELIMINATION

DATE RECEIVED	DATE RESPONDED	LOCATION NAME	RFA ERTS	ILLICIT DISCHARGE	ACTION TAKEN	FINAL
10/18/2018	10/11/2018	15200 I.U.to SB I-405 onramp	684729	Tractor trailer spilled oil 75x4 feet.	Tukwila PW Maintenance & FD responds. PW lays	
					absorbent down and DOT lays sand down and swept area.	
					NFA	10/18/2018
10/13/2018	10/13/2018	351 Baker Blvd.	684643	Reported as unknown oil (likely gas) on	NPDES Inspector tracked pressure washing to 350 Baker	
				ground flowing into SD and contacted	Blvd and gave instruction on pressure washing BMPS.	
				Fire Dept. who indicated seen pressure		
				washing job where water was flowing		
				through parking lot and picking up oil		
				that leaked from cars creating rainbow		
				sheen that is unrecoverable.	NFA	10/13/2018
10/21/2018	10/21/2018	Strander Blvd & Green River	684774	Due to City watermain break water	City crew responded, isolated watermain break. Begin	
				flowing into Green River and immediately	install of BMPS and watermain repair. Potable water that	
				effected the behavior of Salmon. Strong	flowed to multiple catch basins and consequently to the	
				chemical odor associated with the water	Green River moved rapidly and considered as transient and	
				origin unknown.	unrecoverable. Impacted cb's have been cleaned. NFA	10/22/2018
10/30/2018	10/30/2018	Duwamish River & S. 112th	684980	Lots of debris and mattresses in the	Material reported is within the Duwamish River. Area is	
				Duwamish River.	inaccessible consequently unable to retrieve. NFA	10/30/2018
11/20/2018	11/20/2018	11911 E Marg Wy S	685422	400 gallons of anti-icing brine solution	Vactor truck has cleaned the drains an vacuumed up	
				spilled to gravel and storm drains. A	puddles from gravel.	
				tank of fluid was being off loaded and		
				tank cracked.	NFA	11/20/2018
12/4/2018	12/4/2018	120 Andover Park East	685738	1-2 gallons of mineral oil spilled to	Clean up is in route. City crew follows up with additional	
				asphalt, and 5-10 gallons spilled to	cleanup due to additional unknown liquid by transformer.	
				transformer vault when mounted	Since no rain in recent days, assumed it was mineral oil.	
				transformer was struck by vehicle.	NFA	12/4/2018

2018 ILLICIT DISCHARGE, DETECTION & ELIMINATION

DATE RECEIVED	DATE RESPONDED	LOCATION NAME	RFA ERTS	ILLICIT DISCHARGE	ACTION TAKEN	FINAL
12/12/2018	12/12/2018	Tukwila Pond	685919	Reported City Parks Dept. has been	Referred to City Planning Dept. and Code Enforcement.	
				doing a lot of tree removal around the	Not an NPDES concern. NFA	
				pond. Going on for about a month.		12/12/2018
12/20/2018	12/20/2018	1164 Minkler Blvd.	686102	Business is opening holes in pavement	Contractor was asked and is responding and a member	
				for trash enclosures. Large amounts of	of the crew is getting a vacuum pump and will pick up soil	
				mud was getting into storm drain and	that is causing turbidity.	
				entering Minkler SD Ditch. Observed a		
				500 NTU reading where mixture was		
				more diluted.	NFA	12/21/2018
12/20/2018	12/20/2018	9725 E Marg Wy S.	686124	Caller reported a TSS exceedance of	Called Ray Power to discuss TSS. Ray indicated it was not	
				34 mg/l from lab results received 12/19	a spill but was reporting per Industrial Stormwater Permit.	
				Cause unknow but caller suspects it	Will resample when rain stops. Ray to call after follow up	
				due to sample taken during a high rain	sample results are available.	
				event.	1/10/19 Ray Powers called to say follow up TSS at 6	
					taken on 12/20/18. NFA	1/10/2019
12/21/2018	12/21/2018	17333 Southcenter Pkwy	686166	Discharging mud/sediment, asphalt soap	12/21 Site visited by NPDES Inspector which requested	
		Chick Fillet		and paint and styrofoam pieces. Site is	immediate install of BMPS. Referred issue to City Const.	
				a mess.	Inspector. 12/24 site visit found site still needs cleaning.	
					Was told responsible person(superintendent) was on vac.	
					Need continued site visits. Per Eric Prichard/Inspector	
					contractor in process of cleaning site. NFA	2/1/2019

February 1, 2018

Attn: Ryan Larson
City of Tukwila Public Works
6200 Southcenter Blvd
Tukwila, Washington

Re: 2018 First Quarter – Boeing Z – Line Stormwater Sampling, Tukwila, Washington
PBS Project Number 40407.026, City Project No: 91041204
Date Sampled: January 11, 2018

Dear Mr. Larson,

Attached please find a summary table of analytical test results, the sample collection field form, and a copy of the laboratory data report for samples collected on January 11, 2018 from the City Stormwater Outfall to Boeing Line "Z" located at the intersection of East Marginal Way South and South 81st Place in Tukwila (manhole 36-165) in Seattle, Washington. The sampling was conducted in accord with the *Stormwater Sampling and Analysis Plan, City Outfall to Boeing Z Line*, PBS-March 16, 2016.

Identification and visual observations of the stormwater sample point are presented below. A summary of the laboratory analysis results at the sample location is presented as Table 1 (attached). Rainfall amount on this day (24-hour period) totaled 0.88 inches (Source: Weather Underground – Seattle, Seattle Boeing Field (KBFI weather station)).

Manhole 36-165: The sample point is a manhole that conveys runoff from East Marginal Way and is located just upstream of the former Boeing plant Z-line storm sewer (see Figure 1). PBS collected the sample from the channel at the bottom of Manhole 36-165 on January 11, 2018.

There was some floating solids observed during the sample collection but no visible sheen. The analyzed sample indicated that levels of total suspended solids (26 milligrams per liter (mg/L)), copper (11.7 micrograms per liter (µg/L)), zinc (60.8 µg/L), pH (6.9), lead (5.39 µg/L) and polychlorinated biphenyls (PCBs) (<0.001 µg/L) were within the adopted benchmark stormwater guidance levels (Washington State Department of Ecology *Stormwater Sampling Manual A Guidance for the Industrial Stormwater General Permit* dated December 2015). Turbidity (50 nephelometric turbidity units (NTU)) was the only exceedance of the benchmark values. The benchmark levels are used as guidance levels, since this sample location is not regulated under a specified stormwater discharge permit.

PBS will coordinate the 2nd Quarter-2018 sampling from the manhole location during a measurable precipitation runoff event. If you have any questions regarding the enclosed material, please call me at 206.233.9639.

Sincerely,

Megan Nogeire, Project Scientist
PBS Engineering and Environmental Inc.

Review: Tom Mergy

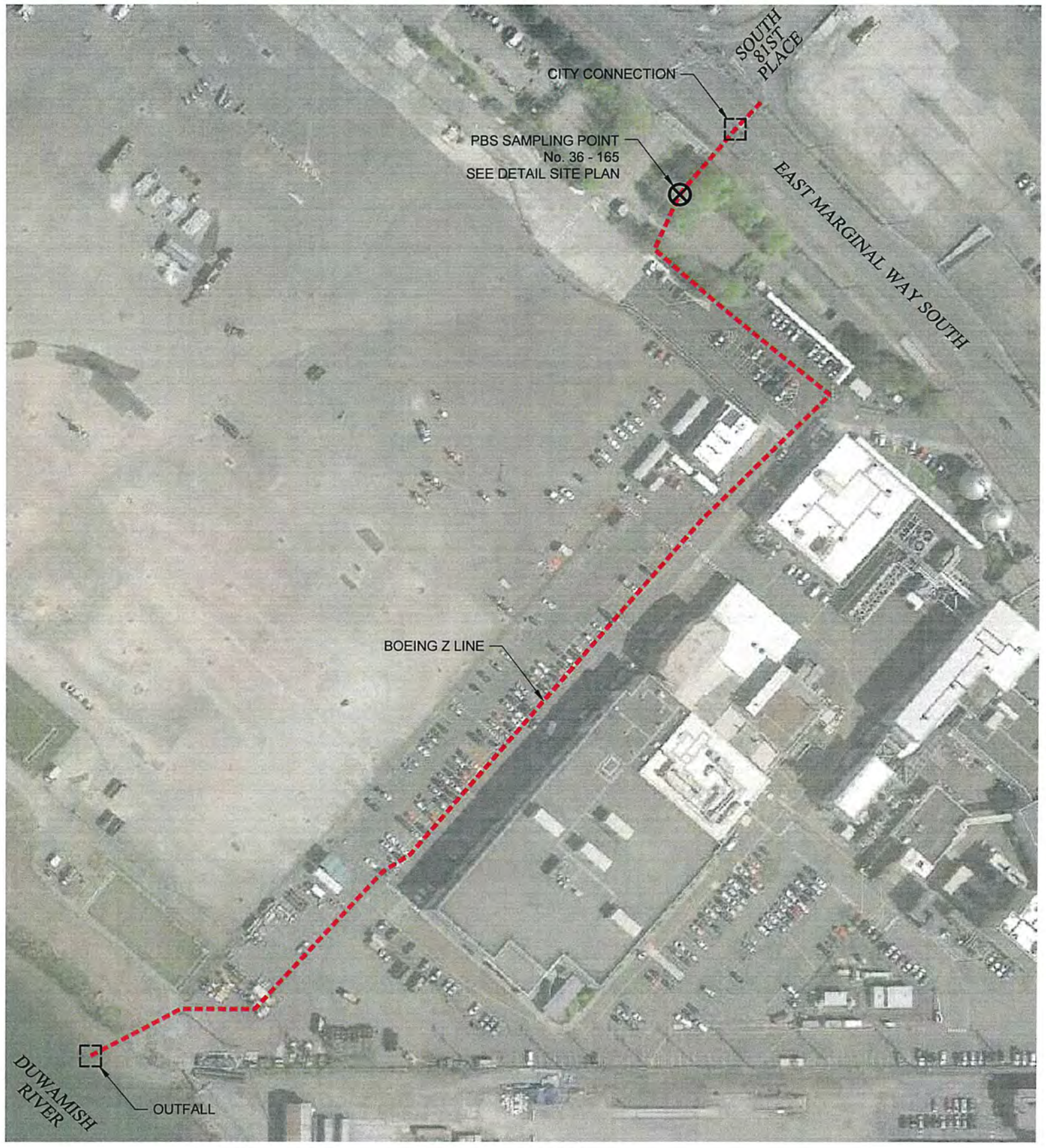
Enclosed:
Table 1: Stormwater Sampling Data Summary
Figure 1: Manhole Location Map
Field Inspection Form
Precipitation Data
Laboratory Analysis Report

Table 1: Stormwater Sample Data Summary
Beeing Z-Line Stormwater Sampling - Tukwila, Washington

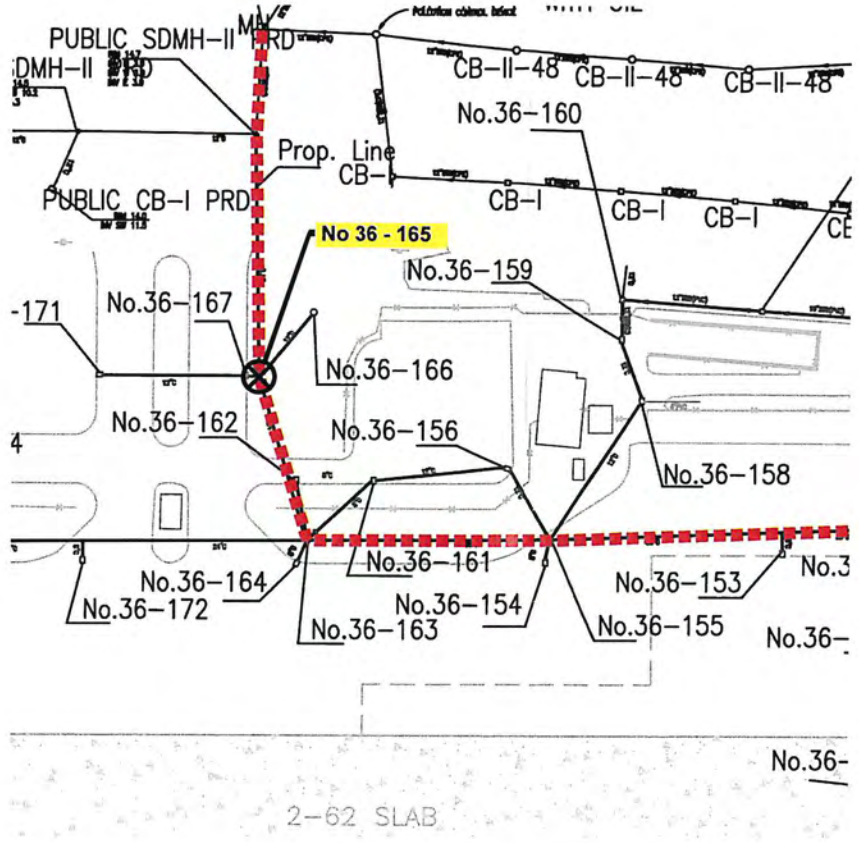
PBS Project No. 40407.026

Sample Location	Year	Quarter	Date Sampled	pH	Metals			TSS	Oil Sheen (Yes/No)	Turbidity	PCBs
					Copper	Lead	Zinc				
MH - 36-165	2016	2	NDQ	NDQ							
		3	9/2/2016	7.6	31.7	9.43	120	55	No	81	<0.0041*
		4	10/13/2016	7.4	16.7	4.79	59.5	16	No	50	<0.00526*
	2017	1	2/9/2017	7.0	15.5	6.30	58.8	23	No	46	<0.002
		2	5/16/2017	6.5	13.5	4.98	72.4	38	No	59	<0.002
		3	NDQ	NDQ							
		4	10/18/2017	6.9	28.8	10.8	131	93	No	105	<0.001
	2018	1	1/11/2018	6.9	11.7	5.39	60.8	26	No	50	<0.001
Benchmark Criteria				**5.0-9.0**	**14 ug/L**	**82 ug/L**	**117 ug/L**	**30 mg/L**	**No Visible Sheen**	**25 NTU**	**0.004 ug/L**

Notes: NDQ = No Discharge During Quarter
< = Not Detected at the Reporting Limit
* = PCBs were not detected above the method detection limit (MRL)



SITE PLAN
SCALE: 1" = 150'



DETAIL SITE PLAN
SCALE: 1" = 150'

LEGEND

- BOEING Z LINE
- STORMWATER MANHOLE NO. 36 - 165

PREPARED FOR: BOEING

PBS
Engineering + Environmental
2517 Eastlake Ave East
Suite 100
Seattle, WA 98102
206.233.9639
www.pbsenv.com

SITE PLAN

BOEING FIELD
SEATTLE, WASHINGTON

SITE PLAN	
PROJECT:	40407.028
DATE:	DECEMBER 2015
FIGURE:	2

L:\Projects\40000\40407 Tukwila Public Works\40407.026 2015 Z Line Stormwater Compliance\CAD\40407.026_FIG_1-3.dwg Dec 23, 2015 11:35am justind

Stormwater Monitoring – City of Tukwila
East Marginal Way and S. 81st Place, Tukwila, Washington
Stormwater Sample Collection Field Form

Quarter: 1 **Year:** 2018

Date: 1/11/18 Time: 1052

Sample Location: **MH – 36-165** Sampler: MN, KN

Weather Conditions: _____

Sample collected within first 12 hours of discharge event? ___ Yes ___ No X Unknown

If no or unknown, explain: _____

Stormwater Flow at Outfall (yes/no): yes

Temperature: 6.3 °C _____ °F

pH: 6.9 S.U. Time of pH Analysis: 1057

Turbidity: 50 NTU Time of Turbidity Analysis: 1057

Visual Assessment of Sample:

a. Color: clear w/ some particulates

b. Floating Solids (associated with industrial activity): X YES ___ NO

c. Visible Oil Sheen: ___ YES X NO Comment:

d. Odor: ___ YES X NO Comment:

Sample ID: **MH – 36 - 165**

Method of Sampling (Circle one): (Single Grab) Time-Proportional Flow-Proportional

Placed in Cooler with ice: X Yes ___ No Chain-of-Custody X Yes ___ No

Analytical Requirements: Total Zinc (EPA 200.8),
Total Copper (EPA 200.8)
Total Lead (EPA 200.8)
Polychlorinated Biphenyls (EPA 8082A)
Total Suspended Solids (SM 2540-D)

Seattle Boeing, WA

Boeing Field-King County International

2:11 PM PST on January 30, 2018 (GMT -0800)

Weather History for KBFI - January, 2018

January

11

2018

View
Thursday, January 11, 2018

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**46** °F	-	
Max Temperature	**51** °F	**44** °F	**59** °F (1987)
Min Temperature	**42** °F	**35** °F	**12** °F (1963)
Degree Days			
Heating Degree Days	18		
Moisture			
Dew Point	**45** °F		
Average Humidity	96		
Maximum Humidity	100		
Minimum Humidity	89		
Precipitation			
Precipitation	**0.88** in	-	- ()
Sea Level Pressure			
Sea Level Pressure	**29.87** in		
Wind			
Wind Speed	**6** mph (SSE)		

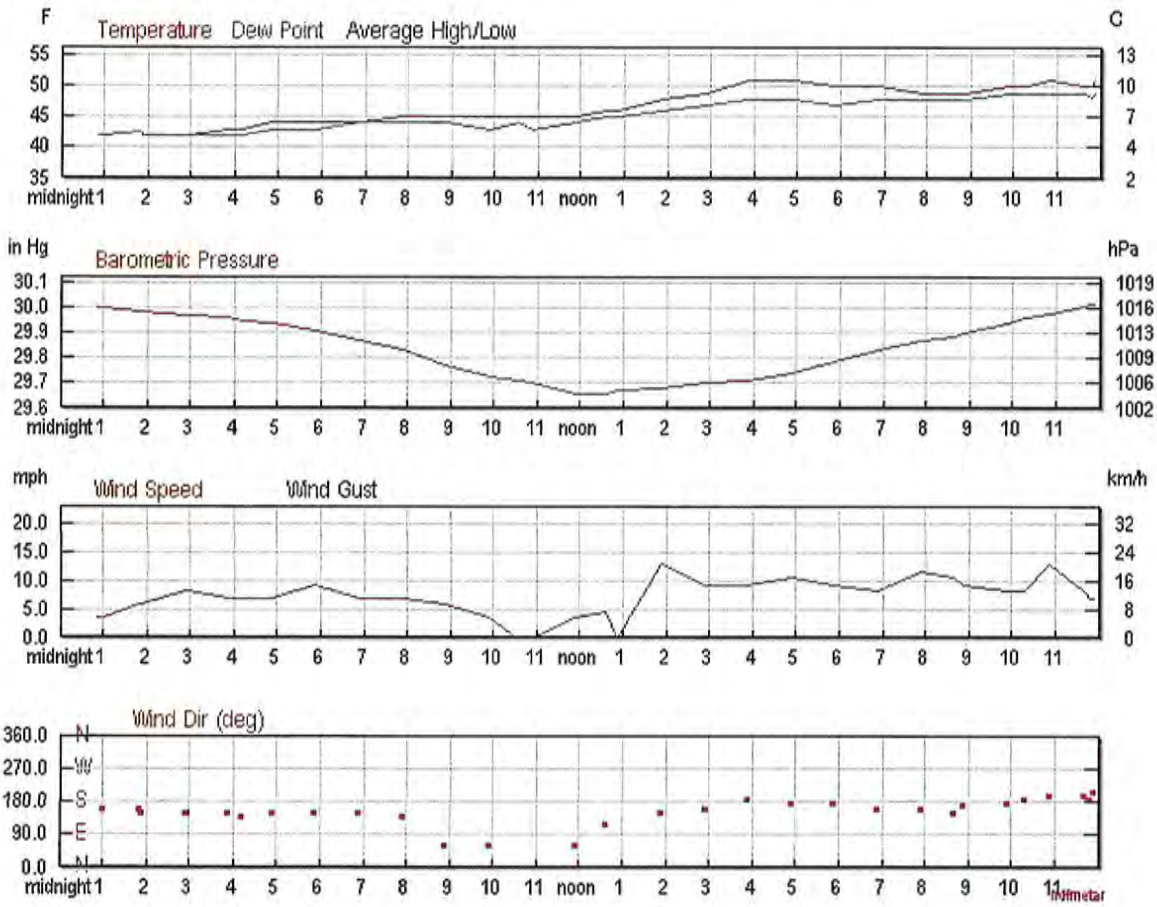
	Actual	Average	Record
Max Wind Speed	**13** mph		
Max Gust Speed	-		
Visibility	**6** miles		
Events	Rain		

Averages and records for this station are not official NWS values.

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KBFI

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

January

11

Submit

Astronomy

Jan. 11, 2018	**Rise**	**Set**
Actual Time	7:54 AM PST	4:40 PM PST
Civil Twilight	7:19 AM PST	5:15 PM PST
Nautical Twilight	6:41 AM PST	5:53 PM PST
Astronomical Twilight	6:04 AM PST	6:30 PM PST
Moon	2:58 AM PST (1/11)	1:16 PM PST (1/11)
Length of Visible Light	9h 55m	
Length of Day	8h 45m	

Waning Crescent, 23% of the Moon is Illuminated

Jan 11	Jan 16	Jan 24	Jan 31	Feb 7
Waning Crescent	New	First Quarter	Full	Last Quarter

Hourly Weather History & Observations

Time (PST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Co
12:53 AM	**42.1** °F	**40.2** °F	**42.1** °F	100%	**30.00** in	**4.0** mi	SSE	**3.5** mph	-	**0.01** in		Ov
1:01 AM	**42.1** °F	**40.2** °F	**42.1** °F	100%	**30.00** in	**4.0** mi	SSE	**3.5** mph	-	N/A		Ov
1:50 AM	**42.8** °F	**39.3** °F	**42.8** °F	100%	**29.99** in	**2.5** mi	SSE	**5.8** mph	-	**0.00** in	Rain	Lig
1:53 AM	**42.1** °F	**38.4** °F	**42.1** °F	100%	**29.99** in	**2.5** mi	SSE	**5.8** mph	-	**0.00** in	Rain	Lig
2:53 AM	**42.1** °F	**37.1** °F	**42.1** °F	100%	**29.97** in	**2.5** mi	SSE	**8.1** mph	-	**0.02** in	Rain	Lig
2:55 AM	**42.1** °F	**37.1** °F	**42.1** °F	100%	**29.97** in	**3.0** mi	SSE	**8.1** mph	-	**0.00** in	Rain	Lig

Time (PST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Co
2:58 AM	42.1 °F	37.1 °F	42.1 °F	100%	29.97 in	2.5 mi	SSE	8.1 mph	-	0.00 in	Rain	Lig
3:53 AM	43.0 °F	38.8 °F	42.1 °F	97%	29.96 in	8.0 mi	SSE	6.9 mph	-	0.00 in		Ov
4:12 AM	43.0 °F	38.8 °F	42.1 °F	97%	29.95 in	9.0 mi	SE	6.9 mph	-	N/A		Ov
4:53 AM	44.1 °F	40.1 °F	43.0 °F	96%	29.94 in	9.0 mi	SSE	6.9 mph	-	0.00 in	Rain	Lig
5:53 AM	44.1 °F	39.0 °F	43.0 °F	96%	29.91 in	7.0 mi	SSE	9.2 mph	-	0.07 in	Rain	Lig
6:53 AM	44.1 °F	40.1 °F	44.1 °F	100%	29.87 in	7.0 mi	SSE	6.9 mph	-	0.03 in	Rain	Lig
7:53 AM	45.0 °F	41.2 °F	44.1 °F	97%	29.83 in	9.0 mi	SE	6.9 mph	-	0.08 in	Rain	Lig
8:53 AM	45.0 °F	41.8 °F	44.1 °F	97%	29.77 in	8.0 mi	ENE	5.8 mph	-	0.12 in	Rain	Lig
9:53 AM	45.0 °F	43.5 °F	43.0 °F	93%	29.73 in	5.0 mi	ENE	3.5 mph	-	0.09 in	Rain	Lig
10:33 AM	45.0 °F	-	44.1 °F	97%	29.71 in	5.0 mi	Calm	Calm	-	0.10 in	Rain	Lig
10:53 AM	45.0 °F	-	43.0 °F	93%	29.70 in	4.0 mi	Calm	Calm	-	0.14 in	Rain	Lig
11:53 AM	45.0 °F	43.5 °F	44.1 °F	97%	29.66 in	5.0 mi	ENE	3.5 mph	-	0.14 in	Rain	Lig
12:37 PM	46.0 °F	43.9 °F	45.0 °F	96%	29.66 in	3.0 mi	ESE	4.6 mph	-	0.09 in	Rain	Lig
12:53 PM	46.0 °F	-	45.0 °F	96%	29.67 in	5.0 mi	Calm	Calm	-	0.10 in	Rain	Lig
1:53 PM	48.0 °F	-	46.0 °F	93%	29.68 in	10.0 mi	SSE	12.7 mph	-	0.01 in		Ov
2:53 PM	48.9 °F	-	46.9 °F	93%	29.70 in	10.0 mi	SSE	9.2 mph	-	N/A		Mo Clo
3:53 PM	51.1 °F	-	48.0 °F	89%	29.71 in	10.0 mi	South	9.2 mph	-	N/A		Mo Clo
4:53 PM	51.1 °F	-	48.0 °F	89%	29.74 in	10.0 mi	South	10.4 mph	-	0.01 in		Mo Clo
5:53 PM	50.0 °F	-	46.9 °F	89%	29.79 in	10.0 mi	South	9.2 mph	-	N/A		Ov
6:53 PM	50.0 °F	-	48.0 °F	93%	29.83 in	9.0 mi	SSE	8.1 mph	-	N/A		Ov
7:53 PM	48.9 °F	-	48.0 °F	97%	29.87 in	6.0 mi	SSE	11.5 mph	-	N/A		Ov

Time (PST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Co
8:39 PM	48.9 °F	-	48.0 °F	97%	29.89 in	2.5 mi	SSE	10.4 mph	-	N/A		Ov
8:53 PM	48.9 °F	-	48.0 °F	97%	29.90 in	3.0 mi	South	9.2 mph	-	0.00 in	Rain	Lig
9:53 PM	50.0 °F	-	48.9 °F	96%	29.94 in	7.0 mi	South	8.1 mph	-	0.03 in		Ov
10:17 PM	50.0 °F	-	48.9 °F	96%	29.96 in	4.0 mi	South	8.1 mph	-	0.01 in	Rain	Lig
10:53 PM	51.1 °F	-	48.9 °F	92%	29.98 in	10.0 mi	SSW	12.7 mph	-	0.01 in		Ov
11:39 PM	50.0 °F	-	48.9 °F	96%	30.01 in	10.0 mi	SSW	8.1 mph	-	0.02 in		Ov
11:48 PM	50.0 °F	-	48.2 °F	94%	30.02 in	10.0 mi	South	6.9 mph	-	0.02 in		Ov
11:53 PM	51.1 °F	-	48.9 °F	92%	30.02 in	10.0 mi	SSW	6.9 mph	-	0.02 in		Ov

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

PBS Engineering & Environmental
Megan Nogeire
2517 Eastlake Ave, E #100
Seattle, WA 98102

RE: City of Tukwila SW
Work Order Number: 1801142

January 25, 2018

Attention Megan Nogeire:

Fremont Analytical, Inc. received 1 sample(s) on 1/11/2018 for the analyses presented in the following report.

Polychlorinated Biphenyls (PCB) by EPA 8082
Total Metals by EPA Method 200.8
Total Suspended Solids (TSS) by SM 2540D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager

Fremont Analytical

Date: *01/25/2018*

CLIENT: PBS Engineering & Environmental
Project: City of Tukwila SW
Work Order: 1801142

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1801142-001	MH-36-165	01/11/2018 10:52 AM	01/11/2018 11:30 AM

CLIENT: PBS Engineering & Environmental
Project: City of Tukwila SW

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.
Prep Comments for METHOD (PREP-PCB-W-LL), SAMPLE (1801142-001A) required Acid Cleanup Procedure (Using Method No 3665A).
Prep Comments for METHOD (PREP-PCB-W-LL), SAMPLE (1801142-001A) required Florisil Cleanup Procedure (Using Method No 3620C).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1801142**
Date Reported: **1/25/2018**

Client: PBS Engineering & Environmental
Project: City of Tukwila SW
Lab ID: 1801142-001
Client Sample ID: **MH-36-165**

Collection Date: 1/11/2018 10:52:00 AM
Matrix: Stormwater

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Polychlorinated Biphenyls (PCB) by EPA 8082				Batch ID: 19513		Analyst: SB
Aroclor 1016	ND	0.00106	MDL	µg/L	1	1/19/2018 2:56:03 PM
Aroclor 1221	ND	0.00106	MDL	µg/L	1	1/19/2018 2:56:03 PM
Aroclor 1232	ND	0.00106	MDL	µg/L	1	1/19/2018 2:56:03 PM
Aroclor 1242	ND	0.00106	MDL	µg/L	1	1/19/2018 2:56:03 PM
Aroclor 1248	ND	0.00106	MDL	µg/L	1	1/19/2018 2:56:03 PM
Aroclor 1254	ND	0.00106	MDL	µg/L	1	1/19/2018 2:56:03 PM
Aroclor 1260	ND	0.000867	MDL	µg/L	1	1/19/2018 2:56:03 PM
Aroclor 1262	ND	0.000867	MDL	µg/L	1	1/19/2018 2:56:03 PM
Aroclor 1268	ND	0.000867	MDL	µg/L	1	1/19/2018 2:56:03 PM
Total PCBs	ND	0.00106	MDL	µg/L	1	1/19/2018 2:56:03 PM
Surr: Decachlorobiphenyl	103	14.3 - 145		%Rec	1	1/19/2018 2:56:03 PM
Surr: Tetrachloro-m-xylene	89.3	5.8 - 131		%Rec	1	1/19/2018 2:56:03 PM
NOTES: MDL - Sample reported to Method Detection Limit (MDL)						
Total Metals by EPA Method 200.8				Batch ID: 19494		Analyst: WC
Copper	11.7	0.500		µg/L	1	1/15/2018 1:40:25 PM
Lead	5.39	0.500		µg/L	1	1/15/2018 1:40:25 PM
Zinc	60.8	1.50		µg/L	1	1/15/2018 1:40:25 PM
Total Suspended Solids (TSS) by SM 2540D				Batch ID: R41025		Analyst: KT
Total Suspended Solids	26.0	5.00		mg/L	1	1/11/2018 3:00:10 PM

Work Order: 1801142
CLIENT: PBS Engineering & Environmental
Project: City of Tukwila SW

QC SUMMARY REPORT

Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID MB-19513	SampType: MBLK			Units: µg/L		Prep Date: 1/16/2018		RunNo: 41291		
Client ID: MBLKW	Batch ID: 19513					Analysis Date: 1/19/2018		SeqNo: 796079		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.00999									
Aroclor 1221	ND	0.00999									
Aroclor 1232	ND	0.00999									
Aroclor 1242	ND	0.00999									
Aroclor 1248	ND	0.00999									
Aroclor 1254	ND	0.00999									
Aroclor 1260	ND	0.00999									
Aroclor 1262	ND	0.00999									
Aroclor 1268	ND	0.00999									
Total PCBs	ND	0.00999									
Surr: Decachlorobiphenyl	189		199.8		94.7	14.3	145				
Surr: Tetrachloro-m-xylene	133		199.8		66.7	5.8	131				

Sample ID LCS1-19513	SampType: LCS			Units: µg/L		Prep Date: 1/16/2018		RunNo: 41291		
Client ID: LCSW	Batch ID: 19513					Analysis Date: 1/19/2018		SeqNo: 796081		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.818	0.00999	0.9991	0	81.8	34.9	134				
Aroclor 1260	1.07	0.00999	0.9991	0	107	33.5	147				
Surr: Decachlorobiphenyl	194		199.8		97.0	14.3	145				
Surr: Tetrachloro-m-xylene	120		199.8		60.2	5.8	131				

Sample ID 1801142-001ADUP	SampType: DUP			Units: µg/L		Prep Date: 1/16/2018		RunNo: 41291		
Client ID: MH-36-165	Batch ID: 19513					Analysis Date: 1/19/2018		SeqNo: 796087		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.00998						0		30	
Aroclor 1221	ND	0.00998						0		30	
Aroclor 1232	ND	0.00998						0		30	
Aroclor 1242	ND	0.00998						0		30	

Work Order: 1801142
CLIENT: PBS Engineering & Environmental
Project: City of Tukwila SW

QC SUMMARY REPORT

Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID 1801142-001ADUP	SampType: DUP			Units: µg/L		Prep Date: 1/16/2018		RunNo: 41291		
Client ID: MH-36-165	Batch ID: 19513					Analysis Date: 1/19/2018		SeqNo: 796087		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1248	ND	0.00998						0		30	
Aroclor 1254	ND	0.00998						0		30	
Aroclor 1260	ND	0.00998						0		30	
Aroclor 1262	ND	0.00998						0		30	
Aroclor 1268	ND	0.00998						0		30	
Total PCBs	ND	0.00998						0		30	
Surr: Decachlorobiphenyl	213		199.7		107	14.3	145		0		
Surr: Tetrachloro-m-xylene	185		199.7		92.5	5.8	131		0		

Sample ID 1801176-003BMS	SampType: MS			Units: µg/L		Prep Date: 1/16/2018		RunNo: 41291		
Client ID: BATCH	Batch ID: 19513					Analysis Date: 1/19/2018		SeqNo: 796090		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.914	0.00998	0.9984	0	91.5	30.6	133				
Aroclor 1260	1.32	0.00998	0.9984	0	132	32	128				S
Surr: Decachlorobiphenyl	184		199.7		92.1	14.3	145				
Surr: Tetrachloro-m-xylene	161		199.7		80.5	5.8	131				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID 1801176-003BMSD	SampType: MSD			Units: µg/L		Prep Date: 1/16/2018		RunNo: 41291		
Client ID: BATCH	Batch ID: 19513					Analysis Date: 1/19/2018		SeqNo: 796092		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.878	0.00998	0.9981	0	87.9	30.6	133	0.9135	4.02	30	
Aroclor 1260	1.25	0.00998	0.9981	0	125	32	128	1.322	5.68	30	
Surr: Decachlorobiphenyl	172		199.6		86.0	14.3	145		0		
Surr: Tetrachloro-m-xylene	152		199.6		76.2	5.8	131		0		

Work Order: 1801142
CLIENT: PBS Engineering & Environmental
Project: City of Tukwila SW

QC SUMMARY REPORT

Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID **LCS2-19513**	SampType: **LCS**			Units: **µg/L**		Prep Date: **1/16/2018**		RunNo: **41291**			
Client ID: **LCSW**	Batch ID: **19513**					Analysis Date: **1/24/2018**		SeqNo: **796212**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1254	1.79	0.00999	0.9988	0	180	34	121				S
Surr: Decachlorobiphenyl	266		199.8		133	14.3	145				
Surr: Tetrachloro-m-xylene	186		199.8		93.2	5.8	131				

NOTES:
S - Outlying spike recovery observed (high bias). Samples are non-detect for this analyte; no further action required.

Work Order: 1801142
CLIENT: PBS Engineering & Environmental
Project: City of Tukwila SW

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID	MB-19494	SampType:	MBLK			Units:	µg/L		Prep Date:	1/15/2018		RunNo:	41091	
Client ID:	MBLKW	Batch ID:	19494						Analysis Date:	1/15/2018		SeqNo:	791608	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		ND	0.500											
Lead		ND	0.500											
Zinc		ND	1.50											

Sample ID	LCS-19494	SampType:	LCS			Units:	µg/L		Prep Date:	1/15/2018		RunNo:	41091	
Client ID:	LCSW	Batch ID:	19494						Analysis Date:	1/15/2018		SeqNo:	791609	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		105	0.500	100.0	0	105	85	115						
Lead		53.6	0.500	50.00	0	107	85	115						
Zinc		105	1.50	100.0	0	105	85	115						

Sample ID	1801156-001DDUP	SampType:	DUP			Units:	µg/L		Prep Date:	1/15/2018		RunNo:	41091	
Client ID:	BATCH	Batch ID:	19494						Analysis Date:	1/15/2018		SeqNo:	791613	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		18.5	0.500						19.94	7.61	30			
Lead		3.23	0.500						3.203	0.917	30			
Zinc		18.3	1.50						10.23	56.5	30	R		

NOTES:
R - High RPD observed. The method is in control as indicated by the LCS.

Sample ID	1801156-001DMS	SampType:	MS			Units:	µg/L		Prep Date:	1/15/2018		RunNo:	41091	
Client ID:	BATCH	Batch ID:	19494						Analysis Date:	1/15/2018		SeqNo:	791614	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		521	0.500	500.0	19.94	100	70	130						
Lead		270	0.500	250.0	3.203	107	70	130						
Zinc		503	1.50	500.0	10.23	98.5	70	130						

Work Order: 1801142
CLIENT: PBS Engineering & Environmental
Project: City of Tukwila SW

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID **1801156-001DMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/15/2018** RunNo: **41091**
Client ID: **BATCH** Batch ID: **19494** Analysis Date: **1/15/2018** SeqNo: **791615**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	524	0.500	500.0	19.94	101	70	130	521.2	0.449	30	
Lead	268	0.500	250.0	3.203	106	70	130	269.6	0.557	30	
Zinc	501	1.50	500.0	10.23	98.1	70	130	502.9	0.474	30	

Work Order: 1801142
CLIENT: PBS Engineering & Environmental
Project: City of Tukwila SW

QC SUMMARY REPORT

Total Suspended Solids (TSS) by SM 2540D

Sample ID MB-R41025	SampType: MBLK			Units: mg/L		Prep Date: 1/11/2018			RunNo: 41025		
Client ID: MBLKW	Batch ID: R41025					Analysis Date: 1/11/2018			SeqNo: 790458		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Suspended Solids	ND	5.00									

Sample ID LCS-R41025	SampType: LCS			Units: mg/L		Prep Date: 1/11/2018			RunNo: 41025		
Client ID: LCSW	Batch ID: R41025					Analysis Date: 1/11/2018			SeqNo: 790459		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Suspended Solids	354	10.9	300.0	0	118	65	135				

Sample ID 1801067-001CDUP	SampType: DUP			Units: mg/L		Prep Date: 1/11/2018			RunNo: 41025		
Client ID: BATCH	Batch ID: R41025					Analysis Date: 1/11/2018			SeqNo: 790461		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Suspended Solids	124	10.0						132.0	6.25	30	

Sample ID 1801150-002BDUP	SampType: DUP			Units: mg/L		Prep Date: 1/11/2018			RunNo: 41025		
Client ID: BATCH	Batch ID: R41025					Analysis Date: 1/11/2018			SeqNo: 790473		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Suspended Solids	19.0	5.00						18.00	5.41	30	

Fremont Analytical

Sample Log-In Check List

Client Name:	**PBS**	Work Order Number:	**1801142**
Logged by:	**Brianna Barnes**	Date Received:	**1/11/2018 11:30:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	3.7
Sample	3.3
Temp Blank	1.4

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 1/11/18 Page: 1 of: 1
Laboratory Project No (internal): 1901142
Project Name: City of Tukwila SW
Special Remarks:
Project No: 40409.026
Client: PBS
Collected by: M. Nogeire
Address: 2517 Eastlake Ave E #200
Location: Tukwila, WA
City, State, Zip: Seattle, WA 98102
Report To (PM): M. Nogeire
Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)
Telephone: 206.491.1220
Fax:
PM Email:

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	TSS			Comments
1	MH-32165	1/11/18	1052	SW								X		X			X			* PCBs down to 0.004
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr (Cu) Fe Hg K Mg Mn Mo Na Ni (Pb) Sb Se Sr Sn Ti Tl U V (Zn)

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard
☐ 3 Day
☐ 2 Day
☐ Next Day
Same Day _____ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x	1/11/18 1130	x	1/11/2019 1130
Relinquished	Date/Time	Received	Date/Time
x		x	

Susan Murrietta

From: Megan Nogeire <Megan.Nogeire@pbsusa.com>
Sent: Tuesday, July 3, 2018 3:41 PM
To: Ryan Larson
Cc: Tom Mergy
Subject: Boeing Z Line Q2 Stormwater Sampling

Good afternoon Ryan,

PBS was unable to collect a stormwater sample this quarter at the Boeing Z Line. We will be looking out for some rain heading into Q3.

Have a great 4th of July!

Megan

Megan Nogeire
Project Scientist

PBS
2517 Eastlake Ave. East, Suite 100, Seattle, WA 98102
office: 206.233.9639 | direct: 206.766.7615 | cell: 206.491.1220
megan.nogeire@pbsusa.com
pbsusa.com

September 28, 2018

Attn: Ryan Larson
City of Tukwila Public Works
6200 Southcenter Blvd
Tukwila, Washington

Re: 2018 Third Quarter – Boeing Z – Line Stormwater Sampling, Tukwila, Washington
PBS Project Number 40407.026, City Project No: 91041204
Date Sampled: No third quarter rain event

Dear Mr. Larson,

PBS Engineering and Environmental Inc. (PBS) prepared this memorandum to document the stormwater sample program event (or non-event) for the third quarter of 2018 at the City Stormwater Outfall to Boeing Line "Z" located at the intersection of East Marginal Way South and South 81st Place in Tukwila (manhole 36-165) in Seattle, Washington. Refer to Figure 1 for sample location.

Based on the review of precipitation data during the period from July 1 to September 30 of 2018 (i.e., 3rd quarter) there was not a recorded precipitation event that generated an off-site discharge of stormwater during this period based on precipitation data and site knowledge.

Precipitation data was measured at the Seattle Boeing Field (Station KBFI) located approximately 200 feet to the north from the "Z" Line Sampling Location. Data was obtained from the MesoWest website that is through the University of Utah's Department of Atmospheric Sciences (https://mesowest.utah.edu/). Upon review of the precipitation data, PBS identified one storm event that had a storm amount greater than 0.1 inches during business hours. The event was on September 14, 2018 and reported 0.1 inches of precipitation over a 24-hr period. The rain was sporadic and based on weather observations a sampling attempt was not made. The precipitation data for September 14, 2018 is presented in Table 1.

PBS will coordinate the 4th Quarter-2018 sampling from the manhole location during a measurable precipitation runoff event. If you have any questions regarding the enclosed material, please call me at 206.233.9639.

Sincerely,

Megan Nogeire
Digitally signed by Megan Nogeire
Date: 2018.09.28 15:45:29 -07'00'

Megan Nogeire, Project Scientist
PBS Engineering and Environmental Inc.

Review: Tom Mergy

Enclosed: Table 1: September 14, 2018 Precipitation Data

Table 1: September 14, 2018 Precipitation Data

STATION: KBFI
STATION NAME: Boeing Field - King County International Airport
LATITUDE: 47.54548
LONGITUDE: -122.31470
ELEVATION [ft]: 20
STATE: WA

Station_ID	Date_Time	air_temp_set_1 Fahrenheit	relative_humidity_set_1 %	precip_accum_one_hour_set_1 Inches
KBFI	09/14/2018 00:35 UTC	68	49.15	
KBFI	09/14/2018 00:40 UTC	66.2	52.3	
KBFI	09/14/2018 00:45 UTC	66.2	52.3	
KBFI	09/14/2018 00:50 UTC	66.2	52.3	
KBFI	09/14/2018 00:53 UTC	66.92	50.67	
KBFI	09/14/2018 00:55 UTC	66.2	52.3	
KBFI	09/14/2018 01:00 UTC	66.2	52.3	
KBFI	09/14/2018 01:05 UTC	66.2	52.3	
KBFI	09/14/2018 01:10 UTC	66.2	55.93	
KBFI	09/14/2018 01:15 UTC	66.2	55.93	
KBFI	09/14/2018 01:20 UTC	66.2	55.93	
KBFI	09/14/2018 01:25 UTC	66.2	52.3	
KBFI	09/14/2018 01:30 UTC	66.2	52.3	
KBFI	09/14/2018 01:35 UTC	66.2	52.3	
KBFI	09/14/2018 01:40 UTC	66.2	52.3	
KBFI	09/14/2018 01:53 UTC	64.94	56.13	0.001
KBFI	09/14/2018 01:55 UTC	64.4	55.67	
KBFI	09/14/2018 02:00 UTC	64.4	55.67	
KBFI	09/14/2018 02:05 UTC	64.4	55.67	
KBFI	09/14/2018 02:10 UTC	64.4	55.67	
KBFI	09/14/2018 02:15 UTC	64.4	55.67	
KBFI	09/14/2018 02:20 UTC	64.4	55.67	
KBFI	09/14/2018 02:25 UTC	64.4	55.67	
KBFI	09/14/2018 02:30 UTC	64.4	55.67	
KBFI	09/14/2018 02:35 UTC	64.4	55.67	
KBFI	09/14/2018 02:40 UTC	64.4	55.67	
KBFI	09/14/2018 02:45 UTC	64.4	55.67	
KBFI	09/14/2018 02:50 UTC	64.4	55.67	
KBFI	09/14/2018 02:53 UTC	64.04	57.92	
KBFI	09/14/2018 02:55 UTC	64.4	55.67	
KBFI	09/14/2018 03:00 UTC	64.4	55.67	
KBFI	09/14/2018 03:05 UTC	64.4	55.67	
KBFI	09/14/2018 03:10 UTC	64.4	55.67	
KBFI	09/14/2018 03:15 UTC	64.4	55.67	
KBFI	09/14/2018 03:20 UTC	64.4	55.67	
KBFI	09/14/2018 03:25 UTC	64.4	59.54	
KBFI	09/14/2018 03:35 UTC	62.6	63.42	
KBFI	09/14/2018 03:40 UTC	62.6	67.79	
KBFI	09/14/2018 03:45 UTC	62.6	67.79	
KBFI	09/14/2018 03:50 UTC	62.6	67.79	

KBFI	09/14/2018 03:53 UTC	62.06	67.27	
KBFI	09/14/2018 03:55 UTC	62.6	67.79	
KBFI	09/14/2018 04:00 UTC	62.6	67.79	
KBFI	09/14/2018 04:05 UTC	62.6	67.79	
KBFI	09/14/2018 04:10 UTC	62.6	63.42	
KBFI	09/14/2018 04:15 UTC	62.6	63.42	
KBFI	09/14/2018 04:20 UTC	62.6	67.79	
KBFI	09/14/2018 04:25 UTC	62.6	67.79	
KBFI	09/14/2018 04:30 UTC	62.6	72.42	
KBFI	09/14/2018 04:35 UTC	60.8	77.17	
KBFI	09/14/2018 04:40 UTC	60.8	77.17	
KBFI	09/14/2018 04:50 UTC	60.8	77.17	
KBFI	09/14/2018 04:53 UTC	60.98	75.18	
KBFI	09/14/2018 04:55 UTC	60.8	77.17	
KBFI	09/14/2018 05:00 UTC	60.8	77.17	
KBFI	09/14/2018 05:05 UTC	62.6	72.42	
KBFI	09/14/2018 05:10 UTC	60.8	77.17	
KBFI	09/14/2018 05:20 UTC	60.8	77.17	
KBFI	09/14/2018 05:25 UTC	60.8	77.17	
KBFI	09/14/2018 05:30 UTC	60.8	77.17	
KBFI	09/14/2018 05:35 UTC	60.8	77.17	
KBFI	09/14/2018 05:40 UTC	60.8	77.17	
KBFI	09/14/2018 05:45 UTC	60.8	77.17	
KBFI	09/14/2018 05:50 UTC	60.8	72.23	0.001
KBFI	09/14/2018 05:53 UTC	60.08	74.59	0.001
KBFI	09/14/2018 05:55 UTC	60.8	72.23	
KBFI	09/14/2018 06:00 UTC	60.8	72.23	
KBFI	09/14/2018 06:05 UTC	59	77.01	
KBFI	09/14/2018 06:10 UTC	59	82.27	
KBFI	09/14/2018 06:20 UTC	57.2	87.75	0.07
KBFI	09/14/2018 06:25 UTC	57.2	93.7	0.07
KBFI	09/14/2018 06:35 UTC	57.2	93.7	0.07
KBFI	09/14/2018 06:40 UTC	57.2	93.7	0.07
KBFI	09/14/2018 06:45 UTC	57.2	93.7	0.07
KBFI	09/14/2018 06:50 UTC	57.2	93.7	0.07
KBFI	09/14/2018 06:53 UTC	57.92	90.12	0.07
KBFI	09/14/2018 06:55 UTC	57.2	93.7	
KBFI	09/14/2018 07:00 UTC	57.2	93.7	
KBFI	09/14/2018 07:05 UTC	57.2	93.7	
KBFI	09/14/2018 07:10 UTC	57.2	93.7	
KBFI	09/14/2018 07:15 UTC	57.2	93.7	
KBFI	09/14/2018 07:20 UTC	57.2	93.7	
KBFI	09/14/2018 07:25 UTC	57.2	93.7	
KBFI	09/14/2018 07:30 UTC	57.2	93.7	0.01
KBFI	09/14/2018 07:35 UTC	57.2	93.7	0.04
KBFI	09/14/2018 07:40 UTC	57.2	93.7	0.06
KBFI	09/14/2018 07:50 UTC	57.2	100	0.08
KBFI	09/14/2018 07:53 UTC	57.92	96.82	0.09
KBFI	09/14/2018 07:55 UTC	57.2	100	
KBFI	09/14/2018 08:00 UTC	57.2	100	
KBFI	09/14/2018 08:05 UTC	57.2	100	0.04
KBFI	09/14/2018 08:10 UTC	57.2	100	0.04

KBFI	09/14/2018 08:15 UTC	57.2	100	0.04
KBFI	09/14/2018 08:20 UTC	57.2	100	0.04
KBFI	09/14/2018 08:25 UTC	57.2	100	0.04
KBFI	09/14/2018 08:30 UTC	57.2	100	0.04
KBFI	09/14/2018 08:33 UTC	57.92	96.82	0.04
KBFI	09/14/2018 08:35 UTC	57.2	100	0.04
KBFI	09/14/2018 08:40 UTC	57.2	100	0.04
KBFI	09/14/2018 08:45 UTC	57.2	100	0.04
KBFI	09/14/2018 08:50 UTC	57.2	100	0.04
KBFI	09/14/2018 08:53 UTC	57.92	100	0.04
KBFI	09/14/2018 08:55 UTC	57.2	100	
KBFI	09/14/2018 09:00 UTC	57.2	100	
KBFI	09/14/2018 09:10 UTC	57.2	100	
KBFI	09/14/2018 09:15 UTC	57.2	100	
KBFI	09/14/2018 09:20 UTC	57.2	100	
KBFI	09/14/2018 09:30 UTC	57.2	100	
KBFI	09/14/2018 09:35 UTC	57.2	100	
KBFI	09/14/2018 09:40 UTC	57.2	100	
KBFI	09/14/2018 09:53 UTC	57.02	93.09	
KBFI	09/14/2018 09:55 UTC	57.2	93.7	
KBFI	09/14/2018 10:00 UTC	57.2	93.7	
KBFI	09/14/2018 10:05 UTC	57.2	93.7	
KBFI	09/14/2018 10:10 UTC	57.2	93.7	
KBFI	09/14/2018 10:15 UTC	57.2	87.75	
KBFI	09/14/2018 10:30 UTC	57.2	87.75	
KBFI	09/14/2018 10:35 UTC	57.2	87.75	
KBFI	09/14/2018 10:40 UTC	57.2	87.75	
KBFI	09/14/2018 10:45 UTC	57.2	87.75	
KBFI	09/14/2018 10:50 UTC	57.2	87.75	
KBFI	09/14/2018 10:53 UTC	57.02	89.49	
KBFI	09/14/2018 10:55 UTC	57.2	87.75	
KBFI	09/14/2018 11:00 UTC	57.2	87.75	
KBFI	09/14/2018 11:05 UTC	57.2	87.75	
KBFI	09/14/2018 11:10 UTC	57.2	87.75	
KBFI	09/14/2018 11:15 UTC	57.2	87.75	
KBFI	09/14/2018 11:28 UTC	57.02	89.49	
KBFI	09/14/2018 11:30 UTC	57.2	87.75	
KBFI	09/14/2018 11:40 UTC	57.2	87.75	
KBFI	09/14/2018 11:45 UTC	57.2	87.75	
KBFI	09/14/2018 11:50 UTC	57.2	87.75	
KBFI	09/14/2018 11:53 UTC	57.02	89.49	
KBFI	09/14/2018 11:55 UTC	57.2	87.75	
KBFI	09/14/2018 12:05 UTC	57.2	87.75	
KBFI	09/14/2018 12:10 UTC	57.2	87.75	
KBFI	09/14/2018 12:14 UTC	57.02	89.49	
KBFI	09/14/2018 12:15 UTC	57.2	87.75	
KBFI	09/14/2018 12:20 UTC	57.2	87.75	
KBFI	09/14/2018 12:25 UTC	57.2	87.75	
KBFI	09/14/2018 12:30 UTC	57.2	87.75	
KBFI	09/14/2018 12:35 UTC	57.2	87.75	
KBFI	09/14/2018 12:40 UTC	57.2	87.75	
KBFI	09/14/2018 12:50 UTC	57.2	87.75	

KBFI	09/14/2018 12:53 UTC	57.02	89.49	0.001
KBFI	09/14/2018 12:55 UTC	57.2	87.75	
KBFI	09/14/2018 13:10 UTC	57.2	87.75	
KBFI	09/14/2018 13:15 UTC	57.2	87.75	
KBFI	09/14/2018 13:20 UTC	57.2	87.75	
KBFI	09/14/2018 13:25 UTC	57.2	87.75	
KBFI	09/14/2018 13:35 UTC	57.2	87.75	
KBFI	09/14/2018 13:40 UTC	55.4	93.65	
KBFI	09/14/2018 13:45 UTC	55.4	93.65	0.01
KBFI	09/14/2018 13:50 UTC	55.4	93.65	0.01
KBFI	09/14/2018 13:53 UTC	55.94	93.05	0.01
KBFI	09/14/2018 13:55 UTC	55.4	93.65	
KBFI	09/14/2018 14:00 UTC	55.4	93.65	
KBFI	09/14/2018 14:05 UTC	55.4	93.65	
KBFI	09/14/2018 14:10 UTC	55.4	93.65	
KBFI	09/14/2018 14:15 UTC	55.4	93.65	
KBFI	09/14/2018 14:20 UTC	55.4	93.65	
KBFI	09/14/2018 14:25 UTC	55.4	93.65	
KBFI	09/14/2018 14:35 UTC	57.2	87.75	
KBFI	09/14/2018 14:40 UTC	57.2	87.75	
KBFI	09/14/2018 14:45 UTC	57.2	87.75	
KBFI	09/14/2018 14:50 UTC	57.2	87.75	
KBFI	09/14/2018 14:53 UTC	57.02	89.49	0.06
KBFI	09/14/2018 14:55 UTC	57.2	87.75	0.03
KBFI	09/14/2018 15:00 UTC	55.4	93.65	
KBFI	09/14/2018 15:05 UTC	55.4	93.65	0.12
KBFI	09/14/2018 15:09 UTC	55.94	93.05	0.14
KBFI	09/14/2018 15:10 UTC	55.4	93.65	0.14
KBFI	09/14/2018 15:11 UTC	55.94	93.05	0.14
KBFI	09/14/2018 15:20 UTC	55.4	93.65	0.17
KBFI	09/14/2018 15:22 UTC	55.94	90.04	0.17
KBFI	09/14/2018 15:25 UTC	55.4	93.65	0.18
KBFI	09/14/2018 15:30 UTC	55.4	93.65	0.19
KBFI	09/14/2018 15:35 UTC	55.4	93.65	0.19
KBFI	09/14/2018 15:40 UTC	55.4	93.65	0.19
KBFI	09/14/2018 15:50 UTC	55.4	93.65	0.19
KBFI	09/14/2018 15:53 UTC	55.94	90.04	0.19
KBFI	09/14/2018 15:55 UTC	55.4	93.65	0.01
KBFI	09/14/2018 16:00 UTC	55.4	93.65	
KBFI	09/14/2018 16:05 UTC	55.4	93.65	0.01
KBFI	09/14/2018 16:10 UTC	55.4	93.65	0.01
KBFI	09/14/2018 16:15 UTC	55.4	93.65	0.01
KBFI	09/14/2018 16:20 UTC	55.4	93.65	0.01
KBFI	09/14/2018 16:25 UTC	55.4	93.65	0.01
KBFI	09/14/2018 16:30 UTC	57.2	87.75	0.01
KBFI	09/14/2018 16:32 UTC	57.02	86.6	0.01
KBFI	09/14/2018 16:35 UTC	57.2	87.75	0.01
KBFI	09/14/2018 16:40 UTC	57.2	87.75	0.01
KBFI	09/14/2018 16:45 UTC	57.2	87.75	0.01
KBFI	09/14/2018 16:50 UTC	57.2	87.75	0.01
KBFI	09/14/2018 16:53 UTC	57.92	83.84	0.01
KBFI	09/14/2018 16:55 UTC	57.2	87.75	

KBFI	09/14/2018 17:00 UTC	57.2	87.75
KBFI	09/14/2018 17:05 UTC	57.2	87.75
KBFI	09/14/2018 17:10 UTC	57.2	87.75
KBFI	09/14/2018 17:15 UTC	57.2	87.75
KBFI	09/14/2018 17:20 UTC	57.2	87.75
KBFI	09/14/2018 17:25 UTC	57.2	87.75
KBFI	09/14/2018 17:35 UTC	57.2	87.75
KBFI	09/14/2018 17:40 UTC	57.2	87.75
KBFI	09/14/2018 17:45 UTC	57.2	87.75
KBFI	09/14/2018 17:50 UTC	59	82.27
KBFI	09/14/2018 17:53 UTC	59	80.66
KBFI	09/14/2018 17:55 UTC	59	82.27
KBFI	09/14/2018 18:00 UTC	59	82.27
KBFI	09/14/2018 18:05 UTC	59	82.27
KBFI	09/14/2018 18:10 UTC	59	82.27
KBFI	09/14/2018 18:15 UTC	59	82.27
KBFI	09/14/2018 18:20 UTC	59	82.27
KBFI	09/14/2018 18:30 UTC	60.8	77.17
KBFI	09/14/2018 18:35 UTC	60.8	77.17
KBFI	09/14/2018 18:40 UTC	60.8	72.23
KBFI	09/14/2018 18:45 UTC	60.8	72.23
KBFI	09/14/2018 18:50 UTC	62.6	67.79
KBFI	09/14/2018 18:53 UTC	62.06	69.55
KBFI	09/14/2018 18:55 UTC	62.6	72.42
KBFI	09/14/2018 19:05 UTC	62.6	72.42
KBFI	09/14/2018 19:10 UTC	62.6	67.79
KBFI	09/14/2018 19:15 UTC	62.6	67.79
KBFI	09/14/2018 19:20 UTC	62.6	67.79
KBFI	09/14/2018 19:25 UTC	62.6	67.79
KBFI	09/14/2018 19:30 UTC	62.6	67.79
KBFI	09/14/2018 19:35 UTC	62.6	67.79
KBFI	09/14/2018 19:45 UTC	62.6	63.42
KBFI	09/14/2018 19:50 UTC	64.4	59.54
KBFI	09/14/2018 19:53 UTC	64.04	62.76
KBFI	09/14/2018 19:55 UTC	62.6	67.79
KBFI	09/14/2018 20:00 UTC	62.6	67.79
KBFI	09/14/2018 20:05 UTC	62.6	67.79
KBFI	09/14/2018 20:10 UTC	64.4	59.54
KBFI	09/14/2018 20:15 UTC	62.6	63.42
KBFI	09/14/2018 20:20 UTC	62.6	63.42
KBFI	09/14/2018 20:25 UTC	64.4	59.54
KBFI	09/14/2018 20:30 UTC	64.4	55.67
KBFI	09/14/2018 20:35 UTC	64.4	55.67
KBFI	09/14/2018 20:40 UTC	64.4	55.67
KBFI	09/14/2018 20:50 UTC	64.4	55.67
KBFI	09/14/2018 20:53 UTC	64.94	58.43
KBFI	09/14/2018 21:00 UTC	64.4	59.54
KBFI	09/14/2018 21:05 UTC	64.4	59.54
KBFI	09/14/2018 21:10 UTC	66.2	55.93
KBFI	09/14/2018 21:15 UTC	64.4	55.67
KBFI	09/14/2018 21:20 UTC	66.2	52.3
KBFI	09/14/2018 21:30 UTC	66.2	55.93

KBFI	09/14/2018 21:35 UTC	66.2	52.3
KBFI	09/14/2018 21:45 UTC	68	49.15
KBFI	09/14/2018 21:53 UTC	66.02	50.19
KBFI	09/14/2018 21:55 UTC	66.2	52.3
KBFI	09/14/2018 22:00 UTC	66.2	52.3
KBFI	09/14/2018 22:05 UTC	66.2	52.3
KBFI	09/14/2018 22:15 UTC	66.2	52.3
KBFI	09/14/2018 22:25 UTC	66.2	48.87
KBFI	09/14/2018 22:30 UTC	66.2	48.87
KBFI	09/14/2018 22:35 UTC	66.2	48.87
KBFI	09/14/2018 22:45 UTC	66.2	48.87
KBFI	09/14/2018 22:53 UTC	66.02	48.51
KBFI	09/14/2018 22:55 UTC	66.2	48.87
KBFI	09/14/2018 23:00 UTC	66.2	48.87
KBFI	09/14/2018 23:05 UTC	66.2	48.87
KBFI	09/14/2018 23:10 UTC	66.2	48.87
KBFI	09/14/2018 23:15 UTC	66.2	48.87
KBFI	09/14/2018 23:20 UTC	66.2	48.87
KBFI	09/14/2018 23:30 UTC	66.2	48.87
KBFI	09/14/2018 23:35 UTC	66.2	48.87
KBFI	09/14/2018 23:40 UTC	66.2	48.87
KBFI	09/14/2018 23:45 UTC	66.2	48.87
KBFI	09/14/2018 23:50 UTC	66.2	48.87
KBFI	09/14/2018 23:53 UTC	66.02	48.51
KBFI	09/14/2018 23:55 UTC	66.2	48.87

December 21, 2018

Attn: Ryan Larson
City of Tukwila Public Works
6200 Southcenter Blvd
Tukwila, Washington

Re: 2018 fourth Quarter – Boeing Z – Line Stormwater Sampling, Tukwila, Washington
PBS Project Number 40407.026, City Project No: 91041204
Date Sampled: November 26, 2018

Dear Mr. Larson,

Attached please find a summary table of analytical test results, the sample collection field form, and a copy of the laboratory data report for samples collected on November 26, 2018 from the City Stormwater Outfall to Boeing Line "Z" located at the intersection of East Marginal Way South and South 81st Place in Tukwila (manhole 36-165) in Seattle, Washington. The sampling was conducted in accordance with the *Stormwater Sampling and Analysis Plan, City Outfall to Boeing Z Line*, PBS-March 16, 2016.

Identification and visual observations of the stormwater sample point are presented below. A summary of the laboratory analysis results at the sample location is presented as Table 1 (attached). Rainfall amount on this day (24-hour period) totaled 1.36 inches (Source: Weather Underground – Seattle, Seattle Boeing Field (KBFI weather station)).

Manhole 36-165: The sample point is a manhole that conveys runoff from East Marginal Way and is located just upstream of the former Boeing plant Z-line storm sewer (see Figure 1). PBS collected the sample from the channel at the bottom of Manhole 36-165 on November 26, 2018.

There was some floating solids observed during the sample collection but no visible sheen. The analyzed sample indicated that levels of total suspended solids (17 milligrams per liter (mg/L)), zinc (71.5 micrograms per liter (µg/L), pH (7.6), lead (4.51 µg/L) and polychlorinated biphenyls (PCBs) (<0.001 µg/L) were within the adopted benchmark stormwater guidance levels (Washington State Department of Ecology *Stormwater Sampling Manual A Guidance for the Industrial Stormwater General Permit* dated December 2015). Turbidity (50 nephelometric turbidity units (NTU)) and copper (22.6 µg/L) were the only exceedance of the benchmark values. The benchmark levels are used as guidance levels, since this sample location is not regulated under a specified stormwater discharge permit.

PBS will coordinate the 1st Quarter-2019 sampling from the manhole location during a measurable precipitation runoff event. If you have any questions regarding the enclosed material, please call me at 206.233.9639.

Sincerely,

Megan Nogeire, Project Scientist
PBS Engineering and Environmental Inc.

Review: Tom Mergy

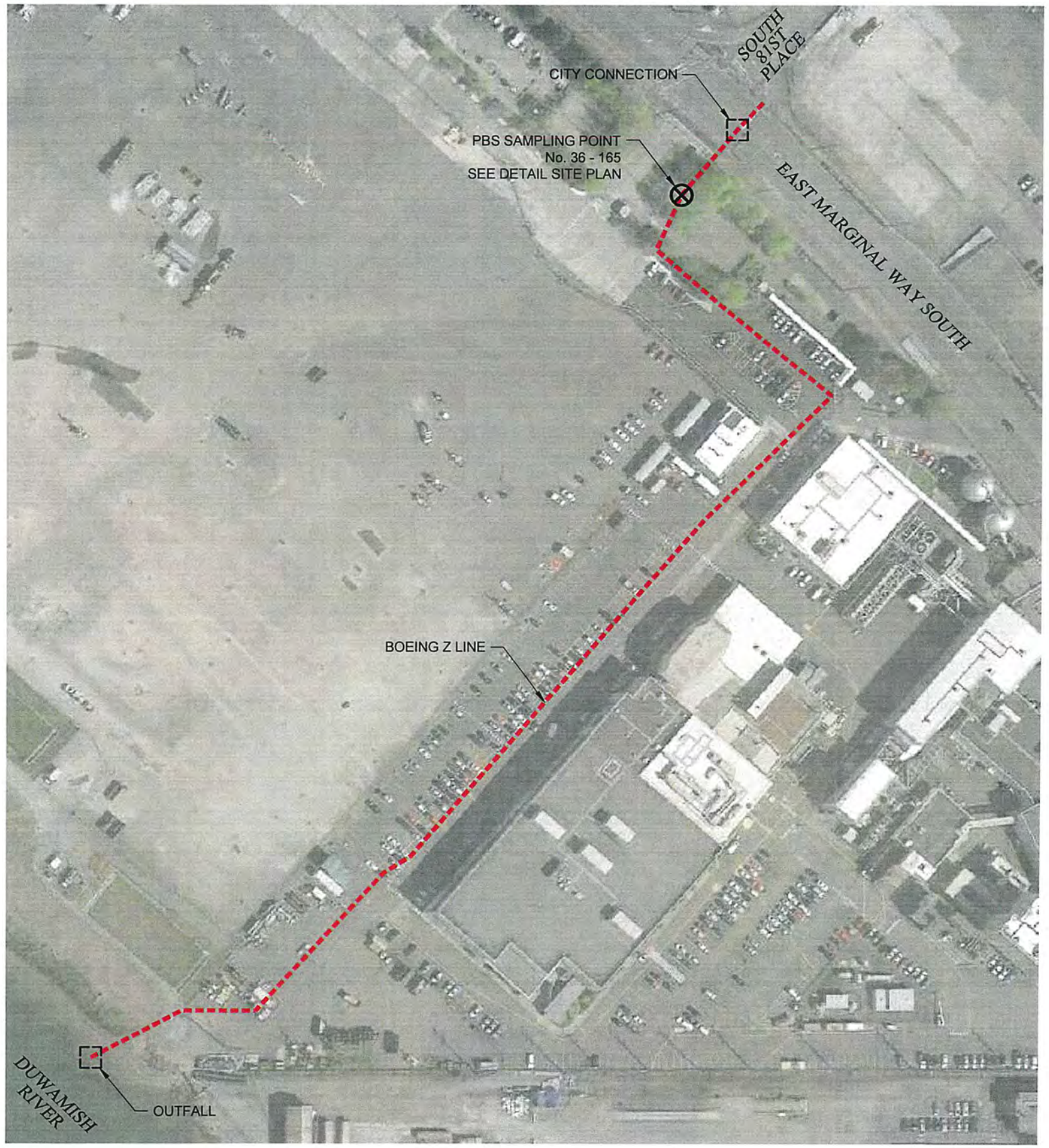
Enclosed:
Table 1: Stormwater Sampling Data Summary
Figure 1: Manhole Location Map
Field Inspection Form
Laboratory Analysis Report

Table 1: Stormwater Sample Data Summary
Beeing Z-Line Stormwater Sampling - Tukwila, Washington

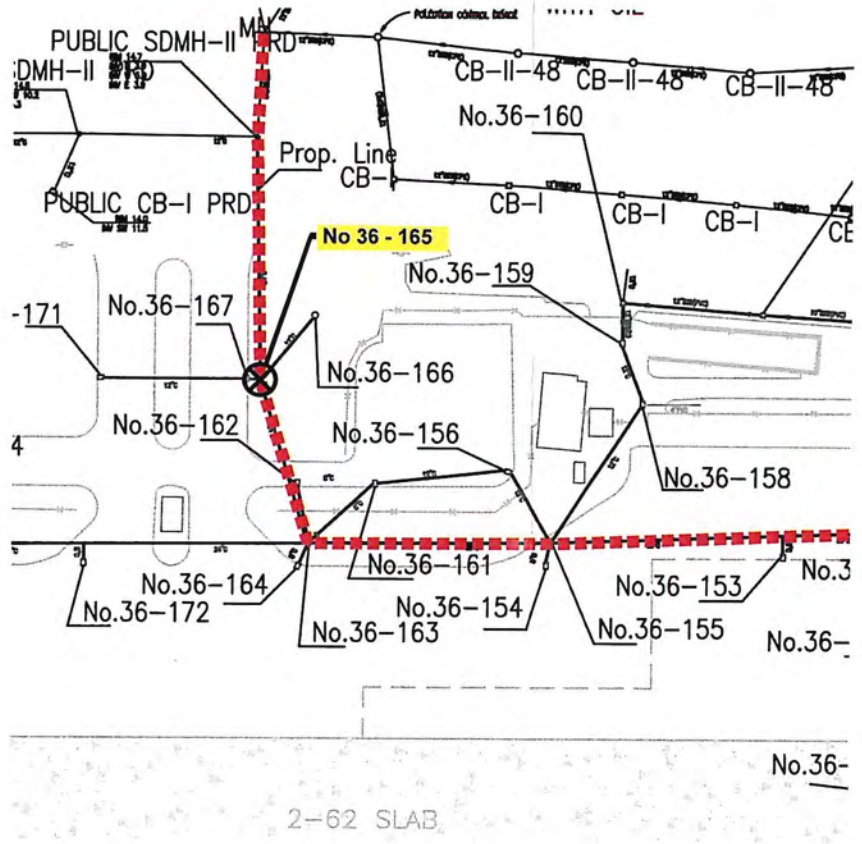
PBS Project No. 40407.026

Sample Location	Year	Quarter	Date Sampled	pH	Metals			TSS	Oil Sheen (Yes/No)	Turbidity	PCBs
					Copper	Lead	Zinc				
MH - 36-165	2016	2	NDQ	NDQ							
		3	9/2/2016	7.6	31.7	9.43	120	55	No	81	<0.0041*
		4	10/13/2016	7.4	16.7	4.79	59.5	16	No	50	<0.00526*
	2017	1	2/9/2017	7.0	15.5	6.30	58.8	23	No	46	<0.002
		2	5/16/2017	6.5	13.5	4.98	72.4	38	No	59	<0.002
		3	NDQ	NDQ							
		4	10/18/2017	6.9	28.8	10.8	131	93	No	105	<0.001
	2018	1	1/11/2018	6.9	11.7	5.39	60.8	26	No	50	<0.001
		2	SNC	Sampling was not completed this quarter							
		3	NDQ	NDQ							
		4	11/26/2018	7.6	**22.6**	4.51	71.5	17	No	**43**	<0.001
Benchmark Criteria				**5.0-9.0**	**14 ug/L**	**82 ug/L**	**117 ug/L**	**30 mg/L**	**No Visible Sheen**	**25 NTU**	**0.004 ug/L**

Notes:
SNC = Sampling not completed
NDQ = No Discharge During Quarter
< = Not Detected at the Reporting Limit
* = PCBs were not detected above the method detection limit (MRL)



SITE PLAN
SCALE: 1" = 150'



DETAIL SITE PLAN
SCALE: 1" = 150'

LEGEND

- BOEING Z LINE
- STORMWATER MANHOLE NO. 36 - 165

PREPARED FOR: BOEING

PBS Engineering and Environmental Inc.
214 East Galer Street, Suite 300
Seattle, WA 98102
206.233.9639
pbsusa.com

SITE PLAN
BOEING FIELD
SEATTLE, WASHINGTON

PROJECT
40407.026
DATE
DEC 2018
SHEET ID
2

Full Size Sheet Format Is 11x17; If Printed Size Is Not 11x17, Then This Sheet Format Has Been Modified & Indicated Drawing Scale Is Not Accurate.

Filename: L:\Projects\40000\40407 Tukwila Public Works\40407.026 2015 Z Line Stormwater Compliance\CAD\40407.026_FIG_1-3.dwg Layout Tab: 11X17 DRAWINGS User: Rebecca Snellings CAD Plot Date/Time: 12/21/2018 11:30:55 AM

Stormwater Monitoring – City of Tukwila
East Marginal Way and S. 81st Place, Tukwila, Washington
Stormwater Sample Collection Field Form

Quarter: 4 **Year:** 2018

Date: 11/26/18 Time: 10:30

Sample Location: **MH – 36-165** Sampler: M. Bayley

Weather Conditions: rain

Sample collected within first 12 hours of discharge event? ✓ Yes ___ No ___ Unknown

If no or unknown, explain: ___

Stormwater Flow at Outfall (yes/no): Yes

Temperature: 6.3 °C ___ °F

pH: 7.6 S.U. Time of pH Analysis: 10:30

Turbidity: 43.3 NTU Time of Turbidity Analysis: 10:30

Visual Assessment of Sample:

a. Color: clear

b. Floating Solids (associated with industrial activity): ___ YES ✓ NO

c. Visible Oil Sheen: ___ YES ✓ NO Comment:

d. Odor: ___ YES ✓ NO Comment:

Sample ID: **MH – 36 - 165**

Method of Sampling (Circle one): (Single Grab) Time-Proportional Flow-Proportional

Placed in Cooler with ice: ✓ Yes ___ No Chain-of-Custody ✓ Yes ___ No

Analytical Requirements: Total Zinc (EPA 200.8),
Total Copper (EPA 200.8)
Total Lead (EPA 200.8)
Polychlorinated Biphenyls (EPA 8082A)
Total Suspended Solids (SM 2540-D)

Fremont Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

PBS Engineering & Environmental
Megan Nogeire
2517 Eastlake Ave, E #100
Seattle, WA 98102

RE: Tukwila SW Outfall
Work Order Number: 1811369

December 10, 2018

Attention Megan Nogeire:

Fremont Analytical, Inc. received 1 sample(s) on 11/26/2018 for the analyses presented in the following report.

Polychlorinated Biphenyls (PCB) by EPA 8082
Total Metals by EPA Method 200.8
Total Suspended Solids (TSS) by SM 2540D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager

Fremont Analytical

Date: *12/10/2018*

CLIENT: PBS Engineering & Environmental
Project: Tukwila SW Outfall
Work Order: 1811369

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1811369-001	MH-36-165	11/26/2018 10:30 AM	11/26/2018 12:11 PM

CLIENT: PBS Engineering & Environmental
Project: Tukwila SW Outfall

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.
Prep Comments for METHOD (PREP-PCB-W-LL), SAMPLE (1811369-001A) required Acid Cleanup Procedure (Using Method No 3665A).
Prep Comments for METHOD (PREP-PCB-W-LL), SAMPLE (1811369-001A) required Florisil Cleanup Procedure (Using Method No 3620C).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Client: PBS Engineering & Environmental
Project: Tukwila SW Outfall
Lab ID: 1811369-001
Client Sample ID: **MH-36-165**

Collection Date: 11/26/2018 10:30:00 AM
Matrix: Stormwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polychlorinated Biphenyls (PCB) by EPA 8082				Batch ID: 22812		Analyst: SB
Aroclor 1016	ND	0.00107	MDL	µg/L	1	12/6/2018 12:57:34 PM
Aroclor 1221	ND	0.00107	MDL	µg/L	1	12/6/2018 12:57:34 PM
Aroclor 1232	ND	0.00107	MDL	µg/L	1	12/6/2018 12:57:34 PM
Aroclor 1242	ND	0.00107	MDL	µg/L	1	12/6/2018 12:57:34 PM
Aroclor 1248	ND	0.00107	MDL	µg/L	1	12/6/2018 12:57:34 PM
Aroclor 1254	ND	0.00107	MDL	µg/L	1	12/6/2018 12:57:34 PM
Aroclor 1260	ND	0.000875	MDL	µg/L	1	12/6/2018 12:57:34 PM
Aroclor 1262	ND	0.000875	MDL	µg/L	1	12/6/2018 12:57:34 PM
Aroclor 1268	ND	0.000875	MDL	µg/L	1	12/6/2018 12:57:34 PM
Total PCBs	ND	0.00107	MDL	µg/L	1	12/6/2018 12:57:34 PM
Surr: Decachlorobiphenyl	91.1	6.04 - 174		%Rec	1	12/6/2018 12:57:34 PM
Surr: Tetrachloro-m-xylene	110	5.8 - 131		%Rec	1	12/6/2018 12:57:34 PM

NOTES:
MDL - Analyte reported to Method Detection Limit (MDL)

Total Metals by EPA Method 200.8				Batch ID: 22771		Analyst: WC
Copper	22.6	1.00		µg/L	1	11/29/2018 11:48:14 AM
Lead	4.51	0.500		µg/L	1	11/29/2018 11:48:14 AM
Zinc	71.5	2.50		µg/L	1	11/29/2018 11:48:14 AM
Total Suspended Solids (TSS) by SM 2540D				Batch ID: R47956		Analyst: GM
Total Suspended Solids	17.0	5.00		mg/L	1	11/28/2018 11:40:00 AM

Work Order: 1811369
CLIENT: PBS Engineering & Environmental
Project: Tukwila SW Outfall

QC SUMMARY REPORT

Total Suspended Solids (TSS) by SM 2540D

Sample ID	MB-R47956	SampType:	MBLK			Units:	mg/L	Prep Date:	11/28/2018		RunNo:	47956	
Client ID:	MBLKW	Batch ID:	R47956					Analysis Date:	11/28/2018		SeqNo:	936499	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Suspended Solids		ND	5.00										

Sample ID	LCS-R47956	SampType:	LCS			Units:	mg/L	Prep Date:	11/28/2018		RunNo:	47956	
Client ID:	LCSW	Batch ID:	R47956					Analysis Date:	11/28/2018		SeqNo:	936500	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Suspended Solids		228	5.00	300.0	0	76.0	65	135					

Sample ID	1811366-001CDUP	SampType:	DUP			Units:	mg/L	Prep Date:	11/28/2018		RunNo:	47956	
Client ID:	BATCH	Batch ID:	R47956					Analysis Date:	11/28/2018		SeqNo:	936502	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Suspended Solids		7.00	5.00						5.000	33.3	30		

Work Order: 1811369
CLIENT: PBS Engineering & Environmental
Project: Tukwila SW Outfall

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID	MB-22771	SampType:	MBLK			Units:	µg/L		Prep Date:	11/29/2018		RunNo:	47950	
Client ID:	MBLKW	Batch ID:	22771						Analysis Date:	11/29/2018		SeqNo:	936284	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		ND	1.00											
Lead		ND	0.500											
Zinc		ND	2.50											

Sample ID	LCS-22771	SampType:	LCS			Units:	µg/L		Prep Date:	11/29/2018		RunNo:	47950	
Client ID:	LCSW	Batch ID:	22771						Analysis Date:	11/29/2018		SeqNo:	936285	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		103	1.00	100.0	0	103	85	115						
Lead		48.3	0.500	50.00	0	96.5	85	115						
Zinc		100	2.50	100.0	0	100	85	115						

Sample ID	1811402-005BDUP	SampType:	DUP			Units:	µg/L		Prep Date:	11/29/2018		RunNo:	47950	
Client ID:	BATCH	Batch ID:	22771						Analysis Date:	11/29/2018		SeqNo:	936289	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		20.9	1.00						19.61	6.29	30			
Lead		10.5	0.500						10.58	0.317	30			
Zinc		52.9	2.50						55.46	4.73	30			

Sample ID	1811402-005BMS	SampType:	MS			Units:	µg/L		Prep Date:	11/29/2018		RunNo:	47950	
Client ID:	BATCH	Batch ID:	22771						Analysis Date:	11/29/2018		SeqNo:	936290	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Copper		503	1.00	500.0	19.61	96.6	70	130						
Lead		236	0.500	250.0	10.58	90.2	70	130						
Zinc		558	2.50	500.0	55.46	101	70	130						

Work Order: 1811369
CLIENT: PBS Engineering & Environmental
Project: Tukwila SW Outfall

QC SUMMARY REPORT

Total Metals by EPA Method 200.8

Sample ID **1811402-005BMSD** SampType: **MSD** Units: **µg/L** Prep Date: **11/29/2018** RunNo: **47950**
Client ID: **BATCH** Batch ID: **22771** Analysis Date: **11/29/2018** SeqNo: **936291**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	513	1.00	500.0	19.61	98.6	70	130	502.7	1.96	30	
Lead	234	0.500	250.0	10.58	89.5	70	130	236.0	0.663	30	
Zinc	530	2.50	500.0	55.46	94.9	70	130	558.3	5.25	30	

Work Order: 1811369
CLIENT: PBS Engineering & Environmental
Project: Tukwila SW Outfall

QC SUMMARY REPORT

Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID **MB-22812**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **12/3/2018**		RunNo: **48146**			
Client ID: **MBLKW**	Batch ID: **22812**					Analysis Date: **12/6/2018**		SeqNo: **940486**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0100									
Aroclor 1221	ND	0.0100									
Aroclor 1232	ND	0.0100									
Aroclor 1242	ND	0.0100									
Aroclor 1248	ND	0.0100									
Aroclor 1254	ND	0.0100									
Aroclor 1260	ND	0.0100									
Aroclor 1262	ND	0.0100									
Aroclor 1268	ND	0.0100									
Total PCBs	ND	0.0100									
Surr: Decachlorobiphenyl	363		200.4		181	6.04	174				S
Surr: Tetrachloro-m-xylene	308		200.4		154	5.8	131				S

NOTES:
S - Outlying surrogate recovery(ies) observed (high bias). Sample is non-detect; no further action required.

Sample ID **LCS1-22812**	SampType: **LCS**			Units: **µg/L**		Prep Date: **12/3/2018**		RunNo: **48146**			
Client ID: **LCSW**	Batch ID: **22812**					Analysis Date: **12/6/2018**		SeqNo: **940487**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.773	0.0101	1.007	0	76.8	34.9	134				
Aroclor 1260	0.837	0.0101	1.007	0	83.1	33.5	147				
Surr: Decachlorobiphenyl	305		201.4		152	6.04	174				
Surr: Tetrachloro-m-xylene	250		201.4		124	5.8	131				

Sample ID **LCS1D-22812**	SampType: **LCSD**			Units: **µg/L**		Prep Date: **12/3/2018**		RunNo: **48146**			
Client ID: **LCSW02**	Batch ID: **22812**					Analysis Date: **12/6/2018**		SeqNo: **940488**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.869	0.0100	0.9998	0	86.9	34.9	134	0.7730	11.7	30	
Aroclor 1260	0.972	0.0100	0.9998	0	97.3	33.5	147	0.8368	15.0	30	
Surr: Decachlorobiphenyl	324		200.0		162	6.04	174		0		

Work Order: 1811369
CLIENT: PBS Engineering & Environmental
Project: Tukwila SW Outfall

QC SUMMARY REPORT

Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID	LCS1D-22812	SampType:	LCSD		Units: µg/L		Prep Date:	12/3/2018		RunNo:	48146	
Client ID:	LCSW02	Batch ID:	22812				Analysis Date:	12/6/2018		SeqNo:	940488	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Surr: Tetrachloro-m-xylene	254		200.0		127	5.8	131		0			

Sample ID	LCS2-22812	SampType:	LCS		Units: µg/L		Prep Date:	12/3/2018		RunNo:	48146	
Client ID:	LCSW	Batch ID:	22812				Analysis Date:	12/6/2018		SeqNo:	940489	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aroclor 1254	1.12	0.0100	1.003	0	112	34	121					
Surr: Decachlorobiphenyl	311		200.5		155	6.04	174					
Surr: Tetrachloro-m-xylene	280		200.5		140	5.8	131				S	

NOTES:
S - Outlying surrogate recovery(ies) observed.

Sample ID	1811369-001ADUP	SampType:	DUP		Units: µg/L		Prep Date:	12/3/2018		RunNo:	48146	
Client ID:	MH-36-165	Batch ID:	22812				Analysis Date:	12/6/2018		SeqNo:	940492	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aroclor 1016	ND	0.0100						0		30		
Aroclor 1221	ND	0.0100						0		30		
Aroclor 1232	ND	0.0100						0		30		
Aroclor 1242	ND	0.0100						0		30		
Aroclor 1248	ND	0.0100						0		30		
Aroclor 1254	ND	0.0100						0		30		
Aroclor 1260	ND	0.0100						0		30		
Aroclor 1262	ND	0.0100						0		30		
Aroclor 1268	ND	0.0100						0		30		
Total PCBs	ND	0.0100						0		30		
Surr: Decachlorobiphenyl	237		200.3		118	6.04	174		0			
Surr: Tetrachloro-m-xylene	248		200.3		124	5.8	131		0			

Fremont Analytical

Sample Log-In Check List

Client Name:	**PBS**	Work Order Number:	**1811369**
Logged by:	**Clare Griggs**	Date Received:	**11/26/2018 12:11:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☐	No ☑	NA ☐
		Samples received straight from field.		
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☑	No ☐	NA ☐

Person Notified:	Megan Nogeire	Date	11/28/2018
By Whom:	Clare Griggs	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Confirming analysis.		
Client Instructions:	Low Level PCBs		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	10.8
Sample	10.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 11/26/18 Page: 1 of: 1

Laboratory Project No (internal): 18113609

Project Name: Tukwila SW Outfall

Project No: 40407.026

Client: PBS

Address: Seattle

Collected by: M. Bagley

City, State, Zip:

Location:

Special Remarks: edits per MB 11/26/18 DMG

Telephone:

Report To (PM): M. Nogel

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email:

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	TSS				Comments
1	MH-36-165	11/26	10:30	SW									X	X	T			X					
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished x — Date/Time 11/26/18 12:11

Relinquished x — Date/Time

Received x — Date/Time 11/26/18

Received x — Date/Time

Turn-around Time:

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 11/26/18 Page: 1 of: 1

Laboratory Project No (internal): 1811369

Project Name: Turkwila SW Outfall

Project No: 40407.026

Client: PBS

Address: Seattle

Collected by: M. Bagley

City, State, Zip:

Location:

Special Remarks: edits per MB 11/26/18 DMB

Telephone:

Report To (PM): M. Nogel

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email:

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 524)	GW/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	TSS				Comments
1	MH-36-165	11/26	10:30	GW									X	X	T			X				Low level PCBs per MN 11/28/18 cag
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Turn-around Time:
- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

Relinquished x _____ Date/Time 11/26/18 12:11

Received x _____ Date/Time 11/26/18

Relinquished x _____ Date/Time

Received x _____ Date/Time

City of Tukwila

2019 Update

Stormwater Management Program Plan

(SWMP) Plan

Prepared By

City of Tukwila
Public Works Department

City of Tukwila

Stormwater Management Program Plan

TABLE OF CONTENTS

INTRODUCTION

The National Pollutant Discharge Elimination System (NPDES) permit program is a requirement of the federal Clean Water Act. The federal Environmental Protection Agency (EPA) has delegated permit authority to state environmental agencies. In Washington, the NPDES delegated permit authority is the Washington State Department of Ecology (DOE).

The City of Tukwila prepared this document to meet the requirements for a Stormwater Management Program (SWMP) Plan as required by the NPDES Phase II Stormwater Permit issued to the City of Tukwila by DOE. The SWMP Plan was developed to reduce pollutant discharges from the City's Municipal Separate Storm Sewer System (MS4).

Tukwila is defined as a Phase II community by DOE and, therefore, mandated to comply with the requirements of the NPDES Phase II Stormwater Permit. Phase II communities are those that:

- Own and operate a storm drain system
- Discharge to surface waters of the state
- Are in urbanized areas
- Have a population of more than 1,000

Municipalities with a population of over 100,000 (as of the 2010 census) have been designated as Phase I communities and must comply with DOE's Phase I NPDES Municipal Stormwater Permit. Tukwila's population is below the 100,000 threshold and must comply with the Phase II Municipal Stormwater Permit. Approximately 100 other municipalities in Washington must now comply with the Phase II Permit, as operators of small "municipal separate storm sewer systems" (MS4). Ecology's Phase II Permit is available on Ecology's website at:

http://www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseIIww/wwphiipermit.html

Tukwila was first issued a Western Washington Phase II Municipal Stormwater Permit on January 17, 2007 (February 15, 2012 permit term), and June 17, 2009 Ecology modified the permit. On August 1, 2012 the permit term was extended to July 31, 2013. A new five-year Permit term went into effect August 1, 2013 and was modified January 16, 2014. After careful consideration of many factors, Ecology extended the current 2013-2018 Permit term for one year. A new Western Washington Phase II Municipal Stormwater Permit will reissue on July 1, 2019 becoming effective on August 1, 2019 for five years.

The Permit allows discharge of stormwater runoff from municipal drainage systems into the state's water bodies (i.e., streams, rivers, lakes, wetlands, etc.) if municipalities implement programs to protect water quality by reducing the discharge of "non-point source" pollutants to the "maximum extent practicable" (MEP). In addition, the City must meet "all known and reasonable treatment" (AKART) through application of Permit specified "best management practices" (BMPs).

The Permit also requires by March 31 of each year the City provide an annual report for each previous year's activities that documents the City's compliance with the Permit. Both the annual report and the updated SWMP are to be posted on the City's website no later than May 31st of each year.

The BMPs specified in the Permit are collectively referred to as the SWMP Plan and grouped under the following program components:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Controlling Runoff from New Development, Redevelopment, and Construction Sites
- Municipal Operations and Maintenance
- Special condition, Total Maximum Daily Load Requirements
- Special condition, Monitoring and Assessment

The following sections describe requirements of each program component and the City's planned activities to meet the requirements. In general, the City of Tukwila is currently performing all previously required Permit activities and has programs in place to address the updated Permit requirements.

1. PUBLIC EDUCATION AND OUTREACH

1.1 Permit Requirements

The Permit (Section S5.C.1.) requires the City to:

- Target and implement an educational and outreach program that will build general awareness to the general public (including school age children), businesses (including home-based and mobile businesses), engineers, contractors, developers, development staff and land use planners and other City employees, residents, landscapers, and property managers/owners that will help to reduce and eliminate behaviors and practices that cause or contribute too adverse stormwater impacts.
- Implement an outreach program that targets a selected audience with the purpose of improving their understanding and behaviors that impact surface water.
- Create stewardship opportunities and/or partner with existing organizations to encourage residents to participate in activities such as stream teams, storm drain marking, volunteer monitoring, riparian plantings, and education activities.
- Measure the understanding and adoption of the targeted behaviors for at least one target audience and one subject area.
- Track and maintain records of public education and outreach activities.

1.2 Continuing and Current Activities

The City's education and outreach program will target the general public (including school aged children), residents/homeowners (including property managers), general businesses (including mobile/automotive/truck facilities and restaurants), developers, engineers and contractors with the following activities:

- Brochures and information regarding pollutants that impacts stormwater.
- ECOSS Spill Kit Incentive Program.
- Suds Free Car Wash Kit made available to citizens and fund raising in Tukwila.
- Support Puget Sound Starts Here campaign and it's Don't Drip & Drive Campaign.

- Elementary school aged stormwater interaction.
- Commercial business inspection program.
- Storm drainage marker program for both public and private properties.
- Notice boards informing the public of stormwater ponds, wetlands, no dumping and this stream is in your care.
- Tukwila's government Channel 21, which was implemented as a tool to provide updates and various types of information to the public.
- Continue to provide the Hazelnut Newsletter, various brochures, handouts, and upcoming stormwater notices on bulletin boards at various community locations,
- Maintain the City's NPDES website where public notices, meeting dates, educational videos and various course catalogs can be viewed.
- Conduct project pre-application meetings informing engineers, contractors and developers of the City's adopted stormwater manual, Ecology's construction stormwater permit requirements, including LID standards and LID BMPs.

Planned Activities

- Make available rain barrels at a discount price to residents through the 2019 – 2020 Tukwila Residential Rain Barrel Program.
- Conduct a waste recycling and hazardous waste reduction event which supports the City's Illicit Discharge Detection and Elimination program.
- Provide an outreach booth at the City's annual Backyard Wild Life Festival, giving exposure to the City's SWMP Plan and encouraging input to the Plan. This year the outreach booth will again emphasize Low Impact Development and Illicit Discharge Detection and Elimination. In addition, target school age children by challenging them with stormwater quality questions.
- Display an NPDES inspection truck with hands on stormwater testing. Display various IDDE posters in bilingual languages at the annual City Touch a Truck event.
- Partner with Environmental Coalition of South Seattle (ECOSS) and provide a spill kit, spill plan and training to diverse businesses through the ECOSS Spill Kit Incentive Program.
- Make Available general information regarding LID, pesticides, fertilizers and herbicides, washing cars at home, proper disposal of used motor oil, and household hazardous waste program.
- The City will continue to focus on priority 1 & 2 stormwater issues as measured in the 2017 Community Stormwater Phone Survey by using the City's established resources.
- The City partners with Forterra, EarthCorps, Boeing Employee Credit Union, Student Conservation Association, and Friends of Duwamish Hill Preserve to provide stewardship training and restoration activities in City parks and shoreline areas.
- Continue with the Green Tukwila 20-year Stewardship Plan where 1.5 previously enrolled acres of 17 are identified for restoration and stewardship activities and add two new acres for restoration and stewardship activities.
- Under the Green Tukwila Program, Tukwila has partnered with McKinstry (local company) to restore Crystal Springs Park by removing weeds and ivy to help protect Crystal Springs Creek and wetland and essentially improving the quality of the Park.

- The City's pilot Public/Private Green the Green Project will restore sections of the Green/Duwamish River for the purpose of improving water quality and habitat for ESA-listed Puget Sound Chinook salmon and other aquatic life.
- Summarize annual education and outreach activities in the annual report.

2. PUBLIC INVOLEMENT AND PARTICIPATION

2.1 Permit Requirements

The Permit (Section S5.C.2) requires the City to:

- Provide ongoing opportunities for public involvement and participation through advisory councils, public hearings, watershed committees, participating in developing rate-structures, SWMP Plan development and implementation or other similar activities.
- Make available and post the current SWMP Plan and annual report for the previous years on the City's website no later than May 31st of each year. Make available to the public all other documents to be submitted to DOE as required by the Permit.

2.2 Continuing and Current Activities

The City of Tukwila uses the following opportunities for Public Involvement and Participation:

- The public is invited to all City Council, Committee of the Whole, and Transportation and Infrastructure Committee meetings including workshops where input on NPDES Phase II related topics is accepted.
- Provide notices of upcoming workshops, in the Tukwila Reporter, City's NPDES website, and City calendar. In addition, notices will be posted at strategic locations such as City Hall, Public Works, Community Development and at the Tukwila Community Center.
- The City maintains the most current SWMP Plan and Annual Report on its NPDES website. These documents are also made available to the public upon request.
- Invite the public to participate in the decision-making process involving review of the 2018 annual report and updating the annual SWMP Plan through public meetings.
- The City will make available and update with current NPDES information including the current SWMP Plan and Annual Report on its website www.tukwilawa.gov/pubwks/npdes by May 31st of each year and summarize annual Public Involvement and Participation activities in the annual report.

3. ILLICIT DISCHARGE DETECTION AND ELIMINATION

3.1 Permit Requirements

The Permit (Section S5.C.3) requires the City to:

- Implement an ongoing Illicit Discharge Detection and Elimination (IDDE) program designed to prevent, detect, characterize, trace and eliminate illicit connections and illicit discharges into our MS4.
- Periodically update the City's municipal storm sewer system map.

- Have an ordinance in place to effectively prohibit non-stormwater, illegal discharges, and dumping into the City's MS4, including locating priority areas likely to have illicit discharges.
- Implement a field screening methodology appropriate to the characteristics of the MS4 and water quality concerns. Complete field screening for at least 40% of the MS4 no later than December 31, 2017, and on average 12% each year thereafter.
- Publicly list and publicize a hotline or telephone number for public reporting of spills and other illicit discharges.
- Implement an ongoing program designed to detect, identify and address non-stormwater discharges, illicit connections, and spills. Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper waste disposal.
- Provide training to appropriate City employees on IDDE. Document training events, staff attendance and maintain records of activities conducted to meet Permit requirements. Conduct follow-up training as necessary to address changes in procedures, techniques, requirements, or staffing.
- Inform the general public, businesses and public employees of hazards associated with illicit discharges, illegal connections and improper waste disposal.
- Summarize illicit discharges and connections activities in the annual report.

3.2 Continuing and Current Activities

The City of Tukwila has an ongoing IDDE program in place that include the following activities:

- The City conducts residential, commercial, and industrial storm drainage inspections of permit issued projects. In addition, the City has an ongoing business inspection program that targets businesses with potential pollution generating activities.
- The City maintains a geographic (GIS) mapping program of its stormwater drainage system which is used to conduct IDDE investigations. These maps are available to the public and interested parties upon request.
- The City has an ordinance and program in place that prohibits non-stormwater, illegal discharges, and dumping into the City's MS4, including locating priority areas likely to have illicit discharges. The ordinance also provides for escalating enforcement.
- The City has an active IDDE inspection program that includes both private and public stormwater facilities using methods indicated in the Illicit Connection and Illicit Discharge Field Screening and Source Tracing Guidance Manual.
- The City is active with field screening of all accessible stormwater outfalls.
- The City's Maintenance Department provides ongoing video inspection of the public stormwater conveyance system.
- Provide standard illicit connection via dye testing and smoke testing when necessary.
- Ongoing inspections of catch basins/manholes, ditches and stormwater BMPs are conducted.
- The City has an advertised reporting phone number, (206) 433-1860, where illegal dumping, illicit discharges and spills can be reported. Also, the City initiated Tukwila Works where online reporting is available.

- Appropriate training is provided to City employees, including new hires on spill prevention/response and IDDE into the City's MS4.
- Provide and make available various brochures to help increase public awareness of the City's stormwater issues. Continue to provide public outreach videos on the City's NPDES website.
- The City provides information regarding the hazards associated with illegal discharges and improper waste disposal to residents, businesses, and public employees.
- The City has a Suds Safe Car Wash Program that makes car wash kits available to Tukwila citizens for fund raising events held within Tukwila city limits.
- The City summarizes illicit discharges and elimination in the annual report.

Planned Activities

- Update stormwater mapping to include new storm drainage facilities.
- Review and update if necessary IDDE training program for municipal staff.
- Provide construction stormwater pollution prevention training for appropriate municipal staff.
- Review and update as necessary O&M Construction Stormwater Pollution Prevention Plan.
- Review and update as necessary illicit discharge outreach material.
- Provide immediate response to reported spills and illicit discharges.
- Summarize illicit discharge, detection and elimination in the annual report.

4. CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVLOPMENT AND CONSTRUCTION SITES

4.1 Permit Requirements

The Permit (Section S5.C.4) requires the City to:

- Implement and enforce an ordinance or other mechanism that addresses stormwater runoff and pollutant generating activities to its MS4 from any new development, redevelopment, and construction site activities. This applies to both private and public development, including roads.
- Have in place a permitting process for residential and commercial site plan review, inspection, and enforcement capability necessary to implement the requirements of the Permit.
- Have provisions in place to verify adequate long-term operation and maintenance (O&M) of new stormwater treatment and flow control BMPs/facilities permitted and constructed. Establish maintenance standards that are as protective as those in Chapter 4 of Volume V of the 2012 *Stormwater Management Manual for Western Washington* by December 31, 2016.
- Provide and make available as copies of the "*Notice of Intent for Construction Activity*" and copies of the "*Notice of Intent for Industrial Activity*" to representatives of proposed new development and redevelopment.
- Ensure proper staff is trained to conduct inspection and enforcement as necessary and provide follow-up training as needed to address changes in procedures, techniques, or

staffing. Record and maintain records of training provided and a list of staff that have been trained.

- Review and revise the City's development codes, standards, and specifications and update as necessary.
- Participate in watershed-scale stormwater planning under condition S5.C.5.c of the Phase I Municipal Stormwater General Permit if required.
- Summarize Controlling Runoff from New Development, Redevelopment and Construction Sites in the annual report.

4.2 Continuing and Current Activities

The City has an active program to reduce pollutants in stormwater runoff from new development, redevelopment, and construction sites that includes the following:

- The City adopted and implements the *2016 King County Surface Water Design Manual (KCSWDM)* as direction to address stormwater runoff and water quality for both public and private projects, including roads.
- Staff reviews all proposed construction stormwater site plans in accordance with the 2016 King County Surface Water Design Manual.
- As part of the permitting process, pre-application meetings and weekly plan review meetings are conducted to insure applicants project plan submittal will meet stormwater regulations and that long-term operation and maintenance of water quality and flow control will meet the *2016 KCSWDM* maintenance standards.
- All construction sites are inspected prior to start, during, and post construction. This includes annual post-construction of all commercial and residential treatment and flow control BMPs/facilities whereby maintenance responsibility, standards and inspection procedures are addressed.
- The City has a long-term Operations and Maintenance (O&M) program for City owned and operated post-construction stormwater facilities and BMPs that include inspection, review, and documentation.
- The City conducts post-construction inspections of privately owned and maintained stormwater facilities.
- The City directs representatives of proposed new development and redevelopment to the Department of Ecology's construction stormwater website: http://www.ecy.wa.gov/programs/wq/stormwater/construction/enoi.html and if applicable provide to the representatives a "Notice of Intent (NOI) for Construction Activity and Industrial Activity".
- Staff responsible for inspection are fully trained and receive ongoing training in erosion control, low impact development, stormwater, and updated inspection techniques. Records of training are maintained and available upon request.
- Document and maintain records of all new development and redevelopment and construction site activities, including inspections and enforcement actions.
- The City incorporated into its development-related codes, rules, standards, and enforceable documents, Low Impact Development (LID) and Best Management Practices (BMPs) making LID and BMPs the preferred method for development.
- The City will continue to train pertinent employees on LID and BMPs. In addition, post LID training events on the City's website.

- Currently, King County has not selected Tukwila as a participant in the watershed-scale stormwater planning process, consequently, no action required.

Planned Activities

- Review and update as necessary the plan review, inspection, enforcement and compliance documentation and tracking process and procedures to align with Permit requirements.
- Review City Infrastructure Design and Construction Standards and update as necessary.
- Summarize Controlling Runoff from New Development, Redevelopment, and Construction Sites in the annual report.

5. MUNICIPAL OPERATIONS AND MAINTENANCE

5.1 Permit Requirements

The Permit (Section S5.C.5) requires the City to:

- Implement an operations and maintenance program with the goal of preventing or reducing pollutant runoff from the MS4 and municipal operations.
- Implement maintenance standards that are as or more protective, of facility functions than those specified in *Chapter 4 of Volume V of the 2012 Stormwater Management Manual for Western Washington* by December 31, 2016.
- Conduct annual inspections of all municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities and conduct necessary maintenance actions that will meet City adopted standards.
- Conduct spot checks, of City owned flow control and water quality facilities after major storm events, and repair if needed or perform any necessary maintenance.
- Inspect all City owned catch basins and inlets at least once no later than August 1, 2017 and every two years thereafter. Clean catch basins if needed to comply with maintenance standards.
- Maintain compliance with an established inspection program designed to inspect all sites, achieving at least 95% of inspections per requirements of the Permit.
- Implement an operations and maintenance (O&M) program with the goal of preventing or reducing pollutant runoff from all lands owned or maintained by the City, including but not limited to, streets, parking lots, roads, highways, buildings, parks, open space, road right-of-ways, maintenance yards, and stormwater treatment and flow control BMPs/facilities.
- Conduct ongoing training for employees whose primary construction operations or maintenance job functions may impact stormwater. Document and maintain records of training provided and the staff trained.
- Training public works personnel including field staff, new employees, development review and planning department personnel relating to Low Impact Development (LID) principals and LID Best Management Practices (BMPs).
- Provide a Stormwater Pollution Prevention Plan (SWPPP) for all City owned or operated heavy equipment maintenance or storage yards and material storage yards. A

schedule for implementation of structural BMPs and periodic inspections shall be included in the SWPPP.

- Maintain ongoing records of inspections, maintenance, or repairs conducted to meet performance measures.
- Maintain records of inspections and maintenance or repair activities.
- Summarize Controlling Runoff from New Development, Redevelopment and Construction Sites in the annual report.

5.2 Continuing and Current Activities

The City of Tukwila's Operations & Maintenance (O&M) program includes the following:

- Adoption of the *2016 King County Surface Water Design Manual (KCSWDM)* in December 2016 which is used to implement our O&M program reducing and preventing pollutant runoff from municipal operations.
- Adoption of the *2016 King County Stormwater Pollution Prevention Manual (KCSPPM)* in December 2016 which is used as a maintenance standard guideline for industrial, commercial, and multi-family and residential properties.
- Catch basins and conveyance system including flow and water quality facilities are inspected, cleaned, and maintained on a circuit-based program and as necessary.
- Conduct street sweeping activities in support of catch basin cleaning.
- Staff maintains a list of potential problem areas that are monitored and maintained prior to, during and after major storm events. Additional inspections occur at the discretion of the surface water department.
- Annually inspect and provide necessary maintenance of all water quality and flow control facilities, including catch basins owned and operated by the City.
- Continue with the City's street sweeping program helping to reduce the amount of sediment and associated waste from entering the storm drainage system.
- Provide necessary training for City employees whose job functions may impact stormwater.
- The City has in place a SWPPP for each of its maintenance and storage yards that is reviewed annually to determine if updates are needed. In addition, records are kept of routine inspections of these facilities and their BMPs.
- The City maintains records of its circuit-based storm drainage system inspection, cleaning and repair activities and street sweeping.

Planned Activities

- Review and revise as necessary the SWPPP.
- Review the King County Stormwater Pollution Prevention Manual to ensure O&M compliance.
- Summarize Municipal Operations and Maintenance activities in the annual report.

6. COMPLIANCE WITH TOTAL MAXIMUM DAILY LOAD REQUIREMENTS

The Permit (Special Condition Section S7) requirements:

The Permit (Section S7) requirements apply if an applicable Total Maximum Daily Load (TMDL) is approved for stormwater discharges from MS4s owned or operated by the

Permittee. Applicable TMDLs are TMDLs which have been approved by EPA on or before the issuance date of this Permit or prior to the date that Ecology issues coverage under this permit, whichever is later. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards. The DOE determines the reduction of pollutant discharge needed to be compliant with water quality standards.

6.1 Activities

- A TMDL has not been established for the City of Tukwila at this time, consequently no action needed.

7. MONITORING AND ASSESSMENT

The Permit (Special Condition Section S8) requires the City to:

- Notify DOE of its choice to independently conduct Status and Trends Monitoring and Effectiveness Studies or participate by paying annually into the Regional Stormwater Monitoring Program (RSMP) that will be conducted by DOE.
- Pay into the RSMP to implement the Source Identification Information Repository (SIDR) element of the RSMP.
- Track and Document additional monitoring conducted and summarize in the 2016 Annual Report.

7.1 Continuing and Current Activities

- The City paid a fee of $4.444,00 into the RSMP to have DOE conduct the Status and Trends Monitoring.
- The City paid a fee of $7,405.00 into the RSMP to have DOE conduct the Effectiveness Studies.
- The City paid a fee of $687.00 into the RSMP to have DOE conduct the Source ID and Diagnostic Monitoring.

The total fee of $12,536 is due each year by August 15th until the permit expiration date of July 31, 2019.

CONCLUSION

The current Western Washington Phase II Permit expires on July 31, 2018. DOE extended the current (2013-2018) Permit for one year. The Permit will reissue on July 1, 2019 and become effective on August 1, 2019. This Stormwater Management Program Plan has been prepared to demonstrate efforts and compliance with the requirements of this current NPDES Phase II Permit. This SWMP Plan will be a working document with updates annually until the Permit expires on July 31, 2019.

The City's Public Education and Outreach Program is an extension of the previous permit term and will continue to grow with the planned activities. The City of Tukwila will continue to reach out and encourage public involvement and participation in the City's SWMP Plan with the existing notification process.

The City's IDDE Program is in place, which includes a spill hotline, and will be reviewed periodically to ensure performance measures are met.

The City adopted the *2016 KCSWDM, KCSPPM* and revised its standards and codes to include LID and BMPs as the preferred method for development in December 2016, and uses it for controlling runoff from new development, redevelopment, and construction sites.

The City of Tukwila's Operations & Maintenance (O&M) is very active in all areas of permit compliance. It should be noted; The *2016 KCSWDM & KCSPPM* have new maintenance standards that O&M will follow.

Coordination efforts will continue with neighboring jurisdictions and be reviewed to determine where improvements are needed to remove jurisdictional barriers.

Total Maximum Daily Load requirements in Tukwila have not been determined by DOE to date. However, the City will prepare for this requirement when it comes due.

The City chose to participate in the RSMP collective fund and have DOE administer and conduct the Monitoring and Assessment for this Permit term.

Additional information on the City's NPDES program can be found online at http://www.tukwilawa.gov/pubwks/npdes.html.

The public is encouraged to participate in the development of the SWMP Plan. Please contact Greg Villanueva of the City of Tukwila's Public Works Department with questions, comments, or ideas at:

Mail: Greg Villanueva, NPDES Coordinator
Department of Public Works
City of Tukwila
6300 Southcenter Blvd, Suite 100
Tukwila, WA 98188-8548

Phone: 206-431-2442
Email: greg.villanueva@tukwilawa.gov
Website: www.tukwilawa.gov/pubwks/npdes.html

INFORMATIONAL MEMORANDUM

TO: **Transportation and Infrastructure Committee**

FROM: **Henry Hash, Public Works Director**

BY: **Bryan Still, Operations Manager**

CC: **Mayor Ekberg**

DATE: **March 15, 2019**

SUBJECT: **Surface Water Fund – Renewal**
King County Regional Stormwater Decant Facility Use Agreement 2019-2023

ISSUE

Approve King County Regional Stormwater Decant Facility Use Agreement for 2019 through 2023.

BACKGROUND

Tukwila cleans approximately 10,000 lineal feet of storm pipe and 1,000 catch basins each year which on average generates 13.2 tons of waste material a month. This waste material must be disposed of properly and the King County Regional Stormwater Decant Facility, located at 155 Monroe Ave NE in Renton, is the closest facility capable of handling the waste material. The first Use Agreement with King County was from 2014 through 2018.

DISCUSSION

The attached forms are merely a renewal of our Use Agreement with King County and allows us to continue using their facility. The King County site has been approved by the Department of Ecology and allows Tukwila to meet the requirements of Section G10 of the Western Washington NPDES Phase II Municipal Stormwater Permit. This section states that the permittee shall not allow collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater to be resuspended or reintroduced to the storm sewer system or waters of the state.

FINANCIAL IMPACT

The King County waste disposal fees have not changed since the last contract. They are $81.00 per facility entry for liquids and $59.00 per ton of solids disposed. The charges will be paid from the Surface Water Waste Materials Disposal budget account 412.01.538.380.47.01, which has $50,000.00 budgeted annually. In the previous Use Agreement, the annual average cost was $13,284.46 and over the last five years the total spent was $66,422.30. As the total cost is over $40,000 for the duration of the agreement, we are requesting Council approval.

RECOMMENDATION

Council is being asked to approve the King County Regional Stormwater Decant Facility Use Agreement for 2019 through 2023 and consider this item on the Consent Agenda at the April 1, 2019 Regular Council Meeting.

ATTACHMENTS

- 2019-2023 King County Regional Stormwater Decant Facility Program Use Agreement
- 2019-2023 Applicant & Authorized User Information

2019 - 2023 KING COUNTY
REGIONAL STORMWATER DECANT FACILITY PROGRAM
Use Agreement

1. PROGRAM PURPOSE

The purpose of the King County Regional Decant Program (Decant Program), operated by King County Road Services Division (KCRSD) is to provide an environmentally sound system for disposing of materials generated from the cleaning of stormwater drainage systems. King County is providing a facility for the disposal of generated stormwater materials that is open to authorized users, including other King County agencies, public agencies, and private companies. Authorized Users of this facility have completed all portions of this Use Agreement, signed by the King County Program Administrator and Finance Manager, and are in good standing with their accounts. In order to operate this system, it is required that all users pay their fair share and follow standard operating procedures as laid out in this *Use Agreement,* and the *Regional Stormwater Decant Facility Program Operations and Maintenance Manual* (Operations Manual). The Operations Manual has been prepared to provide a more detailed description of the Decant Facility, use procedures, and allowable discharges.

KCRSD currently operates one Regional Stormwater Decant Facility that is open to authorized users, referred to as the Renton Decant Facility. The Renton Decant Facility is located at the King County Road Services Division Headquarters at 155 Monroe Avenue NE in Renton, Washington. Currently, this Facility has a scale system; a series of covered liquid decant settling ponds and other water treatment structures; and a covered stormwater solids storage area. The Facility discharges treated stormwater liquids to the sanitary sewer system under a Waste Discharge Authorization issued by the King County Industrial Waste (KCIW).

2. USE AGREEMENT CONDITIONS

A. This Use Agreement shall be valid from date of final application approval (Page 13 of this Use Agreement) through December 31, 2023.

A.1. This Use Agreement may be amended at any time in writing, to add or subtract equipment to the Vehicle Identification Form of the user's application.

A.2. The Authorized User is responsible for notifying King County of any change(s) to the Applicant/Authorized User Information, including ownership, owner or billing names, physical addresses, billing address, phone numbers, or insurance coverage status within 30 days of the change(s).

A.3. Either party may terminate this Use Agreement at any time by sending written notice to the person who signed this Use Agreement for the other party.

B. The Authorized User is responsible for paying the user fee as established by King County, including, without limitation, any user fees that are outstanding on the

termination of this Use Agreement. The current fee is eighty-one dollars ($81.00) per Facility entry for liquids and fifty-nine dollars ($59.00) per ton for solids disposal.[1] The fee structure is set by King County Council and may be amended at its discretion.

B.1. The Authorized User acknowledges that the late payment by Authorized User to the County of any sum due under this Use Agreement will cause the County to incur administrative, collection, processing and accounting costs and expenses not contemplated under this Use Agreement, the exact amounts of which are extremely difficult and impractical to fix. Therefore, should the County determine it is necessary to submit an account to Collections, the County will add an administrative fee of one hundred dollars ($100.00) to the balance due. The County and the Authorized User agree that this administrative fee represents a reasonable estimate of such costs and expenses and is fair compensation to the County for its loss caused by the Authorized User's nonpayment. Any payments of any kind returned for insufficient funds will be subject to an additional charge of $35.00 payable by the Authorized User to the County.

B.2. If payments are received by check or draft from the Authorized User, and two (2) or more of such checks or drafts are dishonored by the bank or other financial institution they were drawn upon in any twelve (12) month period, the County may thereafter terminate this Use Agreement or require all payments due hereunder from Authorized User to the County to be made by bank cashier's or bank certified check or other similar means of payment and the County shall not be required to accept any checks or drafts of Authorized User which do not comply with such requirements.

- If suit is brought upon the Authorized User's failure to pay, and if judgment in such a suit is entered in favor of the County, then the Authorized User shall pay all damages, including but not limited to costs, expenses and reasonable attorney's fees and all other litigation related expenses incurred by the County.

C. The Authorized User certifies that it will maintain for a three-year period after each use of the facility, on the Authorized User's premises, a detailed log of all activities conducted by each vehicle that uses the facility. This log must identify all stormwater drainage systems that have been cleaned and be signed by the employee on a daily basis. This log shall be made available for inspection by King County or its assigns upon request by the Program Administrator and shall contain the information identified in the Operations Manual.

D. The Authorized User certifies that it will abide by all rules and regulations contained

[1] King County Code, Title 14, 14.85 REGIONAL VACTOR WASTE DISPOSAL, 14.85.020 FEES (Ord. 14523 § 2, 2002: Ord. 13019 § 1 (part), 1998).

within the Operations Manual and that its' employees will attend the required training provided by King County, prior to using any King County facility. The Authorized User is responsible for their own and for all of their employees' activities relating to the use of the facilities.

D.1. Any vehicle that uses a King County facility without at least one employee trained by KCRSD present will be subject to termination pursuant to section 9 of this Use Agreement.

E. In the event that any of the Authorized User's officers, employees, agents, or representatives cause damage in any way to any facility or property of King County, the Authorized User covenants and agrees to pay King County the amount of damages thereby incurred by King County, together with any and all costs, legal and otherwise, including attorney's fees, incurred by King County in the determination of the nature and extent of the damage and enforcement of such obligation against the Authorized User.

F. The Authorized User will provide the Program Administrator with a copy of the User's procedures for dealing with known or suspected contaminated materials, also referred to as "hot loads" or unacceptable loads (Section 8.0). The Authorized User's contaminated load procedures will be provided on company or agency letterhead and signed by the company president or principle owner. Although the County reserves the right to review and approve such procedures, the County is under no obligation to do so, and the County assumes no responsibility for such procedures or their compliance with applicable laws, rules and regulations, which shall remain the sole responsibility of the Authorized User.

G. The Authorized User further agrees to pay all disposal costs, cleanup costs, remediation costs and other costs, if any, resulting from the delivery of contaminated materials by the Authorized User to a King County facility. For purposes of this Application – Use Agreement, "contaminated" or "contaminated materials" means any hazardous, toxic, dangerous or unacceptable substance, waste or material which is or becomes regulated under any federal, state or local statute, ordinance, rule, regulation or other law now or hereafter in effect pertaining to environmental protection, contamination, remediation or cleanup, or public health, safety or welfare, including, without limitation, any substance, waste or material which now or hereafter is designated as hazardous in or for the purposes of any federal, state or local statue, ordinance, rule or other regulation.

H. The Authorized User agrees that King County personnel may inspect its vehicles and contents at any time such inspection is requested by King County at the point of disposal.

I. The Authorized User agrees that in the event that King County determines that the Authorized User has violated any provision hereof this Use Agreement may

be terminated immediately by King County.

3. HOLD HARMLESS AND INDEMNIFICATION

To the maximum extent permitted by law and except to the extent caused by the sole negligence of King County, the Authorized User shall protect, defend, indemnify, and save harmless the County, its officers, officials, employees and agents, from any and all penalties, losses, costs, claims, judgments, and/or awards of damages, of whatsoever nature arising out of or in any way resulting from the acts or omissions of the Authorized User, its officers, employees, and/or agents incident to this Application – Use Agreement. The Authorized

User agrees that its obligations hereunder extend to any claim, demand, and/or cause of action brought by or on behalf of any of its employees or agents. For this purpose, the Authorized User, by mutual negotiation, hereby waives, as respects the County only, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Title 51 RCW. In the event the County incurs any judgment, award and/or cost arising therefrom, including attorney's fees, to enforce the provisions of this paragraph, all such fees, expenses, and costs shall be recoverable by the County from the Authorized User.

The foregoing Hold Harmless and Indemnification provisions shall survive the expiration or termination of this Use Agreement with respect to any event that occurs prior to, or on the date of, such expiration or termination. Nothing contained within these provisions shall affect and/or alter the application of any other provision contained within this Use Agreement.

4. RESELLERS PERMIT (Documentation Required)

By the date of execution of this Use Agreement the Authorized User shall procure and maintain for the duration of this Use Agreement a valid Resellers Permit issued by the Washington State Department of Revenue. Annual renewals of the Resellers Permit are the responsibility of the Authorized User. The cost of the permit shall be paid by the Authorized User.

5. INSURANCE REQUIREMENTS (Documentation Required)

A. By the date of execution of this Use Agreement the Authorized User shall procure and maintain for the duration of this Use Agreement insurance against claims for injuries to persons or damages to property which may arise from, or in connection with the performance of work hereunder by the Authorized User, its agents, representatives, employees, and/or subcontractors. Annual renewals of insurance certification are the responsibility of the Authorized User. The cost of such insurance shall be paid by the Authorized User.

For All Coverages: Each insurance policy shall be written on an "Occurrence" form.

By requiring such minimum insurance, the County shall not be deemed or construed to have assessed the risks that may be applicable to the Authorized User under this Use Agreement. The Authorized User shall assess its own risks and, if it deems appropriate and/or prudent, maintain greater limits and/or broader coverage.

Nothing contained within these insurance requirements shall be deemed to limit the scope, application and/or limits of the coverage afforded, which coverage will apply to each insured to the full extent provided by the terms and conditions of the policy(s). Nothing contained within these provisions shall affect and/or alter the application of any other provision contained within this Use Agreement.

B. Minimum Scope of Insurance

Coverage shall be at least as broad

as:

1. General Liability:

   Insurance Services Office form covering
   COMMERCIAL GENERAL LIABILITY.

2. Automobile Liability:

   Insurance Services Office form - covering BUSINESS AUTO COVERAGE, symbol 1 "any auto"; or the combination of symbols 2, 8, and 9.

3. Workers' Compensation:

   Workers' Compensation coverage, as required by the Industrial Insurance Act of the State of Washington.

4. Employers Liability or "Stop-Gap":

   The protection provided by the Workers Compensation policy Part 2 (Employers Liability) or, in states with monopolistic state funds, the protection provided by the "Stop Gap" endorsement to the General Liability policy.

C. Minimum Limits of Insurance

The Authorized User shall maintain limits no less than, for:

1. General Liability: $1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage, and for those policies with aggregate limits, a $2,000,000 aggregate limit.

2. Automobile Liability: $1,000,000 combined single limit per accident for bodily injury and property damage.

3. Workers' Compensation: Statutory requirements of the State of residency.

4. Employers Liability or "Stop Gap" coverage: $ 1,000,000 limit of liability

D. Deductibles and Self-Insured Retention

Any deductibles or self-insured retention must be declared to, and approved by, the County. The deductible and/or self-insured retention of the policies shall not limit or apply to the Authorized User's liability to the County and shall be the sole responsibility of the Authorized User.

E. Other Insurance Provisions

The insurance policies required in this Use Agreement are to contain, or be endorsed to contain the following provisions:

1. General and Automobile Liability Policy(s):

a. The County, its officers, officials, employees and agents are to be covered as additional insured as respects: liability arising out of activities performed by or on behalf of the Authorized User in connection with this Use Agreement.

b. To the extent of the Authorized User's negligence, the Authorized User's insurance coverage shall be primary insurance as respects the County, its officers, officials, employees and agents. Any insurance and/or self-insurance maintained by the County, its officers, officials, employees or agents shall not contribute with the Authorized User's insurance or benefit the Authorized User in any way.

c. The Authorized User's insurance shall apply separately to each insured against whom a claim is made and/or lawsuit is brought, except with respect to the limits of the insurer's liability.

2. All Policies:

Coverage shall not be suspended, voided, canceled, reduced in coverage or in limits, except by the reduction of the applicable aggregate limit by claims paid, until after forty-five (45) days prior written notice has been given to the County.

F. Acceptability of Insurers

Unless otherwise approved by the County, Insurance is to be placed with insurers with a Bests' rating of no less than A:VIII, or, if not rated with Bests', with minimum surpluses the

equivalent of Bests' surplus size VIII.

If at any time, any of the foregoing policies shall be or become unsatisfactory to the County, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the County, the Authorized User shall, upon notice to that effect from the County, promptly obtain a new policy, and shall submit the same to the County, with the appropriate certificates and endorsements, for approval.

G. Verification of Coverage

The Authorized User shall furnish the County with certificates of insurance and endorsements required by this Use Agreement. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements for each insurance policy are to be on forms approved by the County and are to be received and approved by the County prior to the commencement of activities associated with this Use Agreement. The County reserves the right to require complete, certified copies of all required insurance policies at any time.

H. Subcontractors

The Authorized User shall include all subcontractors as insured under its policies, and/or shall furnish separate certificates of insurance and policy endorsements from each subcontractor. Insurance coverage provided by subcontractors, as evidence of compliance with the insurance requirements of this Use Agreement shall be subject to all of the requirements stated herein.

I. Municipal or State Agency Provisions

If the Authorized User is a Municipal Corporation or an agency of the State of Washington and is self-insured for any of the above insurance requirements, a certification of self-insurance shall be attached hereto and be incorporated by reference and shall constitute compliance with this section.

6. CASH DEPOSIT

The applicant shall, prior to completion of this application, deposit with the County, and shall maintain during the entire term of this Use Agreement, a non-interest bearing cash deposit as follows: fifteen-hundred dollars ($1,500.00) payable to King County Roads. King County may increase or decrease the amount of the deposit on thirty (30) days written notice to the Authorized User. If King County increases the amount, the Authorized User shall deposit the amount of the increase with King County no later than thirty (30) days after the date of the County's written notice. If King County decreases the amount, King County shall refund the amount of the decrease to the Authorized User. This deposit shall

be used to ensure payment of monthly billings, costs associated with disposal of contaminated materials, damages to the facility or other County property, and any other amounts due the County by the Authorized User, and may be utilized by King County when the amount payable by the Authorized User to King County is delinquent. Neither the payment of said deposit to King County, nor King County's utilization of the deposit, shall limit the Authorized User's liability to King County for the payment of amounts due the County by the Authorized User in excess of the amount covered by said deposit. If the County utilizes the cash deposit, authorization to use the facilities may be suspended and use privileges will not be reinstated until deposit levels are restored to the original amount and all outstanding bills have been paid. The amount remaining in the deposit will be returned to the Authorized User when this Use Agreement expires or terminates and all outstanding claims are satisfied. A waiver of the cash deposit may be granted to public agencies.

Arrangements to submit the cash deposit should be made with the Decant Lead or Accounting Staff prior to delivery so that the deposit can be handled safely and efficiently.

7. PERMITTED DECANT MATERIAL

A. Renton Decant Facility Waste Discharge Permit

The Renton Decant Facility functions to discharge stormwater, separated from stormwater solids through the decant process and discharge the stormwater to sanitary sewer under a five-year Waste Discharge Authorization, No. 4367-01. Under this Permit KCRSD is required to:

- Only allow water stormwater collected from the cleaning of stormwater drainage systems to be discharged.
- Track every discharge by Facility user's name and origin of material decanted.
- Test liquid waste for metals and oil pollutants by a Ecology-certified laboratory
- Field test liquid waste for pH and settleable solids
- Submit a quarterly report to KCIW on test results and usage

The following table outlines the substances tested for and their allowable limits:

Table 1 Renton Decant Facility Waste Water Permit Limits

RENTON Parameters	Allowable Limits
Arsenic	1.0 mg/L

Cadmium	0.5 mg/L
Chromium	2.75 mg/L
Copper	3.0 mg/L
Lead	2.0 mg/L
Mercury	0.1 mg/L
Nickel	2.5 mg/L
Silver	1.0 mg/L
Zinc	5.0 mg/L
Cyanide	2.0 mg/L
Nonpolar Fats, Oil & Grease	100 PPM
pH	5.0 – 12.0 SU
Settleable Solids	7.0 ml/L
Hydrogen Sulfide (atmospheric)	10.0 ppm

B. Stormwater Only

Only stormwater liquids and solids collected from the cleaning of drainage systems designed to collect stormwater (water that originates from precipitation and enters the stormwater system as stormwater runoff, groundwater, or surface water) is allowed to be disposed of at the Renton Decant Facility. The stormwater must meet the Waste Discharge Permit criteria as issued by the KCIW Program (see Section 8 above).

Waste materials specifically prohibited from being disposed of at the Renton Decant Facility include, but is not limited to:

- ⃠ Materials with suspected or obvious contamination
- ⃠ Waste or leachate collected from solid waste transfer Facility's
- ⃠ Sites associated with the production of solvents, fuels, PCBs, pesticides, or radioactive materials
- ⃠ Process water from car wash vaults
- ⃠ Waste materials from non-King County decant Facility's
- ⃠ Stormwater and/or water treatment systems (filters, etc.)
- ⃠ Concrete slurry

- ⃠ Waste material from stormwater drainage systems with known contamination
- ⃠ Sewage or industrial lift Facility's
- ⃠ Sanitary sewer systems or septic systems
- ⃠ Grease trap wastes
- ⃠ Water pumped from utility vaults (requires analytical testing/profile)

Any authorized user who disposes of prohibited wastes or waste materials at the Renton Decant Facility will be responsible for the cost of cleaning the decant facility, sewer line, and receiving treatment plant facilities. In addition, the user may have their authorization to use the facility revoked.

To be clear, the driver or trained user is ultimately responsible for the materials being disposed of at the Renton Decant Facility. The driver will be held accountable for delivery of prohibited wastes and/or misuse of the Facility, and King County reserves the right to deny entry to an individual for inappropriate discharge of prohibited wastes. Similarly, any public agency or private company identified for delivering prohibited wastes or misuse of the Facility may have their authorization to use the Facility revoked.

8. PROVIDE A WRITTEN CONTAMINATED LOAD PROCEDURE (Document Required)

Each authorized agency or company must provide documentation on company letterhead detailing their organization's handling of suspected contaminated loads or materials that are not in compliance with the KCRSD Regional Decant Discharge Permit as described in this contract. The Contaminated Load Procedure supports the understanding and agreement that drivers will recognize and pre-screen for any materials suspected of being contaminated or having obvious contamination, or any prohibited materials and will not bring or discharge these materials at the Renton Decant Facility.

9. ATTEND DRIVER TRAINING

Upon approval of the application, contact the Decant and Scales Program lead to schedule an appointment for training of each vacuum/flush (Vactor) truck drivers (drivers) assigned to use the Renton Decant Facility. All drivers who plan to use this Facility must complete the required King County training prior to use.

The training covers use of the King County scale system, Facility emergency shutdown procedures, operational procedures for decanting liquids and dumping solids, acceptable and unacceptable materials, and identification and screening of contaminated loads.

Additional topics may also be covered. KCRSD staff will maintain a database of personnel successfully completing the training program.

10. ALLOWABLE EQUIPMENT

Vehicles using the decant Facility must meet the following requirements:

- Ability to discharge liquids and solids separately
- Total capacity for liquid not to exceed 3,000 gallons
- Company sign or image on vehicle that is visible from 100 feet.
- Decant discharge hose reaches ground
- Scale card issued to the specific vehicle (matching VIN #, and Company ID#)

11. APPROVED APPLICATIONS AND ISSUANCE OF SCALE CARDS

The applicant is authorized to use the Renton Decant Facility once an application has been approved and scale card(s) issued. A scale card will be issued for each vehicle listed in the application. Approved applications may be modified at any time to add or delete vehicles and personnel. (Note: All new vehicles must be registered (using the Vehicle Identification Form) and all new personnel must attend the King County training.)

12. REVOCATION OF AUTHORIZATION

All Renton Decant Facility users are on the "honor system". This means that all trained users are expected to follow the procedures presented in this document and provided in their training. The trained users will be held accountable for any misuse of the facility and unacceptable materials disposed at the facility as well as the company or agency the user represents. King County reserves the right to revoke authorization to use the Facility for any of the following, including but not limited to: discharging liquids other than stormwater, dumping contaminated solids, misuse of the scales or decant Facility, failure to follow the "Regional Stormwater Decant Facility Operations & Maintenance Manual", failure to pay the monthly billing, allowing non-King County trained staff to use the Facility, and/or transferring scale cards between vehicles.

13. MISUSE OF THE SITE OR SCALES

The following actions constitute system misuse:

- Repeated loss of scale card
- Damage to Facility and or equipment
- Unauthorized use of the Facility (i.e. vehicle on-site with untrained staff, use during non-business hours)
- Failure to report problems
- Failure to clean the decant bay after use

14. FAILURE TO COMPLY WITH USE AGREEMENT OR OPERATIONS MANUAL PROCEDURES

All users will be provided a copy of "Regional Stormwater Decant Facility Operations & Maintenance Manual." All authorized users will be trained on using the manual. Failure to comply with conditions presented in the Use Agreement or the manual may result in revocation of authorization to use the Facility.

2019 - 2023 KING COUNTY
REGIONAL STORMWATER DECANT FACILITY PROGRAM
Use Agreement

Terms of the Regional Stormwater Decant Facility Program 2019 – 2023 Application - Use Agreement have been read and agreed to by:

Signature of owner or principal executive officer	Date
Print name	Title
Company	

THE FOLLOWING CHECKED ITEMS MUST BE INCLUDED IN YOUR COMPLETED APPLICATION PACKET:

- ☑ Application/Authorized User Information
- ☑ Signed Use Agreement
- ☑ Vehicle Identification Form
- ☑ Copy of State of Washington Resellers Permit
- ☑ Certificate of Liability Insurance
- ☑ Contaminated Load Procedure
- ☑ Fifteen-hundred dollar ($1,500.00) deposit
  - Checks or money orders only. Make checks payable to: King County DLS
  - A waiver of the cash deposit may be granted to public agencies.
  - Contact Accounting or Decant Lead Staff to arrange payment of the deposit

SEND COMPLETED APPLICATION TO:

King County Department of Local Services
Road Services Division
Regional Stormwater Decant Facility Program
ATTN: Jim Crawford
155 Monroe Ave NE
Renton, WA 98056-4199

Approved by_____ Date_____
Program Administrator, Roads Maintenance Section
King County Road Services Division

Approved by_____ Date_____
Financial Services Administrator, Finance Unit
King County Road Services Division

2019 - 2023 KING COUNTY
REGIONAL STORMWATER DECANT FACILITY PROGRAM

(Please Type or Print Clearly)

APPLICANT and/or AUTHORIZED USER INFORMATION

Business/Agency Name City of Tukwila

Owner or /Principal Executive Officer Name Allan Ekberg

Title Mayor

Business/Agency Physical Address 6200 Southcenter Blvd

City Tukwila Zip 98188

Tax ID Number 91-6001519 Telephone (206) 433-1860 Number

Fax Number (206) 575-3404 Cell Number

E-mail Address

Web Address www.tukwilawa.gov

Billing Address if different from above 600 Minkler Blvd

City Tukwila Zip 98188

Billing Contact Name Jeff Heglund

Title Sewer/Surface Water Superintendent

Billing Contact Telephone Number (206) 433-1864

Billing Contact E-mail Jeff.Heglund@tukwilawa.gov

Day-to-Day Operations Contact Name Jeff Heglund

Title Sewer/surface water superintendent

Telephone Number (206) 433-1864 Cell Number (206) 571-6312

E-mail Jeff.heglund@tukwilawa.gov

Please provide additional contacts as necessary. Please notify King County of any changes made to the information provided above within 30days by calling 206-477-2382.

Date

INFORMATIONAL MEMORANDUM

TO: Transportation and Infrastructure Committee
FROM: Henry Hash, Public Works Director
BY: Hari Ponnekanti, City Engineer
CC: Mayor Allan Ekberg
DATE: March 15, 2019
SUBJECT: BNSF Intermodal Facility Access Project
Project No. 99510409
Schedule Update and next steps

ISSUE

Provide an update on the Burlington Northern Santa Fe (BNSF) Intermodal Access Study.

BACKGROUND

Burlington Northern Santa Fe (BNSF) owns an Intermodal facility that transports containers from trucks to railroad and vice versa. This facility is located within Tukwila city limits in the Allentown community. The intermodal facility is adjacent to I-5 and just south of King County International Airport, also known as Boeing Field. BNSF calls this facility the South Seattle Intermodal Facility.

The City of Tukwila and BNSF jointly funded an access study to determine a potential new route for truck traffic into the intermodal yard. David Evans Associates began the study in March of 2015. The BNSF access study produced a draft report in November 2016. As part of the study, open houses were held, and community input was collected. The following five alternatives were studied;

1. Airport Way S
2. South 112th Street
3. South 124th Street
4. Gateway Drive - north leg
5. 48th Ave S Bridge

The draft study indicated that the 48th Ave S Bridge was the preferred alternative. The study remains in draft form.

ANALYSIS

The findings from the draft study were provided to the City Council in December 2016 after the first round of open houses and community outreach. The alternatives were presented at the August 17, 2017 Open House, with the preferred alternative identified as 48th Ave South Bridge. The next step was planned to bring these alternatives and funding options to the City Council in the fall of 2017.

The original next steps for the BNSF Intermodal Study included these options:

- Review and finalize the Preferred Alternative and seek Council adoption
- Identify and provide funding for preliminary engineering and design of preferred alternative
- Continue public outreach and continue SEPA process

The draft access study preferred alternative has not been finalized due to new information regarding the 42nd Ave S/Allentown Bridge, which became the top priority for the neighborhood. This bridge provides one of only three access points into the Allentown neighborhood, and is the sole access point for trucks traveling to and from the BNSF Intermodal yard. In August 2017, the City received the 42nd Ave S Bridge Structural Assessment, by TranTech Engineering LLC, which determined that, "…the existing bridge is both structurally deficient and functionally obsolete." The deficiency rating has resulted in the City being forced to post speed and load restrictions in March 2018.

The City met with BNSF and informed them of these changes. A grant to replace the existing 42nd Ave S Bridge was applied for through the federal Bridge Replacement Advisory Committee (BRAC) in September 2017 but was unsuccessful. The City's adopted the 2019-2024 Capital Improvement Program, which includes funding for the 42nd Ave S Bridge Replacement Project and the City is currently applying for another BRAC grant in 2019. The 2019 CIP does not include funding for the BNSF Intermodal Facility Access Project until after six years.

BNSF informed the City that if the 42nd Ave S/Allentown Bridge failed they would have no good alternative route. BNSF also stated that their trucks cannot negotiate the 90-degree turn along the river near Fire Station 53 and that access up the bridge into Skyway and the Martin Luther King Jr Way corridor is already heavily congested. In addition, the steep grade could pose difficulties for large trucks carrying heavy loads.

Also of note, the City has been seeking funds for the Strander Blvd Extension Phase 3 for the last 15 years and those funds have still not materialized for construction. As such, seeking funding to replace an existing failing bridge took priority over the new access point, which would likely compete with the Strander Blvd Project for funds.

TIMELINE/ROADMAP

- BNSF Intermodal Facility Access Study start date – 3/20/15
- Open Houses – March & August 2016
- BNSF Intermodal Facility Access Study – Draft Alternative Screening Analysis Report 11/28/16
- Open House – Preferred Alternative Outreach – 8/17/17
- 42nd Ave South Bridge Structural Assessment, August 2017
- City implements Structural Assessment & begins six-month review of 42nd Ave S Bridge, 2017
- City receives notification that 42nd Ave S Bridge did not receive BRAC funding – Dec. 2017
- Council adopts Ordinance No. 2566 restricting speeds on 42nd Ave S Bridge – 2/20/18
- City Applies for BRAC grant funding for 42nd Ave S Bridge Replacement – March 2019
- GNCC Meeting and Tour of the BNSF South Seattle Intermodal Facility – 3/27/19

BNSF has scheduled a Greater Northern Corridor Coalition (GNCC) meeting for March 27, 2019 and will be offering tours of the BNSF South Seattle Intermodal Facility at 10:00 a.m. for the GNCC meeting attendees. BNSF explains the GNCC as:

> "The Great Northern Corridor Coalition is a regional cooperative comprised of eight states, numerous ports, BNSF Railway, and other interested stakeholders along the Corridor. The states of Illinois, Wisconsin, Minnesota, North Dakota, Montana, Idaho, Oregon, and Washington have been collaborating for several years to promote region-wide cooperation, in transportation planning and shared infrastructure investment.
>
> The Coalition's primary purpose is to promote regional cooperation, planning, and shared project implementation for programs and projects. Its objective, to improve multimodal transportation system management and operations along the corridor, exactly matches the purpose of the Multimodal Corridor Operations and Management (MCOM) Program."

Coalition members are largely made up of state transportation departments in the states listed above, as well as various Ports located within those states. The only municipal participant is the town of Connell, Washington. It is the understanding of City staff that it is BNSF's goal to have the preferred alternative, the 48th Ave S Bridge, included on the list of necessary infrastructure investments that the GNCC is developing.

Councilmembers are invited to attend the tour on March 27, 2019 and should contact Hari Ponnekanti, Tukwila's Deputy Public Works Director/City Engineer to RSVP.

FINANCIAL IMPACT

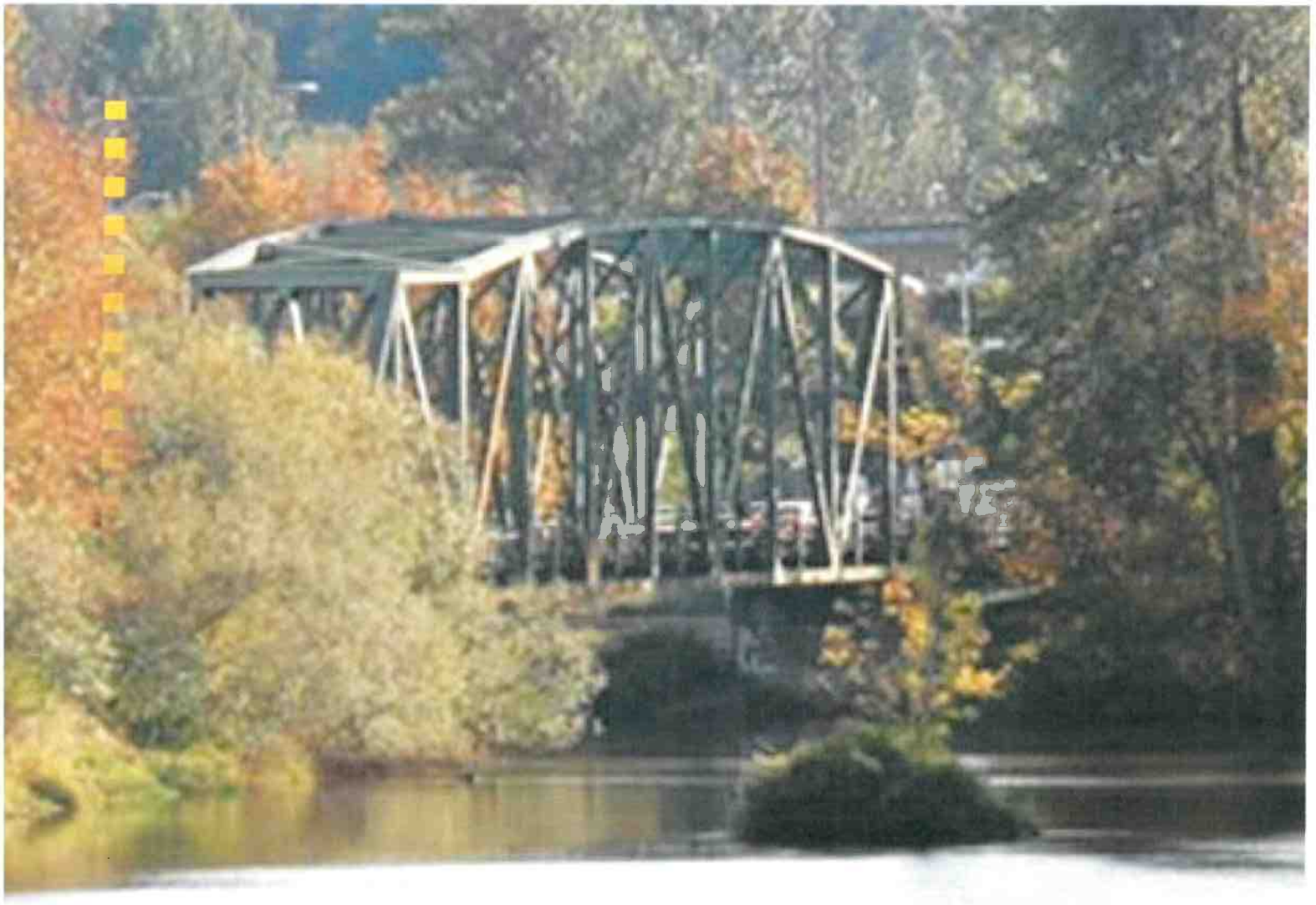
Project costs for the preferred alternative, 48th Ave S Bridge, are unknown until preliminary engineering is complete. Best available estimates developed in 2017 were approximately $20 million (adding 30% cost growth per year into 2019, the estimate would be $34 million). In general, there are not many outside funding sources (i.e. federal, state funding) for new bridges such as the potential 48th Ave S Bridge Project.

RECOMMENDATION

Information only.

ATTACHMENTS

- 42nd Ave S Bridge Structural Assessment, August 2017
- Draft BNSF Intermodal Facility Access Study – Excerpts - Draft Alternative Screening Analysis *(full draft report is available upon request)*
- Draft BNSF Intermodal Facility Access Study – Preferred Alternative Outreach Summary
  August 2017 Open House Summary
- Ordinance No. 2566 – Speed Restrictions on 42nd Ave S Bridge
- Great Northern Corridor Coalition Overview and list of partners



The City of Tukwila Public Works

August 2017

42nd Avenue South Bridge Structural Assessment

TRANTECH Engineering LLC

12011 NE 1st Street, Suite 305
Bellevue, WA 98005
(425) 453-5545

Executive Summary

The 42nd Avenue South Bridge is a 3-span 280-foot-long bridge built in 1949. The bridge is composed of a 220-foot-long fracture critical steel thru-truss main span with 30-foot-long concrete T-beam approach spans at each end. The existing bridge is both Structurally Deficient and Functionally Obsolete.

A three-tier structure assessment has revealed that there are critical structural elements within the 42nd Ave bridge structure that have deteriorated into poor conditions. The examples of these are the short plinth columns at the bridge approaches, truss gusset plates, and main span deck structure.

The bridge is currently nearing the end of its service life and requires strengthening, repainting, deck work, a seismic retrofit, and scour protection, if it were to remain in service. The cost of this work would be prohibitively expensive and would exceed the cost of a new bridge.

The proposed new structure will have the added advantages of being a redundant concrete bridge with very low life cycle maintenance costs to the Bridge Program or to the City of Tukwila.

A cost estimate for the proposed replacement bridge is presented in Appendix C.

Furthermore, it is recommended that until the bridge can be replaced, the interim inspection frequency remains at a six-month interval with special attention being paid to the critical structural elements identified in the structural analysis presented here. A monitoring plan has been developed and will be implemented by the City of Tukwila until bridge funding can be secured and the bridge can be replaced.

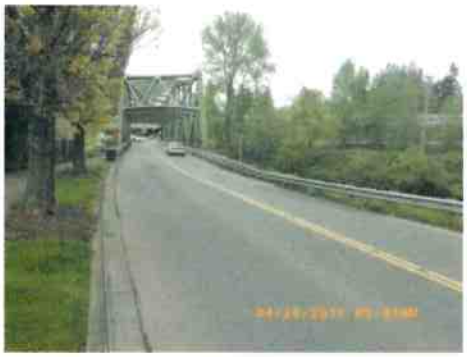
Table of Contents

1. INTRODUCTION

The 42nd Avenue South Bridge is a 3-span 280-foot-long bridge built in 1949. The bridge is composed of a 220-foot-long fracture critical steel thru-truss main span with 30-foot-long concrete T-beam approach spans at each end. The existing bridge is both Structurally Deficient and Functionally Obsolete. The plans for the existing bridge are available under the "Records/Plans" tab in the WSDOT Bridge Inspection Application.

The bridge is located within the City of Tukwila on a sharp bend of the Duwamish River that produces turbulent high velocity flows at the truss abutments. These frequent flows have caused scour damage at the bridge abutments and at the north approach roadway. Because the bridge foundation depths are unknown and there is active scour, the City has implemented a scour Plan of Action (POA) for high flow events. Additionally, existing riprap at Pier 2 is either washing away or is falling into a scour hole developing on the river side of the pier. The bridge is the only access for the BNSF intermodal yard located at the end of South 124th Street as other routes into the yard prohibit trucks. As a result, the bridge has been subjected to an unusually high percentage of truck traffic constantly crossing the bridge around the clock.

The City of Tukwila has struggled for years to maintain the bridge. Maintenance projects includ a major paint project in the mid-1990's and a significant project to rebuild the north bridge approach after erosion, caused by scour, threatened the existing roadway. This problem is currently resurfacing even after the City installed a sheet pile wall to protect the approach. A dramatic illustration is the sinking of the north approach guardrail posts with a section of the rail currently at almost ground level. There is also the ongoing problem of keeping the bridge clean enough to perform valid inspections. Cleaning the bridge adds significant cost to the already expensive fracture critical inspections as well as adding equipment scheduling complications.



In addition to the substructure problems, the deck and floor system are in distress as evidenced by significant loud floor system creaking and deck panel banging under traffic. These problems have been reported by bridge inspectors and Tukwila

Maintenance for years. These noises cannot be associated with specific damage at this point but are worrisome in a fracture critical bridge subjected to extreme fatigue stresses by the heavy truck traffic.

The bridge is currently nearing the end of its service life and would require strengthening, repainting, deck work, a seismic retrofit, and scour protection, if it were to remain in service. The cost of this work would be prohibitively expensive and would exceed the cost of a new bridge. The proposed new structure will have the added advantage of being a redundant concrete bridge with very low life cycle maintenance costs to the Bridge Program and to the City of Tukwila.

2. STRUCTURAL ASSESSMENT

The structural assessment activities performed as part of this study have a three-tier approach that is described in detail in the following sections:

2.1 Tier 1 - Bridge Inspections

The 42nd Avenue South Bridge has been inspected on an increased frequency (a reduced frequency duration) since 2014. The frequency change started at 12 months and is now set at a six-month interval for Interim Inspections. These inspections focused on monitoring the damaged short concrete plinth columns supporting the approach span girder bearings at piers 2 and 3 and bridge gusset plates.

Since 2014, the bridge has also undergone several in-depth and routine bridge inspections with the most recent being in spring of 2017. The observations and data obtained from these inspections has been utilized in a new comprehensive load rating per WSDOT and AASHTO recommended Load Factor Rating requirements that includes gusset plate and Emergency Vehicle (EV) ratings. The new load rating is described in further detail in the following sections. The in-depth and interim inspections, some of which were performed with UBIT special access and after bridge cleaning to ensure a valid inspection, indicate that approximately one third of the truss structure is now in BMS Condition State 3 and that the Substructure Overall Condition rating is at a 4-code because of critical damage to the concrete plinth columns at Piers 2 and 3. Please see Appendix A for the latest Inspection Report.

The resulting Sufficiency Rating has dropped in steps as the inspection and analysis has progressed, reaching its current level of 7.56 SD. The new load rating indicates that posting of the bridge for legal loads, single hauling vehicles, and emergency vehicles is necessary. The City is currently implementing the NBIS load posting requirements.

2.2 Tier 2 - Structural Assessment – Piers 2 and 3 Column Damages

The City of Tukwila has initiated a structural evaluation of the short concrete approach span, girder support columns at Piers 2 and 3. The deterioration of these columns was listed as one of the main reasons for the reduction of the Substructure Overall Code to 4 (i.e., Poor Condition) as reported in the 2015 bridge inspection report. This engineering analysis is supporting information to justify the request for bridge replacement funding from the WSDOT administered Local Bridge Program. The results of the structural analyses are summarized below.

Eight short plinth columns support the concrete T-beams of approach Spans 1 and 3. The girders sit on a rocker bearing installed on top of each plinth. These bearings are completely frozen by pack rust and deterioration. In addition, the rocker bearings for the truss span at Pier 2 appear have been frozen or locked in the expansion direction for years.

Each column has six number seven vertical shear friction bars at their interface with the pier wall.

First, the plinth columns were analyzed for temperature and vehicular breaking force induced stresses. These results showed that the demand forces are not large enough to create the observed damage.

Next, seismic forces were analyzed and were shown to be large enough to yield the interface of the short columns and the piers wall as the forces are transferred through the semi rigid link caused by the frozen bearings. This condition is accentuated at the obtuse corner (i.e. Column Plinth 3A at northwest corner of the Pier 3).

The existing bridge design, which includes an extreme skew of 38°, puts these columns at additional risk from seismic events as well as from normal temperature and traffic forces as torque forces are developed and added to the high shear forces.

The interface cracking has been documented since 2001 (upper photo) and the cracks are currently opening and starting to spall. In addition, there has been documented evidence for many years of the deterioration of the reinforcing steel as evidenced by rusty leaching. These problems may have been initiated during the April 29, 1965 South Sound Earthquake and were likely compounded by the February 28, 2001 Nisqually earthquake. However, the damage is aggravated daily by the constant truck traffic and seasonally due to normal temperature

forces. This constant cyclical bombardment of Column 3A make it a failure risk for Span 3.

Since the rocker bearings located on the plinths are all completely frozen, there is a semi-rigid link allowing these high magnitude forces to be transmitted through Span 3 to the North Abutment, Pier 4. Again, due to the bridge's large skew, a concentration of force is toward the northwest side of the abutment as illustrated by the damage at this location. This concentration of force may play a role in the continued settlement issues of the north bridge approach roadway at the steel sheet pile wall repair mentioned above.

2.3 Tier 3 - Updated Load Rating Analysis

A gusset plate load rating update was performed in November 2014 that did not consider the coding changes made during the condition assessments performed in the Spring of 2015. A new comprehensive Load Rating Report was completed in August 2017 as part of the funding analysis as well as to evaluate the bridge for emergency vehicles. The new load rating indicates that the deck and gusset plates have ratings that are below 1.0 with respect to the legal trucks and that the gusset plates control. TranTech has ranked the gusset plates by their criticality and has identified the failure mechanism of each plate. This information will be used to focus the gusset plate inspection during future interim and routine bridge inspections. The rating outcome has further reduced the bridge's capacity and the resulting Sufficiency Rating. A copy of the Summary Sheet from the new load rating is attached in Appendix B.

3. CONCLUDING REMARKS

A three-tier structure assessment has revealed that there are critical structural elements of the 42nd Ave bridge structure that have deteriorated to poor conditions. Examples are the short columns at the bridge approaches, truss gusset plates, and main span deck structure. Rehabilitation of this structure would be prohibitively expensive and a bridge replacement is recommended. A cost estimate for this bridge replacement is presented in Appendix C.

Furthermore, it is recommended that until the bridge can be replaced, the interim inspection frequency remains at a six-month interval with special attention being paid to the critical structural elements identified in the structural analysis. A monitoring plan has been developed and will be implemented by the City of Tukwila until bridge funding can be secured and the bridge can be replaced.

APPENDIX A | Current Inspection Report

BRIDGE INSPECTION REPORT

Status: Released | Printed On: 8/17/2017 | Agency: TUKWILA

CD Guid: 4305b7a6-8599-4765-87ce-c492bac836bd | CD Date: 7/27/2017 | Program Mgr: Roman G. Peralta

Br. No. TUKWILA-14 **SID** 08109700 **Br. Name** 42ND AVENUE SOUTH BR

Carrying 42ND AVE SO **Route On** 01037 **Mile Post** 1.04

Intersecting DUWAMISH RIVER **Route Under** **Mile Post**

Inspector's Signature GDG Cert # G0014 Cert Exp Date 5/12/2021 Co-Inspector's Signature

2		Structural Eval	(1657)	27	23	Operating Tons	(1552)	2		No Utilities	(2675)
2		Deck Geometry	(1658)	0.77	0.65	Op RF	(1553)	1		Bridge Rails	(1684)
9		Underclearance	(1659)	16	14	Inventory Tons	(1555)	0		Transition	(1685)
8		Alignment	(1661)	0.46	0.39	Inv RF	(1556)	0		Guardrails	(1686)
6	5	Deck Overall	(1663)	5	3	Operating Level	(1660)	0		Terminals	(1687)
5		Superstructure	(1671)	A		Open/Closed	(1293)	0.00		Asphalt Depth	(2610)
4		Substructure	(1676)	8		Waterway	(1662)	6.00		Design Curb Ht	(2611)
9		Culvert	(1678)	U		Scour	(1680)	40.0		Bridge Rail Ht	(2612)
5		Chan/Protection	(1677)			Soundings Flag	(2693)	1949		Year Built	(1332)
N		Pier/Abut/Prot	(1679)	N		Revise Rating	(2688)	0		Year Rebuilt	(1336)
4		Drain Cond	(7664)			Photos Flag	(2691)	Y		Subj to NBIS	(2614)
1		Drain Status	(7665)			Measure Clrnc	(2694)				
M		Deck Scaling	(7666)	6		Sdwk Cond	(7673)				
10		Scaling Pct	(7667)	5		Paint Cond	(7674)				
7		Deck Rutting	(7669)	6		Approach Cond	(7681)				
7		Exposed Rebar	(7670)	7		Retaining Wall	(7682)				
6		Curb Cond	(7672)	9		Pier Prot	(7683)				

Alpha Span Type:

STrus

Sufficiency Rating 7.56 SD

High Risk

Inspections Performed:

Freq	Hrs	Date	Rep Type
12	6.0	4/26/2017	Routine
24	6.0	4/26/2017	Fract Crit
			UW
			Special
24	1.0	2/26/2016	Interim
			UWI
			Damage
			Safety
			Short Span
			In Depth
			Geometric

BMS Elements

Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
12	Concrete Deck	6,816	SF	6,811	0	5	0
35	Concrete Deck Soffit	6,816	SF	6,812	0	4	0
110	Concrete Girder	256	LF	256	0	0	0
113	Steel Stringer	1,100	LF	1,050	0	50	0
126	Steel Thru Truss	440	LF	286	0	154	0
133	Truss Gusset Plates	40	EA	20	0	20	0
152	Steel Floor Beam	332	LF	282	50	0	0
205	Concrete Pile/Column	18	EA	10	0	8	0
212	Concrete Submerged Pier Wall	74	LF	71	3	0	0
215	Concrete Abutment	76	LF	66	0	10	0
234	Concrete Pier Cap/Crossbeam	149	LF	149	0	0	0
266	Concrete Sidewalk & Supports	1,100	SF	1,100	0	0	0
311	Moveable Bearing (roller, sliding, etc)	10	EA	2	0	0	8
313	Fixed Bearing	2	EA	2	0	0	0

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Carrying 42ND AVE SO **Route On** 01037 **Mile Post** 1.04

Intersecting DUWAMISH RIVER **Route Under** **Mile Post**

BMS Elements (Continued)

Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
330	Metal Bridge Railing	568	LF	456	100	12	0
340	Metal Pedestrian Railing	284	LF	284	0	0	0
357	Pack Rust	50	EA	46	4	0	0
361	Scour	4	EA	2	2	0	0
362	(Discontinued) Impact Damage	1	EA	1	0	0	0
402	Open Concrete Joint	216	LF	0	0	216	0
408	Steel Sliding Plate	48	LF	0	0	48	0
901	Red Lead Alkyd Paint System	17,000	SF	11,800	4,000	1,000	200

Notes

0	ORIENTATION Beginning of bridge at south abutment (nearest traffic signal at Interurban Ave).
1	FRACTURE CRITICAL INSPECTION This includes visual inspection of truss tension members, bottom chords, floor beams, diagonal and vertical members. See Fracture Critical Report in Files Tab.
3	UBIT 60 UBIT can deploy through both sides of truss. However, the bridge deck is narrow with low portals and sways. Suggest closing the bridge for next UBIT inspection due to the bouncing motion of the UBIT caused by the high volume of truck traffic on the bridge. Also added congestion to main arterial Interurban Ave S from the in inadequate approach distance on 42nd Ave S to south portal of the bridge. TRANSIENTS Activity under Span 3. Garbage accumulated, litter and needles on top of cap 3.
11	EV2 RF = 0.62 EV3 RF = 0.42 LOAD RATING Gusset Plate at L2U1-East controls. A new load rating has been performed (August 2017) and the bridge requires load posting for AASHTO 2 and 3, SHV 5,6,&7, and EV 2 and 3. The City is in the process of implementing the posting requirements.
12	CONCRETE DECK (SURFACE) Open joints at floorbeam. Exposed aggregate in wheel lines and slight rutting. Moderate scaling, pop-outs and mudball voids scattered throughout surface. Longitudinal cracks concentrated near ends of bridge, some porosity. North bound lane: 4"-6" pavement spall. South bound lane: 6" loose pavement near double yellow line.
35	CONCRETE DECK SOFFIT Diagonal hairline leaching cracks near steel stringers. Deck fillets are spalled in several locations along top flanges of floorbeams. Many short exposed rebar in edge overhangs due to lack of cover and poor consolidation of concrete. Scattered hairline transverse rusty leaching cracks in soffit. Moderate sized pockets of poor consolidation - spans 2-4 thru 2-7.
110	CONCRETE GIRDER Four lines of CIP concrete T-beams in Spans 1 and 3. Webs have hairline vertical and diagonal cracks. 1A - Vertical crack near Pier 2 End diaphragm @ Pier 3 - hairline vertical leaching cracks Span 3 griders are coverd with soot
113	STEEL STRINGER Five lines of stringers (5x220=1100 LF). Square cope at connection to floorbeams, no cracks observed. Rusty top flanges. Mud staining on outside stringers. Rust blisters on a few copes.

Status: Released | Printed On: 8/17/2017 | Agency: TUKWILA

CD Guid: 4305b7a6-8599-4765-87ce-c492bac836bd | CD Date: 7/27/2017 | Program Mgr: Roman G. Peralta

Br. No. TUKWILA-14 **SID** 08109700 **Br. Name** 42ND AVENUE SOUTH BR

Carrying 42ND AVE SO **Route On** 01037 **Mile Post** 1.04

Intersecting DUWAMISH RIVER **Route Under** **Mile Post**

Notes (Continued)

126	STEEL THRU TRUSS GENERAL: See 2017 FCR for detail on fracture critical members. Lower panel points were dry cleaned prior to inspection. Upper panel points and those connecting members are covered in guano droppings, active nests in upper chords and owls nest at L4E. Debris building up in bottom chord. See note #133 Gusset Plates PACK RUST: Pack rust is starting to develop in all built-up members but hasn't reached the point of popping rivet heads. - Up to 1/8" pack rust in seams of tension and compression diagonals. - Pack rust between bottom lateral gusset plates and bottom chord has caused bulging up to 3/8" at most chord joints. - Pack rust between interior cover plates and bottom chord channel has caused warping of cover plate up to 1/4". - Bottom laterals have seam rust and pack rust up to 3/8" along tops of members. - Bottom chords two channel beams from L2 to L8 E&W addition plates riveted to webs, pack rust forming between channel webs and plates distorting up to 1/8" between rivets. - Upper chords seam rust along channel/plate seams throughout. PORTALS & SWAYS: SOUTH PORTAL, U1W-U2E: High load traffic damage to south portal and sway frame. North flange of south portal is bent north 3" over 2 ft length. Bottom flange of sway is pushed up 2" over 8" length. Top flange of sway has a sine-wave shaped crimp, 1" over 7" length. Center of sway is bent 1'-0" to north. -SWAY M1W-M2E: Impact damage to sway, pushed 5" to north with flanges buckled. SWAY M2W-M3E: Minor impact damage. U5W: Paint blister and minor pack rust along edge of top chord. L7W: 2 rusty rivet heads on bottom plate. L7-U7E: Paint failure at SW. L7-L8W: Pack rust on lower chord. L8W: Pack rust 1/8" on bottom plate. L9W-U9W: Pitting up to 1/8" near top of bottom gusset plate. L9W: Gusset plate 7/16" thick. Pack rust 1/8" on bottom plate and 1/4" V.P.
133	STEEL GUSSET PLATES 20 gusset plates per truss line. High bird activity. Bottom lateral gusset plates at bottom chord have pack rust causing bulging up to 3/8" at most chord joints. Interior cover plates at bottom chord channel have pack rust causing warping of cover plate up to 1/4". Interior rivet heads have blistered paint or lack paint, many are heavily rusted. 5LE bottom plate has two deformed rivet heads.
152	STEEL FLOOR BEAM Two skewed end floorbeams and ten transverse floorbeams (2x33.6+10x26.5=332 LF). Dirt and mud at connections to truss. Laminar rust along top flange with minor section loss (<2%).
205	CONCRETE PILE Five concrete piles each at Piers 1 and 4, with cap and backwall. Rough concrete and a few hairline cracks at cap interface. 1C: 10" spall with exposed rebar. 4A, 4B, 4C: Hairline horizontal cracks at about 1 ft. spacing. CONCRETE COLUMNS: 28" tall concrete columns support the sliding plate bearings at Piers 2 & 3. 2A: Horizontal crack at cap interface, exposed rusty rebar, corners are spalled off, NW corner of bearing is unsupported. 2B: Horizontal crack at cap interface, exposed rusty rebar, large spalls in NW corner of bearing is unsupported. 2C: Horizontal crack at cap interface, exposed 4" section of rusty rebar 2D: Hairline crack at cap interface, SE corner is spalled off (18" high by 4" deep) 3A: Horizontal cracks at cap interface 3B: Horizontal cracks at cap interface 3C: 12" of horizontal rebar exposed on south side 3D: Hairline crack at cap interface
212	CONCRETE SUBMERGED PIER WALL Hairline vertical cracks in pier walls. Many 1-1/2" shallow form tie holes in both walls. Pier 2: water abrasion along north face. Pier 3: Three 12" x 12" x 1" deep areas of abrasion in south face.
215	CONCRETE ABUTMENT Both backwalls have a few hairline vertical cracks throughout. Graffiti at face of abutment. Pier 4: gap under backwall from pile 4A through 4D, minor erosion/sloughing. NW wingwall: open diagonal crack above top of cap to ground line (1.75" gap at top) with 2 ft x 8" x 6" deep spall with 5" exposed rebar. NE wingwall: 8" x 6" x 3" deep spall. Two steel plates attached on the east side of north abutment wall at the NE corner bridge rail. MONITOR NOTES 2/25/2016 Pier 2 concrete columns - no change noted. Pier 3 concrete columns - Heavy graffiti on north face of column of all columns and pier cap. Change noted in column 3A; north face - cracks at base along interface with pier cap, full width. Cracks are narrow to open, some new chips and small spalls along crack line. Column is tilted to the north 1.5 degrees. Abutment 4 - west corner at wingwall interface. 2016: Gap is 1.75" at top horizontal face. Concrete piles with transverse cracks - no change

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Br. No. TUKWILA-14 **SID** 08109700 **Br. Name** 42ND AVENUE SOUTH BR

Carrying 42ND AVE SO **Route On** 01037 **Mile Post** 1.04

Intersecting DUWAMISH RIVER **Route Under** **Mile Post**

Notes (Continued)

234 CONCRETE PIER CAP
Hairline vertical cracks in perimeter, tops are covered with mud, moss and transient debris.
Pier 2 - spall with exposed rebar NW, north & SE face.
Pier-3. Caps have open form tie holes.
Pier 4 : 4A, 4B & 4C top of beam cap spall across width of stringer.

266 CONCRETE SIDEWALK & SUPPORTS Surface: Transverse cracks at panel points, open up to 1/8", small spalls starting to form. ACP at south approach to sidewalk is steep (Repair #12316). Vegetation growing along edge next to east truss line. Soffit: Many hairline transverse cracks leaching on underside. Form anchors still in place on soffit along channel web. Supports: Steel knee braces support sidewalk in Span 2. Top clips at truss are separating due to pack rust.

311 MOVEABLE BEARING
Rocker Bearings- Truss: Both bearings 2-1A & 2-1B are tipped 5° expanded, temperature was 44° F.
Rocker Bearings - approach spans. Eight skewed steel bearings, each bearing has two hing bars.
Bearings are mounted on concrete plinths at Piers 2 and 3. Pack rust between sole plates and hing bars on all bearings. Hing bars at 2A, 2D, 3-1A and 3-1D, are bulging up to 1/8" from pack rust, all eight bearings are frozen.
SEE NOTE 1676 SUBSTRUCTURE - for details on the concrete plinths.

313 FIXED BEARING Two pinned shoe bearings at Pier 3, minor rust on edges.

330 METAL BRIDGE RAILING Retrofitted thrie beam has minor traffic scrapes throughout. Rail has loose connection at U5L5 in east truss and rattles under traffic. Curbs cracked open 1/8" over truss floorbeams. Tack welds broken on west rail, widespread.

340 METAL PEDESTRIAN RAILING Rail panel section loose at bottom tube connection to post, east sidewalk north of centerline of the river, between L4 & L5.

357 PACK RUST Seam rust and pack rust - most 1/4" or less on built-up members throughout truss.

361 SCOUR, FIELD
Pier 2 is located on the outside of a sharp meander bend in the Duwamish River.
Riprap along Pier 2 has a scour scallop, about 8 to 10 feet in diameter at the center of pier, two relic piles are exposed in the scalloped area. During inspection flow increased velocity with the changing tide. The main thalweg flow is near the left bank at Pier 2; back eddies were noted along the center and downstream face of Pier 2. Riprap is scattered and missing along the downstream face of Pier 3. Gravel bar visible upstream of pier 3, right bank to mid channel. Riprap has scatted areas upstream and downstream along both banks. 2015 soundings show 2.5' deepening near Pier 2. Little change to gravel bar forming near Pier 3.
SOUNDINGS: are taken from upstream rail at truss panel points:

Year	L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
2015	18.5	30.5	41.5	44.5	40.5	36.0	29.7	28.5	26.5	23.5	16.0
2014	19.0	30.5	39.0	42.0	39.5	34.0	28.5	28.0	26.5	23.5	15.0
2013	18.8	30.2	41.0	42.0	42.0	35.0	30.0	27.5	26.0	23.8	16.0
2007	18.5	30.5	40.0	43.5	43.0	37.5	31.0	28.5	27.0	25.5	15.0

Update soundings every two years or more often if lateral migration is suspected. Monitor riprap at low tide and low flow periods.

362 IMPACT DAMAGE Traffic impact damage to truss south portal and sway members.

402 JOINT FILLER Open joints over floorbeams; most of fabric fill is worn away, allowing mud and water to pump through onto floorbeam top flanges (Repair #12306).

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Intersecting DUWAMISH RIVER **Route Under** **Mile Post**

Notes (Continued)

408 STEEL SLIDING PLATE
Joints are full of dirt. D-spalls and delaminations along edges of both joints. Water leaks through joint onto truss main piers.
MEASUREMENTS: are taken at center line of each joint.

YEAR	TEMP	TIME	PIER 2 (WEST)	PIER 3 (EAST)
2016	62°	09:00	1-0"	1-1/2"
2015	48°	09:20	7/8"	1-1/2"
2013	48°	11:00	15/16"	1-3/8"
2011	50°	15:30	15/16"	1-3/8"
2009	65°	10:00	1-0"	1-5/8"
2007	50°	08:00	1-1/2"	1-5/8"
2005	65°	10:00	1-0"	1-3/8"

901 RED LEAD ALKYD PAINT SYSTEM Top coat of paint on top chord has flaked off in many areas. There are a few rust spots where failed paint has exposed bare metal. Seam rust is bleeding through along edges of built-up members. Moss growth on some diagonal/vertical members.

1663 The Deck Overall code was downgraded based on deck and floor system deterioration. The deck panels are non-composite and are loose and banging on the floor system under traffic. In addition, the floor system is creaking and groaning under load. These problems are not revealing themselves in recordable damage but the loose deck panels and lack of continuity was taken into account in a new load rating update.

1676 SUBSTRUCTURE
Code reduced to 4 due to condition of concrete plinths under rocker bearings at piers 2 and 3.
Pier 2 plinth 2A, and 2B have open cracks at interface with pier cap. All plinths have large spalls with exposed rebar along edges, several are spalled under bearing plates.
Pier 3 plinth 3A and 3B have open cracks at interface with pier cap. Several plinths have spalls with exposed rebar.

Unknown pile tip elevation of piles supporting Piers 2 & 3.
Channel thalweg is near pier 2, riprap is scattered.

1680 SCOUR , OFFICE Scour analysis done in 2014. Since pile tip elevations are not available, the scour code = "U". The channel is centered under L3-East and is slightly aggradating at piers 1, 2 and 3. Calculated contraction scour is 0.6 feet, local pier scour ranges between 6 feet and 13 feet depending on angle of attack. Plans indicate bottom of footing at -7.0, top of rail is estimated per plans at 28.0.

1685 TRANSITION Bridge rail transition at Pier 1 west side is missing approach guard rail.

1686 GUARDRAILS SE Traffic impact damage to approach rail flex beam. NW Approach rail is below standard height at settlement area, 18in to top of rail.

1687 TERMINAL Terminals not slotted. Attenuator is located at NE corner.

2675 NO. OF UTILITIES Two utilities are suspended from east edge under sidewalk: One 12" diameter steel waterline with mechanically restrained joints. One 6" diameter gas pipe.

2694 CLEARANCE Vertical clearance at portals and sway braces 3" from curb: East truss: E-M0 - W-M0 = 15'-3 1/8" E-M2 - W-M1 = 15'-0 1/4" E-M3 - W-M2 = 15'-0" E-M4 - W-M3 = 15'-0" E-M5 - W-M4 = 15'-0 7/16" E-M6 - W-M5 = 15'-0 3/8" E-M7 - W-M6 = 15'-1 3/8" E-M8 - W-M7 = 15'-0 1/8" E-M9 - W-M8 = 15'-0 1/8"

7664 DRAINS Drains are plugged throughout.

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Notes (Continued)

7681 APPROACH ROADWAY
Longitudinal and transverse cracking in ACP in both approaches.
South approach - slight settlement.
North approach - settlement at sheet pile wall and in southbound lane for 50 ft north of approach, longitudinal cracks and fault cracks around settled area, approximately 1" settlement.

7682 RETAINING WALL Sheet pile wall to retain NW approach fill, no defects noted.

Repairs

Repair No	Pr	R	Repair Descriptions	Noted	Maint	Verified
12306	1	B	JOINTS SPAN 2: (MAH Revised 4/10/2015) Open Joints: Clean out open joints over floor beams thoroughly and fill with a flexible sealant, priority 1 due to corrosion at top flanges of floorbeams from leaking joints.	3/25/1998		
12316	1	B	SIDEWALK: North approach - rework the sliding plate expansion joint so it is smooth with sidewalk. Deck - patch spalls near panel points, seal open cracks.	4/12/2007		
13469	1	B	RAIL: SW transition is missing approach guard rail and terminal. SE guardrail is bent and deformed. NW guardrail has sunk down below acceptable standards. REPAIR - replace missing guard rail and terminal at SW corner, replace damaged rail at SE corner, reset NW rail and posts to bring rail up to standard height.	4/8/2013		
13471	1	B	PAINT: Paint has failed in many locations on top of top chords of truss. Pack rust is forming in seams of all built-up members. Moist dirt and pigeon guano are trapped in truss panel points and will cause premature paint failure. Algae growing on many members. REPAIR - Thoroughly pressure wash clean truss of all dirt/algae/guano, prepare surface, paint bridge to encapsulate pack rust and protect truss members. Add bird deterrent at all panel points, upper and lower chords.	4/8/2013		
13473	1	B	EXPANSION JOINT: Steel sliding plate expansion joints allows water and dirt to fall onto top of caps at Piers 2 and 3. The edges around the joints are chipped and spalled. REPAIR - Replace steel sliding plate expansion joints with either a strip seal with steel header or modular joint.	4/8/2013		
13474	S	S	SCOUR: Current scour code is coded "5" which means that foundation is stable for calculated scour depths. Need copy of pile tip elevations from city for bridge file.	4/16/2013		

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Repairs (Continued)

Repair No	Pr	R	Repair Descriptions	Noted	Maint	Verified
13475	2	B	STRUCTURAL SUBSTRUCTURE: (RPH Revised 4/8/13) Concrete columns supporting sliding bearings at Piers 2 and 3 have horizontal cracks at cap interface, exposed rusty rebar, spalls and delaminations. Pier 2 - Cap has spall, with rusted rebar and open cracks up to .05mm. Pier 3 - heavily abraded at waterline. Pier 4 - columns 4A-C have horizontal cracks. Abutment backwall is undermining along west half. West wing wall has large open crack and spalls. REPAIRS: P2 and P3 bearing columns - recommend design seismic retrofit steel collar and construct around bearing columns, anchored to cap, then fill tight with epoxy. Pier 2 - cap clean exposed rebar and patch spalls, epoxy inject cracks. Pier 3 - clean and patch abraded areas of pier wall Pier 4 - FRP wrap columns 4 A-C. Reinforce west wingwall. Add quarryspall along abutment 4 and under span 3 to retain fill and discourage transient activity.	4/16/2013		
13476	2	B	SCOUR: (RPH Revised 7/22/2014) Small scour scallops in left bank armor in front of Pier 2. Riprap is sparse and scattered through mudbar in front of Pier 3. Monitor the downstream inside face of Pier 3 at low water. REPAIR - Replace missing riprap along banks and in front of piers.	4/17/2013		
13478	1	B	SWAY BRACES: Heat straighten south portal and sway E-M3/W-M2. Sway bracing measures 15'-0" three inches from curb. Vertical clearance signs are required for measured clearances less than or equal to 15'-3" Install warning signs at both portals with posted height 3" less than lowest measured clearance. Recommend raising portals and sways due to the high volume of truck traffic and existing damage to sway members.	4/10/2015		
13479	2	B	BEARINGS: Main span rocker bearings at pier 2 are frozen in expanded position, fixed bearing at pier 3 are offset. Clean and reset main span bearings. Approach span bearings - slide bearing at pier 2 and 3 are corroded - possibly frozen. Replace sliding plates with elastomeric dynamic isolation bearings.	4/10/2015		
13480	2	B	DECK SOFFIT - widespread honeycombed areas, spalls with exposed rebar east side of soffit. SURFACE - worn to aggregate, spalling along joints. Patches of light scaling. REPAIR: Chip any delamintaed concrete from exposed rebar, clean and seal exposed bar and patch spalls. Sack honeycombed areas throughout soffit. Shotblast deck surface, patch spalled areas and apply epoxy overlay.	4/10/2015		

Inspections Performed and Resources Required

Report Type	Date	Freq	Hrs	Insp	CertNo	Coinsp	Note
Routine	4/26/2017	12	6.0	ZZ	G1414	TTT	
Fracture Critical	4/26/2017	24	6.0	ZZ	G1414	TTT	

Resources	Hours	Min	Pref	Max	Freq Date	Need Date	Override	Notes
UBIT	6.00							SDOT UBIT 60 USED

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Inspections Performed and Resources Required (Continued)

Report Type		Date	Freq	Hrs	Insp	CertNo	Coinsp	Note
Flagging	6.00							LOCAL AGENCY Flagging provided by City of Tukwila - contact Steve Carstens at 206-431-2446
Interim		2/26/2016	24	1.0	MAH	G1103	BLR	Inspect short concrete columns supporting bearings at piers 2 and 3. See Monitor Note 695 for details

Resources	Hours	Min	Pref	Max	Freq Date	Need Date	Override	Notes
Special Equipment								Bring ladder to reach columns and bearings.

Equipment		4/26/2017	24	6.0	ZZ	G1414	TTT	

Resources	Hours	Min	Pref	Max	Freq Date	Need Date	Override	Notes
UBIT	4.00							SDOT UBIT-60 USED
Flagging	4.00							Flagging provided by City of Tukwila - contact Steve Carstens 206-431-2446.

Informational		7/27/2017			GDG	G0014		Updated load rating information with 2017 rating results. Downgraded Deck Overall to account for loose deck panels and floor system noise under traffic. These issues have were noted in inspections since 2014 were not noted. This change was made with the concurrance of the previous bridge inspector.

Washington State Department of Transportation

WSBIS Local Agency Inventory Report

Bridge ID

1001 Structure ID	2009 Bridge Number	2132 Bridge Name	1019 Owner	1286 Cust	1021 County	2023 City	1156 Location	2181 Section	2183 Twnship	2185 Range	1188 Latitude	1196 Longitude
08109700	TUKWILA-14	42ND AVENUE SOUTH BR	04	4	17	1320	.03 MI N OF INTERURBAN AV	10	23	04E	47° 29' 23.10"	122° 16' 49.00"

Facilities

1232 Feature Intersected	1256 Facilities Carried	1274 Region	7281 Leg1	7283 Leg2	1276 FIPS	1285 Toll	1288 Para	1289 Temp	1293 OPC	1292 NRHP	2295 HAER	7296 LRHP
DUWAMISH RIVER	42ND AVE SO	NW	11	0	72625	3	N		A	4		

Printed Date: **8/17/2017**

Sufficiency Rating: 7.56 SD (Item 2710 SR / Item 2711 SD/FO)

High Risk

Layout

1332 Year Built	1336 Year Rebuilt	1340 Bridge Length	2346 NBIS Length	1348 Maximum Span Length	1352 Lanes On	1356 Curb to Curb Deck Width	1360 Out to Out Deck Width	1364 Sidewalk Left	1367 Sidewalk Right	1310 Skew	1312 Flared	1370 Min Vert Over Deck	1374 Min Vert Under	1378 Vert Code	1379 Min Lat Under Right	1382 Lat Code	1383 Min Lat Under Left	1386 Nav Ctl Code	1387 Nav Vert Clear	1390 Nav Horiz Clear	1394 Nav Vert Lift Clear	1291 Median	1397 Appr Rdwy
1949	0	284		220	2	24.0	30.0	0.0	3.5	38	N	15' 00"	00' 00"	N	0.0	N	0.0	0	0	0		0	36

Crossing

1432 On Under	1433 Hwy Class	1434 Service Level	1435 Route Number	2440 Milepost	1445 ADT	1451 Truck %	1453 Year of ADT	1457 Future ADT	1463 Future ADT Year	1467 Linear Referencing System	1477 LRS Sub	1469 LRS Milepost	2410 NBI Bridge	7479 Fed Aid Route #	1483 NHS	1484 BHS	1485 STRAH	1486 FLH	1487 Funct. Class	1489 NTN	1490 Lane Use Direction	1354 Lanes Under	1491 Horizontal Clearance Route Dir	1495 Horizontal Clearance Reverse Dir	1499 Max Vert Clearance Route	1413 Detour	2441 Speed Limit
1	5	1	01037	1.04	10000	20	2014	11000	2034	01037			Y	1037	0	0	0	0	17	N	2	0	24' 00"		*15' 00"*	2	25

Design

1532 Main Span Material	1533 Main Span Design	1535 Appr Span Material	1536 Appr Span Design	1538 Number Main Spans	1541 Number Appr Spans	1544 Service On	1545 Service Under	1546 Deck Type	1547 Wearing Surface	1548 Membrane	1549 Deck Protect	1550 Design Load Code	1551 Oper Rating Method	1552 Oper Rating Tons	1553 Oper Rating Factor	1554 Inv Rating Method	1555 Inv Rating Tons	1556 Inv Rating Factor	1585 Border State Cd	1588 Border Pct	1590 Border Structure ID	7565 Fed Aid Project No	7557 Design Exemption
3	10	1	04	1	2	5	5	1	1	0	0	4	6	27	0.77	6	16	0.46					
														23	0.65		14	0.39					

Load Rating

2587 Type 3	2588 Type 3S2	2589 Type 3-3	2590 NRL	2591 SHV 4	2592 SHV 5	2593 SHV 6	2594 SHV 7	2595 OL 1	2596 OL 2
1.21	0.90	0.84	0.73	1.11	0.98	0.88	0.81	0.65	0.34

Waterway/ Prop Imp

7832 Water Type	7833 Flood Pln Intr	7834 Flood Control	7835 Flood Hist	7836 Scour	7837 Strmbd Matrl	7838 Substr Stablty	7839 Wtrwy Obstr	7840 Strmbd Stablty	7841 Strmbd Anabrn	1844 Piers In Watr	1846 Type Work	1847 Work Meth	2853 Stru Imp Length	2860 Roadway Width	1867 Cost Per SF	1873 Struct Cost	2870 Rdwy Cost	1861 Engr Cost	1879 Total Cost	2883 Estmt Year	Prop Imp Cost Calc
B	A	N	H	2	3	N	A	N	2	31	1	294	38	800	4469	894	3575	8938	2014	Y

Inspection Report Types

2920 Inspection	1990 Date	2646 Inspector	2649 Cert No	2654 Co-Inspector
Routine				
Fracture Critical				
Special Feature				
Underwater				

Inspection	Date	Inspector	Cert No	Co-Inspector
UW Interim				
Interim				
In Depth				
Damage				

Inspection	Date	Inspector	Cert No	Co-Inspector
Safety				
Short Span				
Geometric				
Info	7/27/2017	GDG	G0014	
Inventory				

Control Data Guid: 4305b7a6-8599-4765-87ce-c492bac836bd Control Data Date: 7/27/2017

APPENDIX B | Current Load Rating Summary

BRIDGE RATING SUMMARY

Bridge Name:	42ND AVENUE SOUTH BR
Bridge Number:	TUKWILA-14
Span Types:	Steel Through Truss Bridge & Approach Slabs
Bridge Length:	280' (220' Truss + 2x30' Approach Slab)
Design Load:	HS20-44
Rated By:	VP
Checked By:	KN
Date:	8/1/2017

Inspection Report Date	4/26/2017	Substructure Condition	4
Rating Method	LFR	Deck Condition	6
Overlay Thickness	0"/Truss & 2"/Approach	Superstructure Condition	5

Truck	RF (INV)	RF (OPR)	Controlling Point
AASHTO-1	0.72	1.21	Yielding in member L2U1
AASHTO-2	0.54	0.90	Yielding in member L2U1
AASHTO-3	0.50	0.84	Yielding in member L2U1
NRL	0.44	0.73	Yielding in member L2U1
OL-1	0.39	0.65	Yielding in member L2U1
OL-2	0.20	0.34	Yielding in member L2U1

NBI Rating	RF		Controlling Point
Inventory (HS-20)	0.39		Yielding in member L2U1
Operating (HS-20)	0.65		Yielding in member L2U1

Remarks: Bridge requires posting. The single unit and FAST Act vehicles rating factors are:

Operating Rating	RF	Ton	Controlling Point
SU4 (GVW = 54 K)	1.11	29.97	Yielding in member L2U1
SU5 (GVW = 62 K)	0.98	30.38	Yielding in member L2U1
SU6 (GVW = 69.5 K)	0.88	30.58	Yielding in member L2U1
SU7 (GVW = 77.5 K)	0.81	31.39	Yielding in member L2U1
EV2 (GVW = 57.5 K)	0.62	17.83	Yielding in member L2U1
EV3 (GVW = 86.0 K)	0.42	18.06	Yielding in member L2U1

APPENDIX C | Bridge Replacement Estimate

City of Tukwila-Tukwila 14-42nd Avenue Bridge Replacement Cost Estimate August 1, 2017

285 foot simple span with angled bearings.

STD. ITEM	ITEM DESCRIPTION	MEAS. UNIT	QUANTITY	UNIT PRICE	COST
130	REMOVING ASPHALT CONCRETE SIDEWALK	SY	10	$ 150	$ 1,500
170	REMOVING GUARDRAIL	LF	40	$ 25	$ 1,000
1085	QUARRY SPALLS	CY	500	$ 40	$ 20,000
4006	STRUCTURE EXCAVATION CLASS A INCL. HAUL	CY	200	$ 150	$ 30,000
4010	SPECIAL EXCAVATION	CY	100	$ 200	$ 20,000
4013	SHORING OR EXTRA EXCAVATION CLASS A - SHAFT	LS	1	$ 25,000	$ 25,000
4007	SOIL EXCAVATION FOR SHAFT INCL HAUL	CY	450	$ 450	$ 202,500
4008	FURNISH AND PLACE TEMP CASING FOR 60" DIAM SHAFT	LF	600	$ 200	$ 120,000
	FURNISH PERM CASING FOR 60" DIAM SHAFT	LF	600	$ 450	$ 270,000
	PLACING PERM CASING FOR 60" DIAM SHAFT	EA	6	$ 3,000	$ 18,000
	CONC CL 4000P FOR SHAFT	CY	450	$ 300	$ 135,000
	ST REINF BAR FOR SHAFT	LBS	540,000	$ 1.70	$ 918,000
	CSL ACCESS TUBES	LF	600	$ 15	$ 9,000
	REMOVING SHAFT OBSTRUCTIONS	LS	1	$ 100,000	$ 100,000
	REMOVING EXISTING BRIDGE SUPERSTRUCTURE	LS	1	$ 300,000	$ 300,000
	REMOVING EXISTING BRIDGE FOUNDATION	LS	1	$ 300,000	$ 300,000
	REMOVING EXISTING BRIDGE APPROACHES	LS	1	$ 100,000	$ 100,000
	TEMPORARY DETOUR BRIDGE	LS	1	$ 1,250,000	$ 1,250,000
	PRESTRESSED CONCRETE GIRDERS, WATER XING WITH PILING	LF	1,750	$ 300	$ 525,000
	BRIDGE APPROACH SLAB	SY	280	$ 250	$ 70,000
	REINFORCED CONC RETAINING WALL	SF	2,000	$ 90	$ 180,000
	CONC CL 4000 FOR BRIDGE	CY	550	$ 575	$ 316,250
	STRUCTURAL SURVEYING	LS	1	$ 30,000	$ 30,000
4438	EXPANSION JOINT SYSTEM COMPRESSION SEAL - SUPERSTRUCT.	LF	160	100	$ 16,000
4339	EXPANSION JOINT SYSTEM STRIP SEAL	LF	160	800	$ 128,000
4410	BRIDGE RAILING	LF	600	120	$ 72,000
6403	ESA LEAD	DAYS	280	120	$ 33,600
6416	SEEDING, FERTILIZING, AND MULCHING	LS	1	3,000	$ 3,000
6455	BIODEGRADABLE EROSION CONTROL BLANKET	SY	250	4	$ 1,000
6470	STREET CLEANING	HR	120	200	$ 24,000
6471	INLET PROTECTION	EA	6	100	$ 600
6488	EROSION CONTROL AND WATER POLLUTION PREVENTION	LS	1	2,000	$ 2,000
6630	HIGH VISIBILITY FENCE	LF	300	4	$ 1,200
6806	PAINT LINE	LF	-	5	$ -
6869	PEDESTRIAN TRAFFIC CONTROL	LS	1	10,000	$ 10,000
6899	BRIDGE MOUNTED SIGN	EA	2	1,000	$ 2,000
6903	TEMPORARY ILLUMINATION SYSTEM	LS	1	10,000	$ 10,000
6913	PORTABLE TEMPORARY TRAFFIC CONTROL SIGNAL	LS	1	30,000	$ 30,000
6971	PROJECT TEMPORARY TRAFFIC CONTROL	LS	1	100,000	$ 100,000
6974	TRAFFIC CONTROL SUPERVISOR	LS	1	10,000	$ 10,000
6982	CONSTRUCTION SIGNS CLASS A	SF	200	20	$ 4,000
7003	TYPE B PROGRESS SCHEDULE	LS	1	5,000	$ 5,000
7052	BRIDGE END SIDEWALK RAMP	EA	2	1,000	$ 2,000
7400	TRAINING	HR	500	20	$ 10,000
7480	ROADSIDE CLEANUP	EST	1	10,000	$ 10,000
7500	FIELD OFFICE BUILDING	LS	1	20,000	$ 20,000
7570	HEALTH AND SAFETY PLAN	LS	1	10,000	$ 10,000
7736	SPCC PLAN	LS	1	2,000	$ 2,000
	APPROACH @15% OF BRIDGE COST	LS	1	817,148	$ 817,148
	WILDLIFE MANAGEMENT	LS	1	5,000	$ 5,000
	SUBTOTAL				$ 6,269,798
	CONTINGENCY (15%)				$ 940,470
	MOBILIZATION			$ 626,980	$ 626,980
	RIGHT OF WAY COSTS				$ 500,000
	PRELIMINARY ENGINEERING (25% CONSTRUCTION COST)				$ 1,567,449
	CONSTRUCTION MANAGEMENT (18% CONSTRUCTION COST)				$ 1,128,564
	INFLATION FACTOR (5%/YEAR BASED ON PROJECTED AD DATE)				$ 1,351,181
	TOTAL				$ 12,384,440

PE Costs (approximately 25% of Total)	
(Soils, Environmental, Desig Docuemnts, Plan Preparation, etc.)	$ 1,567,449
Right of Way Costs	
(Purchases, Reoloation and Construction Easement)	$ 500,000
Construction Costs	
(Environmental mitigation, approach costs (15%), structure costs, etc)	$ 6,269,798
Construction engineering (18%)	$ 1,128,564
contingency (15%)	$ 940,470
Mobilization (10%)	$ 626,980
Inflation Factor (5% per year based on project Ad Date below)	$ 1,351,181
Total Rehabilitation/Replacement/Preventative Maitnenance Project Costs	$ 12,384,440

BNSF RAILWAY INTERMODAL FACILITY ACCESS STUDY

ALTERNATIVE SCREENING ANALYSIS REPORT

Prepared for:

City of Tukwila
Public Works Department
6300 Southcenter Boulevard
Tukwila, WA 98005

Prepared by:

David Evans and Associates, Inc.
14432 SE Eastgate Way
Bellevue, WA 98007

November 28, 2016

EXECUTIVE SUMMARY

This Alternative Screening Analysis Report for the City of Tukwila was prepared by David Evans and Associates, Inc. to evaluate alternative access to the Burlington Northern Santa Fe (BNSF) Railway intermodal facility in Tukwila, Washington. This facility is also known as South Seattle Yard. BNSF Railway also sponsored this study.

The existing access to the intermodal facility uses 42nd Avenue S and S 124th Street. S 124th Street is also a residential collector street serving the community of Allentown. Several residential homes with driveways are located on S 124th Street, as is the Tukwila Community Center which houses an aquatic center, meeting rooms, classes and activities for all ages, and playground and ball fields.

This study did not create new alternatives but used alternatives that were developed by previous studies. A total of five alternatives were studied: Airport Way S, S 112th Street, S 124th Street, Gateway Drive – North Leg, and 48th Avenue S.

Several desktop researches were performed as part of this study. These researches included critical and sensitive areas, fish and wildlife, water resources, hazardous materials, geological and soils, and cultural and historical resources.

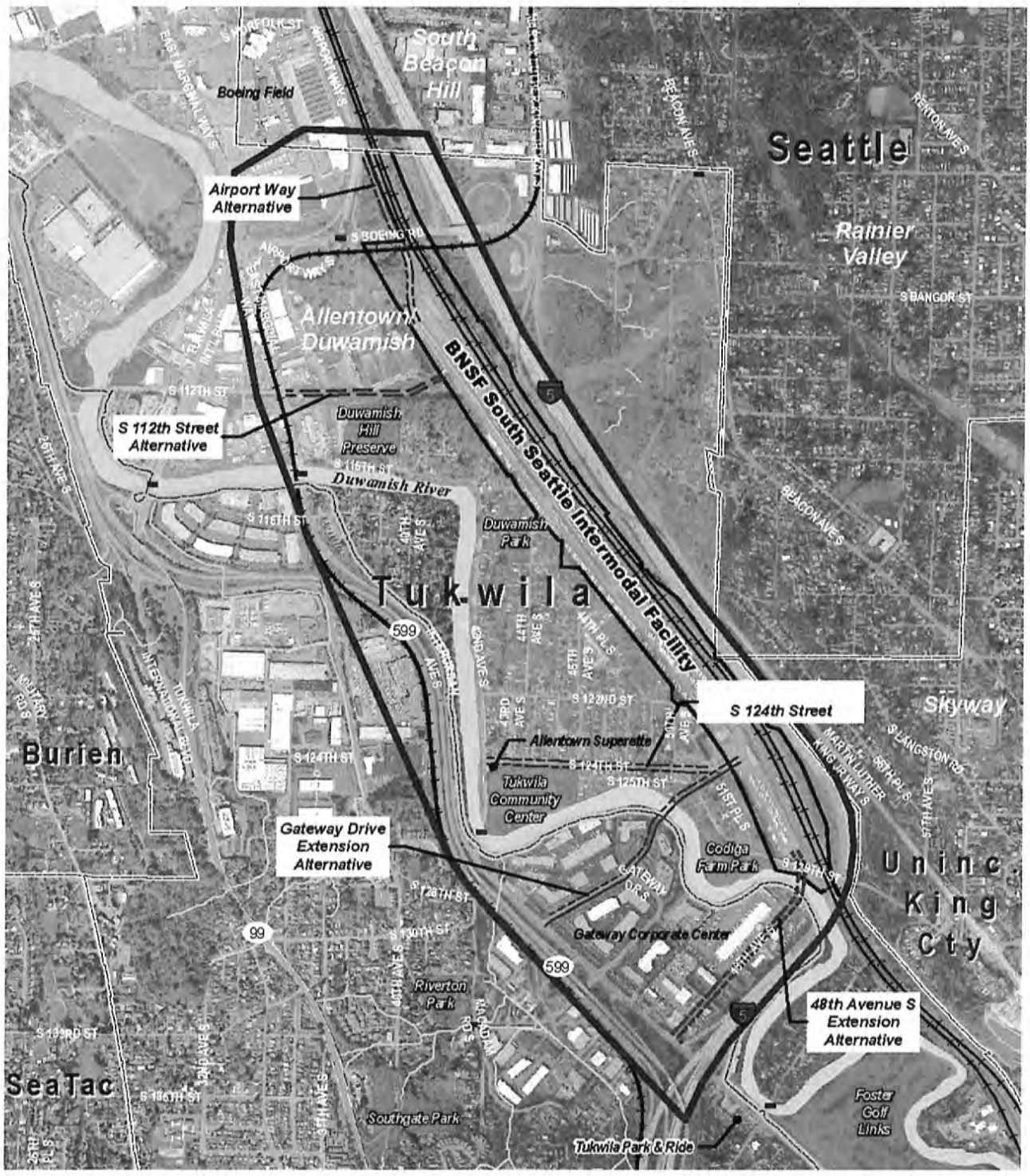
A scored screening matrix was developed collaboratively between the City of Tukwila, BNSF Railway, and David Evans and Associates, Inc. The matrix was presented to Tukwila City Council as well as to the public for their feedback on the screening matrix criteria. The public was allowed to provide feedback via an on-line open house and an in-person open house.

Representatives from Tukwila, BNSF Railway, and David Evans and Associates, Inc. met to score each alternative using a numerical scoring system from 1 to 9. The score for each criteria was added, and the lowest score is the preferred alternative.

Based on the scoring result, the 48th Avenue S alternative is the preferred alternative.

Figure 1 shows the project study area. The following provides a description for each alternative.

Figure 1 – Project Study Area



Preferred Alternative Outreach Summary

BNSF Access Study

DRAFT – September 5, 2017

Background

In 2016, the Tukwila community provided input on the screening criteria that was used to develop the BNSF Access Study report. The City identified a preferred alternative route and shared it with the community at an open house on August 17, 2017.

Summary

The City of Tukwila hosted an in-person open house at the Tukwila Community Center on August 17, 2017. The in-person house accompanied an online open house, which included the same information as the in-person open house and was available from August 15 - 28, 2017.

Notifications

The project team advertised the in-person and online open houses in early August 2017. Notifications included the following:

- Postcard sent to the Allentown and Duwamish neighborhoods
- Emails to the City's project listserv
    - Listserv includes community members, business and property owners, other interested parties
- Flier emailed as attachment to Allentown and Duwamish neighborhood listservs by neighborhood leaders
- Facebook and Twitter posts on the City's social media accounts

Attendance and visitor statistics

- In-person open house attendance: 42
- In-person comment forms completed: 20
- Online open house visitors: 32
- Online surveys completed: 12
- Overall number of participants: 74

Engagement Methods

In-Person Open House

The City gathered shared information about the preferred alternative and other considered alternatives during an open house at the Tukwila Community Center on August 17, 2017, from 5:30 p.m. to 7:30 p.m. Participants viewed informational boards that described the project purpose, schedule, alternative and preferred routes, screening criteria and environmental process. Project staff were on hand to answer questions. Participants contributed comments via comment cards. Comments received at the open house are shown in Appendix 1 and summarized below.

In-person open house participants give feedback on comment cards.

Online Open House

In order to reach Tukwila businesses and residents who were unable to attend the in-person open house, the City advertised an online open house, available 24 hours a day, seven days a week, starting August 15 and ending August 28. The online open house included the same information as at the in-person open house and a survey that gathered specific feedback in a similar fashion to the comment boxes at the in-person open house. Comments received through the online open house are shown in Appendices 2 and summarized below.

Feedback Overview

Several themes emerged from the input received through 32 comments and surveys:

- Those who supported the preferred alternative (15) stated a number of reasons for their support, including **moving the truck route to a commercial street and away from residences**, **access/proximity to I-5 and current residential impacts on 124th**.
- **All residents who said they live along or near the current access route** who participated (4) **supported moving the truck access route** to another street.
- Those who opposed the preferred alternative (4) stated **increased traffic**, **business impacts** and **residential impacts** as reasons for their opposition.
- Several participants urged the City to **study or investigate cost** (4) **and traffic** (3). Several participants also expressed interest in **potential environmental impacts** (3).

Next Steps

All feedback presented here is being provided to the project team for consideration. The study and proposed route will be presented to City Council in the fall of 2017.

One participant requested specific follow up regarding business impacts on 48th Ave S: Quinn Closson, 360-607-8178, qclosson@pape.com.

Appendices

1. Comments gathered at in-person open house
2. Online comments
3. Notifications

Appendix 1: Comments Gathered at In-person Open House

Note: comments are verbatim as written. Commenters were asked if they live, work or visit Tukwila.

Live	Work	Visit	Name	Email	Comment (verbatim)
x			Phillip Camball	Phillameball@hotmail.com	Anything except 48th Ave S. Minimum public $, maximum private funding.
x			Angela Steel	angelasb13@hotmail.com	I prefer the 48th Ave S option as the least impactful to residential properties in Allentown and Duwamish. This option keeps semis on existing truck routes w/out creating new roads through environmentally critical areas or private property. *Also need noise wall along edge of railyard.
			[unknown]	[unknown]	My first choice BNSF move out completely. Second choice I prefer 48th Ave S. Build wall to control noise and shaking control.
x			Mary Fertakis	[unknown]	Thanks for all the work that has been done on this. The grid was particularly helpful - very concrete information and easy to understand. The original study in 1990 shows that the 48th st option was the least expensive and made the most sense. It is the same in 2017. Seems pretty clear that this is still the direction to go.
x	x		David Shumate	David@propeldesigns.com	The 48th Ave and Bridge looks like the best one!
x	x		Sean Albert	seanalbert2001@hotmail.com	I think the preferred 48th ave south route is by far the best alternative!!

x			Patty Cokus	pcokus@hotmail.com	I agree wholeheartedly with the preffered study route where it impacts all identified impact criteria the least and is the least expensive. Thank you for working on this and advocating for community input and gathering feedback. The preferred route makes the most sense for all.
x			[Illegible]	[unknown]	I think the preferred option makes the most sense of those presented. It takes the traffic completely off residential streets and on to a commercial street that already accomodates semi-truck traffic.
x			Lucia Nilo	ltannilo@hotmail.com	I hope this project gets look at seriously as I really enjoy my home at 124th - but the vibration of the trucks in and out 24-7 is really bad and nuisance. It shakes our house especially when sleeping - the NO-Build option: S 124th should not be an option.
x			Wilfredo Nilo	wznilo@gmail.com	We live by 124th ave which is active for semi-trucker. Since we moved here from september 2016 we felt a massive vibration everytime those truckets pass by. We live in a brand new home and it created major cracks in aour garage. We worried whats gonna happen next.
x			Oscar Uceda	o.uceda@yahoo.com	We would like to support the prefer alternative for the trucks route coming in and out of the BNSF Railroad Yard facility in Allentown.

x	x	Becky [Illegible]	becarosep@aim.com	Concern the increase in traffic from now and 20 years down the road on the 48th ave purposal. What effects it will have on the businesses on 48th (widening roads etc) Residents being impacted by not being able to get access to the businesses they already go to.
	x	Morgan Llewellyn	mllewellyn@ccim.net	I'm wonderng how the project will be funded particularly in light of the right away acquisitions required by the preferred route. It appears the northern route would have the least impact on residential AND commercial businesses.
	x	Todd Jones	rain1916@comcast.net	I stronly oppose Gateway Drive option and 124th st options. I do like the 48th st option or others to the north.
x		Hanice Ludington	shofarJCL@gmail.com	My preference is Airport Way s
x		[Illegible]	[Illegible]	The road should go out the north end. I live on 51st (across the street from the flat bed trucks, and am concerned about where the railroad will put the road inside this yard. Will trucks have to be removed and trailers [illegible]? And if so, where will they go? It is close to our homes, your moving one road to another.
	x	Linda McLeod	sam.linda.mcleod@gmail.com	No on Gateway Dr. Divides BECU campuses, has many employees + customers
	x	[unknown]	[unknown]	Airport SO. (BEST) [*sic*]

x	Edna Derr[illegible]	edna0801@gmail.com	I live in 122nd st. I hope the 124th s st. would be closed as enterence of BNSF or trucks facility. The impact to our home and neighborhood is terrible, the house vibrates each time; lots of noise; and traffic gets crowded. 48th st is great alternative for the BNSB enterence.
	Steven	steve@xmrine.com	We'd like to see a traffic impact study done on inerurban and exit 156 off I-5. Please go to fife and see the issues they have and avoid that happening to us.

Appendix 2: Comments from Online Open House

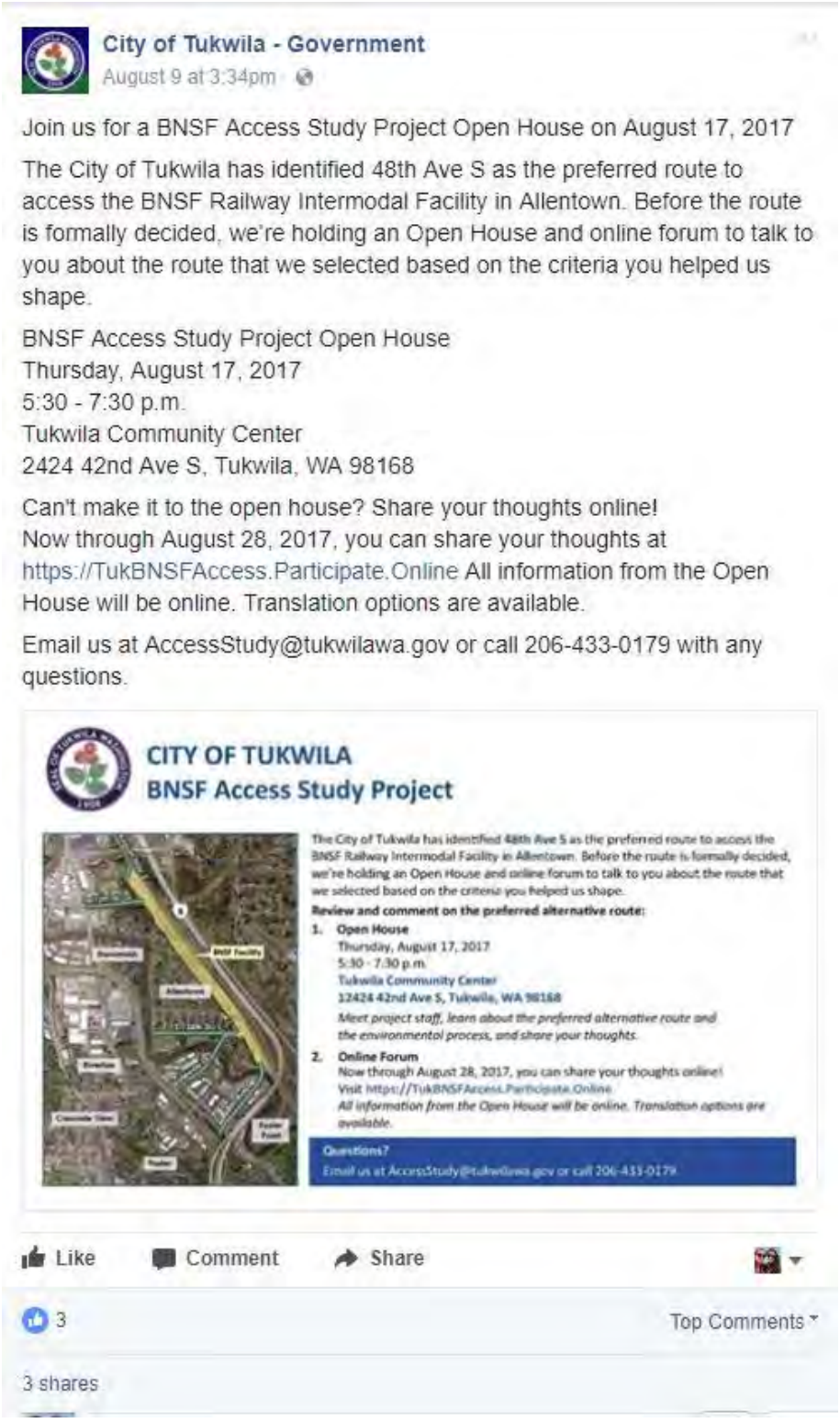
Note: comments are verbatim as written.

Comment
1. Will all trucks no longer use 124th st ? 2. Will there be entry and exit capability from 50th PL S/129th street? we must have the capability to enter and exit from 50th PL S/129th street. Please make sure this option available. Thanks for your consideration
How much will this cost? What about an option to improve the 42nd st. bridge by the community center and do some mitigation on the streets that the trucks drive down, such as widening the shoulders of the street, side walks and maybe even some sort of sound barrier? How is this project prioritized compared to needs in other neighborhoods such as sidewalks and road repair?
I am an employee of BECU and believe that the 48th Ave So. preferred option is by far the best choice. Not only from a cost perspective but also from a life safety, employee/member environment and the disruption of multiple businesses/residential and land/building value standpoint. The 48th Ave So. option already houses a street with truck yard access and would be a much easier way to execute on this initiative. While I know this still impacts some, it is the reasonable choice and should be adopted.
I am not only a Tukwila resident but also a Tukwila business owner that would be greatly affected by the "preferred" route of 48th AVE S. The overall impact on the businesses along this route would be devastating. People are already frustrated with the current amount of big trucks coming along 48th. We are already lacking suitable gas stations in Tukwila. Please don't make them impossible to get to. Tukwila is a growing city and the north side (Airport way) of it is already industrial. Interurban Ave is an incredibly popular thoroughfare for many people going south/north and the 2 gas stations on 48th Ave services more than half of those people. Please reconsider 112th or Airport way as the better alternative that will impact our growing city the least amount. Thank you.
I am very happy that the city is analyzing other options for the truck route into the BNSF yard. The current route is not sustainable. My family prefers the 48th Av S option since it uses an existing commercial street and is least impactful to residential communities and the environment. I would like you to heavily factor in the environmental impacts the other two northerly options would have on wetlands and existing greenspaces.Will the Airport Way option impede future Light rail/Sounder station location planning efforts? How will the different entrance options impact yard operations? Currently, the BNSF yard is very noisy 24/7 with back up beepers. Will these operations shift or diminish with the varying options? Can the city proceed with pursuing the noise wall installation along the railyard boundary? I think this will make a significant improvement to the quality of life in Duwamish and Allentown. thank you
I represent The Pape' Group, Inc. who owns the Ditch Witch dealership on 48th Ave, South. I understand there will be significant traffic impact during construction. I don't think we're overly concerned about that. However, I'd like a little more information on the traffic study or estimates on additional traffic impact on 48th Ave. South after completion of the project. Also, will there be any improvements done to the 48th Ave road itself? Finally, is there something I'm missing that you think we should be concerned about as a business right on 48th Ave? Thanks, Quinn Closson 360-607-8178 qclosson@pape.com

I wish that this 124th St. access be change to a different access ASAP because we moved here in a new home development last year 2016 of Sept. which we are not aware about this 124th St. right beside our house is the major access for truckers. We encountered 24-7 of a massive vibration like an earthquake multiple times everyday and we felt scary that our house may collapse one of this day. So far we had a multiple long cracks in our garage and hopefully will not affect the foundation. We live right by the stop sign where those truckers heading out from BNSF gate and also for coming in. That really distract us everyday. There's a time when some of the truck driver lost their focus on the stop sign especially in the evening and they made an emergency brakes and it shakes the ground so bad and it vibrates our house also. I Believe that 48th Ave S is the best alternatives route for the truckers.
I work at BECU. The Gateway alternative would have a negative impact on our members who come into our Tukwila Financial Center to conduct their personal business (primarily retail banking, trust services, and investment services). We are about to engage on a Gateway campus upgrade and a truck route cutting through the middle of it would have a negative impact on our employee experience and may have a negative impact on our ability to recruit and retain employees. Given the existing land use abutting most of your preferred alternative (gas stations, commercial, etc.). I can see the potential noise downside for a hotel (but it's already next To I-5 and a busy off ramp so marginal impact seems moderate).
I would like to avoid having another bridge over the river and prefer this option: S 112th Street Thank you.
Thank you for considering all options and explaining the reasoning. What timeframe are you looking at for construction of the new bridge and roadway. What impact will there be on the existing Interurban Bike/Walking Trail both during construction and upon completion. Will traffic studies be done to work on minimalizing impact at the intersection for traffic on Interurban and from the off ramp on I5?
This route makes the most sense as it is a quick, direct route off of I-5, drives through a commercial area only and does not affect the public's experience of their greenspace, except for a small segment of the bike trail. I fully support this preferred route.
What are the costs? How it will be funded?

Appendix 3: Notifications

Social media

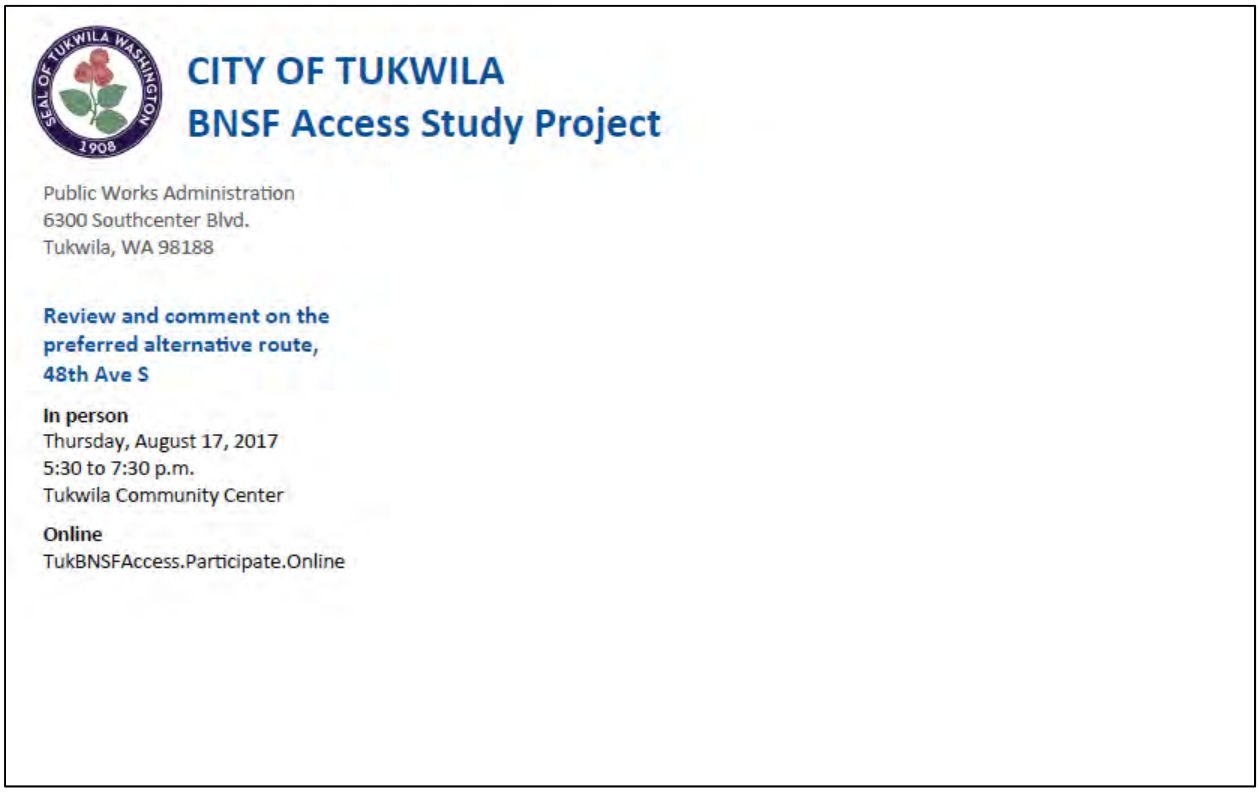


Facebook post published August 9, 2017.

Tweet published August 9, 2017.

Postcard

One side of a postcard sent to the Allentown and Duwamish neighborhoods.



Reverse of a postcard sent to the Allentown and Duwamish neighborhoods.

Emails

City of Tukwila

Washington

Ordinance No. 2566

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF TUKWILA, WASHINGTON, ESTABLISHING NEW REGULATIONS TO ACCURATELY DEFINE THE PORTION OF 42ND AVENUE SOUTH BETWEEN 124TH STREET SOUTH AND INTERURBAN AVENUE SOUTH WHERE THE SPEED LIMIT IS TO BE REDUCED FROM 25 MPH TO 15 MPH FOR AASHTO TYPE 1, 2, AND 3 TRUCKS ONLY; REPEALING ORDINANCE NO. 1801, AS CODIFIED AT TUKWILA MUNICIPAL CODE SECTION 9.16.060; PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, American Association of State Highway Officials (AASHTO) defines a Type 1 truck as a three-axle truck limited to 25 tons; and

WHEREAS, AASHTO defines a Type 2 truck as a three-axle truck with a two-axle single trailer limited to 36 tons; and

WHEREAS, AASHTO defines a Type 3 truck as a three-axle truck with two, double-axle trailers limited to 40 tons; and

WHEREAS, Title 23 Code of Federal Regulations (CFR) subpart c, *National Bridge Inspection Standards (NBIS) Section 650.313 (c)* states: "Post or restrict the bridge in accordance with the AASHTO Manual or in accordance with State law, when the maximum unrestricted legal loads or State routine permit loads exceed that allowed under the operating rating or equivalent rating factor"; and

WHEREAS, *AASHTO Manual for Bridge Evaluation 2nd Edition 2011 – with 2016 Interim Revisions*, Section 6A.8.1 and Section 6B.7.2**,** states, "When the maximum legal load under state law exceeds the safe load capacity of a bridge, restrictive posting shall be required"; and

WHEREAS, the bridge crossing the Duwamish River on 42nd Avenue South, also known as Tukwila-14, structure ID 08109700, has been determined to require a restriction to the legal truck loads for AASHTO truck Type 3, which includes a reduction to the speed limit from 25 MPH to 15 MPH for all AASHTO truck types; and

WHEREAS, RCW 46.61.415 authorizes the City to alter speed limits on the basis of engineering and traffic investigations; and

WHEREAS, an engineering investigation was conducted in the form of a load rating analysis of 42nd Avenue South between South 124th Street and Interurban Avenue South; and

WHEREAS, based upon the load rating analysis, the City has determined that 15 miles per hour is a reasonable and safe maximum limit for AASHTO Type 1, 2, and 3 trucks traveling on 42nd Avenue South between South 124th Street and Interurban Avenue South;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF TUKWILA, WASHINGTON, HEREBY ORDAINS AS FOLLOWS:

Section 1. Repealer. Ordinance No. 1801, as codified at TMC Section 9.16.060, "South 124th Street, 42nd Avenue South, and 50th Place South," is hereby repealed.

Section 2. TMC Section 9.16.060 Reenacted. Tukwila Municipal Code Section 9.16.060 is hereby reenacted to read as follows:

9.16.060 South 124th Street, 42nd Avenue South, and 50th Place South

A 25 MPH speed limit is established on certain collector arterials as follows:

1 South 124th Street from 42nd Avenue South to 50th Place South.

2. 42nd Avenue South from Interurban Avenue to South 115th Street; except that Type 1, Type 2, and Type 3 trucks, as defined by the American Association of State Highway Officials (AASHTO), shall be restricted to a maximum speed of 15 MPH.

3. 50th Place South from South 124th Street to the east City limit.

Section 3. Signs to be Posted. The Public Works Department is hereby directed to post appropriate speed limit signs reflecting the speed limits established in Section 2 of this ordinance.

Section 4. Corrections by City Clerk or Code Reviser. Upon approval of the City Attorney, the City Clerk and the code reviser are authorized to make necessary corrections to this ordinance, including the correction of clerical errors; references to other local, state or federal laws, codes, rules, or regulations; or ordinance numbering and section/subsection numbering.

Section 5. Severability. If any section, subsection, paragraph, sentence, clause or phrase of this ordinance or its application to any person or situation should be held to be invalid or unconstitutional for any reason by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of the remaining portions of this ordinance or its application to any other person or situation.

Section 6. Effective Date. This ordinance or a summary thereof shall be published in the official newspaper of the City, and shall take effect and be in full force five days after passage and publication as provided by law.

PASSED BY THE CITY COUNCIL OF THE CITY OF TUKWILA, WASHINGTON, at a Regular Meeting thereof this 20TH day of February, 2018.

ATTEST/AUTHENTICATED:

Christy O'Flaherty, MMC, City Clerk

Verna Seal, Mayor Pro Tempore

APPROVED AS TO FORM BY:

Rachel B. Turpin, City Attorney

Filed with the City Clerk: 2-14-18
Passed by the City Council: 2-20-18
Published: 2-26-18
Effective Date: 3-3-18
Ordinance Number: 2566

City of Tukwila Public Notice of Ordinance Adoption for Ordinance 2566.

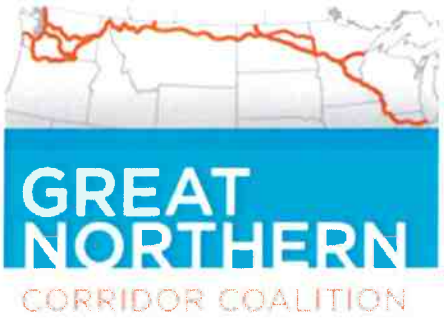
On February 20, 2018 the City Council of the City of Tukwila, Washington, adopted the following ordinance, the main points of which are summarized by title as follows:

Ordinance 2566: AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF TUKWILA, WASHINGTON, ESTABLISHING NEW REGULATIONS TO ACCURATELY DEFINE THE PORTION OF 42ND AVENUE SOUTH BETWEEN 124TH STREET SOUTH AND INTERURBAN AVENUE SOUTH WHERE THE SPEED LIMIT IS TO BE REDUCED FROM 25 MPH TO 15 MPH FOR AASHTO TYPE 1, 2, AND 3 TRUCKS ONLY; REPEALING ORDINANCE NO. 1801, AS CODIFIED AT TUKWILA MUNICIPAL CODE SECTION 9.16.060; PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE.

The full text of this ordinance will be provided upon request.

Christy O'Flaherty, MMC, City Clerk

Published Seattle Times: February 26, 2018



THE CORRIDOR

Overview

Stretching from Chicago to ports on the Pacific Northwest, the Great Northern Corridor is an east-west artery of commerce that supports the economic vitality of more than 38 million Americans across eight North Central and Pacific Northwestern states. Thousands of manufacturers, ranchers, farmers, miners, timber and lumber businesses and energy producers rely on the Corridor's multimodal transportation options.

The unifying thread and primary focus of this Corridor is the rail network stretching from the Great Lakes to the Pacific Northwest, and other logistics infrastructure such as highways, ports, and terminals. Every day, Americans across this system work together to produce and deliver vital products for their neighbors and the world, such as factory workers in Illinois making tractors for farmers in Montana to grow wheat that longshoremen in Washington load onto ships for ultimate delivery to dinner tables in Japan.

GREAT NORTHERN
CORRIDOR COALITION

THE CORRIDOR

History

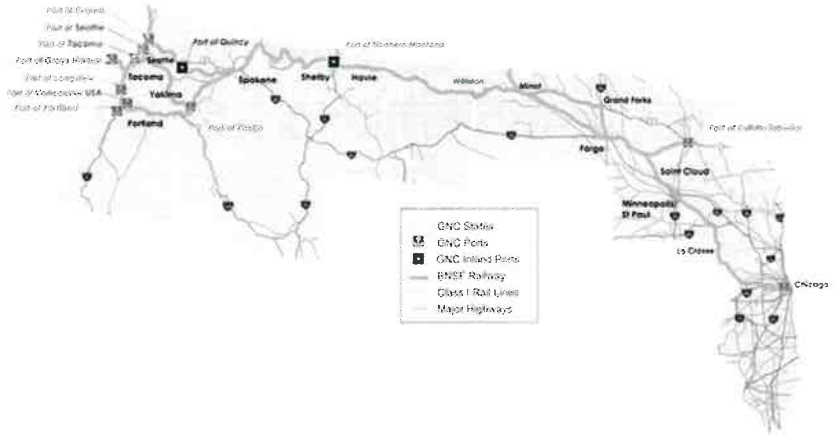
In the late 1800s when railroad magnate James Hill created the Great Northern Railway Company, the northern United States from the Great Lakes to the Pacific Ocean was untapped territory, holding the promise of entrepreneurial dreams unfulfilled. As an example of that entrepreneurial spirit, the Great Northern Railway was constructed and was the only transcontinental railroad built without using federal dollars or donations of federally owned land. It has maintained that spirit for over 100 years because its history and operations are rooted in solid economic principles and performance. The Great Northern merged with other railroads, and, over time, became a key element of the BNSF Railway Company as we know it today.

GREAT NORTHERN
CORRIDOR COALITION

THE CORRIDOR

Location & Map

The Great Northern Corridor is a strategic link in the supply chain spanning the northern United States, from the Pacific Northwest to the Midwest, and reaching key southern points in Canada. The Corridor includes 3,331 rail route miles traversing eight states providing consumers, manufacturers, industries and farmers with critical access to the nation's vast rail and highway network, vital multimodal connections and the global marketplace.



Download print-friendly map

GREAT NORTHERN
CORRIDOR COALITION

THE CORRIDOR

Facts

The Great Northern Corridor is an integral part of BNSF Railway's rail network connecting the Corridor to the national rail system, North American markets and the Global marketplace.

Vital Connections

- Links eight States and three Canadian Provinces to the global marketplace
- Serves an area where more than 38 million people live and work
- Supports regional businesses and approximately 12.5 million jobs
- Intersects or parallels 20 major cross continent Interstate and US Highways
- Connects the Northern Tier to the nation's extensive rail network and economic centers throughout North America
- Links 37 short line railroads and their customers to the national rail network and the global marketplace

- Connects to eleven ocean, river and lake ports, and two inland ports

The Great Northern Corridor is the foundation of the supply chain for raw materials and finished goods that support major U.S. industries and consumer markets.

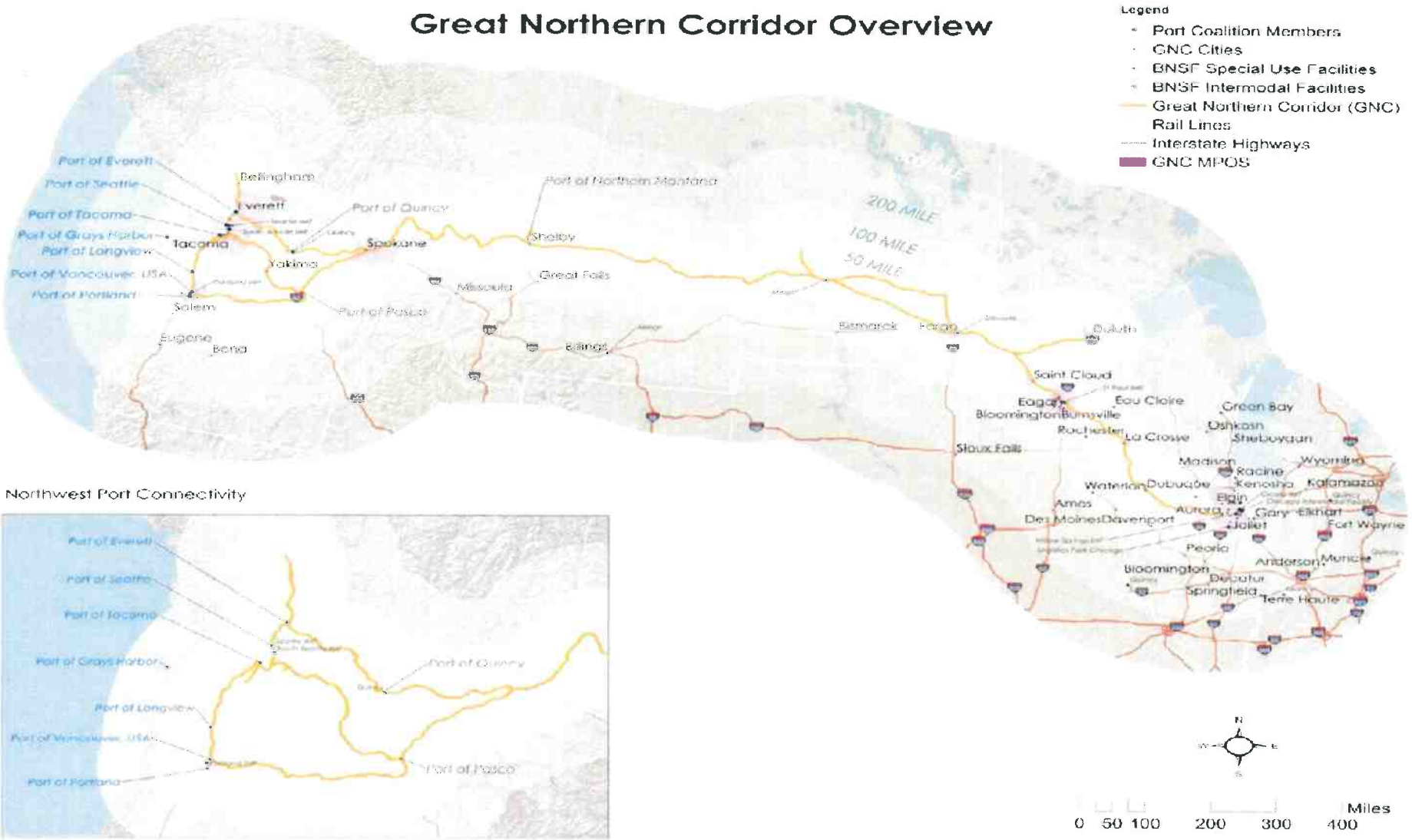
On the Move

- Carried 278 million tons of freight in 2014
- Supported 51 million tons of agricultural exports
- Moved 964,000 units of consumer goods from ships to logistics parks and distribution centers throughout the country
- Moved 91 million tons of construction materials, building products, manufactured goods, and energy related products to construction sites, consumers, factories, and refineries
- Removed over 10 million long-haul trucks from the nation's highways
- Supports an area with wind energy generation potential of over two million megawatts

With the recent boom in wind energy projects along the Corridor, growing agricultural exports and consumer product demands, and Bakken Shale crude oil drilling and distribution activities in the region, transportation needs are anticipated to increase significantly over the foreseeable future.

Corridor Description:

GREAT NORTHERN CORRIDOR COALITION



Northwest Port Connectivity

Corridor Coalition Background:

- MCOM 1 Grant Award $299,910
- MCOM 2 Grant Award $419,200
  - 22.5% Public/Private Partnership Match
- Participating Members:

1. Idaho DOT
2. MN DOT
3. MT DOT
4. ND DOT
5. OR DOT
6. WA DOT
7. WI DOT
8. FHWA
9. BNSF
10. Port of Everett
11. Port of Seattle
12. Port of Tacoma
13. Port of Grays Harbor
14. Port of Longview
15. Port of Vancouver USA
16. Port of Portland, OR
17. Port of Pasco
18. Port of Quincy
19. WA Public Ports Association
20. Port of Northern Montana