

**SECOND AMENDMENT TO
INTERGOVERNMENTAL AGREEMENT BETWEEN TRIMET AND CITY OF
PORTLAND FOR PORTLAND-MILWAUKIE LIGHT RAIL PROJECT DESIGN AND
CONSTRUCTION SERVICES**

TriMet Intergovernmental Agreement No.
GH110189TL

This Second Amendment ("Second Amendment") is made and entered into by and between the Tri-County Metropolitan Transportation District of Oregon, a mass transit district organized under the laws of the state of Oregon ("TriMet") and the City of Portland ("City") (each referred to as a "Party," and jointly referred to as "the Parties").

RECITALS

- A. On or about July 1, 2010, the Parties entered into the Intergovernmental Agreement between TriMet and City of Portland for Portland-Milwaukie Light Rail Project Design and Construction Services Agreement ("Agreement"). Under the Agreement, the Parties agreed to certain responsibilities with respect to Project delivery, and TriMet agreed to compensate the City for its performance of certain services. As stated in the Recitals, the Parties understood that the Agreement provided a starting point for future modifications or amendments to the Agreement that better defined the details of final design, construction, and close out of the Project.
- B. On or about March 24, 2011, the Parties entered into the First Amendment to the Agreement ("First Amendment"), which, except for the Effective Date, entirely superseded and replaced the Agreement. The First Amendment expanded on the Agreement to include Party responsibilities with respect to the final design and construction phases of the Project.
- C. In May 2012, TriMet entered into a Full Funding Grant Agreement ("FFGA") with the Federal Transit Administration for the Project. The Issue for Construction (100% or "IFC" plans) have been issued and the Project is now in full construction. Accordingly, the Parties now desire to amend the Agreement to include additional Party responsibilities, including the construction and payment for betterments, as the Project moves into the full construction phase.

NOW THEREFORE, in consideration of the above recitals and mutual promises contained herein, the Parties agree as follows to these changes to the Agreement.

AGREEMENT

- 1. **Article II, paragraph L, "Contractor Selection, Oversight, Payment"** is hereby deleted in its entirety and replaced with the following:

“TriMet will prepare procurement and contract documents, make the CM/GC selection, manage and enforce provisions of the CM/GC contracts, and make payments to the CM/GC. TriMet will secure in all such construction service contracts for the Project a provision that the Contractor will (1) be enrolled in and covered by TriMet’s Owner Controlled Insurance Program (“OCIP”) for general liability and workers compensation insurance, (2) name the City as an additional insured on the same terms as the Contractor agrees for TriMet’s additional insured status, (3) indemnify the City, its officers, employees, and agents on the same terms the contractor agrees to indemnify TriMet, (4) name the Oregon Museum of Science and Industry (“OMSI”) and the State of Oregon, acting by and through the Department of Energy, as an additional insured, for the Contractor’s construction work related to New Water Avenue, which is discussed further in Article IV, U.2, below. TriMet shall furnish the City with evidence of this insurance. The City Project Manager will have the opportunity to review and comment on all Project procurement and contract documents prior to issuance by TriMet.”

2. **Article II, paragraph S, “TriMet Staff,”** is hereby amended by adding the following clause after the identification of “Inspectors”:

“Inspectors, including Chief Inspector and Lead Inspectors”

3. **Article III, paragraph I, “City Staffing,”** is hereby amended by deleting the prior Exhibit B, and replacing it with the Exhibit B that is attached to this Second Amendment.
4. **Article IV, paragraph A, “City Staffing Plan,”** is hereby deleted in its entirety and replaced with the following:

“The City shall provide services in conjunction with the Project’s PE and Extended PE activities, Final Engineering, Construction, and Closeout, as described in this Article. City shall make available during the PE and Extended PE phases, Final Engineering, Construction, and Closeout, the persons identified in Exhibit B. The parties recognize that these persons and attendant services will be adjusted and allocated as necessary and reasonable to fulfill the purposes of this Agreement. The Parties agree that this Staffing Plan will be modified to meet the needs during the final design and construction phases of the Project. The Parties recognize that the Staffing Plan may be updated throughout the various phases of the Project.”

5. **Article IV, paragraph D.1(h) under “Portland Bureau of Transportation (“PBOT”), “Bureau of Transportation Engineering and Development,”** is hereby deleted in its entirety and replaced with the following:

“(h)(i) Provide necessary staffing and support services for the right-of-way acquisition of parcels to be owned or controlled by the City upon completion of construction. Facilitate all transfers of parcels to be owned or controlled by the City upon completion of construction, and coordinate with TriMet access to those parcels by the City prior to their transfer. These transfers of dedicated parcels from TriMet to the City may occur individually throughout the Project, or may occur as part of an omnibus jurisdictional

transfer upon completion of construction. The omnibus jurisdictional transfer must occur within one year after the opening date of the Project.

(h) (ii) Transfer City owned properties that have been identified as in-kind property donations to TriMet."

6. **Article IV, paragraph D.1(i) under "Portland Bureau of Transportation ("PBOT")", "Bureau of Transportation Engineering and Development,"** is renumbered to Article IV, paragraph D.1(j), and a new Article IV, paragraph D.1(i) is added as follows:

"Provide increased permitting support coordination with the Bureau of Development Services ("BDS"), pursuant to that Memorandum of Understanding ("MOU") attached as Exhibit D. This permitting support includes, but is not limited to, structural review of walls, bridges, and other improvements on private property."

7. **Article IV, paragraph F, "Portland Water Bureau ("PWB"),** is hereby amended by adding a new subparagraph (9):

"Install advanced isolation gate valves, and cut and plug water mains, relocate a water main, and relocate hydrants and water services."

8. **Article IV, paragraph K, "City Staff,"** is hereby amended by deleting (6) "City Project Inspector," and renumbering "(7) City Staff Inspector(s)" to "(6) City Staff Inspector(s)," and renumbering "(8) Specialty Inspector(s) (e.g., street lighting, signals, water, sewer)" to (7) Specialty Inspector(s) (e.g., street lighting, signals, water, sewer)."

9. **Article IV, paragraph L, "Inspection,"** is hereby amended by deleting the first two sentences of the paragraph, and replacing them with the following:

"TriMet is providing the Chief and Lead Inspectors for the Project, and the staff inspectors for the Project. The City will provide input and approve of the selection of the Chief and Lead Inspector for each CM/GC segment within the City limits."

10. **Article IV, paragraph N.2, under "Compensation,"** is hereby deleted in its entirety and replaced with the following:

"The City's compensation for services provided during the Final Design, Construction, and Close Out phases must not exceed Fourteen Million, Four Hundred Thousand, Four Hundred and Seventy Nine Dollars (\$14,400,479.00). These services must be provided on a reimbursable cost basis. This amount specifically includes work the City will perform on the Moody Project that also benefits this project, as set forth in Article IV, D.1(j)."

11. **Article IV, paragraph P, "Payment for Permits,"** is hereby deleted in its entirety and replaced with the following:

"During the design and construction of the Project, the City will provide services related to permits and land use approvals. These costs will be paid by TriMet through this Agreement as compensation to BDS and PBOT, as appropriate, for the permit coordinator, staff time for site and land use and permit coordination. TriMet will pay fees and land use application fees, as a direct expense to BDS and PBOT, as appropriate, outside of this Agreement."

12. **Article IV, paragraph T, "Betterments/Cost Sharing,"** is hereby amended by adding the following subparagraph at the end of the first subparagraph:

"City Betterments covered by this Agreement are identified in Article V, below, and identified on Exhibit E. Additional Betterments may be included within this Agreement by mutual written agreement of the Parties. All Betterments constructed under this Agreement will be paid for, owned, and maintained by the City. The City shall pay for each invoice of a Betterment within 30 days of receipt of a proper invoice from TriMet. The cost for each Betterment will include a 3.25% markup for TriMet's Contractor, and a 10% markup for TriMet's project management services. The City shall pay the actual costs incurred by TriMet for each Betterment, including any City-directed change order, regardless of the cost estimates identified below, unless identified otherwise in this Agreement, or otherwise agreed to in writing by the Parties."

13. **Article IV, paragraph U, "Other City Project Costs,"** is hereby deleted in its entirety and replaced with the following:

"At Project cost, the City shall provide all necessary services to properly coordinate with this Project all design and construction work related to or required by other City projects within or near this Project's contract limits.

Further, the Parties recognize that in some instances it may be more cost effective or result in less public impact for certain other City project work to be performed under this Project. The other City project work to be performed under this Project is identified below, in this paragraph U. For any additional City project work, the Parties may modify this Agreement in writing, or enter into a separate MOU that documents each particular cost or work sharing agreement.

TriMet is not responsible for any of the final, actual costs for other City project work that is transferred into and performed as part of this Project, unless a cost sharing agreement is reached between the Parties. Preliminary cost estimates may not accurately reflect final, actual costs for which the City will be responsible.

1. South Auditorium District

The Parties have entered into an MOU regarding a Project scope change associated with the South Auditorium District, which is attached as Exhibit F. By incorporation into this Agreement, the Parties' understandings related to the MOU are formalized and are binding on each Party.

TriMet shall manage and fund the design and installation of the 28 poles and fixtures identified in the MOU, according to the terms and conditions set forth in the MOU. The City shall provide the poles and fixtures to TriMet, and shall be responsible for and maintain the poles and fixtures, each according to the terms and conditions set forth in the MOU.

No compensation is exchanged between the Parties for this work.

2. New Water Avenue

The Parties, along with the Oregon Museum of Science and Industry ("OMSI"), Portland General Electric ("PGE"), Portland Opera, and Oregon Pacific Railroad ("OPR"), have entered into the Agreement Regarding Property Transactions for Relocation of SE Water Avenue ("Water Avenue Multi-Party Coordination Agreement"), which was authorized by City Ordinance No. 185579. Under that Agreement, the parties agreed to the sequence and type of property transactions that would need to occur to relocate certain PGE poles and OPR tracks to allow for the construction of New Water Avenue.

No compensation is exchanged between the Parties for the work under the Coordination Agreement.

The Parties, along with Portland Development Commission and OMSI, have entered into the Design and Construction Funding Agreement for SE New Water Avenue ("Water Avenue Funding Agreement"), which was authorized by City Ordinance No. 185578. Under the Funding Agreement, the parties agreed to each party's respective funding obligation for the relocation of SE Water Avenue. No compensation is exchanged between the parties under this Agreement, but will be exchanged under the separate Funding Agreement.

In the Funding Agreement, PWB agreed to contribute the cost of a new 12-inch water line in New Water Avenue, which cost will be tracked as a Betterment to the City, and will be billed under this Agreement, pursuant to Article V, paragraph A.3, below.

3. Design and Construction Funding for Eastside Streetcar Close the Loop Project

The Parties intend to enter into an agreement for the funding of the design and construction of the Portland Streetcar Eastside Streetcar "Close the Loop" project, which will unite the west and east streetcar lines over the new transit bridge. Under this separate agreement, TriMet will order the items necessary to and will construct the united loop, and the City will reimburse TriMet for these expenses. No compensation is exchanged between the parties under this Agreement, but will be exchanged under the separate Eastside Streetcar Close the Loop agreement."

14. **Article V, "TriMet Services to be Provided to City,"** is hereby amended by deleting it in its entirety and renaming it as:

"Article V, TriMet Services and Betterments to be Provided to City"

15. **Article V, paragraph A, "Portland Water Bureau,"** is hereby amended by numbering it as subparagraph *"(1) Transit Bridge,"* and adding the following sentence at the end of the subparagraph:

"These services will be paid for under this Agreement."

16. **Article V, paragraph A, "Portland Water Bureau,"** is hereby amended by adding a new subparagraph *"(2) SW Naito Parkway from SW Lincoln to Caruthers Street Betterment,"* and adding the following:

"PWB and TriMet have entered into an MOU, which is attached as Exhibit G regarding certain Betterments to be performed by TriMet on behalf of PWB. Under that MOU, TriMet will extend PWB's 12" water main located in SW Naito Parkway from the south property line of SW Lincoln Street to SE Caruthers Street, and install a 36" steel casing in future SW Bond Avenue. This work will be tracked as a Betterment to the City, and will be billed under this Agreement. The cost estimate for this Betterment is Three Hundred and Ninety-Four Thousand, Eight Hundred-Sixty Nine Dollars (\$394,869).

17. **Article V, paragraph A, "Portland Water Bureau,"** is hereby amended by adding a new subparagraph *"(3) New Water Avenue Water Line Construction Betterment,"* and adding the following:

"As discussed previously in Article IV, paragraph U, in the Water Avenue Funding Agreement, PWB agreed to contribute the cost of a new 12" water line in New Water Avenue to replace the abandoned water line in "Old" Water Avenue (or SE 2nd Place). This work will be tracked as a Betterment to the City, and will be billed under this Agreement. The cost estimate for this Betterment is One Hundred Five Thousand, Five Hundred Dollars (\$116,500).

18. **Article V, paragraph B, "PBOT,"** is hereby amended by numbering it as naming it subparagraph *"(1) Pipeline Evaluation of SWPI,"* and adding the following sentence at the end of the subparagraph:

"These services will be paid for under this Agreement."

19. **Article V, paragraph B, "PBOT,"** is hereby amended by adding a new subparagraph *"(2) LED Lights on SE Powell Blvd. Betterment,"* and adding the following:

"As part of the Project, TriMet had intended to clean and re-lamp, in-kind, the light fixtures on SE Powell Blvd. The City has agreed to update the lighting fixtures to LED fixtures. No compensation for this Betterment is exchanged between the Parties for this work."

20. **Article V, paragraph B, "PBOT,"** is hereby amended by adding a new subparagraph *"(3) Fence on SW Moody/SW Sheridan St. Betterment,"* and adding the following:

"The City's Moody Project requires a fence to be replaced on certain property owned by the Oregon Department of Transportation under the Marquam Bridge. This work will

be tracked as a Betterment to the City, and will be billed under this Agreement. The cost estimate for this Betterment is Ten Thousand Dollars (\$10,000).

21. **Article V, paragraph B, "PBOT,"** is hereby amended by adding a new subparagraph "(4) *Clinton to the River Betterment,*" and adding the following:

"The City plans to construct a multi-use path adjacent to the Project alignment between SE 11th and SE 7th Avenues, and an on-street bikeway facility on SE Caruthers Street between SE 7th Avenue and the Willamette River ("Clinton to the River" improvements"). By City Ordinance Nos. 36842 and 36851, the City is authorized to proceed with constructing the Clinton to the River improvements. TriMet's Contractor will design and construct the improvements, and BES and PBOT will reimburse TriMet. The cost estimate for this Betterment is Six Hundred, Forty-four Thousand, One Hundred, Sixty-two Dollars (\$652,162). Two Hundred, Eighty-four Thousand, Seven Hundred, Sixty Two Dollars (\$284,762) will come from the PBOT Innovation Quadrant TSDC Overlay and (Three Hundred, Sixty-nine Thousand, Four Hundred Dollars (\$369,400) will come from the BES East Side CSO Community Benefits Opportunity Program. The funding contribution from BES and PBOT are fixed under this Betterment. This work will be tracked as a Betterment to the City, and will be billed under this Agreement. "

22. **Article V, paragraph B, "PBOT,"** is hereby amended by adding a new subparagraph "(5) *Traffic Loops Betterment,*" and adding the following:

TriMet will install new traffic loops at SW 4th and Naito Avenues. This work will be tracked as a Betterment to the City, and will be billed under this Agreement. The cost estimate for this Betterment is One Thousand, Six Hundred Dollars (\$1,600)."

23. **A new paragraph C under Article V is added and named, "BES,"** and the following subparagraphs are added:

"1. Crystal Springs Railroad Culvert Replacement and Restoration Project Betterment

To facilitate fish passage beneath Union Pacific's Railroad tracks over Crystal Springs Creek, TriMet, BES, and Union Pacific entered into an MOU, attached as Exhibit H, which outlines each party's respective responsibilities to replace the timber culvert on Crystal Springs Creek. By incorporation into this Agreement, TriMet's and BES's understandings related to the MOU are formalized and are binding on each party.

Under the MOU, TriMet is responsible for designing and permitting the improvements, and will contribute up to Five Hundred, Seventy Thousand Dollars (\$570,000) as its share for the project. BES will assume the lead role for funding and pursuing permit applications, and contribute up to One Million Dollars (\$1,000,000) as its share for the project. BES also received a One Hundred Thousand Dollar (\$100,000) grant from the East Multnomah Soil and Water Conservation District for construction of the culvert, which is in addition to each party's respective monetary contributions. The estimated cost for this work is One Million, Five Hundred and Nine Thousand, One Hundred and Forty-two Dollars (\$1,509,142).

The estimated cost to be invoiced to BES for this work is Nine Hundred Thirty-nine Thousand, One Hundred Forty-two Dollars (\$939,142), plus the \$100,000 in grant funds. This Betterment will be billed under this Agreement. TriMet shall also provide to BES a conservation easement for the purpose of re-vegetation, long-term maintenance of the restoration work, and to monitor ongoing fish passage, and hydrology elements.

2. Insley Sewer Diversion Structure Betterment

BES has requested that TriMet replace the existing diversion structure at SE Insley Street with a new structure that meets the requirements, beyond flow conveyance, of the City's Combined Sewer Overflow program. BES has also requested a monitoring manhole as part of the Betterment work. The fixed BES contribution for the diversion structure is Two Million, Five Hundred Thousand Dollars (\$2,500,000), except that BES shall also pay for any costs associated with design errors or omissions, changed conditions, or BES directed increases to scope. TriMet will pay for structure costs exceeding \$2,500,000. The cost estimate for the monitoring manhole is Thirty-four Thousand, Seventy-three Dollars (\$34,073). The fixed BES contribution for the manhole is \$34,073, except that BES shall also pay for any costs associated with design errors or omissions, changed conditions, or BES-directed increases to scope. TriMet will pay for the manhole costs exceeding \$34,073. TriMet shall endeavor to control costs to align with these estimates, and shall consult with BES if costs begin to exceed these estimates. The structure and manhole will be tracked as a Betterment to the City, and will be billed under this Agreement.

TriMet will also connect a new 96" diameter pipe to the structure, which is being relocated due to conflict with the Project's tracks. TriMet will pay for the new pipe connection, which is estimated to be Five Hundred Thousand Dollars (\$500,000). These betterments will be paid for under this Agreement.

3. SE 17th Avenue: Pershing-Lafayette Sewer Reconstruction Betterment

BES has requested sewer reconstruction and lining work in the vicinity of SE Pershing and SE Lafayette St. along SE 17th Avenue. This work will be tracked as a Betterment to the City, and will be billed under this Agreement. The cost estimate for this Betterment is Two Hundred, Ninety-four Thousand, Eight Hundred Thirty-two Dollars (\$294,831).

4. SE 12th and Gideon Street Pavement Restoration Betterment

The BES SE 12th and Gideon Street project needs to restore pavement that would be removed or damaged by the Project. To most economically complete the restoration and minimize impacts to traffic and business, This work will be tracked as a Betterment to the City, and will be billed under this Agreement. The cost estimate for this Betterment is Fifty Thousand Dollars (\$50,000)."

24. Article V, paragraph B "End Products," is hereby amended by adding two new subparagraphs "(13) Jurisdictional Transfer," and "(14) Property Ownership and Asset Management," as follows:

“(13) Jurisdictional Transfer

Lead Agency: TriMet

TriMet will work with the City to transfer all parcels that will become City right-of-way or otherwise owned by the City at the conclusion of the Project. This jurisdictional transfer must occur within one year after the opening date of the Project.

(14) Property Ownership and Asset Management

Lead Agency: TriMet

TriMet will work with the City to develop a list of each Party's recorded assets upon completion of the Project. This list must be developed within one year after the opening date of the Project.”

25. Article VIII, paragraph G, “Termination for Default” is hereby deleted in its entirety and replaced with the following:

“If the City fails to perform in the manner called for in this Agreement, or if the City fails to comply with any other provisions of the Agreement, such failure will, subject to the notice and opportunity to cure provision below, be deemed a material breach for which TriMet may seek any remedy available to it under the law, including but not limited to, termination of contract or suspension of services. The City will be paid only the Agreement price for authorized services performed prior to termination in accordance with the manner of performance set forth in this Agreement.

If it is later determined by TriMet that the City has an excusable reason for not performing, such as a strike, fire, flood, or events that are not the fault of, or are beyond the control of the City, TriMet shall establish a new performance schedule, and allow the City to continue work, or treat the termination as a termination for convenience.

In the event TriMet fails to pay the City for its services provided under this Agreement, or otherwise fails to comply with its obligations under this Agreement, this failure will be deemed a material breach for which the City may seek any remedy available to it under the law, including but not limited to, termination of contract or suspension of services.

If either TriMet or the City is in breach under this Agreement, prior to pursuing any remedy (except in the case of an emergency) the nonbreaching party shall give written notice to the breaching party by registered or certified mail detailing the breaching party's violations. If the violation(s) is not corrected to the reasonable satisfaction of the nonbreaching party within thirty (30) days after the date of the notice of the violation(s), or within such reasonable time as may be required to cure the violation (provided the acts to cure the violation are commenced within thirty (30) days and thereafter diligently pursued to completion), the nonbreaching party may, without further notice, pursue any remedy under local, state, or federal law.”

26. Article VIII, paragraph Q, “Integration, Modification, and Administrative Changes,” is hereby amended by deleting the first sentence and replacing it with the following:

"This Agreement, including all Exhibits attached hereto, includes the final and exclusive agreement between the Parties on the subject matter hereof and supersedes any and all prior or contemporaneous written or oral understandings, representations, or communications of any kind."

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27. NO OTHER CHANGES TO AGREEMENT AT THIS TIME.

CITY OF PORTLAND

**TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT
OF OREGON**

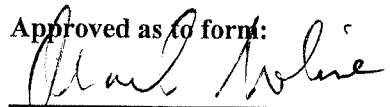
By: _____
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Title: _____

By: _____
Daniel W. Blocher, P.E.
Executive Director, Capital Projects

Dated: _____

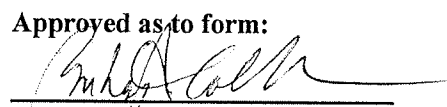
Dated: _____

Approved as to form:



City Attorney

Approved as to form:



TriMet Deputy General Counsel

Exhibit B
 Portland-Milwaukie LRT
 City services -all phases
 12/5/2012

Bur	A B C=A-B						D E F=D+E G H=A+D+G I J=H+E-I							Betterments
	PE Phase	Extended PE Phase	Final Engineering Phase	Budget for PE/XPE/FE phases	Actuals for PE/XPE/FE phases	Budget balance for PE/XPE/FE	Construction Phase	Contract amendment for construction	New Construction Budget	Closeout Phase	Contract total prior to amendment	Remove budget balance from PE/EXPE/FD	Modified Contract total	
BES	\$229,600	\$21,700	\$149,669	\$400,969	\$395,297	\$5,672	\$1,331,073	\$353,027	\$1,684,100	\$0	\$1,732,042	\$5,672	\$2,079,397	\$4,287,446
BDS	\$0	\$0	\$221,366	\$221,366	\$27,811	\$193,555	\$0	\$93,555	\$93,555	\$0	\$221,366	\$100,000	\$121,366	\$0
Parks	\$15,600	\$0	\$14,006	\$29,606	\$20,220	\$9,386	\$11,073	\$0	\$11,073	\$0	\$40,679	\$9,386	\$31,293	\$0
Planning and Sustainability	\$55,200	\$26,400	\$56,242	\$137,842	\$70,113	\$67,729	\$0	\$67,700	\$67,700	\$0	\$137,842	\$67,729	\$137,813	\$0
Transportation	\$705,700	\$367,100	\$1,540,599	\$2,613,399	\$2,467,655	\$145,744	\$4,373,362	\$528,465	\$4,901,827	\$103,970	\$7,090,731	\$145,744	\$7,473,452	\$296,362
Transportation-Moody swaps			\$244,998	\$244,998	\$244,998	\$0	\$0	\$0	\$0	\$0	\$244,998	\$0	\$244,998	
Water	\$101,200	\$18,300	\$345,200	\$464,700	\$443,136	\$21,564	\$2,871,593	\$997,430	\$3,869,023	\$0	\$3,336,293	\$21,564	\$4,312,159	\$510,919
Total	\$1,107,300	\$433,500	\$2,572,080	\$4,112,880	\$3,669,230	\$443,650	\$8,587,101	\$2,040,177	\$10,627,278	\$103,970	\$12,803,951	\$350,095	\$14,400,479	\$5,094,727

PE Phase
 Extended PE Phase
 FE Phase
 Construction Phase
 Closeout

Mar'09- Mar'10
 April '10-Jan '11
 Jan '11 -Feb '12
 Mar '12- Sept '15
 Oct '15- June '16

EXHIBIT B
 185819

Exhibit B

Portland-Milwaukie LRT
City services - all phases
3/1/2011

Bureau	PE Phase	Extended PE Phase	Final Engr Phase	Construction Phase	Closeout Phase	Grand Total
BES	\$229,600	\$21,700	\$149,669	\$1,331,073	\$0	\$1,732,042
BDS	\$0	\$0	\$221,366	\$0	\$0	\$221,366
Parks	\$15,600	\$0	\$14,006	\$11,073	\$0	\$40,679
Planning and Sustainability	\$55,200	\$26,400	\$56,242	\$0	\$0	\$137,842
Transportation - PMLRT	\$705,700	\$367,100	\$1,540,599	\$4,373,362	\$103,970	\$7,090,731
Transportation - Moody swaps			\$244,998			\$244,998
Water	\$101,200	\$18,300	\$345,200	\$2,871,593	\$0	\$3,336,293
Grand Total	\$1,107,300	\$433,500	\$2,572,081	\$8,587,101	\$103,970	\$12,803,952

PE Phase
Extended PE Phase
FE Phase
Construction Phase
Closeout

Mar '09 - Mar '10
April '10 - Jan '11
Jan '11 - Feb '12
Mar '12 - Sept '15
Oct '15 - June '16

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Exhibit B

Portland-Milwaukie LRT
IGA City services FE, CON, and Closeout
3/1/2011

Bureau	Final Engr Phase	Construction Phase	Closeout Phase	Total
BES	\$149,669	\$1,331,073	\$0	\$1,480,742
BDS	\$221,366	\$0	\$0	\$221,366
Parks	\$14,006	\$11,073	\$0	\$25,079
Planning and Sustainability	\$56,242	\$0	\$0	\$56,242
Transportation	\$1,540,599	\$4,373,362	\$103,970	\$6,017,931
Water	\$345,200	\$2,871,593	\$0	\$3,216,793
Total	\$2,327,082	\$8,587,101	\$103,970	\$11,018,153
MOODY Swaps				\$244,998
Grand Total				\$11,263,151

FE Phase
Construction Phase
Closeout

Jan '11 - Feb '12
Mar '12 - Sept '15
Oct '15 - June '16

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Portland-Milwaukie LRT
IGA City services PE and extended PE
6/10/2010

Exhibit B

<u>Bureau</u>	<u>PE Phase</u>	<u>Extended PE Phase</u>	<u>Total PE/Extended PE Budget</u>
BES	229,600	21,700	251,300
Parks	15,600	0	15,600
Planning and Sustainability	55,200	26,400	81,600
Transportation	705,700	367,100	1,072,800
Water	<u>101,200</u>	<u>18,300</u>	<u>119,500</u>
total	\$1,107,300	\$433,500	\$1,540,800

note: PE Phase is 3-30-09 through 3-31-10. Extended PE Phase is 4-1-10 through 10-31-10

Bureau of Environmental Services (BES)
Summary sheet 12/5/12

Row	Phase	Amount
A	PE Phase	\$229,600
B	Extended PE (EXPE) Phase	\$21,700
C	Final Design (FD)	\$149,669
D = A+B+C	Total Budget (PE/EXPE/FD)	\$400,969
E	Total Expenditures (PE/EXPE/FD)	\$395,297
F = D-E	Unspent balance	\$5,672

G	Construction	\$1,331,073
H	Close out	\$0
I	Amendment 2 Construction	\$353,027
J= G+H+I	Amended construction & close out total	\$1,684,100

K=D+G+H Amendment 1 IGA Total \$1,732,042

L=E+J Total IGA amount with Amendment 2*

*Total IGA budget reduced by the unspent PE/EXPE/FD budget - \$5,672

BES Betterments	Amount
Crystal Springs RR Culvert Replacement (BES portion)	\$939,142
Crystal Springs RR Culvert Replacement (Grant proceeds)	\$100,000
Clinton to the River (BES portion)	\$369,400
Insley Sewer Diversion Structure	\$2,500,000
Monitoring Manhole	\$34,073
SE 17th Ave: SE Pershing-Lafayette Sewer Reconstruction	\$294,831
New SE Water Avenue (billed under separate IGA)	\$0
SE 12 th and Gideon Street Pavement Restoration	\$50,000
Total	\$4,287,446

Milwaukie Light Rail Extension
Project Staffing Plan
Final Design & Construction Phases
BES Project # E09163

BES Employee	Final Design Phase			Construction Phase			Employee Totals
	Hours	Rate*	Totals	Hours	Rate*	Totals	
Dave Nunamaker	150	\$62.89	\$9,433.50	200	\$62.89	\$12,578.00	\$22,011.50
Susan Hjorten	50	51.75	2,587.50	50	51.75	2,587.50	5,175.00
W. Brenes Morua	350	69.35	24,272.50	300	69.35	20,805.00	45,077.50
Don Wolsborn	150	69.35	10,402.50	140	69.35	9,709.00	20,111.50
Rob Cozzi	30	69.35	2,080.50	30	69.35	2,080.50	4,161.00
Don Poletski	200	69.35	13,870.00	2000	69.35	138,700.00	152,570.00
Blair Bean	20	76.29	1,525.80	40	76.29	3,051.60	4,577.40
Sr. Inspector	50	51.25	2,562.50	1700	51.25	87,125.00	89,687.50
Inspector I	100	45.82	4,582.00	5500	45.82	252,010.00	256,592.00
Brandy Branch	50	45.58	2,279.00	1500	45.58	68,370.00	70,649.00
Mike Szwaya	20	69.35	1,387.00	30	69.35	2,080.50	3,467.50
Jeremy Person				170	49.17	8,358.90	8,358.90
Laura Sloan				200	49.17	9,834.00	9,834.00
Contract/Invoices							Invoice Totals
D. Collins Engr.			1,600.00			2,000.00	\$3,600.00
Construction Mgmt.			3,000.00			20,000.00	23,000.00
Mat'l Testing Lab						35,000.00	35,000.00
Vector Control						15,000.00	15,000.00
BES Revegetation						417,829.00	417,829.00
Totals	1170		\$79,582.80	11860		\$1,107,119.00	\$1,186,701.80
Total w/ OH **			\$149,669.22			\$1,684,099.96	
Grand Total			\$1,833,769.19				

* Labor + Benefits + Leave Accrual

** BES Rate FY 2011 @ 93.47%

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Milwaukee Light Rail Extension
Project Staffing Plan
Final Design & Construction Phases
BES Project # E09163

BES Employee	Final Design Phase			Construction Phase			Employee Totals
	Hours	Rate*	Totals	Hours	Rate*	Totals	
Dave Nunamaker	150	\$62.89	\$9,433.50	200	\$62.89	\$12,578.00	\$22,011.50
Susan Hjorten	50	51.75	2,587.50	50	51.75	2,587.50	5,175.00
Unassigned Engr.	350	69.35	24,272.50	300	69.35	20,805.00	45,077.50
Don Wolsborn	150	69.35	10,402.50	140	69.35	9,709.00	20,111.50
Rob Cozzi	30	69.35	2,080.50	30	69.35	2,080.50	4,161.00
Don Poletski	200	69.35	13,870.00	2000	69.35	138,700.00	152,570.00
Blair Bean	20	76.29	1,525.80	40	76.29	3,051.60	4,577.40
Sr. Inspector	50	51.25	2,562.50	1700	51.25	87,125.00	89,687.50
Inspector I	100	45.82	4,582.00	5500	45.82	252,010.00	256,592.00
Brandy Branch	50	45.58	2,279.00	1500	45.58	68,370.00	70,649.00
Mike Szwaya	20	69.35	1,387.00	30	69.35	2,080.50	3,467.50
Contract/Invoices							Invoice Totals
D. Collins Engr.			1,600.00			2,000.00	\$3,600.00
Construction Mgmt.			3,000.00			20,000.00	23,000.00
Mat'l Testing Lab						35,000.00	35,000.00
Vector Control						15,000.00	15,000.00
BES Revegetation						100,000.00	100,000.00
Totals	1170		\$79,582.80	11490		\$771,097.10	\$850,679.90
Total w/ OH **			\$149,669.22			\$1,331,073.16	
Grand Total			\$1,480,742.38				

* Labor + Benefits + Leave Accrual

** BES Rate FY 2011 @ 93.47%

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Milwaukee Light Rail Extension
Project Staffing Plan for Extended PE
(4/10 through 10/10)
BES Project # E09163

BES Employee	Preliminary Design Phase		
	Hours	Rate*	Totals
Dave Nunemaker	30	\$61.46	\$1,843.60
Susan Hjorten	30	47.74	1,432.20
Rob Cozzi	40	69.98	2,799.20
Don Wolsborn	30	69.11	2,073.30
Nick Naval, Jr.	40	73.30	2,932.00
Blair Bean	20	73.41	1,468.20
Inspector I	5	46.24	231.20
Alicia Rawlins	20	38.35	767.00
Contract/Invoices			
Construction Mgmt.			1,000.00
Total w/o OH	215		\$14,546.60
Total w/ OH **			\$21,601.67

- * Labor + Benefits + Leave Accrual
- ** BES Rate FY 2010 @ 52.08%

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Milwaukee Light Rail Extension
 Project Staffing Plan (6/10 Update)
 Through end of PE (3/31/10)
 BES Project # E09163

BES Employee	Preliminary Design Phase		
	Hours	Rate*	Totals
Dave Nunemaker	100	\$81.45	\$6,145.00
Susan Hjorten	79	47.74	3,771.46
Rob Cozzi	10	89.98	1,119.68
Don Wolsborn	131	69.11	9,053.41
Rick Washington	32	45.09	1,442.88
Nick Naval, Jr.	21	73.90	1,539.30
Blair Bean	36	73.41	2,642.76
Sr. Inspector	0	51.72	0.00
Inspector I	0	46.24	0.00
Alicia Rawlins	9	38.35	345.15
Mike Szwaya	45	72.28	3,252.60
Contract/Invoices			
Construction Mgmt.			3,060.00
CCTV Pipe Insp.			181,822.00
Total w/o OH	469		\$214,294.24
Total w/ OH **			\$229,660.05

* Labor + Benefits + Leave Accrual

** BES Rate FY 2010 @ 52.08%

Bureau of Development Services (BDS)
Summary sheet 12/5/12

Row	Phase	Amount
A	PE Phase	\$0
B	Extended PE (EXPE) Phase	\$0
C	Final Design (FD)	\$221,366
D = A+B+C	Total Budget (PE/EXPE/FD)	\$221,366
E	Total Expenditures (PE/EXPE/FD)	\$27,811
F = D-E	Unspent balance	\$193,555
G	Construction	\$0
H	Close out	\$0
I	Amendment 2 Construction	\$93,555
J= G+H+I	Amended construction & close out total	\$93,555
K=D+G+H	Amendment 1 IGA Total	\$221,366
L=E+J	Total IGA amount with Amendment 2*	\$121,366

* Total IGA budget reduced by the unspent PE/EXPE/FD budget - \$100,000
and \$93,555 is moved to construction

PMLRT BDS TIME EST 01.14.2011

**Bureau of Development Services
Portland-Milwaukie Light Rail
Project Staffing Plan - FY 10-11 & FY 11-12**

Time Spent not Covered by Permit or LU as FTE

	PM (Charles Auch)	LUS	Site	LS/Str	FTE
FY 10-11	0.2	0.15	0.1		0.45
FY 11-12	0.2	0.2	0.2	0.1	0.7
Total*	0.4	0.35	0.3	0.1	1.15

Number of Hours
936
1,456
2,392

*Total Annual Costs for First Two Fiscal Years. Remaining years costs to be negotiated prior to end of FY 11-12
42.28%

	Salary and Benefits	COLA	Overhead	Total
FY 10-11	\$ 60,512.40		\$ 25,584.64	\$ 86,097.04
FY 11-12	\$ 95,071.70	1%	\$ 40,196.32	\$ 135,268.02
	\$ 155,584.10		\$ 65,780.96	\$ 221,365.06

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Parks and Recreation
Summary sheet 12/5/12

Row	Phase	Amount
A	PE Phase	\$15,600
B	Extended PE (EXPE) Phase	\$0
C	Final Design (FD)	\$14,006
D = A+B+C	Total Budget (PE/EXPE/FD)	\$29,606
E	Total Expenditures (PE/EXPE/FD)	\$20,220
F = D-E	Unspent balance	\$9,386

G	Construction	\$11,073
H	Close out	\$0
I	Amendment 2 Construction	\$0
J= G+H+I	Amended construction & close out total	\$11,073

K=D+G+H	Amendment 1 IGA Total	\$40,679
L=E+J	Total IGA amount with Amendment 2*	\$31,293

*Total IGA budget reduced by the unspent PE/EXPE/FD budget - \$9,386

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Parks Bureau
 Milwaukie Light Rail Extension
 Project Staffing Plan - Final Eng. Phase 12/10 - 1/12
 10/28/2010

Parks Employee	Final Engineering Phase		
	Hours	Rate*	Totals
Brett Horner	42	65.97	2,771
Susan Meamber	10	59.59	596
George Lozovoy	48	61.44	2,949
total	100		6,316
Parks Forestry	56	61.44	3,009
Total w/o OH			\$9,325
Total w/ OH **			\$14,006

* Labor + Benefits + Leave Accrual

** Parks Overhead Rate @ 50.19%

Parks Bureau
 Milwaukie Light Rail Extension
 Project Staffing Plan - Construction
 11/4/2010

Parks Employee	Construction Phase		
	Hours	Rate*	Totals
Brett Horner	0	65.97	0
Susan Meamber	0	59.59	0
George Lozovoy	0	61.44	0
total	0		0
Parks Forestry	120	61.44	7,373
Total w/o OH			\$7,373
Total w/ OH **			\$11,073

* Labor + Benefits + Leave Accrual

** Parks Overhead Rate @ 50.19%

Grand Total	\$25,079
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Parks and Recreation
Milwaukee to Portland LTR
TR00940002

Employee Name	Data	Total	Hourly Rate	Overhead	Total Including Overhead
Brett Horner	Sum of Hours	160			
	Sum of Amount	10352.01	\$64.70	5035.22	15387.23
Joseph Hintz	Sum of Hours	2			
	Sum of Amount	85.83	\$42.92	41.75	127.58
Total Sum of Hours		162			
Total Sum of Amount		\$10,437.84		\$5,076.97	\$15,514.81

Park Indirect Cost Rate 48.64%
Overhead added at time of billing

Planning and sustainability
Summary sheet 12/5/12

Row	Phase	Amount
A	PE Phase	\$55,200
B	Extended PE (EXPE) Phase	\$26,400
C	Final Design (FD)	\$56,242
D = A+B+C	Total Budget (PE/EXPE/FD)	\$137,842
E	Total Expenditures (PE/EXPE/FD)	\$70,113
F = D-E	Unspent balance	\$67,729
G	Construction	\$0
H	Close out	\$0
I	Amendment 2 Construction	\$67,700
J= G+H+I	Amended construction & close out total	\$67,700
K=D+G+H	Amendment 1 IGA Total	\$137,842
L=E+J	Total IGA amount with Amendment 2*	\$137,813

*Unspent PE/EXPE/FD budget moved forward into Construction (\$67,700)

Bureau of Planning and Sustainability – Construction Budget

Project Start-up		Hours	Hourly Rate (with 74.3% OH)		Sub-total
	Wickstrom	20	\$	77.02	\$ 1,540.40
	Beckman	15	\$	96.65	\$ 1,449.75
	Hamblin	10	\$	69.26	\$ 692.60
	Task Subtotal	45			\$ 3,682.75
Task 1	Existing Conditions				
	Beckman	20	\$	96.65	\$ 1,933.00
	Hamblin	40	\$	69.26	\$ 2,770.40
	Raggett	10	\$	96.65	\$ 966.50
	Starin	10	\$	85.98	\$ 859.80
	Lum	40	\$	63.24	\$ 2,529.60
	Wickstrom	20	\$	77.02	\$ 1,540.40
	Task Subtotal	140			\$ 10,599.70
Task 2	Needs, Opportunities and Constraints; Goals				
	Beckman	20	\$	96.65	\$ 1,933.00
	Hamblin	20	\$	69.26	\$ 1,385.20
	Raggett	20	\$	96.65	\$ 1,933.00
	Starin	10	\$	85.98	\$ 859.80
	Lum	30	\$	63.24	\$ 1,897.20
	Bump	10	\$	62.13	\$ 621.30
	Wickstrom	20	\$	77.02	\$ 1,540.40
	Task Subtotal	110			\$ 10,169.90
Task 3	E-TOD Concept Development				
	Beckman	20	\$	96.65	\$ 1,933.00
	Hamblin	40	\$	69.26	\$ 2,770.40
	Raggett	25	\$	96.65	\$ 2,416.25
	Starin	10	\$	85.98	\$ 859.80
	Lum	40	\$	63.24	\$ 2,529.60
	Bump	10	\$	62.13	\$ 621.30
	Wickstrom	20	\$	77.02	\$ 1,540.40
	Task Subtotal	145			\$ 12,670.75
Task 4	Alternatives Development				
	Beckman	20	\$	96.65	\$ 1,933.00
	Hamblin	40	\$	69.26	\$ 2,770.40
	Raggett	25	\$	96.65	\$ 2,416.25
	Starin	10	\$	85.98	\$ 859.80
	Lum	40	\$	63.24	\$ 2,529.60
	Bump	30	\$	62.13	\$ 1,863.90
	Wickstrom	25	\$	77.02	\$ 1,925.50
	Task Subtotal	165			\$ 14,298.45
Task 5	Evaluate Alternatives				
	Beckman	20	\$	96.65	\$ 1,933.00
	Hamblin	20	\$	69.26	\$ 1,385.20
	Raggett	25	\$	96.65	\$ 2,416.25
	Starin	20	\$	85.98	\$ 1,719.60
	Lum	20	\$	63.24	\$ 1,264.80
	Wickstrom	20	\$	77.02	\$ 1,540.40
	Bump	20	\$	62.13	\$ 1,242.60
	Task Subtotal	145			\$ 11,501.85
	Subtotal	750			\$ 62,923.40
	Materials and Services				\$ 4,776.60
	Total				\$ 67,700.00

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PORTLAND-MILWAUKIE LRT PROJECT
Bureau of Planning and Sustainability - Budget for FE and CON
3/1/2011

Task 1: PMLRT Final Design Issues with CDR					
Staff:	Hours	Rate	Total	Ovehead	Subtoals
Mark Raggett	25	\$ 53.35	\$ 1,333.75	59.31%	\$ 2,124.80
Matt Wickstrom	25	\$ 42.04	\$ 1,051.00	59.31%	\$ 1,674.35
Troy Doss	10	\$ 53.37	\$ 533.70	59.31%	\$ 850.24
Leslie Lum	0	\$ 32.76	\$ -	59.31%	\$ -
Subtotal	60		\$ 2,918.45	59.31%	\$ 4,649.38
Task 2: Community Communication					
Mark Raggett	0	\$ 53.35	\$ -	59.31%	\$ -
Matt Wickstrom	175	\$ 42.04	\$ 7,357.00	59.31%	\$ 11,720.44
Troy Doss	0	\$ 53.37	\$ -	59.31%	\$ -
Leslie Lum	0	\$ 32.76	\$ -	59.31%	\$ -
Subtotal	175		\$ 7,357.00	59.31%	\$ 11,720.44
Task 3: Techncial Planning Assistance on permitting issues:					
Mark Raggett	25	\$ 53.35	\$ 1,333.75	59.31%	\$ 2,124.80
Matt Wickstrom	20	\$ 42.04	\$ 840.80	59.31%	\$ 1,339.48
Troy Doss	10	\$ 53.37	\$ 533.70	59.31%	\$ 850.24
Lora Lillard	10	\$ 48.82	\$ 488.20	59.31%	\$ 777.75
Subtotal	65		\$ 3,196.45	59.31%	\$ 5,092.26
Task 4: Station Area Planning					
Mark Raggett	20	\$ 53.35	\$ 1,067.00	59.31%	\$ 1,699.84
Matt Wickstrom	60	\$ 42.04	\$ 2,522.40	59.31%	\$ 4,018.44
Lora Lillard	136	\$ 48.82	\$ 6,639.52	59.31%	\$ 10,577.42
John Cole	150	\$ 47.65	\$ 7,147.50	59.31%	\$ 11,386.68
Leslie Lum	136	\$ 32.76	\$ 4,455.36	59.31%	\$ 7,097.83
Subtotal	502		\$ 21,831.78	59.31%	\$ 34,780.21
IGA Totals					
Mark Raggett	70	\$ 53.35	\$ 3,734.50	59.31%	\$ 5,949.43
Matt Wickstrom	280	\$ 42.04	\$ 11,771.20	59.31%	\$ 18,752.70
Troy Doss	20	\$ 53.37	\$ 1,067.40	59.31%	\$ 1,700.47
Lora Lillard	146	\$ 48.82	\$ 7,127.72	59.31%	\$ 11,355.17
John Cole	150	\$ 47.65	\$ 7,147.50	59.31%	\$ 11,386.68
Leslie Lum	136	\$ 32.76	\$ 4,455.36	59.31%	\$ 7,097.83
Total	802		\$ 35,303.68		\$ 56,242.29

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Portland Milwaukie LRT project
BPS - extended PE 6/4/2010
40312

Task 1: Review and Adoption of PMLRT Concept Design Report

Staff:	Hours	Rate	Total
Mark Raggett	25	\$ 47.63	\$ 1,190.75
Matt Wickstrom	75	\$ 41.68	\$ 3,126.00
Troy Doss	5	\$ 52.43	\$ 262.15
Leslie Lum	0	\$ 31.23	\$ -
Total	105		\$ 4,578.90

Task 2: Community Communication

Staff:	Hours	Rate	Total
Mark Raggett	0	\$ 47.63	\$ -
Matt Wickstrom	20	\$ 41.68	\$ 833.60
Troy Doss	0	\$ 52.43	\$ -
Leslie Lum	0	\$ 31.23	\$ -
Total	20		\$ 833.60

Task 3: Technical Planning Assistance on design issues, permitting issues:

Staff:	Hours	Rate	Total
Mark Raggett	25	\$ 47.63	\$ 1,190.75
Matt Wickstrom	30	\$ 41.68	\$ 1,250.40
Troy Doss	30	\$ 52.43	\$ 1,572.90
Leslie Lum	10	\$ 31.23	\$ 312.30
Total	95		\$ 4,326.35

Task 4: Station Area Planning

Staff:	Hours	Rate	Total
Mark Raggett	20	\$ 47.63	\$ 952.60
Matt Wickstrom	75	\$ 41.68	\$ 3,126.00
Troy Doss	5	\$ 52.43	\$ 262.15
Leslie Lum	30	\$ 31.23	\$ 936.90
Total	130		\$ 6,277.65

Staff:	Hours	Rate	Total	Overhead Rate	Overhead	Total
Mark Raggett	70	\$ 47.63	\$ 3,334.10	75.77%	\$ 2,526.25	\$ 5,860.35
Matt Wickstrom	200	\$ 41.68	\$ 8,336.00	75.77%	\$ 6,316.19	\$ 14,652.19
Troy Doss	40	\$ 52.43	\$ 2,097.20	75.77%	\$ 1,589.06	\$ 3,686.26
Leslie Lum	40	\$ 31.23	\$ 1,249.20	75.77%	\$ 946.52	\$ 2,195.72
Total	350		\$ 15,016.50		\$ 11,378.00	\$ 26,394.50

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Portland-Milwaukee LRT Project
BPS budget - PE] 6/4/2010

Bureau of Planning and Sustainability				
PE Expenses			Hours	Total
Mark Raggeli	Senior Planner	\$ 47.63	87	\$ 4,144
Troy Doss	Senior Planner	\$ 52.43	302	\$ 15,833
Matt Wickstrom	City Planner II	\$ 41.66	179	\$ 7,461
Leslie Lum	Associate Planner	\$ 31.23	40	\$ 1,249
Tom Armstrong	City Planner II	\$ 48.87	55	\$ 2,688
Total			663	\$ 31,375
Overhead Rate				75.77%
Total OH				\$ 23,773
Total with Overhead				\$ 55,147

Bureau of Transportation
Summary sheet 12/5/12

Row	Phase	Amount
A	PE Phase	\$705,700
B	Extended PE (EXPE) Phase	\$367,100
C	Final Design (FD)	\$1,540,599
D = A+B+C	Total Budget (PE/EXPE/FD)	\$2,613,399
E	Total Expenditures (PE/EXPE/FD)	\$2,467,655
F = D-E	Unspent balance	\$145,744

G	Construction	\$4,373,362
H	Close out	\$103,970
I	Amedment 2 Construction	\$528,465
J= G+H+I	Amended construction & close out total	\$5,005,797

K=D+G+H Amendment 1 IGA Total \$7,090,731

L=E+J Total IGA amount with Amendment 2* \$7,473,452

*Total IGA budget reduced by the unspent PE/EXPE/FD budget - \$145,744

Transportation - Moody Swaps
\$244,998

Transportation Betterments*	Amount
New SE Water Avenue (billed under separate IGA)	\$0
LED lights on SE Powell Blvd (no funds exchanged)	\$0
Fence on SW Moody/SW Sheridan St	\$10,000
Traffic loops	\$1,600
Clinton to the River (PBOT portion)	\$284,762
Total	\$296,362

* Close the Loop Streetcar betterment will be billed under a separate agreement.

PORTLAND TO MILWAUKIE LRT PROJECT
Transportation Budget - CON Amendment #2

PDOT		CONSTRUCTION	
		5/12 - 9/15	
		Proj # T00138.C	
	hours		total
Project Management - 42			
Teresa Boyle	6013	91.05	547,514
Art Pearce	1173	83.25	97,680
Jody Yates			
Shoshanah Oppenheim	6013	78.85	474,151
Jean Senechal Biggs			3,000
Other Project Management (plus Edin)			
Project Management Subtotal	13200	\$	1,122,345
Transportation Planning - 09			
Patrick Sweeney	40	71.96	2,878
Roger Geller	40	64.95	2,598
April Bertelsen			
Courtney Duke			
Denver Ingarta			
Nick Falbo			
John Gillam			
Ningsheng Zhou			1,000
Others			
Transportation Planning Subtotal	80	\$	6,476
Traffic Investigations - 11			
Tom Jensen	24	68.27	1,638
Other Traffic Investigations			1,000
Traffic Investigations Subtotal		\$	2,638
Street Lighting and Traffic Signals - 19			
Lisa Elbert	364	85.24	31,027
	392	88.59	34,727
Dave Hatch	504	74.12	37,356
Paul Zebell			
Titus Reynolds	701	71.00	49,771
Dale Kurkinen	1,248	71.01	88,620
Rob Jennings	400	70.00	28,000
Lloyd Boucke			0
Other Street Lighting (BOM sig shop)			30,000
Street Lighting/Traffic Signal Subtotal	3609	\$	299,503
Parking			
Ramon Corona	40		2,819
Other Parking			
Parking Subtotal		\$	2,819
Civil Design - 30			
Linda Williams	1063	80.74	85,854
Other Civil Design			
Civil Design Subtotal		\$	85,854

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Traffic Design & Engineering - 34			
Lewis Wardrip	320	91.38	29,242
Michelle Dewey/Dellinger	1,528	77.06	117,748
Jennie Tower	2,266	77.11	174,731
Other Traffic Design (BOM work orders)			0
Traffic Design Subtotal	4114		\$321,721

Construction Inspection - 35			
Gary Hopkins	6013	68.14	409,749
Robin Kinnaird			
Todd Liles	4,033	62.00	250,067
Dan Holly			1,000
Other Construction Inspection			
Construction Inspection Subtotal	10047		\$ 660,815

Bridges and Structures - 39			
David O'Longaigh	160	99.26	15,882
Manchi Lai	1,540	88.16	135,766
Other Structures			2,000
Structures Subtotal	1700		\$ 153,648

Right of Way - 46			
David McElowney	166	79.58	13,210
Lance Lindahl	387	53.97	20,886
Dee Walker	305	67.98	20,734
Kris Calvert	352	42.34	14,904
Other Right of Way			4,000
Right of Way Subtotal			\$ 73,734

Materials & Services			
Misc. M&S			28,000
M&S Total			28,000

PBOT SUBTOTAL	\$ 2,757,553
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Overhead	\$ 2,144,274
Overhead Rate for PBOT (except BOM)	77.76%

PBOT SUBTOTALS PER PHASE	\$ 4,901,827
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PBOT TOTAL	\$ 4,901,827
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note: budget is built using productive hours and loaded hrly rates

	months in phase	prod hrs in phase	prod hrs/yr
FE 1/11 - 2/12			
CON 3/12 - 9/15 (5/12 - 9/15) amend 2	41	6,013	1760
CLOSEOUT 10/15 - 6/16			

PORTLAND TO MILWAUKIE LRT PROJECT
Transportation Budget Estimate - FE, CON and Closeout

PDOT

Project Management

Teresa Boyle
Art Pearce
Jody Yates
Shoshanah Oppenheim
Other Project Management

Project Management Subtotal

Transportation Planning

Patrick Sweeney
Roger Geller
April Bertelsen
Courtney Duke
Denver Ingarta
Nick Falbo
John Gillam
Ningsheng Zhou
Others

Transportation Planning Subtotal

Traffic Investigations

Tom Jensen
Other Traffic Investigations

Traffic Investigations Subtotal

Street Lighting and Traffic Signals

Lisa Elbert
Dave Hatch
Paul Zebell
Dale Kurkinen
Lloyd Boucke
Other Street Lighting (BOM sig shop)

Street Lighting/Traffic Signal Subtotal

Parking

Ramon Corona
Other Parking

Parking Subtotal

Civil Design

Linda Williams
Other Civil Design

Civil Design Subtotal

CLOSEOUT 10/15 - 6/16		
Proj #		
hours	rate	total

132	90.18	11,903
		1,000
132	\$	12,903

8	73.78	590
8	66.34	531
16	\$	1,121

0	\$	-

0	\$	-

0	\$	-

132	80.32	10,603
132	\$	10,603

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Traffic Design & Engineering	
Lewis Wardrip	
Michelle Dewey	
Jenny Tower	
Other Traffic Design (BOM work orders)	
Traffic Design Subtotal	

30	87.52	2,625
85	78.20	6,647
85	69.96	5,947
0		5,000
170		\$ 20,219

Construction Inspection	
Gary Hopkins	
Robin Kinnaird	
Todd Liles	
Other Construction Inspection	
Construction Inspection Subtotal	

80	63.38	5,071
80	95.03	7,602
160		\$ 12,673

Bridges and Structures	
David O'Longaigh	
Manchi Lai	
Other Structures	
Structures Subtotal	

0		\$ -

Right of Way	
Lance Lindahl	
Dee Walker	
Other Right of Way	
Right of Way Subtotal	

0		\$ -

Materials & Services	
Misc. M&S	
M&S Total	

	500
	\$ 500

PBOT SUBTOTAL

\$ 58,019

Overhead	
Overhead Rate for PBOT (except BOM)	

\$ 45,951

FY 15-16	FY 16-17
	79.20%

PBOT SUBTOTALS PER PHASE

\$ 103,970

PBOT TOTAL

\$ 103,970

note: budget is built using productive hours and loaded hrly rates

FE 1/11 - 2/12
CON 3/12 - 9/15
CLOSEOUT 10/15 - 6/16

PORTLAND TO MILWAUKEE LRT PROJECT
Transportation Budget Estimate - FE, CON and Closeout

PDOT				03/11 - 02/12				03/12 - 01/13				01/14 - 03/16			
Proj #				Proj #				Proj #				Proj #			
hours	rate	total		hours	rate	total		hours	rate	total		hours	rate	total	
Project Management															
Teresa Boyle	91.08	156,202		9100	86.08	520,247		132	90.18	11,903		6100		604,459	
Art Pearce	1007	73.70		3080	77.32	238,248						4087		778,807	
Jody Yates	80	81.93		40	85.03	3,441						120		9,903	
Shoshannah Oppenheim	80	51.84										80		4,131	
Other Project Management		1,000				3,000				1,000		0		5,000	
Project Management Subtotal		2973	\$ 306,515	8220	\$ 775,034			132	\$ 12,903			13345	\$ 1,086,452		
Transportation Planning															
Patrick Sweeney	40	59.80		40	70.42		2,817	6	73.78		590	40	2,352		
Roger Oster	80	67.07		40	65.33		2,533	6	88.34		531	120	8,773		
April Erickson	80	60.31										120	7,880		
Courney Duke	145	58.80										145	8,530		
Devin Ingels	70	57.47										70	4,023		
Nick Fisher	155	20.40										155	3,170		
John Olson	25	75.45				1,885						25	1,886		
Ningsheng Zhou	40	65.58				2,622						40	2,622		
Other		1,000				1,000				1,000		0	2,800		
Transportation Planning Subtotal		635	\$ 33,829	80	\$ 6,350			16	\$ 1,121			731	\$ 41,209		
Traffic Investigations															
Tom Jensen	24	62.02		24	66.07		1,585					48	3,006		
Other Traffic Investigations		1,000				1,000						0	2,000		
Traffic Investigations Subtotal		24	\$ 6,510	24	\$ 2,585			0	\$ -			48	\$ 5,006		
Street Lighting and Traffic Signals															
Lee Ebert	598	78.03		482	80.78		38,934					1050	84,838		
David Hatch	598	78.86		0	83.87		0					598	47,788		
Paul Zebell	600	65.80		484	65.07		31,384					1084	72,708		
Dale Karlsson		65.81		1280	69.21		88,563					1280	88,583		
Lloyd Boudew		58.73		768	61.87		47,360					768	47,308		
Other Street Lighting (BOM sig shop)						30,000				30,000		0	30,000		
Street Lighting/Traffic Signal Subtotal		1786	\$ 123,166	3214	\$ 238,261			0	\$ -			4810	\$ 371,447		
Parking															
Ramon Corne	24	67.12		40	70.48		2,819					64	4,430		
Other Parking		1,000		40			2,819					0	1,000		
Parking Subtotal		24	\$ 6,611	40	\$ 2,819			0	\$ -			64	\$ 5,430		
Civil Design															
Under Warrants	1907	73.02		6100	78.67		472,283	132	80.32		10,603	8197	622,121		
Other Civil Design		1,000				1,000				1,000		0	1,000		
Civil Design Subtotal		1907	\$ 145,213	6100	\$ 473,283			132	\$ 10,603			8197	\$ 623,121		
Traffic Design & Engineering															
Levin Wendt	940	78.58		320	83.54		26,732	30	87.52		2,625	1200	104,144		
Nichelle Denny	940	71.09		850	74.84		63,519	65	78.20		5,047	1575	114,881		
Jeremy Tower	300	43.00		650	66.78		43,407	85	89.08		7,547	1005	72,250		
Other Traffic Design (BOM work orders)		1,000				30,000		0		5,000		0	30,000		
Traffic Design Subtotal		2140	\$ 158,288	1820	\$ 148,653			170	\$ 20,218			3860	\$ 327,278		
Construction Inspection															
Gary Hopkins	80	70.42		80	73.94		5,834	80	63.38		5,071	80	5,834		
Robin Kennedy	80	57.82		8100	80.50		65,205	80	95.03		7,602	8320	78,736		
Todd Lira	120	88.30		3090	90.71		279,385					3280	297,354		
Other Construction Inspection		10,367				10,367						0	1,000		
Construction Inspection Subtotal		280	\$ 26,510	9240	\$ 852,011			160	\$ 12,673			8630	\$ 685,354		
Bridges and Structures															
David Olmstead	120	91.40		120	85.97		10,315					320	20,876		
Marcus Lal	950	77.82		1540	81.71		125,839					2450	200,020		
Other Structures		1,000				2,000						0	3,000		
Structures Subtotal		1113	\$ 89,812	1700	\$ 143,150			0	\$ -			2813	\$ 233,893		
Right of Way															
Lenore Lindahl		42.79			44.93		0					0	0		
Dea Walter		58.27			81.18		0					0	0		
Other Right of Way		5,000				15,000						0	20,000		
Right of Way Subtotal		0	\$ 5,000	0	\$ 15,000			0	\$ -			0	\$ 20,000		
Materials & Services															
Misc. M&S		\$ 1,000			\$ 3,000				\$ 500				\$ 4,500		
M&S Total			\$ 1,000		\$ 3,000				\$ 500				\$ 4,500		
PBOT SUBTOTAL		11892	\$ 885,497		\$ 2,460,261				\$ 58,019				\$ 3,413,879		
Overhead			\$ 844,882		\$ 1,813,109				\$ 43,981				\$ 2,693,832		
Overhead Rate for PBOT (except BOM)		FY 10-11	FY 11-12	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17						
		65.88%	72.00%		72.00%		77.74%		78.20%						
PBOT SUBTOTALS PER PHASE			\$ 1,540,599		\$ 4,273,362				\$ 103,970				\$ 5,017,930		
PBOT TOTAL			\$ 1,540,599		\$ 4,273,362				\$ 103,970				\$ 5,017,930		

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PORTLAND TO MILWAUKEE LRT PROJECT Transportation Budget Estimate - PE and Post PE				PRELIMINARY ENGINEERING (actual) 03/09 - 3/10 T00135.V			POST PE 4/10 - 10/10 Proj #			Total PE and Post PE 03/09 - 10/10		
PDOT				hours	rate	total	hours	rate	total	hours	rate	total
Project Management												
Teresa Boyle				1130	80.05	80,467						
Art Pearce				1303	71.19	98,466	1027	83.17	85,388	2157		175,844
Jody Yates				19	83.71	1,549	770	74.27	57,108	2153		165,844
Shoshannah Oppenheim				10	50.84	483						1,640
Other Project Management					27.20							483
Project Management Subtotal				2541		190,944	1797		142,676	4310		333,620
Transportation Planning												
Patrick Sweeney				258	58.03	14,834	40	69.10	2,384	298		16,998
Roger Geller				30	64.76	1,910	8	67.35	539	38		2,449
April Bertelsen				60	59.80	3,558	8	62.19	498	68		4,056
Nivedita Doljode				65	56.94	3,614				66		3,814
Grant Morehead				2	44.94	90				2		90
Ningsheng Zhou				40	67.06	2,683	40	68.12	2,725	80		5,408
Others										0		0
Transportation Planning Subtotal				453		26,489	96		8,125	540		32,614
Traffic Investigations												
Scott Dalton				24	82.84	1,967				24		1,967
Clifford Boiling				3	44.66	112				3		112
Robby Civan				19	46.80	891				19		891
Tom Jensen				2	64.88	130	4	67.46	270	6		400
Other Traffic Investigations										0		0
Traffic Investigations Subtotal				47		3,100	4		270	51		3,370
Street Lighting and Traffic Signals												
Lisa Elbert				79	80.36	6,369	60	83.67	4,179	129		10,547
Dave Hsieh				99	75.60	7,437	50	78.62	3,920	149		11,363
Paul Zebell				111	65.05	7,221	100	67.65	6,765	211		13,986
Other Street Lighting										0		0
Street Lighting Subtotal				289		21,026	200		14,870	480		35,896
Parking												
Ramon Corona				42	67.64	2,837				42		2,837
Other Parking										0		0
Parking Subtotal				42		2,837	0		0	42		2,837
Civil Design												
Linda Williams - Permits				1165	70.32	81,923	297	74.00	19,014	1422		100,937
Brett Kesterson				2	81.13	162				2		162
Neal Robinson				34	71.87	2,406				34		2,406
Other Civil Design										0		0
Civil Design Subtotal				1201		84,493	297		19,014	1457		103,507
Traffic Design & Engineering												
Lewis Wardrip				548	78.90	43,040	140	80.72	11,301	686		54,341
Michelle Dowdy				489	72.35	35,379	140	72.12	10,097	629		45,476
Jenny Tower				206	60.17	12,395	140	64.62	9,033	346		21,420
Other Traffic Design										0		0
Traffic Design Subtotal				1241		90,814	420		30,430	976		121,245

PE and Post PE

P2M - PDOT BUDGET for PE and post PE 5-17-10.xls

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PORTLAND TO MILWAUKIE LRT PROJECT
Transportation Budget Estimate - PE and Post PE

PRELIMINARY ENGINEERING (actual)				POST PE				Total PE and Post PE			
03/09 - 3/10				4/10 - 10/10				03/09 - 10/10			
700138.V				Proj #							
hours	rate	total		hours	rate	total		hours	rate	total	
PDOT											
Construction Inspection											
Gary Hopkins	0	71.44	0					0			0
Robin Kinnaird	12	51.71	621					12			621
Other Construction Inspection											
Construction Inspection Subtotal											
12		\$	621	0		\$		12		\$	621
Bridges and Structures											
David O'Loughlin	14	90.94	1,273	24	94.58	2,270		38			3,543
John Glasgow	1	75.14	76		70.15	0		1			76
Steve Yates	43	73.05	3,141	0	75.97	608		51			3,748
Other Structures											
Structures Subtotal											
58		\$	4,489	32		\$	2,878	90		\$	7,367
Right of Way											
Lance Lindahl	6	44.74	224	18	46.53	744		21			968
Don Walker	0	57.14	343	40	58.43	2,377		48			2,720
David Kuhnhausen	1	32.63	33					1			33
Other Right of Way											
Right of Way Subtotal											
12		\$	599	58		\$	3,121	69		\$	3,721
Materials & Services											
Misc. M&S											
M&S Total											
PDOT SUBTOTAL											
585		\$	426,411			\$	2,21,284			\$	646,695
Overhead											
Overhead Rate for PDOT (except BOM)											
FY 09-10	FY10-11			FY 09-10	FY10-11						
65.88%	65.88%			65.88%	65.88%			65.88%	65.88%		
PDOT TOTAL FOR PE											
\$ 705,672				\$ 367,066				\$ 1,072,738			

PE 3/09 - 3/10
Post PE 4/10 - 10/10
FE 11/10 - 1/12
Post PE 2/12 - 6
CON 6/11 - 9/15
CLOSEOUT 10/16 - 3/16

# mo in phase	hrs in phase	prod hrs/yr
13	1907	1760
7	1027	
14	2053	

PE and Post PE

P2M - PDOT BUDGET for PE and post PE 5-17-10.xls

PORTLAND TO MILWAUKEE LRT PROJECT
MOODY PROJECT COORDINATION
Budget Estimate

PDOT

Project Management

Chris Ames
Jean Senechal Biggs
Project Management Subtotal

Construction Services

Brenda Strombo
Construction Services Subtotal

Civil Design

Denise Dietrich
Civil Design Subtotal

Construction Inspection

Dan Holly
Construction Inspection Subtotal

PBOT SUBTOTAL

Overhead

Overhead Rate for PBOT (except BOM)

PBOT SUBTOTALS PER PHASE

PBOT TOTAL

FINAL ENGINEERING 01/11 - 06/11 Proj # T00185		
hours	rate	total

325	70.36	22,867
285	70.55	20,107
610		\$ 42,974

175	49.61	8,682
175		\$ 8,682

150	70.06	10,509
150		\$ 10,509

150	60.43	9,065
150		\$ 9,065

1085		\$ 71,229
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		\$ 46,926
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FY 10-11	FY11-12
65.88%	72.00%

\$ 118,155

\$ 118,155

FINAL ENGINEERING 07/11 - 12/11 Proj # T00185		
hours	rate	total

330	72.88	24,050
301	72.66	21,871
631		\$ 45,921

150	51.09	7,664
150		\$ 7,664

150	72.16	10,824
150		\$ 10,824

150	62.25	9,338
150		\$ 9,338

1081		\$ 73,746
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		\$ 53,097
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FY 10-11	FY11-12
65.88%	72.00%

\$ 126,843

\$ 126,843

\$ 244,998

note: budget is built using productive hours and loaded hrly rates

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Portland Water Bureau
Summary sheet 12/5/12

Row	Phase	Amount
A	PE Phase	\$101,200
B	Extended PE (EXPE) Phase	\$18,300
C	Final Design (FD)	\$345,200
D = A+B+C	Total Budget (PE/EXPE/FD)	\$464,700
E	Total Expenditures (PE/EXPE/FD)	\$443,136
F = D-E	Unspent balance	\$21,564
G	Construction	\$2,871,593
H	Close out	\$0
I	Amendment 2 Construction	\$997,430
J= G+H+I	Amended construction & close out total	\$3,869,023
K=D+G+H	Amendment 1 IGA Total	\$3,336,293
L=E+J	Total IGA amount with Amendment 2*	\$4,312,159

*Total IGA budget reduced by the unspent PE/EXPE/FD budget - \$21,564

PWB Betterments	Amount
SW Naito Parkway from SW Lincoln to Caruthers Street	\$394,869
New Water Avenue Water Line Construction	\$116,050
Total	\$510,919

Portland to Milwaukie Light Rail Extension (W01348)

SAP Code	PWB Work Order Items @ 100% IFC Plans	Unit	East	West	Total Units	Unit Cost	Total Cost
C.M.16C	36" Connections (Contractor Installed with PWB Operations Support)	EA	1	1	2	\$2,000	\$4,000
C.M.16C	Cut & Plug Existing 36" Mains - Advance Work	EA	2	2	4	\$25,000	\$100,000
C.M.16C	30" Connections	EA	2		2	\$34,000	\$68,000
C.M.16C	Cut & Plug Existing 30" Mains - Advance Work	EA	2		2	\$25,000	\$50,000
C.M.16C	24" Connections	EA		1	1	\$32,000	\$32,000
C.M.16C	20" Connections	EA	2		2	\$29,600	\$59,200
C.M.16C	Cut & Plug Existing 20" Mains - Advance Work	EA	2		2	\$25,000	\$50,000
C.M.16C	16" Connections	EA	6	2	8	\$23,600	\$188,800
C.M.16C	Cut & Plug Existing 16" Mains - Advance Work	EA	7		7	\$13,500	\$94,500
C.M.14C	12" Connections	EA	7	6	13	\$18,600	\$241,800
C.M.14C	Cut & Plug Existing 12" & 8" Mains - Advance Work	EA	22	4	26	\$10,000	\$260,000
C.M.14C	8" & 6" Main Connections	EA	19	1	20	\$15,900	\$318,000
C.M.14C	Cut & Plug Existing 6" Mains - Advance Work	EA	7	1	8	\$10,000	\$80,000
C.HC	Fire Hydrant - Install	EA	19	1	20	\$5,000	\$100,000
C.HE	Fire Hydrant - Kill & Abandon	EA	15	4	19	\$4,000	\$76,000
C.SC	8" Domestic Service (E) Connections	EA	1	1	2	\$8,000	\$16,000
C.SC	6" Domestic Service (D) Connections	EA		2	2	\$7,000	\$14,000
C.SC	4" Domestic Service (C) Connections	EA	1	3	4	\$6,000	\$24,000
C.SC	2" Domestic Service (B) Connections	EA	2	1	3	\$4,000	\$12,000
C.SC	1" Service Branch (A) & Connections by PWB	EA		0	0	\$15,000	\$0
C.SC	1" Domestic Service (A) Connections	EA	7	1	8	\$2,000	\$16,000
C.SC	1" Domestic Service (A) Meter Relocations	EA	4		4	\$2,000	\$8,000
	Subtotal Cost						\$1,812,300
	NOTE: Contractor will provide Traffic Control for all PWB work.						
	10% Contingency						\$ 181,200
	Isolation Valves	EA					\$564,100
	Total Cost of Work to be Performed by PWB Crews						\$2,557,600
	Electrical Costs for Washington County Supply Line Shutdown (1 month)						\$ 80,000
.DC	Total Design Costs						\$323,777
.IC	Total Construction Engineering Management						\$1,231,423
	Total Cost of Work to be Performed by PWB Forces @ AU 100% IFC Plans & Specifications						\$4,192,800

Portland to Milwaukie Light Rail Extension (W01348)

SAP Code	PWB Work Order Items @ 100% PE Plans	Unit	Total Units	Unit Cost	Total Cost
C.M.16C	36" Connections (Contractor Installed with PWB Operations Support)	EA	2	\$2,000	\$4,000
C.M.16C	Cut & Plug Existing 36" Mains - Advance Work	EA	4	\$25,000	\$100,000
C.M.16C	30" Connections	EA	2	\$34,000	\$68,000
C.M.16C	Cut & Plug Existing 30" Mains - Advance Work	EA	2	\$25,000	\$50,000
C.M.16C	24" Connections	EA	2	\$32,000	\$64,000
C.M.16C	20" Connections	EA	2	\$29,600	\$59,200
C.M.16C	Cut & Plug Existing 20" Mains - Advance Work	EA	2	\$25,000	\$50,000
C.M.16C	16" Connections	EA	8	\$23,600	\$188,800
C.M.14C	12" Connections	EA	10	\$18,600	\$186,000
C.M.14C	Cut & Plug Existing 12" Mains - Advance Work	EA	5	\$10,000	\$50,000
C.M.14C	8" Connections	EA	23	\$15,900	\$365,700
C.M.14C	Cut & Plug Existing 8" Mains - Advance Work	EA	5	\$10,000	\$50,000
C.HC	Fire Hydrant - Install	EA	8	\$5,000	\$40,000
C.HE	Fire Hydrant - Kill & Abandon	EA	8	\$4,000	\$32,000
C.SC	8" Domestic Service (E) Connections	EA	4	\$8,000	\$32,000
C.SC	6" Domestic Service (D) Connections	EA	5	\$7,000	\$35,000
C.SC	4" Domestic Service (C) Connections	EA	5	\$6,000	\$30,000
C.SC	2" Domestic Service (B) Connections	EA	8	\$4,000	\$32,000
C.SC	1" Service Branch (A) & Connections by PWB	EA	2	\$15,000	\$30,000
C.SC	1" Domestic Service (A) Connections	EA	35	\$2,000	\$70,000
	Isolation Valves	EA			\$0
	Subtotal Cost				\$1,536,700
	NOTE: Contractor will provide Traffic Control for all PWB work.				
	10% Contingency				\$ 153,700
	Total Cost of Work to be Performed by PWB Crews				\$1,690,400
.DC	Total Design Costs (includes \$64,100 as allowance for Construction Crew Meter Installation Work)				\$387,600
.IC	Total Construction Engineering Management				\$1,138,800
	Total Cost of Work to be Performed by PWB Forces @ 100% PE Plans				\$3,216,800

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ESTIMATED COSTS FOR EXTENDED PE, April 2010 to PE									
Labor (PWB Employee-Name or Classification)	Task	Estimated Hours	Base Rate	Fringe 64.20%	Burdened Rate (3)	Indirect Rate 103.78%	Billable Rate	Total Hours X Billable Rate	Total
		A	B	C	D = B+C	E	F = D/E	G = A x F	
Cheri Wanko	Water Design Contract	20			68.31	71.09	143.30	\$2,886.01	
Cheri Wanko	Transit Bridge	20			68.31	74.09	148.30	\$2,886.01	
Steve Young	Water Design Contract	20			66.63	73.15	139.78	\$3,494.41	
Steve Young	Transit Bridge	11			66.63	73.15	139.78	\$1,637.51	
Siu Greenberger	Water Design Contract	10			76.78	83.19	150.07	\$2,604.34	
Lloyd Miller	Transit Bridge	20			66.64	73.38	140.22	\$2,880.43	
Holly Wade	Water Design Contract	2			66.64	73.38	140.22	\$280.43	
Holly Wade	Transit Bridge	10			77.12	84.66	161.78	\$1,617.82	
Marvin Weber	Water Design Contract	2			77.12	84.66	161.78	\$323.56	
Dan Hogan	Transit Bridge	4			62.85	69.93	173.76	\$347.52	
TOTAL ESTIMATED COSTS FOR EXTENDED PE, April 2010 to PE					66.63	73.15	139.78	\$569.11	\$1,280.44

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PORTLAND TO MILWAUKIE LIGHT RAIL PROJECT
 Portland Water Bureau (PWB) Project Staffing Plan for PE Design Phase (Feb. 2009 - March 2010)
 PWB IBIS Project #182 and SAP Cost Objects W00913.PE and W01348.PE

FY 2009/2009 and FY 2009/2010 - ACTUAL COSTS FROM 3/1/2009 THRU 3/31/2010		Actual Hours	Add Pring		Fully	Add	Total	
Labor (PWB Employee--Name or Classification)	Task	IBIS (1)	SAP (2)	Gross Pay	Benefit @ 64.20%	Burdened Pay	Indirect OH, 108.78%	Billable Amount
		A	B	C	D = B+C	E = D x Rate	F = D+E	
Cheryl Wamke (3/01 to 6/30/2009)	TAC and misc. meetings	70.6		2,830.10	1,822.70	4,651.80	5,117.72	9,770.52
Cheryl Wamke (3/01 to 6/30/2009)	PLA Impact assessment	17.5				1,152.89	1,276.82	2,429.81
Cheryl Wamke (7/01 to 1/06/2010)	TAC and misc. meetings	108.5				7,411.75	8,136.62	15,548.37
Cheryl Wamke (1/07/2010 to 3/31/2010)	TAC and misc. meetings	28.0				2,013.32	2,210.22	4,223.54
Cheryl Wamke (1/07/2010 to 3/31/2010)	Transit Bridge	14.0				971.95	1,067.00	2,038.95
Steve Yeung (3/01 to 6/30/2009)	TAC and misc. meetings	26		1,139.12	731.32	1,870.44	2,053.37	3,923.81
Steve Yeung (7/01 to 1/06/2010)	TAC and misc. meetings	77.0				6,130.00	6,632.37	10,762.37
Steve Yeung (1/07/2010 to 3/31/2010)	TAC and misc. meetings	11.8				765.26	841.20	1,606.46
Steve Yeung (1/07/2010 to 3/31/2010)	Transit Bridge	7.5				498.73	548.60	1,048.32
Siu Greenberger (3/01/2009 to 6/30/2009)	TAC and misc. Meetings	18		804.06	516.21	1,320.27	1,448.39	2,768.66
Siu Greenberger (7/01/2009 to 1/06/2010)	TAC and misc. Meetings	4.0				303.10	332.74	635.84
Lloyd Miller (3/01/2009 to 6/30/2009)	SW Moody Ave	16		706.39	456.42	1,164.80	1,278.72	2,443.52
Lloyd Miller (3/01/2009 to 6/30/2009)	Transit Bridge	28.0				1,820.84	1,998.92	3,819.76
Lloyd Miller (7/01/2009 to 1/06/2010)	Plan Review	52.0				3,475.08	3,815.60	7,290.68
Lloyd Miller (1/07/2010 to 3/31/2010)	Plan Review	31.6				2,105.49	2,311.37	4,416.86
Holly Walls (3/01/2009 to 6/30/2009)	Transit Bridge	6		272.82	175.16	447.97	491.78	939.75
Holly Walls (3/01/2009 to 6/30/2009)	Transit Bridge	2.0				150.08	164.74	314.80
Holly Walls (7/01/2009 to 1/06/2010)	Transit Bridge	12.0				825.44	905.95	1,731.39
Holly Walls (1/07/2010 to 3/31/2010)	Transit Bridge	4.0				306.48	336.65	643.13
Marvin Weber (3/01/2009 to 6/30/2009)	SW Moody Ave	1		45.91	30.12	77.03	84.56	161.59
Marvin Weber (3/01/2009 to 6/30/2009)	Transit Bridge	2.0				161.14	176.80	337.94
Marvin Weber (7/01/2009 to 1/06/2010)	Transit Bridge	15.5				1,080.46	1,195.71	2,276.18
Dave Evonuk (3/01/2009 to 6/30/2009)	SW Moody Ave	19		822.70	528.17	1,350.87	1,482.98	2,833.86
Dave Evonuk (7/01/2009 to 1/06/2010)	Plan Review	21.5				1,590.96	1,740.66	3,331.62
Others								
Michael Saline (3/01/2009 to 6/30/2009)	SW Moody Ave	6		267.48	170.68	438.16	482.23	920.39
Michael Saline (3/01/2009 to 6/30/2009)	Transit Bridge	2.0				163.62	179.02	342.64
Michael Saline (7/01/2009 to 1/06/2010)	Transit Bridge	5.0				420.50	461.62	882.12
Robert Goldie (3/01/2009 to 6/30/2009)	SW Moody Ave	3		129.72	83.28	213.00	233.83	446.83
Stephen Ngai (3/01/2009 to 6/30/2009)	TAC and misc. meetings	6		167.47	107.62	274.99	301.88	576.87
Stephen Ngai (7/01/2009 to 1/06/2010)	Transit Bridge	7.0				531.30	583.79	1,115.09
Roderick Allan (3/01/2009 to 6/30/2009)	Transit Bridge	4.0				305.92	336.94	642.86
Roderick Allan (7/01/2009 to 1/06/2010)	Transit Bridge	11.5				807.02	895.73	1,702.75
Dana Henshaw (7/01/2009 to 1/06/2010)	Plan Review	16.5				1,125.65	1,240.12	2,365.77
Daniel Hogan (7/01/2009 to 1/06/2010)	Transit Bridge	7.5				531.63	583.84	1,115.47
Daniel Hogan (1/07/2010 to 3/31/2010)	Transit Bridge	4.0				281.78	309.40	591.18
Vu Mai (1/07/2010 to 3/31/2010)	Plan Review	45.6				3,031.70	3,328.20	6,360.90
Gregory Drechsler (3/01/2009 to 6/30/2009)	Transit Bridge	0.6				47.88	52.64	100.52
Gregory Drechsler (7/01/2009 to 1/06/2010)	Transit Bridge	1.0				97.16	106.80	203.96
Stan Vendo Bajuli (7/01/2009 to 1/06/2010)	Transit Bridge	2.0				194.30	213.30	407.60
TOTAL LABOR		1,176.2		16,540.1	10,422.0	26,962.1	29,615.3	56,577.4

Note (1): IBIS Project 1182 hours are from 3/1 through 6/1/2009 (pre-SAP)

Note (2): SAP Cost Objects W00913.PE & W01348.PE from 6/1/2009 through 3/31/2010

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PORTLAND-MILWAUKIE LIGHT RAIL TRANSIT PROJECT

MEMORANDUM OF UNDERSTANDING

Transfer of Review and Permit Authority

In order to effectively permit construction of those portions of the Portland-Milwaukie Light Rail Project (Project) within the City of Portland limits, the Bureau of Development Services (BDS) and the Portland Bureau of Transportation (PBOT) wish to enter into an agreement that defines a project-specific permitting process.

Under Titles 24 and 33, BDS is responsible for reviewing, permitting, and inspecting development on private property. Under Title 17, PBOT acting for the City Engineer is responsible for reviewing, permitting, and inspecting development in the public right-of-way.

It has been the practice of BDS and PBOT to develop a unique and specialized process for permitting each of the individual light rail projects built within Portland. These large, linear public works projects are aligned in such a way that they move in and out of public right-of-way and private property. It has proven to be most effective for each bureau to transfer certain permit authorities where overlap of the same structure or construction activity occurs between private property and public right-of-way. This transfer reduces duplicative plan review and inspections, reduces potential for confusion, and provides a more streamlined permitting process.

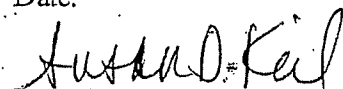
The philosophy governing transfer of authority is to assign permit responsibilities based on the type of facility, regardless of the nature of the underlying land. This memorandum documents verbal agreements that have been reached between BDS and PBOT staff during the preliminary engineering phase of the Project.

The attached Exhibit outlines specific permit authority for each bureau for this Project. Changes may be made in the future as needed to address unanticipated conflicts by executing an amendment to this MOU.

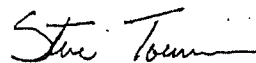
This agreement is valid for the Portland-Milwaukie Light Rail Project only and is effective immediately upon its full execution.



Paul Scarlett, Director
Bureau of Development Services
Date:



Susan D. Keil, Director
Bureau of Transportation
Date: 4-28-11



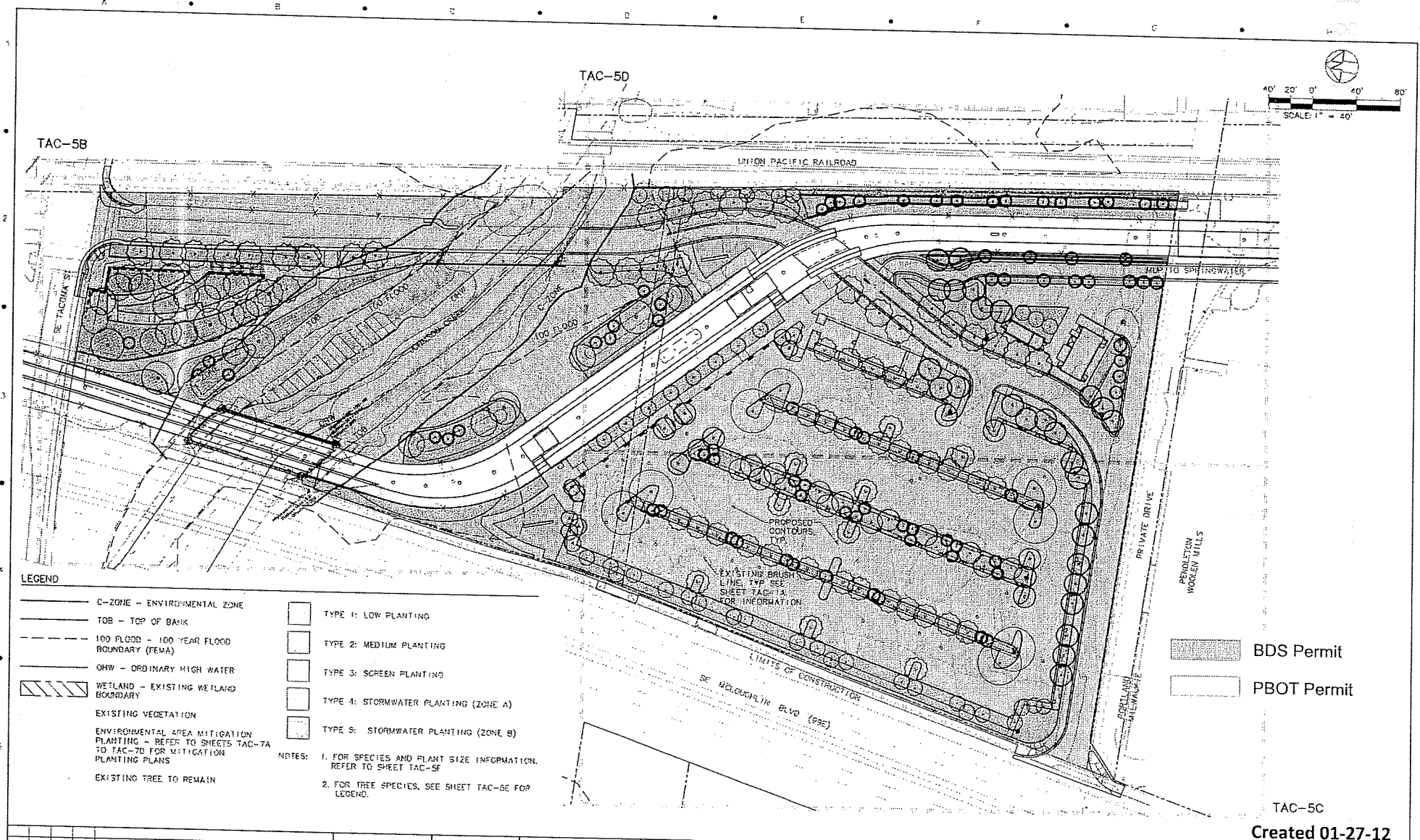
Steve Townsen, City Engineer
Bureau of Transportation
Date: 5/9/11

EXHIBIT
PORTLAND-MILWAUKIE LIGHT RAIL TRANSIT PROJECT
Permit Type, Review, Issuance and Inspection Authorities

Project Element	Zoning Review Req'd?	Permit Req'd / Type	Who Does Plan Review	Who Does Inspection
New buildings to be occupied/habitable	Yes	CO	BDS	BDS
Demolition, alteration, addition to existing buildings	Yes	CO	BDS	BDS
Park & ride facilities – private prop.	Yes	CO	BDS	PBOT/BDS
PBOT inspects overall facility construction. BDS inspects at completion for permit compliance. Stormwater treatment inlets and conveyance for building code standards requires plumbing permit and review. Buildings on site require separate building permits. Permit includes internal roadway, pathway, and stair connections (if applicable) [see attached plan for detail]				
Demolition, alteration, addition to existing parking lots	Yes	ZP	BDS	PBOT/BDS
These need to be looked at on a one by one basis. If changes, due to widening the road, are limited to removing some parking and replacing the landscape buffer, not taking the lot any further out of compliance, it will not be required to bring lot into full compliance. BDS will issue permit and will group parcels under one permit wherever possible. BDS reviews: Changes to parking stall layout, ADA stalls, landscape screening, and accessible routes to buildings				
Transit station shelters	Yes	PBOT	PBOT	PBOT
Construction staging – private prop.	Yes	ZP or CO	BDS	PBOT /BDS
Erosion Control inspection by PBOT.				
Construction staging - ROW	Yes	PBOT	PBOT	PBOT
Zoning review and ZP is required for construction staging if the ROW is in an environmental or greenway zone.				
Track work	No	PBOT	PBOT	PBOT
Including track and structures in the OS zone, with the exception of any stop, turn around, station or park and ride.				
Catenary Systems	No	PBOT	PBOT	PBOT
BDS review required for catenary poles that require alteration to private structures (for example, below grade basement lids or walls)				
Signals, street lights, poles	No	PBOT	PBOT	PBOT
Disturbance in GW zones	Yes	ZP/CO/PBOT	BDS	BDS/PBOT
Disturbance in EN zones	Yes	ZP/CO/PBOT	BDS	BDS/PBOT
Construction of new facilities in GW and EN zones permitted as otherwise described				

Project Element	Zoning Review Req'd?	Permit Req'd / Type	Who Does Plan Review	Who Does Inspection
Signage – LRT and Traffic	No	PBOT	PBOT	PBOT
Signage - Private	Yes	Sign	BDS	BDS
Art in Public ROW	No	PBOT	PBOT	PBOT
Art on private property	Yes	ZP/CO	PBOT	PBOT
Elevator structures	Yes	CO	BDS	PBOT/BDS
BDS plan review for car dimensions, ADA requirements, button locations, mechanical vending and machine room. BDS trade permit required to bring power to elevator, if not provided for under the State of Oregon electrical permit.				
Trades (Plumb., Mech., Elect.)	No	PT, ET MT	BDS	BDS
The state will inspect the right-of-way areas such as station platforms for lighting and power installations; however the City of Portland will be responsible to inspect the services supplying the systems substations, and also any remote lighting away from the platform areas.				
Stormwater Facilities	No	PBOT	BES	BES
Plumbing code appeal for non-standard plumbing, piping and fixtures is required for all facilities on private property. See attached Stormwater Facilities Matrix.				
Private bus driveway (SE 11th)	Yes	ZP/PBOT	PBOT	PBOT
Plumbing code appeal for non-standard plumbing, piping and fixtures. BDS will treat this road as a "driveway" that will require a zoning permit. Stormwater facilities will be under PBOT permit.				
Tree Removals	Yes	PBOT	PBOT/PP&R	PBOT
Zoning reviews for trees in EN and GW zones and on private property when in conflict with existing zoning or LU conditions. Review for South Auditorium required. Urban Forestry must review for consistency with MOU.				
Willamette River Bridge (DR, GW)				
Structure riverward of OHW	Yes	No	PBOT	PBOT
Structure landward of OHW	Yes	CO	PBOT	PBOT
Porter Retained Fill	Yes	CO	PBOT	PBOT
Site Preparation /Staging Areas	Yes	SD	BDS	BDS
Porter Surface Improvements	Yes	ZP/PBOT	PBOT	PBOT
Porter Surface Improvements zoning confirmation tied to Porter Retained Fill CO				
West Greenway Imp	Yes	ZP	PBOT	PBOT
Harbor Elevated Structure and Retained Fill (DR)				
Structure	Yes	ZP/PBOT	PBOT/BDS	PBOT/BDS
Approach embankments	Yes	ZP/PBOT	PBOT/BDS	PBOT/BDS

Project	Zoning Review Req'd?	Permit Req'd / Type	Who Does Plan Review	Who Does Inspection
Harold Structure				
Structure	Yes	PBOT	PBOT	PBOT
Approach embankments	Yes	PBOT	PBOT	PBOT
Crystal Springs Structure (EN)				
Structure	Yes	ZP/PBOT	PBOT/BDS	PBOT/BDS
Approach embankments	Yes	PBOT	PBOT	PBOT
Where PBOT is the permitting authority, PBOT shall review for compliance with Flood Hazard Regulations				
Bybee Bridge Widening Structure				
Structure	Yes	PBOT	PBOT	PBOT
Tacoma Structure				
Structure	Yes	PBOT	PBOT	PBOT
Approach embankments	Yes	PBOT	PBOT	PBOT
Johnson Creek Bridges (EN)				
LRT Structure	Yes	PBOT	PBOT	PBOT
Widen Ped Structure	Yes	CO	BDS	PBOT/BDS
Where PBOT is the permitting authority, PBOT shall review for compliance with Flood Hazard Regulations				
Elevated structure (Powell)	No	ODOT	ODOT	ODOT
Pedestrian bridge (Gideon and Rhine)	No	PBOT	PBOT	PBOT
Retaining Walls over 3ft on private property	Yes	ZP/PBOT	PBOT/BDS	PBOT
OPRR Trackage	No	No	PBOT	PBOT
New areas created for vehicle storage	Yes	ZP/CO	BDS	BDS



PORTLAND-MILWAUKIE LIGHT RAIL TRANSIT PROJECT

Summary of Betterments

12/5/2012

Betterment Item	Bureau	Amount	Notes
Crystal Spring RR Culvert Replacement	BES	\$939,142	
	Conservation district	\$100,000	Grant proceeds from BES
Insley Sewer Diversion Structure	BES	\$2,500,000	
Monitoring Manhole	BES	\$34,073	
SE 12th and Gideon Street Pavement Restoration	BES	\$50,000	
SE 17th Ave: SE Pershing-Lafayette Sewer Reconstruction	BES	\$294,831	
Clinton to the River	PBOT	\$284,762	Innovation Quadrant TSDC
	BES	\$369,400	Eastside CSO Comm Benefit Ops
SE Water Avenue	BES	\$250,000	Billed under separate agreement
	PBOT	\$250,000	Billed under separate agreement
	PWB	\$116,050	waterline construction
	PDC	\$250,000	Billed under separate agreement
	OMSI	\$325,000	Billed under separate agreement
LED lights on SE Powell Blvd	PBOT	\$0	no funds exchanged
Fence on SW Moody/Sheridan	PBOT	\$10,000	
Traffic loops	PBOT	\$1,600	at SW 4th and Naito Pkway
West PWB Betterments	PWB	\$394,869	
Close the Loop	PBOT	\$4,000,000	Billed under separate agreement

Betterment totals by Bureau	Amount
BES	\$4,287,446
PWB	\$510,919
PBOT	\$296,362
Total betterment value	\$5,094,727

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EXHIBIT E

185819

**MEMORANDUM OF UNDERSTANDING BETWEEN
CITY OF PORTLAND AND THE TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF OREGON REGARDING PORTLAND-
MILWAUKIE LIGHT RAIL PROJECT / SOUTH AUDITORIUM LIGHTING
PROJECT**

This **Memorandum of Understanding ("MOU")**, dated as of April 1, 2011 (the "Effective Date"), is by and between the **City of Portland, acting through its Bureau of Transportation ("City")** and the **Tri-County Metropolitan Transportation District of Oregon** (hereinafter "TriMet") (each a "Party," and collectively the "Parties").

A. Recitals

1. In March 2011, the Parties executed the First Amendment to the Intergovernmental Agreement between TriMet and the City of Portland for [the] Portland-Milwaukie Light Rail Project Design and Construction Services ("Amended Design and Construction Agreement"). Among other items, that Amended Design and Construction Agreement allows for other City project work to be performed under the Light Rail Project. If the Parties agree for other City project work to be performed under the Light Rail project, the Parties will append and incorporate into the Amended Design and Construction Agreement an agreement that documents each particular cost or work sharing agreement. The Parties expect to amend the Amended Design and Construction Agreement in December 2012, and the terms and conditions of this MOU will be incorporated into that Agreement. The Light Rail Project is funded at 50 percent by the Federal Transit Administration ("FTA"). TriMet received a Full Funding Grant Agreement ("FFGA") from FTA in May 2012.
2. The City, through its Portland Bureau of Transportation ("PBOT"), has entered into an agreement with the Oregon Department of Transportation ("ODOT") (ODOT Agreement No. 25, 522) to replace certain foundations, poles, and lighting fixtures and to install conduit and power wire from SW Naito Parkway to SW 4th Avenue, and from SW Clay Street to SW Arthur Street. This work is hereinafter referred to as the "**South Auditorium Lighting Project**".
3. At the 30% design stage of the Light Rail Project, TriMet and the City confirmed that 28 of the South Auditorium poles and associated fixtures are within the geographic limits of the Light Rail Project. That means that without coordination between TriMet and the City with respect to these poles and fixtures, the Light Rail Project would remove and replace these poles and fixtures shortly after the City installs them.
4. The City has already purchased and received the poles and fixtures for the South Auditorium Lighting Project, and has already begun installing some of them. However,

TriMet and the City agree that it is reasonable, prudent, and in the best public interest for TriMet to incorporate the design and installation scope of the work for the 28 poles and fixtures into the design and construction scope of the Light Rail Project. This incorporation will allow the 28 poles and fixtures to still be a part of the overall South Auditorium Lighting Project, but without interfering with the design of the Light Rail Project. This discrete scope of work that TriMet will perform with respect to the 28 South Auditorium poles and fixtures that is the subject of this MOU is hereinafter referred to as the **"PMLR South Auditorium Lighting Project."**

B. Intent of this MOU

This MOU memorializes the Parties' intent to proceed with TriMet incorporating the design and installation of the conflicting 28 poles and fixtures into the design and construction scope of the Light Rail Project. This MOU is not a binding legal document.

C. Terms of Agreement

The City and TriMet agree as follows:

1. TriMet

- a. TriMet will manage and fund only the design and installation of the poles and fixtures that comprise the PMLR South Auditorium Lighting Project, which are the 25 poles and fixtures specifically identified on **Exhibit A** to be installed on the Naito and 1st Avenue frontages, and three additional poles and fixtures that will be utilized on the Lincoln Street frontages. Exhibit A is incorporated in its entirety by this reference. Specifically, the 28 poles and fixtures are comprised of
 - (i) 16, fifteen-foot poles and "lollipop" fixtures, complete with anchor bolts and assembly components per drawings,
 - (ii) 11 single mast arm poles (for the bell lights), complete with anchor bolts and assembly components per drawings,
 - (iii) 1 double mast arm pole (for the bell lights), complete with anchor bolts and assembly components per drawings,
 - (iv) 13 bell lights; and
 - (v) 28 Virticus Rialto units with coax cable.
- b. TriMet's activities are more particularly described in the Issued for Construction ("IFC") drawings and specifications, which together will comprise TriMet's "Scope of Work," for the PMLR South Auditorium Lighting Project. TriMet estimates the cost to complete the Scope of Work is approximately \$115,000. If the cost to

complete the Scope of Work is more than \$115,000, TriMet will incur that cost and not pass it on to the City. TriMet will have no other funding responsibilities associated with the South Auditorium Lighting Project.

- c. TriMet will use commercially reasonable efforts to complete the Scope of Work no later than December 31, 2013. If, despite using commercially reasonable efforts to complete the Scope of Work by December 31, 2013, TriMet has not completed the Scope of Work by that time, TriMet will not under any circumstance be responsible for any costs, expenses, or damages incurred by or on behalf of the City related directly or indirectly to that failure. This includes, but is not limited to, any cost, expense, or damage that arises under ODOT Agreement No. 25,522.
- d. TriMet and the City agree to coordinate an appropriate time and place for TriMet to retrieve the poles and fixtures from the City. TriMet will be responsible for the condition of the poles and fixtures upon the poles and fixtures physically changing hands from the City to TriMet for TriMet's installation, except for any manufacturer defect. TriMet will remain responsible for the condition of the poles and fixtures, except for any manufacturer defect, up until the time the joint inspector issues a letter of completion certifying that the poles and fixtures have been installed properly, as discussed in "TriMet Obligations," Paragraph (f), below. Notwithstanding TriMet's possession of the poles and fixtures at any point, ownership of the poles and fixtures at all times remain with the City. If there is a manufacturer defect associated with any of the 28 poles or fixtures and it is discovered within the manufacturer's warranty period, TriMet will work with the manufacturer to correct the defect or issue a new pole or fixture. If there is a manufacturer defect associated with any of the 28 poles or fixtures and discovered after the manufacturer warranty period has expired, TriMet will notify the City, and it will be resolved according to "City Obligations," Paragraph (d), below.
- e. The Parties will agree on a joint inspector to inspect the poles and fixtures after TriMet has completed installation to ensure proper installation according to current applicable codes. TriMet will correct installation errors or deficiencies found by the inspector, if any, at TriMet's cost, which cost will not be passed on to the City. The Parties will request that the inspector issue a letter of completion, certifying that the 28 poles and fixtures have been properly installed. Immediately upon issuance of that letter of completion, TriMet will be relieved of any responsibility or liability associated with the 28 poles and fixtures, except for work that falls within TriMet's two-year workmanship warranty period.
- f. TriMet's contractor will provide to TriMet a two-year warranty for workmanship issues associated with the installation of the 28 poles and fixtures. TriMet will submit to its contractor all workmanship warranty claims that arise within this two-year period. Thereafter, any maintenance responsibility for the 28 poles and fixtures rests with the City, as discussed in "City Obligations," Paragraph (e), below.

- g. Within a reasonable period of time after TriMet has completed the Scope of Work, TriMet will issue to the City a copy of the as-built drawings of the PMLR South Auditorium Lighting Project.

2. City

- a. The City has confirmed with ODOT that the Scope of Work may be completed by the Light Rail Project, and on TriMet's timeline, each without violating the terms of ODOT Agreement No. 25,522.
- b. The City acknowledges that there may be increased costs to the City associated with TriMet managing the design and installation of the PMLR South Auditorium Lighting Project. This includes, but may not be limited to, costs incurred by City's design and construction contractors in removing the 28 poles and fixtures from the South Auditorium Lighting Project. The City will cover those additional costs and not pass them on to TriMet.
- c. The City will, at its own cost, cause its contractor to store the 28 poles and fixtures at the contractor's yard through May 2012, at which time TriMet will make arrangements to pick up the 28 poles and fixtures and store them at a TriMet facility until TriMet is ready to install them. The Parties agree to work in good faith to coordinate reasonable times at which TriMet may retrieve the poles and fixtures.
- d. The City will be responsible for the condition of the poles and fixtures up until the time TriMet arrives to retrieve the poles and fixtures from the City and the poles and fixtures physically change hands from the City to TriMet. If there is a manufacturer defect associated with any of the 28 poles or fixtures and it is discovered after the manufacturer warranty period has expired, the City will either, in its reasonable discretion, provide to TriMet replacement parts, at no cost to TriMet, or the City will repair the defective pole or fixture.
- e. Immediately upon issuance of the joint inspector's letter of completion that the 28 poles and fixtures have been properly installed, the City will assume all responsibility and liability associated with the poles and fixtures, except as specifically identified in "TriMet's Obligations," Paragraphs (e) and (f) above, with respect to warranty work. The City's responsibility that it assumes upon issuance of the letter of completion includes, but is not limited to, all responsibility associated with ongoing maintenance of the poles and fixtures, and any costs associated therewith.

D. Avoidance of Conflicts

The Parties agree that nothing in this MOU will give rise to any legally binding or enforceable obligation, liability or agreement on the part of any Party. Nothing in this MOU waives any Portland City Policy or prohibits the City from maintaining or enforcing its current policies or agreements. The City is specifically not obligating itself or any other agency with respect to any discretionary or regulatory action, including but

not limited to zoning, variances, dedications, vacations, regulatory plan reviews, issuances of permits, code compliance or any other governmental approvals or regulatory actions which may be required or authorized

E. Future Agreements

The Parties, subject to the terms of this MOU, intend to incorporate this MOU into an amendment to the Amended Design and Construction Agreement on a date as soon as feasible. The amendment will fully integrate the terms of this MOU, and by integration into that Agreement will become fully binding and enforceable on each Party.

E. Term

This MOU is effective as of April 1, 2011, and will terminate upon incorporation into the amendment of the Amended Design and Construction Agreement.

F. Notices

All notices or other communications required by or relating to this MOU will be in writing.

Correspondence concerning this MOU must be addressed to:

For TriMet:

Scott Robertson
TriMet
710 NE Holladay Street
Portland, OR 97232
Phone: (503) 962-8841
email: robertss@trimet.org

For City:

Lisa Elbert
City of Portland
PBOT
1120 SW 5th Avenue
Portland, OR 97201
Phone: (503) 823-6197
email: Lisa.Elbert@portlandoregon.gov

AGREED AND ACCEPTED

TRIMET

CITY

By: 

Daniel W. Blocher, PE

Executive Director, Capital Projects

By: 

Tom Miller

Director, Portland Bureau of Transportation

618681

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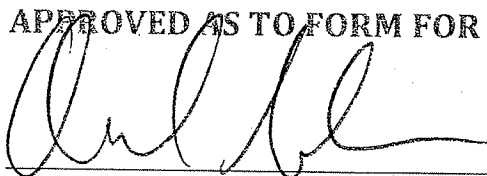
Date: 11.12.12

Date: 12.5.12

APPROVED AS TO FORM FOR TRIMET

Britney Colton
Deputy General Counsel
TriMet

APPROVED AS TO FORM FOR CITY



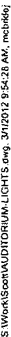
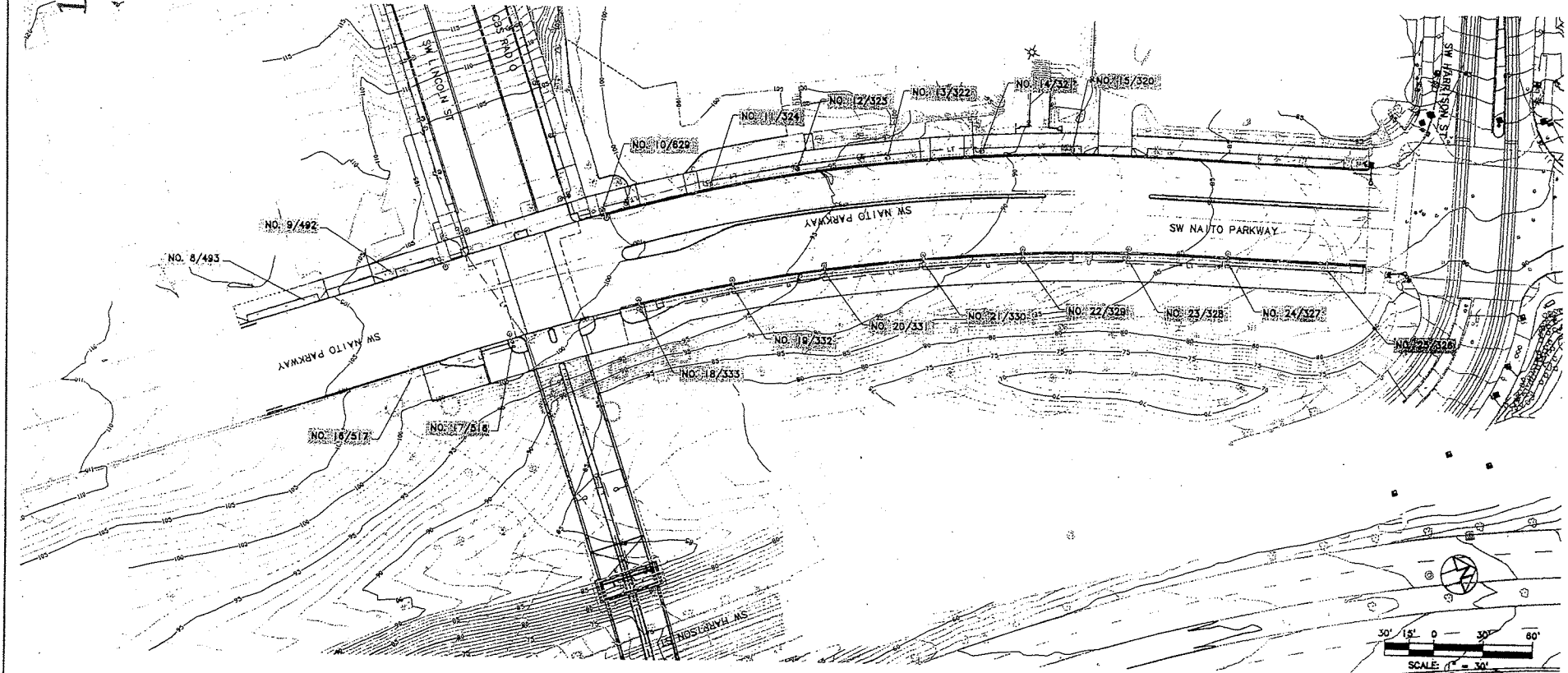


Exhibit A
Page 1 of 2

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MEMORANDUM OF UNDERSTANDING

DATED: December 4, 2012

AMONG: THE TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON (TriMet)

AND: THE CITY OF PORTLAND, BY AND THROUGH ITS PORTLAND WATER BUREAU (PWB)

RECITALS

The Tri-County Metropolitan Transportation District of Oregon ("TriMet") owns and operates the public mass transit system serving the Portland Metropolitan area which runs through the City of Portland (the "City").

The City is a municipal corporation of the state of Oregon. The Portland Water Bureau ("PWB") is a bureau within the City, organized under Chapter 11 of the City of Portland Charter and Title 21 of the City of Portland Code. The Portland Bureau of Transportation ("PBOT") is the agency within the City in charge of building and maintaining the City's transportation infrastructure.

PWB's Chief Engineer is responsible for determining the standards for the City's water system. PWB is responsible for all work involving the public water system.

On or about July 1, 2010, the TriMet and City (collectively referred to as "the Parties") entered into the Intergovernmental Agreement for Portland-Milwaukie Light Rail Project Design and Construction Services ("Agreement"), effective as of March 30, 2009. The Portland-Milwaukie Light Rail Transit Project is referred to as the "Project".

During the Preliminary Engineering Phase of the Project, the Parties identified certain areas where the Project construction or operations, or both, will or may impact the existing water system facilities of PWB.

This Memorandum of Understanding ("MOU") is intended to clarify the understandings with respect to the shared obligations, and the Parties intent for the MOU to be included in the Design & Construction Management Services intergovernmental agreement between the City and TriMet.

UNDERSTANDINGS AND AGREEMENTS

TriMet and PWB understand and agree that:

1. **Project Effects:** The Project will affect the existing water facilities of PWB in the areas shown in the Advanced Utilities Engineering Plans Issued for Construction, West Segment dated August 19, 2011 and East Segment dated October 31, 2011.
2. **Public Water System Safety and Integrity:** Relocation and protection of PWB water facilities is necessary to resolve physical conflicts with the Project and provide adequate protection to maintain the safety and integrity of the public water system.
3. **PWB Design Standards:** Relocation and protection of the water system will be to PWB's design standards for electric rail projects, except as modified by this agreement in Section 9 – Water System Modification and Relocation Criteria.
4. **PWB Betterments:** PWB intends to take this opportunity to make Betterments to the water system that it deems appropriate. "Betterments" are defined as water system upgrades beyond work needed to address impacts of the Project, and may include installing a new facility (mains, services, etc.) where one did not exist before, replacing mains not affected by the Project, abandonment or removal of unused water facilities, or increasing pipe diameter beyond existing pipe diameter. Betterment work may be performed by TriMet's utility contractor as part of the construction contract or be done by PWB personnel, as determined in the discretion of PWB. PWB intends to be responsible for the actual cost of the Betterments, by reimbursement to TriMet. The Betterments are:
 - a. West Segment
 - 1) New 12" water main in SW Naito Parkway from south side of Lincoln St. to Caruthers St.
 - 2) New 36" steel casing for future SW Bond Ave. crossing at Porter St.
 - b. East Segment
 - 1) New 12" water main in SE Water Ave. from SE "Old" Water Ave. to the north side of SE Sherman St.
5. **Project Responsibility:** The Project should be responsible for the cost of water system protection and relocations necessary to mitigate Project impacts, but should not be responsible for the costs of Betterments.
6. **PWB Responsibility for the Public Water System:** PWB intends to shutdown, drain, cut and plug affected water lines prior to work on the system. PWB intends to make all connections to the public water system and intends to make all service transfers, unless otherwise specified in Project plans. PWB construction crew scope of work is as specified in the 100% IFC plans and specifications (Documents 1 and 2 of 2) of the Portland to Milwaukie Light Rail Project Advance Utilities West Segment (dated August 19, 2011) and East Segment (dated October 31, 2011).
7. **Stray Current Protection:** TriMet and PWB agree to the following design and construction scope of work for track stray current isolation and monitoring:

- a. TriMet agrees to incorporate electrical isolation into the light rail track design.
 - 1) Ballasted track: 500 ohms
 - 2) Embedded track: 200 ohms
 - 3) Direct fixation track: 500 ohms
 - b. TriMet agrees to meet the following construction quality acceptance criteria:
 - 1) Provide high voltage flaw (holiday) detection of the boot insulation prior to placing concrete.
 - 2) Provide isolation testing between rail and rebar immediately prior to placing the concrete.
 - 3) Meet minimum track to earth prorated resistance criteria in ohms per 1000 feet and the actual test section should be no longer than 750 feet (to limit the maximum possible magnitude of an undetected short).
 - c. Test Method Acceptance: Testing for acceptance will utilize test methods acceptable to PWB and TriMet. PWB may at its discretion be present and participate in the testing. In the event that the measured resistances do not meet the specified levels, TriMet intends to exercise all reasonable means to determine the cause of the lower reading and correct the cause. If correction is not feasible, TriMet intends to consult with PWB and cooperate to find an acceptable resolution to the Parties.
8. **Stray Current Monitoring:** TriMet and PWB agree to execute a maintenance agreement with the following ongoing responsibilities before the Project is placed into service:
- a. TriMet's maintenance program should include a stray current monitoring and testing program. TriMet intends to perform repairs as necessary and maintain the electrical isolation so that levels of stray current generated due to light rail operations do not cause damage to PWB facilities.
 - b. TriMet's monitoring and testing program should, at a minimum, consist of the following:
 - 1) Provide baseline monitoring of operational track to earth voltage gradients and exception reports showing 20% or greater variation in operating conditions.
 - 2) Provide results of a radio frequency current mapper/flaw (holiday) detection survey.
 - 3) Repeat the radio frequency current mapper/flaw (holiday) detection survey at five-year intervals on embedded tracks.
 - 4) In areas of track repair provide measurements of track to earth resistance extending 500 ft beyond the repair length.
 - c. With regard to all PWB facilities that are within the Project limits, TriMet intends to indemnify and hold PWB harmless for the cost of repair or replacement due to damage caused by stray current generated by light rail operations.
9. **Water System Modification and Relocation Criteria:** Water system protection and relocations will be made using the following specifications:

- a. Pursuant to PWB Electric Rail Standards, the following corrosion protection measures should be incorporated into the water system relocations paralleling the tracks.
 - 1) All newly installed mains in the vicinity of the light rail tracks will be cathodically protected (isolated, joint bonded, poly-wrapped, cathodic protection, test stations, etc.).
 - 2) Relocate, isolate and cathodically protect all water facilities that are fifteen (15) feet or less from the centerline of the nearest track. Mains to be relocated parallel to the track should be designed and constructed to maintain a minimum of ten (10) feet clearance from the outer most edge of the nearest track slab to the edge of the pipe.
 - 3) Existing water mains located between fifteen (15) feet and ten (10) feet from the centerline of the nearest track may remain in place, as an exception to PWB's electric rail standards for this project if the track slab is insulated from the surrounding soil with a di-electric geomembrane.
 - 4) Replace, isolate and cathodically protect all existing water facilities within 200 feet of any light rail substation DC ground mat unless: a) the ground mat is installed vertically with at least 200 feet of separation from the water facilities and the electrically conducting portion of the ground bed, or b) TriMet eliminates the diode connection to the DC ground mat.
- b. Pursuant to PWB Electric Rail Standards, replace, isolate, encase and cathodically protect all water mains, services, fire hydrant runs and any other appurtenances crossing under the light rail tracks.
 - 1) Cased and sleeved crossings under the tracks should extend at least five feet beyond the outside edge of the track slab. Casing should extend beyond five feet, using a 1:1 (base of structure to base/invert of casing) slope criteria, when deeper than five feet or when platforms or other structures are associated with the track slab structure.
 - 2) Steel casings crossing under the tracks are required for all water mains.
 - 3) Services and fire hydrant runs can be sleeved with Schedule 80 PVC under the tracks, except at Station Platforms where steel casings will be required.

10. Standards For Services, Hydrants, and Isolation Valves: The Parties' obligations and expectations regarding services, hydrants, and isolation valves, reflected in the plans and allocations referenced in this MOU, are as follows:

- a. Replacement of existing services and hydrant runs that do not cross the tracks: Where an existing main or service is in conflict with the Project, the Project should be responsible for the full cost of its relocation and replacement. Where the existing main is not in conflict with the Project, PWB intends to be responsible for the cost of replacing the service run between existing main and the existing meter as a Betterment.
- b. Replace existing services and hydrant runs that cross the light rail tracks: The Project should be responsible for the cost of replacing the entire service and service run. Large services, 4" and larger, should be replaced with a combination of DI pipe and a PVC-sleeved/encasement. Small diameter services, 2" and smaller, should be replaced with copper pipe encased in PVC pipe underneath the light rail tracks. All services and hydrant runs that cross a Station Platform should be encased with steel casings.

- c. PWB intends to design and install isolation valves along the light rail route to facilitate live system connections while minimizing the impact to customers.
- d. The plans must include, and the Project shall pay the cost of maintaining or relocating, existing fire hydrants and placement of new hydrants to provide fire protection coverage as required by the Fire Bureau, at the Project's cost. In most cases, the Fire Bureau will require two (2) hydrants per intersection.
- e. PWB intends to take measures to minimize the relocation service, valve, and hydrant costs as much as reasonably possible without compromising the water system integrity or safety.

11. Project Management: PWB, PDOT and TriMet intend to establish a project management partnership that is responsible for implementing the agreed-upon work scope within the Project schedule and budget requirements.

- a. PWB and TriMet intend to establish a project management team with joint overall responsibility for all aspects of the Project, including disputes resolution. PWB has assigned Steve Yeung, and TriMet has assigned Simon Cooper as project managers of the technical work. The Parties may, during the Project, assign other staff to this work.
- b. In the event of any disputes between PWB and TriMet, the dispute should be referred for resolution as follows:
 - 1) Refer the dispute to Steve Yeung at PWB and Simon Cooper at TriMet, who shall make a good faith effort to resolve it;
 - 2) If unresolved, refer it to PWB's Chief Engineer and to TriMet's Project Director, Robert Barnard;
 - 3) If unresolved, refer it to the City's Commissioner-in-Charge of PWB and TriMet's Executive Director of Capital Projects and Facilities;
 - 4) If unresolved, refer it to City Council and TriMet's General Manager.

12. Cost Allocations and Reimbursements: PWB and TriMet agree to the following cost allocations and reimbursement arrangements:

- a. The total water system construction costs to be managed under this MOU include relocations and system alterations required by the TriMet Project, including the pre-project work identified in Section 10, above, ("Project-required alterations"), plus certain Betterments that PWB intend undertake in conjunction with Project-required alterations. The alterations and Betterments are identified in the 100% IFC Plans (Document 2 of 2) of the Portland to Milwaukie Light Rail Project Advance Utilities West Segment (dated August 19, 2011) and East Segment (dated October 31, 2011).
- b. The total construction cost of Project-required alterations and Betterments to be constructed during the project is estimated to be \$9,802,700. Of that total, the cost of PWB's Betterments is estimated to be \$510,919 for work to be performed by the TriMet Contractor in SW Naito Parkway, SW Bond Ave, and SE Water Ave. Refer to "Attachment 1 - Water System Modifications Estimated Costs" for specific details.

- c. The Parties agree to calculate and allocate costs of Project-required water system alterations and Betterments as follows:
 - 1) Actual costs from PWB Staff from engineering design, construction management and inspection, and Interstate Construction & Operations working on the Project should be billed to TriMet.
 - 2) The Parties intend to allocate all additional costs for PWB Project-required alterations and Betterments. Each party intends to reimburse the other for its share of the costs, depending on which party's employees or contractors perform the work.
 - 3) Costs for contractor performed work must be based on actual contractor invoices. Costs for work performed by PWB employees and crews must be based on actual costs incurred and documented on PWB time and work records. A PWB overhead rate of 109.89% for Fiscal Year 2010-11, 114.74% for Fiscal Year 2011-12, and 111.62% for Fiscal Year 2012-13 must be applied to direct labor costs for all billable work invoiced to TriMet. The labor overhead rate for future Fiscal Years beyond 2013-14 will be determined and announced through an Ordinance by the City of Portland Council. Any overhead rates charged to TriMet by the City must meet all federal requirements for federally-funded projects.
 - d. If, subsequent to the effective date of this MOU, it is determined that PWB system alterations or relocations not identified in the 100% IFC Plans of the Portland to Milwaukie Light Rail, Advance Utilities (West and East Segments), Document 2 of 2, are required for Project completion, TriMet agrees to reimburse PWB for all direct and indirect costs of those Project-required alterations, at the overhead rate specified in subpara.12c. (3). PWB shall be responsible for the cost of any associated Betterments. The Parties may, in any case, amend this MOU to make different or more specific cost allocations.
13. **Design and Specifications:** TriMet, in coordination with PWB, has been and intends to continue to be, responsible for providing the final design of the water system improvements. TriMet and PWB work is broken down as follows:
- a. TriMet, in coordination with PWB, intends to negotiate with consultants for professional, technical and expert services contracts in accordance with Project budget, schedule and FTA requirements.
 - b. PWB, in coordination with TriMet, intends to manage the consultants' design phase services.
 - c. Consultants, in coordination with PWB, intend to prepare the specifications for the contract water system modifications.
 - d. Consultants, in coordination with TriMet and PWB, intend to provide final design drawings, specifications and engineer's estimate in accordance with the Project schedule.
 - e. Consultants, in coordination with PWB, intend to provide electronic copies of the 50%, 90%, 99%, and 100% Issued for Construction (IFC) final design drawings, specifications and all addenda to TriMet. TriMet intends to print and distribute plan and specification sets for review. PWB intends to have no less than twenty one (21) calendar days to review the 50% and 95%, fifteen (15) days to review 100% plans and specifications, and any addenda upon receipt of printed plans and specifications from TriMet.

- f. TriMet intends to prepare as-built drawings based on the construction contractor's "red-lines" that meet PWB standards and turn over one complete set to PWB at the completion of the work.
 - g. TriMet intends to submit 100% final design or IFC drawings and specifications to PWB for signatures. PWB intends to have five (5) days to review and sign the 100% IFC final plans following receipt of the plans from TriMet.
 - h. TriMet intends to provide surveying, base maps and CAD support that meet TriMet's Project requirements and PWB CAD standards for layering and symbols for drawings and as-built records.
 - i. The 100% IFC final design drawings and specifications for water system modifications must be incorporated into the Project's civil construction package, as appropriate for a CM/GC contract.
14. **Contractor and Subcontractor Pre-qualification:** Subject to PWB pre-qualification (see below) a CM/GC contractor selected by TriMet for its Project may self-perform or subcontract work related to PWB water facilities, except work specifically identified as being done by PWB, such as service transfers, connections to the public system, and installation of isolation valves. Contractors and subcontractors, performing any work on the water system modifications, shall be prequalified by PWB in Category 11 Water Mains, pursuant to the 2010 City of Portland Standard Construction Specifications.
15. **New Water Service for TriMet Facilities:** TriMet shall apply and pay for all new water service installations required for the Project with the PWB Development Services office. TriMet shall submit appropriate payment for system development fees and installation fee for work by PWB crews. TriMet shall provide drawings showing the location of the new services. Construction should be coordinated with the Project team. TriMet and PWB agree that some private parcels with water service will be converted to City right-of-way and that PWB intend to allow these meters to be converted to TriMet use within the public right-of-way.
16. **PWB Acceptance of Work:** PWB shall provide construction management of water system modifications, inspection services and engineering support services. PWB shall review and approve submittals, field orders, and requests for information. PWB and TriMet shall approve progress payments and change orders for the water system modifications. PWB intends to provide final inspection and acceptance of water system modifications.
17. **Sequence of Work:** TriMet and PWB intend to explore and may implement construction sequencing and construction staging to minimize the need for temporary services and surface restoration work and thereby lower the overall cost of construction. Any additional costs of the water system associated or resulting from TriMet's construction staging and sequencing plans will be funded by the Project.
18. **Coordination of Work:** PWB, PBOT, and TriMet acknowledge that time should be of the essence in the performance of all work. Each party agrees to take all necessary actions to facilitate the shortest feasible construction durations.

19. **Budget:** PWB, PBOT, and TriMet acknowledge that overall budget for the Project is limited. Accordingly, the Parties agree to cooperate in an effort to accomplish the work required herein within the established budget.
20. **Billings by TriMet for Betterments Installed by TriMet Contractor:** When TriMet's contractor or contractors perform work on PWB Project-required alterations or Betterments, TriMet intends to submit monthly billing to PWB for payment, based upon invoices from the construction contractor. PWB payment of its share must be made directly to TriMet who, in turn, intends to pay the construction contractor for its costs as part of the monthly progress payment process. Supporting documentation should be included with all pay requests.
21. **Billing by PWB for Project-Required Work Performed by PWB:** When PWB crews or PWB contractors perform work on PWB Project-required alterations or Betterments, PWB intends to submit monthly billing to TriMet for payment, based upon invoices from the contractor or City records. TriMet's payment of its share must be made directly to PWB, which, in turn, intends to pay the contractor or reimburse City funds. Supporting documentation should be included with all pay requests.
22. **Review of Billings:** TriMet intends to submit to PWB for review and approval all construction contractor calculations, invoices for actual incurred costs, progress payment requests, change order requests, and submittals for any work related to the water system modifications.
23. **Maintenance Agreement:** TriMet and PWB intends to enter into a separate maintenance agreement, in accordance with provisions of this MOU. (See paragraph 8 above.) The maintenance agreement should include the ongoing stray current monitoring and protection of PWB's water system along the Project and the repair and replacement of any water facilities damaged by the light rail. The Water Bureau Administrator of the PWB is authorized to enter into that agreement on behalf of the City.
24. The Parties have executed and delivered this MOU to be effective on the _____ day of _____.

TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF
OREGON

By [Signature]
DAN BLOCHER
Executive Director

Approved as to form

By [Signature]
MONIQUE HAWTHORNE
Deputy General Counsel

CITY OF PORTLAND, BY AND
THROUGH THE PORTLAND
WATER BUREAU

By [Signature]
DAVID G. SHAFF
Administrator, Portland Water Bureau

APPROVED AS TO FORM

By [Signature]
City Attorney
CITY ATTORNEY
12/6/12

Attachment 1 - Estimated Costs for Water System Modifications

	Project Cost	PWB Betterments	TriMet Reimbursement to PWB
ENGINEERING DESIGN COSTS			
PWB Staff	\$323,777		\$323,777
CONSTRUCTION COSTS			
West Segment - TriMet Water Subcontract including General Condition Costs	\$1,904,300	\$394,869	
East Segment - TriMet Water Subcontract including General Condition Costs	\$3,705,600	\$116,050	
Construction Management & Inspection			
PWB Staff	\$1,231,423		\$1,231,423
PWB Construction Crews and Operations Staff			
ADVANCED WORK:			
Isolation Valve Installations	\$564,100		\$564,100
LIVE WATER SYSTEM WORK			
Connections for Services & Water Mains, Hydrant Installations & Kills, and Cut & Plug on Water Mains	\$1,993,500		\$1,993,500
Electrical Pumping Cost for WCSL Shutdown	\$80,000		\$80,000
PROJECT TOTALS	\$9,802,700	\$510,919	\$4,192,800
Total TriMet Share of Water System Modification Costs			\$9,291,781
Total PWB Payment to TriMet for Betterments			510,919
Total TriMet Payment to PWB			\$4,192,800

185819

CRYSTAL SPRINGS CULVERT REPLACEMENT PROJECT
MEMORANDUM OF UNDERSTANDING

CITY OF PORTLAND BUREAU OF ENVIRONMENTAL SERVICES,
TRIMET
and
UNION PACIFIC RAILROAD COMPANY

This Memorandum of Understanding ("MOU") is between the City of Portland, a municipal corporation organized under the laws of the State of Oregon, by and through its Bureau of Environmental Services ("BES"), the Tri-County Metropolitan Transportation District of Oregon, a mass transit district organized under the laws of the State of Oregon ("TriMet"), and Union Pacific Railroad Company, a Delaware corporation ("Union Pacific"), collectively referred to as "the Parties."

RECITALS:

- A. Crystal Springs Creek is a tributary of lower Johnson Creek in southeast Portland. The creek originates from a spring near Reed College and the Eastmoreland Golf Course, an area that was once primarily marshy wetlands. Before development, the wetlands retained excess water from flood events and provided important rearing and refuge habitat for salmon, and foraging and nesting sites for beavers, birds, turtles, frogs, and other wildlife.
- B. Crystal Springs is spring-fed, which keeps water temperatures cool and stream flow uniform throughout the year. This adds cool water to Johnson Creek in the summer when stream flow can be low and warm. Fish and amphibians thrive in cool water. Crystal Springs is home to coho and Chinook salmon and steelhead trout. All three species are listed as threatened under the federal Endangered Species Act ("ESA") and Crystal Springs is designated as critical habitat.
- C. BES is working to enhance conditions in Crystal Springs Creek to benefit native fish and reduce localized flooding.
- D. There are nine culverts on Crystal Springs Creek between SE 28th Avenue and the creek's confluence with Johnson Creek that inhibit fish from swimming upstream and downstream to reach spawning and rearing habitat. Undersized culverts also impound water and create localized flooding. Culvert replacement or removal is a key element of recovery of endangered juvenile salmon and trout species and reducing flooding. Replacing Crystal Springs Creek culverts with fish-friendly culverts will open up nearly three miles of prime habitat for threatened native fish species.
- E. BES, through its Grey to Green initiative, allocated \$2 million to replace the culverts in Crystal Springs Creek over five years. In conjunction with Reed College, the Corps of Engineers, and other resource agencies and wildlife advocates, BES has planned and is proceeding with improved fish passage by elimination or replacement of eight culverts. A

partnership between TriMet and Union Pacific Railroad would provide the opportunity for BES to improve fish passage and localized flooding at the ninth culvert under the existing Railroad tracks. BES is programming, within its stormwater capital program, an additional \$1 million for the project in fiscal year 2014.

- F. BES secures and retains monitoring and maintenance responsibility for the culvert replacement projects that it owns. For culverts owned by others, BES may retain monitoring and maintenance of upstream and downstream improvements, and overall fish passage to ensure its investment in meeting ratepayer expectations.
- G. TriMet, in conjunction with the City of Portland and others, is designing and constructing the Portland-Milwaukie Light Rail Transit Project (the "PMLRT Project"), an extension of the MAX light rail system to Milwaukie, which by necessity will cross Crystal Springs west of the existing Union Pacific main line in Southeast Portland. TriMet and Union Pacific have executed an as-yet undated Construction, Operating, and Maintenance Agreement ("COMA") related to the PMLRT Project.
- H. TriMet, in conjunction with BES and Union Pacific, is intent on leveraging its investment in crossing Crystal Springs by fostering a new fish-friendly culvert under both the MAX and Union Pacific alignments (the "Crystal Springs Culvert Replacement Project" or "Project"). The new culvert would replace the ninth culvert on Crystal Springs Creek (the "Railroad Culvert"), piggybacking on the efforts of the Grey to Green initiative to replace all of the Crystal Springs Creek culverts between SE 28th Avenue and the creek's confluence with Johnson Creek.
- I. Union Pacific, in support of its and the City of Portland's sustainability agendas, is cooperating in coordinating train movements and track removal and restoration, necessary to support the replacement of the Railroad Culvert.
- J. TriMet and BES will each participate in pursuing and securing necessary permits for implementation of the Crystal Springs Culvert Replacement Project from the City and natural resource agencies. The permitting will be paid by BES.
- K. The Project schedule contemplates permitting construction to begin in summer 2012 to accommodate federal "fish window" restrictions.

FUNCTION OF THIS MOU:

This MOU is a statement of intent regarding how the Parties will cooperatively implement the Crystal Springs Culvert Replacement Project, and will be followed by a more formal agreement among the Parties.

UNDERSTANDINGS:

NOW, THEREFORE, in consideration of their mutual assurances set forth below, each party agrees as follows:

1. TriMet, BES and Union Pacific agree to pursue the Project funding, design, permitting and construction in the summer of 2012.
2. In conjunction with the PMLRT Project TriMet will:
 - a. Secure design services necessary for procurement, installation and permitting of the culvert.
 - b. Secure construction services to install the improvements on a schedule approved by Union Pacific.
 - c. In cooperation with BES, pursue permits as required.
 - d. Provide up to \$570,000 as its share of the Crystal Springs Culvert Replacement Project cost.
 - e. Maintain as necessary the culvert within its right-of-way.
 - f. Bill City up to \$1 million to be paid in fiscal year 2014.
 - g. Build the Project across the additional width of the east side of the Union Pacific right of way to accommodate a possible future fourth track in that area.
 - h. Build the Project according to a design approved by Union Pacific.
3. BES will:
 - a. In cooperation with TriMet, assume the lead role in securing any and all permits necessary to support Project construction in summer 2012. BES is responsible for funding the permit applications.
 - b. Secure and provide the City of Portland's share of the Project cost on or about July 1, 2013, in an amount not to exceed \$1,000,000.
 - c. Provide monitoring and maintenance required to meet all environmental permit conditions.
 - d. Acquire a right of entry at no cost from Union Pacific prior to entering the railroad's property for any purpose under this MOU.
4. Union Pacific will:
 - a. Support BES and TriMet in securing any required permits for construction in Union Pacific right-of-way.
 - b. Cooperate with BES in allowing BES to secure an ongoing role for monitoring and maintenance of the stream flows and vegetation management to assure the objectives of the Project are met.
 - c. Facilitate construction activities by TriMet's contractor and contribute necessary safety, train scheduling, and track removal and replacement services; provided, however, that Union Pacific will not make any cash contribution to the cost of the Project and will not be responsible to pay for any Project cost overruns.
 - d. Maintain as necessary the culvert within its right-of-way.
 - e. Participate in meetings with TriMet and fiber optic companies that have lines in the vicinity of the Project to confirm the location of those lines. If the fiber optic lines will be affected by the Project, the parties may need to supplement this MOU to address those impacts.

5. TriMet and BES have applied for a grant for the Project on behalf of Union Pacific from the East Multnomah Soil and Water Conservation District. Any grant funds received will first be used to reimburse Union Pacific for costs that it incurs in relation to construction of the Project.

AUTHORIZATION:

Each Party represents that it has the authority to enter into this MOU on its behalf and the individual signatory for a Party represents that it has been authorized by that Party to execute and deliver this MOU.

IN WITNESS WHEREOF, the Parties hereto have set their hands on the day and year set forth below.

CITY OF PORTLAND, by and through its
BUREAU OF ENVIRONMENTAL SERVICES

By: Dean Ma

Title: Director of BES

Date: 3/1/12

TRI-COUNTY METROPOLITAN TRANSPORTATION
DISTRICT OF OREGON

By: DBR

Title: Exec. Dir. Cap. Proj.

Date: 3.6.12

UNION PACIFIC RAILROAD COMPANY

By: [Signature]

Title: General Mgr. - Network Infrastructure

Date: 3/1/12