CITY OF MILWAUKIE
PLANNING COMMISSION
MINUTES
Milwaukie City Hall
10722 SE Main Street
TUESDAY, November 8, 2011
6:30 PM

COMMISSIONERS PRESENT
Lisa Batey, Chair
Nick Harris, Vice Chair
Scott Churchill
Chris Wilson
Mark Gamba
Russ Stoll
Clare Fuchs

STAFF PRESENT
Katie Mangle, Planning Director
Susan Shanks, Senior Planner
Zach Weigel, Engineer
Damien Hall, City Attorney

1.0 Call to Order – Procedural Matters

Chair Batey called the meeting to order at 6:32 p.m. and read the conduct of meeting format into the record.

2.0 Planning Commission Minutes

2.1 September 27, 2011

Commissioner Gamba moved to adopt the September 27, 2011, meeting minutes. Commissioner Wilson seconded the motion, which passed unanimously.

3.0 Information Items

Chair Batey explained that two separate hearings would be opened this evening if the first hearing was not completed. Both hearings related to the southern end of the light rail project, but they were technically two separate land use applications and therefore required two separate hearings.

4.0 Audience Participation –This is an opportunity for the public to comment on any item not on the agenda. There was none.

5.0 Public Hearings

5.1 Summary: Kellogg Bridge for Light Rail
Applicant/Owner: TriMet
File: WG-11-01, DR-11-01, HCA-11-01, WQR-11-03, CSU-11-09
Staff Person: Susan Shanks

Chair Batey called the hearing to order and read the conduct of quasi-judicial hearing format into the record.

Susan Shanks, Senior Planner, cited the applicable approval criteria of the Milwaukie Municipal Code as found in 5.1 Page 10 of the packet, which was entered into the record. Copies of the report were made available at the sign-in table.

Chair Batey asked if any Commissioners had any ex parte contacts to declare.

Chair Batey declared that she spoke briefly with Design and Landmarks Committee (DLC) Chair Greg Hemer after the October 17 DLC meeting about how the meeting for the Design Review application went. Everything related by Chair Hemer was consistent with what was in the meeting packet. She also had a brief conversation with Island Station Neighborhood District Association (NDA) Chair JoAnne Bird, who had reviewed the packet and had some concerns about tree removal. She encouraged Ms. Bird to submit formal comments, which she had done and her comments were in the packet.

Commissioner Stoll said he had attended light rail meetings for about three years and had spoken to many TriMet officials and architectural and engineering consultants who worked for TriMet during that time about many different aspects of the project. However, he had never discussed the merits or approval criteria of the Kellogg Lake Bridge and Trolley Trail modification applications currently under consideration. He was able and would decide the application based on the facts and evidence in the record.

Commissioner Gamba stated he had also attended many of the public meetings and spoke with engineers, planners, and TriMet officials. He had a number of conversations over the years with Milwaukie citizens, none particularly germane to these applications with the exception of a spoken and written conversation this morning with Terry Dolan, a retired TriMet employee and Milwaukie citizen. The written portion of the conversation would be distributed to the Commission. The spoken portion of the conversation involved if Mr. Dolan felt that pushing for the bike/ped bridge was going to be problematic for TriMet, about which he did not have a strong opinion. Commissioner Gamba left the meeting with no clearer thought on the matter than he had going into the meeting. He confirmed with Damien Hall, City Attorney, that the content of the discussion will be included in the record. He confirmed he would be able to make a decision based on the testimony and evidence in the record.

All the Commissioners declared for the record that they had visited the site. No Commissioners, however, declared a conflict of interest, bias, or conclusion from a site visit. No Commissioners abstained and no Commissioner's participation was challenged by any member of the audience.

Ms. Shanks presented the staff report via PowerPoint, providing an overview of the Kellogg Bridge for light rail project, which was actually composed of five individual applications because of the nature and location of the proposed bridge. She reviewed the applications and responded to comments and questions from the Commission as follows:

- She confirmed the project's staging area was on the Kronberg Park property, adding the City would be compensated for the construction access easement.
- The Willamette Greenway was not anticipated to change; even if the lake were gone, the area would still be part of the overly zone because of Kellogg Creek.
- The yellow line on Exhibit P5 indicated where a construction management plan (CMP) was required when within 100 ft of the edge of a Habitat Conservation Area (HCA). Even with no impact to the HCA, a CMP was required to ensure erosion control and limited tree disturbance. The south abutment was not close to the other Water Quality Resource (WQR) involved with the Trolley Trail.
- Regarding Design Review, the Design and Landmarks Committee (DLC) recommended Planning Commission approval with their recommended conditions of approval, which included specific conditions about the abutment wall treatments and lighting under the jump span, Damien Hall, City Attorney, advised that the initial condition regarding the jump span lighting was too discretionary, so the conditions required the proposed lighting return to the DLC with the light rail station review.

- Planting mitigation had been discussed for the use of the construction staging area as part of the Applicant's mitigation plan.
    - She confirmed that the Tree Planting Plan for Kronberg Park Exhibit referred to planting only for the swath as indicated along the bank.
    - During bridge construction 8 trees would be removed on the northern bank as well as 8 trees on the southern side of the lake. TriMet would be planting more than the number required for mitigation.
    - The large oak tree that the Oregon Department of Fish and Wildlife (ODFW) had urged the City to save was in the HCA. The applicant looked at trying to save the tree and had an arborist evaluate it. Although the trunk was not in the way of the bridge structure, and the amount of limbing necessary for construction would be so detrimental that tree would likely not survive. Saving the tree was carefully considered because staff knew the community wanted to save the tree.
- Details regarding site preparation and mitigation for the staging area would be addressed in the development permit phase. Staff was currently reviewing the detailed conduct of construction contract between TriMet and its contractors to ensure the City's standards were in line with TriMet's. Contractors were subject to Milwaukie's ordinances regarding noise, construction hours, etc., and part of the contract involved best management practices with respect to erosion, draining, spill prevention, etc.
    - Questions regarding soil compaction and treatment were deferred to the Applicant, and staging area reparation, such as hydro seeding, should be specified in the construction easement.
    - She confirmed that the design of the proposed plantings had been submitted and staff provided recommended conditions of approval that slightly tweaked that planting plan in terms of identifying specific trees and shrubs. Sarah Hartung, the consultant from ESA, did an independent review of the application and believed the plantings were appropriate. She also provided some conditions of approval that made minor tweaks to the plan.
- **Chair Batey** noted several comments suggested that more oaks be planted at or above the top of bank, which was not in the referenced area. On Elk Rock Island, Douglas firs were removed because they were shading out the oaks, and many conifers had been planted in Kronberg Park already.
    - **Ms. Shanks** explained that the tree planting plan would provide more specificity of what, when, and where. The mitigation plan actually showed what was being planted, and staff wanted more details as to where plantings would occur.
    - Regarding the top of bank issue, as the owner of Kronberg Park, the City was voluntarily agreeing to have mitigation plantings on the park site as a way to mitigate the impacts of the bridge. After review by different City departments, the City would be fine with planting oaks above top of bank. This was currently one of the recommended conditions.
- Staff was not aware of any other standalone staging areas within Milwaukie boundaries related to this project. TriMet had asked about using certain areas, such as in the North Industrial Area, but staff explained that any standalone staging area might need to go through Community Service Use (CSU) review since standalone staging was not listed as a use in most zones.
- **Ms. Mangle** added that there would be staging within the TriMet light rail right-of-way in the construction zone. Staff was not aware of any other staging areas related to this project within the city limits that were not in the TriMet right-of-way, public right-of-way, or other City properties.
- Specific language required that the plantings along the shore be done in the first planting season following major construction being done. A 5-year monitoring requirement was included to address maintenance responsibilities.

Ms. Shanks briefly overviewed the comments received, notices given, and staff recommendations as follows:

- Comments received prior to the DLC design review meeting were from City staff, Island Station and Historic Milwaukie residents, and ODFW.
- Some of the comments were incorporated into the conditions such as requiring specific plantings in the natural resource area. No comments had been received since preparing the staff report for the hearing.
- The application was referred to the NDAs as well as City departments and State agencies on September 23, and public hearing notices were sent October 19. Signage was also posted in advance of both the design review meeting and this hearing.
- Staff believed the project complied with all applicable approval criteria and development and design standards, as well as being substantially consistent with the design guidelines. Staff recommended approval of the application with revised conditions as stated in Attachment 2, the goldenrod handout, which Ms. Shanks reviewed.

Chair Batey noted Condition 13.E.(2) on Page 6 of 7, but understood that FEMA review was no longer required.

- **Zack Weigel, City Engineer,** explained that the FEMA review was struck because the local jurisdiction, not FEMA, was responsible for identifying impacts to the floodway. If there were an impact to the floodway, FEMA would review it.
- **Ms. Shanks** added that Condition 13.E.(2) had not been revised.

Ms. Shanks concluded that the Commission needed to allow time for a possible appeal of the application to City Council and the 120-day land use decision deadline was January 18, 2012. If continued, the November 22 hearing would be the last hearing for the Commission to make a decision on this application with enough time left for the possibility of appeal.

- The light rail station land use review process would begin soon. Staff scheduled a preapplication conference with TriMet within the next week and a half. Staff talked with the DLC at a worksession last night about the station design, which was expected to come before the Commission in 2012.
- A future land use application on the pedestrian bridge connections for the future pedestrian bridge would go through the DLC, because it was in the downtown zone area, as well as the Planning Commission.

Chair Batey called for the Applicant's presentation.

Leah Robbins, TriMet, stated she was filling in for Jeb Doran who was presently unavailable. She introduced several members of the project team and reviewed the presentation via PowerPoint; paper copies were distributed to the Commissioners.

Ms. Robbins and TriMet's project team addressed questions from the Commission with these comments:

- There would be compaction of the soil at the staging area, and restoration of that area once the bridge structure was complete. The details regarding the restoration had not yet been submitted, but the City would review that with TriMet.
- In downtown, the site being considered for staging was the area being purchased from Union Pacific Railroad and private property owners located north of Lake Rd. This staging area would be accessed from public rights-of-way and would be used for building the station and access from the north side.

- TriMet did not anticipate storing large quantities of material in the staging area in Kronberg Park; they were confined to the purchased right-of-way and building the site adjacent to the active freight railroad. There would be transfer of material north and south, but not large quantities.
- Any staging from Hwy 224 south to Harrison St, Washington St, and beyond would take place within the TriMet right-of-way. Retaining wall work would be done from Harrison St south to Washington St, but that would not become a staging area after the retaining wall was in place. TriMet would be building elements of the civil infrastructure for the rail facility.
  - **Ms. Mangle** noted the geographic area of the application was south of Lake Rd.
- **Commissioner Churchill** said he wanted to ensure that the true impacts of the different staging sites were clear, as well as the flow in and around the proposed 50-ft wide staging area, which seemed miniscule considering the scale of this project.
  - **Ms. Robbins** explained that TriMet was purchasing a site from Oregon Department of Transportation (ODOT) at Sparrow St, which was currently used as a materials storage site.
- **Calvin Lee, TriMet Structural Engineer,** explained the temporary piles driven into the water for the construction bridge would be removed at the end of the project. Access for cranes, etc., would be via McLoughlin Blvd/Hwy 99E.
  - TriMet was only allowed to drive the piles within a defined fish window, which was mid-July to the end of September. Therefore, any installation or removal of piles during those times would have minimal effects on fish habitat.
  - **Ms. Robbins** added that part of the mitigation was removal of existing piles currently in the water. This would be done at the end of the construction window.
- **Commissioner Churchill** noted that avoiding critical access time to the creek for fish habitat was understood, but nothing had been discussed regarding any mitigation for the creek bed itself.
  - **Ms. Mangle** responded that work within the waterway was covered by NEPA permits and the federal process. Mitigation was not discussed in this application, because the City did not have jurisdiction of the waterway.
  - **Ms. Robbins** added that jurisdiction was through the Corps of Engineers permit that was submitted and included as part of the Willamette River Bridge permitting effort. She believed no mitigation was required if the work was done during the fish window. The Corps permit substantiated the removal of the other existing piles as part of the impact mitigation.
- **Commissioner Gamba** asked if a construction bridge would have to be put back in if the pedestrian bridge was not built during the initial construction window.
  - **Mr. Lee** responded the pedestrian bridge could be done in other ways, but it could cost more. Alternatives exist in terms of the impacts, but those also had costs.

Mark Mikolavich, Project Architect, Waterleaf Architects, continued with the design review portion of the Applicant's presentation, noting the additional conditions of approval from the DLC, which were included in the staff report. He addressed clarifying questions from the Commission with these comments:

- The Applicant would address the nesting issue on the column caps. The strategy at this point was to consider putting innocuous, somewhat beveled elements on the ledges to prevent perching; where those were not appropriate, stainless steel wires would be used.
- The transparent, acrylic sound barrier wall was made of a very durable material. If scratched, a small torch was utilized that softened the surface and made scratches disappear. Sediment that splashed up on the surface of the acrylic material during a rain tended to wash off in the next rain. It was not literally self-cleaning, but it did not appear dirty over time.

- He was uncertain about the ability of the material to resist tagging, but the very smooth surface would not absorb spray paint. The fact that the 200-ft length of sound barrier was close to the midpoint of the bridge made it relatively difficult to access.

Commissioner Churchill asked how long the staging area would be used at Kronberg Park.

- **Ms. Robbins** believed the negotiated agreement with the City was to use the park from approximately January 2012 through December 2015 to ensure completion of the project and restoration.

Chair Batey suggested the Commission defer questions for the Applicant to the next hearing date to provide sufficient time for public testimony.

The Commission discussed concerns about the limited time available to ask questions and for the applicant to respond or return with information to the Planning Commission if the hearing was reconvened on November 22.

- **Ms. Mangle** reminded that questions could be submitted to staff outside of the hearing and staff could coordinate responses for November 22.

Chair Batey called for public testimony in favor of the project.

Greg Hemer, **DLC Chair, 5822 SE Harrison St, Milwaukie**, stated that on October 17, the DLC reviewed the Kellogg Bridge design and found it to comply with the downtown design guidelines. The DLC recommended approval with the conditions provided. He noted the key issues regarding the north abutment wall treatments samples, the weathering steel cladding on the jump span but not on the cantilever, the quality and efficiency of the jump span lighting, and the lessened uniformity of the column treatments.

Commissioner Gamba:

- Asked if the DLC believed the project met the pedestrian emphasis guidelines to provide an environment where the pedestrian was the priority.
  - **DLC Chair Hemer** responded the pedestrian safety and the environment of the pedestrian experience was met except for the lighting and the jump span gap.
- Clarified his question was more about whether or not the DLC was fine with the prospect of never having a pedestrian bridge in the structure.
  - **DLC Chair Hemer** replied that personally, he would like the pedestrian bridge in the structure, but the DLC did not discuss if there should be a condition of approval for the pedestrian bridge.

Commissioner Churchill applauded the DLC for questioning the lighting underneath the jump span. He also found the surface mounted industrial looking fixtures inappropriate, and asked if recessed LED lights in the underside of the deck had been discussed with the Applicant.

- **DLC Chair Hemer** stated more natural and less industrial options were discussed, including LED. The effect of illumination was preferred and not the fixture itself. Adequate lighting for pedestrians was a concern.

Chair Batey called for public testimony in opposition to the project

Les Poole, 1515 SE Lee Ave, Clackamas County, noted his testimony and audience participation at Council meetings in April, May, and June, and at the last Planning Commission meeting. He stated he was quite certain they were not following the Land Use Final Order (LUFO) with this project.

- If one looked at the LUFO, they would immediately realize that TriMet and the City of Milwaukie had worked very hard to locate the parking, the end of the line, and the undesirable aspects of this project in a variety of places ever since it was hijacked and the attempt was made six years ago to locate it at Kronberg Park.
- He presented images of Kronberg Park, and stated planting trees and fixing the shoreline was a great idea, but trees had never grown there because of what was underneath that mess.
- He believed the design itself would suffer a legal challenge.
- He was not talking about the mitigation of a project, but the protection of resources, Regardless of cost, if TriMet needed to place the structure through parklands, water resources, and partly on top of the Trolley Trail, the key criteria for an acceptable design were not being met, and therefore could not be mitigated.
- He wanted to know where the at-grade crossing went in this process.
- He was in favor of the pedestrian bridge. If the end of light rail was going to be dumped at Park Ave after the disaster at Kellogg Lake Park, he hoped TriMet would have had the money to do it in a reasonable manner and with the least impacts. This design failed that test miserably and was foisted on the neighborhood.
    - An open house on the Park Ave segment was held a few months ago at Portland Classic Guitar. The business was no longer there, because at that meeting, a citizen produced a picture that light rail was going to be an elevated bridge over River Rd and the Trolley Trail, and through the Willamette Greenway. The owner was not told that, so did not renew his lease and left two weeks later. The retail space was now empty.
- He hoped everyone would look at the LUFO and the environmental impact statement and see what it said. He delivered a copy of each to City Council recently. Upon review, the Commission would find that the design over Kellogg Lake to Park Ave needed to be completely redone. Several issues needed to be addressed that had not been discussed at this point. So many complexities existed, not just saving the waterway at Kellogg Lake and bringing the fish back while somehow bringing in light rail. He was not here to argue about bringing light rail to Milwaukie.
- He assured this project would not survive, adding he would leave some information about the protection of resources.
- The issues he would like to see addressed included Kellogg Lake Park, the railroad trestle, and the criteria regarding unobstructed views of the Willamette Greenway. He would also like to see live diagrams at some point of what this would look like at Kronberg Park, rather than little sketch drawings.
- He concluded that it was unfortunate that this issue has ripped the community apart for so many years.

The information provided by Mr. Poole was distributed to the Commission.

Commissioner Churchill:

- Asked what the concern was about the material in or under Kronberg Park.
    - **Mr. Poole** responded that for many years there was illegal dumping there, although the top surface had been cleaned up. He explained that the Kronbergs took fill from across the street at what used to be the old shingle mill and was now the sewer treatment plant. A lot of illegal dumping occurred in the 1960s. Around 1980, ODOT wanted to clean up the lake and drain it, but the dam had clogged with debris when opened. The park was an environmental mess, and he believed this design was an attempt to circumvent dealing with the reality at Kellogg Lake, and unfortunately, it put light rail on top of the Trolley Trail.

- Asked if his concern was about using a portion of Kronberg Park as the staging area and any disturbance through compaction that would affect the water table.
  - **Mr. Poole** responded 'no', his concern was that without an at-grade crossing, the design was unacceptable to the environment. If they made an at-grade crossing when making the big sweeping turn south onto McLoughlin Blvd and across, they had to encroach on the park resulting in there no longer being de minimis impacts. He wanted them to stay out of the park and within the confines of the railroad right-of-way and avoid dealing with that. The reality was that there was a mess under there and building light rail over the park and planting some trees and doing some minor impact mitigation to the site did not meet the criteria of a federally funded project and a Section 4 (f) Resource.

Mr. Poole asked how long the record would be open on this issue after this evening.

Chair Batey responded they would decide that after the end of testimony, but she suspected the record would close tonight, although the hearing would continue.

Chantelle Gamba, 10414 SE 24 Ave, stated that as a DLC Member, she was sorry she could not force the pedestrian emphasis of the design guidelines to require the pedestrian bridge in the project. Moving forward without the pedestrian/bike bridge would be extremely unfortunate.

Commissioner Churchill asked if she had heard any cost estimates for the pedestrian bridge.
- **Ms. Gamba** recalled$1.4 million as an estimate mentioned. She noted that building it later would be more expensive..

Chair Batey called for public testimony neutral to the project.

Ray Bryan, 11416 SE 27th Ave, stated he came to highlight his written testimony. He also supported the pedestrian bridge, which would be of great benefit to his neighborhood, the city, and Island Station.
- It could be argued that the habitat review would require they disrupt the area as little as possible, and by not building the pedestrian bridge with the initial project, they were actually disrupting the area a second time.
- He also had concerns around the lighting and noise. One thing that had not been discussed was the stormwater runoff from the bridge. One-half inch of rain would produce about 15,000 gallons of water that would come to the downtown side of Milwaukie.
- He was happy to see what TriMet was doing with the mitigation. He preferred that the mitigation be done in an area that would not be disturbed later; so if the lake was drained and grading or changes had to be done to the bank, it would not have to be done in the area that had been replanted.

Chair Batey asked if the proposed sound walls would be adequate and if he had been on the tour to visit places on the alignment and listen to the noise.
- **Mr. Bryan** responded that he did not go on the tour. His letter did note that lubrication of the tracks was not specifically mentioned and he wanted to make sure that was still part of the plan. However, the lubrication of the tracks just added more concerns about the stormwater runoff. TriMet did a good job of reevaluating the noise with the new bridge design, and now they had some baseline noise amounts and levels that could be referenced if there were concerns about noise after the project was built.

Brad Smith, 13621 Fair Oaks Dr, Clackamas County, said he owned three undeveloped lots in the Island Station area. He heard earlier that there would be no impact to that area, but he

also heard that electricity was going to be rerouted and new poles run through Island Station, which would directly impact his lots.

- The initial plan was to put in the large, industrial-looking poles, and he was very against that. If poles were to be put in, he preferred having three wooden poles than one large cement or steel pole. With the bridge coming in, it was industrial enough.
- He noted the jump span over Lake Rd was 10.5 ft high and confirmed it was so low because that was the same height as the existing railroad bridge and they were trying to maintain the profile as light rail crossed Lake Rd.

Chair Batey did not believe they meant to say there were no impacts on Island Station. What was being reviewed for the application tonight ended at 22nd Ave and did not include the poles. The Island Station NDA had expressed concerns about the poles as well, but they were not a part of the application being considered this evening.

- **Mr. Smith** stated the poles had come to his attention because of the survey stakes on his lots. He went to the City to see why they were there and was told the poles would be coming through. A HCA was adjacent to the tracks on 21st Ave.

Dion Shepard, 2136 SE Lake Rd, had a number of concerns.

- She wanted the City to reconsider saving the large oak tree in Kronberg Park. She did not believe a 1:1 replacement ratio was adequate for an oak tree that age. If the branch going toward the light rail structure were removed, she believed the tree could still be saved.
- It takes about 30 years for a tree to grow enough to provide the same benefits as a mature tree. TriMet did not intend to replace any trees with larger trees, and the replacement trees were pretty small.
- She wanted assurance that there would be no negative impacts to the springs underneath Kellogg Creek when the piles were driven in on both sides of the lake because the restoration on Kellogg Creek was dependent on those springs that would feed the creek in the summertime and keep it cool. There were a number of springs and she hoped TriMet would research this issue.
- A noise analysis was done at her end of the property, so a baseline did exist to measure noise once construction was completed. She still had a concern about the noise because where the new structure crossed Kellogg Lake was a quiet part of the neighborhood. She has an apartment above her garage and was concerned how noise would affect renters.
- She did not necessarily want to see the bridge and encouraged more plantings, both deciduous and evergreens, be planted to add to the natural area versus strategically placed trees that allow the bridge to still be seen.
- TriMet had stated the staging area could be used for up to three years, which was a concern, because without pedestrian access on the bridge and no ability to plan and develop the park, it would be a very uncomfortable place to be with a pedestrian access and then no park to go to. Timing was important. The equipment should be removed as soon as possible so they could work on developing the park.
- TriMet's presentation showed the trees being planted along the bank, which was rock and chunks of concrete. She hoped that any grading would be done in such a way that the bank could be integrated into the park when it was actually developed.

There was no further public testimony.

Commissioner Churchill moved to continue the hearing to November 22, 2011. Commissioner Fuchs seconded the motion.

The Commission discussed whether to keep the public record open at the continued hearing on November 22 and deliberated about the limiting time frame available for public testimony and to get responses and information from the Applicant.

Commissioners Churchill, Wilson, Gamba, and Fuchs expressed concern about not having public testimony at the next hearing because this hearing was noted as likely to be continued to November 22. No notice was given that there would not be public testimony at that hearing as well. Some people might not have been able to attend this hearing, and the Commissioners did not want to deny them access for public comment at the next hearing.

Commissioner Churchill amended his motion to continue the hearing to November 22, keeping the record open and allowing for public testimony at that time. Commissioner Fuchs seconded the motion.

Discussion amongst the Commission continued with these key comments and responses from staff as noted:

- There were a number of issues and questions, many of which would warrant time to look at concepts or possibilities to bring back to the Commission. Having to ask questions, deliberate, and make a decision all in the same night was very limiting.
  - **Ms. Mangle** responded that questions could be emailed to staff, which staff could share with the Applicant; staff could facilitate that discussion.
- Asking questions of staff, and staff asking questions of the Applicant, prevented the public from hearing that exchange.
  - **Ms. Mangle** responded it would come back and be reported either in writing shared with the whole Commission or in person on November 22.
  - She agreed the Applicant could waive the 120-day clock, but was not something they had control over.
- This was a huge project, one of the biggest things to happen in Milwaukie in 50 years. The Commission was restrained by the 120-day clock, but needed time to hear public testimony, deliberate, and study the issues further, as much as possible.
  - **Ms. Mangle** replied that staff had done what they could and met with most of the Commissioners one-on-one to review the application. As on every land use application, staff did not control the clock. Another option would be to set an interim special meeting if the Applicant was available.
  - With regard to waiving the 120-day clock, she believed the Applicant would say that construction of the bridge was tied to the in-water work window, which was really driving the schedule of the application.
- It was not the Commission's responsibility to respond urgently due to an applicant's lack of planning.
- If the Commission's major concerns and suggestions had actually been addressed during previous meetings and discussions provided by staff, the Commission would not feel backed into a corner. The major issue had been decidedly ignored, and it would take some work to come to a solution that did not result in the Commission adding a condition that TriMet could not meet.
- What would happen if the Commission could not make a decision on November 22 or the decision was denial because they could not get the answers or what they wanted?
  - **Ms. Mangle** stated the Commission could not deny the application, so conditions would need to be crafted to address the concerns the best way possible, which was what the DLC did because they had concerns as well.
  - The DLC's concerns were not being addressed in this venue but were being continued. They had summarily taken the lighting of the jump span and moved it to the station

hearing. The Commission did not have the option of addressing their concerns at a later date.

- Some things could be addressed through conditions like that, but that solution would not work for everything.

Ms. Robbins stated the Applicant was happy to be part of an interim meeting before November 22. Their team had been working in consideration of the DLC's recommendations on the column treatments and she had some images available. There had been further discussion about the lighting treatments under the jump span and they would be happy to discuss it further between now and November 22.

- She stated TriMet would have concerns about extending the 120-day timeline and being able to meet their overall construction schedule. She was not in a position to say right now that TriMet would entertain the voluntary waiving of that clock. They could return to the Commission within a week with the impacts of that change.

Ms. Mangle confirmed enough notification time existed for an interim meeting on November 17 as long as the hearing was continued to a date certain because the original public notice for tonight's hearing was sufficient.

- Staff had been doing extensive notification regarding light rail using the City's website, email lists, *The Pilot*, Twitter, Facebook, and all the tools the City uses, extending well beyond the notification requirements for land use.

Commissioner Churchill moved to continue the hearing for WG-11-01, DR-11-01, HCA-11-01, WQR-11-03, and CSU-11-09 to November 17, 2011 date certain at 6:30 p.m., keeping the record open and allowing for public testimony on that date. Commissioner Fuchs seconded the motion, which passed unanimously.

The Commission took a brief recess and reconvened at 9:08 pm.

5.2 Summary: Trolley Trail Modification for Light Rail
Applicant/Owner: TriMet
File: MOD-11-01, WQR-11-04
Staff Person: Susan Shanks

Chair Batey called the hearing to order and read the conduct of quasi-judicial hearing format into the record.

Susan Shanks, Senior Planner, cited the applicable approval criteria of the Milwaukie Municipal Code as found in 5.2 on page 7 of the packet, which was entered into the record. Copies of the report were made available at the sign-in table.

Chair Batey asked if any Commissioners had any ex parte contacts to declare.

Chair Batey clarified that one of the ex parte contacts she declared for the last hearing actually pertained to this application, the contact with JoAnne Bird regarding the tree removal along the ODOT gravel pit property on McLoughlin Blvd.

All Commissioners declared for the record that they had visited the site. No Commissioners however, declared a conflict of interest, bias, or conclusion from a site visit. No Commissioners abstained and no Commissioner's participation was challenged by any member of the audience.

Ms. Shanks presented the staff report via PowerPoint, reviewing the Water Quality Resource (WQR) application and the modifications proposed between River Rd and Park Ave and the previously approved Trolley Trail Community Service Use (CSU) approval. She explained the Applicant submitted this application at the same time because a substantial amount of grading and earth moving was required, and it made sense to do this now considering the construction timing of the Kellogg Bridge work.

She responded to clarifying questions from the Commission with these comments:

- The original application did not have a WQR or a timeline for construction, because that was before the Code change that created expiration dates for applications. Old CSUs did not have expiration dates.
- The trail section from River Rd to Park Ave would be lit. Lighting levels were not discernable in the photometric plan provided to the Commission because of the paper size. Staff included a condition to ensure there was no increase in lighting levels that was more than what was allowed at the residential edge. The top of slope was deemed a good place to for that measurement. A zero foot-candle reading would not be conditioned, due to the ambient light from McLoughlin Blvd, but no increase would be allowed. A photometric study was required for staff to evaluate.
- She did not know the cubic feet per second (CFS) of the water in the ravine, but that would be addressed in upcoming testimony.
    - There was no requirement about having a specific CFS to be classified as a primary protected feature. Other thresholds included year-round flow, certain drainage areas, and a year-round seep or spring.
- She believed the decision to cut the three sequoia trees was because they were located in the middle of the proposed new Trolley Trail alignment. The Applicant could provide further details.
- The Applicant wanted to maintain a certain distance between the light rail and trail without shifting closer to WQR area, which includes the buffer around the actual water feature. She clarified the trail would cross the WQR area and that the water quality feature went underground into a culvert. The significant slope was a key factor, so the Applicant was putting in a short retaining wall to minimize the grading and fill impacts to the WQR area where the feature goes underground.
- A consistent distance was maintained between the Trolley Trail and light rail with a minimum 6-ft planted landscape buffer between the rail and trail. The cross sections provided by TriMet were good illustrations of the change in grade, but did not reflect the revised landscape and planting plans. Revisions to the landscaping plan had been submitted which eliminated a number of the shrubs between the rail and trail, turning it into more of an eco-seeded area at the intersections.
- The retaining walls became much larger as they went farther west in the proposed alignment. She did not know if the possible increase in noise to the east was studied as sound reflected off the retaining wall, and deferred to the applicant.
- Staff was unable to analyze the revised landscape plan prior to the date of the packet, but had since that time. Staff's recommended conditions for the revisions were on the green handouts. The revised findings in support of approval included updated findings on the WQR Plan. She reviewed the revised conditions provided on the light green handout.

Chair Batey confirmed that no further correspondence had been received other than the items included in the packet. She then called for the Applicant's presentation.

Leah Robbins, TriMet, presented the application via PowerPoint, paper copies of which had been distributed to the Commission with the Kellogg Bridge handout. She clarified questions from the Commission as follows:

- The noise analysis had anticipated retaining walls, so that part of the noise analysis was consistent with what they studied in the Final Environmental Impact Study. An additional noise analysis was done at the south end of the structure for two additional properties that were to be acquired to build the retaining walls. They were able to determine there was no impact to the neighbors on the remaining parcels.
- She did not have a technical response regarding the noise reflected off the wall across McLoughlin Blvd to parcels on the east side of McLoughlin, but that information could be provided to the Commission.

Ms. Mangle reminded a vote was needed on whether or not to continue the meeting past 10:00 p.m. before continuing with questions from the Commission.

The Commission concurred that those who had signed up to testify should testify and then the hearing could be continued at that point.

Chair Batey called for public testimony opposed to the application.

Les Poole, 1515 SE Lee Ave, Clackamas County, stated his opposition went back to the LUFO and dovetailed with some things he said earlier in the meeting. He was not trying to stop light rail but had talked with lawyers and had 30 years land use experience. He hoped to be heard.

- He would have liked to have seen an appropriate amount of money from TriMet in the original design. If they were going to come across Kellogg Lake and the edge of Kronberg Park, rather than trying to stay out of Kronberg Park and in the railroad right-of-way, they should have condemned the corner of Kronberg Park, mitigating the park, and bringing the overpass at an angle and crossing more diagonally at McLoughlin Blvd/Hwy 99E rather than on top of the Trolley Trail.
- He believed the effort made to modify the original plan was a dramatic improvement.
- He had the same concerns as Commissioner Churchill. There was no indication of how tall the retaining wall would be, or what it would sound like on the Trolley Trail with the trains vibrating, and the traffic and noise bouncing off of a 25- to 30-ft high retaining wall.
- Because light rail was on top of the Trolley Trail for part of the alignment, he believed the alternative analysis was flawed. Given the time of day and the situation, he requested the record be kept open on this issue, at least for written input until November 17. He assured he was not representing himself.
- He noted the table was about 6 ft long, and the trains would be 6 ft away from the trail in places with this design. One reaching through the bushes would be pretty close to the train. The pictures showed nicely trimmed trees, but TriMet would not be replacing all the fir trees.
- A section of the Supplemental Draft Environmental Impact Statement (SDEIS) said, "On the west side of McLoughlin, the project would use a portion of an old street car right-of-way that was purchased by Metro and the parks district for development of the Trolley Trail. Light rail would operate between the trail and McLoughlin Blvd." This was true in places but in other places with this design, TriMet was basically putting a giant concrete roof over the top of a park. The Trolley Trail was a park; a historic public resource. The minimum impact rating for the Trolley Trail impacts in this situation was what would be challenged legally.
- The Commission was doing a great job trying to mitigate a design based on de minimis or minimum impacts. He found it hard to believe that these were minimum impacts to that park.

In fact, he believed the attempt to avoid major impacts at Kronberg Park was how they came up with the design in the first place.

- The original estimate to go to Park Ave was $140 million to $150 million. The LUFO said they were taking 1,200 cars off the street. Now, they were buying more property and still having major impacts on the trail and to the entire watershed. Nowhere in the discussion did he see anything that addressed that they were condemning a portion of a public park. It stated, "As the light rail and trail approach Park Ave, light rail leaves the Trolley Trail alignment to stay on McLoughlin." He did not know how much of the Trolley Trail was being condemned in this process, but he would appreciate an answer next week. He hoped the record would be kept open until November 17.

Chair Batey called for testimony neutral to the application.

Michelle Healey, North Clackamas Parks and Recreation District (NCPRD), stated the NCPRD had known about this project since they appeared before the Commission with the original land use application for the Trolley Trail. NCPRD recognized this project was very different from what the community first envisioned. Given all the conditions they were working with, TriMet, the City, and all the partners have done a very good job trying to mitigate the impacts and coordinate with NCPRD, and they were cognizant that this trail was an important community asset. She encouraged the Commission to keep moving forward with the project. The trail would never be what the community had envisioned, but TriMet and the City had addressed the concerns NCPDR had had over time.

Chair Batey asked about the issue raised of changing the plantings between the trail and the rail to just ground cover as opposed to trees and shrubs.

- **Ms. Healey** responded there were still a lot of trees. Some changes came out of discussions around maintaining good sight lines and safety for people on the trail by avoiding shadowed areas and hiding places. Changes were also made in acknowledgment of the maintenance work required to make sure the Trolley Trail was a nice facility within the city and surrounding area. How the trail would be maintained had yet to be worked out in detail between NCPRD and TriMet, but both were working toward making it a very nice facility. NCPD knew their limitations. Maintenance was secondary to the security issues, but it was part of the discussion.

Commissioner Gamba asked Ms. Healey's opinion about removing the three sequoias versus pushing further into the WQR.

- **Ms. Healey** responded there were tradeoffs either way. She personally would have liked to see the trees retained, but did not know the impacts to the WQR by moving further into the area. She believed they were doing their best to make it work, and was glad they were able to maintain the large sequoia around the corner. It was not ideal; NCPRD did not want the trail moved closer to the train because, as Mr. Poole noted, 6 ft was not a very large buffer.

Commissioner Churchill asked how safety versus visual privacy from McLoughlin Blvd was balanced in the landscaping strip between the train and trail.

- **Ms. Healey** responded vegetation was wonderful; however, walking on a trail that was heavily vegetated could cause a very uncomfortable sense. Sometimes it was safe, and it was just a feeling, but sometimes some real problems could be encountered. On other parts of the trail where vegetation had been cleared and more eyes were on it, the police informed NCPRD that unwanted characters had moved on. They were trying to keep that in mind as they looked at the entire trail, especially with a long stretch with no outlets along the way,

especially since it was dark when getting off the train at 5:00 p.m. at this time of year, which was one reason the lighting was recommended.

Daniel Platter, 12320 SE Ave, Milwaukie, hoped the Commission was aware of how lighting could affect residents close by; light made it difficult to sleep, chased birds away, etc. He proposed that the lighting be contingent on aiming light at the trail. Removing the big trees would already let a huge amount of additional light in from the city and the streetlights.

- The main reason he wanted to testify was to emphasize the importance of the trail to Milwaukie citizens. It was the only green space where they could run. Right now, the trail invoked the feeling of running under a huge forest with big trees, which was really beautiful and made one run faster.
- He proposed moving the trail to the west along the gravel pits. One advantage of moving the trail was that it would be far enough away from the power lines to plant large trees that might not be disturbed for a long time. There was opportunity to have what they have now back again in the future.
- One way to separate a green space from the ugly sort of spaces was to have large trees above. He understood, based on the arguments, that there probably could not be shrubbery between the trail and highway, but to emphasize what could be done behind the trail might be a way to mitigate for what was being lost. He suggested planting large trees such as oaks, ashes, and maples with native dogwoods underneath. They should be very specific on what TriMet was going to do. He preferred trees with blooms or fall color; it was important to pay attention to detail.
- He agreed with replanting a lot of trees, but sometimes that meant so many were being planted that none would thrive. Looking forward, he suggested having large trees with some of the replantings be dogwood, which could grow underneath.

Chair Batey asked about the ravine and water where he had done some planting.

- **Mr. Platter** responded the plantings were going to be destroyed, unfortunately. For nine months of year, the water flowed about 1.5 ft wide and about 2+ in deep. During summer, the water trickled and dripped into the pools.
- There were also giant trilliums in that area, which was a rare plant. He thought they might be destroyed and felt they should be preserved
- He clarified that the culvert collapsed last winter and would have to be redone. The culvert had almost looked like a little sandy estuary before last winter and had somehow sunk down to go under the road. He did not know how it was engineered.

Commissioner Gamba asked if his proposal to move the trail further west involved a significant length of the trail or just the portion around the three sequoias.

- **Mr. Platter** responded there were too many sequoias in that area. They could consider cutting down two of the sequoia and keep the southern one, which would prevent the curve from being too rounded. Sequoias were too large to be planted 10 ft apart, so they would not thrive for long anyway.
    - He clarified that his comment was not about saving the trees but getting the trail away from the highway to become more of a green space. If they could not do that, it would be best to use some of the gravel pit for mitigation. His neighborhood was being hit hard; it would not be the neighborhood he moved to that had the towering trees. How it would look in the future depended on how good a job they did now.

Chair Batey asked if the Commission wanted to ask questions of the Applicant or continue the hearing.

Commissioner Churchill supported a continuance because he wanted to hear more about the apparent increase of reflective noise from the higher wall.

Chair Batey added the Commission probably had questions about plantings and other items such as trees.

Commissioner Gamba moved to continue the hearing on MOD-11-01 and WQR-11-04 to a date certain of November 22, 2011, keeping the record open and allowing for public testimony on that date. Commissioner Fuchs seconded the motion, which passed unanimously.

6.0 Worksession Items—None

7.0 Planning Department Other Business/Updates—None

8.0 Planning Commission Discussion Items—None

9.0 Forecast for Future Meetings:

November 22, 2011 1. Public Hearing: WG-11-01 Kellogg Lake Light Rail Bridge *(tentative)*
2. Public Hearing: MOD-11-01 Trolley Trail for Light Rail (tentative)
3. Public Hearing: CPA-11-02 Water Master Plan (tentative)

December 13, 2011 1. Public Hearing: WQR-11-05 Furnberg St wetland
2. Worksession: Residential Development Standards update *tentative*

Ms. Mangle noted that on November 17 at 6:30 p.m., the special meeting continuing the public hearing on the Kellogg Bridge would be held as discussed. On November 22, they would have the continued public hearings on the two applications. The public hearing on the Water Master Plan scheduled for December 13 would not be held, but staff would begin their series of worksessions on the Residential Development Standards which would continue into January.

Meeting adjourned at 10:25 p.m.

Respectfully submitted,

Paula Pinyerd, ABC Transcription Services, Inc. for
Alicia Martin, Administrative Specialist II

Lisa M. Batey

Lisa Batey, Chair

AGENDA

MILWAUKIE PLANNING COMMISSION
Tuesday November 8, 2011, 6:30 PM

MILWAUKIE CITY HALL
10722 SE MAIN STREET

1.0 Call to Order - Procedural Matters

2.0 Planning Commission Minutes – Motion Needed

2.1 September 27, 2011

3.0 Information Items

4.0 Audience Participation – This is an opportunity for the public to comment on any item not on the agenda

5.0 Public Hearings – Public hearings will follow the procedure listed on reverse

5.1 Summary: Kellogg Bridge for Light Rail
Applicant/Owner: TriMet
File: WG-11-01, DR-11-01, HCA-11-01, WQR-11-03, CSU-11-09
Staff Person: Susan Shanks

5.2 Summary: Trolley Trail Modification for Light Rail (estimated start time 8:30pm)
Applicant/Owner: TriMet
File: MOD-11-01, WQR-11-04
Staff Person: Susan Shanks

Summary: Proposed Revised Exhibits from Applicant for Trolley Trail Modification
Applicant/Owner: TriMet
File: MOD-11-01, WQR-11-04
Staff Person: Susan Shanks

6.0 Worksession Items

7.0 Planning Department Other Business/Updates

8.0 Planning Commission Discussion Items – This is an opportunity for comment or discussion for items not on the agenda.

9.0 Forecast for Future Meetings:

November 22, 2011	1. Public Hearing: WG-11-01 Kellogg Lake for Light Rail *cont'd tentative* 2. Public Hearing: MOD-11-01 Trolley Trail for Light Rail *cont'd tentative* 3. Public Hearing: CPA-11-02 Water Master Plan *tentative*
December 13, 2011	1. Public Hearing: WQR-11-05 Furnberg St wetland 2. Worksession: Residential Development Standards update *tentative*

Milwaukie Planning Commission Statement

The Planning Commission serves as an advisory body to, and a resource for, the City Council in land use matters. In this capacity, the mission of the Planning Commission is to articulate the Community's values and commitment to socially and environmentally responsible uses of its resources as reflected in the Comprehensive Plan

1. **PROCEDURAL MATTERS.** If you wish to speak at this meeting, please fill out a yellow card and give to planning staff. Please turn off all personal communication devices during meeting. For background information on agenda items, call the Planning Department at 503-786-7600 or email planning@ci.milwaukie.or.us. Thank You.

2. **PLANNING COMMISSION MINUTES.** Approved PC Minutes can be found on the City website at www.cityofmilwaukie.org

3. **CITY COUNCIL MINUTES** City Council Minutes can be found on the City website at www.cityofmilwaukie.org

4. **FORECAST FOR FUTURE MEETING.** These items are tentatively scheduled, but may be rescheduled prior to the meeting date. Please contact staff with any questions you may have.

5. **TME LIMIT POLICY.** The Commission intends to end each meeting by 10:00pm. The Planning Commission will pause discussion of agenda items at 9:45pm to discuss whether to continue the agenda item to a future date or finish the agenda item.

Public Hearing Procedure

Those who wish to testify should come to the front podium, state his or her name and address for the record, and remain at the podium until the Chairperson has asked if there are any questions from the Commissioners.

1. **STAFF REPORT.** Each hearing starts with a brief review of the staff report by staff. The report lists the criteria for the land use action being considered, as well as a recommended decision with reasons for that recommendation.

2. **CORRESPONDENCE.** Staff will report any verbal or written correspondence that has been received since the Commission was presented with its meeting packet.

3. **APPLICANT'S PRESENTATION.**

4. **PUBLIC TESTIMONY IN SUPPORT.** Testimony from those in favor of the application.

5. **NEUTRAL PUBLIC TESTIMONY.** Comments or questions from interested persons who are neither in favor of nor opposed to the application.

6. **PUBLIC TESTIMONY IN OPPOSITION.** Testimony from those in opposition to the application.

7. **QUESTIONS FROM COMMISSIONERS.** The commission will have the opportunity to ask for clarification from staff, the applicant, or those who have already testified.

8. **REBUTTAL TESTIMONY FROM APPLICANT.** After all public testimony, the commission will take rebuttal testimony from the applicant.

9. **CLOSING OF PUBLIC HEARING.** The Chairperson will close the public portion of the hearing. The Commission will then enter into deliberation. From this point in the hearing the Commission will not receive any additional testimony from the audience, but may ask questions of anyone who has testified.

10. **COMMISSION DISCUSSION AND ACTION.** It is the Commission's intention to make a decision this evening on each issue on the agenda. Planning Commission decisions may be appealed to the City Council. If you wish to appeal a decision, please contact the Planning Department for information on the procedures and fees involved.

11. **MEETING CONTINUANCE.** Prior to the close of the first public hearing, *any person* may request an opportunity to present additional information at another time. If there is such a request, the Planning Commission will either continue the public hearing to a date certain, or leave the record open for at least seven days for additional written evidence, argument, or testimony. The Planning Commission may ask the applicant to consider granting an extension of the 120-day time period for making a decision if a delay in making a decision could impact the ability of the City to take final action on the application, including resolution of all local appeals.

The City of Milwaukie will make reasonable accommodation for people with disabilities. Please notify us no less than five (5) business days prior to the meeting.

Milwaukie Planning Commission:

Lisa Batey, Chair
Nick Harris, Vice Chair
Scott Churchill
Chris Wilson
Mark Gamba
Russ Stoll

Planning Department Staff:

Katie Mangle, Planning Director
Susan Shanks, Senior Planner
Brett Kelver, Associate Planner
Ryan Marquardt, Associate Planner
Li Alligood, Assistant Planner
Alicia Martin, Administrative Specialist II
Paula Pinyerd, Hearings Reporter

CITY OF MILWAUKIE
PLANNING COMMISSION
MINUTES
Milwaukie City Hall
10722 SE Main Street
TUESDAY, September 27, 2011

COMMISSIONERS PRESENT
Lisa Batey, Chair
Chris Wilson
Mark Gamba
Russ Stoll
Clare Fuchs
Scott Churchill

STAFF PRESENT
Katie Mangle, Planning Director

COMMISSIONERS ABSENT
Nick Harris, Vice Harris

1.0 Call to Order – Procedural Matters

Chair Batey called the meeting to order at approximately 7:45 p.m., following a joint study session with City Council.

2.0 Planning Commission Minutes

2.1 August 9, 2011

Commissioner Stoll moved to approve the August 9, 2011, Planning Commission minutes as presented. Commissioner Gamba seconded the motion, with Commissioner Fuchs abstaining.

2.2 August 23, 2011

Commissioner Stoll moved to approve the August 23, 2011, Planning Commission minutes as presented. Chair Batey seconded the motion, which passed unanimously.

3.0 Information Items

Katie Mangle, Planning Director, noted Chair Batey's request for an update on the North Clackamas Park project. She reported that Katie Dunham, the planner for Clackamas County, had met with the Milwaukie Center about the parking issues and they had reached an agreement. She planned to return to the Planning Commission worksession with a revised plan this fall.

Regarding the Harmony Mini-Storage, she noted that permits have been submitted and were under review. However, revisions have been requested and the permits were currently on hold. Susan Shanks, Senior Planner, had reminded the applicant of the substantial construction deadline of February 27, 2012.

Ms. Mangle verified that the Commissioners received the referral packet for the Kellogg Bridge light rail application. She stated Ms. Shanks will have a few informal nonquorum worksessions with the Commissioners to ensure they understand the application. The Design and Landmarks Committee Design Review meeting was scheduled for October 17, 2011, and the Commissioners' attendance was strongly recommended.

Commissioner Stoll noted the ribbon cutting for the Johnson Creek Confluence Project will be First Friday, October 7, 2011, at 5:30pm by the Spring Creek Coffee House. Ms. Mangle stated that all of the in-water work was done.

Commissioner Gamba mentioned the Willamette Riverkeepers will be doing some river cleaning around the mouths of both Kellogg and Johnson Creeks on Saturday, October 8, 2011.

4.0 Audience Participation –This is an opportunity for the public to comment on any item not on the agenda. There was none.

5.0 Joint Session Items

5.1 City Council Study Session

Summary: Residential Development Standards update

Staff Person: Katie Mangle and Susan Shanks

The Commission attended the City Council Study Session as a joint session prior to the regularly scheduled Commission meeting. The minutes for this discussion are captured in the minutes for the City Council meeting.

6.0 Worksession Items – None

7.0 Planning Department Other Business/Updates – None

8.0 Planning Commission Discussion Items

9.0 Forecast for Future Meetings:

October 11, 2011	1. Worksession: South Downtown: New zoning approach
October 25, 2011	1. Public Hearing: CSU-11-02 Ukrainian Bible Church

Meeting adjourned at approximately 8:00 p.m.

Respectfully submitted,

Alicia Stoutenburg, Administrative Specialist II

_____

Lisa Batey, Chair

MILWAUKIE
Dogwood City of the West

To: **Planning Commission**

Through: **Katie Mangle, Planning Director**

From: **Susan P Shanks, Senior Planner**

Date: **November 1, 2011 for November 8, 2011 Public Hearing**

Subject: **File:** WG-11-01, DR-11-01, WQR-11-03, HCA-11-01, CSU-11-09

Applicant: TriMet

Owner(s): TriMet[1] and City of Milwaukie

Location: City of Milwaukie, Oregon Department of Transportation, and Union Pacific Railroad rights-of-way on Tax Maps 1S1E36BC, 1S1E36CB, and 1S1E35AD between SE Lake Rd and SE 22nd Ave; Portions of Kronberg Park on Tax Lots 1S1E36CB03100 and 1S1E36CB03000.

NDAs: Historic Milwaukie and Island Station

ACTION REQUESTED

Approve applications **WG-11-01, DR-11-01, WQR-11-03, HCA-11-01, and CSU-11-09** with the recommended Findings and Conditions of Approval found in Attachments 1 and 2. This action would approve a design, natural resource mitigation, and temporary construction staging for the Portland Milwaukie Light Rail (PMLR) bridge over Kellogg Lake and McLoughlin Blvd ("Kellogg Bridge") that enables the alignment to extend southward to Park Ave in Clackamas County. This action would also approve a design for a future pedestrian bridge over Kellogg Lake below the Kellogg Bridge.

BACKGROUND INFORMATION

A. Site and Vicinity

The site is composed of an assortment of public and private rights-of-way under the ownership or jurisdiction of three different legal entities. The northernmost portion of the

[1] The proposed bridge is located in City of Milwaukie and State of Oregon public rights-of-way and Union Pacific Railroad private right-of-way. TriMet has a signed Purchase and Sale Agreement for the Union Pacific Railroad right-of-way where the bridge is to be located. TriMet will own and maintain the entire bridge structure, including those portions over public right-of-way and on future TriMet property.

site consists of Lake Rd right-of-way between Main St and 22nd Ave that is under the jurisdiction of the City of Milwaukie. This is the location of the proposed jump span between the future light rail station in south downtown Milwaukie and the proposed bridge structure over Kellogg Lake and McLoughlin Blvd. The middle portion of the site consists of privately-owned Union Pacific Railroad (UPRR) right-of-way between Lake Rd and McLoughlin Blvd. This is the location of the proposed bridge structure over Kellogg Lake. The southernmost portion of the site consists of McLoughlin Blvd right-of-way (OR Hwy 99E) between the UPRR right-of-way and 22nd Ave that is under the jurisdiction of the Oregon Department of Transportation. This is the location of the proposed bridge structure over McLoughlin Blvd.

The site also includes Kronberg Park, which abuts the UPRR right-of-way on the east side. The westernmost 50 feet of the park is proposed as a temporary staging area for Kellogg Bridge construction. TriMet is in the process of negotiating a temporary construction easement from the City for use of this area.

The jump span and bridge structure pass through a number of distinct areas in a short distance as they parallel the existing UPRR freight rail tracks through downtown Milwaukie and over Kellogg Lake and the highway. The northernmost area is at the edge of downtown Milwaukie, which includes a mix of small commercial businesses, vacant land, residences, and the Milwaukie High School campus. The middle area is dominated by Kellogg Lake, developed and undeveloped park land on either side of the lake (e.g. Dogwood Park and Kronberg Park), and the historic train trestle over the lake. The southernmost area is dominated by McLoughlin Blvd, a 4-lane highway. A small commercial node is located on the west side of the highway at 22nd Ave.

B. Zoning Designation

The majority of the site has a base zone designation of Downtown Open Space (DOS) with an overlay zone designation of Willamette Greenway (WG). A small portion of the site (i.e. the northern half of the Lake Rd right-of-way) has a base zone designation of Downtown Office (DO). A portion of the site around Kellogg Lake, including areas within Kronberg Park, is also subject to water quality resource (WQR) and habitat conservation area (HCA) regulations.

C. Comprehensive Plan Designation

The site has a land use designation of Public (P), with the exception of the northern half of the Lake Rd right-of-way, which has a designation of Town Center.

D. Land Use History

There are no previous land use actions by the City on record for this site. However, the entire PMLR alignment has an existing land use approval that was issued by Metro in 2008.[2] This land use final order (LUFO) was made pursuant to House Bill 3478 (1996), which provides for the review and siting of regional transportation facilities through local jurisdictions. The 2008 LUFO extended the original alignment southward through downtown Milwaukie to a new terminus at Park Ave in Clackamas County in order to be consistent with the Locally Preferred Alternative supported by the City. In other words, the 2008 LUFO has already approved the location of the Kellogg Bridge.

[2] Metro Resolution No. 08-3964 entitled 2008 South/North Land Use Final Order (LUFO) Amendment.

House Bill 3478, however, allows the City to review the proposed bridge against the City's design and development standards to ensure that it respects Milwaukie's existing small town character, fine-grained development pattern, and future development and natural restoration aspirations. The City may subject the proposed bridge to reasonable and necessary conditions of approval to ensure conformance with local standards and appropriate mitigation of local impacts. It cannot, however, condition the approval of the light rail bridge in such a way as to prevent the implementation of the 2008 LUFO.

E. Right-of-Way History

The public rights-of-way in downtown Milwaukie and Island Station, including what is now Oregon Highway 99E (McLoughlin Blvd), pre-date the railroad rights-of-way in this area. What this means is that the railroad acquired and assembled private property in order to create the rail corridor that exists through downtown Milwaukie today and that its crossings of the City and State's public rights-of-way are allowed by easement and/or governed by rail crossing agreements.

F. Proposal

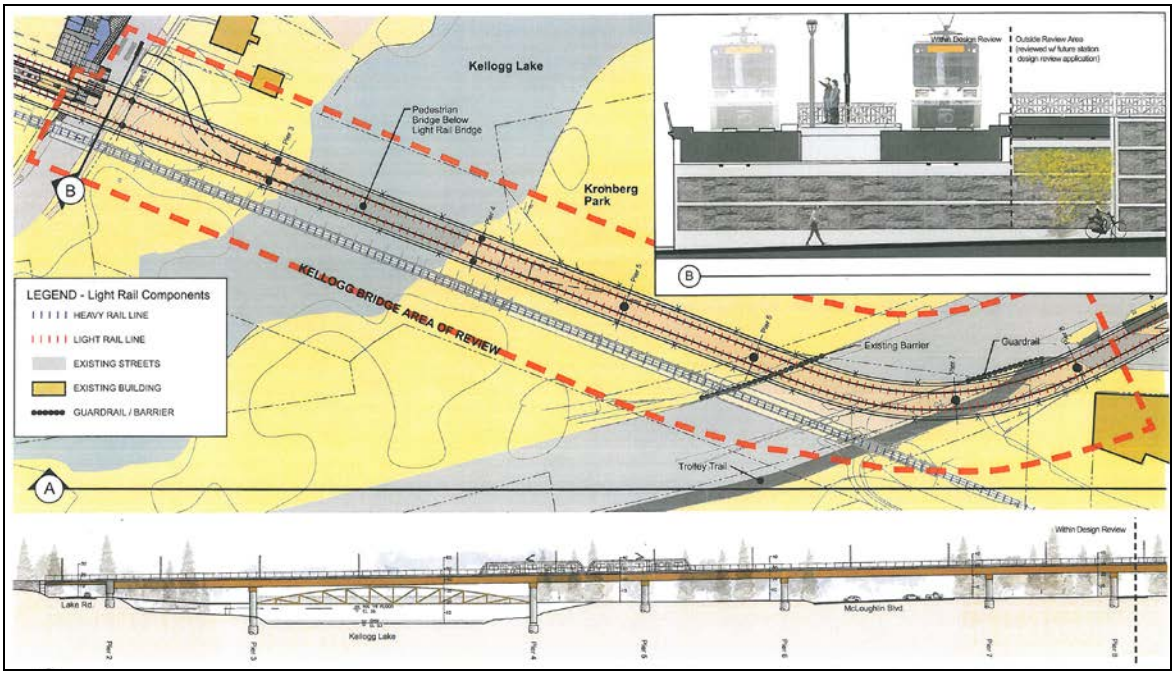
The applicant is seeking design approval for the Kellogg Bridge and a future pedestrian bridge over Kellogg Lake and below the Kellogg Bridge. The proposal includes the following elements:

- A jump span over Lake Rd; in this section it would be supported by an abutment on the north side and a set of columns on the south side that connects the light rail bridge to the station platform.
- A light rail bridge over Kellogg Lake; in this section it would be supported by two sets of columns on either side of the lake above ordinary high water. No in-water piers are proposed.
- A light rail bridge over McLoughlin Blvd; in this section it would be supported by a series of single columns.
- A future pedestrian bridge over Kellogg Lake below the light rail bridge. Design and location of pedestrian pathways to this bridge are not included in this proposal.
- A temporary construction bridge in the UPRR right-of-way in Kellogg Lake on the east side of the permanent light rail bridge.

The jump span and light rail bridge are designed exclusively for use by light rail trains. However, the light rail bridge has been structurally designed to accommodate a future pedestrian bridge below it. A funding source for this bridge, including connecting pathways from Lake Rd and through Kronberg Park, is actively being pursued by the applicant and the City but has not yet been secured. The intent of including the bridge design in the proposal at this time is to advance the design and permitting process as much as possible prior to construction of the light rail bridge since construction of both bridges at the same time would result in significant time and cost savings for the pedestrian bridge project. See Attachment 3A for more details on the pedestrian bridge design proposal.

The jump span and light rail bridge contain a number of elements consistent with their purpose of carrying light rail trains (e.g. catenary poles and safety railings) and mitigating community impacts (e.g. sound walls). The bridge materials consist primarily of weathering

steel and concrete. See Attachment 3B for specific material choices and design treatments of the columns, column caps, tubs, railings, walls, and poles.



The applicant is also seeking approval of mitigation plans for the permanent and temporary impacts caused by the permanent bridge and temporary construction bridge to the riparian and upland natural resource areas around Kellogg Lake.[3] See Attachment 3C for more detailed information on the proposed mitigation locations and plantings. See Attachments 3D and 3E for the applicant's Water Quality Resource and Habitat Conservation Area reports.

The proposal requires approval of the following applications by the Planning Commission.

1. **Design Review (DR-11-01)**

   A portion of the Kellogg Bridge is in the Downtown Office and Open Space Zones. The entire pedestrian bridge is in the Downtown Open Space Zone. All new construction and most changes to buildings and/or properties in the downtown zones are subject to design review. Design Review application DR-11-01 was reviewed by the Design and Landmarks Committee (DLC) on Oct 17, 2011. The DLC recommended approval of the application at that time. The DLC's recommended findings and conditions of approval have been incorporated into Attachments 1 and 2 respectively.

2. **Willamette Greenway (WG-11-01)**

   A portion of the Kellogg Bridge, the entire pedestrian bridge, and the construction staging area in Kronberg Park are in the Willamette Greenway Zone because Kellogg Creek is a major water course that flows into the Willamette River. All new

[3] Review and mitigation for in-water impacts caused by the permanent light rail bridge and the temporary construction bridge over Kellogg Lake are overseen by State and federal agencies.

development in this zone and/or alterations to the vegetation buffer along Kellogg Lake are subject to review to ensure that the natural and recreational qualities of the river are protected.

3. **Water Quality Resource (WQR-11-03)**

   Construction of the Kellogg Bridge will have temporary and permanent impacts to the banks of Kellogg Creek, including Kronberg Park, which is a primary protected water feature. Impacts to these areas require review and natural resource mitigation. No additional impacts are anticipated if the pedestrian bridge is constructed at the same time as the Kellogg Bridge. However, if the pedestrian bridge is constructed at a later date, it may be subject to further natural resource review at that time.

4. **Habitat Conservation Area (HCA-11-01)**

   Construction of the Kellogg Bridge will have temporary and permanent impacts to the upland areas on either side of Kellogg Lake, including Kronberg Park, which are protected habitat resources. Impacts to these areas require review and natural resource mitigation. No additional impacts are anticipated if the pedestrian bridge is constructed at the same time as the Kellogg Bridge. However, if the pedestrian bridge is constructed at a later date, it may be subject to further natural resource review at that time.

5. **Community Service Use (CSU-11-09)**

   A portion of Kronberg Park will be used for temporary staging during construction of the Kellogg Bridge. Staging at this location is subject to community service use review. No permanent light rail structures are proposed in the park.

G. Specific Design Elements

The applicant has refined the design of the proposed light rail and pedestrian bridges over the last several months in consultation with its design and engineering team and based on feedback from City staff, the City's Planning Commission (PC) and DLC, and the general public. As such, many design issues have been discussed, and some have been resolved, in advance of the PC's review of this application. Below is an overview of the key design elements under review, including design alternatives that have been considered and the applicant's current design proposal. See Attachment 4 for detailed comments from City staff on the light rail bridge design from a project partner perspective.

- Jump span over Lake Rd – In the small segment over Lake Rd, the bridge is proposed to be made of concrete instead of steel to minimize its thickness and match existing clearances over Lake Rd. A weathering steel face is proposed to match the light rail bridge tub and column cap materials. The surface of the pre-cast concrete abutment wall (north side of Lake Rd) and the supporting set of columns (south side of Lake Rd) will be textured with a formliner that resembles a rusticated masonry surface to create a unified appearance and visual interest at the pedestrian level. The applicant did not include this detail in the application, though it is abstractly represented in the illustrations found in Exhibit D of the application.
- Tubs – Tubs provide the main horizontal element of the bridge both structurally and visually. Tubs are proposed instead of I-beams in order to provide a clean bridge profile, an uncluttered bridge underside, and few opportunities for bird perching. The tub form features cantilevered sides to minimize the boxy appearance of the structure.

- Weathered Steel – Steel instead of concrete is proposed to avoid a change in bridge materials since the portion of the bridge over McLoughlin Blvd has to be constructed of steel. The use of weathering steel allows for the creation of a visually coherent ribbon-like structure with an earth-tone quality.
- Columns – Many different column styles and treatments were evaluated. Round concrete columns are proposed to minimize column diameter, allow for graffiti removal, and facilitate safety inspections. Vertical board-form treatments are proposed in order to create visual interest (e.g. depth and shadow), minimize width, and channel any rust caused by the weathering steel in an intentional and decorative manner.
- Column caps – An open-face I-beam column cap design in weathering steel is proposed in order to match the light rail bridge tub material and to not detract from the horizontal "ribbon" effect of the tubs.
- Railings – Weathered steel railings with tension cables are proposed instead of a more solid barrier so as not to visually increase the thickness of the bridge.
- Catenary poles – Round catenary poles are proposed instead of more angular I-beam type poles in order to minimize shadow lines and reinforce the clean simple lines of the bridge.
- Sound wall – A transparent sound wall material is proposed so as not to visually increase the thickness of the bridge or block views.
- Pedestrian bridge – A Bowstring Arch Truss design is proposed instead of a Warren Style Through Truss design in order to open sight lines and views, improve security, address overhead clearance issues, and minimize impacts to Kellogg Lake. Weathering steel is proposed to match the light rail bridge tub and column cap materials and to blend in with the surrounding natural areas around Kellogg Lake.

H. Compliance with Design Guidelines

On a macro level, the light rail bridge and future pedestrian bridge meet the intent and spirit of the Milwaukie Downtown Design Guidelines by reinforcing Milwaukie's sense of place, respecting the natural environment, creating compatible and well-designed structures that respond to their surroundings, enhancing the pedestrian environment, and creating view opportunities. Though the light rail bridge is utilitarian in purpose—and contains all of the necessary elements to carry out its function (e.g. catenary poles and safety railings) while mitigating community impacts (e.g. sound walls)—it has been thoughtfully designed by a team of architects and urban designers to fit into the existing fabric of downtown Milwaukie and the Kellogg Lake area. The overall scale of the bridge does not overwhelm the southern part of downtown. It maintains roughly the same horizontal profile as the adjacent freight rail bridge over Lake Rd, Kellogg Lake, and McLoughlin Blvd. It also utilizes an existing rail corridor, which serves to reinforce Milwaukie's sense of place as a small working town with a long history of rail activity both in the form of freight rail (e.g. Union Pacific Railroad) and local and regional passenger rail (e.g. Portland Traction Company and Amtrak).

The light rail bridge also serves to connect Milwaukie to its neighbors to the south. This has the added benefit of minimizing the light rail footprint in the south downtown area. In other words, by traveling through Milwaukie (which requires a bridge over Kellogg Lake and McLoughlin Blvd) instead of terminating in Milwaukie, the additional infrastructure

associated with a terminus is avoided.

Moreover, the light rail bridge makes a future pedestrian bridge possible at this location. A pedestrian bridge would provide a more direct, safe, and pleasant way for Island Station residents to walk or bike to downtown and for other residents to access the Trolley Trail. Pedestrians have been considered in the design in other ways as well. Board-form treatments on the concrete bridge abutments and columns add visual interest at the pedestrian level, and lighting under the Lake Rd jump span gives pedestrians a measure of safety and comfort.

The overall design of the bridge respects the character of the Kellogg Lake natural area through its uncluttered design, earth-tone materials, and avoidance of in-water bridge supports. It also provides passengers with unique views of Dogwood Park, Kronberg Park, Kellogg Lake, and the Willamette River to the west that are not currently available by any other means.

Both bridges are constructed primarily of weathering steel and concrete. The use of weathering steel tubs as a defining horizontal element on the light rail bridge allows for the creation of a slender, uncluttered, and visually coherent bridge. The lighter-colored concrete columns fade into the background and allow the earth-toned steel to move through the landscape in a ribbon-like fashion. The use of weathering steel on both bridges gives them a softer, less industrial, earth-toned quality in keeping with their proximity to natural areas around Kellogg Lake and vegetated areas along the Trolley Trail. Overall, these design and material choices serve to create a light rail bridge with a thin horizontal profile that does not compete with the neighboring freight rail bridge. In contrast, the design of the future pedestrian bridge over Kellogg Lake incorporates and celebrates the intricate and angular support beam pattern present in the freight rail bridge.

On a micro level, the light rail bridge and future pedestrian bridge appear to meet the intent and spirit of the Milwaukie Downtown Design Guidelines; however, more design detail and some refinements are needed with respect to the pedestrian experience of both bridges to ensure compliance. To that end, the DLC has recommended a number of conditions of approval specific to the light rail bridge column treatments and the jump span lighting and wall treatments. These recommendations have been incorporated into Attachment 2 in their entirety.

KEY ISSUES

Summary

Staff has identified the following key issue for the Planning Commission's deliberation. Aspects of the proposal not discussed here are addressed in the Findings (see Attachment 1) because they either require less analysis and discretion or have already been vetted by the DLC.

Key Issue: Is the proposed natural resource mitigation plan appropriate for the impacts and the site?

Analysis

The proposal results in the following water quality resource (WQR) and habitat conservation area (HCA) impacts:

Impact Area within Construction Limits	WQR Impacts			HCA Impacts		
	# of Trees Removed	Permanent (Sq. ft.)	Temporary (Sq. ft.)	# of Trees Removed	Permanent (Sq. ft.)	Temporary (Sq. ft.)
Willamette HCA	NA	NA	NA	1	1280	0
Kellogg Lake North	5	2170	3020	6	2040	2010
Kellogg Lake South	2	2580	110	0	580	70
Kronberg Park	1	0	3430	1	0	1165
TOTALS	**8**	**4750**	**6560**	**8**	**3900**	**3245**

The applicant proposes to mitigate for these impacts as follows:

- Restore areas temporarily impacted by construction with appropriate native plants pursuant to applicable WQR and HCA standards.
- Mitigate for areas permanently impacted by the Kellogg Bridge at a 1:1 replacement ratio on the bank of Kronberg Park outside of the construction limits between ordinary high water and top of bank.
- Remove invasive and nonnative species from within the construction limits and the Kronberg Park mitigation site.
- Monitor and maintain plantings for five years with a target survival rate of 80%.

The applicant also proposes to provide mitigation for an additional 515 square feet of area on the Kronberg Park mitigation site for permanent impacts from the anticipated pedestrian pathways to the future pedestrian bridge.

The applicant's proposal meets the City's WQR requirements for restoration of a degraded WQR area by removing invasive and nonnative species and revegetating disturbed and bare areas with plants from the Milwaukie Plant List. WQR areas between ordinary high water (OHW) and top of bank (TOB) are proposed to be planted with a wide variety of native riparian trees and shrubs commonly found in the Willamette Valley, with the exception of the areas immediately below the bridge. The plant palette includes a mix of fast and slow growing species, both deciduous and evergreen, that would provide food and shelter for native fauna, seasonal color, and bank stabilization. Close spacing of trees and shrubs would provide canopy cover over the lake and would help out-compete invasive species, such as Armenian blackberry.

WQR areas above TOB are proposed to be completely reseeded but planted with fewer trees and shrubs to allow for a transition from dense lakeshore plantings to a more open and actively maintained park-like setting on both the north and south shores of Kellogg Lake. WQR areas immediately below the bridge are proposed to be planted with shade and drought tolerant native shrubs to prevent erosion.

The applicant's proposal meets the City's HCA discretionary review criteria for HCA impacts outside of Kronberg Park. In lieu of providing the required number of trees and shrubs underneath the bridge, immediately adjacent to the bridge, and in a small degraded area on the west side of McLoughlin Blvd, the applicant proposes to mitigate for permanent impacts caused by the bridge (and the anticipated pathways to the future pedestrian bridge) on the Kronberg Park site at a 1:1 replacement ratio. Plantings in this area would match the plantings proposed

in the disturbed WQR areas between OHW and TOB. Areas underneath the bridge and on the north shore of Kellogg Lake would match the plantings proposed in the adjacent WQR areas for continuity.

The applicant's proposal meets the City's HCA objective review criteria for HCA impacts inside Kronberg Park by applying the mitigation option that results in the most tree plantings. Per City staff direction, the required number of trees and shrubs are proposed to be planted between OHW and TOB in Kronberg Park so as to not interfere with any future park development that may occur above TOB and to accommodate pedestrian pathways to the future pedestrian bridge over Kellogg Lake underneath the Kellogg Bridge.

In summary, staff believes that the applicant's mitigation proposal is appropriate for the identified impacts. It meets and, in some instances, exceeds the City's requirements for WQR and HCA mitigation. It exceeds the City's requirements by proposing mitigation on the Kronberg Park site for impacts to the WQR areas on the UPRR right-of-way site since the City's WQR regulations cannot require an applicant to provide off-site mitigation.

Staff also believes that the mitigation proposal is appropriate for this specific area. Though it is not known exactly how Kronberg Park will be developed or how the area between OHW and TOB of will change in the future (as the result of dam removal, for instance), riparian plantings on the sloped banks of what is now Kellogg Lake is not anticipated to interfere with park development or be regraded as a result of dam removal.

In addition to being reviewed by staff, the applicant's mitigation proposal was reviewed by ESA Northwest Biological Resources. ESA was retained by the City at the applicant's expense to provide independent technical review of the applicant's WQR and HCA analysis and mitigation proposal. ESA determined that: (1) the applicant's analysis was reasonably complete and accurate, (2) the mitigation proposal met code requirements, and (3) the mitigation plantings were suitable for the site and would improve local ecological functions. ESA recommended some refinements to the proposal to better balance ecological restoration with safe pedestrian access and future park redevelopment. These refinements are included in the conditions of approval, and include, but are not limited to, the following: incorporate Oregon white oaks to replace the one large oak that is being removed, add more flowering shrubs that provide wildlife habitat, and add herbaceous plant species to the native grass species mix to provide a food source for native pollinators.

CONCLUSIONS

The Kellogg Bridge will be a major new element in the landscape in the south end of downtown Milwaukie and along McLoughlin Blvd in the Island Station neighborhood. The applicant has responded to the Downtown Design Guidelines and Willamette Greenway criteria through choice of materials, careful integration of bridge elements, and thoughtful design of elements visible to pedestrians. Staff believes the light rail and pedestrian bridges substantially comply with the Design Guidelines and Willamette Greenway criteria as best as possible given the nature and size of these transportation infrastructure elements.

The Kellogg Bridge will also impact the natural resource areas around Kellogg Lake. The applicant has provided the necessary analysis and mitigation plan to address and mitigate for these impacts. Staff believes that the mitigation plan will ultimately improve the current degraded conditions in these areas and put them on a trajectory toward providing better water quality function and habitat values.

Staff recommendation to the Planning Commission:

Approve the Willamette Greenway, Design Review, Water Quality Resource, Habitat Conservation Area, and Community Service Use applications for the design and construction of the Kellogg Bridge and the future pedestrian bridge over Kellogg Lake with the recommended findings and conditions of approval in Attachments 1 and 2.

Key conditions of approval:

- Revise the mitigation plan to ensure appropriate plant densities and a minimum 1:1 replacement ratio in Kronberg Park.
- Provide a detailed tree planting plan for Kronberg Park that is consistent with the approved mitigation plan and that balances ecological restoration with future park development and the desire to maintain some views to Kellogg Lake.
- Provide detailed information on the jump span wall treatments to ensure the design is appropriately scaled and executed.
- Provide detailed information and a different light fixture option for the lighting underneath the jump span to ensure a comfortable, attractive, and safe pedestrian environment.
- Provide detailed information and a slightly different design pattern on the bridge columns to soften the verticality and regularity of the overall design.
- Provide a memo that describes the lighting impacts, if any, from the train light on nearby residential uses and drivers on McLoughlin Blvd as the tracks curve near the McLoughlin Blvd crossing.
- Provide a memo that summarizes the noise impact studies conducted for the areas around the Kellogg Bridge and explains why sound walls are not proposed on the bridge structure where the tracks curve near the McLoughlin Blvd crossing.

CODE AUTHORITY AND DECISION-MAKING PROCESS

The proposal is subject to the Milwaukie Design Guidelines and the following provisions of the Milwaukie Zoning Ordinance, which is Title 19 of the Milwaukie Municipal Code (MMC).

- Section 19.310 – Downtown Zones
- Section 19.401 – Willamette Greenway
- Section 19.402 – Water Quality Resource
- Section 19.904 – Community Service Use
- Section 19.905 – Conditional Use
- Section 19.907 – Downtown Design Review
- Chapter 19.1000 – Review Procedures (specifically Section 19.1001 General Provisions and Section 19.1006 Type III Review)
- Interim Implementation Memo for Metro Title 13 Habitat Conservation Area

The Commission has 3 decision-making options as follows:

A. Approve applications **WG-11-01, DR-11-01, WQR-11-03, HCA-11-01, and CSU-11-09** with the recommended Findings and Conditions of Approval.

B. Approve applications **WG-11-01, DR-11-01, WQR-11-03, HCA-11-01, and CSU-11-09** with modified Findings and Conditions of Approval. Any modifications must be read into the record.

C. Continue the hearing to November 22, 2011.

(The final decision on this application, including any appeals to City Council, must be made by January 18, 2012 in accordance with the Oregon Revised Statutes and the Milwaukie Zoning Ordinance. Unless the applicant extends the time period within which the City must make a decision, a hearing continuation beyond November 22, 2011 is not feasible.)

All five applications are subject to Type III review by the Planning Commission at a public hearing. In Type III reviews, the Planning Commission considers the DLC recommendation on the Design Review application, assesses all five applications against all applicable provisions of the Milwaukie Zoning Ordinance, and evaluates testimony and evidence received at the public hearing.

COMMENTS

All five applications were referred for comment to the following City departments and agencies: City of Milwaukie Engineering, Building, and Community Development Departments; Clackamas County Fire District #1; Oregon Department of Transportation; Oregon State Marine Board; Oregon Division of State Lands; Oregon Department of Fish and Wildlife; Oregon Parks and Recreation Department; and, North Clackamas Parks and Recreation District.

There were also forwarded to the Historic Milwaukie and Island Station Neighborhood District Associations, and public copies were made available at City Hall, Ledding Library, and the Planning Department. Key sections of the application were posted on the Planning Department website. Additionally, the Community Services Department broadly advertised the DLC's design review meeting and the PC's public hearing on the applications at various public forums, such as the Milwaukie Farmers Market, and through direct e-mailings and the City's PMLR project website.

Two people testified at the Oct 17 DLC design review meeting, one was in favor of the application and one was neutral. The five written comments on the applications that were received by the City on or before October 24, 2011 are included in Attachment 4. Any additional comments received after this date but before the November 8, 2011 public hearing will be brought to the hearing.

Summary of Written Comments:

- **Gary Michael (Island Station Resident):** *Likes light rail bridge design but does not like wall treatment on jump span abutment and columns.*
- **Ray Bryan (Historic Milwaukie Resident):** *Likes light rail bridge design; has concerns about noise and train light impacts and the ability of the stormwater management facilities to handle all the stormwater from the bridge; wants construction of pedestrian bridge included in project; wants mitigation plantings in Kronberg Park to be more diverse and to consider how the area will change when the Kellogg Lake dam is removed.*

- **Tony Enders (Oregon City Resident and Island Station Property Owner):** *Wants a sound wall installed on the west side of the light rail bridge structure between 22nd Ave and Bluebird St to protect the property at 11923 SE McLoughlin from noise impacts.*
- **Elizabeth Ruther (Oregon Department of Fish and Wildlife):** *Appreciates efforts TriMet has made to minimize impacts to fish and wildlife and suggest specific measures to reduce these impacts even further.*
- **Kenny Asher, Katie Mangle, and Wendy Hemmen (City Staff):** *Believes that TriMet has incorporated all of the City staff's design suggestions into the final bridge design.*

ATTACHMENTS

Attachments are provided only to the Planning Commission unless noted as being attached. All material is available for viewing upon request.

1. Recommended Findings in Support of Approval (attached)
2. Recommended Conditions of Approval (attached)
3. Applicant's Narrative and Supporting Documentation date stamped September 20, 2011 by the Planning Department.
   A. Exhibit D8 Pedestrian Bridge Design (attached)
   B. Exhibits D3–D7 and D9–D14 Light Rail Bridge Design (attached)
   C. Exhibits P5–P7 Mitigation Site Plan and Plant Schedule (attached)
   D. Exhibit TR1 Kellogg Lake WQR and HCA Report (attached)
   E. Exhibit TR2 Kronberg Park WQR and HCA Report (attached)
4. Comments Received (attached)
5. Exhibits List (attached)

Recommended Findings in Support of Approval

1. The applicant, TriMet, submitted five land use applications (the "application") for approval of a light rail bridge over Kellogg Lake and McLoughlin Blvd ("Kellogg Bridge") as part of the Portland Milwaukie Light Rail (PMLR) project. The application requests approval for bridge design, natural resource mitigation, and temporary construction staging. The application has been assigned the following file numbers and consists of the following application types:

   - **DR-11-01: Design Review**
   - **WG-11-01: Willamette Greenway**
   - **WQR-11-03: Water Quality Resource**
   - **HCA-11-01: Habitat Conservation Area**
   - **CSU-11-09: Community Service Use**

2. The PMLR alignment, which includes the location of specific project elements such as the Kellogg Bridge, has an existing land use approval that was issued by Metro in 2008.[1] This land use final order (LUFO) was made pursuant to House Bill 3478 (1996), which provides for the review and siting of regional transportation facilities through local jurisdictions. The City may subject the Kellogg Bridge to reasonable and necessary conditions of approval to ensure conformance with local standards and appropriate mitigation of local impacts. It cannot, however, condition the approval of the bridge in such a way as to prevent the implementation of the 2008 LUFO.

3. The Kellogg Bridge site is composed of an assortment of public and private rights-of-way on Tax Maps 1S1E36BC, 1S1E36CB, and 1S1E35AD between SE Lake Rd and SE 22nd Ave that are under the ownership or jurisdiction of three different legal entities, namely the City of Milwaukie, Oregon Department of Transportation, and the Union Pacific Railroad (UPRR). The Kellogg Bridge site also includes a temporary construction staging area on Kronberg Park that is under the ownership of the City of Milwaukie, which consists of Tax Lots 1S1E36CB03100 and 1S1E36CB03000. TriMet has eminent domain authority and is in the process of purchasing portions of the sites listed above and/or acquiring the necessary easements to construct the bridge.

4. The application includes a design for a future pedestrian bridge over Kellogg Lake underneath the Kellogg Bridge. The applicant is not proposing to construct the pedestrian bridge as part of the PMLR project due to lack of funding. However, the applicant is proposing to advance the design and review process for the pedestrian bridge at this time in order to allow for the possibility of constructing the pedestrian bridge at the same time as the Kellogg Bridge, which would result in significant time and cost savings for the pedestrian bridge project. The design and location of pedestrian pathways to the pedestrian bridge are not included in the current application and would require additional land use approvals at a later date.

5. The proposal includes the following elements:

   - A jump span over Lake Rd; in this section it would be supported by an abutment on the north side and a set of columns on the south side that connects the light rail bridge to the station platform.

[1] Metro Resolution No. 08-3964 entitled 2008 South/North Land Use Final Order (LUFO) Amendment.

- A light rail bridge over Kellogg Lake; in this section it would be supported by two sets of columns on either side of the lake above ordinary high water. No in-water piers are proposed.
- A light rail bridge over McLoughlin Blvd; in this section it would be supported by a series of single columns.
- A future pedestrian bridge over Kellogg Lake underneath the light rail bridge.
- A temporary construction bridge in the UPRR right-of-way in Kellogg Lake on the east side of the permanent light rail bridge.

The jump span and light rail bridge contain a number of elements consistent with their purpose of carrying light rail trains (e.g. catenary poles and safety railings) and mitigating community impacts (e.g. sound walls). The jump span, light rail bridge, and pedestrian bridge materials consist primarily of weathering steel and concrete. The use of steel tubs as a defining horizontal element allows for the creation of a slender, uncluttered, visually coherent, and ribbon-like structure. The use of weathering steel gives the bridge a softer, less utilitarian, earth-toned quality in keeping with its proximity to natural areas around Kellogg Lake and vegetated areas along the Trolley Trail. Board-form treatments on the cast-in-place concrete bridge abutments and columns add visual interest.

6. The proposal results in the following water quality resource (WQR) and habitat conservation area (HCA) impacts:

Impact Area within Construction Limits	WQR Impacts			HCA Impacts		
	# of Trees Removed	Permanent (Sq. ft.)	Temporary (Sq. ft.)	# of Trees Removed	Permanent (Sq. ft.)	Temporary (Sq. ft.)
Willamette HCA	NA	NA	NA	1	1280	0
Kellogg Lake North	5	2170	3020	6	2040	2010
Kellogg Lake South	2	2580	110	0	580	70
Kronberg Park	1	0	3430	1	0	1165
TOTALS	**8**	**4750**	**6560**	**8**	**3900**	**3245**

7. The applicant proposes the following mitigation plan:

- Restore areas temporarily impacted by construction with appropriate native plants pursuant to applicable WQR and HCA standards.
- Mitigate for areas permanently impacted by the Kellogg Bridge at a 1:1 replacement ratio on the bank of Kronberg Park outside of the construction limits between ordinary high water and top of bank.
- Remove invasive and nonnative species from within the construction limits and the Kronberg Park mitigation site.
- Monitor and maintain plantings for five years with a target survival rate of 80%.

The applicant also proposes to provide mitigation for an additional 515 square feet of area on the Kronberg Park mitigation site for permanent impacts from the anticipated pedestrian pathways to the future pedestrian bridge.

8. The applicant's mitigation plan was reviewed by ESA Northwest Biological Resources. ESA was retained by the City at the applicant's expense to provide independent technical review of the applicant's WQR and HCA analysis and mitigation plan. ESA determined that: (1) the applicant's analysis was reasonably complete and accurate, (2) the mitigation plan met code requirements, and (3) the mitigation plantings were suitable for the site and would improve local ecological functions.

9. The application was submitted on August 8, 2011. It was initially deemed incomplete by the City on September 7, 2011. The applicant revised and resubmitted the application on September 20, 2011 and requested that the application be deemed complete on that date. The City deemed the application complete on September 20, 2011, and now has until January 18, 2012 to issue a final decision on the application.

10. The majority of the Kellogg Bridge site has a base zone designation of Downtown Open Space (DOS) with an overlay zone designation of Willamette Greenway (WG). A small portion of the site (i.e. the northern half of the Lake Rd right-of-way) has a base zone designation of Downtown Office (DO). The portion of the Kellogg Bridge that is within a downtown zone and the WG overlay zone is subject to both Design Review and Willamette Greenway review. The future pedestrian bridge is also subject to both Design Review and Willamette Greenway review. A portion of the site around Kellogg Lake, including the construction staging area in Kronberg Park, is also subject to Water Quality Resource (WQR) and Habitat Conservation Area (HCA) review. Additionally, the construction staging area in Kronberg Park is subject to Community Service Use review and Willamette Greenway review due to its alteration of the vegetation buffer along Kellogg Lake.

11. The application is further subject to Development Review at or before the time of development permit submittal pursuant to MMC Section 19.906. The purpose of Development Review is to ensure compliance with applicable standards and conditions of approval through an efficient review process that effectively coordinates the City's land use and development permit review functions.

12. The Design and Landmarks Committee (DLC) evaluated the Design Review application (DR-11-01) on October 17, 2011 pursuant to MMC 19.1011 Design Review Meetings. The DLC recommended that the Planning Commission adopt Finding 17, and the associated conditions of approval, as the findings and conditions of approval for the Kellogg Bridge Design Review application.

13. The Planning Commission (PC) evaluated the entire application at a public hearing on November 8, 2011 pursuant to MMC Section 19.1006 Type III Review.

14. The October 17 DLC design review meeting and the November 8 PC public hearing on the application were properly noticed through direct mailings and sign postings pursuant to Milwaukie Municipal Code (MMC) Subsection 19.1006.3 Type III Public Notice, MMC Subsection 19.1011.2. Design Review Meeting Notice Requirements, and MMC Subsection 19.401.5 Willamette Greenway Zone Procedures.

15. The application was referred for comment to the following City departments and agencies: City of Milwaukie Engineering, Building, and Community Development Departments; Clackamas County Fire District #1; Oregon Department of Transportation; Oregon State Marine Board; Oregon Division of State Lands; Oregon Department of Fish and Wildlife; Oregon Parks and Recreation Department; and, North Clackamas Parks and Recreation District. It was also forwarded to the Historic Milwaukie and Island Station Neighborhood District Associations, and public copies were made available at

City Hall, Ledding Library, and the Planning Department. Additionally, the Community Services Department broadly advertised the DLC's design review meeting and the PC's public hearing on the application at various public forums, such as the Milwaukie Farmers Market, and through direct e-mailings and the City's PMLR project website.

Four written comments were received by the City prior to October 17, 2011. Two of the comments were from Milwaukie residents, one was from the Oregon Department of Fish and Wildlife, and one was from the City's project design team. Additionally, two people testified at the October 17, 2011 DLC design review meeting. All verbal and written comments are summarized in and/or attached to the November 8, 2011 PC staff report.

16. The application is subject to the Milwaukie Design Guidelines, Interim Implementation Memo for Metro Title 13 Habitat Conservation Area, and the following provisions of the Milwaukie Zoning Ordinance, which is Title 19 of the Milwaukie Municipal Code (MMC):

- Section 19.310 – Downtown Zones
- Section 19.401 – Willamette Greenway
- Section 19.402 – Water Quality Resource
- Section 19.904 – Community Service Use
- Section 19.905 – Conditional Use
- Section 19.907 – Downtown Design Review
- Chapter 19.1000 – Review Procedures (specifically Section 19.1001 General Provisions and Section 19.1006 Type III Review)

Provisions not addressed in these findings are found to be not applicable to the decision on the application.

17. **DESIGN REVIEW:** MMC Subsection 19.907.7 contains the approval criteria for design review applications. The approval authority may approve, approve with conditions, or deny a design review application based on the following criteria:

A. Compliance with Title 19 Zoning Ordinance.

The only two applicable standards pertain to landscaping and wall design. Section 19.310.4.11 requires that a minimum of 20% of the site be landscaped. The applicant is proposing to retain approximately 70% of the site in landscaping. Section 19.310.6.C.2 contains the design standards for walls. The applicant is not proposing any wall-mounted mechanical equipment or any prohibited wall materials.

As conditioned, the Planning Commission finds that these standards have been met and that this approval criterion is therefore met.

B. Substantial consistency with the Downtown Design Guidelines

Refer to Table 1 below for detailed findings pertaining to this approval criterion.

As conditioned, the Planning Commission finds that the proposal is substantially consistent with the Downtown Design Guidelines and that this approval criterion is therefore met.

C. Submittal of a complete application and applicable fee as adopted by the City Council.

The applicant submitted a revised application on September 20, 2011 and requested that the City deem the application complete. The applicable design review application fee was paid August 8, 2011.

The Planning Commission finds that this approval criterion has been met.

18. **WILLAMETTE GREENWAY:** MMC Subsection 19.401.6 contains the approval criteria for development in the Willamette Greenway (WG) Zone. MMC Subsection 19.905.4 contains the related Conditional Use (CU) approval criteria since all development in the WG Zone is considered a conditional use.

The WG Zone approval criteria ensure that the bridge and associated staging area are compatible with the character of the area and that views, public access, and the natural environment are protected and enhanced as much as possible. The CU approval criteria ensure that the bridge and associated staging area are appropriate for the location and will have minimal impacts on nearby uses. All identified impacts are required to be mitigated as much as practicable. Refer to Table 2 below for detailed findings pertaining to these approval criteria.

As conditioned, the Planning Commission finds that the WG and CU approval criteria are met.

A. Vegetation Buffer Plan Requirement

Greenway conditional use approval is required for all development or alteration of the greenway vegetation buffer pursuant to Subsection 19.401.5.D. The greenway vegetation buffer is the area between ordinary high water and 25 feet upland of ordinary high water. Prior to development (e.g. removal of substantial amounts of vegetation or alteration of natural site characteristics) within the buffer, a vegetation buffer plan for the buffer area shall be submitted for review and approval pursuant to Subsection 19.401.5.E. The plan shall address the following elements:

- Riverbank Stabilization
- Scenic View Protection
- Native Vegetation Retention
- Native Vegetation Restoration
- Vegetation Buffer Enhancement

In this instance, the greenway vegetation buffer area is entirely contained within the water quality resource area, which is measured 50 feet upland of ordinary high water. The applicant's alternatives analysis and mitigation plan for the water quality resource area adequately addresses all of the required greenway vegetation buffer plan elements. In summary, no bank erosion has been identified and no bank stabilization is anticipated; areas of disturbance and plant removal have been minimized as much as practicable; all temporarily disturbed areas will be appropriately revegetated with native species; and all permanently disturbed areas will be mitigated through invasive and nonnative plant removal and native plantings along the bank of Kronberg Park.

As proposed, the Planning Commission finds that the greenway vegetation buffer plan requirement is met.

19. **WATER QUALITY RESOURCE:** MMC Subsection 19.402.9 and 10 contain the application requirements and development standards respectively for development in water quality resource (WQR) areas.

The applicant submitted the required WQR materials and analysis for impacts to the banks of Kellogg Lake and Kronberg Park. Refer to Table 3 below for detailed findings pertaining to the applicant's alternatives analysis and mitigation plan, which are required per MMC Subsection 19.402.9.G and I respectively. Two separate reports were completed by the applicant at the City's direction. One report focused on the impacts to Kronberg Park. The second report focused on the impacts to the northern and southern banks of Kellogg Lake in the UPRR right-of-way. The City directed the applicant to evaluate the impacts to these areas separately because: (1) Kronberg Park is currently under—and will continue to be under—separate ownership, (2) Kronberg Park will not be permanently occupied or encumbered by the Kellogg Bridge, and (3) the City's WQR regulations limit where mitigation can be required. Evaluating the UPRR right-of-way area separately from the Kronberg Park tax lots for this review enabled the City to maximize its mitigation requirements for Kronberg Park.

As conditioned, the Planning Commission finds that no practicable alternative exists to the proposed bridge or construction staging area; that disturbance to the WQR area is limited to the area necessary to accommodate the proposed bridge and construction staging area; and that the mitigation plan proposed by the applicant for impacts to the WQR area caused by the proposed bridge and construction staging area is adequate.

A. Application Requirements

Ingress and egress across water quality resource areas, such as the Kellogg Bridge, are subject to Type III review pursuant to MMC Subsection 19.402.7. The applicant submitted all required information for Type III review, a summary of which is provided below.

- A topographic map of the site with contour intervals of five (5) feet or less showing a delineation of the water quality resource area and all wetlands.
- The location of all existing natural features including, but not limited to, all trees of a caliper greater than six (6) inches diameter at breast height (DBH).
- The location of all wetlands.
- An inventory and location of existing debris and noxious materials.
- An inventory of vegetation, including percentage ground and canopy coverage.
- An assessment of the existing condition of the water quality resource area.

Additionally, MMC Subsection 19.402.9.K requires payment of all adopted fees. The applicant paid the required water quality resource application fee and technical report review deposit. The deposit is meant to cover the City's expenses related to the hiring of a consultant with the appropriate technical expertise to review the applicant's water quality resource study.

The Planning Commission finds that the water quality resource application requirements have been met.

B. Development Standards

Applications for development or land disturbance on properties that contain water quality resource areas shall demonstrate compliance with the following standards:

- The water quality resource area shall be restored and maintained in accordance with the approved mitigation plan and the specifications in MMC Table 19.402.9.E Water Quality Resource Area Requirements.
- Existing vegetation shall be protected and left in place wherever practicable. Work areas shall be carefully located and marked to reduce potential damage to the water quality resource area. Where existing vegetation has been removed, the site shall be revegetated as soon as practicable.
- Prior to construction the water quality resource area shall be flagged, fenced or otherwise marked and shall remain undisturbed except as may be allowed by this decision. Such markings shall be maintained until construction is complete.
- Appropriate site preparation and construction practices shall be followed to prevent erosion, pollution, sedimentation, or drainage of hazardous materials to the water quality resource area.
- Lights must be placed and hooded so that they do not shine directly into the water quality resource areas wherever practicable. Lights must provide the minimum level of lighting necessary for safe development operations and limited water quality resource area impacts.
- Storm water flows as a result of the proposed development within and to water quality resource areas shall not exceed pre-development flows. Storm water outfalls shall be appropriately designed to avoid erosion to stream banks or water quality resource area slopes.

Most of the standards in this section pertain to the development phase of the project and are appropriate as conditions of approval.

As conditioned, the Planning Commission finds that these development standards will be met.

20. **HABITAT CONSERVATION AREAS:** The Planning Director's Interim Implementation Memo for Metro Title 13 Habitat Conservation Area (HCA) dated May 29, 2009 contains the approval criteria, application requirements, and development standards for development in habitat conservation areas.

The applicant submitted the required HCA materials and analysis for impacts to the banks of Kellogg Lake, Kronberg Park, and a small area of HCA on the west side of McLoughlin Blvd. Two separate HCA impact reports were completed by the applicant at the City's direction. One report focused on the impacts to Kronberg Park. The second report focused on the impacts to the northern and southern banks of Kellogg Lake in the UPRR right-of-way and to the small area of HCA on the west side of McLoughlin Blvd in the ODOT right-of-way. For purposes of this document, the HCA area in the ODOT right-of-way is called "Willamette HCA" because it is part of the mapped Willamette River

floodplain. However, it is over 700 feet from the Willamette River and is bounded by McLoughlin Blvd on one edge and the freight rail tracks on another.

The City directed the applicant to evaluate the impacts to these areas separately because: (1) Kronberg Park is currently under—and will continue to be under—separate ownership, (2) Kronberg Park will not be permanently occupied or encumbered by the Kellogg Bridge, and (3) mitigation for HCA impacts in Kronberg Park are able to meet the City's clear and objective HCA development standards in Section 6. Evaluating the UPRR and ODOT rights-of-way area separately from the Kronberg Park tax lots for this review enabled a more streamlined HCA review for Kronberg Park impacts.

Kronberg Park impacts are proposed to be evaluated and mitigated pursuant to Section 6 Development Standards. UPRR and ODOT rights-of-way impacts are proposed to be evaluated and mitigated pursuant to Section 7 Alternative Discretionary Development Standards due to the site constraints associated with these areas. Section 7 review requires more analysis and discretion, but also allows for more flexibility with respect to mitigation. In this instance, Section 7 review enables the applicant to propose mitigation plantings along the bank of Kronberg Park outside of the bridge construction limits to make up for sub-standard mitigation plantings underneath and next to the light rail bridge structure and in the Willamette HCA. Sub-standard mitigation plantings are proposed underneath and immediately adjacent to the light rail bridge structure for practical reasons (e.g. trees are not appropriate underneath a bridge); to accommodate access to the future pedestrian bridge; and in response to existing park conditions and possible future park development in Kronberg Park. Sub-standard mitigation plantings are proposed for the Willamette HCA due to the impracticality and unfeasibility of planting in this location.

Refer to Table 4 below for detailed findings pertaining to Section 6 review of impacts to and mitigation for Kronberg Park and Section 7 review of impacts to and mitigation for UPRR and ODOT rights-of-way.

As conditioned, the Planning Commission finds that HCA impacts to Kronberg Park are allowed and that the proposed mitigation plan meets all applicable standards.

As conditioned, the Planning Commission finds that the alternatives analysis and proposed mitigation plan for HCA impacts to the UPRR and ODOT rights-of-way meet all applicable approval criteria.

A. Application Requirements

The City's interim HCA regulations apply to all areas containing mapped habitat conservation areas outside of existing water quality resource areas. The applicant submitted all required information, or can be conditioned to submit all required information, a summary of which is provided below.

- Construction Management Plan pursuant to Section 5
- Detailed site plans showing HCA boundaries, existing conditions, and proposed temporary construction staging on Kronberg Park pursuant to Section 6
- Detailed site plans showing HCA boundaries, existing conditions, and proposed light rail bridge development pursuant to Section 7
- Impact evaluation, alternative analysis, and mitigation plan for proposed light rail bridge development pursuant to Section 7

- Boundary verification pursuant to Section 9

As conditioned, the Planning Commission finds that the HCA application requirements will be met.

B. Development Standards and Habitat Friendly Development Practices

Applications for development or land disturbance on properties that contain water quality resource areas shall demonstrate compliance with the following standards:

- Disturbance area limitations
- Habitat protection during construction
- Design and construction practices to minimize hydrologic and wildlife corridor impacts
- Mitigation requirements

Most of the standards in this section pertain to the development phase of the project and are appropriate as conditions of approval.

As conditioned, the Planning Commission finds that the HCA development standards will be met.

21. **COMMUNITY SERVICE USE:** MMC Subsection 19.904.4 contains the approval criteria for community service use (CSU) applications. An application for a CSU may be allowed if the following criteria are met:

A. The building setback, height limitation, and off-street parking and similar requirements governing the size and location of development in the underlying zone are met. Where a specific standard is not proposed in the CSU, the standards of the underlying zone are met.

The proposed use is for temporary construction staging for the Kellogg Bridge on the westernmost 50 feet of Kronberg Park. No permanent structures are proposed, and the site will be returned to a similar or better condition once construction is completed per the terms of the temporary construction easement between the City and TriMet.

The Planning Commission finds that this criterion is met.

B. Specific standards for the proposed uses as found in Subsections 19.904.7-11 are met.

The only three applicable standards pertain to site improvements, noise, and lighting. Subsection 19.904.9.A requires that utilities, streets, or other improvements necessary for the use shall be provided by the agency constructing the use. Subsection 19.904.9.E requires that noise-generating equipment shall be sound-buffered when adjacent to residential areas. Subsection 19.904.9.F requires that lighting shall be designed to avoid glare on adjacent residential uses and public streets.

The staging area requires access from McLoughlin Blvd. This right-of-way is under ODOT's jurisdiction. Any required improvements related to the proposed access point would need to be approved by ODOT. Construction impacts relating

to noise and lighting will be minimized to the greatest extent practicable through TriMet's Conduct of Construction Plan and the City's construction and noise ordinances.

As conditioned, the Planning Commission finds that this criterion is met.

C. The hours and levels of operation of the proposed use are reasonably compatible with surrounding uses.

The hours and levels of use of the staging area will vary over time. Construction impacts will be minimized to the greatest extent practicable through TriMet's Conduct of Construction Plan and the City's construction and noise ordinances. Normal operations will consist of 10 hour days, five days a week. Project needs may require some six-day work weeks. There may also be a need for some nighttime construction, such as girder erection over McLoughlin Blvd, due to jurisdictional requirements to minimize traffic impacts. Particular phases of construction will also result in varying levels of vehicular activity. Normal operations are expected to produce 30 vehicle trips/day. During peak operations, such as when major concrete pours are occurring, average trip generation might be nearer to 70 vehicle trips/day. Overall, due to the site's location near an undeveloped and relatively unused open space area and adjacency to a freight rail bridge and State highway, the use of this site as a temporary construction staging area will have nominal impacts on surrounding uses.

The Planning Commission finds that this criterion is met.

D. The public benefits of the proposed use are greater than the negative impacts, if any, on the neighborhood.

The public benefits resulting from use of this site as a staging area for construction of a portion of the PMLR project are expected to be substantial, both locally and regionally. They include a more efficient transit system, reduced automobile usage and associated reduction in vehicle emissions and congestion, improved access and mobility for residents, a significant increase in local construction jobs, an accessible connection to the region's light rail system, enhanced regional economic competiveness, and eventual downtown economic benefits typically associated with transit-oriented development. Any negative impacts associated with use of this site as a staging area will be both temporary and nominal as noted in the Findings both immediately above and below this one. Impacts may include noise, traffic, and dust typically associated with a public works project of this size and scale. Best Management Practices will be utilized to minimize construction dust and equipment emissions to the extent practicable. Impacts to vegetation will be mitigated, and are the subject of associated water quality resource, habitat conservation area, and Willamette Greenway reviews.

The Planning Commission finds that this criterion is met.

E. The location is appropriate for the type of use proposed.

The temporary construction staging area being proposed for the bridge is immediately adjacent to the Kellogg Bridge site and has been minimized in size as much as possible so as not to impact Kronberg Park any more than necessary. A construction staging area on the north bank of Kellogg Lake was

evaluated and rejected because of its more limited vehicular access and steep slopes. Off-site staging areas were also evaluated and rejected because of the number of additional vehicle trips that would be generated. The flat and accessible area within Kronberg Park adjacent to the construction site is the most logical location for construction staging and has the least impacts to the traveling public and surrounding uses. Unless otherwise specified in the temporary construction easement for use of a portion of Kronberg Park for staging, access to the staging area must be physically located within the easement area.

As conditioned, the Planning Commission finds that this criterion is met.

22. Pursuant to Subsection 19.1001.7.E, the decision on this land use application shall expire and become void within the time periods specified in Subsection 19.1001.7.E.1 unless the review authority specifies a different expiration time period as allowed by Subsection 19.1001.7.E.2. Given the size, complexity, and phased nature of the proposal, the Planning Commission finds that it is appropriate to extend the time period within which the applicant must obtain development permits from 2 years to 4 years, and within which the applicant must pass all final inspections from 4 years to 6 years, from the date of the land use decision on this application.

Table 1: Design Review Findings

MILWAUKIE CHARACTER GUIDELINES	
Applicant Information	**Recommended Findings**
a. Reinforce Milwaukie's Sense of Place = Strengthen the qualities and characteristics that make Milwaukie a unique place.	
Milwaukie's history is largely formed and defined by its natural surroundings (hills, river, and lake) and its connections by road, rail, and the river. The project's parallel relationship to the existing rail trestle reinforces this transportation and technological history. Light rail is the steamship of the 21st century, and will provide Milwaukie with a new link to the region. It will provide unique views to the formative natural and urban areas that are Milwaukie of today, and will reinforce Milwaukie's qualities and characteristics into the future.	The overall design of the light rail bridge reinforces Milwaukie's sense of place as a small town with a long history of rail activity both in the form of freight rail (e.g. Union Pacific Railroad) and local and regional passenger rail (e.g. Portland Traction Company and Amtrak). As proposed, the light rail bridge connects Milwaukie to its neighbors to the south, which has the added benefit of minimizing the light rail footprint in the south downtown area. In other words, by traveling through Milwaukie, which requires a bridge over Kellogg Lake and McLoughlin Blvd, instead of terminating in Milwaukie, the additional infrastructure associated with a terminus is avoided. As proposed, the light rail bridge respects Milwaukie's sense of place by utilizing an existing rail corridor, designing a bridge with a modest horizontal profile, and using materials, such as weathered steel, that are visually compatible with the Kellogg Lake natural area. *The proposal meets this guideline.*
b. Integrate the Environment = Building design should build upon environmental assets.	
The design of the bridge respects the character of the natural area it crosses	As proposed, the design of the bridge respects the character of the Kellogg Lake natural area through its

through its simple detailing, material selection, minimized structure, and careful placement of structural elements. Its presence will allow unique views to the environmental assets of Kellogg Lake, Kronberg Park, and Dogwood Park, and to the River and hills beyond. Removal of invasive plans and re-planting with appropriate native replacements will further enhance the immediate environmental quality. The potential future pedestrian bridge will further build on, support, and connect these central environmental assets.	uncluttered design, earth-tone materials, and avoidance of in-water bridge supports. Unavoidable impacts to the lake and surrounding riparian and habitat areas will be mitigated. All mitigation plans require review and approval by the Planning Commission. *The proposal meets this guideline.*
c. Promote Linkages to Horticultural Heritage = Celebrate Milwaukie's heritage of beautiful green spaces.	
The bridge, by making a visual connection between the green areas to the north and to the south of Kellogg lake, and providing new and unique views for passengers above, celebrates those spaces. The design of the bridge also acknowledges and celebrates Milwaukie's open space heritage through its simple detailing, sympathetic materials and colors, minimized structure, and careful placement of structural elements. Its presence will allow unique views to Kellogg Lake, Kronberg Park, and Dogwood Park; as well as to the River, the Trolley Trail, and the hills beyond.	As proposed, the light rail bridge provides passengers with unique views of Dog wood Park, Kronberg Park, Kellogg Lake, and the Willamette River to the west that are not currently available by any other means. Additionally, the future proposed pedestrian bridge over Kellogg Lake would connect parks and natural areas on both sides of Kellogg Lake in a way that hasn't occurred in decades. In addition to these localized connections, the future pedestrian bridge would increase passive and active recreational opportunities in this area and afford connections to other open spaces that are further afield, such as Spring Park in Island Station. *The proposal meets this guideline.*
d. Establish or Strengthen Gateways = Projects should use arches, pylons, arbors, or other transitions to mark special or primary entries and/or borders between public and private spaces.	
The careful design of the bridge abutments, and their contrast with the ribbon like character of the bridge itself, heralds and marks the public and private spaces below. The pylons too, with their minimal scale, texture, and material, contribute to marking the transitions between these various zones, spaces, and ownerships.	As proposed, the jump span over Lake Rd along with the abutment wall and support columns on either side create a unique passageway through which drivers, bicyclists, and pedestrians can travel. Though not designed with this purpose in mind, this passageway serves as a sort of a gateway into the south downtown area. Specific design features of this passageway are evaluated under other guidelines. *The proposal meets this guideline.*
e. Consider View Opportunities = Building designs should maximize views of natural features or public spaces.	
The bridge will create new and very different viewpoints of Kellogg Lake, Kronberg Park, and the river and Greenway for the many passengers riding it each day. The bridge itself will enhance the views of the Lake and the Park, by providing a well-proportioned,	As proposed, the light rail bridge provides passengers with unique views of Dogwood Park, Kronberg Park, Kellogg Lake, and the Willamette River to the west that are not currently available by any other means. Additionally, the future proposed pedestrian bridge over

designed, and detailed structure as a backdrop for views from the south, and from the future light rail station to which it will connect.	Kellogg Lake would provide bicyclists and pedestrians with unique views of these areas as well. *The proposal meets this guideline.*
f. Consider Context = A building should strengthen and enhance the characteristics of its setting, or at least maintain key unifying patterns.	
The bridge will establish a new pattern of columns and spans that parallels, and is in plane with, the historic railroad trestle, thus providing both a modern contrast and a formal and utilitarian consistency. The bridge will, additionally, visually tie one side of Kellogg Creek/Lake to the other, and do so in a manner that provides an elegant and simple backdrop for the natural qualities and diversity of the Lake area and Kronberg Park.	As proposed, the light rail bridge maintains roughly the same horizontal clearance as the freight rail bridge over Lake Rd and McLoughlin Blvd and has roughly the same horizontal profile as the freight rail bridge over Kellogg Lake. As proposed, the design of the bridge respects the character of the Kellogg Lake natural area through its uncluttered design, earth-tone materials, and avoidance of in-water bridge supports. *The proposal meets this guideline.*
g. Promote Architectural Compatibility = Buildings should be "good neighbors." They should be compatible with surrounding buildings by avoiding disruptive excesses. New buildings should not attempt to be the center of attention.	
The sleek ribbon like character of the bridge fits quietly into its surroundings. Rather than calling attention to itself thru aggressive structure or excessive detail, the bridge contributes elegantly to the visual character of the site. In contrast to the busier and more rustic railroad trestle, the new bridge, with its simple stoic form and structure, further reinforces its quieter neighborliness.	As proposed, the tubs provide the main horizontal element of the light rail bridge both structurally and visually. Tubs are proposed instead of I-beams in order to provide a clean and thin bridge profile, an uncluttered bridge underside, and few opportunities for bird perching. The use of weathering steel allows for the creation of a visually coherent ribbon-like structure with an organic, earth-tone quality. Cantilevered sides also serve to minimize its boxy appearance. The use of steel tubs throughout avoids a change in bridge materials since the portion of the bridge over McLoughlin Blvd must be constructed of steel. Overall, these design and material choices serve to create a visually low-key bridge with simple lines that do not compete with the neighboring freight rail bridge. In contrast to the light rail bridge's simple horizontal lines, the design of the future proposed pedestrian bridge over Kellogg Lake incorporates and celebrates the intricate and angular support beam pattern present in the freight rail bridge. *The proposal meets this guideline.*

h. Preserve Historic Buildings = Historic building renovation, restoration, or additions should respect the original structure.	
No historic buildings are affected by the Kellogg Bridge application.	*This guideline is not applicable.*
i. Use Architectural Contrast Wisely = Contrast is essential to creating an interesting urban environment. Used wisely, contrast can provide focus and drama, announce a socially significant use, help define an area, and clarify how the downtown is organized.	
The clean orthogonal design of the bridge creates an interesting backdrop with the natural areas it spans, and a gateway between the natural areas and the more urban downtown. The long span bridge structure reflects the advancement in structural materials since the construction of the adjacent railroad bridge. Unlike the railroad structure, the new bridge will clear span Kellogg Creek with environmentally sensitive materials and minimum structure, a clear symbol and manifestation of our increasing awareness of the need to protect and improve fisheries and other habitat.	As proposed, the design of the light rail bridge uses contrast in an intentional and thoughtful manner throughout. • Round concrete vertical columns contrast with the horizontal lines of the weathering steel tubs. The lighter-colored concrete columns fade into the background and allow the earth-toned steel to move through the landscape as a thin visually-coherent ribbon. • Vertical offsets on the round concrete columns serve to create visual interest (e.g. depth and shadow), minimize width, and channel any rust caused by the weathering steel in a decorative manner. However, more information is needed to ensure that the vertical offsets contribute to the bridge's overall design and the pedestrian environment. • Open-face I-beam column caps add visual interest without detracting from the smooth clean lines of the tubs that they support. • The textured surfaces of the pre-cast concrete abutment wall (north side of Lake Rd) and the supporting set of columns (south side of Lake Rd) for the jump span contrast with the smooth weathering steel face of the jump span. The textured surfaces on either side of the jump span unify the space and create visual interest at the pedestrian level. However, more information is needed to ensure that the textured wall and column surfaces contribute to an attractive pedestrian environment. *As conditioned, the proposal meets this guideline.*
j. Integrate Art = Public art should be used sparingly. It should not overwhelm outdoor spaces or render buildings mere backdrops. When used, public art should be integrated into the design of the building or public open space.	
TriMet's public art program installs a variety of artwork at appropriate locations along its light rail lines. Art is intended be installed at the nearby stations, as well as on the bridge itself.	The proposal includes public art work on a portion of the structure. The current concept places a number of abstract forms on the surface of the tubs, creating a subtle, integrated project. Though the details of the art

The art is being developed to be sensitively integrated, and specifically respectful of this guideline. The art is not specifically being reviewed through this process: it is being vetted through the Public Art process, with input from the public and respective Commissions in order to ensure the result is appropriate and contributory.	concept are still evolving, it is one that will not overwhelm the bridge itself nor neighboring places. TriMet has convened a Public Art Advisory Committee (PAAC) as part of the Portland Milwaukie Light Rail project. The PAAC is a citizen committee charged with artist selection and final review and approval of all art concepts along the alignment. It has representatives from along the entire alignment including several from the Milwaukie and Oak Grove areas. *The proposal meets this guideline.*

PEDESTRIAN EMPHASIS GUIDELINES

Applicant Information	Recommended Findings
a. Reinforce and Enhance the Pedestrian System = Barriers to pedestrian movement and visual and other nuisances should be avoided or eliminated, so that the pedestrian is the priority in all development projects.	
The Crossing structure preserves all existing pedestrian paths in the area and therefore creates no barrier to pedestrian movement. Instead of creating visual nuisances, the project creates a visual attraction that will enhance the pedestrian experience. The potential future pedestrian bridge will potentially further enhance the prioritization of the pedestrian movement, resulting in a simple and generous connection from Lake Road, across Kellogg Creek through to the Trolley Trail.	As proposed, travel on the light rail bridge is restricted to light rail trains and passengers. However, the applicant has included a design for a future pedestrian bridge over Kellogg Lake in its application as a way to advance the design and review process for this bridge at this time. This would allow for the possibility of constructing the pedestrian bridge at the same time as the light rail bridge, which would result in significant time and cost savings for the pedestrian bridge project. The applicant is not proposing to construct the pedestrian bridge as part of the Portland Milwaukie Light Rail project due to a lack of funding. As proposed, the light rail bridge does not introduce any new barriers to pedestrian movement. Bridge designers carefully considered impacts to pedestrian sight lines and safety issues when placing columns. Column widths were minimized as much as possible and CPTED (crime prevention through environmental design) principles were applied throughout. As proposed, the pedestrian experience is enhanced by vertical board-form column treatments and horizontal bands of textured wall treatments on either side of the jump span over Lake Rd. *The proposal meets this guideline.*
b. Define the Pedestrian Environment = Provide human scale to the pedestrian environment, with variety and visual richness that enhance the public realm.	
While the bridge is a large structure, design elements such as the piers and guardrails have been detailed to provide human scale. Materials have been chosen - concrete contrasting with weathering steel, light guardrails, simple elegant light standards,	As proposed, the light rail bridge introduces human-scaled design treatments where the bridge elements intersect with the pedestrian environment. • The widths of the columns have been minimized as much as possible while still providing the

details at the column caps and bases- to further add to the richness and enhancement of the public realm.	appropriate amount of structural support. Vertical board-form treatments serve to further minimize their bulk and create visual interest (e.g. depth and shadow) at the pedestrian level. However, more information is needed to ensure that the vertical treatments are appropriately-scaled and interesting at the pedestrian level. • The textured wall surfaces of the pre-cast concrete abutment wall (north side of Lake Rd) and the jump span supporting columns (south side of Lake Rd) unify the space and create visual interest at the pedestrian level. However, more information is needed to ensure that the proposed lighting and textured wall and column surfaces contribute to an attractive pedestrian environment. *As conditioned, the proposal meets this guideline.*
c. Protect the Pedestrian from the Elements = Protect pedestrians from wind, sun, and rain.	
The bridge will protect pedestrians from wind, sun, and rain in two different respects. Boarding a train and riding from Milwaukie to points north and south will provide one form of protection. So too will the bridge itself: passing under the bridge - whether by Lake Road, Kronberg Park, or elsewhere - the bridge will provide protection from the elements above.	As proposed, travel on the light rail bridge is restricted to light rail trains and passengers. However, the future proposed pedestrian bridge over Kellogg Lake is naturally protected from some elements by the light rail bridge above it. *The proposal meets this guideline.*
d. Provide Places for Stopping and Viewing = Provide safe, comfortable places where people can stop to sit and rest, meet and visit with each other, and otherwise enjoy the downtown surroundings.	
The bridge provides a link from the Park Avenue park and ride to the light rail station, both of which have stopping, resting, and meeting areas. The bridge itself has no formal pedestrian places, but it does make the station pedestrian areas more accessible and helps to concentrate activity at those areas. The Lake Road overpass will also provide a place where weather protection and views down to the Lake and Park may afford meeting and visiting opportunities. Lighting provided under the overpass will ensure this area is comfortable and safe at all hours.	As proposed, travel on the light rail bridge is restricted to light rail trains. Passengers are able to sit, meet, and visit with other passengers while riding the light rail system. As proposed, the future proposed pedestrian bridge over Kellogg Lake is designed as a transportation facility and does not include benches for resting or sitting. However, as a pedestrian facility, people would be able to socialize with one another and stop to admire the views while on the bridge. *The proposal meets this guideline.*
e. Create Successful Outdoor Spaces = Spaces should be designed for a variety of activities during all hours and seasons.	
By raising the light rail system above grade, the bridge allows for a flexible layering of uses during all hours and all seasons.	No outdoor spaces are proposed as part of the Kellogg Bridge application beyond the enclosure of a short length of Lake Rd by the jump span, abutment wall, and column walls. Specific design features of these

	walls are evaluated under other more relevant guidelines. Use of Lake Rd by the traveling public will not change. *The proposal meets this guideline.*
f. Integrate Barrier-Free Design = Accommodate handicap access in a manner that is integral to the building and public right-of-way and not designed merely to meet minimum building code standards.	
Tri Met consistently manifests an exceptional barrier free design integrated into all of its projects. The bridge is a part of a region wide accessible transportation network, and all elements associated with the project will exceed minimum standards, both technically and aesthetically.	ADA standards are not applicable to the light rail bridge, as it is only for use by light trains. As proposed, the future pedestrian bridge has a flat concrete walking surface that meets ADA standards. Future path connections to this bridge are not part of this proposal and are not being evaluated at this time. *The proposal meets this guideline.*

ARCHITECTURE GUIDELINES	
Applicant Information	**Recommended Findings**
a. Corner Doors = Locate entry doors on corners of commercial and retail buildings wherever possible.	
No doors are proposed as part of the Kellogg Bridge application.	*This guideline is not applicable.*
b. Retail and Commercial Doors = Doors should create an open and inviting atmosphere.	
No doors are proposed as part of the Kellogg Bridge application.	*This guideline is not applicable.*
c. Residential Doors = Residential front doors should define a friendly transition between the public and the private realm.	
No doors are proposed as part of the Kellogg Bridge application.	*This guideline is not applicable.*
d. Wall Materials = Use materials that create a sense of permanence.	
TriMet consistently applies the use of long lasting, high quality materials to ensure low maintenance costs for its facilities and enhance the quality of the communities. In this case, the use of concrete, weathering steel and galvanized metal have been designed and detailed in a manner that will ensure that the structure is of a consistent and well maintained quality, both physically and visually for the life of the project.	As proposed, the abutment walls and jump span supporting columns that enclose a portion of Lake Rd are made of concrete. *The proposal meets this guideline.*

e. Wall Structure = Use scale defining devices to break up the longitudinal dimensions of buildings, creating a comfortable sense of enclosure by establishing an uninterrupted street edge.	
This guideline applies exclusively to buildings. However, this portion of the project does include a street-enclosing wall element: the portion of the abutment under the Lake Road jump span. This wall is to be crafted of faceted pre-cast concrete panels that will provide a quality texture and finish fitting for this public passageway. The faceted texture contributes to its "human scale" and, coupled with lighting under the span in this location, will result in a wall and space that is safe and comfortable at all times.	As proposed, the abutment wall (north side of Lake Rd) and jump span column treatments (south side of Lake Rd) are made of pre-cast concrete and textured with a formliner that resembles a rusticated masonry surface to create a unified appearance and visual interest at the pedestrian level. However, more information is needed to ensure that the textured wall and column surfaces are appropriately-scaled for visual interest, effectively break up the longitudinal dimensions of these structures, and sufficiently hide the form pattern. *As conditioned, the proposal meets this guideline.*
f. Retail Windows =Use windows that create an open and inviting atmosphere.	
No retail windows are proposed as part of the Kellogg Bridge application.	*This guideline is not applicable.*
g. Residential Bay Windows =Provide bays to add variety and visual interest to façade and interesting views and outdoor spaces from the interiors.	
No residential bay windows are proposed as part of the Kellogg Bridge application.	*This guideline is not applicable.*
h. Silhouette and Roofline = Create interest and detail in silhouette and roofline.	
The ribbon of steel and concrete that forms the primary character of the Kellogg Creek crossing is enhanced by the careful modulation of the pillars and railings, and the rhythm of the catenaries, and railings. These elements are enhanced by the more subtle play of light and shadow and color that will result from the weathering steel and its various connections and details, and the contrast in color and texture between the concrete and weathering steel. These elements and treatments cumulatively will contribute interest and detail in silhouette and roofline.	As proposed, the tubs provide the main horizontal element of the light rail bridge both structurally and visually. Tubs are proposed instead of I-beams in order to provide a clean and thin bridge profile. The use of weathering steel allows for the creation of a visually coherent ribbon-like structure with an organic, earth-tone quality. Cantilevered sides also serve to minimize its boxy appearance. Overall, these design and material choices serve to create a bridge with a simple, elegant silhouette. *The proposal meets this guideline.*
i. Rooftops = Integrate rooftop elements into building design.	
No rooftops are proposed as part of the Kellogg Bridge application.	*This guideline is not applicable.*
j. Green Architecture = New construction or building renovation should include sustainable materials and design.	
TriMet consistently applies the use of long lasting, high quality materials to ensure low	As proposed, the light rail bridge will be constructed of quality, durable materials with low lifecycle costs. The

maintenance costs for its facilities and enhance the quality of the communities. In this case, the use of concrete, weathering steel and galvanized metal have been designed and detailed in a manner that will ensure that the structure is sustainable by having permanent, quality materials with low life cycle costs. The steel elements, as well as the concrete, will include recycled content, and have been structurally designed to be as efficient as possible. Finally, a majority of the materials would be potentially recyclable - most readily the predominant use of steel - should the project ever have an end-of-use.	steel elements, as well as the concrete, include recycled content, and have been structurally designed to be as efficient as possible. Furthermore, a majority of the materials are potentially recyclable should the project ever have an end-of-use. Though not specifically described in the application, the applicant has indicated elsewhere that fluorescent tubes are proposed for the light fixtures underneath the jump span. While not specifically prohibited by the design guidelines, fluorescent tubes do not necessarily meet the intent or spirit of this guideline given the recent advancements in lighting technology. Consequently, more information is needed about the viability of other light fixtures and how they compare with fluorescent tubes with respect to energy efficiency and environmental sustainability to ensure this guideline is met. *As conditioned, the proposal meets this guideline.*
k. Building Security = Buildings and site planning should consider and employ techniques that create a safe environment.	
Safety is a prime design consideration for Tri Met in all its projects. TriMet's safety and security committee has reviewed the project and determined that in both construction and use, the anticipated construction techniques and overall design will contribute to a safe environment. TriMet has included intrusion detection on the bridge, to deter trespass, and will install CCTV at both ends of the bridge for an added layer of security.	As proposed, the light rail bridge includes safety railings on both sides for maintenance workers, intrusion detection devices on the bridge to deter trespassers, and CCTV surveillance. As proposed, the area underneath the jump span at Lake Rd includes lighting at sufficiently high enough levels for safe vehicular and pedestrian travel. However, more information is needed about what kinds of safety measures will be employed around the jump span columns to prevent climbing on the support beams and minimize hiding places. *As conditioned, the proposal meets this guideline.*
l. Parking Structures = Parking structures should be designed so that they appear like most other buildings in the downtown.	
No parking structures are proposed as part of the Kellogg Bridge application.	*This guideline is not applicable.*

LIGHTING GUIDELINES

Applicant Information	Recommended Findings
a. Exterior Building Lighting = Architectural lighting should be an integral component of the façade composition.	
There is no architectural lighting intended for the bridge overall, nor would it be appropriate in this environmentally sensitive area. However, lighting is being provided under the	As proposed, the area underneath the jump span at Lake Rd includes 4 Guth light fixtures mounted at or near the top of the abutment wall and each of the supporting columns. The applicant's photometric

Lake Road jump span. The lighting fixture has a minimum profile, has been discretely placed, and is of a finish that is compatible with the surrounding materials. It is also thematically consistent with other lighting and hardware elements incorporated elsewhere in the rail project design, and is also consistent with typical Milwaukie street elements. The light will wash the textured wall in a manner that heightens the aesthetic experience of the wall at night.	studies indicate that the fixtures would light this area to an average level of 5.10 foot candles. The applicant's narrative also states that the fixtures would wash the concrete wall and column surfaces, which are proposed to have horizontal bands of rock-textured surface treatments, creating both a visually interesting and safe pedestrian experience. The proposed lighting level creates a safe pedestrian environment from a purely technical standpoint. However, more information is needed to better understand how the proposed lighting would create a comfortable and attractive pedestrian environment including, but not limited to: • How the light from the light fixtures interacts with the underside of the jump span. • How the light from the light fixtures enhances the proposed wall treatments. • How the light fixtures compliment the style of the proposed wall treatments. • The degree to which the light fixtures are tamper resistant. No lighting is proposed on the light rail bridge or on the future pedestrian bridge at this time. Lighting on the light rail bridge is neither necessary nor appropriate, but lighting on the pedestrian bridge would be desirable. *As conditioned, the proposal will meet this guideline.*
b. Parking Lot Lighting = Ornamental street lights should be used to be compatible with downtown streetlight standards identified in the Public Area Requirements.	
No parking lots are proposed as part of the Kellogg Bridge application.	*This guideline is not applicable.*
c. Landscape Lighting = Lighting should be used to highlight sidewalks, street trees, and other landscape features. Landscape lighting is especially appropriate as a way to provide pedestrian safety during holiday periods.	
Lighting is provided under the Lake Road jump span, contributing to the comfort and safety of this street/sidewalk area. There is no other architectural or landscape lighting intended for the bridge, as it would not be appropriate in this environmentally sensitive area.	No landscape lighting is proposed as part of the Kellogg Bridge application. *This guideline is not applicable.*
d. Sign Lighting = Sign lighting should be designed as an integral component of the building and sign composition.	
No signs are proposed as part of the Kellogg Bridge application.	*This guideline is not applicable.*

SIGN GUIDELINES	
Applicant Information	**Recommended Findings**
a. Wall Signs	
b. Hanging or Projecting Signs	
c. Window Signs	
d. Awning Signs	
e. Information and Guide Signs	
f. Kiosks and Monument Signs	
g. Temporary Signs	
No signs are proposed as part of the Kellogg Bridge application.	*These guidelines are not applicable.*

Table 2: Willamette Greenway Findings

MMC Subsection 19.401.6 – APPROVAL CRITERIA The following shall be taken into account in the consideration of a greenway conditional use.		
	Criteria	**Findings**
A.	**Whether the land to be developed has been committed to an urban use, as defined under the State Willamette River Greenway Plan;**	An urban use, as defined in the State Willamette Greenway Plan, is a use that is part of the built environment and that is not natural, rural, or agricultural in character. The north end of the Kellogg Bridge site is in the south downtown area, which has been committed to an urban use for over 150 years. The bridge crosses Lake Rd and parallels the existing freight rail line as it crosses Kellogg Lake and McLoughlin Blvd. Kellogg Lake is a manmade lake that is dammed further downstream where it flows underneath McLoughlin Blvd. On the south side of Kellogg Lake is Kronberg Park. Kronberg Park is an undeveloped open space area that was used as a construction dumping site in the 1950's and is currently overrun with nonnative and invasive species along its banks. The bridge continues southward where it turns to the east, leaving the freight rail corridor behind and running parallel to McLoughlin Blvd, until its terminus at Park Ave. In summary, the Kellogg Bridge site has been the location of urban transportation infrastructure and urban open spaces for quite some time. *The proposal meets this criterion.*
B.	**Compatibility with the scenic, natural, historic, economic, and recreational character of the river;**	Kellogg Bridge, its associated staging area, and the future pedestrian bridge are compatible with the character of the area as described both here and in the Design Guidelines findings in Table 1. Both bridges will create new views to the Willamette River, Kellogg Lake, and Kronberg Park. Removal of invasive species and mitigation plantings will improve the scenic and environmental qualities of the area. The light rail bridge, which is immediately

		adjacent to the existing historic railroad trestle, builds on the role that both the rail and the river played in the history of Milwaukie's historic development, thus referencing Milwaukie's historical connection to the Willamette River. Lastly, the new bridge is part of a regional transit system that will bring new economic, recreational, and tourist activity to Milwaukie and the river. *The proposal meets this criterion.*
C.	**Protection of views both toward and away from the river;**	Much of the bridge will not be viewable from the Willamette River, nor will it obscure views toward the river, due to the presence of the existing freight rail trestle. As proposed, steel tubs provide the main horizontal element of the light rail bridge both structurally and visually. Use of steel reduces the thickness of the structure, creating a bridge with a thin profile that minimizes the blocking of any current views. Use of weathering steel allows the bridge to blend in with the natural setting around Kellogg Lake and any views beyond. The light rail bridge will provide passengers with unique views of Dogwood Park, Kronberg Park, Kellogg Lake, and the Willamette River to the west that are currently not available by any other means. Additionally, the future pedestrian bridge over Kellogg Lake would provide bicyclists and pedestrians with unique views of these areas as well. Due to bridge's impacts to the water quality resource and habitat conservation areas on either side of Kellogg Lake, natural resource mitigation is required and is detailed elsewhere in this document. The proposed mitigation plan includes native plantings between Kellogg Lake's ordinary high water and Kronberg Park's top of bank. In order to ensure that these mitigation plantings balance ecological restoration with future park development and the desire to maintain some views to Kellogg Lake, a more detailed tree planting plan for Kronberg Park is necessary. *As conditioned, the proposal meets this criterion.*
D.	**Landscaping, aesthetic enhancement, open space, and vegetation between the activity and the river, to the maximum extent practicable;**	The proposal includes revegetation of areas disturbed during construction of the Kellogg Bridge and mitigation plantings to offset the temporary and permanent impacts caused by the bridge and its associated staging area. The proposal indicates that the areas underneath the bridge between Lake Rd and McLoughlin Blvd and outside of the mitigation plan area will include landscaping, but no specific landscaping plan was included in the application. A landscaping plan needs to be provided for these areas that shows how they will be landscaped to the maximum extent practicable. *As conditioned, the proposal meets this criterion.*
E.	**Public access to and along the river, to the greatest possible degree, by appropriate legal means;**	The light rail bridge will not block any access that currently exists to Kellogg Lake or the Willamette River. The light rail station in downtown Milwaukie will be located just two blocks from Riverfront Park, which provides direct legal access to the Willamette River. The light rail bridge has also been engineered to accommodate a future pedestrian bridge, which will provide additional access through and to the greenway area along Kellogg Lake and in Kronberg Park.

		The proposal meets this criterion.
F.	**Emphasis on water-oriented and recreational uses;**	The light rail bridge is restricted to light rail trains and passengers. However, new views of Kellogg Lake and the Willamette River from the light rail bridge may attract new users to the area. The future pedestrian bridge will provide residents and visitors with new recreational opportunities and connections. *The proposal meets this criterion.*
G.	**Maintain or increase views between the Willamette River and downtown;**	The light rail bridge will provide passengers with unique views of downtown Milwaukie, including Dogwood Park, Kronberg Park, Kellogg Lake, and the Willamette River to the west that are currently not available by any other means. Additionally, the future pedestrian bridge over Kellogg Lake would provide bicyclists and pedestrians with unique views of these areas as well. Neither bridge will block views between the Willamette River and downtown Milwaukie. *The proposal meets this criterion.*
H.	**Protection of the natural environment according to regulations in the Natural Resource overlay Zone;**	Kellogg Bridge, its associated staging area, and the future pedestrian bridge are all subject to the City's water quality resource and habitat conservation area regulations. See Tables 3 and 4 below for detailed findings related to compliance with these regulations. *The proposal meets this criterion.*
I.	**Advice and recommendations of the Design and Landmark Committee, as appropriate;**	The Design and Landmarks Committee (DLC) reviewed the Kellogg Bridge and future pedestrian bridge design during a series of informal advisory meetings. The proposal was substantially modified and improved in response to these meetings. Additionally, the DLC evaluated both bridges at a formal design review meeting on October 17, 2011 and recommended findings and conditions of approval that have been incorporated into the final findings and conditions of approval forwarded to the Planning Commission for their consideration on November 8, 2011. *The proposal meets this criterion.*
J.	**Conformance to applicable Comprehensive Plan policies;**	The applicable Comprehensive Plan Policies are individually addressed below in the next section of this table. *The proposal meets this criterion.*
K.	**The request is consistent with applicable plans and programs of the Division of State Lands;**	The entire PMLR project was referred to the Division of State Lands (DSL), which reviewed the project and had no objections. A Joint Permit Application was submitted to DSL and US Army Corp of Engineers (USACOE) on June 30, 2010. DSL issued a Removal/Fill permit for the project on November 17, 2010, while the USACOE issued a Section 404 permit on June 17, 2011, which required DSL approval/consultation prior to issuance. *The proposal meets this criterion.*
L.	**A vegetation buffer plan meeting the conditions of Subsections 19.401.8.A**	A water quality resource report and mitigation plan has been provided that satisfies the greenway vegetation buffer plan requirements.

	through C.	*The proposal meets this criterion.*
MMC Subsection 19.401.6.J – CONFORMANCE TO APPLICABLE COMPREHENSIVE PLAN POLICIES The following comprehensive plan policies have been found to be applicable.		
	Policy	**Findings**
	Chapter 1: **Citizen Involvement** • **Objective #2 (Public Participation)** • **Objective #3 (Communication)**	This City and TriMet have provided substantial and multiple opportunities for citizen involvement, including but not limited to community meetings, stakeholder meetings, and work sessions with the Design and Landmarks Committee, Planning Commission, and City Council. All meetings have been broadly advertised and widely attended. Additionally, the City and TriMet have maintained web sites with up-to-date project information, staffed information booths at community events, and drafted press releases and newsletter articles on a regular basis. *The proposal conforms with this policy and its objectives.*
	Chapter 3: **Environmental and Natural Resources** **Natural Hazards Element** • **Objective #1 (Floodplain)** • **Objective #2 (Seismic Conditions)** **Open Spaces, Scenic Resources, and Natural Resources Element** • **Objective #1 (Open Space)** • **Objective #2 (Natural Resource Areas)** • **Objective #3 (Scenic Areas)** **Air, Water, and Land Resources Quality Element** • **Objective #1 (Regional Air Quality)** • **Objective #2 (Local Air Quality)** • **Objective #3 (Noise)** • **Objective #4**	**Natural Hazards Element:** The two sets of columns on either side of Kellogg Lake are located above ordinary high water but within the 100-year floodplain. The project has been designed to ensure elements within the floodplain have been minimized, and will be unaffected by any future inundation. The project has been engineered to meet or exceed all applicable seismic requirements. **Open Spaces, Scenic Resources, and Natural Resources Element:** Kellogg Lake is identified in Appendix 2 as Site #22 with riparian, habitat, and scenic values. The light rail bridge, its associated staging area, and the future pedestrian bridge have been designed to minimize impacts to Kellogg lake and the surrounding natural areas. No in-water piers are proposed, and the light rail bridge has been structurally designed to accommodate a pedestrian bridge without increasing the overall footprint of the bridge structure. Structural elements have been minimized as much as possible to minimize view impacts within and through the greenway area. To the extent that protected natural resource areas are affected, they will be enhanced through the removal of invasive and non-native plantings, the introduction of new appropriate riparian habitat, and the removal of approximately 12 derelict piles from Kellogg Lake. The removal of the derelict piles will restore approximately 60 square feet of Essential Fish Habitat since the piles currently provide perches for piscivorous birds, leach contaminants, and inhibit natural reclamation of shallow water habitat. In-water Best Management Practices will be utilized to prevent downstream turbidity during construction of the bridge and removal of the derelict piles. In-water work will occur only during the legally specified in-water work time period.

	(Water Quality) **Appendix 2: Kellogg Lake identified as Site #22 with riparian, habitat, and scenic values**	**Air, Water, and Land Resources Quality Element:** The light rail bridge is part of a regional rail system that is a fundamental strategy for improving air quality, both regionally and locally, and is a cornerstone element of the Regional Non-Attainment and Air Quality Maintenance Plans of Metro and DEQ. Shifting transportation modes from automobile to rail has yielded significant positive air quality results elsewhere in the region. The new PMLR line is expected to build on that success. As a result of the project's noise analysis, noise reduction has been integrated into the project through the introduction of sound walls on private property and on the Kellogg Bridge itself. Homes identified by the analysis will receive upgrades to windows and insulation, as necessary, to reduce noise to acceptable levels per federal guidelines for transit projects. Additionally, the anticipated reduction of vehicle traffic along this corridor will further reduce noise at the local level. The habitat value improvements in the vicinity of Kellogg Lake will contribute to the quality of that resource. The bridge itself has been designed to minimally impact the lake through efficient design, limitations on in-water work, the placement of permanent structural elements outside of the water resource, and the removal of 12 derelict piles. *The proposal conforms with this policy and its objectives.*
	Chapter 4: Land Use **Economic Base and Industrial/Commercial Land Use Element** • **Objective #1 (Economic Development)** • **Objective #12 (Town Center)** **Recreational Needs Element** • **Objective #7 (Riverfront Recreation)** **Willamette Greenway Element** • **Objective #3 (Land Use)** • **Objective #5**	**Economic Base and Industrial/Commercial Land Use Element:** Light Rail has consistently demonstrated its role in stimulating economic development in a number of ways. It increases mobility, transportation options, and capacity, without widening roads, which allows for increased economic development within station areas. It serves to define and stimulate targeted growth for populations, businesses, and industries. The PMLR line and the bridge will thus serve to help implement and actuate Milwaukie's Town Center Plan, emphasizing downtown and contributing additional infrastructure improvements that will further the attractiveness and accessibility of the Town Center. This augmented urban environment is anticipated to stimulate investment in Milwaukie and contribute to its ongoing economic growth. **Recreational Needs Element:** The light rail station in downtown Milwaukie will provide convenient access to Riverfront Park and the Trolley Trail. Views of Kellogg Lake and the Willamette River from the light rail bridge may attract new users to the area, and the future pedestrian bridge will provide residents and visitors with new recreational opportunities and connections.

	(Public Access and View Protection) **Neighborhood Element** • **Objective #2 (Neighborhood Needs Guideline)** • **Objective #4 (Community Open Space)**	**Willamette Greenway Element:** Refer to the Willamette Greenway findings in the first section of this table for more detailed findings that pertain to this policy. In summary, the light rail bridge is non-water dependent, does not interface directly with the river, and will contribute to the access and enjoyment of the river and the greenway. The bridge has been carefully designed to minimally impact the visual corridors to the Willamette River and Kellogg Lake through its slender profile, selection of aesthetically and visually appropriate materials, and co-location with the existing historic railroad trestle. **Neighborhood Element:** Light rail is a substantial public facility that will contribute to the economic vitality of the area. The light rail bridge and PMLR line are a part of a regional transportation strategy that is anticipated to result in increased traffic safety, improved traffic circulation, and less congestion. Mitigation for impacts caused by the light rail bridge and its associated staging area will improve the environmental quality around Kellogg Lake and within Kronberg Park. The future pedestrian bridge will provide access to, and appreciation of, these community open spaces. *The proposal conforms with this policy and its objectives.*
	Chapter 5: Transportation, Public Facilities, and Energy Conservation **Transportation Element (Transportation System Plan)** • **Chapter 7 (Public Transit Element)** **Energy Conservation Element** • **Objective #2 (Transportation System)**	**Transportation Element (Transportation System Plan):** High capacity transit (light rail) is identified as a specific system deficiency in Milwaukie along this corridor. The light rail bridge, as one element of the larger PMLR project, implements this aspect of the City's transit master plan. **Energy Conservation Element:** This fundamentally transformative contribution to mass transit in the area will result in vast increases in the use of the transit system, with associated accrued energy conservation at household, local, and regional levels. *The proposal conforms with this policy and its objectives.*
MMC Subsection 19.905.4 – CONDITIONAL USE APPROVAL CRITERIA All uses in the Willamette Greenway Zone are subject to the conditional use provisions of Section 19.905. Establishment of a conditional use shall be approved if the following criteria are met.		
	Criteria	**Findings**
1.	**The characteristics of the lot are suitable for the proposed use considering size, shape, location, topography,**	The location of the light rail alignment through Milwaukie, including the crossing of Kellogg Lake and McLoughlin Blvd in the existing freight rail corridor, was extensively evaluated at the local and regional levels and eventually approved by Metro in 2008. As such, the characteristics of the site are considered suitable for the light rail

	existing improvements, and natural features.	bridge, its associated staging area, and the future pedestrian bridge. *The proposal meets this criterion.*
2.	**The operating and physical characteristics of the proposed use will be reasonably compatible with, and have minimal impact on, nearby uses.**	The location of the light rail alignment through Milwaukie, including the crossing of Kellogg Lake and McLoughlin Blvd in the existing freight rail corridor, was extensively evaluated at the local and regional levels and eventually approved by Metro in 2008. Metro's 2008 land use final order (LUFO) extended the original alignment southward through downtown Milwaukie to a new terminus at Park Ave in Clackamas County in order to be consistent with the Locally Preferred Alternative supported by the City. In other words, light rail service to and through Milwaukie, including the location of the Kellogg Bridge, has already been approved. Mitigation measures proposed by the applicant and imposed upon the applicant by the City through conditions of approval will ensure that the operating and physical characteristics of the light rail bridge, its associated staging area, and the future pedestrian bridge will be compatible with surrounding uses to the greatest extent practicable. *The proposal meets this criterion.*
3.	**All identified impacts will be mitigated to the extent practicable.**	Noise, vibration, lighting, visual, and natural resource impacts associated with the light rail bridge and pedestrian bridge will be mitigated to the greatest extent practicable as described in detail elsewhere in this document and as conditioned by the City. Temporary construction impacts will be minimized to the greatest extent practicable through TriMet's Conduct of Construction Plan and the City's construction and noise ordinances. *As conditioned, the proposal meets this criterion.*
4.	**The proposed use will not have unmitigated nuisance impacts, such as from noise, odor, and/or vibrations, greater than usually generated by uses allowed outright at the proposed location.**	The light rail system does not generate odor. All potential impacts from noise and vibration identified by the project's Noise and Vibration analysis will be mitigated as much as practicable through trackbed design, sound walls, and building insulation, as required by federal law. All light rail vehicles have electric propulsion systems and are designed with "skirts" to minimize noise from metal wheels running on rails. No sound walls are proposed on the bridge structure as the tracks curve near the McLoughlin Blvd crossing; however, the 2nd floor residence at 11923 SE McLoughlin Blvd will be upgraded to mitigate for noise impacts at this location. Additionally, a lubrication system, similar to what is used on other existing light rail lines curves, will be installed on this curve to reduce wheel squeal. Finally, a sound wall is proposed on the bridge structure between Bluebird St and River Rd, which is just south of this location and outside the area of this application's review, to abate noise impacts on nearby residences to the west. No lighting is proposed on the light rail bridge or future pedestrian bridge at this time. Lighting is proposed only under the jump span

		over Lake Rd, and no lighting impacts to nearby natural resources areas or residential uses have been identified. Analysis of lighting impacts from the train itself was not included in the application. More information is needed to understand what, if any, impacts the train light will have on nearby residential uses and drivers on McLoughlin Blvd as the train tracks curve near the McLoughlin Blvd crossing. *As conditioned, the proposal meets this criterion.*
5.	**The proposed use will comply with all applicable development standards and requirements of the base zone, any overlay zones, and the standards in Section 19.905.**	The applicable development standards of the Downtown Zones, Willamette Greenway Zone, Water Quality Resource Areas, and Habitat Conservation Areas are addressed in detail elsewhere in this document. *The proposal meets this criterion.*
6.	**The proposed use is consistent with applicable Comprehensive Plan policies related to the proposed use.**	The applicable Comprehensive Plan Policies are individually addressed in the middle section of this table. *The proposal meets this criterion.*
7.	**Adequate public transportation facilities and public utilities will be available to serve the proposed use prior to occupancy pursuant to Chapter 19.700.**	The project is a public transportation facility. As such, Chapter 19.700 does not apply to this project, but required improvements to accommodate the project through downtown are subject to the City's Public Works Standards, which include requirements for undergrounding of utilities in downtown Milwaukie. The applicant is working with PGE to ensure that necessary utility upgrades are made to accommodate the project's electrical needs. *The proposal meets this criterion.*

Table 3: Water Quality Resource Findings

MMC Subsection 19.402.9.G – ALTERNATIVES ANALYSIS An alternatives analysis shall be included in the application that demonstrates the following.		
	Requirement	**Findings**
1.	**No practicable alternatives to the requested development exist that will not disturb the Water Quality Resource Area.**	Kellogg Bridge: The PMLR alignment has been vetted through a protracted National Environmental Policy Act (NEPA) process. No practicable alternatives were identified through that process that were supported by the City of Milwaukie and that also met the Project's Purpose and Need Statement. As such, a light rail bridge crossing is needed at this location to extend the alignment through Milwaukie to its terminus at Park Ave in Clackamas County. The final alignment, site placement, and specific structural elements for this crossing have been designed to minimize all unavoidable disturbances to the WQR

		area in this area, including the more expensive option of placing all bridge supports above the ordinary high water level to avoid permanent in-water impacts. Staging Area: The temporary construction staging area for the bridge is immediately adjacent to the Kellogg Bridge site and has been minimized in size as much as possible so as not to impact the WQR area any more than necessary. A construction staging area on the north bank of Kellogg Lake was evaluated and rejected because of its more limited vehicular access and steep slopes. Off-site staging areas were also evaluated and rejected because of the number of additional vehicle trips that would be generated. The flat and accessible area within Kronberg Park adjacent to the construction site is the most logical location for construction staging. No permanent structures will be located within the Kronberg Park WQR area, and the site will be returned to an equal or better condition once construction is complete. *This requirement is met.*
2.	**Development in the Water Quality Resource Area has been limited to the area necessary to allow for the proposed use.**	Kellogg Bridge: Development in the WQR area has been limited to the area necessary for construction and placement of the light rail bridge. The bridge is located at a narrow point in Kellogg Lake, and is both perpendicular to the bank and within an existing freight rail corridor. The width of the bridge is the minimum necessary to structurally support the light rail crossing, and the use of steel has minimized the number of piers needed to support the bridge span. As a result, no in-water piers are proposed, and WQR area is minimized to the greatest extent possible. Staging Area: The size of the staging area has been limited as much as possible to allow for the construction of both a temporary bridge and the permanent light bridge. On the east side of the existing freight rail bridge. The staging area is located immediately adjacent to the bridge site to consolidate the areas of impact, and is limited to 50 feet in width, which is approximately 9% of the total Kronberg Park area. *This requirement is met.*
3.	**The Water Quality Resource Area can be restored to an equal or better condition in accordance with Table 19.402.9.E.**	The current condition of the WQR area is degraded. A mitigation plan has been developed to compensate for the unavoidable impacts to this area pursuant to Table 19.402.9.E. The proposed mitigation plan will improve the current conditions and put the area on a trajectory toward providing better water quality function and habitat values. Specific elements of the plan include: • Restoration of all WQR areas temporarily impacted by

		construction with appropriate native plants. • Mitigation for all WQR areas permanently impacted by the Kellogg Bridge (4750 sq. ft.) at a 1:1 replacement ratio on the bank of Kronberg Park outside of the construction limits between ordinary high water and top of bank. (More information about the square footage of all the mitigation areas is needed to ensure a minimum 1:1 replacement ratio in Kronberg Park for the mitigation area outside the construction limits.) • Mitigation for all HCA areas permanently impacted by the Kellogg Bridge (3900 sq. ft.) at a 1:1 replacement ratio on the bank of Kronberg Park outside of the construction limits between ordinary high water and top of bank. (More information about the square footage of all the mitigation areas is needed to ensure a minimum 1:1 replacement ratio in Kronberg Park for the mitigation area outside the construction limits.) • Removal invasive and nonnative species from within the construction limits and the Kronberg Park mitigation site. • Monitoring and maintaining plantings for five years with a target survival rate of 80%. The mitigation plan took the need for pedestrian access through this area and future park development into consideration. However, to better balance ecological restoration with safe pedestrian access and future park redevelopment, the mitigation plan would benefit from the following refinements: • Reduce the shrub density to 6' on center underneath the bridge structure to increase visibility. • Place lower shrubs (e.g. sword ferns and low Oregon grape) closer to areas where pedestrians are likely to walk in the future to access the future pedestrian bridge to ensure a safe pedestrian environment. • Show the existing trees on the Kronberg Park bank in the proposed mitigation area as being retained on the mitigation plan or provide an explanation for their removal. • Add some shrubs above top of bank on the Kellogg Lake north bank in the water quality resource area on the mitigation plan or provide an explanation for their exclusion. • Incorporate a few oaks into the mitigation plan to replace the one that will be removed by this project. Consider replacing 3 of the proposed Douglas firs with Oregon white oaks in the Kronberg Park WQR area. Oaks should be planted at top of bank or just up from top of bank. No other trees should be planted within 20 feet. This could be a mechanism for eventually providing or maintaining views of the water, which is consistent with the Willamette Greenway view protection

		criterion that applies to this area. • Add more flowering shrubs that provide wildlife habitat. Consider reducing the amount of common snowberry (from 100 to 40) and adding red-flowering currant (20), ocean-spray (20), and blue elderberry (20) in the Kronberg Park WQR area. • Add herbaceous plant species to the native grass species mix to provide a food source for native pollinators. Selecting species that bloom at different times throughout the growing season will provide a constant food source. The approval of the application has been conditioned to ensure the mitigation plan is implemented as proposed and as altered by these findings. *As conditioned, this requirement is met.*
4.	**An explanation of the rationale behind choosing the alternative selected, including how adverse impacts to resource areas will be avoided and/or minimized.**	Kellogg Bridge: The proposed alignment, which includes construction of a light rail bridge over Kellogg Lake, was selected based on its ability to balance transit benefits with environmental, construction, social and economic impacts. While several alternatives may have resulted in slightly lower impacts to the WQR areas around Kellogg Lake, they were not deemed practicable when analyzing effects on the overall project and to other environmental considerations around the Kellogg Lake area. The project minimized impacts at Kellogg Lake by aligning the bridge as perpendicular as practicable to the shore line and placing piers above current ordinary high water (OHW). An alignment that resulted in less over-water structure was evaluated to the west of the existing railroad bridge, but it was not practicable due to constraints within the City of Milwaukie and interactions with the existing railroad alignment. The alignment through downtown Milwaukie would have to have changed to the west of the existing rail line, resulting in much higher impacts to residences, businesses, and schools; and likely impacting more water quality and habitat resources at Crystal Creek and Spring Creek. An alternative design placed the piers and abutments for the bridge above the top of bank (TOB) of Kellogg Lake, but the depth of the span would have been inordinately thick to support a structure so massive. It would have also had to be much taller to account for this depth, resulting in much higher visual impacts and potentially unsafe grades on the approaches. Therefore this alternative was determined to not be practicable. Another alternative placed a pier below the existing OHW level with the assumption that the level would be lower once the dam downstream of the bridge was removed. During advanced design, the one pier was moved to above the OHW. This change resulted in

		lower impacts to Kellogg Lake while changing visual and grade elements negligibly and was advanced as the proposed design option with the least impacts. Different construction alternatives were considered for placement of the bridge piers. It was determined that drilled shaft construction techniques conducted from a work bridge would greatly reduce hydroacoustic impacts to fish and other aquatic species. Staging Area: The temporary construction staging area for the bridge is immediately adjacent to the Kellogg Bridge site and has been minimized in size as much as possible so as not to impact the WQR area any more than necessary. A construction staging area on the north bank of Kellogg Lake was evaluated and rejected because of its more limited vehicular access and steep slopes. Off-site staging areas were also evaluated and rejected because of the number of additional vehicle trips that would be generated. The flat and accessible area within Kronberg Park adjacent to the construction site is the most logical location for construction staging for the bridge. Several measures have been employed to avoid and/or minimize impacts to the WQR by the light rail bridge and its associated staging area. They are as follows: • The bridge is proposed at a narrow point in Kellogg Lake that is both perpendicular to the bank and within an existing freight rail corridor. • The width of the bridge is the minimum necessary to structurally support the bridge span, and the use of steel has minimized the number of piers needed to support the bridge span. No in-water piers are proposed. • The width of the columns is the minimum necessary to structurally support the light rail bridge. • Over-water and in-water construction procedures will minimize turbidity and contamination. • The construction staging area is proposed immediately adjacent to the bridge site to consolidate and contain impacts. • A mitigation plan has been developed to compensate for the unavoidable temporary and permanent impacts to this area. The proposed mitigation plan will improve the current conditions and put the area on a trajectory toward providing better water quality function and habitat values. The approval of the application has been conditioned to ensure the mitigation plan is implemented as proposed and as altered by these findings. • A Construction Management Plan will be developed to ensure

		that existing resources are protected during construction. The approval of the application has been conditioned to ensure the protection of the existing resources during construction. *As conditioned, this requirement is met.*
MMC Subsection 19.402.9.I – MITIGATION PLAN A mitigation plan shall be included in the application that includes the following information.		
1.	**A description of adverse impacts that will be caused as a result of development.**	Construction of the light rail bridge will require removal of all vegetation within the defined construction limits, including the temporary staging area in Kronberg Park. The area underneath the bridge will be permanently impacted. Though it will be vegetated after construction is complete, the bridge effectively prevents this area from being restored to a natural state. No trees are proposed underneath the bridge for practical reasons. Bridge construction will result in: • 4,750 sq. ft. of permanent impacts • 3,430 sq. ft. of temporary impacts • Removal of 8 trees greater than 6 inches in diameter at breast height (DBH) Short-term impacts include a slight reduction in the shading of Kellogg Lake and loss of tree canopy habitat. These impacts will gradually diminish over time as the mitigation plantings mature. *This requirement is met.*
2.	**An explanation of how adverse impacts to resource areas will be avoided, minimized, and/or mitigated in accordance with, but not limited to, Table 19.402.9.E.**	An explanation of how adverse impacts to WQR areas will be avoided, minimized, and/or mitigated is included under Subsections 19.402.9.G.3 and 4 above. Though not required as mitigation for impacts to the WQR areas around Kellogg Lake, derelict piles will be removed as part of this project that will restore approximately 60 square feet of Essential Fish Habitat. *This requirement is met.*
3.	**A list of all responsible parties including, but not limited to, the owner, applicant, contractor, or other persons responsible for work on the development site.**	TriMet is the principal party responsible for work on the light rail bridge and its associated staging area. Additional detailed information will be made available to the City prior to construction as specific construction contracts are executed. *This requirement is met.*
4.	**A map showing where the specific mitigation activities will occur.**	The required map has been provided. *This requirement is met.*
5.	**An implementation**	All in-water work is to be done in accordance with the ODFW in-

	schedule, including timeline for construction, mitigation, mitigation maintenance, monitoring, reporting, and a contingency plan. All in-stream work in fish-bearing streams shall be done in accordance with the Oregon Department of Fish and Wildlife in-stream timing schedule.	water work schedule between July 15 – September 30. Bareroot plant materials will be planted between December 1 and February 28th following the completion of heavy construction. TriMet will monitor and maintain the site for five years after the initial planting. Maintenance will include providing mulch rings around trees and shrubs, watering, and weeding as necessary to allow the native plant community to mature to a self-sustaining condition. The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five year period, TriMet will replace with new plants to achieve an overall 80% survival rate. TriMet will submit an annual report to the Planning Director documenting the survival of the trees and shrubs on the mitigation site for a period of five years. The approval of the application has been conditioned to ensure the mitigation plan is implemented as proposed and as altered by these findings. *As conditioned, this requirement is met.*

Table 4: Habitat Conservation Area Findings

Metro Title 13 Section 6 – DEVELOPMENT STANDARDS APPROVAL CRITERIA (KRONBERG PARK) The development standards described in this section apply to all development that occurs within Habitat Conservation Areas unless the applicant chooses to use the alternative discretionary standards in Section 7. The applicant chose to use the standards in Section 6 for the Kronberg Park site.		
	Standard	**Finding**
1.	**Application Requirements.** Applications for a building permit or development permit must provide a development plan and accompanying narrative explanation that includes the following information in addition to any other building permit or development permit requirements.	The required site plan has been provided. No permanent structures are proposed in the Kronberg Park HCA. A portion of the park will be used as temporary construction staging for the Kellogg Bridge. There is a total of 1,165 sq. ft. of HCA within the construction limits. 245 sq. ft. are mapped as Low HCA and 920 sq. ft. are mapped as Moderate HCA. One 42-inch DBH Oregon white oak is within the construction limits. All vegetation (including the one oak tree) within the construction limits will be removed. The total size of the HCA on Kronberg Park is greater than one acre. However, disturbance to the HCA will be less than one acre. Only minimal grading will be required in the HCA for access and staging. *This standard is met.*
2.	**Development in HCAs.** The following development standards apply to all development that occurred with the HCA except for exempted uses and conditioned activities addressed in Section 3 of this ordinance and utility facilities addressed in subsection 6(D) of this ordinance.	Kronberg Park is about 3.5 acres in size and contains 650 sq. ft. of Low HCA and 21,600 sq.ft. of Moderate HCA. Use of the park for construction staging will disturb 245 sq. ft. (38% of the total Low) and 920 sq. ft. (4% of the total Moderate) of the HCA on the site. The disturbance to the HCA will be temporary and will not result in a change to the HCA boundaries in the park. The mitigation plan took the need for pedestrian access through this area and future park development into consideration. Mitigation plantings are proposed between the OHW of Kellogg Lake and TOB so as not to interfere with future park development or pedestrian bridge access. To better balance ecological restoration with safe pedestrian access and future park redevelopment, the mitigation plan would benefit from the following refinements: • Reduce the shrub density to 6 ft on center underneath the bridge structure to increase visibility. • Place lower shrubs (e.g. sword ferns and low Oregon grape) closer to areas where pedestrians are likely to walk in the future to access the future pedestrian bridge to ensure a safe pedestrian environment. • Add herbaceous plant species to the native grass species mix to provide a food source for native pollinators. Selecting species that bloom at different times throughout the growing season will provide a constant food source.

		As conditioned, this standard is met.
3.	**Mitigation requirements for disturbance in HCAs**. In order to achieve the goal of reestablishing forested canopy that meets the ecological values and functions described in section 1(A) of this ordinance, tree replacement and vegetation planting are required when development intrudes into a HCA according to the following standards pertaining to: • Plant types and densities • Plant size • Plant spacing • Plant diversity • On-site mitigation • Invasive vegetation removal • Tree and shrub survival • Survival Enhancement • Monitoring and reporting	Mitigation planting within the Kronberg Park HCA has been designed to meet the mitigation requirements of Section 6(E)(1)(b) Mitigation Option 2. Because the site only has one tree, Mitigation Option 2 results in more tree and shrub plantings than Option 1. Option 2 will require the planting of 12 trees and 58 shrubs. All plantings will occur on Kronberg Park and contiguous to the HCA in the adjacent water quality resource area between OHW and TOB. The planting schedule includes 1-inch trees and 18 – 24-inch height shrubs. All trees and shrubs will be planted and spaced per the standards and will meet the plant diversity standards. Seven different types of trees and 12 different types of shrubs are proposed. No more than 50 of the trees are of the same genus. All Invasive non-native and noxious vegetation will be removed within the mitigation area prior to planting. The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five-year period, TriMet will replace with new plants to achieve an overall 80% survival rate. TriMet will submit an annual report to the Planning Director documenting the survival of the trees and shrubs on the mitigation site for a period of five years. To enhance survivability: • Mulch rings will be provided around trees and shrubs per the standard. • Vegetation suitable to the site, with a high probability of survivability under natural circumstances will be used and replaced as necessary. • Watering will be provided as necessary to allow the native plant community to mature to a self-sustaining condition. • Weeds will be controlled throughout the maintenance period. The approval of the application has been conditioned to ensure the mitigation plan is implemented as proposed and as altered by these findings. *As conditioned, this standard is met.*
Metro Title 13 Section 7 – ALTERNATIVE DISCRETIONARY DEVELOPMENT STANDARDS APPROVAL CRITERIA (KELLOGG LAKE) Applicants may choose to use the alternative discretionary development standards provided in Section 7 rather than the development standards provided in Section 6. The applicant chose to use the standards in Section 7 for the UPRR and ODOT rights-of-way site as they afforded the opportunity to propose off-site mitigation and more appropriate site-specific planting densities for the areas underneath and immediately adjacent to the bridge structure.		
	Criteria	**Finding**
1.	**All application requirements in subsection 7(D)(1) shall**	The application contained all the required materials, including an impact evaluation, alternatives analysis, and mitigation plan.

	be met.	Three separate areas will be impacted by the Kellogg Bridge: • Kellogg Lake North HCA is located within the UPRR right-of-way and contains 840 sq ft of Low HCA and 3,210 sq ft of Moderate HCA for a total of 4,050 sq ft of HCA within the construction limits. • Kellogg Lake South HCA is located within the UPRR right-of-way and contains 650 sq ft of Low HCA within the construction limits. • Willamette HCA is located within the ODOT right-of-way and contains 1,980 sq ft of Low HCA consisting of 410 sq ft of pavement (McLoughlin Blvd), 209 sq ft of compacted gravel sidewalk, and 1,280 sq ft of nonnative invasive groundcover. Construction of the light rail bridge will require the removal of all vegetation within the defined construction limits. The area underneath the bridge is considered a permanent impact. Though it will be vegetated after construction, the bridge effectively prevents this area from being restored to a natural state. As such, no trees are proposed underneath the bridge for practical reasons. The impact evaluation identified both permanent and temporary impacts as a result of Kellogg Bridge construction: • 2,620 sq. ft. of permanent impacts to the Kellogg Lake HCA. • 2,080 sq. ft. of temporary impacts to Kellogg Lake HCA. • 1,280 sq. ft. of permanent impacts to the Willamette HCA. • Removal of 8 trees greater than 6 inches in diameter at breast height (DBH). However, no grading or bridge supports are proposed within the HCAs. Disturbed HCAs will be revegetated and additional areas outside the construction limits will receive mitigation plantings to offset permanent HCA impacts. The proposed mitigation plan compensates for unavoidable detrimental impacts to ecological functions as identified in the impacts evaluation. Specific elements of the plan include: • Restoration of all HCA areas temporarily impacted by construction with appropriate native plants, with the exception of the Willamette HCA where no plantings are proposed. • Mitigation for all HCA areas permanently impacted by the Kellogg Bridge (3900 sq. ft.) at a 1:1 replacement ratio on the bank of Kronberg Park outside of the construction limits between ordinary high water and top of bank. (More information about the square footage of all the mitigation areas is needed to ensure a minimum 1:1 replacement ratio in Kronberg Park for the mitigation area outside the construction limits.) • Removal of invasive and nonnative species from within the construction limits and the Kronberg Park mitigation site.

		• Monitoring and maintaining plantings for five years with a target survival rate of 80%. The approval of the application has been conditioned to ensure the mitigation plan is implemented as proposed and as altered by these findings. The PMLR alignment has been vetted through a protracted National Environmental Policy Act (NEPA) process. The proposed alignment was selected based on balancing its transit benefits with its environmental, construction, social, and economic impacts. No practicable alternatives were identified through that process that were supported by the City of Milwaukie and that also met the Project's Purpose and Need Statement. As such, a light rail bridge crossing is needed at this location to extend the alignment through Milwaukie to its terminus at Park Ave in Clackamas County. The final alignment, site placement, and specific structural elements for this crossing have been designed to minimize all unavoidable disturbances to this area, including the more expensive option of placing all bridge supports above the ordinary high water level to avoid permanent in-water impacts. An alignment that resulted in less over-water structure was evaluated to the west of the existing railroad bridge, but it was not practicable due to constraints within the City of Milwaukie and interactions with the existing railroad alignment. An alignment through downtown Milwaukie would have to have moved to the west of the existing rail line, resulting in much higher impacts to residences, businesses, and schools; and likely impacting more water quality and habitat resources at Crystal Creek and Spring Creek. An alternative design placed the piers and abutments for the bridge above the top of bank (TOB) of Kellogg Lake, but the depth of the span would have to have been inordinately thick to support a structure so massive. It would have also had to be much taller to account for this depth, resulting in greater visual impacts and potentially unsafe grades on the approaches. Therefore this alternative was determined to not be practicable. Another alternative placed a pier below the existing OHW level with the assumption that the level would be lower once the dam downstream of the bridge was removed. During advanced design, the one pier was moved to above the OHW level. This change resulted in lower impacts to Kellogg Lake while changing visual and grade elements negligibly and was advanced as the proposed design option with the least impacts. *As conditioned, this criterion is met.*
2.	**Avoid.** An applicant shall first avoid the intrusion of	Other alignments that did not include a crossing of Kellogg Lake at this location were considered but not advanced. The resource area

	development into the HCA to the extent practicable.	is avoided to the extent that the footprint of the bridge structure is as small as possible for its intended purpose of carrying light rail trains and does not include any bridge support within the HCAs. *This criterion is met.*
3.	**Minimize.** If the applicant demonstrates that there is no practicable alternative that will not avoid disturbance of the HCA, then the development proposed by the applicant within the HCA shall minimize detrimental impacts to the extent practicable.	The project has minimized intrusion of the light rail bridge into the HCAs to the extent practicable. All bridge supports are located outside of the HCAs. The HCAs will be disturbed during bridge construction but will be revegetated once construction is complete with appropriate plants from the Milwaukie Plant List. *This criterion is met.*
4.	**Mitigate.** If the applicant demonstrates that there is no practicable alternative that will not avoid disturbance of the HCA, then development must mitigate for adverse impacts to the HCA. All proposed mitigation plans must meet the following standards. • The mitigation plan shall demonstrate that it compensates for detrimental impacts to ecological functions provided by HCAs. • Mitigation shall occur on the site of the disturbance, to the extent practicable. Off-site mitigation shall be approved if the applicant has demonstrated that it is not practicable to complete the mitigation on-site. • All re-vegetation plantings shall be with native plants listed on the Metro Native Plant	The proposed mitigation plan compensates for unavoidable detrimental impacts to ecological functions as identified in the impacts evaluation. It takes into consideration the resource values that require mitigation, the specific growing conditions under and near the bridge, pedestrian access through the site to the future pedestrian bridge, and the redevelopment potential of Kronberg Park. Specific elements of the plan include: • No grading or bridge supports within the HCAs. • Restoration of all HCA areas temporarily impacted by construction with appropriate native plants, with the exception of the Willamette HCA where no plantings are proposed. • Mitigation for all HCA areas permanently impacted by the Kellogg Bridge (3900 sq. ft.) at a 1:1 replacement ratio on the bank of Kronberg Park outside of the construction limits between ordinary high water and top of bank. • Removal of invasive and nonnative species from within the construction limits and the Kronberg Park mitigation site. • Monitoring and maintaining plantings for five years with a target survival rate of 80%. The mitigation plan took the need for pedestrian access through this area and future park development into consideration. However, to better balance ecological restoration with safe pedestrian access and future park redevelopment, the mitigation plan would benefit from the following refinements: • Reduce the shrub density to 6’ on center underneath the bridge structure to increase visibility. • Place lower shrubs (e.g. sword ferns and low Oregon grape) closer to areas where pedestrians are likely to walk in the future to access the future pedestrian bridge to ensure a safe

	List. • All in-stream work in fish-bearing streams shall be done in accordance with the Oregon Department of Fish and Wildlife in-stream work-timing schedule. • A mitigation maintenance plan shall be included and shall be sufficient to ensure the success of the planting, and compliance with the plan shall be a condition of development approval.	pedestrian environment. • Add herbaceous plant species to the native grass species mix to provide a food source for native pollinators. Selecting species that bloom at different times throughout the growing season will provide a constant food source. Off-site mitigation is proposed for permanent impacts to the HCAs because it was not possible to mitigate for all ecological impacts on site. Kronberg Park, Kellogg North, and Kellogg South HCAs are in the same subwatershed. Therefore, the off-site mitigation proposed in Kronberg Park for the impacts to the Kellogg North and Kellogg South HCAs are in the same subwatershed. Kronberg Park and the Willamette River HCA are not within the same subwatersheds even though they are located within approximately 375 feet of each other. The Willamette HCA is dominated by nonnative invasive ground cover. The overall tree canopy cover is sparse and is provided by one 24-inch DBH Norway maple tree (Norway maple is a Rank B Nuisance by the City of Portland). The HCA is not connected to water, and although part of the mapped Willamette River floodplain, it is over 700 feet from the Willamette River. The HCA is not connected to other habitats. It is completed surrounded by development. TriMet does not have ownership interest outside of its easements. There are no feasible areas that TriMet has the authority to provide mitigation that would effectively mitigate for this area within the subwatershed. Mitigation plantings in this area are neither beneficial nor feasible. The goal of the proposed off-site mitigation is to ensure the successful establishment of a native riparian community along Kellogg Lake in Kronberg Park that will provide a higher ecological function than treeless plantings under the bridge structure and an isolated and shaded roadside planting adjacent to McLoughlin Blvd. The mitigation site will be permanently revegetated during the first planting season following the completion of bridge construction. Bareroot plant materials will be planted between Dec 1 – Feb 28 following the completion of heavy construction. All in-water work will be done in accordance with the ODFW in-water work schedule between July 15 – Sep 30. TriMet will monitor and maintain the site for five years after the initial planting. Maintenance will include providing mulch rings around trees and shrubs, watering, and weeding as necessary to allow the native plant community to mature to a self-sustaining condition. The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five year period, TriMet will replace with new plants to achieve an overall 80% survival rate. TriMet will submit an annual report to the Planning Director documenting the survival of the trees and shrubs on the mitigation site for a period of

		five years. The approval of the application has been conditioned to ensure the mitigation plan is implemented as proposed and as altered by these findings. *As conditioned, this criterion is met.*

Recommended Conditions of Approval

1. The plans submitted to the City of Milwaukie for construction of the Portland Milwaukie Light Rail bridge over Kellogg Lake and McLoughlin Blvd ("Kellogg Bridge") shall be in substantial conformance with the plans reviewed by the Design and Landmarks Committee (DLC) and the Planning Commission (PC) that were date stamped by the City on September 20, 2011. The plans shall be modified only as described in these conditions of approval or through a future land use application or formal modification process.

   (Note: Any plan set changes proposed by the applicant or Planning Commission during or as a result of the land use review process shall be reflected in these conditions of approval prior to adoption by the Planning Commission.)

2. The plans submitted to the City of Milwaukie for construction of the pedestrian bridge underneath the Kellogg Bridge shall be in substantial conformance with the plans reviewed by the DLC and PC that were date stamped by the City on September 20, 2011. The plans shall be modified only as described in these conditions of approval or through a future land use application or formal modification process.

   (Note: Any plan set changes proposed by the applicant or Planning Commission during or as a result of the land use review process shall be reflected in these conditions of approval prior to adoption by the Planning Commission.)

3. Prior to approval of development permits for any proposed pathways to the pedestrian bridge underneath the Kellogg Bridge, the applicant or other authorized entity shall obtain all required land use approvals including, but not limited to, natural resource review.

4. Prior to approval of development permits for the pedestrian bridge, the applicant or other authorized entity shall propose pedestrian scale lighting for the pedestrian bridge and the Planning Director shall consult with the DLC about the proposed lighting prior to approving any development permits for the pedestrian bridge.

5. The development permit submission for the Kellogg Bridge shall include a detailed written and/or graphic description of any plan changes that are not part of these conditions of approval or that were not specified by the final decision-making authority.

6. The DLC requested more information and different light fixture options for lighting underneath the jump span than what was presented by the applicant at the Oct 17 DLC design review meeting. The applicant shall resubmit this design item for consideration during the land use proceedings for the Milwaukie Light Rail Station. A summary of the DLC's design direction to the applicant is as follows:

   A. Provide more detailed information about the underside of the jump span (the "ceiling" of the room) and the light from the light fixtures that demonstrates how the light interacts with the ceiling to make for a comfortable, attractive, and safe pedestrian environment.

   B. Provide more detailed information about the light from the light fixtures that demonstrates how the location, output, and angle of the light enhances the

proposed wall treatments and provides for a comfortable, attractive, and safe pedestrian environment.

C. Provide a less modern and utilitarian light fixture option. Specifically, provide detailed information that demonstrates how the style and color of the light fixture and the method of mounting compliments the style of the proposed wall treatments and provides for a comfortable, attractive, and safe pedestrian environment.

D. Provide illustrations and analysis demonstrating that the proposed lighting achieves the following during both daytime and nighttime conditions:

- Uniform lighting of the sidewalk
- Minimal glare
- Minimal deep shadows beneath the structure

E. Explore other energy efficient and low-pollutant lighting options with a focus on comparing fluorescent lighting with other feasible lighting options. Provide a memo that summarizes key findings and includes a rationale for the final lighting selection.

7. The development permit submission for the Kellogg Bridge shall include the following items to demonstrate conformance with the Milwaukie Downtown Design Guidelines, specifically those that address Milwaukie character, the pedestrian environment, wall design, sustainability, safety, and lighting. Development permits shall not be issued until the Planning Director is satisfied that the following conditions of approval are met.

A. Wall Treatments on the Northernmost Bridge Abutment and Jump Span Columns:

1. Provide specifications and photos that accurately depict the scale and surface finish of the final wall and column treatments. The final wall treatments should have the appearance of stacked ashlar stone with: (a) formliner seams hidden as much as possible, and (b) individual stone dimensions that are proportionally appropriate for the wall surface areas and the pedestrian environment.

2. Demonstrate how the wall will be articulated and light in color throughout the pedestrian zone (6 ft and below), particularly on the north side of Lake Rd where the grade change could leave more smooth concrete exposed.

B. Column Treatments:

1. Provide illustrations and/or material samples for the surface treatment of the remaining bridge columns outside of the jump span area that demonstrates how these columns provide visual interest at the pedestrian level and architectural interest at a distance.

- Vertical reveals shall have a rough-sawn wood textured surface for visual contrast and interest.
- Vertical reveals shall taper in depth at the top edge to soften the transition to the column face.
- Vertical reveals shall randomly vary from each other in both height and width and shall also be randomly spaced around the column so as to soften the hard edges and verticality and regularity of the overall design.

C. Provide a memo that describes how crime prevention through environmental design (CPTED) principles were applied to the area behind and between the jump span columns on the south side of Lake Rd. CPTED solutions could include plantings, fencing, and/or lighting.

8. The development permit submission for the Kellogg Bridge shall include the following items to demonstrate conformance with the Downtown Open Space Zone development standards. Development permits shall not be issued until the Planning Director is satisfied that the following conditions of approval are met.

   A. Demonstrate that at least 20% of the Kellogg Bridge site will be landscaped pursuant to Milwaukie Municipal Code (MMC) Section 19.310.4.11. The proposed mitigation plan shows how some of the site underneath the Kellogg Bridge will be landscaped. However, it is unclear whether these plantings meet or exceed the 20% landscaping standard. If they do not meet the standard, a landscaping plan will be required that demonstrates how the landscaping standard will be met.

9. The development permit submission for the Kellogg Bridge shall include the following items to demonstrate conformance with the Willamette Greenway criteria. Development permits shall not be issued until the Planning Director is satisfied that the following conditions of approval are met.

   A. Provide a landscaping plan for the area underneath the Kellogg Bridge between Lake Rd and McLoughlin Blvd that demonstrates conformance with MMC Subsection 19.401.6.D.

   B. Provide a detailed tree planting plan for Kronberg Park that is consistent with the approved mitigation plan and that balances ecological restoration with the desire to maintain some views to Kellogg Lake. Consider clustering trees to allow for gaps in the tree canopies and/or planting 12 ft on center instead of 10 ft on center where proposed on the Kronberg Park bank.

   C. Provide a memo that describes the lighting impacts, if any, from the train light on nearby residential uses and drivers on McLoughlin Blvd as the tracks curve near the McLoughlin Blvd crossing. If there are any such lighting impacts, provide a mitigation plan that demonstrates conformance with MMC Subsection 19.905.4.A.3 and 4.

10. The development permit submission for the Kellogg Bridge shall include the following items to demonstrate conformance with the Water Quality Resource and Habitat Conservation Area regulations and to balance ecological restoration with safe pedestrian access and future park redevelopment. Development permits shall not be issued until the Planning Director is satisfied that the following conditions of approval are met.

    A. Revise the mitigation plan as follows:

       1) Provide the square footage of all mitigation areas to ensure appropriate plant densities and a minimum 1:1 replacement ratio in Kronberg Park for the mitigation area outside the construction limits.

       2) Reduce the shrub density to 6 ft on center underneath the bridge structure to increase visibility.

       3) Place lower shrubs (e.g. sword ferns and low Oregon grape) closer to areas where pedestrians are likely to walk in the future to access the future

pedestrian bridge to ensure a safe pedestrian environment.

4) Show the existing trees on the Kronberg Park bank in the proposed mitigation area as being retained on the mitigation plan or provide an explanation for their removal.

5) Add some shrubs above top of bank on the Kellogg Lake north bank in the water quality resource area on the mitigation plan or provide an explanation for their exclusion.

6) Incorporate a few oaks into the mitigation plan to replace the one that will be removed by this project. Consider replacing 3 of the proposed Douglas firs with Oregon white oaks in the Kronberg Park WQR area. Oaks should be planted at top of bank or just up from top of bank. No other trees should be planted within 20 feet. This could be a mechanism for eventually providing or maintaining views of the water, which is consistent with the Willamette Greenway view protection criterion that applies to this area.

7) Add more flowering shrubs that provide wildlife habitat. Consider reducing the amount of common snowberry (from 100 to 40) and adding red-flowering currant (add 20), ocean-spray (add 20), and blue elderberry (add 20) in the Kronberg Park WQR area.

8) Add herbaceous plant species to the native grass species mix to provide a food source for native pollinators. Selecting species that bloom at different times throughout the growing season will provide a constant food source.

11. The development permit submission for the Kellogg Bridge shall include the following items to demonstrate conformance with the Community Service Use criteria. Development permits shall not be issued until the Planning Director is satisfied that the following conditions of approval are met.

A. Relocate construction staging area access so that it is physically located within the easement area or negotiate for a larger easement area to accommodate the location of the existing access.

12. The development permit submission for the Kellogg Bridge shall include the following items to demonstrate conformance with the Milwaukie Public Works Standards. Development permits shall not be issued until the Engineering Director has reviewed and approved the following items.

A. Submit a storm water management plan prepared by a qualified professional engineer that conforms to Section 2 – Stormwater Design Standards of the City of Milwaukie Public Works Standards. All stormwater from the Kellogg Bridge shall be treated and infiltrated on private property unless otherwise approved by the Engineering Director.

1) The storm water management plan shall demonstrate that the post-development runoff does not exceed pre-development runoff, including any existing storm water management facilities serving the development site.

2) The storm water management plan shall demonstrate compliance with water quality standards in accordance with the City of Portland Stormwater Management Manual.

B. In the event the storm management system contains underground injection control devices, the applicant shall submit proof of acceptance of the storm

system design from the Department of Environmental Quality. The storm water management plan must also be designed to meet water quality resource development standards contained in MMC Subsection 19.402.10, specifically:

1) Storm water flows as a result of the proposed development within and to water quality resource areas shall not exceed pre-development flows.

2) Storm water outfalls shall be appropriately designed to avoid erosion to stream banks or water quality resource area slopes.

13. The development permit submission for the Kellogg Bridge shall include the following items to demonstrate conformance with Milwaukie Title 18 Flood Hazard Regulations. Development permits shall not be issued until the Engineering Director has reviewed and approved the following items.

A. Provide the following information with the development permit application:

1) Scaled plans showing nature, location, dimensions, and elevations of the development property, including existing and proposed structures, fill, storage of materials, and drainage facilities. Include both the floodplain and floodway boundaries.

2) Elevation in relation to mean sea level of all structures.

3) Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development.

B. Provide an anchor design by a registered professional engineer, such that all new construction within the 100-year floodplain is anchored to prevent flotation, collapse, or lateral movement of the structure(s). Include a written summary that describes how the design of the structure(s) meets this requirement.

C. Construct all structures within the 100-year floodplain utilizing materials resistant to flood damage. Include a written summary that describes how the design of the structure(s) meets this requirement.

D. Placement of fill or structures that displaces more than ten cubic yards of flood storage area shall comply with the following standards.

1) No net fill in any floodplain is allowed, including the volume of structures within the floodplain.

2) All fill placed in a floodplain shall be balanced with at least an equal amount of soil material removed.

3) Any excavation below bankful stage shall not count toward compensating for fill.

4) Excavation to balance a fill shall be located on the same parcel as the fill unless it is not reasonable or practicable to do so. In such cases, the excavation may be located in the same drainage basin and as close as possible to the fill site.

E. Placement of fill or structures within the floodway shall comply with flood storage area requirements and the following additional requirements.

1) The proposed excavation and fill shall not increase flood impacts for surrounding property as determined through hydrologic and hydraulic analysis or “no rise certification.” Submit certification to the Federal Emergency Management Agency (FEMA) for review. FEMA must concur

with the “no-rise certification” prior to development permit approval.

2) If an increase in the base flood elevation is unavoidable, a conditional approval of such increase is required from the FEMA regional office prior to development permit approval.

14. Prior to commencement of any earth disturbing activities, the applicant shall:

A. Submit a Construction Management Plan pursuant to Metro Title 13 Section 5.

B. Obtain an erosion control permit pursuant to MMC Title 16 Erosion Control.

C. Flag, fence, or otherwise mark the extent of the construction limits.

D. Flag, fence, or otherwise mark the water quality resource and habitat conservation areas not proposed to be disturbed pursuant to MMC Subsection 19.402.10 and Metro Title 13 Section 6.C.2. These natural resource areas must be identified in the field by a qualified professional.

15. During site development, the applicant shall:

A. Limit development activity to 7 a.m. to 7 p.m. Monday through Friday and 8 a.m. to 5 p.m. Saturday and Sunday pursuant to MMC Subsection 8.08.070.I.

B. Safeguard the water quality resource and habitat conservation areas pursuant to MMC Subsection 19.402.10 and Metro Title 13 Section 6.C.2 as follows:

1) All site development activities shall conform to the Construction Management Plan.

2) Protection fencing shall be maintained around areas not proposed to be disturbed until site development is complete. Trees shall not be used as anchors to stabilize construction equipment or activities.

3) Appropriate site preparation and construction practices shall be followed to prevent erosion, pollution, sedimentation, or drainage of hazardous materials to the water quality resource area.

4) Native soils disturbed during development shall not be removed from the site.

5) The water quality resource and habitat conservation areas shall be re-vegetated per the approved mitigation plan and as soon as practicable after the approved development activity in the resource area is complete.

16. Prior to final inspection of the Kellogg Bridge, the applicant shall complete the following items to the satisfaction of the Planning Director:

A. Restore and improve the water quality resource and habitat conservation areas per the approved mitigation plan prepared by Vigil Agrimis and subsequently modified by these conditions of approval pursuant to MMC Subsection 19.402.10.A. Submit a letter from the project’s natural resource consultant attesting that all required restoration and mitigation work has been completed in conformance with the approved mitigation plan.

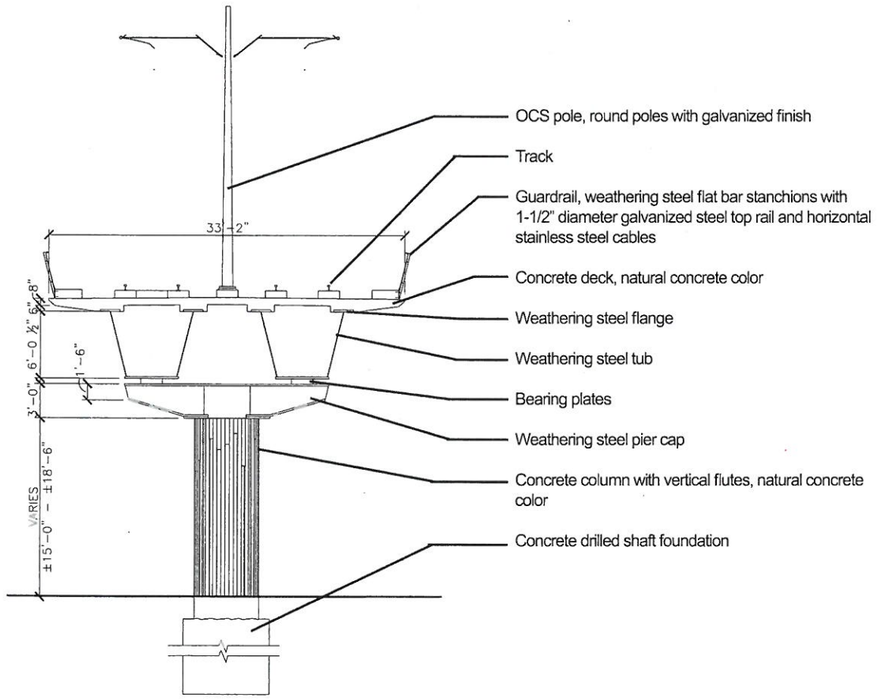
17. Prior to final inspection of the Kellogg Bridge, the applicant shall complete the following items to the satisfaction of the Engineering Director:

A. Construct a private storm management system to accommodate stormwater runoff from the bridge. The private storm management system shall be constructed according to the approved storm water management plan.

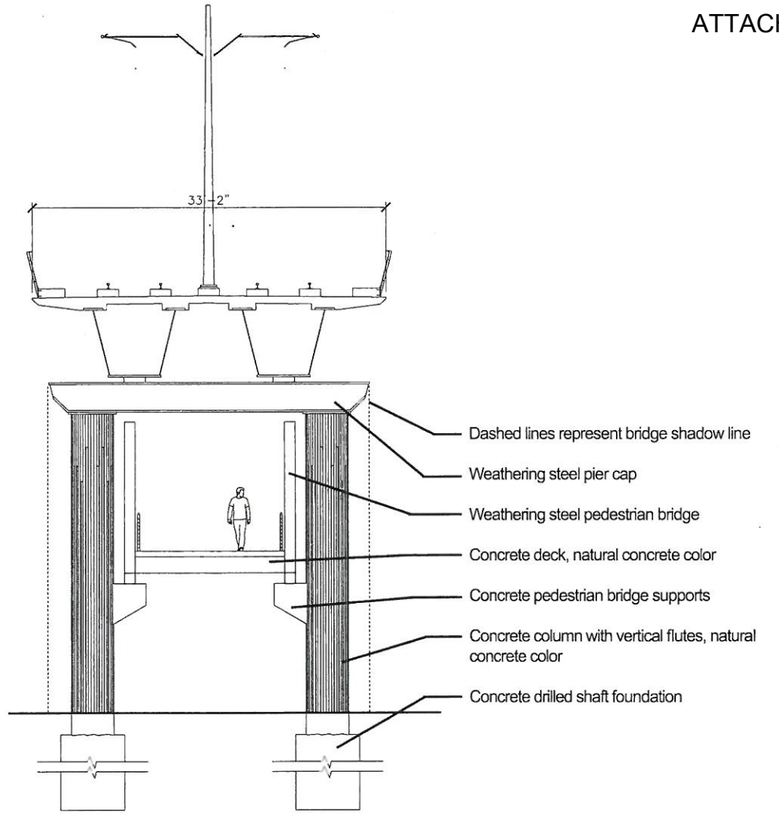
18. Ongoing conditions of approval:

A. Maintain and monitor the water quality resource and habitat conservation area plantings for five years per the approved mitigation plan prepared by Vigil Agrimis and subsequently modified by these conditions of approval. Provide a copy of the annual monitoring report to the City of Milwaukie Planning Director no later than the end of each calendar year during the five years in which the plantings are monitored.

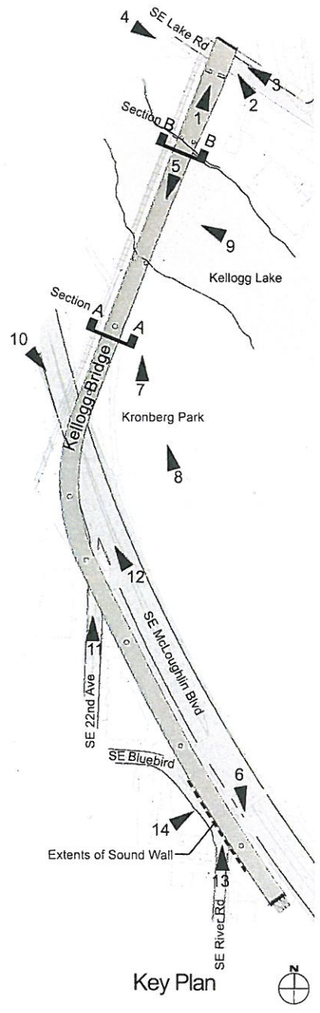
B. Pursuant to Subsection 19.1001.7.E.2, the time period within which the applicant must obtain development permits for the Kellogg Bridge and future pedestrian over Kellogg Lake is extended from 2 years to 4 years, and the time period within which the applicant must pass all final inspections is extended from 4 years to 6 years, from the date of the land use decision on this application.



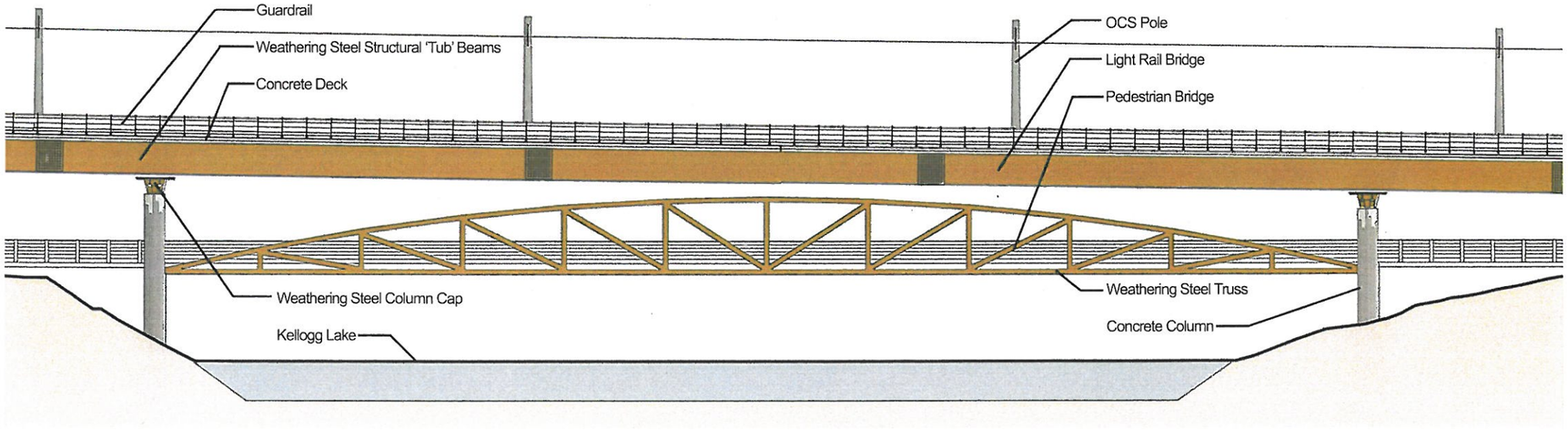
Section A-A. Kellogg Bridge at Single Column
(See key plan for location of section cut)



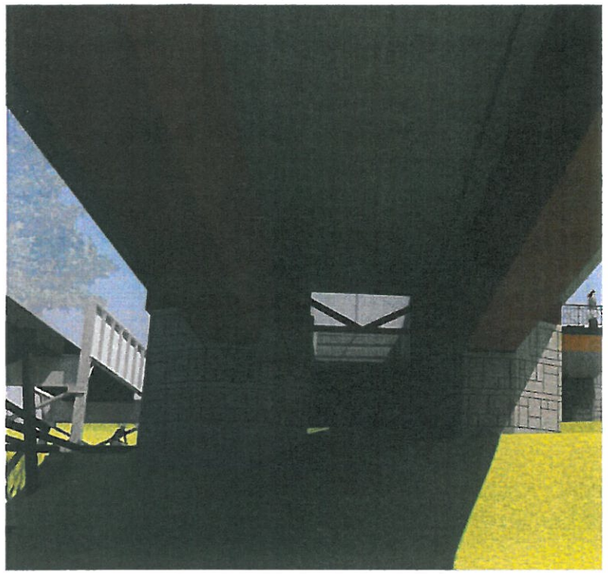
Section B-B. Kellogg Bridge at Double Column
(See key plan for location of section cut)



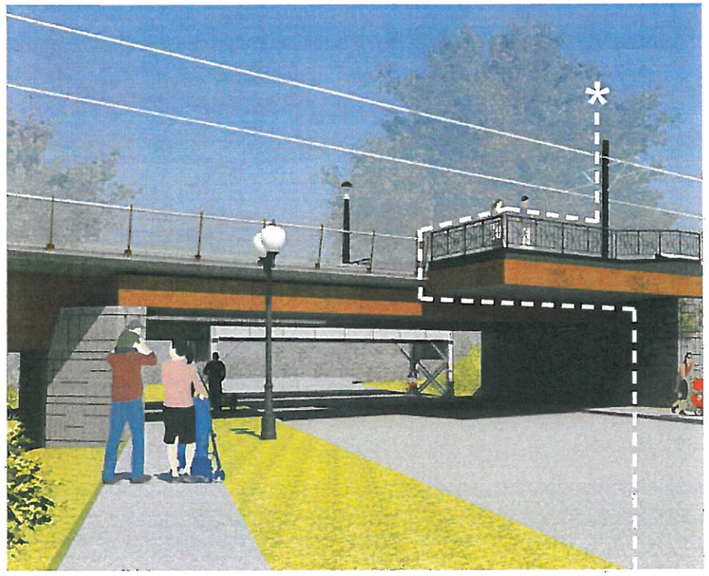
Key Plan



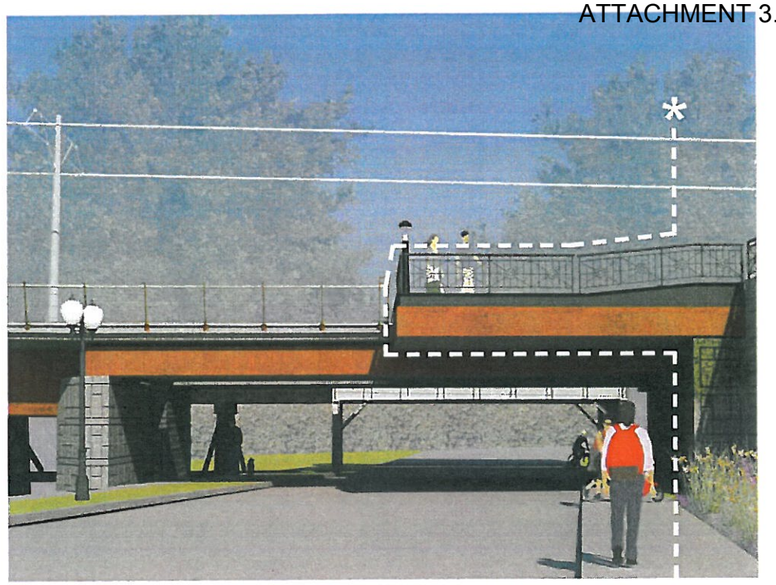
9. Elevation at Pedestrian Bridge



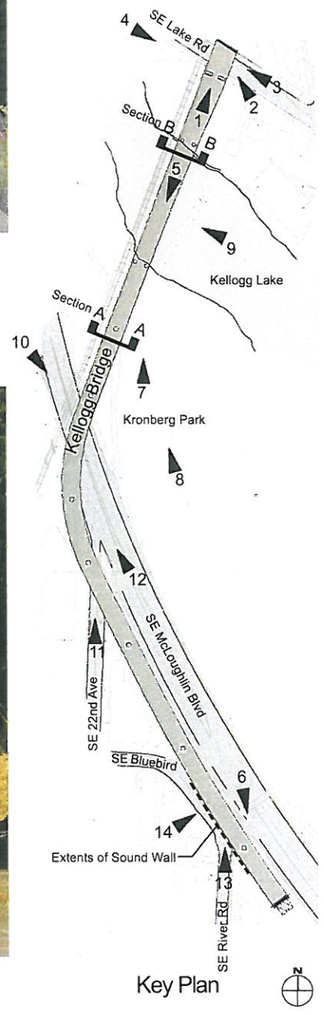
1. View from under Kellogg Bridge in Kronberg Park looking North - Concrete jump span with steel fascia



2. View from South side of Lake Road looking at jump span and North abutment - Concrete jump span with steel fascia



3. View from Lake Road looking West at jump span - Concrete jump span with steel fascia



Key Plan



1A. Existing Conditions, Lake Road at future Kellogg Bridge



2A. Existing Conditions, Lake Road at future Kellogg Bridge

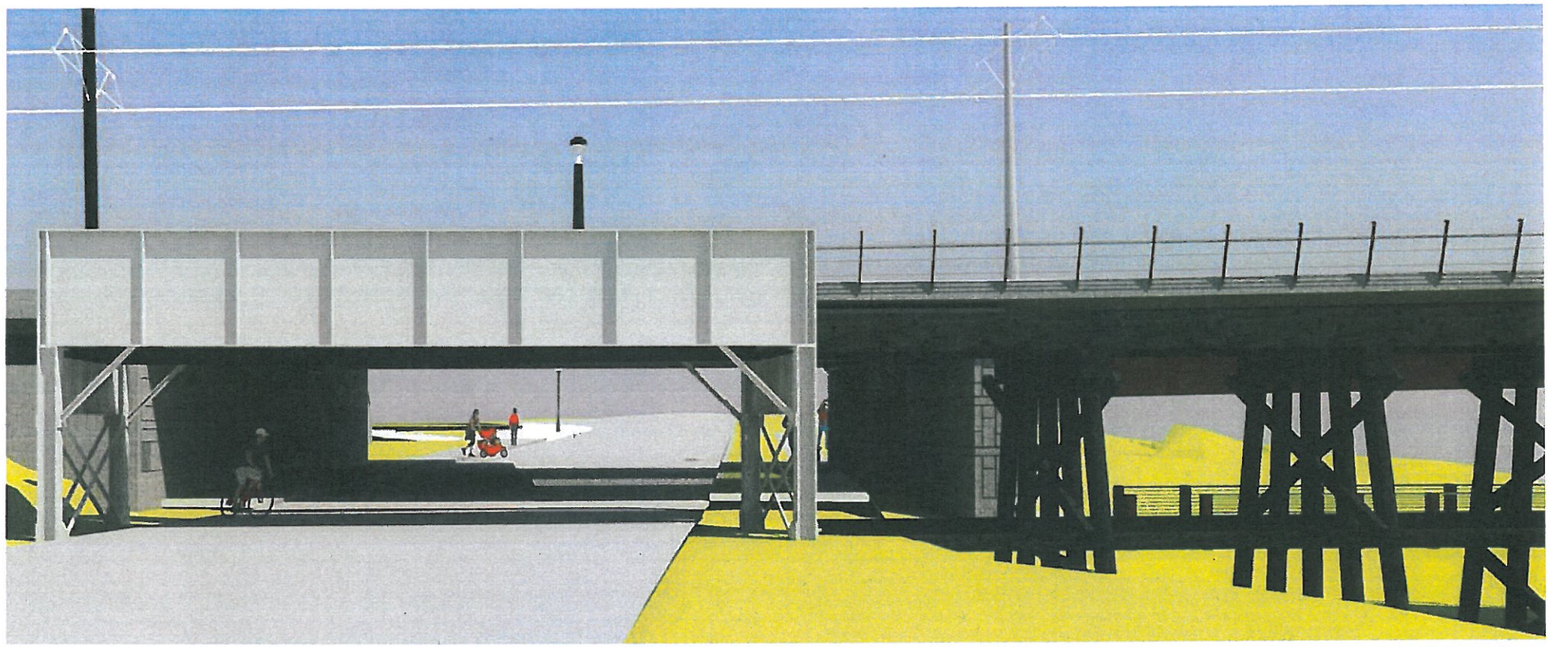


3A. Existing Conditions, Lake Road at future Kellogg Bridge

Kellogg Bridge

* Jump span and the abutment under the jump span subject to this review. All other station elements North and East of the jump span subject to future review

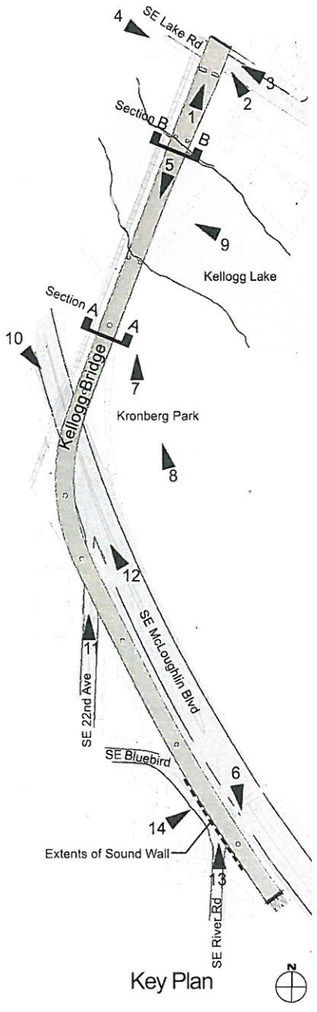
Exhibit D3

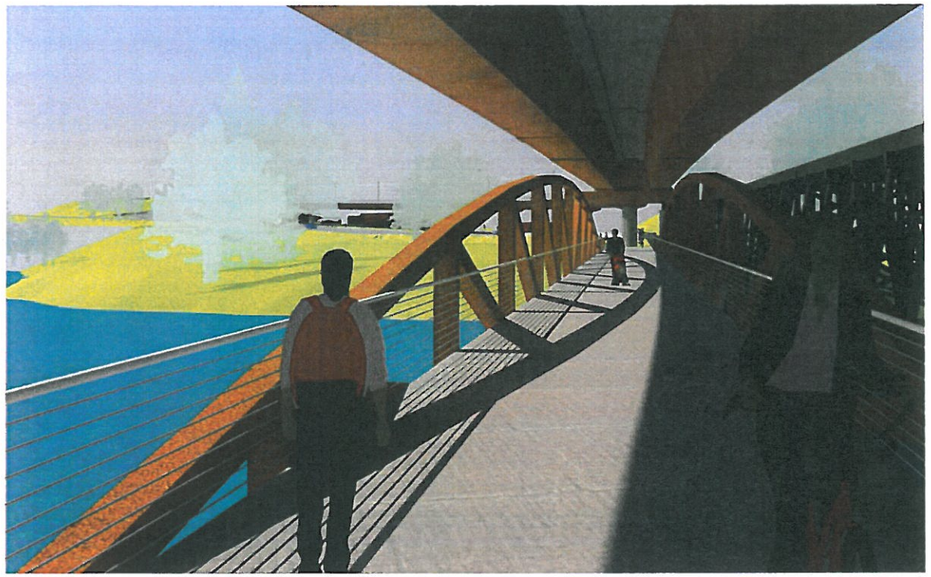


4. View from Dogwood Park looking at existing and future bridge structures

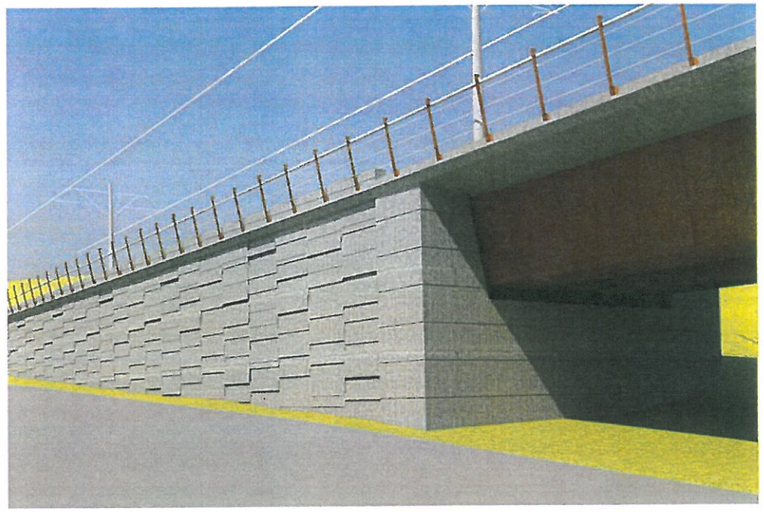


4A. Existing Conditions, view from Lake Road looking East at existing railroad bridge





5. View from Pedestrian Bridge looking South



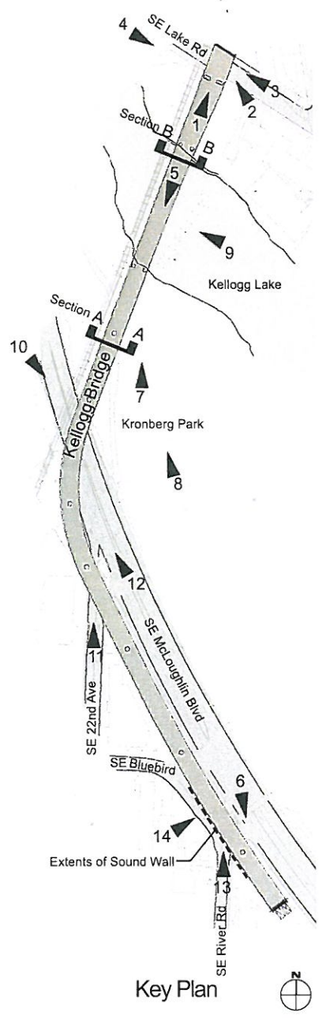
6. South Abutment



5A. Existing Conditions at future Pedestrian Bridge



6A. Existing Conditions at future South Abutment



Key Plan



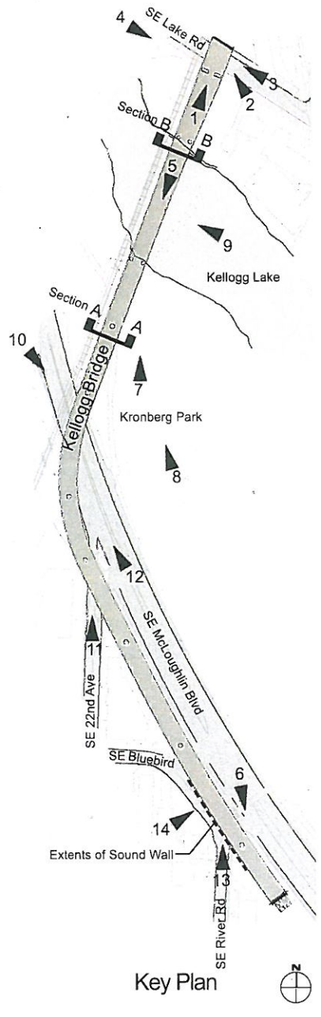
7A. View from South side of Kronberg Park looking North



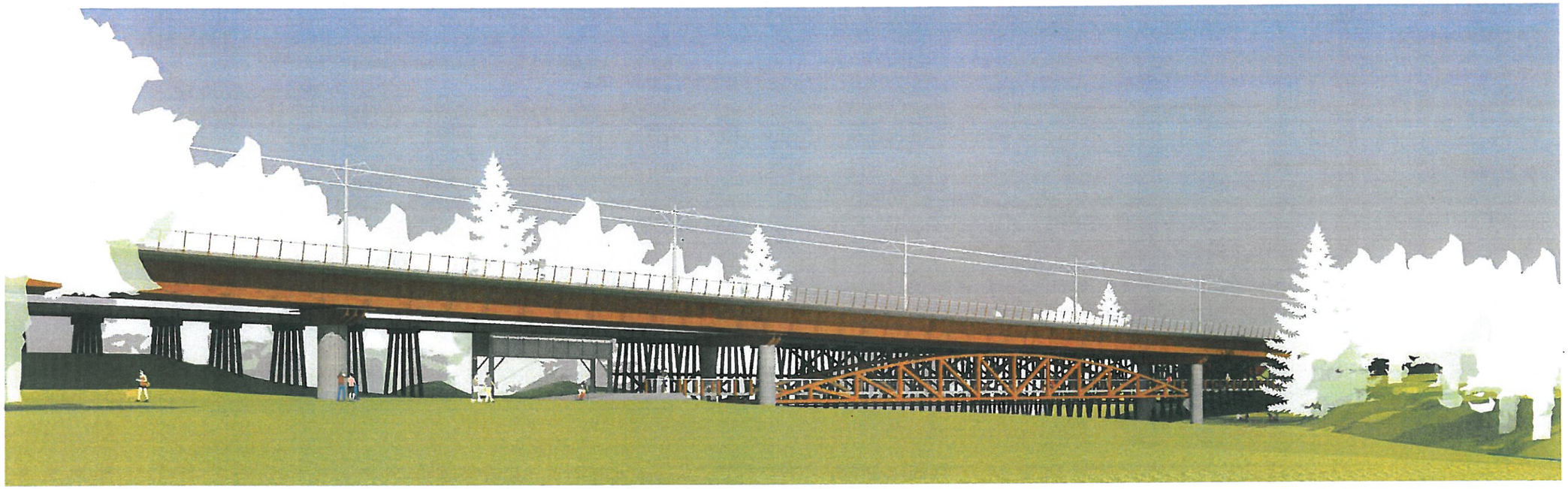
7B. View from South side of Kronberg Park looking North with Pedestrian Bridge



7C. Existing Conditions, Kronberg Park looking North



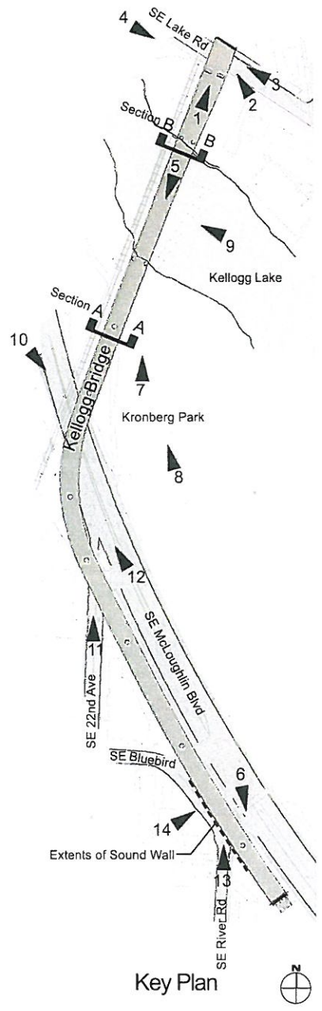
Key Plan



8. View from Kronberg Park looking at bridge structures

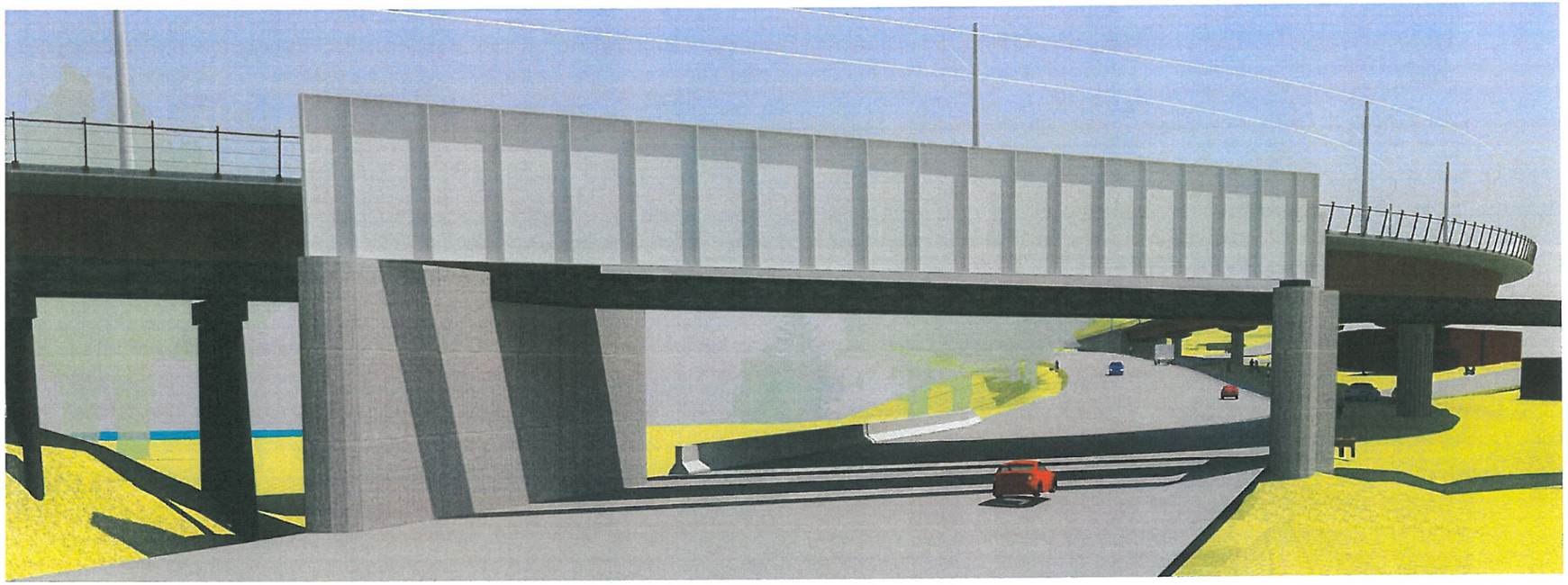


8A. Existing Conditions, Kronberg Park



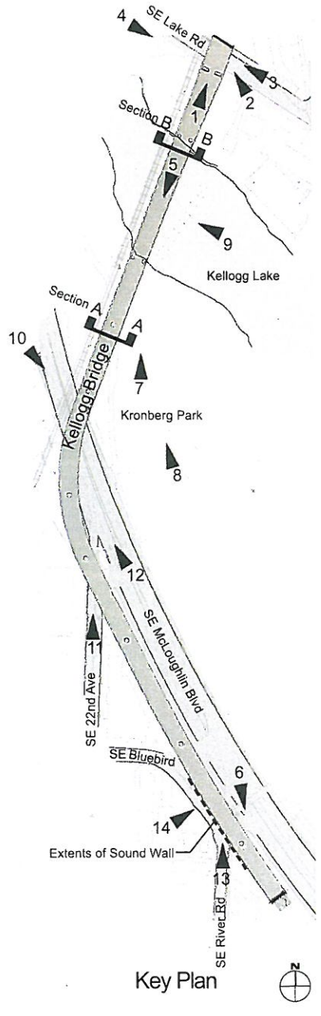
Kellogg Bridge

Exhibit D7



10. View from SE McLoughlin Blvd looking South at existing railroad trestle and future Kellogg Bridge structures

10A. Existing Conditions, looking South on SE McLoughlin Blvd at existing railroad trestle

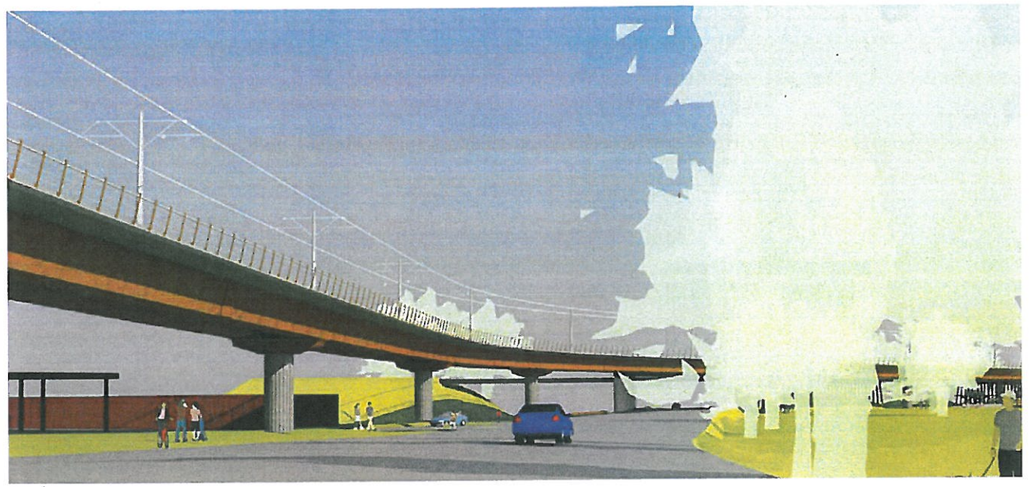


Kellogg Bridge

Exhibit D9



11. View from SE 22nd looking North at SE McLoughlin Blvd and Kronberg Park



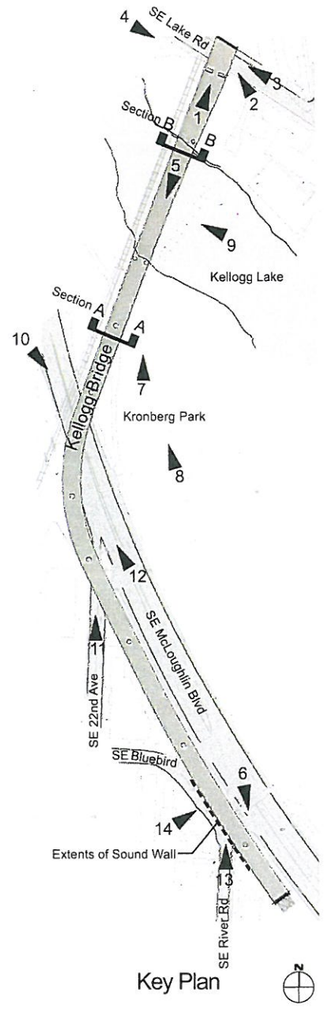
12. View from SE McLoughlin Blvd looking North



11A. Existing Conditions, looking North on SE 22nd



12A. Existing Conditions, looking North on SE McLoughlin Blvd



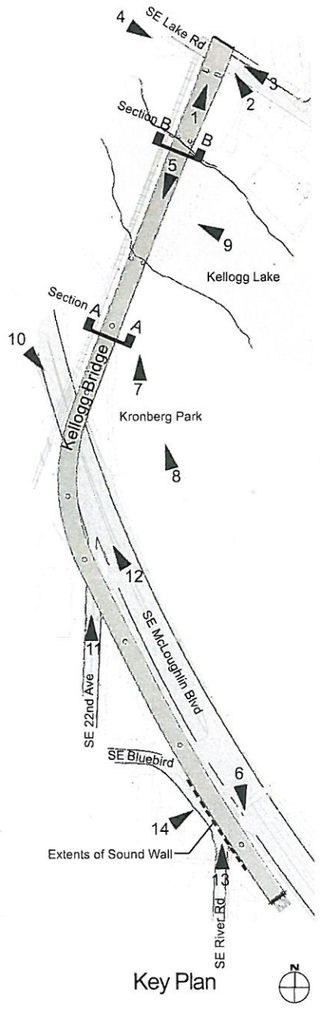
Key Plan



13. View from SE River Road looking North at Kellogg Bridge and Transparent Sound Wall

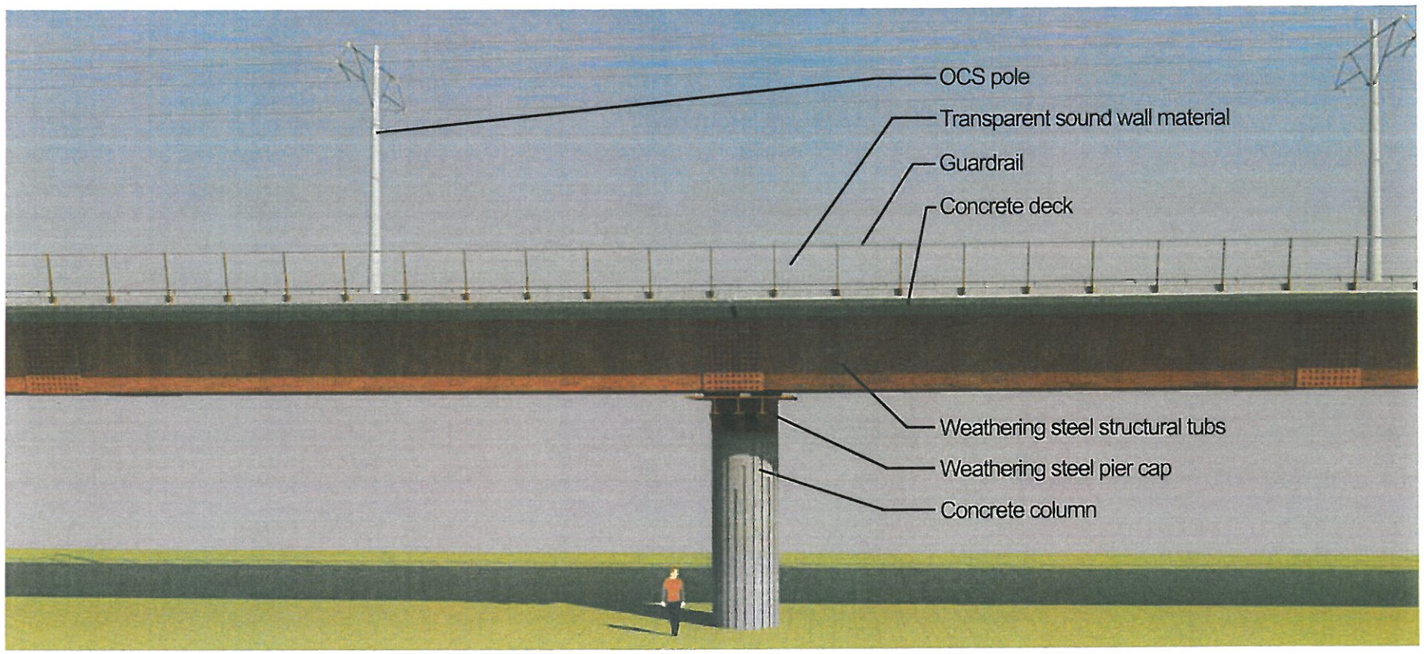


13A. Existing Conditions, looking North on SE River Rd

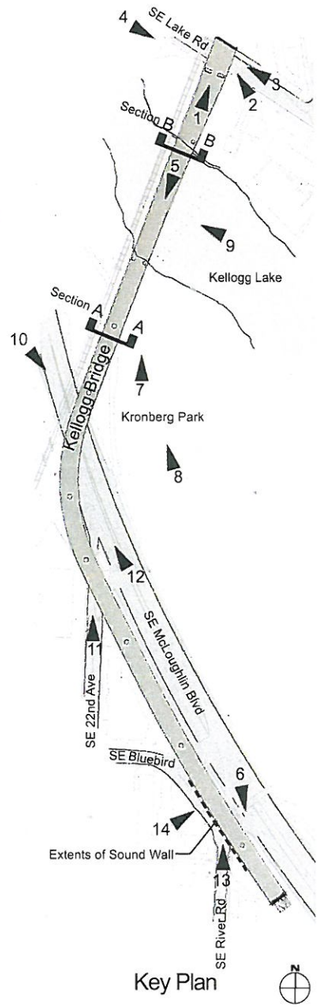




Example of Transparent Sound Wall Installation



14. View of Bridge withTransparent Sound Wall (Outside of Review Area)



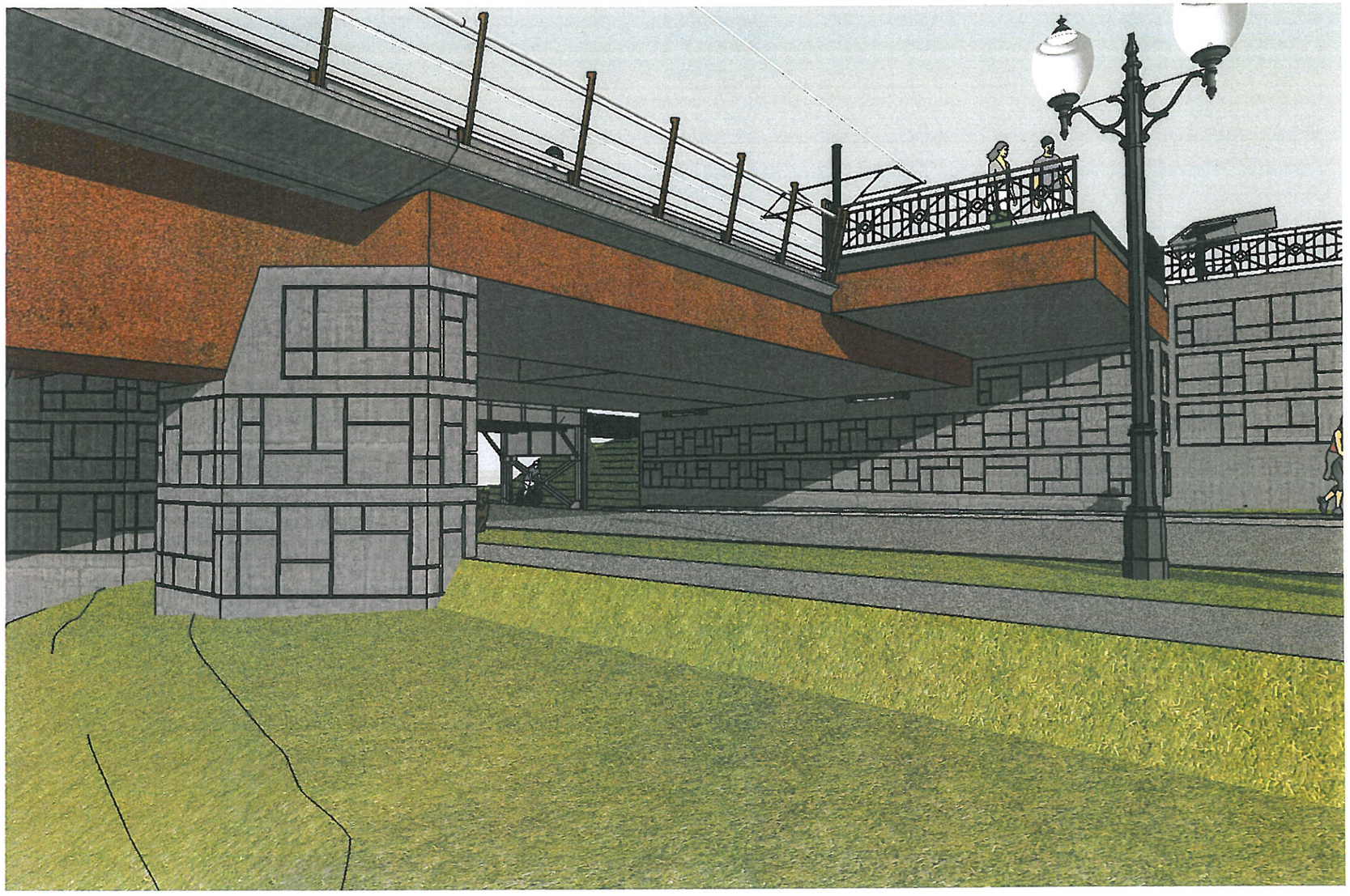


Exhibit D13

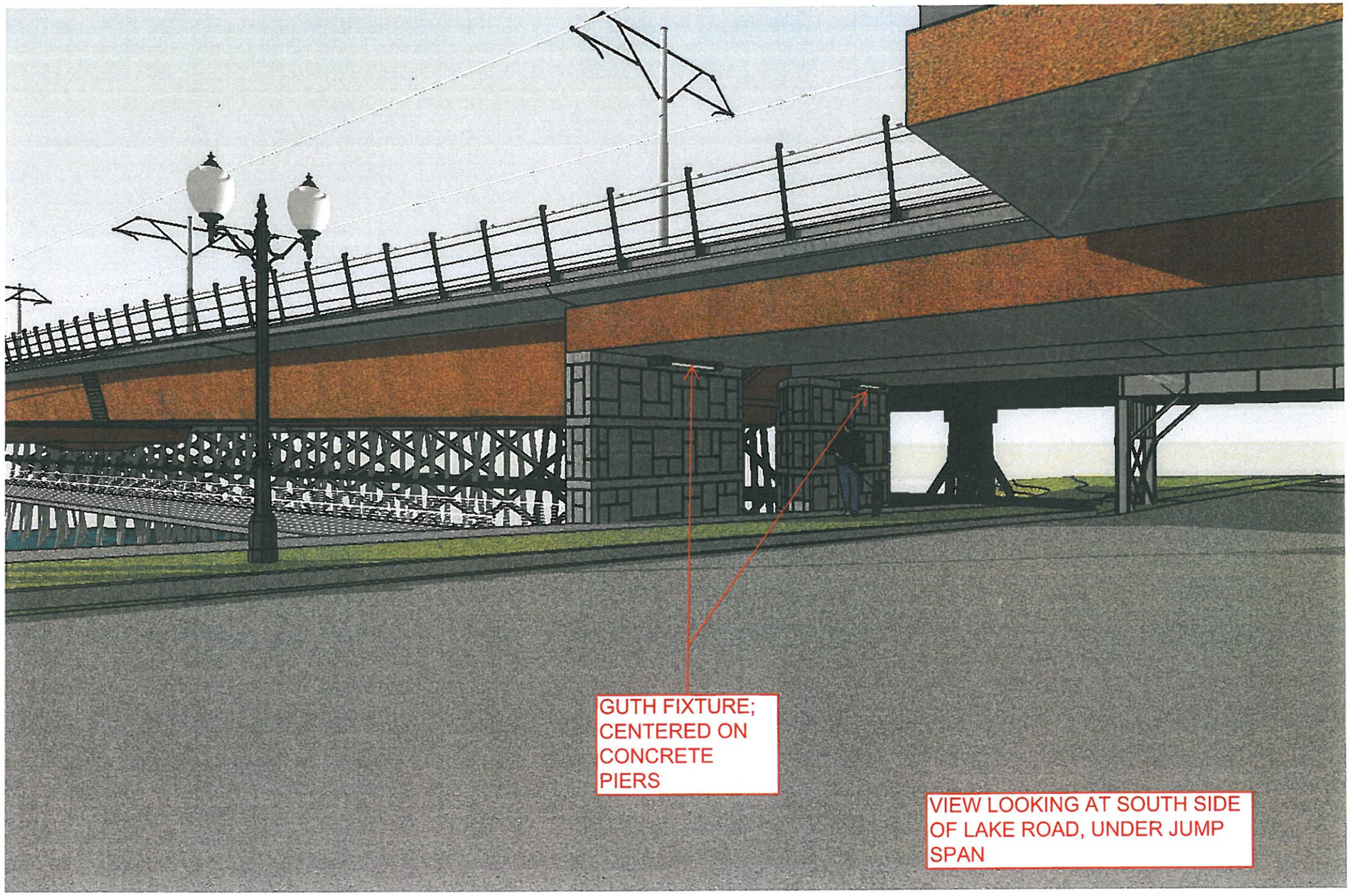
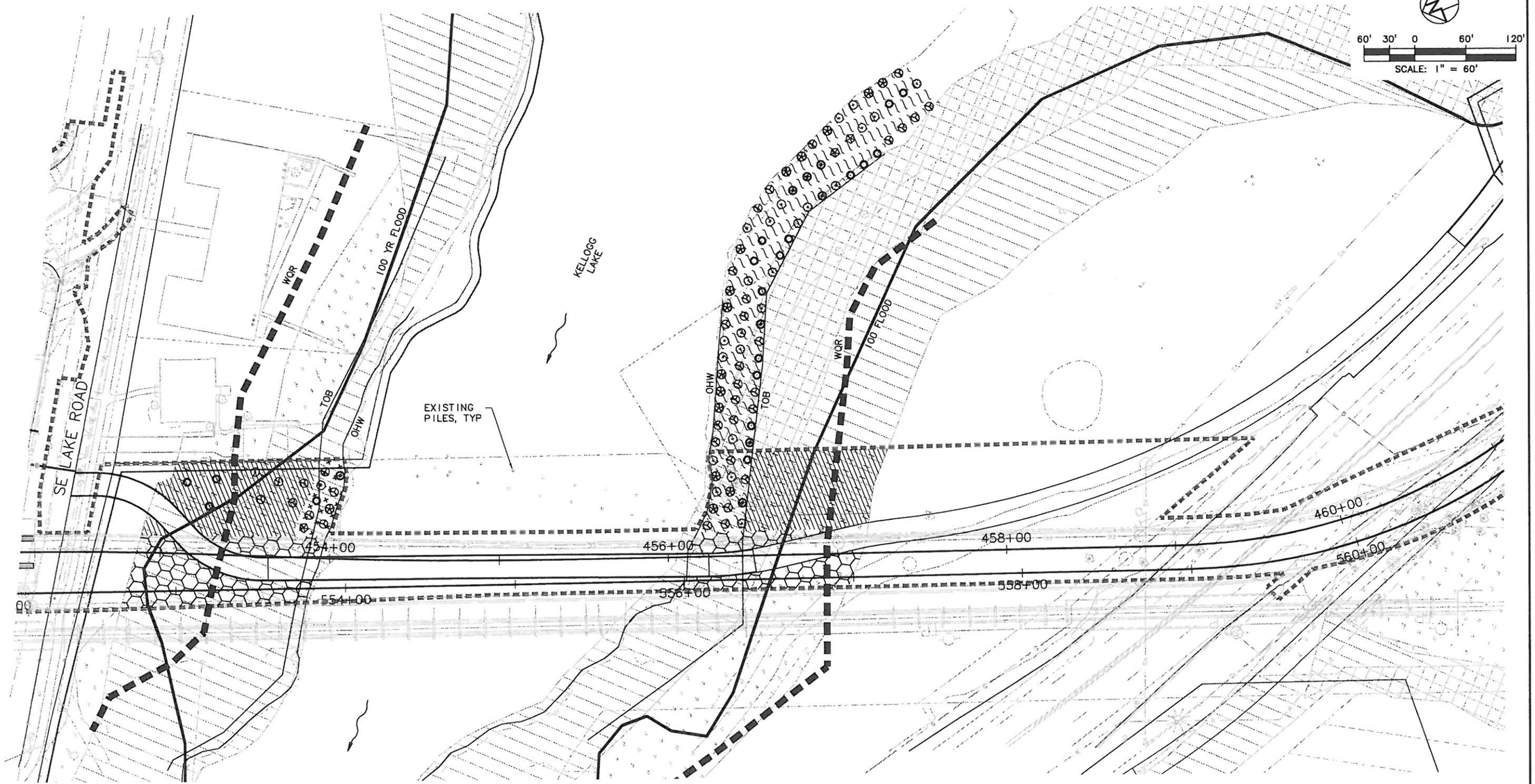

GUTH FIXTURE; CENTERED ON CONCRETE PIERS
VIEW LOOKING AT SOUTH SIDE OF LAKE ROAD, UNDER JUMP SPAN

Exhibit D14



LEGEND

TOB – TOP OF BANK (DEFINED FROM TOPO)

OHW – ORDINARY HIGH WATER (TRIMET)

WQR – WATER QUALITY RESOURCES (BASED ON FIELD VISIT)

HCA – HABITAT CONSERVATION AREA (CITY OF MILWAUKIE)

100 FLOOD – 100 YEAR FLOOD BOUNDARY (TRIMET)

LOW HCA

MODERATE HCA

HIGH HCA

NO.	DATE	BY / CHK.	APPD.	REVISIONS

SAR DESIGNED 09-06-11 DATE

SAR DRAWN 09-06-11 DATE

EES CHECKED DATE

APPROVED DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals

DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: DATE:

APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT

Exhibit P5

LAND USE PERMIT
KELLOGG STRUCTURE
MITIGATION SITE PLAN

SCALE: 1" = 60'

DRAWING NO.: KLG-7A

CONTRACT NO.: RH100544JB

SHEET NO.:

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Plot Date:9/14/2011 10:08 AM_editu k bogusiowski

PLANT SCHEDULE: KELLOGG LAKE WQR/HCA

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	ALRU	7	Alnus rubra – red alder	1" CAL.	B&B	10' o.c.	
	FRLA	1	Fraxinus latifolia – Oregon ash	1" CAL.	B&B	10' o.c.	
	PIPO	4	Pinus ponderosa ssp Valley – Willamette Valley ponderosa	6' HT.	B&B	10' o.c.	
	POBA	1	Populus balsamifera – black cottonwood	1" CAL.	B&B	10' o.c.	
	PSME	1	Pseudotsuga menziesii – Douglas fir	6' HT.	B&B	10' o.c.	
	RHPU	2	Rhamnus purshiana – cascara	1" CAL.	B&B	10' o.c.	
	SALU	1	Salix lucida ssp lasiandra – Pacific willow	1" CAL.	B&B	10' o.c.	
	SHRUBS						
	ACCI	2	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	
	AMAL	2	Amelanchier alnifolia – serviceberry	18–24" HT.	Bareroot	4' o.c.	
	COSE	10	Cornus sericea – redtwig dogwood	18–24" HT.	Bareroot	4' o.c.	
	MAAQ	2	Mahonia aquifolium – tall Oregon–grape	18–24" HT.	Bareroot	4' o.c.	
	OECE	2	Oemleria cerasiformis – Indian plum	18–24" HT.	Bareroot	4' o.c.	
	PHCA	2	Physocarpus capitatus – Pacific ninebark	18–24" HT.	Bareroot	4' o.c.	
	RONU	5	Rosa nutkana var. nutkana – Nootka rose	18–24" HT.	Bareroot	4' o.c.	
	RUPA	2	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	
	RUSP	5	Rubus spectabilis – salmonberry	18–24" HT.	Bareroot	4' o.c.	
	SASI	10	Salix sitchensis – Sitka willow	18–24" HT.	Bareroot	4' o.c.	
	SPDO	5	Spiraea douglasii – Douglas spirea	18–24" HT.	Bareroot	4' o.c.	
	SYAL	10	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	

SEED

Agrostis exarata– spike bentgrass	0.14 lbs	APPLICATION RATE:
Deschampsia elongata– slender hairgrass	0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE
Glyceria elata– Western mannagrass	0.34 lbs	
	1.04 lbs	Total PLS per acre

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

PLANT SCHEDULE: KELLOGG LAKE WQR/HCA UNDER BRIDGE

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	SHRUBS / SMALL TREES						
	ACCI	5	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	edges
	MAAQ	15	Mahonia aquifolium – tall Oregon grape	18–24" HT.	Bareroot	4' o.c.	edges
	MANE	40	Mahonia nervosa – low Oregon grape	18–24" HT.	Bareroot	4' o.c.	interior
	POMU	210	Polystichum munitum – sword fern	18–24" HT.	Bareroot	4' o.c.	interior
	RUPA	10	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	edges
	SYAL	50	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	scattered
	GROUNDCOVER						
	ARUV	130	Arctostaphylos uva–ursa – kinnikinnick	12–18" HT.	Bareroot	4' o.c.	interior
	FRVE	100	Fragaria vesca – woodland strawberry	12–18" HT.	Bareroot	4' o.c.	interior
	FRVI	100	Fragaria virginiana – wild strawberry	12–18" HT.	Bareroot	4' o.c.	interior

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

NO.	DATE	BY / CHK.	APPD.	REVISIONS

SAR DESIGNED 09-06-11 DATE
SAR DRAWN 09-06-11 DATE
EES CHECKED DATE
APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

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TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: DATE: APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P6
LAND USE PERMIT
KELLOGG STRUCTURE
MITIGATION OPTION LEGEND & NOTES

SCALE: AS SHOWN | DRAWING NO.: KLG–7B | CONTRACT NO.: RH100544JB | SHEET NO.:

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PLANT SCHEDULE: KRONBERG PARK WQR

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	ACMA	10	Acer macrophylium – big leaf maple	1" CAL.	B&B	10' o.c.	
	ALRU	26	Alnus rubra – red alder	1" CAL.	B&B	10' o.c.	
	FRLA	2	Fraxinus latifolia – Oregon ash	1" CAL.	B&B	10' o.c.	
	PIPO	14	Pinus ponderosa ssp Valley – Willamette Valley ponderosa	6' HT.	B&B	10' o.c.	
	POBA	13	Populus balsamifera – black cottonwood	1" CAL.	B&B	10' o.c.	
	PSME	7	Pseudotsuga menziesii – Douglas fir	6' HT.	B&B	10' o.c.	
	SALU	14	Salix lucida ssp lasiandra – Pacific willow	1" CAL.	B&B	10' o.c.	
	SHRUBS						
	ACCI	10	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	single
	AMAL	40	Amelanchier alnifolia – serviceberry	18–24" HT.	Bareroot	4' o.c.	single
	COSE	60	Cornus sericea – redtwig dogwood	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	MAAQ	25	Mahonia aquifolium – tall Oregon–grape	18–24" HT.	Bareroot	4' o.c.	single
	OECE	25	Oemleria cerasiformis – Indian plum	18–24" HT.	Bareroot	4' o.c.	single
	PHCA	40	Physocarpus capitatus – Pacific ninebark	18–24" HT.	Bareroot	4' o.c.	single
	RONU	60	Rosa nutkana var. nutkana – Nootka rose	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	RUPA	40	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	RUSP	40	Rubus spectabilis – salmonberry	18–24" HT.	Bareroot	4' o.c.	moist areas
	SASI	60	Salix sitchensis – Sitka willow	18–24" HT.	Bareroot	4' o.c.	near lake
	SPDO	50	Spiraea douglasii – Douglas spirea	18–24" HT.	Bareroot	4' o.c.	moist areas
	SYAL	100	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	SEED						

Agrostis exarata– spike bentgrass	0.14 lbs	APPLICATION RATE:
Deschampsia elongata– slender hairgrass	0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE
Glyceria elata– Western mannagrass	0.34 lbs	
	1.04 lbs	Total PLS per acre

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

PLANT SCHEDULE: KELLOGG AND KRONBERG OPEN AREAS SEEDING

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	SEED						
	NATIVE UPLAND GRASS MIX						

NO.	DATE	BY / CHK.	APPD.	REVISIONS

SAR DESIGNED 09–06–11 DATE
SAR DRAWN 09–06–11 DATE
EES CHECKED DATE
APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals | DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: DATE: APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P7
LAND USE PERMIT
KELLOGG STRUCTURE
MITIGATION OPTION LEGEND & NOTES

SCALE: AS SHOWN | DRAWING NO.: KLG–7C | CONTRACT NO.: RH100544JB | SHEET NO.:

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Portland to Milwaukie Light Rail Project

Water Quality Resource and Habitat Conservation Area Report

Kellogg Lake Area

City of Milwaukie, Oregon

Submitted to:

City of Milwaukie
10722 SE Main Street
Milwaukie, Oregon 97222

Applicant:

TriMet
4012 SE 17th Ave
Portland, Oregon 97202

Prepared by:

VIGIL AGRIMIS
design professionals

819 SE Morrison Street, Suite 310
Portland, OR 97214

Revised September 8, 2011

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1.0 INTRODUCTION

The Portland-Milwaukie Light Rail Project is a 7.3-mile extension of TriMet's regional rail system. The new light rail extension will cross Kellogg Lake on a new bridge to the southeast side of the existing Union Pacific railroad bridge. Kellogg Lake is located in Section 36, Township 1 south, and Range 1 east. This report describes the resources on taxlot 3504 and within portions of the Southern Pacific Railroad right-of-way and Highway 99E (Oregon Department of Transportation) right-of-way. See project vicinity map and site map included with the permitting package.

The area described in this report includes portions of both the north and south shore of Kellogg Lake. Kellogg Lake is a Primary Protected Water Feature as defined by the City of Milwaukie's Water Resource Regulations (Milwaukie Municipal Code [MMC] 19.402). Drawings in the permitting package show the extent of the Water Quality Resource (WQR) and associated vegetated corridors. These areas extend beyond the Southern Pacific Railroad right-of-way and into the City of Milwaukie's Kronberg Park located in taxlot 3100[1]. In addition, the study area also includes a mapped Habitat Conservation Area (HCA) that extends into the Oregon Department of Transportation's (ODOT) Highway 99E right-of-way. HCAs are subject to the City of Milwaukie's Interim Implementation of Metro Title 13 Model Ordinance.

2.0 EXECUTIVE SUMMARY

The main points of this report are summarized as follows:

- The new Portland-Milwaukie light rail line crosses Kellogg Lake.
- Kellogg Lake is a Primary Protected Water Feature as defined by the City of Milwaukie's Water Resource Regulations (Milwaukie Municipal Code 19.402).
- The Kellogg Lake WQR and associated vegetated corridors were delineated in the field. The vegetated corridor is 60 feet wide on the north side and 80 feet wide on the south side.
- The vegetated corridors on both the north and south shore of Kellogg Lake are currently in degraded condition per MMC 19.402.
- The mapped HCA around Kellogg Lake extends beyond the field delineated WQR. On the North Shore, the HCA extends between 35 and 50 feet beyond the WQR boundary, for a total of 4,050 sq. ft. The HCA is mapped as Low (840 sq. ft.) and Moderate (3,210 sq. ft.). On the south, the HCA extends between 10 and 25 feet beyond the WQR boundary for a total of 650 sq. ft. It is mapped as Low.
- On the west side of McLoughlin Blvd, the bridge also crosses a corner of a HCA that includes the 100-year floodplain of the Willamette River. The entire portion of the HCA within the project limits (1,280 sq. ft.) is within ODOT right-of-way for Hwy 99E (McLoughlin Blvd). It is mapped as Low.
- Development of the light rail bridge will occur in both the vegetated corridor of the WQRs (both the north and south sides of the lake crossing) and in the HCAs (both north and south sides of the lake crossing and the Willamette).
- Development in the WQR Areas and the HCAs has been limited to the area necessary for construction and placement of the bridge and associated facilities.

[1] A separate report has been completed to address the WQR and HCA within Kronberg Park.

- The project will clear span Kellogg Lake and no impacts will occur below ordinary high water (OHW). Construction of the new bridge will require the removal of all vegetation within the defined construction limits. The area under the bridge is considered to be a permanent impact because trees are not allowed to be planted and the bridge will provide some shading. The project will result in:
    - 4,750 sq. ft. of permanent impacts to WQR vegetated corridors,
    - 2,620 sq. ft. of permanent impacts to the Kellogg Lake HCA,
    - 1,280 sq. ft. of permanent impacts to the Willamette River HCA,
    - 3,130 sq. ft. of temporary impacts to WQR vegetated corridors, and
    - 2,000 sq. ft. of temporary impacts to Kellogg Lake HCA.
- A total of seven trees greater than 6 inches in diameter at breast height (DBH) will be removed from the WQR vegetated corridors.
- A total of six trees greater than 6 inches DBH will be removed from the Kellogg Lake HCA, and one tree will be removed from the Willamette HCA.
- In the future, a pedestrian bridge maybe added that would access Kronberg Park. The pedestrian bridge is structured to be simply hung from the interior of the two pairs of columns on either side of Kellogg Lake. Connections to grade, and paths to and from this element, have not yet been designed. In order to quantify the impacts caused by the bridge, it is estimated that it would be 12 feet wide with a one foot shoulder on each side. The pedestrian bridge would impact 375 sq. ft. of the Kellogg North HCA.
- Right-of-way improvements to McLoughin Blvd as a result of the project include the addition of a paved sidewalk that currently does not exist. This sidewalk will be located under the new light rail bridge, so no additional impact will occur to the HCA.
- A mitigation plan has been developed to compensate for the unavoidable impacts to the WQR vegetated corridors. The proposed mitigation will reset the current conditions and put the area on a trajectory toward providing high water quality function and high habitat value (meeting MCC 13.402.9.E).
- A mitigation plan has been developed to compensate for the ecological impacts to the HCA while taking into consideration a future pedestrian bridge connection to Kronberg Park.
- TriMet applied for and received a permit from the Department of State Lands and US Army Corps of Engineers for this project (45253-RF). This application included an alternatives analysis, and measures to minimize impacts to wetlands and water resources, and compensatory mitigation plan.

3.0 METHODOLOGY

Vigil-Agrimis, Inc. has prepared this WQR and HCA Report to evaluate the existing condition, assess potential impacts from the proposed development, and describe a mitigation plan that would compensate for potential impacts to water quality and habitat resources as required in Section 19.402 and Title 13 Model Ordinance.

The ordinary high water (OHW) of Kellogg Lake was mapped by a survey team and provided to the design team. Table 19.402.9.A was used to determine the WQR boundaries.

Three site visits, on June 16, 2011, July 1, 2011, and August 1, 2011, were conducted to accurately map existing vegetation and the overall resource conditions within the WQRs. Additionally, the location of existing natural features (wetlands, additional water sources, rock outcroppings, etc.) and trees larger than 6 inches DBH were determined in the field as required by MMC Section 19.402.9(B). The limits of the resources on the site are shown in the figures included in the permitting package. These figures also show the locations of the existing trees that have a DBH greater than 6 inches.

The HCA boundaries were located using data provided by the City and Metro. Note that HCA boundaries extend beyond the WQR boundaries.

4.0 WATER QUALITY RESOURCE AREAS

The City of Milwaukie's Water Quality Resource Area Regulations include vegetated corridors and the adjacent water features, including Primary Protected Water Features and Secondary Protected Water Features. No Secondary Protected Water Features are present on this site. Sections 4.1 and 4.2, below, provide descriptions of the on-site Primary Protected Water Features and associated vegetated corridors, respectively.

4.1 Primary Protected Water Features Existing Condition

As described in Table 1 of the MMC 19.402, Primary Protected Water Features include all perennial streams and streams draining greater than 100 acres, Title 3 wetlands, natural lakes and springs. Kellogg Lake was determined to be a primary protected water feature due to the drainage size and the perennial nature of the man-made lake. It also has been mapped by the City on WQR Map 3 as a drainage course with an associated vegetated corridor.

Kellogg Lake is an old mill pond that was constructed in 1858. The lake is approximately 14 acres with a length of 3,600 feet and a width of 180 feet at the crossing. The lake suffers from poor native fish passage, invasive plant species, high pollutant loading, and some bank erosion.

On the north shore the work area is entirely within the Southern Pacific Railroad right-of-way. The right-of-way contains roughly 0.5 acre of open lake water. The bank form on this side of the lake indicates that much of this area was excavated many years ago. There is a short rise from OHW to the top of bank (TOB) which quickly flattens to a terrace. The distance between OHW and the TOB is approximately 10 feet where the slope exceeds 25%. From the TOB inland the slope is approximately 7-10%.

On the south shore the work area is within ODOT and Southern Pacific Railroad right-of-way and taxlot 3504. The right-of-way contains roughly 0.5 acre of open lake water. The distance between OHW and the TOB is approximately 30 feet where the slope exceeds 25%. From the TOB inland, the slope is approximately 3%.

4.2 WQR Vegetated Corridors

As described in Table 1 of the MMC 19.402, Primary Protected Water Features have an associated vegetated corridor of 50 to 200 feet wide depending on the slopes adjacent to the resource. The extent of the vegetated corridor on the Project site, based on the surveyed boundaries of Kellogg Lake, are depicted in the figures included in the permitting package**.** A brief description and an evaluation of the condition of each of the communities are provided below.

4.2.1 North Shore WQR Vegetated Corridor, Kellogg Lake

The vegetated corridor width on the north shore was determined to be 60 feet offset from OHW (per MCC 19.402.9.A). The distance from OHW to the TOB is approximately 10 feet. The slope is > 25%. The vegetated corridor on the north bank of the lake has some native vegetation, but non-native invasive species constitute the majority of the shrub and ground cover. The overall tree canopy cover is approximately 75% with Oregon ash (*Fraxinus latifolia*) and black walnut (*Juglans nigra*) as the dominant species. The shrub cover is approximately 80% with Armenian blackberry (*Rubus armeniacus*) as the dominant. Dominant plants in the groundcover layer include morning glory (*Convolvulus arvensis*), English ivy (*Hedera helix*), and periwinkle (*Vinca minor*). The percent coverage of the representative trees, shrubs, and groundcovers is detailed in the Table 1 below.

Table 1. North Shore WQR Assessment, Kellogg Lake

Botanical Name	Common Name	Percent Cover	Native?
TREES (total coverage = 75%)			
Fraxinus latifolia	Oregon ash	35%	Yes
Juglans nigra	black walnut	15%	No
Crataegus monogyna	English hawthorn	10%	No
Populus balsamifera	black cottonwood	10%	Yes
Quercus rubra	red oak	5%	No
SHRUBS (total coverage = 80%)			
Rubus armeniacus	Armenian blackberry	40%	No
Clematis vitalba	clematis	10%	No
Ilex aquifolium	English holly	10%	No
Salix scouleriana	Scouler's willow	5%	Yes
Crataegus monogyna	English hawthorn	5%	No
Philadelphus lewisii	wild mockorange	5%	Yes
Symphoricarpos albus	common snowberry	5%	Yes
GROUNDCOVER (total coverage = 80%)			
Native groundcover species cover less than 5% of the site and include small-fruited bulrush (Scirpus microcarpus). The groundcover layer is dominated by a variety of non-native grasses, vines, and herbaceous plants including tall fescue, velvet grass, English ivy, teasel, yellow flag iris, periwinkle, and morning glory.			

The vegetated corridor is in a degraded condition per Table 19.402.9.E. Non-native invasive plant species cover nearly 75% of the area. The ecological function of this area is moderate to low. It is a seed source for the spread of very aggressive non-native plant species and it is providing limited habitat value. Trees in this vegetated corridor provide shade to the lake, habitat structure, and a food source.

Non-native invasive species in the vegetated corridor include yellow flag iris (*Iris pseudacorus*), English ivy, morning glory, clematis (*Clematis ligustifolia*), Armenian blackberry, periwinkle, teasel (*Dipsacus fullonum*), English holly (*Ilex aquifolium*), black walnut, tree of heaven (*Ailanthus altissima*), English hawthorn (*Crataegus monogyna*), and tall fescue (*Festuca arundinancea*).

4.2.2 South Shore WQR Vegetated Corridor, Kellogg Lake

The vegetated corridor width on the south shore was determined to be 80 feet offset from OHW (as per MCC 19.402.9.A). The distance between OHW and the TOB is 30 feet and the slope is > 25%. The Vegetated corridor area of the south shore of Kellogg is dominated by non-native invasive plant species. The overall tree canopy cover is approximately 20%, with red alder (Alnus rubra) as the dominant species. The shrub cover is approximately 50% with Armenian blackberry, as the dominant. The groundcover is nearly 100% non-native invasive weeds. The percent coverage of the representative trees, shrubs, and groundcovers is detailed in the Table 2 below.

The Vegetated corridor is in degraded condition per Table 19.402.9.E. Non-native invasive plant species cover nearly 100% of the area. The ecological function of this area is very low. It is a seed source for the spread of very aggressive non-native plant species, it is providing very little habitat value, and it does not provide shade and cooling for the lake.

Table 2. South Shore WQR Assessment, Kellogg Lake

Botanical Name	Common Name	Percent Cover	Native?
TREES (total coverage = 20%)			
Alnus rubra	Red alder	20%	Yes
SHRUBS (total coverage = 50%)			
Rubus armeniacus	Armenian blackberry	50%	No
GROUNDCOVER (total coverage = 50%)			
A variety of non-native grasses, vines, and herbaceous plants dominated by tall fescue, velvet grass, English ivy, and Canada thistle.			

Armenian blackberry and English ivy cover 100% of the sloped, unmown lake bank. Non-native invasive species in the Vegetated corridor include Canada thistle, yellow flag iris, English ivy, poison hemlock (*Conium maculatum)*, morning glory, clematis, Armenian blackberry, velvet grass (*Holcus lanatus*), and tall fescue.

5.0 HABITAT CONSERVATION AREA

The mapped HCA extends beyond the field delineated vegetated corridor as shown on the figures. On the north shore of Kellogg Lake, the HCA extends from 35 to 50 feet beyond the vegetated corridor boundary. On the south shore of Kellogg Lake, the HCA extends from 10 to 25 feet beyond the vegetated corridor boundary.

On the west side of McLoughlin Blvd, the light rail bridge also crosses an HCA that includes the 100-year floodplain of the Willamette River (http://www.ci.milwaukie.or.us/sites/default/files/fileattachments/wqr_map3.pdf).

The following is a discussion of the riparian habitat and ecological functional value in these areas (as per Section 7(D)(1)(a)(i) and 7.D.1.a.ii(c) and (d) of the Title 13 Model Ordinance).

5.1 North Shore Kellogg Lake HCA

The HCA area within the project limits on the north bank of the lake is mapped as either Low (840 sq. ft.) or Moderate (3,210 sq. ft.). The area has some native vegetation, but non-native invasive species constitute the majority of the vegetative cover. The overall tree canopy cover is approximately 85% with English hawthorn as the dominant species. The shrub cover is approximately 80% with Armenian blackberry as the dominant. Dominant plants in the groundcover layer include morning glory, English ivy, and periwinkle. The percent coverage of the representative trees, shrubs, and groundcovers is detailed in the Table 3 below.

Table 3. North Shore Kellogg Lake HCA

Botanical Name	Common Name	Percent Cover	Native?
TREES (total coverage = 85%)			
Crataegus monogyna	English hawthorn	25%	No
Fraxinus latifolia	Oregon ash	20%	Yes
Acer macrophyllum	Bigleaf maple	20%	Yes
Pseudotsuga menziesii	Douglas fir	20%	Yes
SHRUBS (total coverage = 80%)			
Rubus armeniacus	Armenian blackberry	40%	No
Clematis vitalba	clematis	10%	No
Ilex aquifolium	English holly	5%	No
Salix scouleriana	Scouler's willow	5%	Yes
Crataegus monogyna	English hawthorn	5%	No
Philadelphus lewisii	wild mockorange	5%	Yes
Symphoricarpos albus	common snowberry	5%	Yes
Rosa nutkana	Nootka rose	5%	Yes
GROUNDCOVER (total coverage = 80%)			
Native groundcover species cover less than 5% of the site and include small-fruited bulrush (Scirpus microcarpus). The groundcover layer is dominated by a variety of non-native grasses, vines, and herbaceous plants including tall fescue, velvet grass, English ivy, teasel, periwinkle, and morning glory.			

The existing ecological functional values of the HCA, as required by 7(D)(1)(a)(i) and Table 4 of the Title 13 Model Ordinance, are listed below:

- Microclimate and shade – The existing vegetation provides approximately 85% cover and the dominant species is a non-native. The tree canopy is providing good microclimate and shade.
- Stream flow moderation and water storage – The canopy cover of the plant community will intercept rain before it reaches the ground which moderates local water inputs to the lake. The root systems of the trees, shrubs, and groundcover absorb a portion of the rainwater that reaches the ground.
- Bank stabilization, sediment and pollution control – The HCA areas are offset at least 50 feet from the lake TOB, so they provide minimal direct bank stabilization. However, the root systems provide long term soil stability and help prevent large scale migration of the banks.

- Large wood and channel dynamics – The existing trees are of substantial size and over time will be a source for large wood within the system. Though due to the lack of stream flow it is likely downed wood stays in the lake rather than moving down stream.
- Organic material sources – The existing vegetation provides a good source for organic material.

The existing ecological functional values of the HCA, as required by 7(D)(1)(a)(ii)(C) and (D) Table 4 of the Title 13 Model Ordinance, are listed below:

- Connectivity of the habitat to water – The HCA is located 60 feet from the OHW of Kellogg Lake.
- Connectivity of the habitat to other habitat areas – The HCA is connected to the vegetated corridor on the south. The vegetated corridor was determined to be in degraded condition due to the extensive coverage by non-native species. On the north side of the HCA is a narrow band of undeveloped area (covered in non-native species) and SE Lake Road. The east side is boarded by residential development. The Union Pacific Railroad bridge boarders the west side. Dogwood Park consists mostly of mown lawn with some park amenities.

5.2 South Shore Kellogg Lake HCA

The HCA area within the project limits at the Kellogg Lake south shore is mapped as Low (650 sq. ft.). The overall tree canopy cover within the HCA is approximately 20%. This is provided by branches extend into the HCA from an Oregon white oak that is outside of the mapped HCA boundary. The shrub cover is absent. The groundcover is nearly 100% non-native European pasture grass and gravel road. The percent coverage of the representative trees, shrubs, and groundcovers is detailed in the Table 4. Non-native invasive species in the HCA include yellow flag iris, poison hemlock, morning glory, clematis, Armenian blackberry, velvet grass, and tall fescue.

Table 4. South Shore HCA Assessment, Kellogg Lake

Botanical Name	Common Name	Percent Cover	Native?
TREES (total coverage = 20%)			
Quercus garryana	Oregon white oak	20%	Yes
**Note: Oak trunk not in this HCA*			
GROUNDCOVER (total coverage = 100%)			
Gravel road and parking		20%	
Mown pasture grass		80%	
A variety of non-native grasses, vines, and herbaceous plants dominated by tall fescue, velvet grass, and Armenian blackberry.			

The existing ecological functional values of the HCA, as required by 7(D)(1)(a)(i) and Table 4 of the Title 13 Model Ordinance, are listed below:

- Microclimate and shade – There are no trees or woody vegetation within the HCA.
- Stream flow moderation and water storage – There is very little canopy cover to intercept rain before it reaches the ground, which when it exists can moderate local water inputs to the lake. The root systems of the minimal groundcover absorb a portion of the rainwater that reaches the ground.

- Bank stabilization, sediment and pollution control – The HCA areas are offset at least 50 feet from the lake TOB, so they provide minimal direct bank stabilization. However, the root systems provide long term soil stability and help prevent large scale migration of the banks.
- Large wood and channel dynamics – The HCA does not contribute wood or affect channel dynamics at the site.
- Organic material sources – The HCA is a poor source of organic material, being a mown lawn.

The existing ecological functional values of the HCA, as required by 7(D)(1)(a)(ii)(C) and (D) Table 4 of the Title 13 Model Ordinance, are listed below:

- Connectivity of the habitat to water – The HCA is located 80 feet from the OHW of Kellogg Lake.
- Connectivity of the habitat to other habitat areas – The HCA is connected to the vegetated corridor on the north side. The vegetated corridor was determined to be in degraded condition due to the extensive coverage by non-native species. The HCA is connected to Kronberg Park on the east and south sides. The park is about 3.5 acres in size along the south shore of Kellogg Lake. It is currently undeveloped, but there are future plans to develop it into a park. The habitat in Kronberg Park adjacent to this HCA consists mostly of mown European pasture grasses. There are a few trees scattered throughout the area that provides a sparse tree canopy. The shrub layer is mostly absent. The Union Pacific Railroad bridge boarders the west side.

5.3 Willamette River HCA

This HCA is mapped as Low. The entire HCA within the project limits is located on ODOT right-of-way. The portion of HCA within the project limits is 1,980 sq. ft. consisting of 410 sq. ft. of pavement (McLoughlin Blvd), 209 sq. ft. of compacted gravel sidewalk, and 1,280 sq. ft. of vegetation. The undeveloped (vegetated) area is dominated by non-native invasive ground cover. The overall tree canopy cover is sparse and is provided by one 24-inch DBH Norway maple tree (*Acer platanoides*)[2]. The shrub cover is dominated by Armenian blackberry and clematis. The groundcover is nearly 100% non-native European pasture grasses, ivy, and Armenian blackberry. The percent coverage of the representative trees, shrubs, and groundcovers is detailed in the Table 5. Non-native invasive species in the HCA include clematis, Armenian blackberry, English ivy, velvet grass, and tall fescue.

The existing ecological functional values of the HCA, as required by 7(D)(1)(a)(i) and Table 4 of the Title 13 Model Ordinance, are listed below:

- Microclimate and shade – The overall tree canopy cover is sparse and is provided by one 24-inch DBH Norway maple tree.
- Stream flow moderation and water storage – There is very little canopy cover to intercept rain before it reaches the ground. The root systems of the minimal groundcover absorb a portion of the rainwater that reaches the ground.
- Bank stabilization, sediment and pollution control – The HCA area is over 700 feet from the Willamette River, so it provides minimal direct bank stabilization. However, the root systems provide localized, long term soil stability and help prevent large scale migration of the banks.

[2] Norway maple is a Rank B Nuisance by the City of Portland

- Large wood and channel dynamics – The HCA does not contribute wood or affect channel dynamics at the site.
- Organic material sources – The HCA is a poor source of organic material, being a mown lawn.

Table 5. Willamette River HCA Assessment

Botanical Name	Common Name	Percent Cover	Native?
TREES (total coverage = 15%)			
Acer platanoides	Norway maple	15%	No
SHURBS (total coverage = 35%			
Rubus armeniacus	Armenian blackberry	60%	No
Clematis vitalba	clematis	10%	No
GROUNDCOVER (total coverage = 100%)			
Gravel road and parking		30%	
Mown pasture grass		70%	
A variety of non-native grasses, vines, and herbaceous plants dominated by tall fescue, velvet grass, and Armenian blackberry.			

The existing ecological functional values of the HCA, as required by 7(D)(1)(a)(ii)(C) and (D) Table 4 of the Title 13 Model Ordinance, are listed below:

- Connectivity of the habitat to water – The HCA is not connected to water. It is located on the west side of McLoughlin Blvd, about 385 feet from the OHW of Kellogg Lake and over 700 feet from the Willamette River.
- Connectivity of the habitat to other habitat areas – The HCA is not connected to other habitats. It is completed surrounded by development (McLoughlin Blvd, Union Pacific Railroad Bridge, and development).

6.0 SUMMARY OF IMPACTS

The Portland-Milwaukie light rail will cross Kellogg Lake on a new bridge that parallels the existing Union Pacific railroad bridge on the southeast side. The light rail bridge footprint is 9,330 sq. ft. on this site. The bridge will be supported by two concrete abutments located outside of OHW. The bridge will construct two piers on the south bank within the WQR and two piers on north bank in the WQR. No piers will be located in any of the HCAs.

The bridge height will range from 10 to 20 feet tall. Although the area under the bridge will be planted with native species, this area has been determined to be a permanent impact because trees are not permitted to be planted under the bridge. All vegetation within the delineated construction limits will be removed. Areas disturbed by construction will be planted with appropriate native species.

The construction of the new bridge at Kellogg Lake will not increase pollutant loads, since the bridge will not convey automotive traffic, but will alter hydrologic inputs at Kellogg Lake. The increased hydrologic inputs from the impervious bridge decks are not expected to significantly impact the hydrologic regime of these waterways, since the added surface areas are such a small percentage of the total watershed areas.

In the future, a pedestrian bridge maybe added that would access Kronberg Park. The pedestrian bridge is structured to be simply hung from the interior of the two pairs of columns on either side of Kellogg Lake. Connections to grade, and paths to and from this element, have not yet been designed. In order to quantify the impacts caused by the bridge, it is estimated that it would be 12 feet wide with a one foot shoulder on each side.

6.1 Water Quality Resources Impacts

Within this project site, the permanent impacts to the Kellogg Lake WQR vegetated corridor caused by the light rail bridge footprint are as follows:

- 2,170 sq. ft. within the north WQR vegetated corridor; and
- 2,580 sq. ft. within the south WQR vegetated corridor.

Additionally, temporary impacts will be caused by construction access and material staging and are as follows:

- 3020 sq. ft. within the north WQR vegetated corridor; and
- 110 sq. ft. within the south WQR vegetated corridor.

As stated above, the bridge will clear span Kellogg Lake by being supported by two concrete abutments above the OHW. The light rail construction will require the removal of the vegetation within the vegetated corridor. The vegetated corridor of the WQRs on both the north and south shore of Kellogg Lake are in degraded condition.

All the trees within the construction limits will be removed as a result of bridge construction. Trees to be removed within the WQR are summarized in Table 6 and shown on the figures in the application package.

Table 6. Tree Removal In the WQR Vegetated Corridors

Tree #	DBH (inches)	Latin name	Common Name
Kellogg Lake North Shore WQR = 5 trees total			
8n	24	*Pseudotsuga menziesii*	Douglas-fir
10n	8	*Juglans nigra*	black walnut
11n	18	*Thuja plicata*	Western redcedar
12n	8	*Fraxinus latifolia*	Oregon ash
13n	36	*Populus balsamifera ssp. Trichocarpa*	black cottonwood
Kellogg Lake South Shore WQR = 2 trees total			
1s	36	*Alnus rubra (3 stems, 12" each)*	Red alder
2s	12	*Alnus rubra (3 stems, 12" each)*	Red alder

6.2 Habitat Conservation Area Impacts

The project will cause the following permanent impacts:

- 2,040 sq. ft. of the Kellogg North HCA;
- 580 sq. ft. of the Kellogg South HCA; and
- 1,280 sq. ft. of the Willamette HCA.

Construction access and material staging activities will also temporarily impact 2,000 sq. ft. of the HCA on the north shore.

All the trees within the construction limits will be removed as a result of bridge construction. Trees to be removed within the HCAs are summarized in Table 7 and on the figures in the application package. Note that no trees will be removed on the Kellogg Lake south shore HCA.

Table 7. Tree Removal In The Habitat Conservation Areas

Tree #	DBH (inches)	Latin name	Common Name
North Shore Kellogg Lake HCA = 6 trees total			
3n	20	*Fraxinus latifolia*	Oregon ash
4n	12	*Crataegus monogyna*	English hawthorn
5n	12	*Crataegus monogyna*	English hawthorn
6n	18	*Acer macrophyllum*	bigleaf maple
7n	18	*Crataegus monogyna*	English hawthorn
9n	12	*Crataegus monogyna*	English hawthorn
Willamette River HCA = 1 tree total			
	24	*Acer platanoides*	Norway maple

The future pedestrian bridge may result in an additional 375 sq. ft. of permanent impacts to the Kellogg North HCA.

Right-of-way improvements to McLoughin Blvd as a result of the project include the addition of a paved sidewalk that currently does not exist. Since this area will be under the new light rail bridge it will not increase the amount of permanent impacts. However it does leave the area unable to replant.

6.3 Alternatives Analysis

After public review and extensive analysis through the National Environmental Policy Act process and agency coordination, the governing bodies of the project sponsors, including the City of Portland, City of Milwaukie, Multnomah County, Clackamas County, Metro and TriMet, have agreed upon the overall project described and analyzed in the Final Environmental Impact Statement (FEIS, Metro July 2010) and other documents. The proposed alignment was selected based on balancing its transit benefits with environmental, construction, social and economic impacts. While several alternatives may have resulted in slightly lower impacts to Kellogg Lake, they were not deemed practicable when analyzing effects on the overall project and to other environmental elements at the Kellogg Lake site and its immediate surroundings.

The proposed alignment will result in some sensitive area impacts, but overall, it is preferable to the other alternatives evaluated. It also provides the maximum ridership benefits, maximizes usage and helps to control future traffic and congestion. Further information on mode, alignment, design options, and termini analysis is available in Chapter 2 and Appendix L of the 2008 Supplemental Draft EIS (Metro 2008) and the 2010 FEIS. These environmental documents and additional information related to the Willamette River Bridge study can be found on TriMet's Website at http://www.trimet.org/pm/library/index.htm.

In 2007, the Milwaukie Transit Working Group studied several alternative alignments through the City and across Kellogg Lake, including the proposed alignment. After refinements, analyses, several public meetings, City staff reports, and public testimony, the City Council agreed four to one not to

recommend the addition of new downtown alignments into this SDEIS. The Mayor of Milwaukie submitted a letter to the Portland-Milwaukie Steering Committee recommending that no new alignments be added through downtown Milwaukie. The proposed alternative was the only alignment that was advanced.

The project minimized impacts at Kellogg Lake through aligning structure as perpendicular as practicable to the shore line and placing piers above current OHW level. An alignment that resulted in less over water structure was evaluated to the west of the existing railroad bridges, but it was not practicable due to constraints within the City of Milwaukie and interactions with the existing railroad alignment. The alignment through downtown Milwaukie would have to have changed to the west of the existing rail line, resulting in much higher impacts to residences, businesses, and schools; and likely impacting more water quality and habitat resources at Crystal Creek and Spring Creek. Therefore this alternative was determined to not be practicable.

An alternative design was evaluated that would place the piers and abutments for the bridge above the TOB of Kellogg Lake, but the depth of the span would have been inordinately thick to support a structure so massive. It would also have to be much higher to account for this depth, resulting in much higher visual impacts and potentially unsafe grades on the approaches. Therefore this alternative was determined to not be practicable.

Another alternative proposed in the FEIS placed a pier below the existing ordinary high water level with the assumption that the level would be lower once the dam downstream of the bridge is removed. During advanced design, the one pier was moved to above the OHW. This change resulted in lower impacts to Kellogg Lake while changing visual and grade elements negligibly.

Different construction alternatives were considered for placement of the bridge piers. It was determined that drilled shaft construction techniques conducted from a work bridge will greatly reduce hydroacoustic impacts to fish and other aquatic species.

6.4 Avoidance and Minimization of Impacts

The Joint Removal Fill Permit Application and the Biological Assessment prepared for this project includes a comprehensive list of conservation measures that are designed to avoid and minimize impacts to wetlands, water bodies, and water quality resource areas. Additional measures will be implemented based on the conditions of approval in the Removal-Fill Permit (45253-RF) and the Biological Opinion issued for the project (NOAA Fisheries 2010). Construction activities will utilize Best Management Practices as documented in the required Construction Management Plan. The Plan will ensure that – throughout the site preparation and construction processes - drainage of hazardous materials or erosion, pollution, or sedimentation to the adjacent Water Quality Resource Area is minimized to the greatest extent possible.

The construction limits have been reduced to the extent practicable. The bridge will be located next to and parallel to the existing railroad bridge at a narrow spot of the lake. The project is planned in an area of the WQR and HCA that does not have wetlands, debris, or noxious materials that would make restoration more difficult.

A work plan has been devised that limits the area of impact as much as possible. Work areas will be clearly marked in the field and existing native vegetation along and outside of the construction limits will be protected and left in place. Site preparation and construction practices shall be followed that prevent drainage of hazardous materials or erosion, pollution, or sedimentation to the WQR area.

7.0 MITIGATION

A Compensatory Mitigation Plan (Environmental Services and Assessment LLC., June 2010) has been prepared for the overall project as part of the Joint Removal-Fill Permit Application. A mitigation plan has been developed to compensate for the unavoidable impacts to both the WQR Vegetated Corridors (4,750 sq. ft. permanent and 3,130 sq. ft. temprorary) and the HCAs (3,900 sq. ft. permanent and 2,000 sq. ft. temporary).

The mitigation plan proposed meets MCC 13.402.1.G for impacts to the WQR and Section 7.D. 1.b.ii for impacts to the HCA. See Appendix B for planting plans that detail the mitigation planting communities and spatial planting plan. The mitigation plan consists of the following treatments:

- **Treatment 1** – This treatment will occur in both the WQRs and HCAs under and adjacent to the bridge. The goal of this treatment is to provide shade and drought tolerant native shrubs that will be able to grow below and adjacent the bridge structure to help stabilize the slopes and prevent erosion. Treatment 1 includes a variety of native understory shrubs, ferns, and groundcover. This plant palette was selected for its tolerance to xeric conditions, relatively low levels of light, and generally difficult growing conditions under the bridge structure. Sword fern, kinnickinick, snowberry, and wild strawberry are the primary components of the mix, with additional plants such as Oregon grape and thimbleberry to add diversity. These plants will help prevent erosion and dust, and create a vegetated connection between riparian vegetation on either side of the bridge. The selected plant species will generally not exceed three feet in height, which will allow for pedestrian sight lines along the pathway. The plants are spaced four feet on-center.
- **Treatment 2** – This treatment will occur between the OHW and the TOB along Kellogg Lake. The goal of this treatment plan is to ensure the successful establishment of a native riparian community along Kellogg Lake. The planted area will result in robust native riparian plant community that will provide better shading to the lake, improved habitat features for native fauna, and will become a seed source for the dissemination of native plants in the Kellogg Lake area. Treatment 2 includes a wide variety of native riparian trees and shrubs, and a native underseed mix. This plant palette includes most of the common riparian plants found in the Willamette Valley. It is a mix of fast and slow growing species, deciduous and evergreen trees, and shrubs that will provide food and shelter for native fauna as well as seasonal color. Red alder, big-leaf maple, and Douglas-fir are the primary trees in the mix, with shrubs such as snowberry, Nutka rose, and red-osier dogwood to establish a diverse and robust understory. These plants will help prevent bank erosion and create complex habitat structure along the lakeshore. The trees are spaced 10 feet on-center and the shrubs are spaced four feet on-center. The plant spacing allows for rapid establishment of canopy cover and understory layers to help out-compete common riparian weeds such as Armenian blackberry and reed canarygrass. The underseed mix provides rapid groundcover establishment for erosion and weed control while the trees and shrubs become accustomed to their new environment.
- **Treatment 3** – This treatment will occur on the north shore of Kellogg Lake from the TOB landward (including portions of the WQR and HCA). The goal of this treatment is to establish open site lines and maintenance access while vegetating the upper lakeshore with native trees and a rough grass groundcover. A grove of deciduous trees immediately inland from top-of-bank includes red alder and cascara spaced 15 feet on-center. This grove is adjacent to the more densely planted area between OHW and TOB. The grove begins the transition from dense lakeshore plantings to a more open, and actively maintained park-like setting. Farthest from the

lakeshore itself, a few scattered Willamette Valley ponderosa pines provide large vertical structure that will create avian habitat and become a visual counterpoint to the strong horizontal lines of the bridge decking. The plant palette mirrors the existing restoration planting of the same species across the lake in Kronberg Park.

Performance criteria for all planting treatments described above includes:

- Coverage by native species shall be at least 80% by the fifth year following plant installation. Desirable, native recruited native trees or shrubs that develop in planted areas may be included when calculating survival numbers.
- Non-native invasive vegetation shall not exceed 20% coverage within the project area at any time during the monitoring period.

The site will be permanently revegetated during the first planting season following the completion of construction. The planting season for bareroot plant material is December 1 through February 28th. Temporary irrigation will be used to help establish plants below the bridge structure. TriMet will monitor and maintain the site for five years after the initial planting. Maintenance will include providing mulch rings around trees and shrubs, watering, and weeding as necessary to allow the native plant community to mature to a self-sustaining condition. The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five year period TriMet will replace with new plants to achieve an overall 80% survival rate.

7.1 Water Quality Resource Areas

For impacts to the WQRs, a mitigation plan has been developed in accordance with the specifications in Table 19.402.9.E. Specific elements of the plan include:

- All non-native invasive plants will be removed from within the construction limits;
- All cleared areas will be replanted with a mix of plants from the Portland Native Plant List (as per directed by City of Milwaukie);
- The WQR areas disturbed by construction will be planted with appropriate native plants to provide 100% surface coverage. Areas under and adjacent to the bridge structure will be planted with Treatment 1 described above.
- Permanent impacts (4,750 sq. ft.) will be mitigated for on a 1:1 replacement ratio along the between OHW and TOB of Kellogg Lake within the WQR of Kronberg Park with Treatment 2 described above.

7.2 Habitat Conservation Areas

TriMet tried to meet the planting requirements of Section 6.E.1. but were unable to do so because of sight constraints (i.e. trees are not permitted to grown under the light rail bridge). Section 6.E. requires that a mitigation design must meet either Mitigation Option 1 or 2, whichever results in more tree plants. Table 8 summarizes the required plant densities for either Option 1 or Option 2 under Section 6.E.1.

Table 8. Required Plants and Plant Densities (Title 13 Model Ordinance Section 6.E.1)

Option 1			Option 2		
Trees to be Removed (DBH)	Trees Required to be Planted	Shrubs Required to be Planted	Area (sq. ft.)	5 trees/500 sq. Ft.	25 shrubs/500 sq. ft.
Kellogg North HCA					
20"	5	12	4,040	40.4	202
2 x 18"	6	12			
3 x 12"	6	9			
Total	***17***	***33***		***40***	***202***
Kellogg South HCA					
0	0	0	650	6.5	32.5
Total	***0***	***0***		***7***	***33***
Willamette HCA					
24"	5	12	1,280	13	65
Total	***5***	***12***		***13***	***65***

In addition to the physical site constraints, the development of the mitigation design took into consideration the potential for a future pedestrian bridge and the adjacent Kronberg Park. The mitigation plan meets both the objectives of providing revegetation that fit into a park setting and restoring the ecological functions that are being impacted by the new light rail bridge. Specific elements of the plan include:

- All non-native invasive plants will be removed from within the construction limits;
- All cleared areas will be replanted with a mix of plants from the Portland Native Plant List (as per directed by City of Milwaukie);
- The HCA areas disturbed by construction will be planted with appropriate native plants.
- Areas under and adjacent to the bridge structure (2,040 sq. ft. in the Kellogg North HCA and 650 sq. ft. in the Kellogg South HCA) will be planted with Treatment 1 described above.
- Permanent impacts to the Kellogg and Willamette HCAs (4,275 sq. ft.) will be mitigated for on a 1:1 replacement ratio along the between OHW and TOB of Kellogg Lake within the WQR of Kronberg Park with Treatment 2 described above.
- The area not impacted by the pedestrian path or under the light rail bridge in the Kellogg North HCA (1,635 sq. ft.) will be planted with Treatment 3 described above.

The proposed mitigation plan has been designed to improve the ecological function of the Kellogg HCA areas in the following manner:

- Microclimate and shade – The HCA areas will be planted to with native plant communities. Under the bridge structures, trees will not be planted as they will grow to conflict with the bridge structure. However, native shrubs and groundcover will be planted below the bridges, and in combination with the shade of the bridge they will provide cooling to the lake. In the HCA areas outside of the bridge structure, a mixed palette of trees, shrubs, and groundcover will be planted.
- Stream flow moderation and water storage – The coverage of the proposed plant communities will intercept rain before it reaches the ground which will moderate local water inputs to the lake. The root systems of the trees, shrubs, and groundcover will absorb a portion of the

rainwater that reaches the ground. In addition, during the growing season, trees and shrubs will uptake groundwater further reducing direct water inputs to the lake.

- Bank stabilization, sediment and pollution control – The root system provided by the dense plantings along the steep banks in Kronberg Park will provide substantial bank stabilization. The root systems will provide long term soil stability and help prevent large scale migration of the banks. The native shrub and herbaceous plantings below the bridge deck will stabilize soils and help to control sediment and pollution runoff.
- Large wood and channel dynamics – When the planted trees mature, they will be a source of large wood for the lake and riparian area. The proposed planting will provide more large wood than currently exists.
- Organic material sources – The proposed native tree, shrub and groundcover plantings will provide long term organic material inputs to Kellogg Lake.
- Connectivity to other habitats – The Kellogg HCAs are connected to the Kellogg and Kronberg WQRs and the Kronberg Park. As mentioned above, the adjacent WQRs will be enhanced. The proposed mitigation works in concert with those enhancement efforts by removing non-native vegetation and planting appropriate native plant communities. This results in a wider and healthier buffer along Kellogg Lake. In addition, the proposed planting palette in all treatments mirrors the plants currently being used on a restoration project in Kronberg Park. Thus expanding the ecological functions in the area.

The resulting native plant communities will provide improved habitat features for native fauna, provide bank stability, decrease soil and water temperatures, and become a seed sources for the dissemination of native plants in the Kellogg Lake area. The Planting Plans in Appendix B have the details on the mitigation plant diversity and spatial planting.

Prior to construction of the project, a revegetation contractor will remove the invasive species (*Rubus discolor, Ilex aquifolium, Hendra helix*) throughout the project area. After construction is complete and the site is graded to final contours, the project area will be seeded with native grasses and sterile straw for erosion control. Fallowing construction, native trees, shrubs and herbaceous plugs will be installed. Informal monitoring will occur until the project meets restoration objectives and the site is considered self-sustainable.

To evaluate success of the mitigation efforts, TriMet will monitor the project area for five years. Areas that were revegetated will be informally monitored throughout the monitoring period. Regular monitoring reports will be submitted as required by permit conditions. The monitoring report will include an analysis of the project site and a determination as to whether the vegetation is achieving success criteria. Information will be collected on the vegetation present, including verification that the correct species were planted, in the specified amount, and according to the specification in the planting plan. It shall include:

- Permit number;
- Project name and location;
- Vegetation monitoring data (i.e. plant counts);
- Photo documentation from established photo point locations;
- Visual observations of the project site including observations on invasive plant growth and wildlife usage; and
- Description of all activities that have occurred on the project site during the previous monitoring year.

The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five-year period the owner will replace with new plants to achieve an overall 80% survival rate. Ongoing monitoring will occur to maintain this programming. For a period of five years, TriMet will submit an annual report to the Planning Director documenting the survival of the trees and shrubs on the mitigation site.

Should the desired mitigation goals not be achieved, a contingency project will be initiated. The first step of the contingency program is to complete an analysis of the cause of failure in meeting performance standard. Once determined, appropriate remediate steps would be proposed. Corrective measures may include replanting of native species, reseeding, or development of a noxious weed/invasive species eradication plan.

7.3 Kellogg Lake Pile Removal

Approximately 12 derelict piles will be removed as Project mitigation. The removal of derelict piles will restore approximately 60 square feet of Essential Fish Habitat since the piles currently provide perches for piscivorous birds, leach contaminants and inhibit natural reclamation of shallow water habitat. In-water Best Management Practices will be utilized to prevent downstream turbidity, in accordance with DEQ guidelines.

In-water work for a temporary bridge and derelict pile removal will occur during the in-water work window provided by ODFW – July 15 – September 30.

7.4 Responsible Parties

The Applicant will be responsible for the implementation of the mitigation plan as outlined in this document. Contact information for the Applicant is as follows:

Tri-County Metropolitan Transit District of Oregon
Attn: Leah Robbins
710 NE Holladay Street
Portland, Oregon 97232

8.0 PREPARERS AND CONTRIBUTORS

This report and mitigation design was prepared by the following staff from Vigil-Agrimis, Inc:

- Susan Cunningham, Sr. Biologist
- Steven Roelof, RLA
- Susie Mattke-Robinson, RLIT
- Ryan Makie, PE
- Nathan Dasler, EIT

Project design information and alternatives analysis was provided by:

- David Evans and Associates, Inc.,
- KLK Consulting, Inc.
- GreenWorks, PC

Appendix A
Site Photos

Kellogg Lake WQR and HCA
Willamette River HCA



Photo 1 – Kellogg Lake with existing Union Pacific bridge looking south from north shore



Photo 2 – Kellogg Lake with existing Union Pacific bridge looking north from south shore



Photo 3 – South shore WQR and HCA looking east toward Union Pacific bridge



Photo 4 – South shore HCA looking north



Photo 5 – South shore WQR lake bank



Photo 6 – North shore WQR and HCA looking northwest from Union Pacific bridge



Photo 7 – North shore WQR lake bank



Photo 8 – Willamette HCA looking North along McLoughlin Blvd.

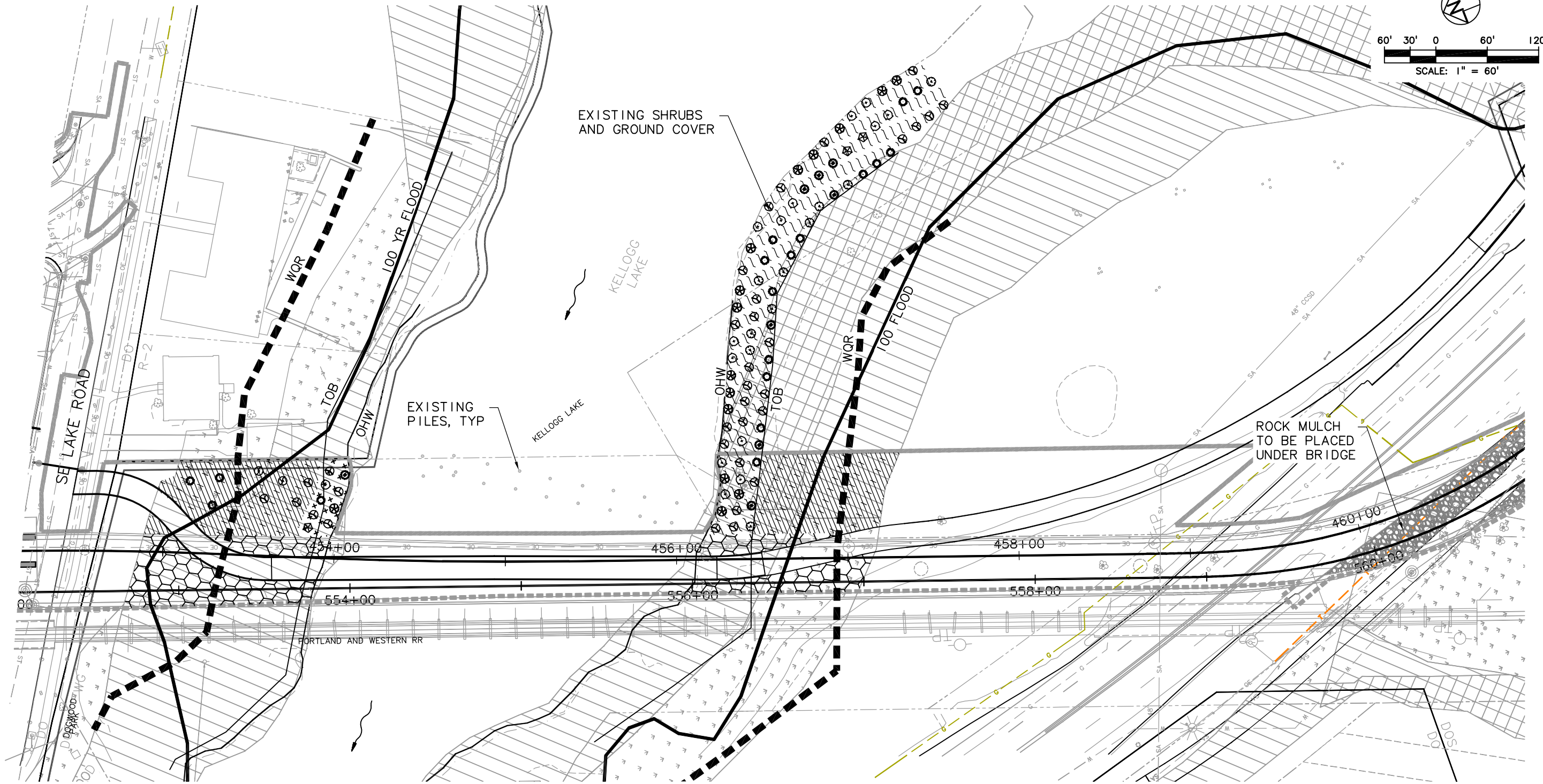


Photo 9 – Willamette HCA looking West across McLoughlin Blvd.



Photo 10 – Willamette HCA looking East along Union Pacific bridge

Appendix B
Mitigation Plans
Kellogg Lake Area WQR and HCA



LEGEND

TOB – TOP OF BANK (DEFINED FROM TOPO)

OHW – ORDINARY HIGH WATER (TRIMET)

WQR – WATER QUALITY RESOURCES (BASED ON FIELD VISIT)

HCA – HABITAT CONSERVATION AREA (CITY OF MILWAUKIE)

100 FLOOD – 100 YEAR FLOOD BOUNDARY (TRIMET)

LOW HCA

MODERATE HCA

HIGH HCA

NO.	DATE	BY CHK.	APPD.	REVISIONS

SAR DESIGNED	09-06-11 DATE	
SAR DRAWN	09-06-11 DATE	
EES CHECKED	DATE	
APPROVED	DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals

DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
KELLOGG STRUCTURE
MITIGATION SITE PLAN OPTION XXX

Exhibit TR1

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1" = 60'	KLG-7A	RH100544JB	

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Plot Date:9/9/2011 6:26 PM_jeff hammond

PLANT SCHEDULE: KRONBERG PARK WQR

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	ACMA	10	Acer macrophyllum – big leaf maple	1" CAL.	B&B	10' o.c.	
	ALRU	26	Alnus rubra – red alder	1" CAL.	B&B	10' o.c.	
	FRLA	2	Fraxinus latifolia – Oregon ash	1" CAL.	B&B	10' o.c.	
	PIPO	14	Pinus ponderosa ssp Valley – Willamette Valley ponderosa	6' HT.	B&B	10' o.c.	
	POBA	13	Populus balsamifera – black cottonwood	1" CAL.	B&B	10' o.c.	
	PSME	7	Pseudotsuga menziesii – Douglas fir	6' HT.	B&B	10' o.c.	
	SALU	14	Salix lucida ssp lasiandra – Pacific willow	1" CAL.	B&B	10' o.c.	
	SHRUBS						
	ACCI	10	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	single
	AMAL	40	Amelanchier alnifolia – serviceberry	18–24" HT.	Bareroot	4' o.c.	single
	COSE	60	Cornus sericea – redtwig dogwood	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	MAAQ	25	Mahonia aquifolium – tall Oregon–grape	18–24" HT.	Bareroot	4' o.c.	single
	OECE	25	Oemleria cerasiformis – Indian plum	18–24" HT.	Bareroot	4' o.c.	single
	PHCA	40	Physocarpus capitatus – Pacific ninebark	18–24" HT.	Bareroot	4' o.c.	single
	RONU	60	Rosa nutkana var. nutkana – Nootka rose	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	RUPA	40	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	RUSP	40	Rubus spectabilis – salmonberry	18–24" HT.	Bareroot	4' o.c.	moist areas
	SASI	60	Salix sitchensis – Sitka willow	18–24" HT.	Bareroot	4' o.c.	near lake
	SPDO	50	Spiraea douglasii – Douglas spirea	18–24" HT.	Bareroot	4' o.c.	moist areas
	SYAL	100	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	cluster of 5

SEED

Agrostis exarata– spike bentgrass	0.14 lbs	APPLICATION RATE:
Deschampsia elongata– slender hairgrass	0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE
Glyceria elata– Western mannagrass	0.34 lbs	
	1.04 lbs	Total PLS per acre

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

PLANT SCHEDULE: KELLOGG AND KRONBERG OPEN AREAS SEEDING

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	SEED						
	NATIVE UPLAND GRASS MIX						

NO.	DATE	BY / CHK.	APPD.	REVISIONS

SAR	DESIGNED	09–06–11 DATE
SAR	DRAWN	09–06–11 DATE
EES	CHECKED	DATE
	APPROVED	DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals

DAVID EVANS AND ASSOCIATES INC.

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PORTLAND, OREGON 97232

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
KELLOGG STRUCTURE
MITIGATION OPTION XXX LEGEND & NOTES

Exhibit TR1

SUBMITTED:	DATE:	APPROVED:	DATE:	SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
				AS SHOWN	KLG–7C	RH100544JB	

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Plot Date:9/9/2011 6:26 PM jeff hammond

PLANT SCHEDULE: KELLOGG LAKE WQR/HCA

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	ALRU	7	Alnus rubra – red alder	1" CAL.	B&B	10' o.c.	
	FRLA	1	Fraxinus latifolia – Oregon ash	1" CAL.	B&B	10' o.c.	
	PIPO	4	Pinus ponderosa ssp Valley – Willamette Valley ponderosa	6' HT.	B&B	10' o.c.	
	POBA	1	Populus balsamifera – black cottonwood	1" CAL.	B&B	10' o.c.	
	PSME	1	Pseudotsuga menziesii – Douglas fir	6' HT.	B&B	10' o.c.	
	RHPU	2	Rhamnus purshiana – cascara	1" CAL.	B&B	10' o.c.	
	SALU	1	Salix lucida ssp lasiandra – Pacific willow	1" CAL.	B&B	10' o.c.	
	SHRUBS						
	ACCI	2	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	
	AMAL	2	Amelanchier alnifolia – serviceberry	18–24" HT.	Bareroot	4' o.c.	
	COSE	10	Cornus sericea – redtwig dogwood	18–24" HT.	Bareroot	4' o.c.	
	MAAQ	2	Mahonia aquifolium – tall Oregon–grape	18–24" HT.	Bareroot	4' o.c.	
	OECE	2	Oemleria cerasiformis – Indian plum	18–24" HT.	Bareroot	4' o.c.	
	PHCA	2	Physocarpus capitatus – Pacific ninebark	18–24" HT.	Bareroot	4' o.c.	
	RONU	5	Rosa nutkana var. nutkana – Nootka rose	18–24" HT.	Bareroot	4' o.c.	
	RUPA	2	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	
	RUSP	5	Rubus spectabilis – salmonberry	18–24" HT.	Bareroot	4' o.c.	
	SASI	10	Salix sitchensis – Sitka willow	18–24" HT.	Bareroot	4' o.c.	
	SPDO	5	Spiraea douglasii – Douglas spirea	18–24" HT.	Bareroot	4' o.c.	
	SYAL	10	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	

SEED

Agrostis exarata– spike bentgrass	0.14 lbs	APPLICATION RATE:
Deschampsia elongata– slender hairgrass	0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE
Glyceria elata– Western mannagrass	0.34 lbs	
	1.04 lbs	Total PLS per acre

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

PLANT SCHEDULE: KELLOGG LAKE WQR/HCA UNDER BRIDGE

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	SHRUBS / SMALL TREES						
	ACCI	5	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	edges
	MAAQ	15	Mahonia aquifolium – tall Oregon grape	18–24" HT.	Bareroot	4' o.c.	edges
	MANE	40	Mahonia nervosa – low Oregon grape	18–24" HT.	Bareroot	4' o.c.	interior
	POMU	210	Polystichum munitum – sword fern	18–24" HT.	Bareroot	4' o.c.	interior
	RUPA	10	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	edges
	SYAL	50	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	scattered
	GROUNDCOVER						
	ARUV	130	Arctostaphylos uva–ursa – kinnikinnick	12–18" HT.	Bareroot	4' o.c.	interior
	FRVE	100	Fragaria vesca – woodland strawberry	12–18" HT.	Bareroot	4' o.c.	interior
	FRVI	100	Fragaria virginiana – wild strawberry	12–18" HT.	Bareroot	4' o.c.	interior

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

NO.	DATE	BY / CHK.	APPD.	REVISIONS

SAR DESIGNED 09-06-11 DATE
SAR DRAWN 09-06-11 DATE
EES CHECKED DATE
APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals
DAVID EVANS AND ASSOCIATES INC.
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: DATE: APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
KELLOGG STRUCTURE
MITIGATION OPTION XXX LEGEND & NOTES
Exhibit TR1

SCALE: AS SHOWN | DRAWING NO.: KLG–7B | CONTRACT NO.: RH100544JB | SHEET NO.:

5.1 Page 104

P:\T\TMTX00000127\0400CAD\Permits\Land Use Permit\2-Kellogg\KLG-7B.dwg Sep. 09, 2011 - 4:34 PM jeff hammond
Plot Date:9/9/2011 6:26 PM jeff hammond

Portland to Milwaukie Light Rail Project

Water Quality Resource and Habitat Conservation Area Report

Kronberg Park

City of Milwaukie, Oregon

Submitted to:

City of Milwaukie
10722 SE Main Street
Milwaukie, Oregon 97222

Applicant:

TriMet
4012 SE 17th Ave
Portland, Oregon 97202

Prepared by:

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Revised September 8, 2011

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1.0 INTRODUCTION

The Portland Milwaukie Light Rail Project is a 7.3 mile extension of TriMet regional rail system. The TriMet light rail will cross Kellogg Lake on a new bridge to the southeast side of the existing Union Pacific railroad bridge. Kellogg Lake is located in Section 36, Township 1 south, and Range 1 east. Kronberg Park is located on the south shore of the lake in taxlots 1S1E36CB 3000 and 3100. See the project vicinity map and site map included with the permitting package.

The site includes portions of the south shore of Kellogg Lake. Kellogg Lake is a Primary Protected Water Feature as defined by the City of Milwaukie's Water Resource Regulations (Milwaukie Municipal Code 19.322). Drawings in the permitting package show the extent of the Water Quality Resource (WQR) and associated vegetated corridors. In addition, the site also includes a mapped Habitat Conservation Area (HCA), and is subject to the Interim Implementation of Metro Title 13.

2.0 EXECUTIVE SUMMARY

The main points of this report are summarized as follows:

- The new Portland-Milwaukie light rail line crosses Kellogg Lake.
- The construction limits have been reduced to the extent practicable, but development of the light rail bridge will require the removal of all vegetation within the construction limits.
- Kellogg Lake is a Primary Protected Water Feature as defined by the City of Milwaukie's Water Resource Regulations (Milwaukie Municipal Code [MCC] 19.402).
- The WQR and associated vegetated corridor was delineated in the field. The vegetated corridor extends 80 feet from the edge of the Ordinary High Water (OHW) on the south side of the lake.
- The vegetated corridor is currently in degraded condition per MCC 19.402.9.E.
- The project will result in 3,430 sq. ft temporary construction impacts to the vegetated corridor of the WQR. There will be no permanent impacts to the WQR vegetated corridor from the light rail bridge.
- The mapped HCA extends between 25 and 30 feet beyond the field delineated WQR boundary. There is a total of 1,165 sq. ft. of HCA within the construction limits. The HCA is mapped both Low (245 sq. ft.) or Moderate (920 sq. ft.).
- The project will result in. 1,165 sq. ft. of temporary impacts to the HCA. There will be no permanent impacts to the HCA from the light rail bridge.
- The project will remove two trees greater than 6 inches diameter at breast height (DBH) (one from the WQR vegetated corridor and one from the HCA).
- In the future, a pedestrian bridge maybe added to the light rail bridge that would access Kronberg Park. Access to this pedestrian bridge may impact an additional 140 sq. ft. to the HCA.
- A mitigation plan has been developed to compensate for the unavoidable impacts to the WQR vegetated corridor. The mitigation plan meets the requirements of 19.402.9.E.
- A mitigation plan has been developed to compensate for the ecological impacts to the HCA while taking into consideration the future development of the Kronberg Park and the pedestrian bridge.

- The project will clear span Kellogg Lake and no impacts will occur below OHW of Kellogg Lake. TriMet applied for and received a permit from the Department of State Lands and US Army Corps of Engineers for this project (45253-RF). This application included an alternatives analysis, and measures to minimize impacts to wetlands and water resources, and a Compensatory Mitigation Plan (Environmental Science and Assessment, LLC 2010).

3.0 METHODOLOGY

Vigil-Agrimis, Inc. has prepared this WQR and HCA Report to evaluate the existing condition, assess potential impacts from the proposed development, and describe a mitigation plan that would compensate for potential impacts to water quality and habitat resources as required in Section 19.402 and Title 13 Model Ordinance.

The OHW of Kellogg Lake was mapped by a survey team and provided to the design team. Table 19.402.9.A was used to determine the WQR boundaries.

Two site visits, on June 16, 2011 and July 1, 2011 were conducted to accurately map existing vegetation and the overall resource condition. Vegetation plots were taken in each plant community to document overall resource conditions. Additionally, the location of existing natural features (wetlands, additional water sources, rock outcroppings, etc.) and the type and location of trees larger than 6 inches DBH have been determined in the field as required by MMC 19.402.9(B). The limits of the resources on the site are shown in the figures included in the permitting package. These figures also show the locations of the existing trees that are 6 inches DBH or greater.

4.0 WATER QUALITY RESOURCE AREAS

The City of Milwaukie's Water Quality Resource Area Regulations include vegetated corridors and the adjacent water features, including Primary Protected Water Features and Secondary Protected Water Features. No Secondary Protected Water Features are present on this site. Sections 4.1 and 4.2, below, provide descriptions of the on-site Primary Protected Water Features and associated vegetated corridors, respectively.

4.1 Primary Protected Water Features Existing Condition

As described in Table 1 of the MMC 19.322, Primary Protected Water Features include all perennial streams and streams draining greater than 100 acres, Title 3 wetlands, natural lakes and springs. Kellogg Lake was determined to be a primary protected water feature due to the drainage size and the perennial nature of the man-made lake. It also has been mapped on WQR Map 3 as a drainage course with an associated vegetated corridor.

Kellogg Lake is an old mill pond that was constructed in 1858. The lake is approximately 14 acres with a length of 3,600 feet and a width of 180 feet at the crossing. The lake suffers from poor native fish passage, invasive plant species, high pollutant loading, and some bank erosion.

On the south shore the work area is within the taxlots 3000 and 3100 and about 0.2 acres of open lake water. The bank is steep. The distance between OHW and the TOB is approximately 30 feet. From the TOB inland the slope is approximately 3%.

4.2 Water Quality Resource Vegetated Corridors

As described in Table 1 of the MMC 19.402, Primary Protected Water Features have an associated vegetated corridor of 50 to 200 feet wide depending on the slopes adjacent to the resource. The extent of the vegetated corridor within the project site is shown in the figures included in the permitting package**.** A brief description and an evaluation of the condition of each of the communities are provided below.

The vegetated corridor width on the south shore was determined to be 80 feet offset from OHW. The distance between OHW and the TOB is 30 feet and the slope is >25%, as described above. There is only one plant community present in the vegetated corridor area within the project limits at Kronberg Park. The vegetated corridor is dominated by non-native invasive plant species. The overall tree canopy cover is approximately 5% with bigleaf maple (*Acer macrophyllum)* as the dominant species. The shrub cover is approximately 50% with Armenian blackberry (*Rubus armeniacus*) as the dominant. The groundcover is nearly 100% non-native invasives. The percent coverage of the representative trees, shrubs, and groundcovers is detailed in Table 1 below.

Table 1. WQR Assessment, Kronberg Park

Botanical Name	Common Name	Percent Cover	Native?
TREES (total coverage = 5%)			
Acer macrophyllum	bigleaf maple	5%	Yes
SHRUBS (total coverage = 50%)			
Rubus armeniacus	Armenian blackberry	50%	No
GROUNDCOVER (total coverage = 50%)			
A variety of non-native grasses, vines, and herbaceous plants dominated by tall fescue, velvet grass, English ivy, and Canada thistle.			

The vegetated corridor is in degraded condition per Table 19.402.9.E. Non-native invasive plant species cover nearly 100% of the area. The ecological function of this area is very low. It is a population source for the spread of very aggressive non-native plant species, it is providing very little habitat value, and it is not providing maximum shade and cooling for the lake.

Armenian blackberry and English ivy (*Hedera helix*) cover 100% of the sloped, unmown lake bank. Non-native invasive species in the vegetated corridor include Canada thistle (*Cirsium arvense*), yellow flag iris (*Iris pseudacorus*), English ivy *Hedera helix*), poison hemlock (*Conium maculatum)*, morning glory (*Convulvus arvensis*), clematis (*Clematis vitalba*), Armenian blackberry, velvet grass (*Holcus lanatus*), and tall fescue (*Festuca arundinacea*).

5.0 HABITAT CONSERVATION AREA

The mapped HCA extends beyond 10 to 25 feet beyond the WQR vegetated corridor boundary. The site contains both Low (245 sq. ft.) and Moderate (920 sq. ft.) mapped HCA. On the ground, there is no difference in habitat type.

The habitat in the HCA area within the project limits at the Kronberg Park is dominated by a mown European pasture grass and with one Oregon white oak (*Quercus garryana)*. The overall tree canopy

cover is approximately 50% that is provided by that single Oregon white oak. The shrub layer is absent. The percent coverage of the representative trees, shrubs, and groundcovers is detailed in the Table 2 below.

Non-native plant species cover nearly 100% of the area. Non-native invasive species in the HCA include velvet grass, and tall fescue. The ecological function of this area is very low due to not having shrubs in the community.

Table 2. HCA Assessment, Kronberg Park

Botanical Name	Common Name	Percent Cover	Native?
TREES (total coverage = 50%)			
Quercus garryana	Oregon white oak	50%	Yes
GROUNDCOVER (total coverage = 100%)			
A variety of non-native grasses, vines, and herbaceous plants dominated by tall fescue and velvet grass.			

The ecological functional values of the HCA as required by 7(D)(1)(a)(i) and Table 4 of the Title 13 Model Ordinance is listed below:

- Microclimate and shade – The existing vegetation provides approximately 85% cover and the dominant species is a non-native. The single tree's canopy is providing good microclimate and shade.
- Stream flow moderation and water storage – The canopy cover of the plant community will intercept rain before it reaches the ground which moderates local water inputs to the lake. The root systems of the trees, shrubs, and groundcover absorb a portion of the rainwater that reaches the ground.
- Bank stabilization, sediment and pollution control – The HCA area is offset at least 50 feet from the lake TOB, so it provides minimal direct bank stabilization. However, the root systems provide long term soil stability and help prevent large scale migration of the banks.
- Large wood and channel dynamics – The existing tree is of substantial size and is back 50 feet from the lake. It is not a primary source of large wood and has a low impact on channel dynamics.
- Organic material sources – The existing vegetation provides a good source for organic material.

The existing ecological functional values of the HCA, as required by 7(D)(1)(a)(ii)(C) and (D) Table 4 of the Title 13 Model Ordinance, are listed below:

- Connectivity of the habitat to water – The HCA is located 50 feet from the OHW of Kellogg Lake.
- Connectivity of the habitat to other habitat areas – The HCA is connected to the vegetated corridor on the north side. The vegetated corridor was determined to be in degraded condition due to the extensive coverage by non-native species. The HCA is connected to Kronberg Park on the east and south sides. The park is approximately 3.5 acres in size along the south shore of Kellogg Lake. It is currently undeveloped, but there are future plans to develop it into a park. The habitat in Kronberg Park adjacent to this HCA consists mostly of mown European pasture grasses. There are a few trees scattered throughout the area that provides a sparse tree

canopy. The shrub layer is mostly absent. The Union Pacific Railroad bridge boarders the west side.

6.0 SUMMARY OF IMPACTS

The Portland-Milwaukie light rail will cross Kellogg Lake on a new bridge to the southeast side of the existing Union Pacific railroad bridge. The construction of the bridge will require temporary impacts to the Kronberg Park WQR vegetated corridor and HCA related to access and material staging. All vegetation within the delineated construction limits will be removed. Areas disturbed by construction will be planted with native species.

The construction of the new bridge at Kellogg Lake will not increase pollutant loads, since the bridge will not convey automotive traffic, but will alter hydrologic inputs at Kellogg Lake. The increased hydrologic inputs from the impervious bridge decks are not expected to significantly impact the hydrologic regime of these waterways, since the added surface areas are such a small percentage of the total watershed areas.

In the future, the City would like to make Kronberg Park a developed park. Additionally, a pedestrian bridge maybe added to the light rail bridge. This pedestrian bridge would access Kronberg Park. The pedestrian bridge is structured to be simply hung from the interior of the two pairs of columns on either side of Kellogg Lake. Connections to grade, and paths to and from this element, have not yet been designed. In order to quantify the impacts caused by the bridge, it is estimated that it would be 12 feet wide with a one foot shoulder on each side.

6.1 Water Quality Resources Impacts

Within this project site, there will be no permanent impacts to Kellogg Lake or the WQR vegetated corridor. The construction activities will temporarily impact 3,430 sq. ft. of WQR vegetated corridor. The impacts to the WQR will be from temporary construction activities including site access and material staging. All existing vegetation (degraded condition) will be removed in these areas during construction. The area will be replanted with native species as described in the Mitigation section below.

The project will remove one, 18-inch big leaf maple tree within the WQR vegetated corridor.

6.2 Habitat Conservation Area Impacts

Within this project site, the construction activities will temporarily impact 1,260 sq. ft. of HCA. There will be no permanent impacts to the HCA from the light rail bridge. The impacts to the HCA will be from temporary construction activities including site access and material staging. All existing vegetation within the construction limits will be removed. The area will be replanted with native species as described in the Mitigation section below.

The project will remove one 42-inch DBH Oregon white oak tree within the HCA. Designers looked at trying to avoid the removal of this tree, but given the location of the tree in proximity to the bridge and size of equipment and materials needed to construct the bridge, it was determined to not be feasible to avoid this tree.

The future pedestrian bridge would result in an additional 140 sq. ft. of permanent impact to the HCA.

6.3 Alternatives Analysis

After public review and extensive analysis through the National Environmental Policy Act process and agency coordination, the governing bodies of the project sponsors, including the City of Portland, City of Milwaukie, Multnomah County, Clackamas County, Metro and TriMet, have agreed upon the overall project described and analyzed in the Final Environmental Impact Statement (FEIS, Metro July 2010) and other documents. The proposed alignment was selected based on balancing its transit benefits with environmental, construction, social and economic impacts. While several alternatives may have resulted in slightly lower impacts to Kellogg Lake, they were not deemed practicable when analyzing effects on the overall project and to other environmental elements at the Kellogg Lake site and its immediate surroundings.

The proposed alignment will result in some sensitive area impacts, but overall, it is preferable to the other alternatives evaluated. It also provides the maximum ridership benefits, maximizes usage and helps to control future traffic and congestion. Further information on mode, alignment, design options, and termini analysis is available in Chapter 2 and Appendix L of the 2008 Supplemental Draft EIS (Metro 2008) and the 2010 FEIS. These environmental documents and additional information related to the Willamette River Bridge study can be found on TriMet's Website at http://www.trimet.org/pm/library/index.htm.

In 2007, the Milwaukie Transit Working Group studied several alternative alignments through the City and across Kellogg Lake, including the proposed alignment. After refinements, analyses, several public meetings, City staff reports, and public testimony, the City Council agreed four to one not to recommend the addition of new downtown alignments into this SDEIS. The Mayor of Milwaukie submitted a letter to the Portland-Milwaukie Steering Committee recommending that no new alignments be added through downtown Milwaukie. The proposed alternative was the only alignment that was advanced.

The project minimized impacts at Kellogg Lake through aligning structure as perpendicular as practicable to the shore line and placing piers above current OHW level. An alignment that resulted in less over water structure was evaluated to the west of the existing railroad bridges, but it was not practicable due to constraints within the City of Milwaukie and interactions with the existing railroad alignment. The alignment through downtown Milwaukie would have to have changed to the west of the existing rail line, resulting in much higher impacts to residences, businesses, and schools; and likely impacting more water quality and habitat resources at Crystal Creek and Spring Creek. Therefore this alternative was determined to not be practicable.

An alternative design was evaluated that would place the piers and abutments for the bridge above the TOB of Kellogg Lake, but the depth of the span would have been inordinately thick to support a structure so massive. It would also have to be much higher to account for this depth, resulting in much higher visual impacts and potentially unsafe grades on the approaches. Therefore this alternative was determined to not be practicable.

Another alternative proposed in the FEIS placed a pier below the existing ordinary high water level with the assumption that the level would be lower once the dam downstream of the bridge is removed. During advanced design, the one pier was moved to above the OHW. This change resulted in lower impacts to Kellogg Lake while changing visual and grade elements negligibly.

Different construction alternatives were considered for placement of the bridge piers. It was determined that drilled shaft construction techniques conducted from a work bridge will greatly reduce hydroacoustic impacts to fish and other aquatic species.

6.4 Avoidance and Minimization of Impacts

The Joint Removal Fill Permit Application and the Biological Assessment prepared for this project includes a comprehensive list of conservation measures that designed to avoid and minimize impacts to wetlands, water bodies, and water quality resource areas. Additional measures will be implemented based on the conditions of approval in the Removal-Fill Permit (45253-RF) and the Biological Opinion issued for the project (NOAA Fisheries 2010). Construction activities will utilize Best Management Practices as documented in the required Construction Management Plan. The Plan will ensure that – throughout the site preparation and construction processes - drainage of hazardous materials or erosion, pollution, or sedimentation to the adjacent Water Quality Resource Area is minimized to the greatest extent possible.

The construction limits have been reduced to the extent practicable. The construction easement within the Park is about 14,455 sq ft. This results in impacting about 9% of the entire Park. The bridge will be located next to and parallel to the existing railroad bridge at a narrow spot of the lake. The project is planned in an area of the WQR and HCA that does not have wetlands, debris, or noxious materials that would make restoration more difficult. No permanent structures will be located within the WQR and HCA, and the entire area will be revegetated with native species.

A work plan has been devised that limits the area of impact as much as possible. Work areas will be clearly marked in the field and existing native vegetation along and outside of the construction limits will be protected and left in place. Site preparation and construction practices shall be followed that prevent drainage of hazardous materials or erosion, pollution, or sedimentation to the WQR area.

7.0 MITIGATION

A Compensatory Mitigation Plan (Environmental Services and Assessment LLC., June 2010) has been prepared for the overall project as part of the Joint Removal-Fill Permit Application. A mitigation plan has been developed to compensate for the unavoidable impacts to both the WQR Vegetated Corridors (4,750 sq. ft. permanent and 3,130 sq. ft. temprorary) and the HCAs (3,900 sq. ft. permanent and 2,000 sq. ft. temporary).

The mitigation plan proposed meets MCC 13.402.1.G for impacts to the WQR and Section 7.D. 1.b.ii for impacts to the HCA. See Appendix B for planting plans that detail the mitigation planting communities and spatial planting plan. The mitigation plan consists of the following treatments:

- **Treatment 1** – This treatment will occur between the OHW and the TOB along Kellogg Lake. The goal of this treatment plan is to ensure the successful establishment of a native riparian community along Kellogg Lake. The planted area will result in robust native riparian plant community that will provide better shading to the lake, improved habitat features for native fauna, and will become a seed source for the dissemination of native plants in the Kellogg Lake area. Treatment 1 includes a wide variety of native riparian trees and shrubs, and a native underseed mix. This plant palette includes most of the common riparian plants found in the Willamette Valley. It is a mix of fast and slow growing species, deciduous and evergreen trees, and shrubs that will provide food and shelter for native fauna as well as seasonal color. Red alder, big-leaf maple, and Douglas-fir are the primary trees in the mix, with shrubs such as snowberry, Nutka rose, and red-osier dogwood to establish a diverse and robust understory. These plants will help prevent bank erosion and create complex habitat structure along the lakeshore. The trees are spaced 10 feet on-center and the shrubs are spaced four feet on-center. The plant spacing allows for rapid establishment of canopy cover and understory layers

to help out-compete common riparian weeds such as Armenian blackberry and reed canarygrass. The underseed mix provides rapid groundcover establishment for erosion and weed control while the trees and shrubs become accustomed to their new environment.

- **Treatment 2** – This treatment will occur landward of Treatment 1 back to the HCA boundary. This treatment consists of an upland grass mix. The goal of this treatment is to establish open site lines and easy maintenance. This will also allow for the maximum flexibility for park development in the future.

Performance criteria for all planting treatments described above includes:

- Coverage by native species shall be at least 80% by the fifth year following plant installation. Desirable, native recruited native trees or shrubs that develop in planted areas may be included when calculating survival numbers.
- Non-native invasive vegetation shall not exceed 20% coverage within the project area at any time during the monitoring period.

The site will be permanently revegetated during the first planting season following the completion of construction. The planting season for bareroot plant material is December 1 through February 28th. Temporary irrigation will be used to help establish plants below the bridge structure. TriMet will monitor and maintain the site for five years after the initial planting. Maintenance will include providing mulch rings around trees and shrubs, watering, and weeding as necessary to allow the native plant community to mature to a self-sustaining condition. The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five year period TriMet will replace with new plants to achieve an overall 80% survival rate.

7.1 Water Quality Resource Areas

For impacts to the WQRs, a mitigation plan has been developed in accordance with the specifications in Table 19.402.9.E. Specific elements of the plan include:

- All non-native invasive plants will be removed from within the construction limits;
- All cleared areas will be replanted with a mix of plants from the Portland Native Plant List (as per directed by City of Milwaukie);
- The WQR areas disturbed by construction will be planted with appropriate native plants to provide 100% surface coverage.
- The WQR will be planted with Treatment 1 (described above) from OHW to TOB. Areas landward of TOB will be planted with Treatment 2.

7.2 Habitat Conservation Areas

The mitigation plan meets the requirements of Section 6E. Section 6.E.1. specifies the required plant densities for the mitigation design. The design must meet either Mitigation Option 1 or 2, whichever results in more tree plants. Table 5 summarizes the required plant densities for either Option 1 or Option 2 under Section 6.E.1.

Table 5. Required Plants and Plant Densities (Title 13 Model Ordinance Section 6.E.1)

Option 1			**Option 2**		
Trees to be Removed (DBH)	Trees Required to be Planted	Shrubs Required to be Planted	Area (sq. ft.)	5 trees/500 sq. Ft.	25 shrubs/500 sq. ft.
Kronberg HCA					
42"	10	30	3,430	12	58
Total	***10***	***30***		***12***	***58***

The development of the mitigation design took into consideration the potential for a future pedestrian bridge and the development of Kronberg Park. The mitigation plan meets both the objectives of providing revegetation that fit into a park setting and restoring the ecological functions that are being impacted by the new light rail bridge. Specific elements of the plan include:

- The proposed mitigation plan meets Option 2 plant densities. Within the construction limits, between the OHW and the TOB of Kellogg Lake, 13 trees and 65 shrubs will be planted. Trees will be 1 inch DBH that are spaced on 10 foot centers and 18-24 inch tall shrubs will be planted on 4 foot centers.
- All non-native invasive plants will be removed from within the construction limits;
- All cleared areas will be replanted with a mix of plants from the Portland Native Plant List (as per directed by City of Milwaukie);
- The HCA areas disturbed by construction will be planted with appropriate native plants.
- Permanent impacts to the HCA (140 sq. ft.) will be mitigated for on a 1:1 replacement ratio along the between OHW and TOB of Kellogg Lake with Treatment 1 described above.
- The HCA within the construction limits will be planted with Treatment 2 described above.

The proposed mitigation plan has been designed to improve the ecological function of the Kronberg HCA in the following manner:

- Microclimate and shade – The banks of Kellogg Lake will be densely planted with a mix of trees and shrubs that when mature will provide shade and cooling of soil temperatures.
- Stream flow moderation and water storage – The coverage of the proposed plant communities will intercept rain before it reaches the ground which will moderate local water inputs to the lake. The root systems of the trees, shrubs, and groundcover will absorb a portion of the rainwater that reaches the ground. In addition, during the growing season, trees and shrubs will uptake groundwater further reducing direct water inputs to the lake.
- Bank stabilization, sediment and pollution control – The root system provided by the dense plantings along the steep banks of Kellogg Lake will provide substantial bank stabilization. The root systems will provide long term soil stability and help prevent large scale migration of the

banks. The native shrub and herbaceous plantings below the bridge deck will stabilize soils and help to control sediment and pollution runoff.

- Large wood and channel dynamics – When the planted trees mature, they will be a source of large wood for the lake and riparian area. The proposed planting will provide more large wood than currently exists.
- Organic material sources – The proposed native tree, shrub and groundcover plantings will provide long term organic material inputs to Kellogg Lake.
- Connectivity to other habitats – The Kronberg Park is rughly 3.5 acres located on the south side of Kellogg Lake. Some restoration has already occurred on the park. The proposed planting plan uses the same plant mix as that restoration project. The proposed mitigation works in concert with those enhancement efforts by removing non-native vegetation and planting appropriate native plant communities. This results in a wider and healthier buffer along Kellogg Lake. In addition, the proposed planting palette in all treatments mirrors the plants currently being used on a restoration project in Kronberg Park. Thus expanding the ecological functions in the area.

The resulting native plant communities will provide improved habitat features for native fauna, provide bank stability, decrease soil and water temperatures, and become a seed sources for the dissemination of native plants in the Kellogg Lake area. The Planting Plans in Appendix B have the details on the mitigation plant diversity and spatial planting.

Prior to construction of the project, a revegetation contractor will remove the invasive species (*Rubus discolor, Ilex aquifolium, Hendra helix*) throughout the project area. After construction is complete and the site is graded to final contours, the project area will be seeded with native grasses and sterile straw for erosion control. Fallowing construction, native trees, shrubs and herbaceous plugs will be installed. Informal monitoring will occur until the project meets restoration objectives and the site is considered self-sustainable.

7.3 Monitoring Plan

To evaluate success of the mitigation efforts, TriMet will monitor the project area for five years. Areas that were revegetated will be informally monitored throughout the monitoring period. Regular monitoring reports will be submitted as required by permit conditions. The monitoring report will include an analysis of the project site and a determination as to whether the vegetation is achieving success criteria. Information will be collected on the vegetation present, including verification that the correct species were planted, in the specified amount, and according to the specification in the planting plan. It shall include:

- Permit number;
- Project name and location;
- Vegetation monitoring data (i.e. plant counts);
- Photo documentation from established photo point locations;
- Visual observations of the project site including observations on invasive plant growth and wildlife usage; and
- Description of all activities that have occurred on the project site during the previous monitoring year.

The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five-year period the owner will replace with new plants to achieve an

overall 80% survival rate. Ongoing monitoring will occur to maintain this programming. For a period of five years, TriMet will submit an annual report to the Planning Director documenting the survival of the trees and shrubs on the mitigation site.

Should the desired mitigation goals not be achieved, a contingency project will be initiated. The first step of the contingency program is to complete an analysis of the cause of failure in meeting performance standard. Once determined, appropriate remediate steps would be proposed. Corrective measures may include replanting of native species, reseeding, or development of a noxious weed/invasive species eradication plan.

7.4 Responsible Parties

The Applicant will be responsible for the implementation of the mitigation plan as outlined in this document. Contact information for the Applicant is as follows:

Tri-County Metropolitan Transit District of Oregon
Attn: Leah Robbins
710 NE Holladay Street
Portland, Oregon 97232

8.0 PREPARERS AND CONTRIBUTORS

This report and mitigation design was prepared by the following staff from Vigil-Agrimis, Inc:

- Susan Cunningham, Sr. Biologist
- Steven Roelof, RLA
- Susie Mattke-Robinson, RLIT
- Ryan Makie, PE
- Nathan Dasler, EIT

Project design information and alternatives analysis was provided by:

- David Evans and Associates, Inc.,
- KLK Consulting, Inc.
- GreenWorks, PC

Appendix A
Site Photos

Kronberg Park WQR and HCA Report



Photo 1 – Kellogg Lake with existing Union Pacific bridge looking south from north shore



Photo 2 – South shore WQR and HCA looking east toward Union Pacific bridge

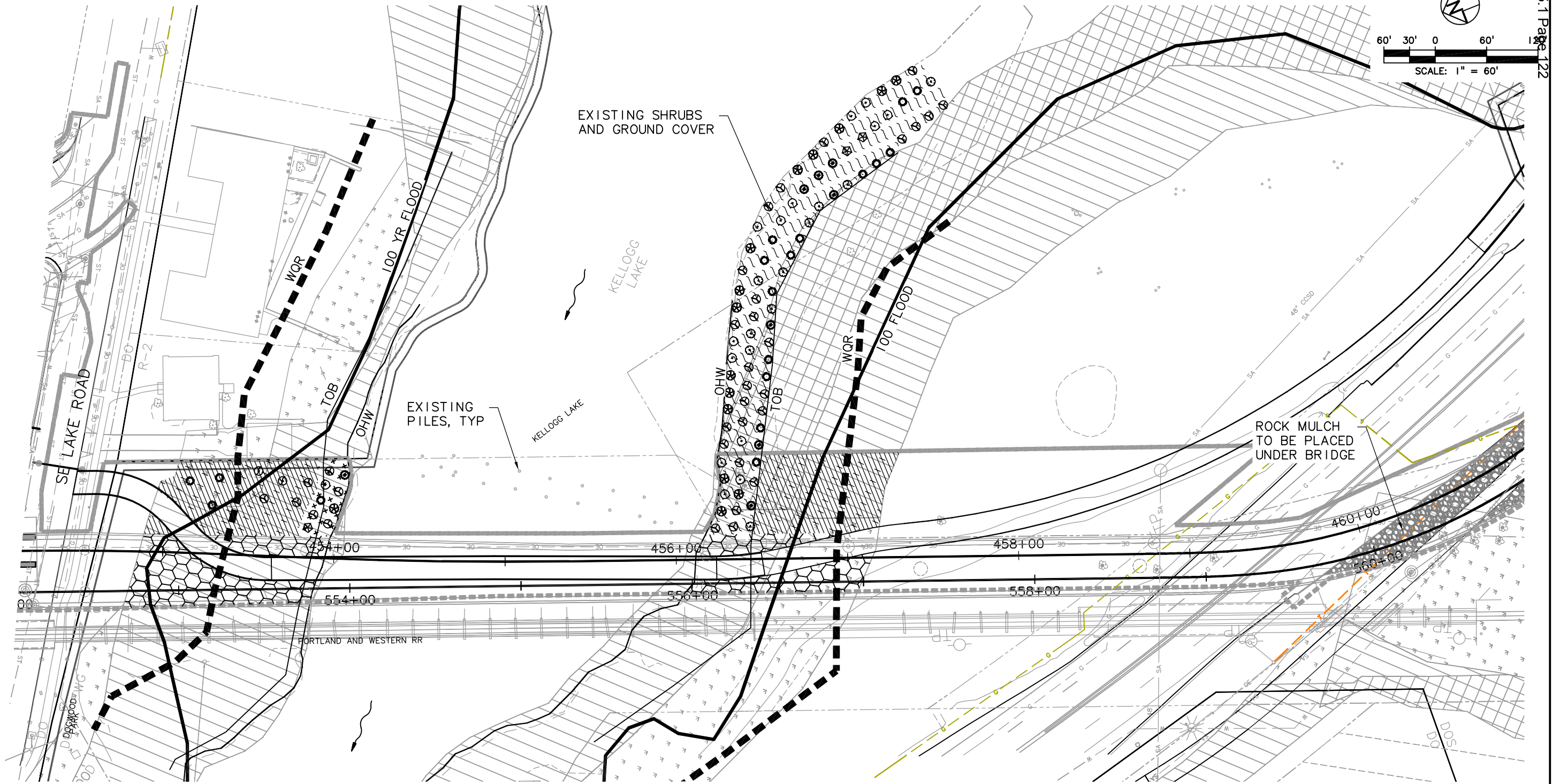


Photo 3 – South shore HCA looking north



Photo 4 – South shore WQR lake bank

Appendix B
Mitigation Plans
Kronberg Park WQR and HCA Report



LEGEND

TOB – TOP OF BANK (DEFINED FROM TOPO)

OHW – ORDINARY HIGH WATER (TRIMET)

WQR – WATER QUALITY RESOURCES (BASED ON FIELD VISIT)

HCA – HABITAT CONSERVATION AREA (CITY OF MILWAUKIE)

100 FLOOD – 100 YEAR FLOOD BOUNDARY (TRIMET)

LOW HCA

MODERATE HCA

HIGH HCA

NO.	DATE	BY CHK.	APPD.	REVISIONS

SAR DESIGNED	09-06-11	DATE
SAR DRAWN	09-06-11	DATE
EES CHECKED		DATE
APPROVED		DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals

DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
KELLOGG STRUCTURE
MITIGATION SITE PLAN OPTION XXX

Exhibit TR2

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1" = 60'	KLG-7A	RH100544JB	

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Plot Date:9/9/2011 6:26 PM_jeff hammond

PLANT SCHEDULE: KELLOGG LAKE WQR/HCA

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	ALRU	7	Alnus rubra – red alder	1" CAL.	B&B	10' o.c.	
	FRLA	1	Fraxinus latifolia – Oregon ash	1" CAL.	B&B	10' o.c.	
	PIPO	4	Pinus ponderosa ssp Valley – Willamette Valley ponderosa	6' HT.	B&B	10' o.c.	
	POBA	1	Populus balsamifera – black cottonwood	1" CAL.	B&B	10' o.c.	
	PSME	1	Pseudotsuga menziesii – Douglas fir	6' HT.	B&B	10' o.c.	
	RHPU	2	Rhamnus purshiana – cascara	1" CAL.	B&B	10' o.c.	
	SALU	1	Salix lucida ssp lasiandra – Pacific willow	1" CAL.	B&B	10' o.c.	
	SHRUBS						
	ACCI	2	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	
	AMAL	2	Amelanchier alnifolia – serviceberry	18–24" HT.	Bareroot	4' o.c.	
	COSE	10	Cornus sericea – redtwig dogwood	18–24" HT.	Bareroot	4' o.c.	
	MAAQ	2	Mahonia aquifolium – tall Oregon–grape	18–24" HT.	Bareroot	4' o.c.	
	OECE	2	Oemleria cerasiformis – Indian plum	18–24" HT.	Bareroot	4' o.c.	
	PHCA	2	Physocarpus capitatus – Pacific ninebark	18–24" HT.	Bareroot	4' o.c.	
	RONU	5	Rosa nutkana var. nutkana – Nootka rose	18–24" HT.	Bareroot	4' o.c.	
	RUPA	2	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	
	RUSP	5	Rubus spectabilis – salmonberry	18–24" HT.	Bareroot	4' o.c.	
	SASI	10	Salix sitchensis – Sitka willow	18–24" HT.	Bareroot	4' o.c.	
	SPDO	5	Spiraea douglasii – Douglas spirea	18–24" HT.	Bareroot	4' o.c.	
	SYAL	10	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	

SEED

Agrostis exarata– spike bentgrass	0.14 lbs	APPLICATION RATE:
Deschampsia elongata– slender hairgrass	0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE
Glyceria elata– Western mannagrass	0.34 lbs	
	1.04 lbs	Total PLS per acre

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

PLANT SCHEDULE: KELLOGG LAKE WQR/HCA UNDER BRIDGE

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	SHRUBS / SMALL TREES						
	ACCI	5	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	edges
	MAAQ	15	Mahonia aquifolium – tall Oregon grape	18–24" HT.	Bareroot	4' o.c.	edges
	MANE	40	Mahonia nervosa – low Oregon grape	18–24" HT.	Bareroot	4' o.c.	interior
	POMU	210	Polystichum munitum – sword fern	18–24" HT.	Bareroot	4' o.c.	interior
	RUPA	10	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	edges
	SYAL	50	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	scattered
	GROUNDCOVER						
	ARUV	130	Arctostaphylos uva–ursa – kinnikinnick	12–18" HT.	Bareroot	4' o.c.	interior
	FRVE	100	Fragaria vesca – woodland strawberry	12–18" HT.	Bareroot	4' o.c.	interior
	FRVI	100	Fragaria virginiana – wild strawberry	12–18" HT.	Bareroot	4' o.c.	interior

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

NO.	DATE	BY / CHK.	APPD.	REVISIONS

SAR DESIGNED 09-06-11 DATE
SAR DRAWN 09-06-11 DATE
EES CHECKED DATE
APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals | DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: | DATE: | APPROVED: | DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
KELLOGG STRUCTURE
MITIGATION OPTION XXX LEGEND & NOTES
Exhibit TR2

SCALE: AS SHOWN | DRAWING NO.: KLG–7B | CONTRACT NO.: RH100544JB | SHEET NO.:

5.1 Page 123

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Plot Date:9/9/2011 6:26 PM jeff hammond

PLANT SCHEDULE: KRONBERG PARK WQR

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	ACMA	10	Acer macrophyllum – big leaf maple	1" CAL.	B&B	10' o.c.	
	ALRU	26	Alnus rubra – red alder	1" CAL.	B&B	10' o.c.	
	FRLA	2	Fraxinus latifolia – Oregon ash	1" CAL.	B&B	10' o.c.	
	PIPO	14	Pinus ponderosa ssp Valley – Willamette Valley ponderosa	6' HT.	B&B	10' o.c.	
	POBA	13	Populus balsamifera – black cottonwood	1" CAL.	B&B	10' o.c.	
	PSME	7	Pseudotsuga menziesii – Douglas fir	6' HT.	B&B	10' o.c.	
	SALU	14	Salix lucida ssp lasiandra – Pacific willow	1" CAL.	B&B	10' o.c.	
	SHRUBS						
	ACCI	10	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	single
	AMAL	40	Amelanchier alnifolia – serviceberry	18–24" HT.	Bareroot	4' o.c.	single
	COSE	60	Cornus sericea – redtwig dogwood	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	MAAQ	25	Mahonia aquifolium – tall Oregon–grape	18–24" HT.	Bareroot	4' o.c.	single
	OECE	25	Oemleria cerasiformis – Indian plum	18–24" HT.	Bareroot	4' o.c.	single
	PHCA	40	Physocarpus capitatus – Pacific ninebark	18–24" HT.	Bareroot	4' o.c.	single
	RONU	60	Rosa nutkana var. nutkana – Nootka rose	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	RUPA	40	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	cluster of 5
	RUSP	40	Rubus spectabilis – salmonberry	18–24" HT.	Bareroot	4' o.c.	moist areas
	SASI	60	Salix sitchensis – Sitka willow	18–24" HT.	Bareroot	4' o.c.	near lake
	SPDO	50	Spiraea douglasii – Douglas spirea	18–24" HT.	Bareroot	4' o.c.	moist areas
	SYAL	100	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	cluster of 5

SEED

Agrostis exarata– spike bentgrass	0.14 lbs	APPLICATION RATE:
Deschampsia elongata– slender hairgrass	0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE
Glyceria elata– Western mannagrass	0.34 lbs	
	1.04 lbs	Total PLS per acre

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

PLANT SCHEDULE: KELLOGG AND KRONBERG OPEN AREAS SEEDING

SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	SEED						
	NATIVE UPLAND GRASS MIX						

NO.	DATE	BY CHK.	APPD.	REVISIONS

SAR DESIGNED	09–06–11 DATE	
SAR DRAWN	09–06–11 DATE	
EES CHECKED	DATE	
APPROVED	DATE	

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Exhibit TR2

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
AS SHOWN	KLG–7C	RH100544JB	

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Plot Date:9/9/2011 6:26 PM jeff hammond

MILWAUKIE
Dogwood City of the West

Memorandum

To: **Design and Landmarks Committee**

From: **Katie Mangle, Planning Director, PMLR Urban Design Lead for the City**
Kenny Asher, Community Development and Public Works Director, PMLR Project Manager for the City
Wendy Hemmen, P.E., Light Rail Specialist for the City

CC: **Susan Shanks, Senior Planner**

Date: **October 6, 2011**

Re: **Comments on PMLR Kellogg Bridge Design Review Application (DR-11-01)**

The purpose of this memo is to share with the DLC staff comments on the proposed design, having contributed to the design process over the past year.

As the Preliminary Engineering phase of the project came to an end in 2010, the design of the bridge over Kellogg Creek and McLoughlin Blvd. was of primary concern to City staff. At the time, TriMet could provide little more information than the "type, size, and location" of the structure. We repeatedly emphasized that this structure would be the significant new element in Milwaukie's landscape, and that it should not resemble the highway-type structures that were constructed for the I-205 light rail line.

Milwaukie staff met frequently with TriMet's design team to help facilitate the best possible public discussion about the bridge design. We offered specific suggestions and feedback to help the design team work through its process; during public meetings over the last six months, the DLC and Planning Commission provided design guidance and significantly shaped the project that TriMet has submitted for Design Review.

As we participated in the design and facilitated the public discussion over the past year, City staff encouraged the design team to design a bridge that would reflect the Downtown Design Guidelines and address City Council's recommendations on the Conceptual Design Report. With that background, we offer the following observations and comments about the progression and status of the bridge design for the DLC's consideration:

- *The City asked that "the entire structure [be designed] to appear as seamless and coherent as possible…"*[1]

  The bridge has been presented as a "ribbon" that establishes a clean horizontal line moving through the landscape. The project achieves this by using a single material (steel), and minimum large vertical elements to emphasize the idea of the bridge as a "ribbon" through the landscape.

[1] Exhibit A to the City Council resolution accepting the PMLRT Conceptual Design Report and making recommendations on specific issues to be addressed by TriMet during Final Design.

- *The City asked that the bridge be designed to be an asset to the surrounding neighborhoods, investigating alternative approaches to scale, depth of reveals, choice of materials, and placement and shape of the columns.*
    - The "ribbon" concept has been supported through the choice of materials, hand rails, and structural details (such as reveals and angles). The design team explored many alternatives along the way, but TriMet provided the community with choices that would strengthen the urban design concept.
    - During the course of the design, the height of the bridge was minimized to meet the required clearances: 10.5 feet over Lake Road and 17.4 feet over McLoughlin Blvd, 22nd Ave and River Rd areas. The ground plane changes near the McLoughlin corridor as the train tracks traverse through. The tracks and supporting bridge were held to smooth grades and transitions to maximize constructability and the ribbon-like affect. TriMet unsuccessfully lobbied ODOT to allow the bridge to be one foot lower over McLoughlin Blvd. The bridge is also as narrow as possible while allowing for maintenance workers and their safety. The sound wall required for the bridge has been designed with a high quality acrylic panel to provide transparency while limiting sound impacts to nearby residences. The safety railings were also designed with narrow cables to provide maximum transparency.
    - Using steel instead of concrete has multiple benefits, one of the greatest being that it has allowed this large structure to be conceived of as an urban design element, not merely a transportation element.
    - TriMet presented several options for the shape of the supporting beam sections (tubs, boxes, I-beams). Following early guidance from the DLC and Planning Commission, the proposed design includes trapezoidal tubs, the shape of which we prefer over those of the box and the I-beam. The trapezoidal tub gracefully reduces the boxy quality of the form.
    - The color and natural patina of weathering steel enhances the character of the bridge, allowing it to sit within the landscape and comfortably and quietly.

- *City staff asked TriMet to design and finish the columns with sensitivity to shape, scale and texture. The column design shouldn't take away from the "ribbon" effect, but neither should they feel overly utilitarian or industrial (given the presence of trolley trail, Kronberg Park, and landscaped bluff on the west side of McLoughlin).*

    - The columns will be the part of the bridge most directly experienced by pedestrians and bicyclists. During the course of the design process, the number of columns was reduced by two. The design team explored many alternative shapes, sizes, and materials for the columns, in the end proposing a column that has the smallest footprint and visual impact. A unique finish is proposed that will add a sense of craft to the pedestrian realm.

- *City staff suggested that the connection between column and support beam be carefully considered, as it is essential for successfully creating the "ribbon" effect.*

    The inclusion of the column cap creates an elegant transition between the columns and the bridge deck. This transition emphasizes both the linear quality of the bridge and the importance of the columns themselves. The column cap design changed based on comments from the public and DLC to reflect patterns from the adjacent freight rail trestle. The column caps were designed to be more consistent with the surrounding area features and of the same material as the bridge structure.

- *The City asked that the bridge be designed to anticipate the future restoration of the creek and installation of a pedestrian bridge beneath the structure.*
    - The concept of a pedestrian bridge over Kellogg Creek emerged from the South Downtown planning process, and TriMet supported the concept during the Preliminary Engineering phase by designing a structure that would not preclude the later addition of a pedestrian bridge. Late in the design process, TriMet directed the design team to incorporate the pedestrian bridge in their design. Though funding has yet to be identified, TriMet has increased its level of commitment to the pedestrian bridge and helped the community to

understand what it would look like. By taking the steps of designing and permitting the pedestrian bridge, TriMet is supporting the City's goal.

- *The City asked that the jump-span section of the bridge over Lake Rd be designed to create a well-lit pedestrian-oriented passage beneath the structure.*
    - The design team has carefully considered the texture of the walls and columns that will be constructed on either side of Lake Rd, and is proposing a design that addresses the pedestrian scale as well as the structure's role as a gateway into the South Downtown area. Staff remains concerned about the lighting of this area, and looks forward to receiving more information about how this space will feel in the evening.

Oregon
John Kitzhaber, Governor

Department of Fish and Wildlife
Sauvie Island Wildlife Area
North Willamette Wildlife District
18330 NW Sauvie Island Road
Portland, OR 97231
Voice: 503-621-3488
Fax: 503-621-3025
http://www.dfw.state.or.us

October 11, 2011

To: Susan Shanks
Planning Department
City of Milwaukie
6101 SE Johnson Creek Blvd
Milwaukie, OR 97206

Re: TriMet Light Rail Bridge City Permit/Review Applications

Dear Ms. Shanks:

This correspondence is in response to the public comment period for the city permit applications submitted for the TriMet Light Rail Transit project. TriMet plans to cross Kellogg Lake by constructing a large bridge spanning not only the lake, but McLoughlin Blvd and Kronberg Park as well. In general, ODFW is highly supportive of the light rail line and has worked with TriMet often to reduce fish and wildlife impacts. ODFW appreciates the steps taken to reduce impacts including the full span bridge design for the crossing over Kellogg Lake.

Additionally, ODFW would like to recommend actions to decrease impact to fish and wildlife resources even further. They are bulleted below.

- Avoid/preserve the 42" DBH oak tree in Kronberg Park. It appears to be 20-30 feet from the track footprint. If branches are in the way of equipment, a qualified arborist may be able to limb the tree to reduce access issues while preserving the tree. The root zone of the oak tree should be marked with construction fencing to avoid damaging the tree. *Quercus garryana* are highly valued wildlife trees (nesting, forage, cover) and provide a large canopy for shade as they grow. Their aesthetic crown shape is also ideal for recreation areas. Oaks are extremely slow growers, so this tree is likely 150-250 years old and could be considered a heritage tree for the City. The low rate of oak recruitment in the region is a concern and protecting as many remaining trees as possible in green spaces is important to maintain services that they provide bird and mammal species.

- If it is absolutely impossible to preserve the oak, the planting plan for tree mitigation should include oaks as replacement trees instead of riparian tree species. Other tree species like Douglas fir or other tall riparian trees should not be planted with the mitigation oak plantings so that they aren't shaded by faster growing species. Native shrubs can be planted as understory.

- Remove the vegetation that will be impacted by construction prior to the critical nesting period for birds (April 1st- July 15th). If vegetation is removed in January-March look for early nesters like owls and Anna's hummingbird before removal. Preserve some of the

vegetation to add brush piles/downed logs to the restored areas after construction to provide cover, micro-shade, moisture, and to attract insects.

- Bat structures attached to the bridge, especially overland segments, could greatly benefit bat species in need of summer roosting habitat near still water.

- Add herbaceous plant species to the native grass species mix to provide food source for native pollinators. Selecting species that bloom at different times throughout the growing season will provide a constant food source.

In summary, the department highly supports the Light Rail Project. ODFW appreciates the opportunity to provide recommendations that will support the best stewardship of the state's fish and wildlife resources as possible. In many instances, changes in design, operation, sequence, or technique makes a substantial difference to species populations, breeding success rate, and overall survival. Please address any questions you may have regarding these comments to me at 503.621-3488 x228.

Sincerely,

Elizabeth J. Ruther
Habitat Conservation Biologist
North Willamette Watershed District

October 16, 2011

Thank you the opportunity to comment on the proposed Kellogg Lake/McLoughlin Blvd light rail bridge.

Bike/Pedestrian Bridge:

My personal opinion is that application for the Kellogg Bridge should include the pedestrian/bike bridge as part of the project not as an add-on dependant on our ability to raise the money. I am very familiar with the financial challenges this project faces, but including bike/pedestrian portion of the bridge is only a tiny fraction of the total budget. The bridge will increase ridership, and provide the same benefits to Milwaukie, that the bike and pedestrian connections included with the Willamette River Bridge will provide to Portland residents. The bridge may also save lives because people routinely us the existing railroad trestle to cross Kellogg Lake and McLoughlin Blvd.

The approval criterion for the HCA review requires that the development avoid intrusion into the HCA to the extent practicable. I think it could be argued that the bike pedestrian portion of the bridge should be constructed as part of the bridge in order to avoid impacts to the HCA in the future.

Lighting:

The bridge is planned to have only a minimum amount of lighting, however the bridge will be hosting a train which does have a very bright light. One of my goals in participating in the light rail process is to not have a lot of surprises on opening day. I don't have a specific understanding of where the impacts of the train light are going to be. However the train on the bridge will be traveling around a curve, the light will be shining and landing somewhere. I am very happy with the design of the bridge, I just want to know where the negative impacts will occur and that appropriate action is taken to either prevent or mitigate those impacts.

Noise:

19.905.4 Section #4 Willamette Green Way. I really appreciate that TriMet has reevaluated the noise after choosing the design for the bridge. As I read the application there were several steps that TriMet is taking to reduce the noise. What I did not see in the application is the inclusion of track lubrication on the curves of the bridge. I am sure that is planned for the project and should be included because it relates to the quality of water running off the bridge.

Storm water:

The application, Exhibit P4, shows that rain water from 47,680 square feet of the bridge will flow back to the Milwaukie station area. Just a half inch of rain will result in almost

15,000 gallons of run off (14,861). The areas around the station dedicated to storm water treatment seem inadequate.

I am not a geologist, but I can see the rock outcroppings at Dogwood Park, and on a previous project in downtown Milwaukie we were told that underground parking was not feasible due to a layer of basalt.

Mitigation:

The Historic Milwaukie NDA has spent many hours at the park, picking up trash, planting trees, cutting back invasive species. However we have been told that restoration to the bank will have to wait until the park has a master plan because the draining of Kellogg Lake and its restoration to a creek may result in changes to the slope of the bank. I would hate to see the five years of restoration planned by this project to be destroyed when the lake is finally drained.

We also found it very difficult to plant in certain areas, due the “fill” that comprises the surface. I am wondering if the slope is any more hospitable to planting.

My preference is that we take a look at the area, the remaining railroad right of way, the green space to the North, Dogwood Park, and perform the mitigation in the area least likely to be disturbed by the draining and subsequent improvement to Kellogg Lake and Creek.

I also have looked at the species the project has chosen to for the mitigation. One of my goals as I participate in the work at Kronberg Park is to have a large variety of native plants and shrubs blooming and producing fruit over the entire growing season. This will add to the experience of visitors, but also be beneficial to wildlife.

There are many wonderful plants included in the mitigation efforts, but I wonder if it could be more diverse with the inclusion native species such as Western Crab Apple (Malus fusca), Ocean-Spray (holodiscus discolor), Flowering Current (Ribes sanguineum), Mock Orange (Philadelphus lewisii), Red Elder Berry (Sambucus racemosa) and Blue Elder Berry (Sambucus cerulea),

Thank you,

Ray Bryan

Historic Milwaukie Land Use Committee member
503-794-9354
ray1bryan2@gmail.com

From: Gary Michael <garymic@gmail.com>
Sent: Thursday, October 06, 2011 9:17 AM
To: Shanks, Susan
Subject: Trolley Trail and Bridge Application Referrals

Hi, Susan!
I got the packets as a member of the neighborhood LUC. I saw nothing I could pick at on the Trolley Trail. I like the bridge design. It will be the best light rail bridge in the system. I take issue, however, with the attempt to make concrete walls look like stone. I have always hated such fakery. Concrete is a perfectly good material, and there are form liners which create patterns and texture without resorting to fakery. I'll be out of the country Oct. 7- 22 so I'll miss the Open House on Residential Standards. I'm interested and will check the City web site.
Gary Michael

--
garymic@gmail.com
www.garylmichaelart.com

October 20, 2011

City of Milwaukie Planning Department
6101 S. E. Johnson Creek Blvd.
Milwaukie, Or. 97206

Attn: Susan Shanks
Sr. Planner for Light Rail Project

Re: Commercial Building and apartment on 2nd floor Located at, 11923 S.E. McLaughlin Blvd.

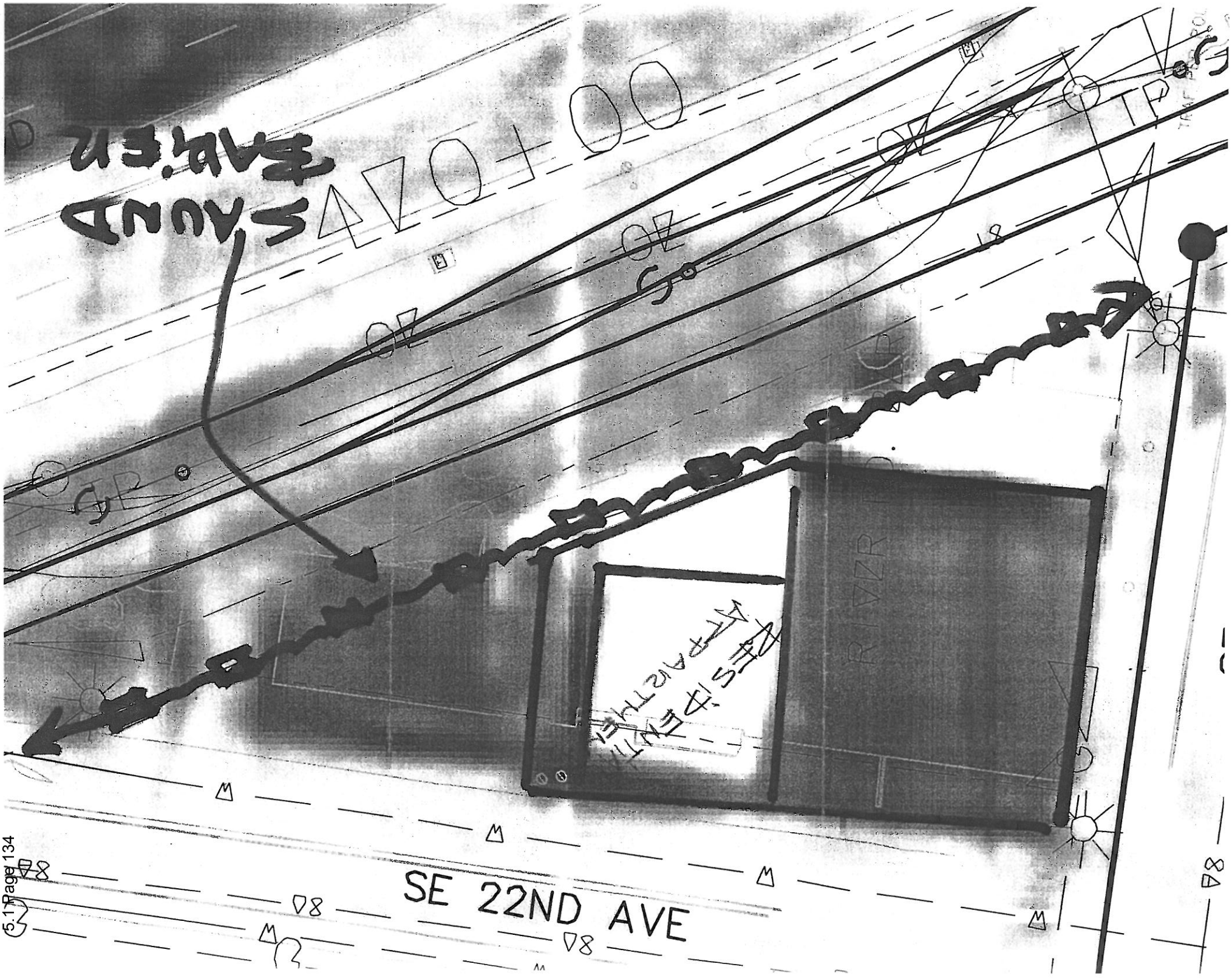
To follow up on many neighborhood meetings, where I expressed concerns over apartments and it's occupants being practically in touch with proposed bridge, high voltage wires and exposed to bright lights, noise, and wind generators by fast moving trains.

Under this scenario it seems to me that at minimum TriMet should erect sound barrier along entire west side of the bridge.

Please take into consideration what I have expressed and it would be helpful if you inform me what are the Federal minimum clearances between residential dwelling and proposed rail.

Regards

Tony Enders
18010 S. Holly Lane
Oregon City, Or. 97045


SE 22ND AVE

Exhibits List for Master Land Use File WG-11-01

(WG-11-01, DR-11-01, WQR-11-03, HCA-11-01, and CSU-11-09)

Portland Milwaukie Light Rail Kellogg Bridge

The following documents are part of the official record for this application as of Nov 2, 2011:

1. Application
   - A. Preapplication conference form and materials (Apr 25, 2011)
   - B. Submittal forms date stamped Aug 8, 2011 (land use application forms, property owner authorization, submittal requirements form, fee receipt)
   - C. Responses to code standards and criteria (initial submission date stamped Aug 8, 2011; final submission date stamped Sep 20, 2011)
   - D. Water quality resource & habitat conservation area reports (initial submission date stamped Aug 8, 2011; final submission date stamped Sep 20, 2011)
   - E. Site plans (initial submission date stamped Aug 8, 2011; final submission date stamped Sep 20, 2011)
     - i) Existing site conditions
     - ii) Proposed site conditions
     - iii) Illustrative drawings
   - F. Letter requesting application be deemed complete (Sep 20, 2011)
   - G. Additional technical report deposit fee receipt date stamped Sep 20, 2011
   - H. Cover memo and omitted exhibits date stamped Oct 12, 2011
   - I. Meeting notice affidavit of sign posting for DR-11-01 (Oct 17, 2011)
   - J. Hearing notice affidavit of sign posting for WG-11-01, DR-11-01, WQR-11-03, HCA-11-01, and CSU-11-09
2. Notification information
   - A. Application referral dated Sep 23, 2011 (Referral sent to City Hall, Ledding Library, Milwaukie Planning Department, Milwaukie Engineering Department, Milwaukie Building Official, Milwaukie Light Rail Coordinator, Clackamas County Fire District #1, North Clackamas Parks and Recreation District, Oregon Department of Parks and Recreation, Oregon Department of State Lands, Oregon Department of Fish and Wildlife, Oregon Department of Transportation, State Marine Board, Planning Commission, Design and Landmarks Committee, and Chair and Land Use Committee for Island Station and Historic Milwaukie Neighborhood District Associations)
   - B. Application referral of omitted exhibits dated Oct 13, 2011 (Referral sent to all parties listed under 2A above)
   - C. Meeting notice dated Oct 7, 2011 (Notice sent to property owners and occupants of properties within 300 ft of development site)
   - D. Meeting notice affidavit (Oct 7, 2011)

E. Hearing notice dated Oct 19, 2011 (Notice sent to property owners and occupants of properties within 300 ft of development site)

F. Hearing notice affidavit (Oct 19, 2011)

G. Hearing and meeting notice sign locations map

3. Materials from City Planning Staff

A. Application submittal requirements memo (Jul 6, 2011)

B. Letter deeming application incomplete (Sep 7, 2011)

C. Letter deeming application complete (Sep 27, 2011)

D. Staff report (Oct 10, 2011 for Oct 17, 2011 Design Review Meeting)

E. Power point presentation for Oct 17, 2011 design review meeting

F. Staff report (Nov 1, 2011 for Nov 8, 2011 Public Hearing)

G. Power point presentation for Nov 8, 2011 public hearing

4. Materials from City Consultant (ESA Northwest Biological Resources)

A. Scope of work (Aug 2011)

B. Peer review memos (Oct 21, 2011)

C. Comments review e-mail (Oct 26, 2011)

5. Comments received

A. Milwaukie Engineering Department (Zach Weigel)

B. Milwaukie light rail design team (Katie Mangle, Kenny Asher, Wendy Hemmen)

C. Oregon Department of Fish and Wildlife (Elizabeth Ruther)

D. Historic Milwaukie resident (Ray Bryan)

E. Island Station resident (Gary Michael)

F. Oregon City resident and Island Station property owner (Tony Enders)

6. Public comments received at Oct 17, 2011 design review meeting

A. Sign-in sheet and yellow cards from meeting (Keith Hopkins, Len Greger, and Cindy Tyler)

7. Public comments received at Nov 8, 2011 public hearing

A. Sign-in sheet from hearing

MILWAUKIE
Dogwood City of the West

To: **Planning Commission**

Through: **Katie Mangle, Planning Director**

From: **Susan P Shanks, Senior Planner**

Date: **November 1, 2011 for November 8, 2011 Public Hearing**

Subject: **File:** MOD-11-01, WQR-11-04

Applicant: TriMet[1]

Owner(s): TriMet, North Clackamas Parks and Recreation District, and various private property owners along the trail alignment

Location: Trolley Trail alignment in the City of Milwaukie between River Rd and Park Ave on tax lots 1S1E36CC02101, 02100, 01900, 01800, 01700, 00901, 00300, 05100, and 05300; 1S1E36CD02400; and 2S1E01BA10100

NDA: Island Station

ACTION REQUESTED

Approve applications **MOD-11-01 and WQR-11-04** with the recommended Findings and Conditions of Approval found in Attachments 1 and 2. This action would modify the location and design of the Trolley Trail and approve a water quality resource mitigation plan.

BACKGROUND INFORMATION

The Trolley Trail was previously approved by the City as a Community Service Use (CSU) in 2009 within the historic trolley corridor that runs roughly adjacent to the current alignment of McLoughlin Blvd between Milwaukie and Gladstone. Passenger service via streetcar operated in this corridor between Portland and Oregon City from 1893 until 1958, followed by freight rail service which operated until 1968. The railway was abandoned after 1968 and most of the rails and ties have since been removed.

[1] TriMet is empowered to initiate the application pursuant to Milwaukie Municipal Code (MMC) Subsection 19.1001.6.A because it has statutory rights of eminent domain. TriMet is in the process of purchasing the lots listed under Project Location and/or acquiring the necessary easements from these owners to construct the trail.

Metro and the North Clackamas Parks and Recreation District (NCPRD) purchased the historic trolley corridor in 2001 for the purpose of creating a multi-use recreational trail between Milwaukie and Gladstone. During this time, Metro and TriMet were evaluating light rail alignments in the same general area, and, in 2008, TriMet obtained a land use final order (LUFO) from Metro to locate the new Portland Milwaukie Light Rail (PMLR) alignment immediately adjacent to the historic trolley corridor between River Rd and Park Ave. When NCPRD obtained land use approvals from the City in 2009 to construct the trail, it was with the understanding that the final trail design and location would likely need to be modified between River Rd and Park Ave to accommodate light rail.

TriMet proposes to modify the original Trolley Trail approval to ensure the continuation of the trail through this area and to accommodate the PMLR alignment along McLoughlin Blvd. The proposed modification to the alignment does not substantially alter the location of the trail at the City or regional level. It also does not change how the trail connects to other trail sections to the north and south.

A. Site and Vicinity

The Trolley Trail site for purposes of this application consists of the following tax lots: 1S1E36CC02101, 02100, 01900, 01800, 01700, 00901, 00300, 05100, and 05300; 1S1E36CD02400; and 2S1E01BA10100. The site includes a portion of the historic trolley corridor that runs roughly adjacent to McLoughlin Blvd between Milwaukie and Gladstone. The site also includes eight additional tax lots under private ownership to the west of the previously approved trail alignment.

B. Zoning Designation

The site has a base zone designation of Residential Zone R-5. A portion of the site on tax lots 1S1E36CC00901 and 00300 (near Wren St and McLoughlin Blvd) contains an unmapped water feature that meets the definition for a protected water feature. As such, this area is subject to the City's water quality resource regulations.

C. Comprehensive Plan Designation

The site has a land use designation of Moderate Density (MD). The Transportation System Plan, which is an ancillary document to the Comprehensive Plan, includes the Trolley Trail on the Pedestrian Master Plan (Figure 5-1) and Bicycle Master Plan (Figure 6-2).

D. Land Use History

The Trolley Trail was previously approved by the City as a Community Service Use (CSU) in 2009 (Land Use File CSU-08-03). Since this portion of the trail has not yet been constructed, the applicant's modification request is being processed as a Modification to an Existing Approval rather than a new CSU application or a modification to an existing CSU. Since the applicant seeks to modify an existing approval, only those portions of the trail that are proposed to be modified between River Rd and Park Ave are subject to review.[2]

[2] The modification request includes all trail improvements in the City of Milwaukie that lie between the light rail safety fencing to the east and the outer edge of the slope easements being acquired by TriMet for trail construction to the west. Light rail improvements in this area, which include everything on either side of the modified Trolley Trail alignment under review, are not part of this land use review. Sound walls, for example, that are located on or to the west of the slope easements for the trail are not part of this review, as they are in response to light rail impacts not trail modifications.

The applicant proposes to modify the original Trolley Trail approval both to ensure the continuation of the trail through this area and to accommodate the PMLR alignment along McLoughlin Blvd. The PMLR alignment has an existing land use approval that was issued by Metro in 2008. This land use final order (LUFO) was made pursuant to House Bill 3478 (1996), which provides for the review and siting of regional transportation facilities through local jurisdictions. The City's review of the proposed trail modifications are not directly encumbered by the 2008 LUFO. However, the proposed trail modifications are a direct result of the approved rail alignment since a portion of the Trolley Trail property was identified in the PMLR Final Environmental Impact Statement as being needed for the light rail project. As such, the City cannot condition the approval of the trail modifications in such a way as to prevent the implementation of the 2008 LUFO.

E. Proposal

The modification proposal includes the following elements. See Attachment 3A for more detailed information about the proposed location and design for the trail, including lighting and landscaping plans.

- A trail alignment shift to the west resulting in impacts to eight tax lots under private ownership, five of which are in residential use.
- Changes to the grade along the western side of the trail that require the construction of retaining walls and safety fencing or walls.
- Changes to the existing vegetation on both sides of the trail as a result of both the trail alignment shift to the west and the light rail construction to the east.
- The introduction of pedestrian-scale lighting along the trail between Park Ave and River Rd.

The proposal results in the following impacts to the unmapped water quality resource (WQR) area near Wren St and McLoughlin Blvd.

- Removal of 13 trees.
- Temporary disturbance to 1,820 sq ft of WQR area.
- Permanent impacts to 2,010 sq ft of WQR area.

The applicant proposes the following mitigation actions for the temporary and permanent impacts to the WQR area. See Attachments 3B and 3C for the applicant's mitigation plan and WQR report respectively.

- Plant 15 trees.
- Restore areas temporarily impacted by trail and light rail construction with appropriate native plants pursuant to applicable WQR standards.
- Mitigate for areas permanently impacted by the trail and light rail at a 1:1 replacement ratio within the WQR area and above the ordinary high water level.
- Remove invasive and nonnative species from within the construction limits and the mitigation area.
- Monitor and maintain plantings for five years with a target survival rate of 80%.

The proposal requires approval of the following applications by the Planning Commission.

- **Modification to an Existing Approval (MOD-11-01)**

  The Trolley Trail was previously approved by the City as a Community Service Use (CSU) in 2009. Since this portion of the trail has not yet been constructed, the applicant's modification request requires review as a Modification to an Existing Approval rather than as a new CSU application or a modification to an existing CSU.

- **Water Quality Resource (WQR-11-04)**

  The trail and light rail alignments through this area will have temporary and permanent impacts to an unmapped water quality resource area. Impacts to this area require review and natural resource mitigation.

KEY ISSUES

Summary

Staff has identified the following two key issues for the Planning Commission's deliberation. Aspects of the proposal not discussed here are addressed in the Findings (see Attachment 1) because they require less analysis and discretion.

1. **Do the benefits of the proposed trail modifications outweigh the potential adverse impacts?**
2. **Are the impacts to the water quality resource (WQR) unavoidable and are they adequately mitigated by the mitigation plan?**

Analysis

Key Issue #1: Do the benefits of the proposed trail modifications outweigh the potential adverse impacts?

The Trolley Trail was originally approved by the City as a Community Service Use (CSU) in 2009. In order to modify the original approval, the Planning Commission must find that the proposed modification will continue to meet all applicable approval criteria upon which the original approval was based. In this case, the original approval was based upon finding, amongst other things, that the benefits of the trail outweighed its potential impacts.

The following public benefits were identified in the original approval:

- Improves an existing public facility
- Expands the local network of safe non-motorized facilities
- Provides a public recreational amenity
- Improves local and regional connectivity
- Encourages alternative transportation modes
- Has the potential to reduce single-occupancy vehicle trips
- Implements the Transportation System Plan

The modified trail alignment and design has the same public benefits as the previously approved trail alignment and design. The width of the trail and the trail shoulders are not

proposed to change. The access points to the trail from the west are also not proposed to change. The addition of trail lighting between River Rd and Park Ave has the added benefit of providing a safer travel experience for pedestrians and cyclists during nighttime hours. Finally, impacts to an unnamed and ecologically degraded protected water feature near Wren St and McLoughlin Blvd enables the City to require natural resource mitigation for these impacts. The applicant's proposed mitigation plan will significantly improve the ecological functioning of this area, and, as such, is a benefit of the modified trail alignment.

The addition of retaining walls and the large scale removal of vegetation along the trail have the potential to negatively change the character of the area. However, staff believes that the change, while dramatic, is not necessarily an adverse impact. Where vegetation is proposed for removal, the applicant proposes new vegetation. Given that much of the understory in this area contains invasive and nonnative plants, wholesale removal and revegetation of this area could be considered a benefit. Additionally, the applicant proposes to preserve the large giant sequoia near Sparrow St and McLoughlin Blvd by designing the trail around it. Different trail designs were evaluated in an effort to preserve three other giant sequoias further to the north; however, none were determined to be practicable. The three sequoias near Wren St are proposed for removal in order to avoid: (1) shifting the trail further into the adjacent water quality resource area to the west, and (2) adding a second jog in the trail so close to the one planned around the large sequoia at Sparrow St, as jogs in the trail negatively affect sight lines and bicyclist safety and comfort.

Where retaining walls are needed due to topography, the applicant proposes to acquire additional land behind the retaining walls (through purchase or easement) to provide a buffer of landscaping between the trail and the adjacent properties to the west. Large retaining walls include vertical reveals, vine plantings, and tiers to soften hard edges and add visual interest at the pedestrian level. The addition of retaining walls and landscape buffers also serve to more clearly define the western edge of the trail site than the previously approved alignment. This has the added benefit of reducing the likelihood of intentional or inadvertent trespassing onto private property by trail users. The applicant has provided landscaping and tree mitigation plans that illustrate the proposed landscaping and wall treatments, and staff recommends conditions of approval to ensure that these plans are implemented as proposed.

The following potential impacts were identified in the original approval:

- Improvements to the trail are expected to increase users of the trail. This increase in use may impact the privacy of private property owners adjacent to the trail. It may also result in trespassing.

The modified trail alignment and design has the following additional potential impacts:

- The applicant is acquiring and demolishing the residences on five properties in the City of Milwaukie to accommodate the proposed trail alignment. On the one hand, this represents a significant disruption and inconvenience for these residents. On the other hand, once these homes are demolished, they are no longer impacted by the trail. If they were ever redeveloped, future development would have the opportunity to minimize any trail impacts through home and site design.
- The addition of trail lighting has the potential to introduce new lighting impacts where none existed before. Staff recommends a condition of approval to avoid this potentiality.
- Shifting the trail alignment to the west results in temporary and permanent impacts to an unnamed protected water feature near Wren St and McLoughlin Blvd. The applicant proposes to mitigate for these impacts and has submitted the appropriate analysis and

mitigation plan. The applicant's mitigation plan is expected to result in substantial ecological improvements to this area. Staff recommends conditions of approval to ensure the successful implementation of the proposed mitigation.

Given that the impacts identified in the original approval have, to some extent, been addressed and new potential impacts can be effectively mitigated, staff believes that the benefits of the modified trail outweigh the potential impacts caused by the proposed modifications.

Key Issue #2: Are the impacts to the water quality resource (WQR) unavoidable and are they adequately mitigated by the mitigation plan?

Placement of the light rail and trail alignments through this area is constrained by McLoughlin Blvd on the east and steep slopes and residentially-zoned properties on the west. Other rail alignments were evaluated but none were advanced. They were considered either nonpracticable or more impactful to the trail, McLoughlin Blvd, or nearby residential properties. Other trail alignments and trail supports were considered within the area left remaining on the west side of the light rail alignment, but none had fewer impacts on the WQR area and/or were considered appropriate by the North Clackamas Parks and Recreation District.

The trail is located as far away from the WQR area as possible while maintaining a minimum acceptable distance from the light rail alignment. A reduction in the width of the trail at this location was considered neither safe nor desirable by the North Clackamas Parks and Recreation District, but a retaining wall is proposed at this location in order to reduce the amount of fill and disturbance within the WQR area. The proposed retaining wall is located above ordinary high water and over an existing culvert.

The applicant's mitigation plan was reviewed by ESA Northwest Biological Resources. ESA was retained by the City at the applicant's expense to provide independent technical review of the applicant's WQR analysis and mitigation plan. Other than the classification of the protected water feature as a secondary protected feature, ESA determined that: (1) the applicant's analysis was reasonably complete and accurate, (2) the mitigation plan met code requirements, and (3) the mitigation plantings were suitable for the site and would improve local ecological functions. Both ESA and the City disagree with the applicant's classification of the protected water feature as a secondary protected feature based on information from local property owners and multiple field observations in late summer. Both ESA and the City believe that the unmapped feature is a primary protected water feature since it appears to have year-round flow.

The applicant has since agreed to modify the WQR boundary and mitigation plan accordingly. Staff believes that the application can be effectively conditioned to address this issue and that the mitigation plan will adequately mitigate for the impacts caused by the proposed trail alignment.

CONCLUSIONS

Staff recommendation to the Planning Commission:

Approve the Modification to an Existing Approval and Water Quality Resource applications for the location and design of the Trolley Trail between River Rd and Park Ave with the recommended findings and conditions of approval in Attachments 1 and 2.

Key conditions of approval:

- Demonstrate that the addition of trail lighting does not impact any properties in the City of Milwaukie on the west side of the trail not permanently acquired by TriMet for construction of the trail or the light rail project.
- Revise the water quality resource area boundary and associated mitigation plan to reflect its classification as a primary protected water feature.

CODE AUTHORITY AND DECISION-MAKING PROCESS

The application is subject to the Interim Implementation Memo for Metro Title 13 Habitat Conservation Areas and the following provisions of the Milwaukie Zoning Ordinance, which is Title 19 of the Milwaukie Municipal Code (MMC):

- Section 19.303 – Residential Zone R-5
- Section 19.402 – Water Quality Resources
- Section 19.904 – Community Service Uses
- Section 19.909 – Modifications to Existing Approvals
- Chapter 19.1000 – Review Procedures (specifically Section 19.1001 General Provisions and Section 19.1006 Type III Review)

The Commission has 3 decision-making options as follows:

1. Approve applications **MOD-11-01 and WQR-11-04** with the recommended Findings and Conditions of Approval.
2. Approve applications **MOD-11-01 and WQR-11-04** with modified Findings and Conditions of Approval. Any modifications must be read into the record.
3. Continue the hearing to November 22, 2011.

   (The final decision on this application, including any appeals to City Council, must be made by January 18, 2012 in accordance with the Oregon Revised Statutes and the Milwaukie Zoning Ordinance. Unless the applicant extends the time period within which the City must make a decision, a hearing continuation beyond November 22, 2011 is not feasible.)

Both applications are subject to Type III review by the Planning Commission at a public hearing. In Type III reviews, the Planning Commission assesses both applications against all applicable provisions of the Milwaukie Zoning Ordinance and evaluates testimony and evidence received at the public hearing.

COMMENTS

The application was referred for comment to the following City departments and agencies: City of Milwaukie Engineering, Building, and Community Development Departments; Clackamas County Fire District #1; and, North Clackamas Parks and Recreation District.

There were also forwarded to the Island Station Neighborhood District Association, and public copies were made available at City Hall, Ledding Library, and the Planning Department. Key sections of the application were posted on the Planning Department website. Additionally, the Community Services Department broadly advertised the PC's public hearing on the application

at various public forums, such as the Milwaukie Farmers Market, and through direct e-mailings and the City's PMLR project website.

The two written comments on the application that were received by the City on or before October 24, 2011 are included in Attachment 4. Any additional comments received after this date but before the November 8, 2011 public hearing will be brought to the hearing.

Summary of Written Comments:

- **Gary Michael (Island Station Resident):** *Likes trail design.*
- **Jo Anne Bird (Island Station Resident):** *Objects to the removal of the sequoias located near the WQR area; encourages the use of native plants throughout the trail alignment and not just in WQR area; and is not sure if it's a good idea to replace all the big leaf maples in the WQR area with western red cedars.*

ATTACHMENTS

Attachments are provided only to the Planning Commission unless noted as being attached. All material is available for viewing upon request.

1. Recommended Findings in Support of Approval (attached)
2. Recommended Conditions of Approval (attached)
3. Applicant's Narrative and Supporting Documentation date stamped September 20, 2011 by the Planning Department.

   A. Exhibits D1–7, P1–2, P5, P7–8, P11–13, P16–20, P28–31 Trolley Trail Location and Design Illustrations and Plans (attached)

   B. Exhibits P32–P33 Mitigation Site Plan (attached)

   C. Exhibit TR1 Trolley Trail WQR Report (attached)
4. Comments Received (attached)
5. Exhibits List (attached)

Recommended Findings in Support of Approval

1. The applicant, TriMet, submitted two land use applications (the "application") for approval of modifications to a portion of the Trolley Trail between River Rd and Park Ave as part of the Portland Milwaukie Light Rail (PMLR) project. The application requests approval for trail design and water quality resource mitigation. TriMet is empowered to initiate the application pursuant to Milwaukie Municipal Code (MMC) Subsection 19.1001.6.A because it has statutory rights of eminent domain. The application has been assigned the following file numbers and consists of the following application types:

   - **MOD-11-01: Modification to Existing Approval**
   - **WQR-11-04: Water Quality Resource**

2. The location and design of the trail was previously approved by the City as a Community Service Use (CSU) in 2009 (Land Use File CSU-08-03). Since this portion of the trail has not yet been constructed, the applicant's modification request is being processed as a Modification to an Existing Approval rather than a new CSU application or a modification to an existing CSU. Since the applicant seeks to modify an existing approval, only those portions of the trail that are proposed to be modified between River Rd and Park Ave are subject to review. The modification request includes all trail improvements in the City of Milwaukie that lie between the light rail safety fencing to the east and the outer edge of the slope easements being acquired by TriMet for trail construction to the west. Light rail improvements in this area, which include everything on either side of the modified Trolley Trail alignment under review, are not part of this land use review. Sound walls, for example, that are located on or to the west of the slope easements for the trail are not part of this review, as they are in response to light rail impacts not trail modifications.

3. The application is being processed as a major modification to an existing approval pursuant to MMC Subsection 19.909.3.A.3.a because the Planning Director determined that the modifications being proposed have different or more impacts than the original Trolley Trail proposal.

4. The applicant proposes to modify the original Trolley Trail approval to ensure the continuation of the trail through this area and to accommodate the PMLR alignment along McLoughlin Blvd. The PMLR alignment has an existing land use approval that was issued by Metro in 2008.[1] This land use final order (LUFO) was made pursuant to House Bill 3478 (1996), which provides for the review and siting of regional transportation facilities through local jurisdictions. The City's review of the proposed trail modifications are not directly encumbered by the 2008 LUFO. However, the proposed trail modifications are a direct result of the approved rail alignment since a portion of the Trolley Trail property was identified in the PMLR Final Environmental Impact Statement as being needed for the light rail project. As such, the City cannot condition the approval of the trail modifications in such a way as to prevent the implementation of the 2008 LUFO.

5. The Trolley Trail site for purposes of this application consists of the following tax lots: 1S1E36CC02101, 02100, 01900, 01800, 01700, 00901, 00300, 05100, and 05300; 1S1E36CD02400; and 2S1E01BA10100. TriMet has eminent domain authority and is in the process of purchasing the lots listed above and/or acquiring the necessary

[1] Metro Resolution No. 08-3964 entitled 2008 South/North Land Use Final Order (LUFO) Amendment.

easements to construct the trail.

6. The Trolley Trail site has a base zone designation of Residential Zone R-5. A portion of the site on tax lots 1S1E36CC00901 and 00300 (near Wren St and McLoughlin Blvd) contains an unmapped water feature that meets the definition for a protected water feature pursuant to MMC table 19.402.9.A. As such, this area is subject to the City's water quality resource (WQR) regulations.

7. The application is further subject to Development Review at or before the time of development permit submittal pursuant to MMC Section 19.906. The purpose of Development Review is to ensure compliance with applicable standards and conditions of approval through an efficient review process that effectively coordinates the City's land use and development permit review functions.

8. The modification proposal includes the following elements:

   - A trail alignment shift to the west resulting in impacts to six tax lots under private ownership, five of which are in residential use.
   - Changes to the grade along the western side of the trail that require the construction of retaining walls and safety fencing or walls.
   - Changes to the existing vegetation on both sides of the trail as a result of both the trail alignment shift to the west and the light rail construction to the east.
   - The introduction of pedestrian-scale lighting along the trail between Park Ave and River Rd.

9. The proposal results in the following WQR impacts:

   - Removal of 13 trees.
   - Temporary disturbance to 1,820 sq ft of WQR area.
   - Permanent impacts to 2,010 sq ft of WQR area.

10. The applicant proposes the following mitigation plan:

    - Plant 15 trees.
    - Restore areas temporarily impacted by trail and light rail construction with appropriate native plants pursuant to applicable WQR standards.
    - Mitigate for areas permanently impacted by the trail and light rail at a 1:1 replacement ratio within the WQR area and above the ordinary high water level.
    - Remove invasive and nonnative species from within the construction limits and the mitigation area.
    - Monitor and maintain plantings for five years with a target survival rate of 80%.

11. The applicant's mitigation plan was reviewed by ESA Northwest Biological Resources. ESA was retained by the City at the applicant's expense to provide independent technical review of the applicant's WQR analysis and mitigation plan. Other than the classification of the protected water feature as a secondary protected feature, ESA determined that: (1) the applicant's analysis was reasonably complete and accurate, (2) the mitigation plan met code requirements, and (3) the mitigation plantings were suitable for the site and would improve local ecological functions. Both ESA and the City

disagree with the applicant's classification of the protected water feature as a secondary protected feature based on information from local property owners and multiple field observations in late summer. Both ESA and the City believe that the unmapped feature is a primary protected water feature since it appears to have year-round flow.

12. The application was submitted on August 8, 2011. It was initially deemed incomplete by the City on September 7, 2011. The applicant revised and resubmitted the application on September 20, 2011 and requested that the application be deemed complete on that date. The City deemed the application complete on September 20, 2011, and now has until January 18, 2012 to issue a final decision on the application.

13. The Planning Commission (PC) evaluated the application at a public hearing on November 8, 2011 pursuant to MMC Section 19.1006 Type III Review. The November 8 PC public hearing on the application was properly noticed through direct mailings and sign postings pursuant to MMC Subsection 19.1006.3 Type III Public Notice.

14. The application was referred for comment to the following City departments and agencies: City of Milwaukie Engineering, Building, and Community Development Departments; Clackamas County Fire District #1; North Clackamas Parks and Recreation District. It was also forwarded to the Island Station Neighborhood District Association, and public copies were made available at City Hall, Ledding Library, and the Planning Department. Additionally, the Community Services Department broadly advertised the PC's public hearing on the application at various public forums, such as the Milwaukie Farmers Market, and through direct e-mailings and the City's PMLR project website.

    Two written comments were received by the City from Island Station residents prior to October 17, 2011. All written comments are summarized in and/or attached to the November 8, 2011 PC staff report.

15. The application is subject to the Interim Implementation Memo for Metro Title 13 Habitat Conservation Areas and the following provisions of the Milwaukie Zoning Ordinance, which is Title 19 of the Milwaukie Municipal Code (MMC):

    - Section 19.303 – Residential Zone R-5
    - Section 19.402 – Water Quality Resources
    - Section 19.904 – Community Service Uses
    - Section 19.909 – Modifications to Existing Approvals
    - Chapter 19.1000 – Review Procedures (specifically Section 19.1001 General Provisions and Section 19.1006 Type III Review)

    Provisions not addressed in these findings are found to be not applicable to the decision on the application.

16. **MODIFICATION TO AN EXISTING APPROVAL:** MMC Subsection 19.909.4.B contains the approval criteria for Modification (MOD) applications. An application for a MOD application shall be approved if the following criteria are met.

    A. The proposed modification complies with all applicable development standards and requirements, except as modified by the original approval.

        Applicable standards are as follows:

        1. Metro Title 13, which the City began implementing May 29, 2009, requires a Construction Management Plan (CMP) and Map Verification for all

development within 100 feet of a mapped habitat conservation area (HCA) pursuant to Sections 5 and 9 respectively.[2] No other provisions of Title 13 apply since no development is proposed within an HCA. The applicant does not dispute the need for map verification or a CMP. Both of these requirements can be fulfilled during the development phase of the project and are appropriate as conditions of approval. As conditioned, this standard will be met.

2. Subsection 19.303.H requires that a minimum of 25% of the site be landscaped. The applicant is proposing to retain approximately 70% of the site in landscaping. This standard is met.

3. Subsection 19.904.9.A requires the applicant to provide all utilities, streets, or other improvements necessary for the trail. The original proposal avoided impacts to the Sparrow St and 26th Ave intersection. The proposed modification to shift the alignment to the west encroaches into this intersection. More detailed information is needed to ensure that sufficient right-of-way width will continue to exist to accommodate full street improvements at this location in the future. If this is not the case, right-of-way dedication may be required. As conditioned, this standard will be met.

4. Subsection 19.904.9.F requires that all trail lighting shall be designed to avoid glare on adjacent residential uses and public streets.

   Light rail will be located to the east of the trail. Residentially-zoned properties are located to the west of the trail. Pedestrian-scale lighting for the trail is proposed on the east side of the trail to minimize impacts on residences to the west. The proposed lights are mounted on 14-foot poles and are designed to shine downwards on the trail rather than outwards. Plantings and retaining walls between the trail and the residences to the west are expected to further minimize any lighting impacts on residences. Approval of the application has been conditioned to ensure that no increase in foot candle readings occurs on these properties (as measured from top of bank) as a result of trail lighting. As conditioned, this standard will be met.

5. Subsection 19.904.9.G requires that, where possible, the hours and levels of operation of the trail shall be adjusted to make it compatible with adjacent uses.

   As originally approved, the Trolley Trail is a transportation facility that is intended to be available for use every day and at all hours of the day, though most use is expected during daylight hours. To the east, the trail is adjacent to two other transportation facilities, namely the future light rail alignment and McLoughlin Blvd, which is continuously in use. To the west, the trail is separated by topography and landscaping from most of the adjacent residential properties. Similar to a lit public sidewalk, the addition of lighting along the trail is not expected to substantially change how the trail is used but will allow for safer pedestrian and bike travel during nighttime hours. No adjustments are necessary to make the trail compatible with adjacent uses. This standard is met.

[2] The original Trolley Trail application was submitted prior to City's implementation of Metro Title 13 and was not subject to these standards.

6. Subsection 19.402.10 contains standards for development on property that contains protected water quality resource (WQR) areas. The standards in this subsection pertain to the development phase of the project and are appropriate as conditions of approval. A summary of these standards is as follows:

   - The water quality resource area shall be restored and maintained in accordance with the approved mitigation plan and the specifications in MMC Table 19.402.9.E WQR Area Requirements.
   - Existing vegetation shall be protected and left in place wherever practicable. Work areas shall be carefully located and marked to reduce potential damage to the water quality resource area. Where existing vegetation has been removed, the site shall be revegetated as soon as practicable.
   - Prior to construction the water quality resource area shall be flagged, fenced or otherwise marked and shall remain undisturbed except as may be allowed by this decision. Such markings shall be maintained until construction is complete.
   - Appropriate site preparation and construction practices shall be followed to prevent erosion, pollution, sedimentation, or drainage of hazardous materials to the water quality resource area.
   - Stormwater facilities that encroach more than 25 feet into the outside boundary of the WQR require the addition of area to the WQR area on the site equal in size to the area of encroachment.
   - Lights must be placed and hooded so that they do not shine directly into the water quality resource areas wherever practicable. Lights must provide the minimum level of lighting necessary for safe development operations and limited water quality resource area impacts.
   - Storm water flows as a result of the proposed development within and to water quality resource areas shall not exceed pre-development flows. Storm water outfalls shall be appropriately designed to avoid erosion to stream banks or water quality resource area slopes.

   As conditioned, the Planning Commission finds that all of these standards will be met and that this approval criterion will therefore be met.

B. The proposed modification will continue to meet all applicable approval criteria upon which the original approval was based.

   The Trolley Trail was originally approved by the City as a Community Service Use (CSU) in 2009. MMC Subsection 19.904.4 contains the applicable approval criteria for CSU applications.

   1. The building setback, height limitation, and off-street parking and similar requirements governing the size and location of development in the underlying zone are met. Where a specific standard is not proposed in the CSU, the standards of the underlying zone are met.

      No buildings or parking areas are proposed. The underlying zone landscape standard will be met.

The Planning Commission finds that this criterion is met.

2. Specific standards for the proposed uses as found in Subsections 19.904.7-11 are met.

   Applicable standards are addressed above under Findings 15.A.3, 4, and 5.

   As conditioned, the Planning Commission finds that this criterion is met.

3. The hours and levels of operation of the proposed use are reasonably compatible with surrounding uses.

   As described in more detail in Finding 15.A.5 above, the trail is a transportation facility immediately adjacent to other existing or planned transportation facilities and separated from adjacent residential uses by retaining walls and landscaping. As such, the hours and levels of operation of the trail are reasonably compatible with surrounding uses.

   The Planning Commission finds that this criterion is met.

4. The public benefits of the proposed use are greater than the negative impacts, if any, on the neighborhood.

   The underlying approval for the Trolley Trail found that the overall public benefits of the trail outweighed its potential impacts. The following public benefits were identified in the original approval:

   - Improves an existing public facility
   - Expands the local network of safe non-motorized facilities
   - Provides a public recreational amenity
   - Improves local and regional connectivity
   - Encourages alternative transportation modes
   - Has the potential to reduce single-occupancy vehicle trips
   - Implements the Transportation System Plan

   The modified trail alignment and design has the same public benefits as the previously approved trail alignment and design. The width of the trail and the trail shoulders are not proposed to change. The access points to the trail from the west are also not proposed to change. The addition of trail lighting between River Rd and Park Ave has the added benefit of providing a safer travel experience for pedestrians and cyclists during nighttime hours. Finally, impacts to an unnamed and ecologically degraded protected water feature near Wren St and McLoughlin Blvd enables the City to require natural resource mitigation for these impacts. The applicant's proposed mitigation plan will significantly improve the ecological functioning of this area, and, as such, is a benefit of the modified trail alignment.

   The addition of retaining walls and the large scale removal of vegetation along the trail have the potential to negatively change the character of the area. However, the Planning Commission finds that the change, while dramatic, is not necessarily an adverse impact. Where vegetation is proposed for removal, the applicant proposes new vegetation. Given that much of the

understory in this area contains invasive and nonnative plants, wholesale removal and revegetation of this area could be considered a benefit. Additionally, the applicant proposes to preserve the large giant sequoia near Sparrow St and McLoughlin Blvd by designing the trail around it. Different trail designs were evaluated in an effort to preserve three other giant sequoias further to the north; however, none were determined to be practicable. The three sequoias near Wren St are proposed for removal in order to avoid: (1) shifting the trail further into the adjacent water quality resource area to the west, and (2) adding a second jog in the trail so close to the one planned around the large sequoia at Sparrow St, as jogs in the trail negatively affect sight lines and bicyclist safety and comfort.

Where retaining walls are needed, the applicant proposes to acquire additional land behind the retaining walls (through purchase or easement) to provide a buffer of landscaping between the trail and the adjacent properties to the west. Large retaining walls include vertical reveals, vine plantings, and tiers to soften hard edges and add visual interest at the pedestrian level. The addition of retaining walls and landscape buffers also serve to more clearly define the western edge of the trail site than the previously approved alignment. This has the added benefit of reducing the likelihood of intentional or inadvertent trespassing onto private property by trail users.

The applicant has provided landscaping plans and a tree mitigation plan that illustrate the proposed landscaping and wall treatments. The application has been conditioned to ensure that these plans are implemented as proposed.

The following potential impacts were identified in the original approval:

- Improvements to the trail are expected to increase users of the trail. This increase in use may impact the privacy of private property owners adjacent to the trail. It may also result in trespassing.

The modified trail alignment and design has the following additional potential impacts:

- The applicant is acquiring and demolishing the residences on five properties in the City of Milwaukie to accommodate the proposed trail alignment. On the one hand, this represents a significant disruption and inconvenience for these residents. On the other hand, once these homes are demolished, they are no longer impacted by the trail. If they were ever redeveloped, future development would have the opportunity to minimize any trail impacts through home and site design.
- The addition of trail lighting has the potential to introduce new lighting impacts where none existed before. The application has been conditioned to avoid this potentiality.
- Shifting the trail alignment to the west results in temporary and permanent impacts to an unnamed protected water feature near Wren St and McLoughlin Blvd. The applicant proposes to mitigate for these impacts and has submitted the appropriate analysis and mitigation plan. The applicant's mitigation plan is expected to result in substantial ecological improvements to this area. The application has been conditioned to ensure the successful implementation of the proposed mitigation.

Given that the impacts identified in the original approval have, to some extent, been addressed and new potential impacts can be effectively mitigated, the Planning Commission finds that the public benefits outweigh the potential impacts from the proposed Trolley Trail modification. As conditioned, this criterion will be met.

5. The location is appropriate for the type of use proposed.

   The trail alignment was established over 110 years ago as a transportation facility, first as a streetcar line and later as a freight rail line. The proposed modification to the alignment does not substantially alter the location of the trail at the City or regional level. It also does not change how the trail connects to other trail sections to the north and south. As such, the location of the modified trail is appropriate for the proposed use.

   The Planning Commission finds that this criterion is met.

17. **WATER QUALITY RESOURCE:** MMC Subsection 19.402.9 contains the application requirements for development in water quality resource (WQR) areas.

The applicant submitted the required WQR materials and analysis for impacts to the unnamed stream on the west side of the Trolley Trail on tax lots 1S1E36CC00901 and 00300 near Wren St and McLoughlin Blvd. Refer to Table 1 below for detailed findings pertaining to the applicant's alternatives analysis and mitigation plan, which are required per MMC Subsection 19.402.9.G and I respectively.

As conditioned, the Planning Commission finds that no practicable alternative exists to the trail alignment and that light rail alignment location has already been approved; that disturbance to the WQR area is limited to the area necessary to accommodate the trail and light rail alignments; and that the mitigation plan proposed by the applicant for impacts to the WQR area caused by the trail and light rail alignments is adequate.

A. Application Requirements

Walkways, bike paths, and roads along or across water quality resource areas, such as the Trolley Trail, are subject to Type III review pursuant to MMC Subsection 19.402.7. The applicant submitted most of the required information for Type III review, a summary of which is provided below.

- A topographic map of the site with contour intervals of five (5) feet or less showing a delineation of the water quality resource area and all wetlands.
- The location of all existing natural features including, but not limited to, all trees of a caliper greater than six (6) inches diameter at breast height (DBH).
- The location of all wetlands.
- An inventory and location of existing debris and noxious materials.
- An inventory of vegetation, including percentage ground and canopy coverage.
- An assessment of the existing condition of the water quality resource area.

The applicant provided a site plan that shows the water quality resource area boundary based on its classification as a secondary protected water feature. The Planning Commission finds that the water feature is a primary protected water

feature. The boundary for a primary protected water features is measured 50 feet back from top of bank when the slopes around the water feature are in excess of 25% for less than 150 feet. As a result, the water quality resource boundary for this water feature is wider than what is shown on the applicant's site plan and needs to be redrawn.

Additionally, MMC Subsection 19.402.9.K requires payment of all adopted fees. The applicant paid the required water quality resource application fee and technical report review deposit. The deposit is meant to cover the City's expenses related to the hiring of a consultant with the appropriate technical expertise to review the applicant's water quality resource study.

As conditioned, the Planning Commission finds that the water quality resource application requirements will be met.

18. Pursuant to Subsection 19.1001.7.E, the decision on this land use application shall expire and become void within the time periods specified in Subsection 19.1001.7.E.1 unless the review authority specifies a different expiration time period as allowed by Subsection 19.1001.7.E.2. Given the size, complexity, and phased nature of the proposal, the Planning Commission finds that it is appropriate to extend the time period within which the applicant must obtain development permits from 2 years to 4 years, and within which the applicant must pass all final inspections from 4 years to 6 years, from the date of the land use decision on this application.

Table 1: Water Quality Resource Findings

MMC Subsection 19.402.9.G – ALTERNATIVES ANALYSIS An alternatives analysis shall be included in the application that demonstrates the following.		
	Requirement	**Findings**
1.	**No practicable alternatives to the requested development exist that will not disturb the Water Quality Resource Area.**	Placement of the light rail and trail alignments in this area are constrained by McLoughlin Blvd on the east and steep slopes and residentially-zoned properties on the west. Other rail alignments were evaluated but none were considered practicable, e.g. placement of light rail on the east side of McLoughlin Blvd and on the west side of the trail. Other trail alignments and trail supports were considered but none had fewer impacts on the WQR area and/or were considered appropriate by the North Clackamas Parks and Recreation District. *This requirement is met.*
2.	**Development in the Water Quality Resource Area has been limited to the area necessary to allow for the proposed use.**	The trail is located as far away from the WQR area as possible while maintaining a minimum acceptable distance from the light rail alignment. A reduction in the width of the trail at this location was considered neither safe nor desirable by the North Clackamas Parks and Recreation District, but a retaining wall is proposed at this location in order to reduce the amount of fill and disturbance within the WQR area. *This requirement is met.*

3.	**The Water Quality Resource Area can be restored to an equal or better condition in accordance with Table 19.402.9.E.**	The current condition of the WQR area is degraded. A mitigation plan has been developed to compensate for the unavoidable impacts to this area pursuant to Table 19.402.9.E. The proposed mitigation plan will improve the current conditions and put the area on a trajectory toward providing better water quality function and habitat values. Specific elements of the plan include: • Restoration of all WQR areas temporarily impacted by trail and light rail construction with appropriate native plants. • Mitigation for all WQR areas permanently impacted by the trail and light rail alignments at approximately a 1:1 replacement ratio within the WQR area and above the ordinary high water level. • Removal of invasive and nonnative species from within the construction limits and the mitigation area. • Monitoring and maintenance of plantings for five years with a target survival rate of 80%. The mitigation plan would benefit from the following refinements to ensure protection of existing trees to be retained and 100% ground coverage at the end of the monitoring period as required by Table 19.402.9.E: • Show which tress are proposed to be retained with a note about protecting these trees in place to ensure that they are not adversely affected during construction or mitigation. • Consider adding a “ground cover and herbaceous species” list to the plant schedule, moving both sword fern and low Oregon grape to this list and adding another 1-gallon herbaceous species like fringe-cup (Tellima grandiflora) to this list. (Fringe cup is a good competitor against invasive plants, tolerates drought, and has a high transplant success rate.) • Revise the shrub density to reflect the removal of sword fern and low Oregon grape from the shrub layer, and add additional shrubs as needed to achieve a shrub planting density of at least 6 ft on center. Existing shrubs to be retained can be included in the shrub planting density calculation. The approval of the application has been conditioned to ensure the mitigation plan is implemented as proposed and as altered by these findings. *As conditioned, this requirement will be met.*
4.	**An explanation of the rationale behind choosing the alternative selected, including how adverse impacts to**	Placement of the light rail and trail alignments in this area is constrained by McLoughlin Blvd on the east and steep slopes and residentially-zoned properties on the west. Other rail alignments were evaluated but none were advanced. They were considered either nonpracticable or more impactful to the trail, McLoughlin Blvd,

	resource areas will be avoided and/or minimized.	or nearby residential properties. Other trail alignments and trail supports were considered within the area left remaining on the west side of the light rail alignment, but none had fewer impacts on the WQR area and/or were considered appropriate by the North Clackamas Parks and Recreation District. The trail is located as far away from the WQR area as possible while maintaining a minimum acceptable distance from the light rail alignment. A reduction in the width of the trail at this location was considered neither safe nor desirable by the North Clackamas Parks and Recreation District, but a retaining wall is proposed at this location in order to reduce the amount of fill and disturbance within the WQR area. The proposed retaining wall is located above ordinary high water and over an existing culvert. *This requirement is met.*
MMC Subsection 19.402.9.I – MITIGATION PLAN A mitigation plan shall be included in the application that includes the following information.		
1.	**A description of adverse impacts that will be caused as a result of development.**	The proposed trail and light rail alignments will have the following adverse impacts: • Temporary disturbance to 1,820 sq ft of WQR area • Permanent impacts to 2,010 sq ft of WQR area • Removal of 13 trees greater than 6 inches in diameter at breast height (DBH) Short-term impacts include a slight reduction in the shading of the WQR area and the loss of tree canopy habitat after trees are removed. These impacts will gradually diminish over time as the mitigation plantings mature. More information is needed to ensure that the WQR area will not be adversely affected by the proposed stormwater plan for this area by piping or otherwise diverting water that would naturally feed this protected water feature. *As conditioned, this requirement will be met.*
2.	**An explanation of how adverse impacts to resource areas will be avoided, minimized, and/or mitigated in accordance with, but not limited to, Table 19.402.9.E.**	An explanation of how adverse impacts to the WQR area will be avoided, minimized, and/or mitigated is included under Subsections 19.402.9.G.3 and 4 above. *This requirement is met.*
3.	**A list of all responsible parties including, but not limited to, the owner,**	TriMet is the principal party responsible for work on the trail at this location. Additional detailed information will be made available to the City prior to construction as specific construction contracts are

	applicant, contractor, or other persons responsible for work on the development site.	executed. *This requirement is met.*
4.	**A map showing where the specific mitigation activities will occur.**	The required map has been provided. *This requirement is met.*
5.	**An implementation schedule, including timeline for construction, mitigation, mitigation maintenance, monitoring, reporting, and a contingency plan. All in-stream work in fish-bearing streams shall be done in accordance with the Oregon Department of Fish and Wildlife in-stream timing schedule.**	No in-water is proposed. Bareroot plant materials will be planted between December 1 and February 28th following the completion of heavy construction. TriMet will monitor and maintain the site for five years after the initial planting. Maintenance will include providing mulch rings around trees and shrubs, watering, and weeding as necessary to allow the native plant community to mature to a self-sustaining condition. The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five year period, TriMet will replace with new plants to achieve an overall 80% survival rate. TriMet will submit an annual report to the Planning Director documenting the survival of the trees and shrubs on the mitigation site for a period of five years. The approval of the application has been conditioned to ensure the mitigation plan is implemented as proposed and as altered by these findings. *As conditioned, this requirement will be met.*

Recommended Conditions of Approval

1. The plans submitted to the City of Milwaukie for modification of the Trolley Trail shall be in substantial conformance with the plans reviewed by the Planning Commission (PC) that were date stamped by the City on September 20, 2011. The plans shall be modified only as described in these conditions of approval or through a future land use application or formal modification process. Plan elements not proposed or approved for modification shall substantially conform to the underlying Trolley Trail approval (Land Use File: CSU-08-03).

   (Note: Any plan set changes proposed by the applicant or Planning Commission during or as a result of the land use review process shall be reflected in these conditions of approval prior to adoption by the Planning Commission.)

2. The development permit submission for the modification of the Trolley Trail shall include a detailed written and/or graphic description of any plan changes that are not part of these conditions of approval or that were not specified by the final decision-making authority.

3. The development permit submission for the modification of the Trolley Trail shall include the following items to demonstrate conformance with the Modification to an Existing Approval criteria. Development permits shall not be issued until the Planning Director is satisfied that the following conditions of approval are met.

   A. Provide a cross section design for the intersection at Sparrow St and 26th Ave that shows that there is sufficient right-of-way width to accommodate full street improvements at this location in the future. Acquire and dedicate property to the right-of-way if necessary.

   B. Update the landscaping plan to include tree quantities that are substantially consistent with the proposed Tree Mitigation Site Plan (Exhibit D7).

   C. Demonstrate that the addition of trail lighting does not increase the foot candle readings (as measured from top of bank) for any properties in the City of Milwaukie on the west side of the trail that are not permanently acquired by TriMet for construction of the trail or the light rail project. Documentation can take the form of a photometric study with pre- and post-construction foot candle readings or a written report by an electrical engineer. Provide additional fencing or screening as needed to meet this criterion.

4. The development permit submission for the modification of the Trolley Trail shall include the following items to demonstrate conformance with the Water Quality Resource area regulations. Development permits shall not be issued until the Planning Director is satisfied that the following conditions of approval are met.

   A. Provide the following application materials:

      1) A topographic map of the site with contour intervals of five (5) feet or less showing a delineation of the water quality resource area, including all wetlands, that is consistent with Milwaukie Municipal Code (MMC) Table 19.402.9.A for a primary protected water feature with slopes greater than 25% for less than 150 ft.

      2) Provide a wetland delineation report for any identified wetlands within the

WQR area.

B. Provide a technical memo that describes how the stormwater plan for this area does not adversely affect the WQR area by piping or otherwise diverting water that would naturally feed this protected water feature.

C. Revise the mitigation plan as follows:

1) Expand the required vegetated buffer around the protected water feature to reflect its classification as a primary protected water feature.

2) Adjust the plant schedule to ensure 100% ground coverage in the mitigation area at the end of the monitoring period. Consider adding a "ground cover and herbaceous species" list to the plant schedule, moving both sword fern and low Oregon grape to this list and adding another 1-gallon herbaceous species like fringe-cup (Tellima grandiflora) to this list. (Fringe cup is a good competitor against invasive plants, tolerates drought, and has a high transplant success rate.) Revise the shrub density to reflect the removal of sword fern and low Oregon grape from the shrub layer, and add additional shrubs as needed to achieve a shrub planting density of at least 6 ft on center. Existing shrubs to be retained can be included in the shrub planting density calculation.

3) Show existing trees to be retained and include a note about protecting these trees in place.

5. The development permit submission for the modification of the Trolley Trail shall include the following items to demonstrate conformance with Milwaukie Public Works Standards. Development permits shall not be issued until the Engineering Director has reviewed and approved the following items.

A. Submit a storm water management plan prepared by a qualified professional engineer that conforms to Section 2 – Stormwater Design Standards of the City of Milwaukie Public Works Standards. All stormwater from the Trolley Trail and its associated retaining walls shall be treated and infiltrated on private property unless otherwise approved by the Engineering Director.

1) The storm water management plan shall demonstrate that the post-development runoff does not exceed pre-development runoff, including any existing storm water management facilities serving the development site.

2) The storm water management plan shall demonstrate compliance with water quality standards in accordance with the City of Portland Stormwater Management Manual.

B. In the event the storm management system contains underground injection control devices, the applicant shall submit proof of acceptance of the storm system design from the Department of Environmental Quality. The storm water management plan must also be designed to meet water quality resource development standards contained in MMC Subsection 19.402.10, specifically:

1) Storm water flows as a result of the proposed development within and to water quality resource areas shall not exceed pre-development flows.

2) Storm water outfalls shall be appropriately designed to avoid erosion to stream banks or water quality resource area slopes.

6. Prior to commencement of any earth disturbing activities, the applicant shall:

A. Submit a Construction Management Plan pursuant to Metro Title 13 Section 5.

B. Submit the map verification information identified in Metro Title 13 Section 9.F.1.

C. Obtain an erosion control permit pursuant to MMC Title 16 Erosion Control.

D. Flag, fence, or otherwise mark the extent of the construction limits.

E. Flag, fence, or otherwise mark the water quality resource area not proposed to be disturbed pursuant to MMC Subsection 19.402.10. The water quality resource area must be identified in the field by a qualified professional.

7. During site development, the applicant shall:

A. Limit development activity to 7 a.m. to 7 p.m. Monday through Friday and 8 a.m. to 5 p.m. Saturday and Sunday pursuant to MMC Subsection 8.08.070.I.

B. Safeguard the water quality resource area pursuant to MMC Subsection 19.402.10 as follows:

1) All site development activities shall conform to the Construction Management Plan.

2) Protection fencing shall be maintained around areas not proposed to be disturbed until site development is complete. Trees shall not be used as anchors to stabilize construction equipment or activities.

3) Appropriate site preparation and construction practices shall be followed to prevent erosion, pollution, sedimentation, or drainage of hazardous materials to the water quality resource area.

4) Native soils disturbed during development shall not be removed from the site.

5) The water quality resource area shall be re-vegetated per the approved mitigation plan and as soon as practicable after the approved development activity in the resource area is complete.

8. Prior to final inspection of the modification of the Trolley Trail, the applicant shall complete the following items to the satisfaction of the Planning Director:

A. Restore and improve the water quality resource area per the approved mitigation plan prepared by Vigil Agrimis and subsequently modified by these conditions of approval pursuant to MMC Subsection 19.402.10.A. Submit a letter from the project's natural resource consultant attesting that all required restoration and mitigation work has been completed in conformance with the approved mitigation plan.

9. Prior to final inspection of the modification of the Trolley Trail, the applicant shall complete the following items to the satisfaction of the Engineering Director:

A. Construct a private storm management system to accommodate stormwater runoff from the trail and retaining walls. The private storm management system shall be constructed according to the approved storm water management plan.

10. Ongoing conditions of approval:

A. Maintain and monitor the water quality resource area plantings for five years per the approved mitigation plan prepared by Vigil Agrimis and subsequently modified by these conditions of approval. Provide a copy of the annual

monitoring report to the City of Milwaukie Planning Director no later than the end of each calendar year during the five years in which the plantings are monitored.

B. Pursuant to Subsection 19.1001.7.E.2, the time period within which the applicant must obtain development permits for the Trolley Trail is extended from 2 years to 4 years, and the time period within which the applicant must pass all final inspections is extended from 4 years to 6 years, from the date of the land use decision on this application.

LEGEND - Light Rail Components

- LIGHT RAIL LINE & CROSSING
- EXISTING STREETS
- EXISTING BUILDING TO REMAIN
- EXISTING BUILDING TO BE REMOVED
- RETAINING WALL
- SOUND WALL
- GABIONS
- FENCE
- LANDSCAPE PLANTING

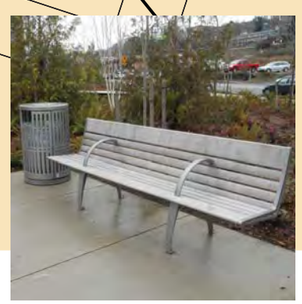














Trolley Trail

N

0′ 30′ 60′ 120′

Scale: 1″ = 60′-0″

PORTLAND-MILWAUKIE LIGHT RAIL PROJECT · TRIMET · CLACKAMAS COUNTY · DAVID EVANS AND ASSOCIATES INC. · waterleaf architecture, interiors & planning · GREENWORKS

Exhibit D1

Mayer/Reed

Existing Conditions









Sections of Proposed Conditions

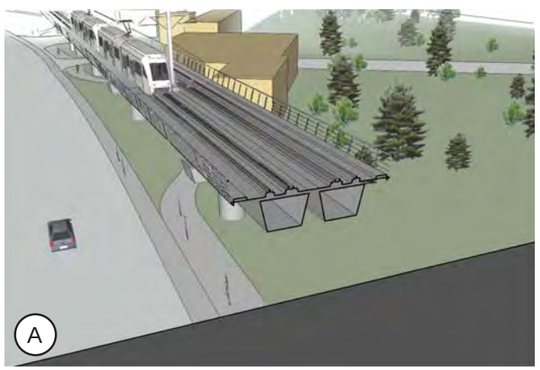








3-D Views of Proposed Conditions





Trolley Trail - Existing and Proposed Conditions

Exhibit D2

Mayer/Reed

Existing Conditions









Sections of Proposed Conditions

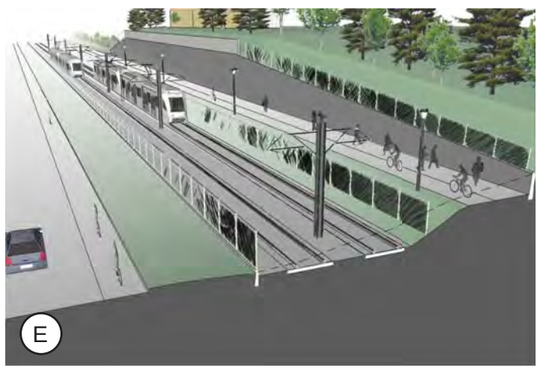








3-D Views of Proposed Conditions







Trolley Trail - Existing and Proposed Conditions

Existing Conditions





3-D View of Proposed Conditions



Sections of Proposed Conditions





Elevation of Proposed Conditions



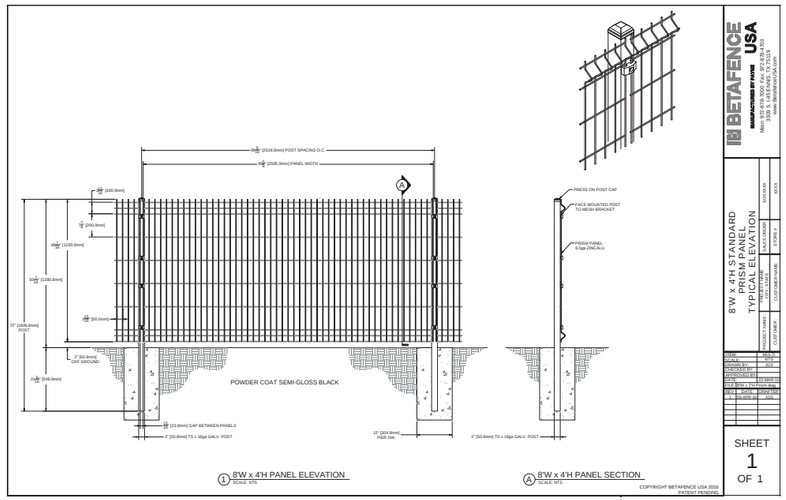
Elevation of Proposed Conditions

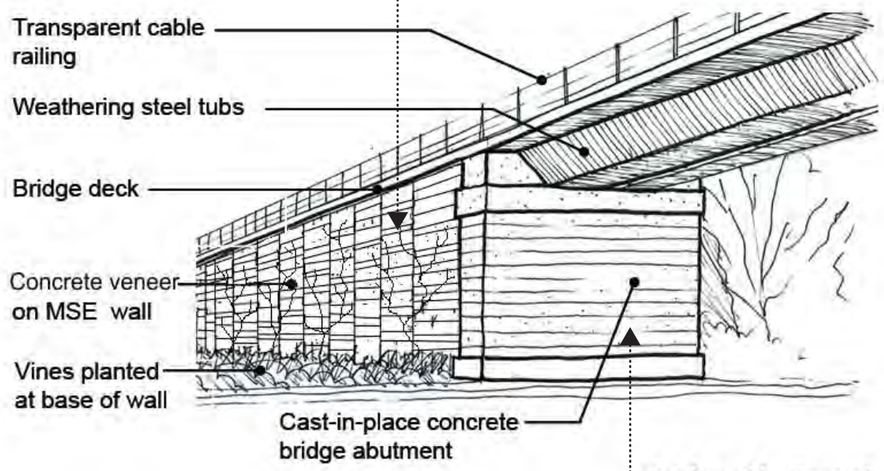


Trolley Trail - Existing and Proposed Conditions

Exhibit D4

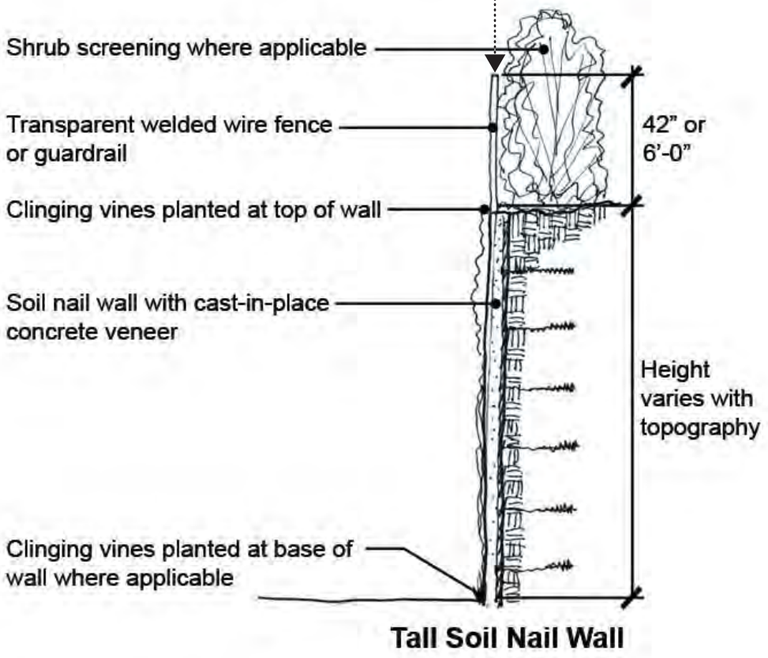
Mayer/Reed



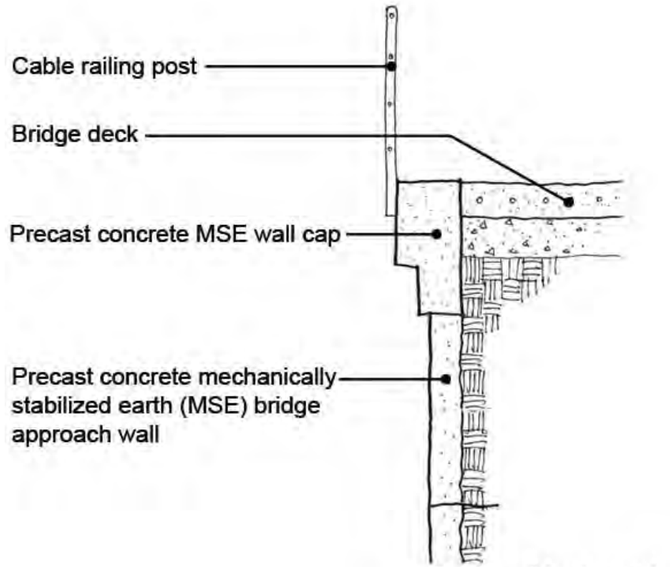


Bridge Abutment

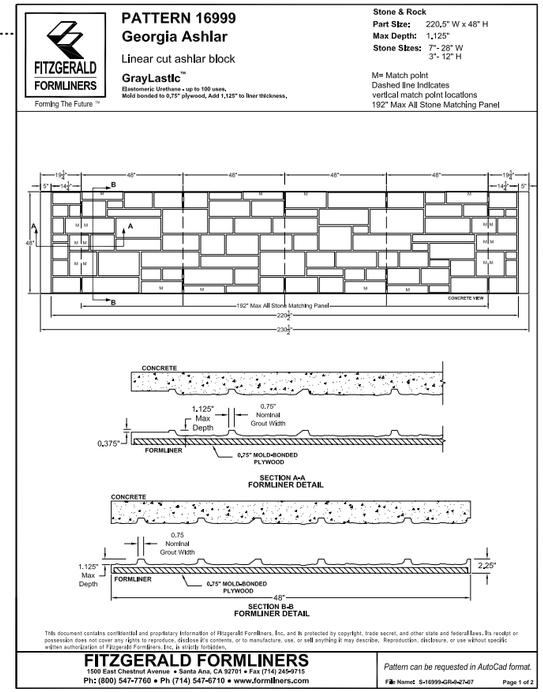


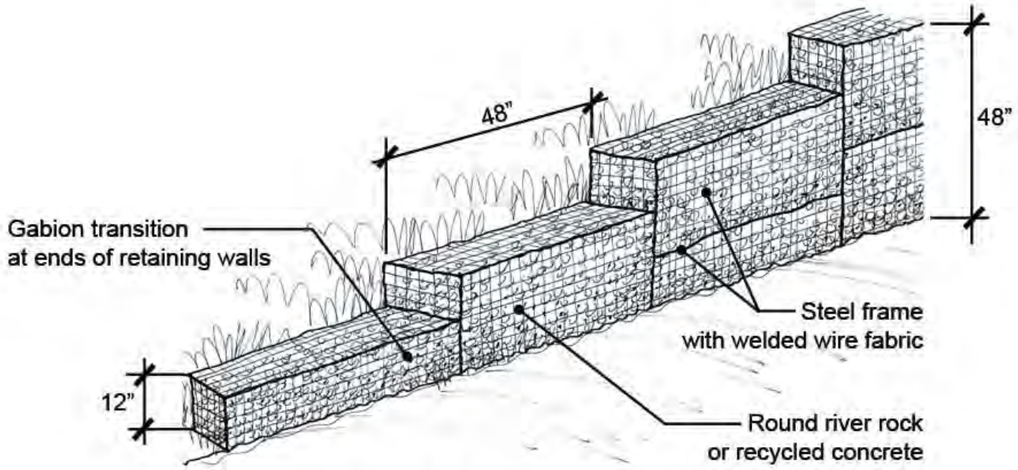


Tall Soil Nail Wall

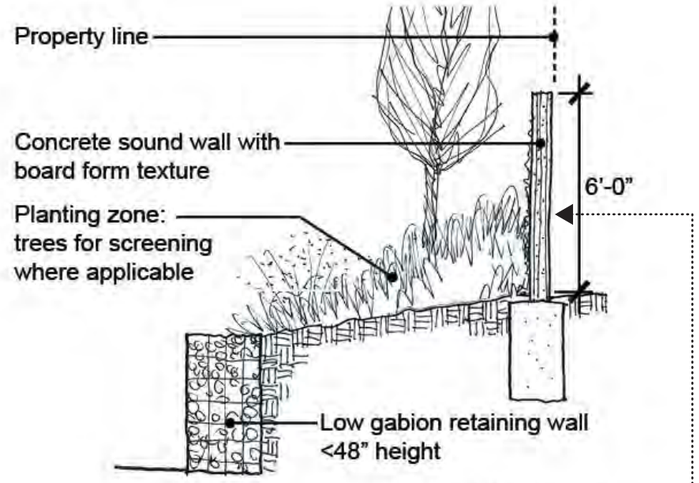


Bridge Abutment MSE Wall Cap



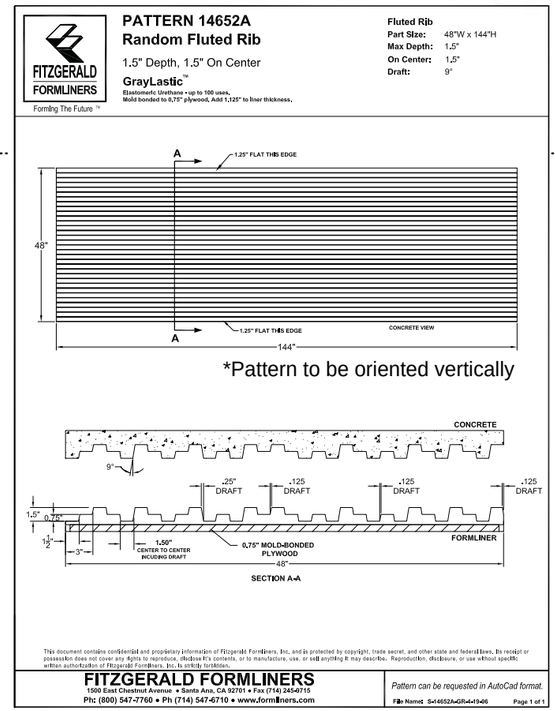


Low Gabion Retaining Wall < 48" Height



Sound Wall and Low Gabion Retaining Wall





TROLLEY TRAL

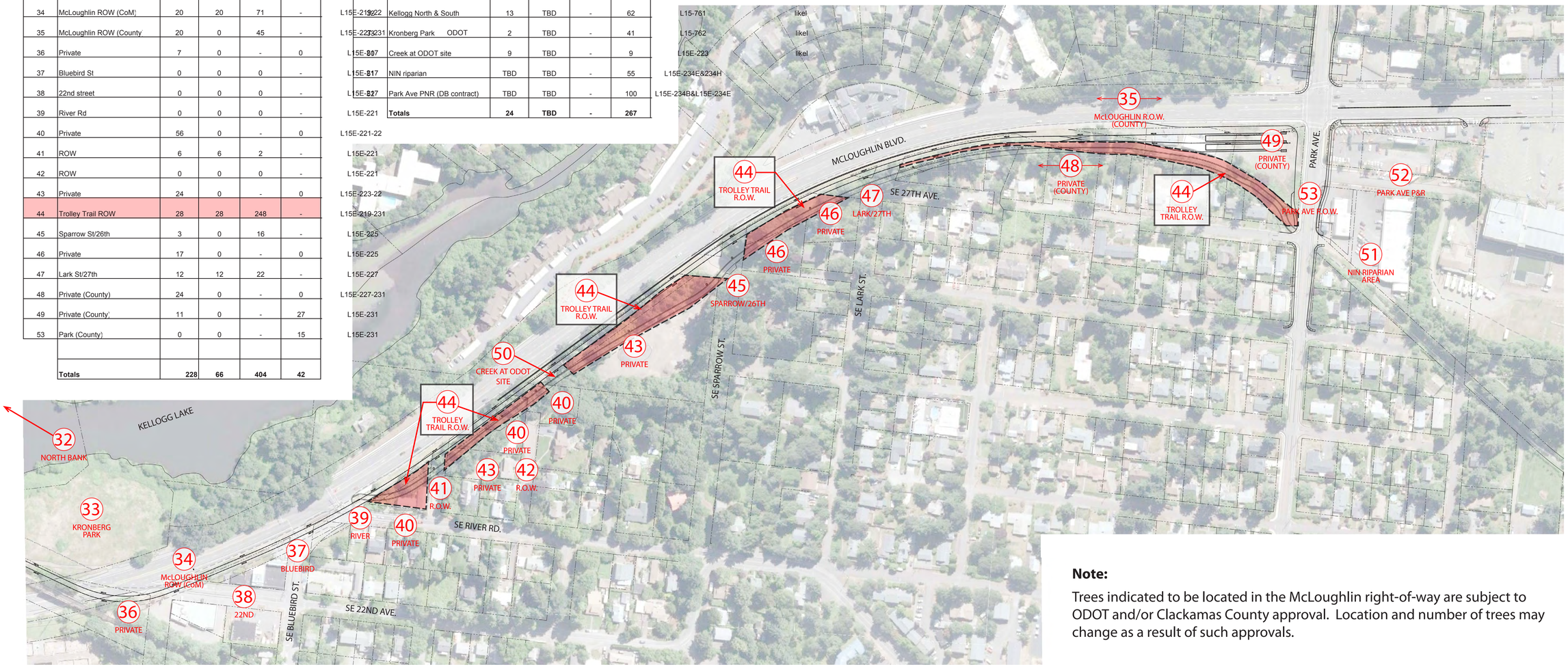
ID #	Location	Trees removed	Required mitigation	ROW Trees Proposed	Other Trees proposed
34	McLoughlin ROW (CoM)	20	20	71	-
35	McLoughlin ROW (County	20	0	45	-
36	Private	7	0	-	0
37	Bluebird St	0	0	0	-
38	22nd street	0	0	0	-
39	River Rd	0	0	0	-
40	Private	56	0	-	0
41	ROW	6	6	2	-
42	ROW	0	0	0	-
43	Private	24	0	-	0
44	Trolley Trail ROW	28	28	248	-
45	Sparrow St/26th	3	0	16	-
46	Private	17	0	-	0
47	Lark St/27th	12	12	22	-
48	Private (County)	24	0	-	0
49	Private (County)	11	0	-	27
53	Park (County)	0	0	-	15
	Totals	**228**	**66**	**404**	**42**

ENVIRONMENTAL AREAS

ID #	Location	Trees removed	Required per HCA mitigation	Street Tree Proposed	Other Trees proposed
L15E-219-222	Kellogg North & South	13	TBD	-	62
L15E-223-231	Kronberg Park ODOT	2	TBD	-	41
L15E-B07	Creek at ODOT site	9	TBD	-	9
L15E-B17	NIN riparian	TBD	TBD	-	55
L15E-B27	Park Ave PNR (DB contract)	TBD	TBD	-	100
L15E-221	**Totals**	**24**	**TBD**	**-**	**267**

L15E-221-22
L15E-221
L15E-221
L15E-223-22
L15E-219-231
L15E-225
L15E-225
L15E-227
L15E-227-231
L15E-231
L15E-231

L15-761 likel
L15-762 likel
L15E-223 likel
L15E-234E&234H
L15E-234B&L15E-234E



Note:

Trees indicated to be located in the McLoughlin right-of-way are subject to ODOT and/or Clackamas County approval. Location and number of trees may change as a result of such approvals.

Tree Mitigation Plan

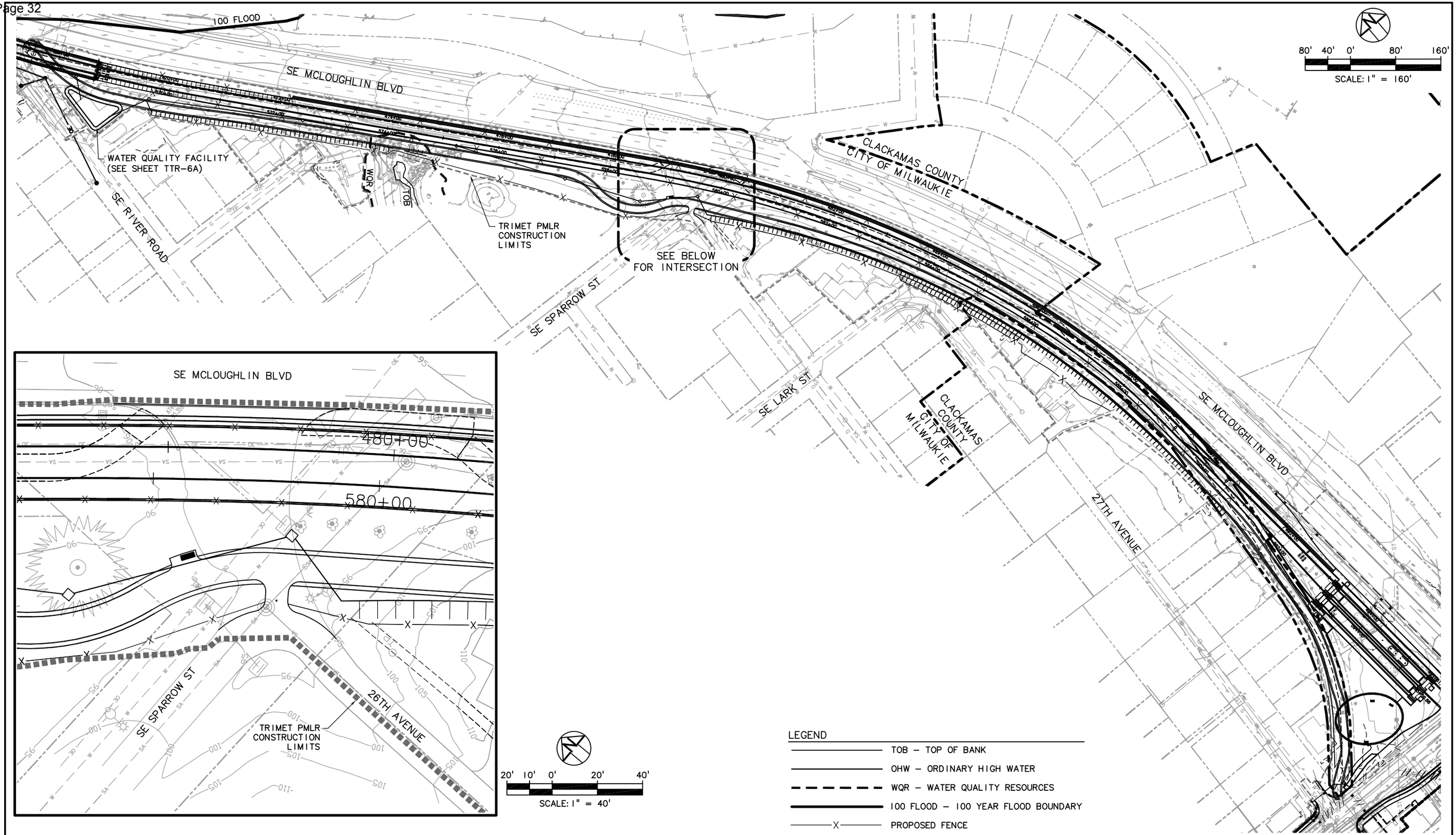
N

0′ 60′ 120′ 240′

Scale: 1″ =120′-0″

Exhibit D7

Mayer/Reed



20' 10' 0' 20' 40'
SCALE: 1" = 40'

LEGEND

- TOB – TOP OF BANK
- OHW – ORDINARY HIGH WATER
- WQR – WATER QUALITY RESOURCES
- 100 FLOOD – 100 YEAR FLOOD BOUNDARY
- PROPOSED FENCE

NO.	DATE	BY CHK.	APPD.	REVISIONS

IML DESIGNED	07-07-11 DATE
JTH DRAWN	07-07-11 DATE
MJH CHECKED	DATE
APPROVED	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

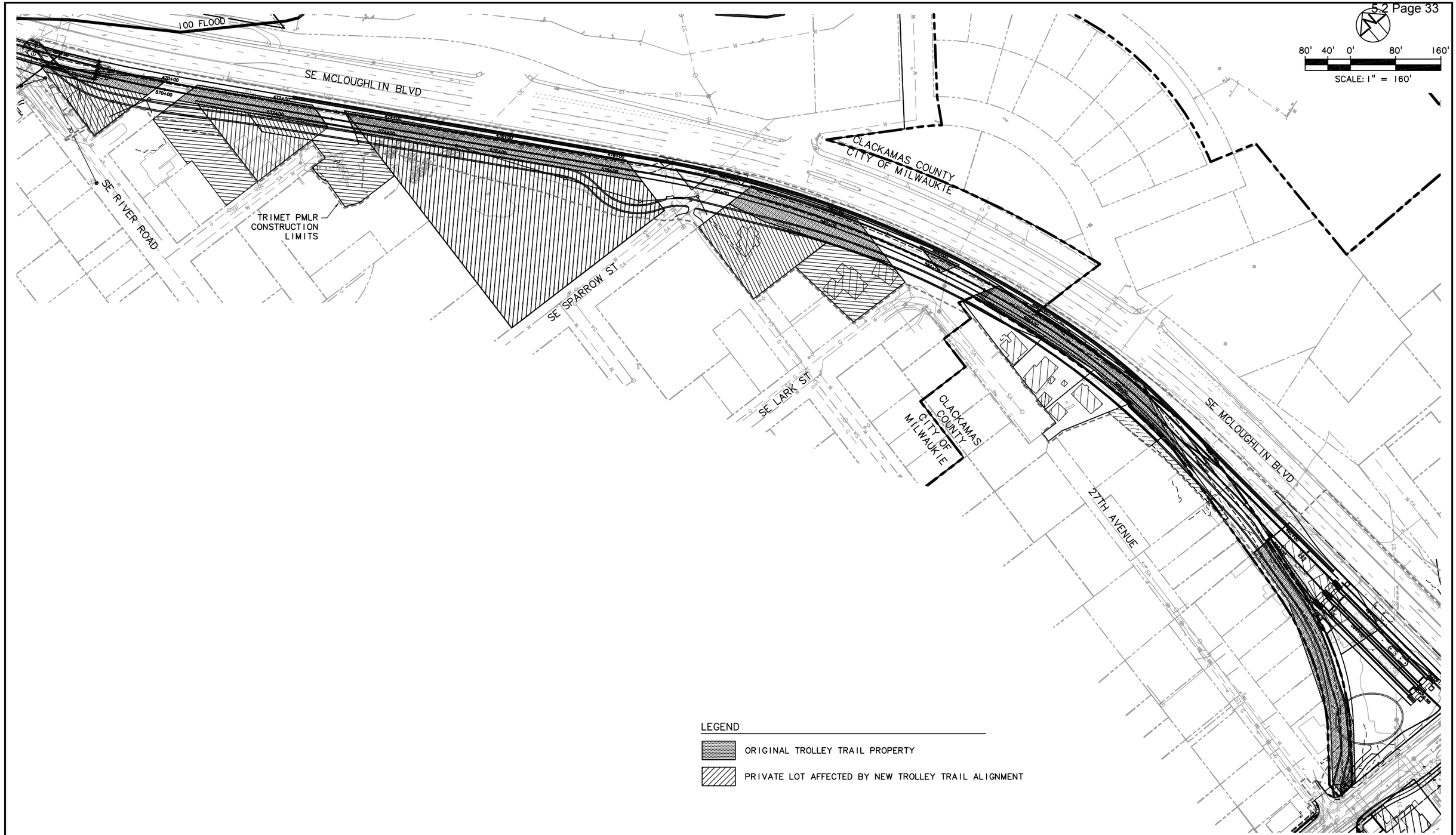
PORTLAND TO MILWAUKIE LRT
EAST SEGMENT

Exhibit P1

LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT SITE PLAN

SUBMITTED:	DATE:	APPROVED:	DATE:	SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
				1" = 160'	TTR-2A	RH100544JB	

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Plot Date:9/13/2011 3:26 PM_edita k boguslawski



LEGEND

- ORIGINAL TROLLEY TRAIL PROPERTY
- PRIVATE LOT AFFECTED BY NEW TROLLEY TRAIL ALIGNMENT

NO.	DATE	BY / CHK.	APPD.	REVISIONS

IML	DESIGNED	07-07-11 DATE
JTH	DRAWN	07-07-11 DATE
MJH	CHECKED	DATE
	APPROVED	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

DAVID EVANS AND ASSOCIATES INC.

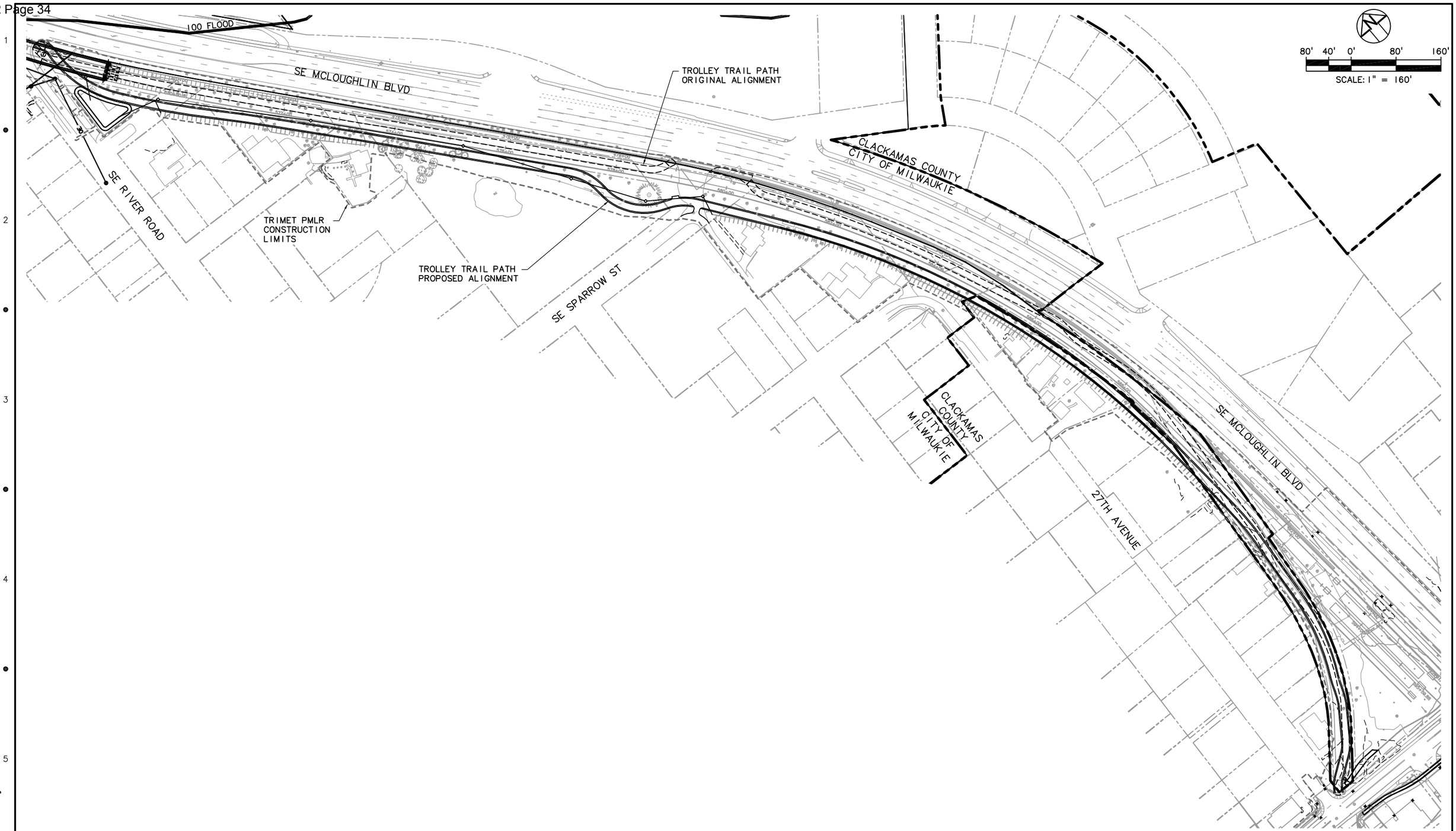
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
Exhibit P2

LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT SITE PLAN

SUBMITTED:	DATE:	APPROVED:	DATE:	SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
				1" = 160'	TTR-2B	RH100544JB	

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Plot Date: 9/13/2011 3:26 PM_edita k boguslowski



NO.	DATE	BY CHK.	APPD.	REVISIONS

IML DESIGNED	07-07-11 DATE
JTH DRAWN	07-07-11 DATE
MJH CHECKED	DATE
APPROVED	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

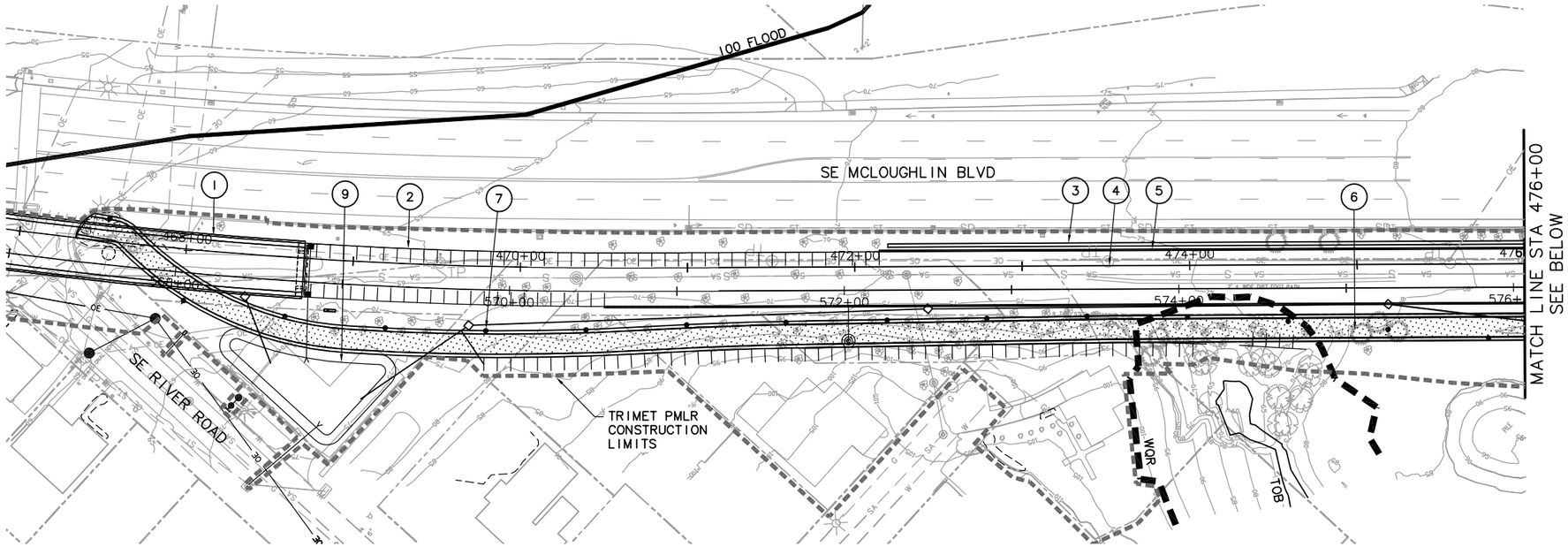
PORTLAND TO MILWAUKIE LRT
EAST SEGMENT

Exhibit P5

LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED & ORIGINAL PATH SITE PLAN

SUBMITTED:	DATE:	APPROVED:	DATE:	SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
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Plot Date:9/13/2011 3:27 PM edita k boguslowski

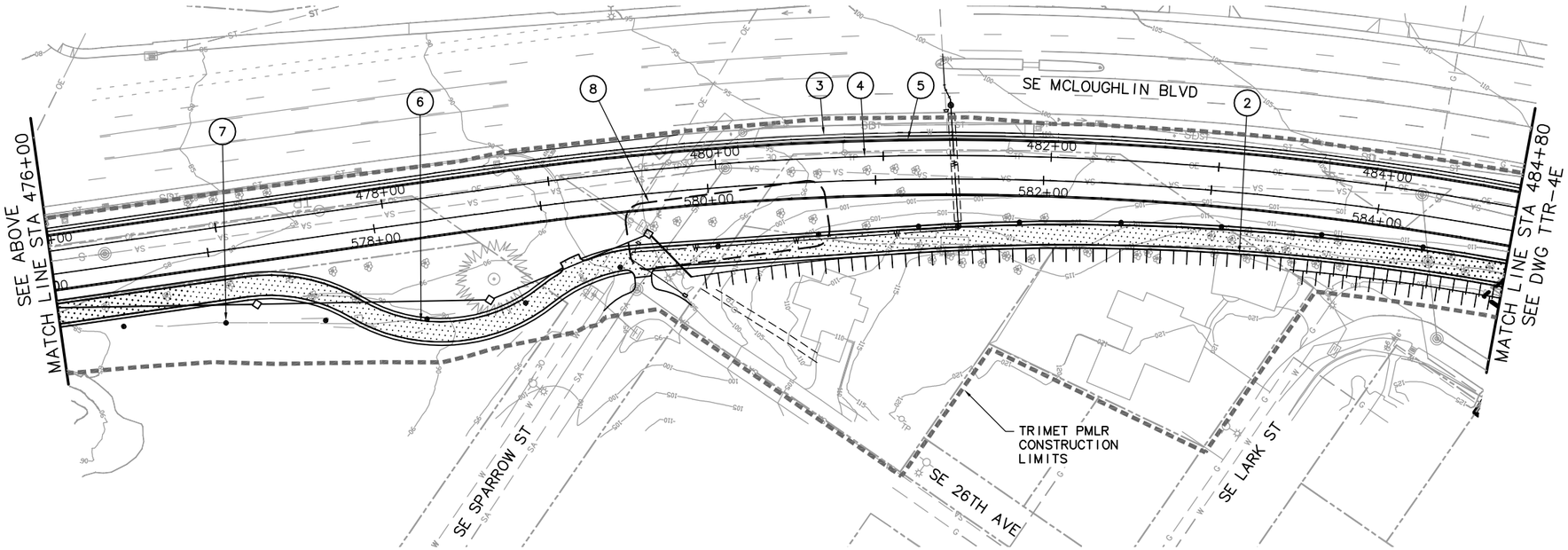


40' 20' 0' 40' 80'

SCALE: 1" = 80'

ARCH & CIVIL KEY NOTES

1. KELLOGG BRANCH STRUCTURE
2. RETAINING WALL
3. HIGHWAY BARRIER
4. TRACK CENTERLINE
5. TRACK BALLAST CURB
6. TROLLEY TRAIL PATH (PMLR)
7. TROLLEY TRAIL LIGHTING
8. TREES TO BE REMOVED THAT WERE IDENTIFIED IN EARLIER APPROVED PLAN AS RETAINED
9. STORM WATER FACILITY



40' 20' 0' 40' 80'

SCALE: 1" = 80'

NO.	DATE	BY / CHK.	APPD.	REVISIONS

IML	DESIGNED	06-20-11 DATE
JTH	DRAWN	06-20-11 DATE
MJH	CHECKED	06-25-11 DATE
	APPROVED	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

DAVID EVANS AND ASSOCIATES INC.

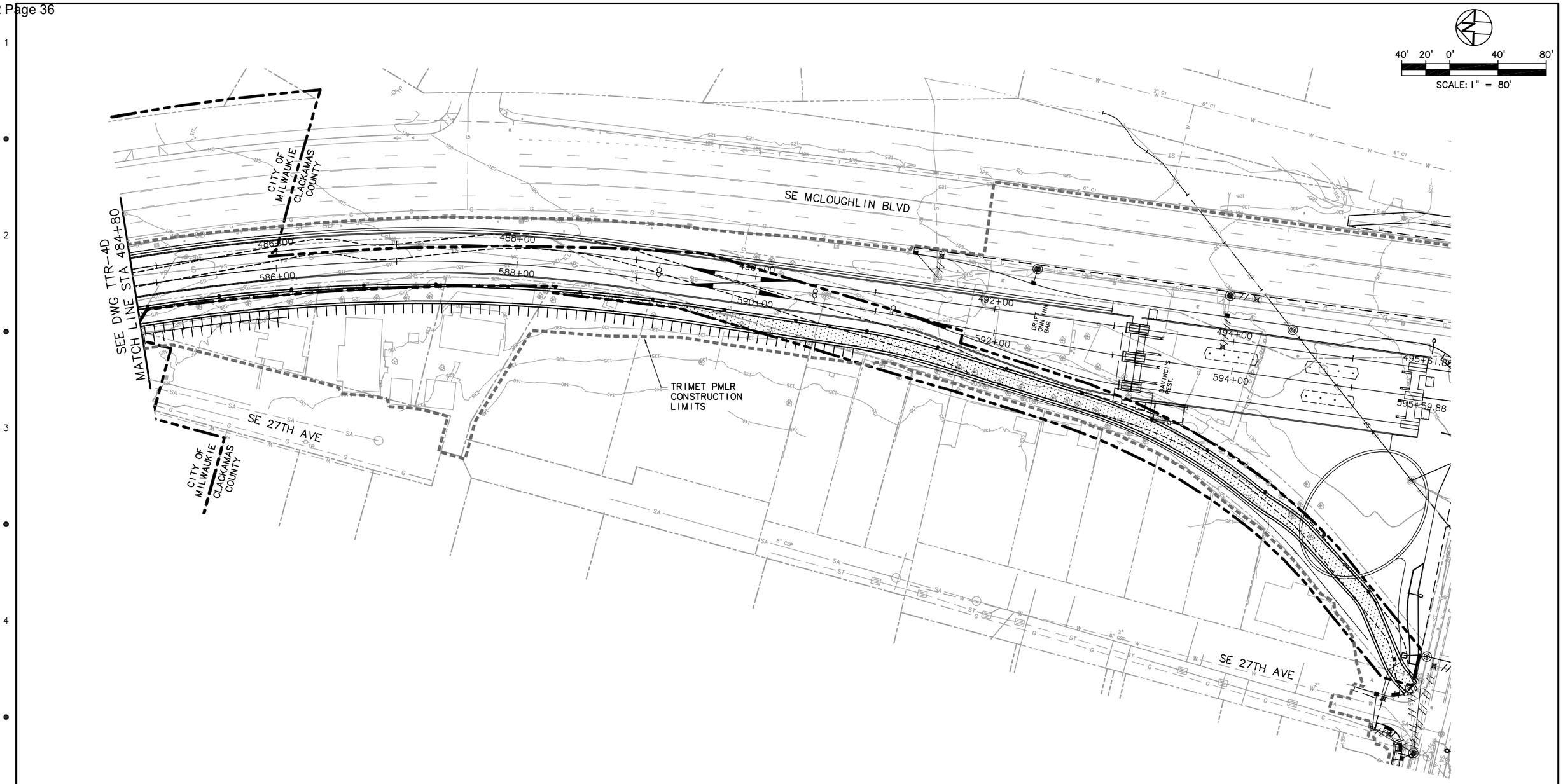
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P7
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT ARCH & CIVIL SITE PLAN 1 OF 2

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1" = 80'	TTR-4D	RH100544JB	

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Plot Date:9/13/2011 3:27 PM_edita k boguslawski



NO.	DATE	BY / CHK.	APPD.	REVISIONS

IML	DESIGNED	06-20-11 DATE
JTH	DRAWN	06-20-11 DATE
MJH	CHECKED	06-25-11 DATE
	APPROVED	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

DAVID EVANS AND ASSOCIATES INC.

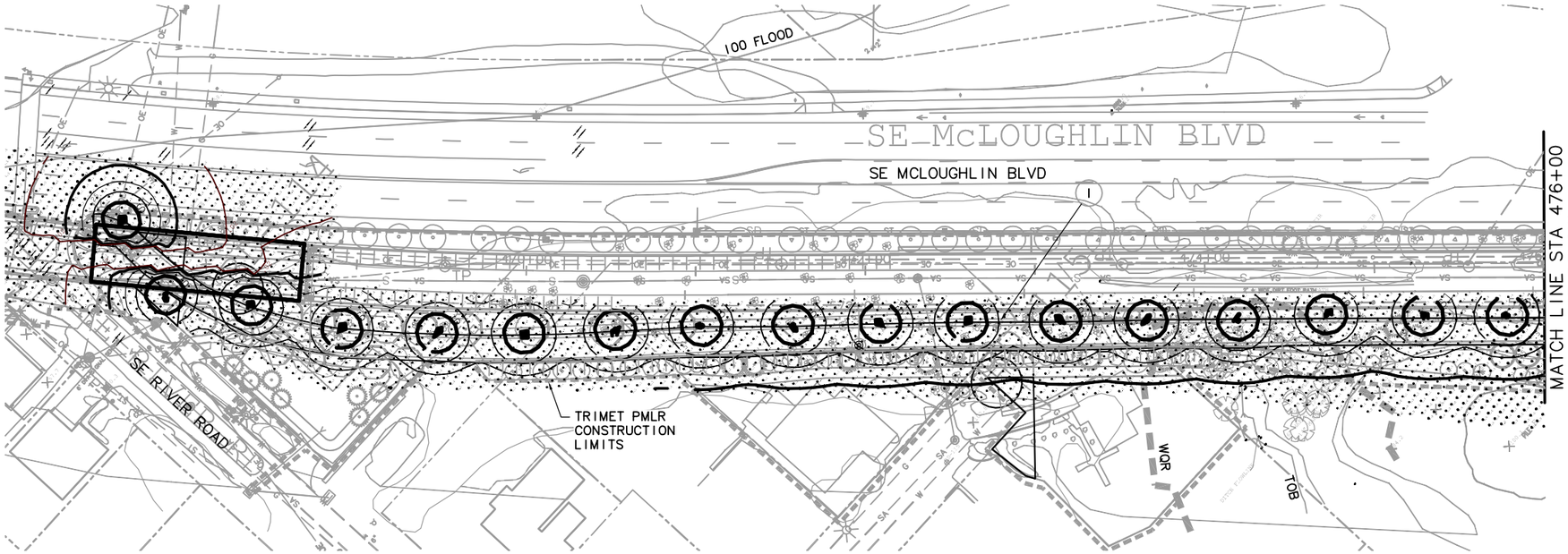
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P8
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT ARCH & CIVIL SITE PLAN 2 OF 2

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1" = 80'	TTR-4E	RH100544JB	

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Plot Date:9/13/2011 3:28 PM_edita k boguslowski

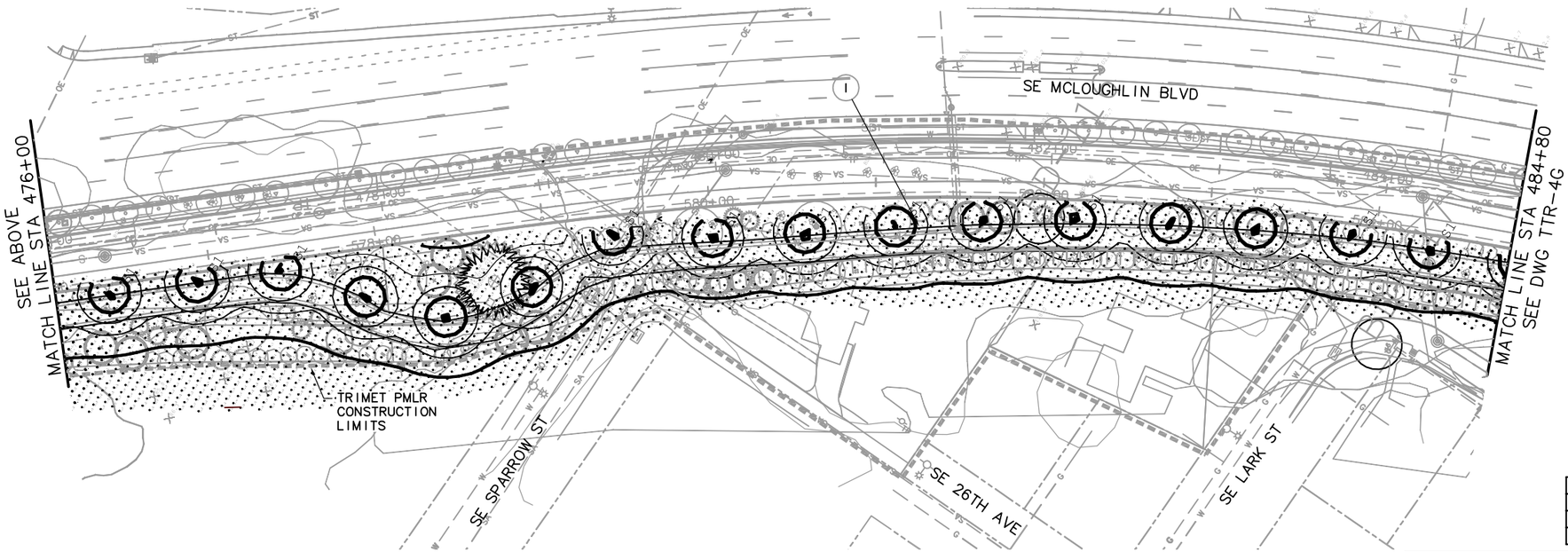


40' 20' 0' 40' 80'

SCALE: 1" = 80'

LIGHTING KEY NOTES

(1) TRAIL LIGHTING, TYP



40' 20' 0' 40' 80'

SCALE: 1" = 80'

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts	Illuminance	Fc	0.38	1.6	0.0	N.A.	N.A.
Trolley Trail	Illuminance	Fc	0.66	1.6	0.0	N.A.	N.A.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	LLD	LDD	BF
●	56	S1	SINGLE	6000	0.763	Kim SRS5F5_85IF-A31_5	0.930	0.820	1.000

NO.	DATE	BY / CHK.	APPD.	REVISIONS

IML DESIGNED	06-20-11 DATE	
JTH DRAWN	06-20-11 DATE	
MJH CHECKED	06-25-11 DATE	
APPROVED	DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

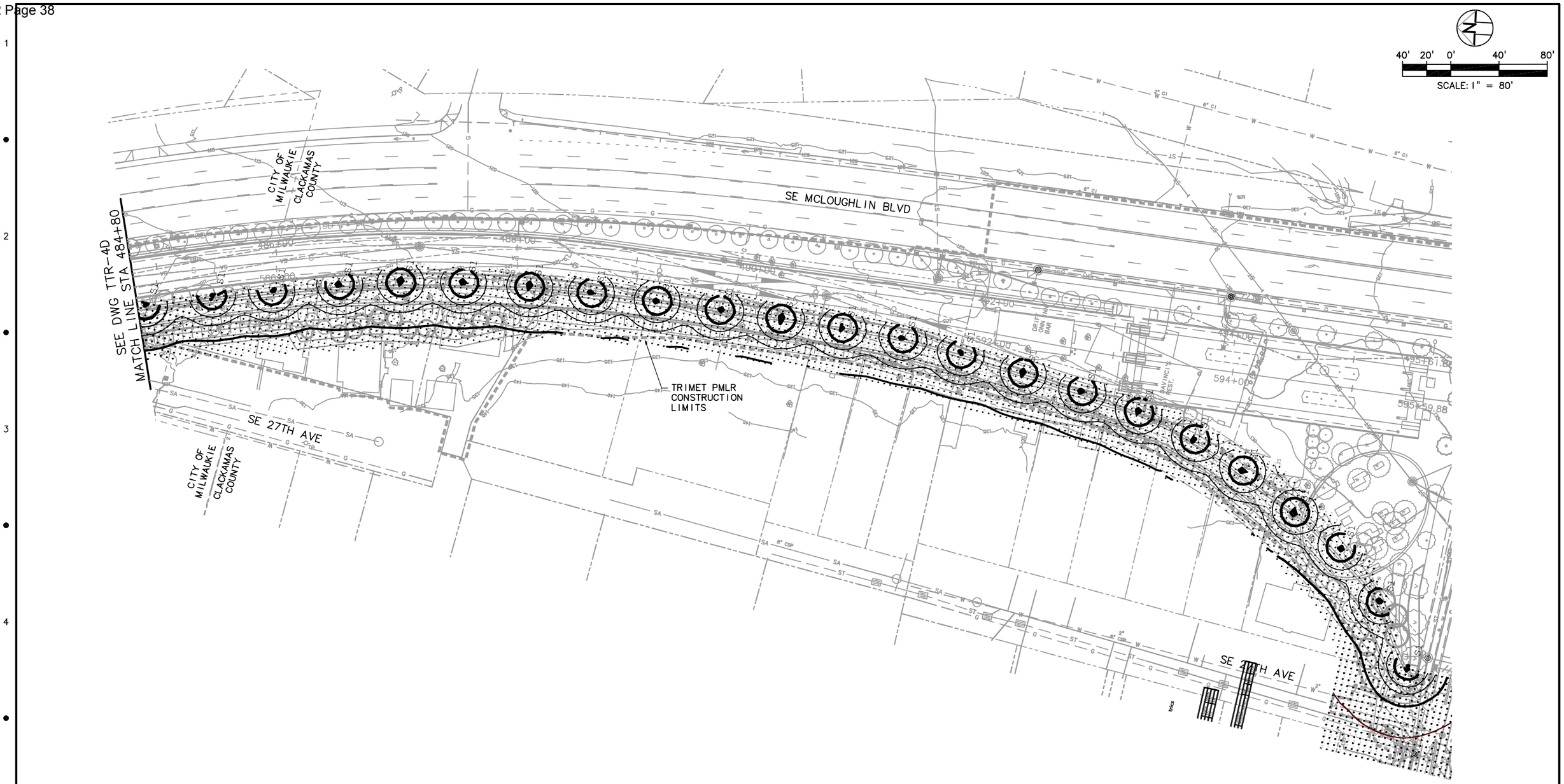
PORTLAND TO MILWAUKIE LRT
EAST SEGMENT

Exhibit P11

LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT LIGHTING SITE PLAN 1 OF 2

SUBMITTED:	DATE:	APPROVED:	DATE:	SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
				1" = 80'	TTR-4G	RH100544JB	

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Plot Date:9/15/2011 10:14 AM_edita k boguslowski



Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts	Illuminance	Fc	0.38	1.6	0.0	N.A.	N.A.
Trolley Trail	Illuminance	Fc	0.66	1.6	0.0	N.A.	N.A.

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	LLD	LDD	BF
●	56	S1	SINGLE	6000	0.763	Kim SRS5F5_85IF-A31_5	0.930	0.820	1.000

NO.	DATE	BY CHK.	APPD.	REVISIONS

IML DESIGNED 06-20-11 DATE
JTH DRAWN 06-20-11 DATE
MJH CHECKED 06-25-11 DATE
APPROVED DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: DATE: APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
Exhibit P12

LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT LIGHTING SITE PLAN 2 OF 2

SCALE: 1" = 80' | DRAWING NO.: TTR-4H | CONTRACT NO.: RH100544JB | SHEET NO.:

P:\TM\TM000027\0400CAD\Permits\Land Use Permit\3-Trolley Trail\TTR-4H.dwg Sep. 15, 2011 - 10:17 AM edita k boguslawski
Plot Date:9/15/2011 10:35 AM edita k boguslawski

KIM LIGHTING

Solitaire™ SRS5

Induction Fluorescent, White Acrylic Lens / Die-Cast Aluminum Top

revision 10/1/08 • srs5.pdf

Type: SA3 / SA4

Job: PMLR - TRANSIT STATIONS

Catalog number:

/ SRS5F5 / / /

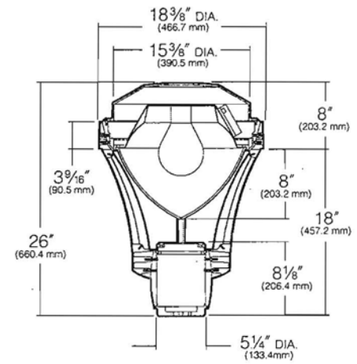
Mtg. · Fixture (See page 2) · Electrical Module (See page 3) · Finish · Options (See pages 4 - 5)

Approvals:

Date:

Page: 1 of 5

Specifications



Top: Lamp and reflector are accessible by loosening four stainless steel captive screws. Die-Cast, low copper (<0.6% Cu) aluminum alloy.

Lens: White high-temperature acrylic.

Reflector Ring: Die-Cast, low copper (<0.6% Cu) aluminum alloy sealed with one-piece silicone gaskets.

Arms: Die-Cast, low copper (<0.6% Cu) aluminum alloy with sealed wireway channels.

Ballast Chamber: Die-Cast, low copper (<0.6% Cu) aluminum alloy with removable cover for access to mounting hardware for head and ballast removal. Sealed with one-piece silicone gaskets. Mounted by one of the following pole attachment means:

FM - Flush Mounting by means of an expansion device activated by a single bolt within the splice compartment. Pole must have a plain-cut top. Standard pole size is 4" O.D. (Other pole adapter sizes available; contact Kim representative.)

PT - Pole Tenon mounting by means of a cast aluminum adapter containing four recessed ⅜" stainless steel allen head set screws. Pole must have a 2" pipe-size tenon (2⅜" O.D. x 4½" minimum length). Pole tenon must be field drilled at one set screw location to secure against fixture rotation.

Vertical Lamp Reflector Module (F5): One-piece Specular Alzak® aluminum shell. Reflector module hooks in and out of the housing by no-tool release hinges and secures to the housing flange by a quick-disconnect plug. Reflectors are factory pre-wired with a quick-disconnect plug.

Electrical Module: All electrical components are UL and CSA recognized, mounted on a single bracket and factory pre-wired with quick-disconnect plugs. A complete HF generator and Induction Lamp system is furnished mounted to the aluminum plate inside housing. Induction Lamp system is high power factor rated for -4°F, starting.

Finish: Super TGIC thermoset polyester powder coat paint, 2.5 mil nominal thickness, applied over a titanated zirconium conversion coating; 2500 hour salt spray test endurance rating. Standard colors are Black, Dark Bronze, Light Gray, Stealth Gray™, Platinum Silver, or White. Custom colors are available.

CAUTION: Fixtures must be grounded in accordance with national, state, and/or local codes. Failute to do so may result in serious personal injury.

NOTE: 14' HIGH POLE, TYPICAL

Listings and Ratings			
UL cUL 1598[1]	4G Vibration[2]	IP66 Rated	25C Ambient

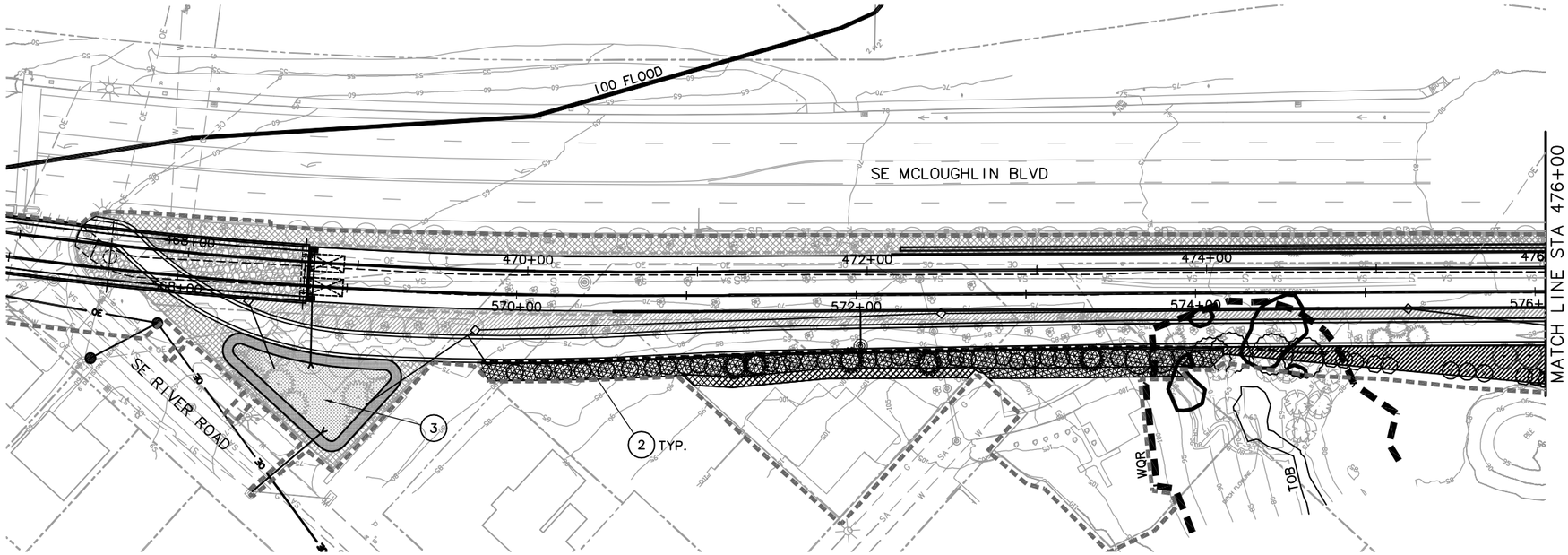
[1]Suitable for wet locations.
[2]5K Cycle Tested

KIM LIGHTING RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT NOTICE.

HUBBELL LIGHTING, INC.

U.S. Patent D444,584

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40' 20' 0' 40' 80'

SCALE: 1" = 80'

NOTES

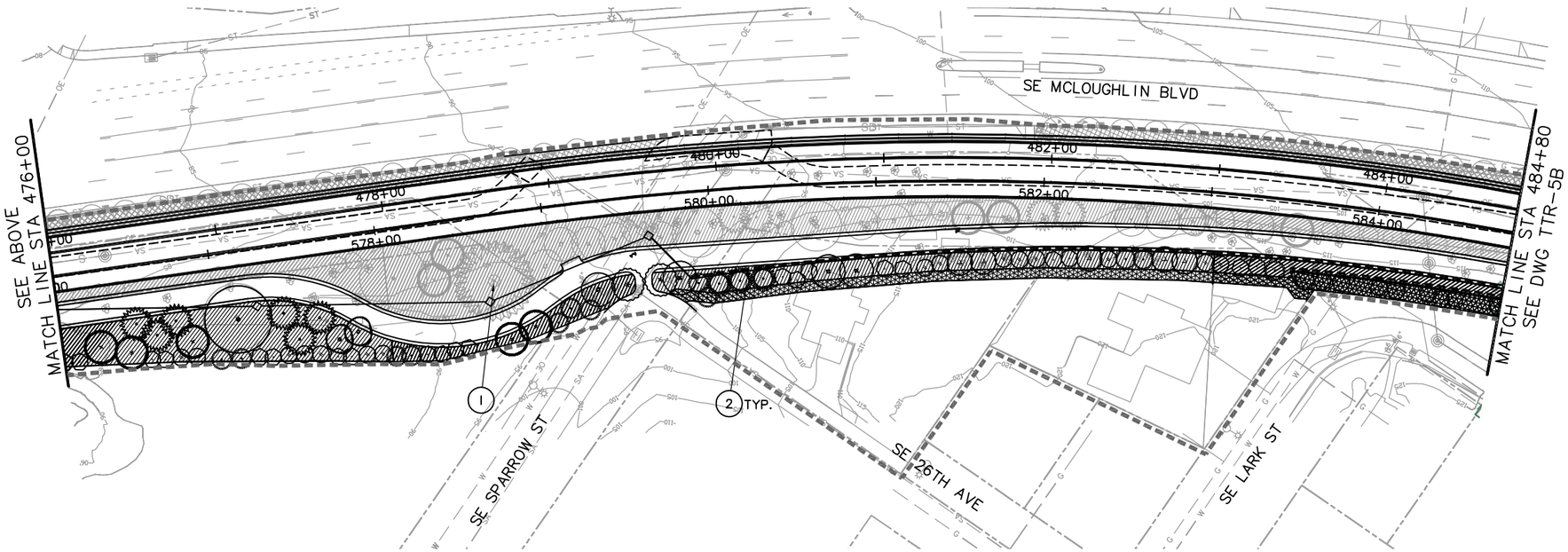
1. SEE SHEETS TTR-5C, TTR-5D AND TTR-5E FOR LANDSCAPE NOTES AND LEGENDS.

PLANTING KEY NOTES

(1) PRESERVE EXISTING TREE – PRIOR TO CONSTRUCTION, INSTALL 4' HEIGHT ORANGE PLASTIC CONSTRUCTION FENCING AROUND EXISTING TREES AS INDICATED ON PLANS. TREE PROTECTION FENCING SHALL BE LOCATED AROUND EACH TREE AT THE DRIPLINE, OR AT 8' DIAMETER MINIMUM. SECURE FENCING TO STEEL POSTS PLACED 6' O.C. WITH PLASTIC TIES. REFER TO SPECIFICATION SECTION 02231 FOR TREE PROTECTION.

(2) VINE PLANTING AT WALL – REFER TO DETAIL 1, SHEET TTR-5C FOR VINE PLANTING DETAIL.

(3) WATER QUALITY BASIN – REFER TO CIVIL DRAWINGS. PLACE 2" DEPTH OF $\frac{1}{2}$"-$\frac{3}{4}$" ROUNDED RIVER ROCK MULCH TO ZONE 'A' PLANTING AREAS, PLACE 2" DEPTH BARK MULCH TO ZONE 'B' PLANTING AREAS UNLESS OTHERWISE INDICATED ON PLANS.



40' 20' 0' 40' 80'

SCALE: 1" = 80'

NO.	DATE	BY CHK.	APPD.	REVISIONS

SK	DESIGNED	05-03-11 DATE
CM/AP	DRAWN	05-03-11 DATE
RT	CHECKED	05-17-11 DATE
	APPROVED	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

GREENWORKS

DAVID EVANS AND ASSOCIATES INC.

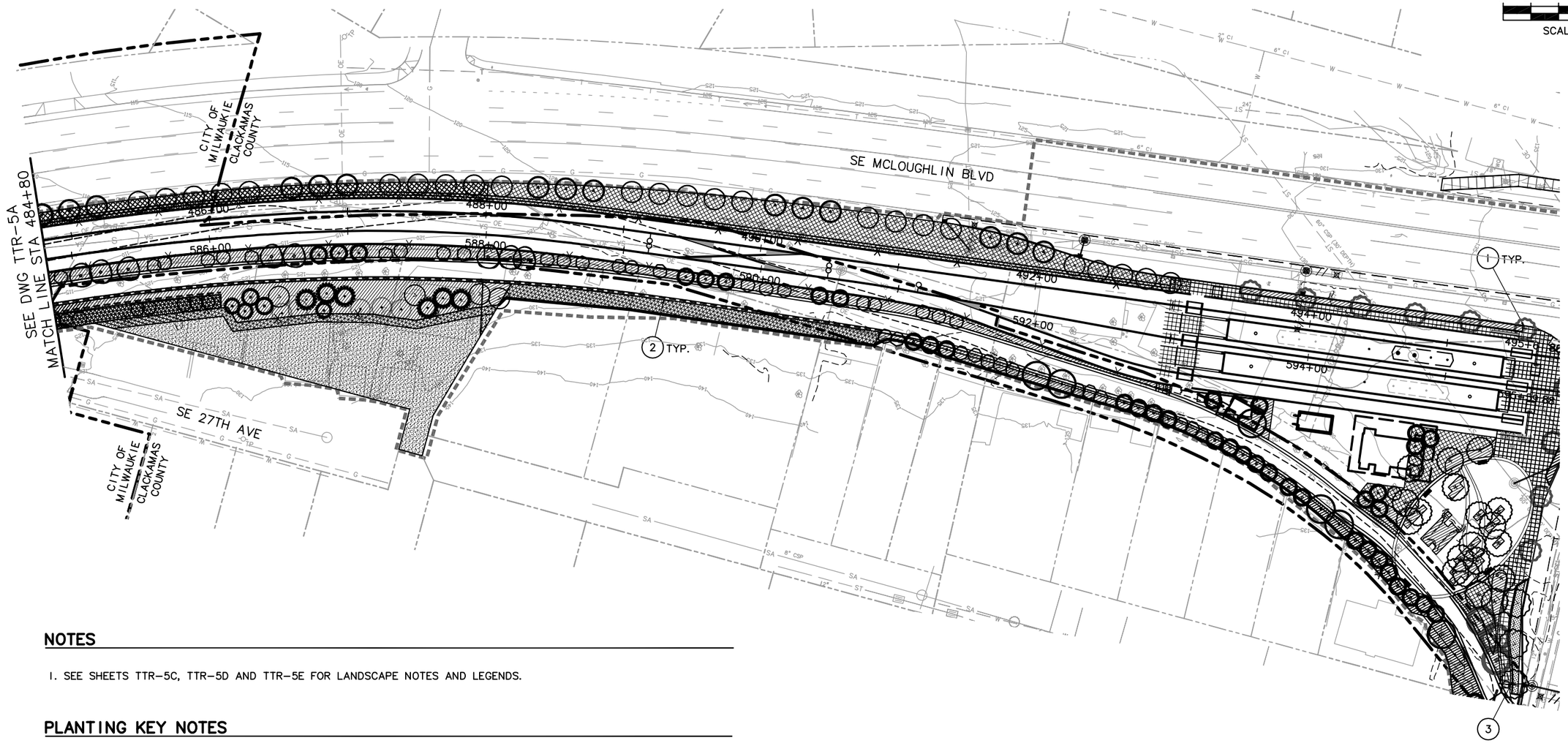
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P16
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED LANDSCAPE SITE PLAN

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
AS SHOWN	TTR-5C	RH100544JB	

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Plot Date:9/13/2011 3:30 PM_edita k boguslawski



NOTES

1. SEE SHEETS TTR-5C, TTR-5D AND TTR-5E FOR LANDSCAPE NOTES AND LEGENDS.

PLANTING KEY NOTES

(1) STREET TREE IN TREE WELL WITH TREE GRATE – REFER TO TRIMET DIRECTIVE DRAWING 5, SHEET LTM301 FOR TREE STAKING AND PLANTING. REFER TO DETAIL 4, SHEET L15E-300 FOR ROOT BARRIER DETAIL. INSTALL TREE GRATE AND ROOTBALL ANCHOR SYSTEM AT LOCATIONS INDICATED ON PLANS. REFER TO ARCH DRAWINGS FOR TREE GRATE DETAILS. REFER TO DETAIL 5, SHEET L15E-300 FOR ROOTBALL ANCHOR SYSTEM DETAIL.

(2) VINE PLANTING AT WALL – REFER TO DETAIL 1, SHEET L15E-300 FOR VINE PLANTING DETAIL.

(3) STORMWATER PLANTER – REFER TO CIVIL DRAWINGS. PLACE 2" DEPTH OF ½"– ¾" ROUNDED RIVER ROCK MULCH THROUGHOUT FACILITY UNLESS OTHERWISE INDICATED ON PLANS.

NO.	DATE	BY CHK.	APPD.	REVISIONS

IML DESIGNED	06-20-11 DATE	
JTH DRAWN	06-20-11 DATE	
MJH CHECKED	06-25-11 DATE	
APPROVED	DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

GREENWORKS

DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P17
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED LANDSCAPE SITE PLAN

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1" = 80'	TTR-5D	RH100544JB	

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Plot Date:9/13/2011 3:30 PM_edita k boguslawski

GENERAL PLANTING NOTES

1. REFER TO DRAWING NOS. LI5E–002 THROUGH LI5E–006 AND LI5E–I02 FOR PLANTING LEGENDS AND QUANTITIES.
2. REFER TO DRAWING LI5E–007 FOR PLANTING SHEET LAYOUT INDEX.
3. REFER TO DRAWING NOS. LI5E–300, LI5E–30I, AND TRIMET DIRECTIVE DRAWINGS LTM30I AND LTM302 FOR LANDSCAPE DETAILS.
4. NUMBERS IN CIRCLES ((XX))REFER TO PLANTING KEY NOTES. NUMBERS IN HEXAGONS ⟨⟨XX⟩⟩ REFER TO PLANTING SHEET NOTES.
5. REFER TO SPECIFICATION SECTION 02231 FOR TREE PROTECTION.
6. REFER TO SPECIFICATION SECTION 02950 FOR LANDSCAPE PLANTINGS.
7. CONTRACTOR SHALL PROVIDE TOPSOIL, SOIL AMENDMENTS, AND MULCH IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS AS PART OF THE CONSTRUCTION DOCUMENTATION PACKAGE. I2" DEPTH TOPSOIL IS REQUIRED FOR ALL SHRUB AND TREE PLANTING AREAS (EXCEPT FOR STORMWATER FACILITIES), AND 6" DEPTH TOPSOIL IS REQUIRED FOR ALL SEEDED AREAS. REFER TO CIVIL DRAWINGS FOR TOPSOIL DEPTHS IN ALL STORMWATER FACILITIES.
8. ALL PLANTS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS PROVIDED AS PART OF THE CONSTRUCTION DOCUMENT PACKAGE.
9. QUANTITIES ARE LISTED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL COUNTS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO INSTALLATION. IN THE CASE OF A DISCREPANCY BETWEEN THE LEGEND AND THE PLAN, PLANTS INDICATED ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN THE LEGEND.
10. INSTALL AND MAINTAIN TREES FURNISHED BY TRIMET ("OWNER–FURNISHED TREES"). SEE PLANTING LEGENDS FOR SPECIES AND QUANTITIES THAT WILL BE PROVIDED. COORDINATE DELIVERY AND RECEIPT THROUGH RESIDENT ENGINEER (RE).
11. CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND ROUTING OF EXISTING UNDERGROUND UTILITIES PRIOR TO STARTING EXCAVATION. REPAIR ONLY DAMAGE TO EXISTING PIPES, UTILITIES, OR RELATED FACILITIES AT THE CONTRACTOR'S EXPENSE IN A MANNER APPROVED BY THE ENGINEER.
12. ADJUST PLANT LOCATIONS SO THAT VEGETATION DOES NOT CONFLICT WITH ABOVE–GROUND UTILITIES, OR WITH TRAFFIC SIGHT LINES, SIGNS, OR OTHER APPURTENANCES.
13. PRESERVE, PROTECT, AND MAINTAIN ALL IMPROVEMENTS WITHIN WORK AREAS, INCLUDING EXISTING TREES AND VEGETATION. THOROUGHLY CLEAN ALL IMPROVEMENTS AFTER COMPLETION OF WORK.
14. PROVIDE I2" ROOT BARRIER WHERE TREES ARE WITHIN 6' OF PAVED SURFACES, CURBS, OR WALLS, AND IN ALL TREE WELLS, UNLESS OTHERWISE REQUIRED BY APPLICABLE JURISDICTIONS, OR AS INDICATED ON PLANS. REFER TO DETAIL 4, SHEET LI5E–300.
15. ALL TREES TO BE BALLED AND BURLAPPED (B&B), UNLESS OTHERWISE INDICATED IN LEGEND OR IN DRAWINGS.
16. REFER TO DEMOLITION DRAWINGS FOR TREES TO BE REMOVED.

TREE PLANTING LEGEND

BOTANICAL NAME	COMMON NAME	INSTALL SIZE
Acer circinatum	VINE MAPLE	7'–8',MULTI–STEM, 3 STEM MIN.
Acer macrophyllum	BIG LEAF MAPLE	3"CAL.
Acer rubrum 'Armstrong'	ARMSTRONG MAPLE	3" CAL.
Acer rubrum 'Bowhall'	BOWHALL MAPLE	3" CAL.
Acer rubrum 'Scarsen'	SCARLET SENTINEL MAPLE	4" CAL.
Arbutus menziesii	PACIFIC MADRONE	3" CAL.
Arbutus unedo 'compacta'	COMPACT STRAWBERRY TREE	I5 GAL.
Alnus rubra	RED ALDER	3" CAL.
Amelanchier laevis 'JFS–Arb' PP I5304	SPRING FLURRY SERVICEBERRY	3" CAL.
Betula jacquemontii	JACQUEMONTII BIRCH	3" CAL.
Cornus nuttalli	WESTERN FLOWERING DOGWOOD	3" CAL.
Fagus sylvatica 'Fastigiata'	FASTIGIATE BEECH	4" CAL.
Fraxinus latifolia	OREGON ASH	3" CAL.
Myrica californica	PACIFIC WAX MYRTLE	6'–8' HT.
Nyssa sylvatica	BLACK TUPELO	3 I/2" CAL.
Prunus emarginata	BITTER CHERRY	2 I/2" CAL.
Prunus virginiana	CHOKECHERRY	3" CAL.
Prunus sargentii 'Columnaris'	COLUMNAR SARGENT CHERRY	3 I/2" CAL.
Pinus contorta	SHORE PINE	I0–I6' HT.
Pseudotsuga menziesii	DOUGLAS FIR	I0–I6' HT.
Thuja plicata	WESTERN RED CEDAR	I0–I6' HT.
Thuja plicata 'Fastigiata'	HOGAN CEDAR	I0–I6' HT.

EXISTING CONIFER TREE TO BE PRESERVED AND PROTECTED
SEE SPECIFICATIONS

NO.	DATE	BY CHK.	APPD.	REVISIONS

SK DESIGNED 05–03–11 DATE
CM/AP DRAWN 05–03–11 DATE
RT CHECKED 05–17–11 DATE
APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

GREENWORKS
DAVID EVANS AND ASSOCIATES INC.
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: DATE: APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P18
LAND USE PERMIT
TROLLEY TRAIL PATH
LANDSCAPE NOTES AND LEGEND

SCALE: AS SHOWN | DRAWING NO.: TTR–5E | CONTRACT NO.: RHI00544JB | SHEET NO.:

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Plot Date:9/13/2011 3:31 PM_edita k boguslawski

MASTER SHRUB/GROUNDCOVER LEGEND

TYPE 1: LOW PLANTING (3"–8" HT.)

NOTES:

	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	PERCENTAGE
	Arctostaphylos uva–ursi	KINNICKINNICK			
	Fragaria chiloensis	BEACH STRAWBERRY	1 GAL.	12" O.C.	50%
	Native and Naturalized Species				
FORBS/ GRASSES	Native and Naturalized Species		1 GAL.	12" O.C.	50%

TYPE 2: MEDIUM PLANTING (8"–30" HT.)

NOTES:

	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	PERCENTAGE
SHRUBS	Symphoricarpos mollis	CREEPING SNOWBERRY	3 GAL.	3' O.C.	25%
	Cornus sericea 'Kelseyi'	KELSEY DOGWOOD			
	Gaultheria shallon	SALAL			
	Mahonia repens	CREEPING OREGON GRAPE			
	Mahonia nervosa	CASCADE OREGON GRAPE	1 GAL.	2' O.C.	35%
	Spiraea betulifolia 'Tor'	BIRCH–LEAF SPIREA			
	Other Native and Naturalized Species				
FORBS/ GRASSES	Deschampsia caespitosa	TUFTED HAIR GRASS			
	Festuca californica	CALIFORNIA FESCUE			
	Helictotrichon sempervirens	BLUE OAT GRASS	1 GAL.	2' O.C.	40%
	Other Native and Naturalized Species				

TYPE 4: TALL PLANTING (30"+ HT.)

NOTES:

	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	PERCENTAGE
SHRUBS	Arctostaphylos columbiana	HAIRY MANZANITA			
	Cornus stolonifera	RED TWIG DOGWOOD			
	Holodiscus discolor	OCEANSPRAY			
	Mahonia aquifolium	TALL OREGON GRAPE			
	Ribes sanguineum	RED FLOWERING CURRANT	5 GAL.	4' O.C.	50%
	Rhododendron macrophyllum	PACIFIC RHODODENDRON			
	Rosa nutkana	NOOTKA ROSE			
	Umbellularia californica	OREGON MYRTLE			
	Vaccinium ovatum	EVERGREEN HUCKLEBERRY			
	Other Native and Naturalized Species				

NO.	DATE	BY CHK.	APPD.	REVISIONS

SK DESIGNED 05-03-11 DATE
CM/AP DRAWN 05-03-11 DATE
RT CHECKED 05-17-11 DATE
APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

GREENWORKS | DAVID EVANS AND ASSOCIATES INC. | TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION 710 N.E. HOLLADAY STREET PORTLAND, OREGON 97232

SUBMITTED: | DATE: | APPROVED: | DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P19
LAND USE PERMIT
TROLLEY TRAIL PATH
LANDSCAPE NOTES AND LEGEND

SCALE: AS SHOWN | DRAWING NO.: TTR–5F | CONTRACT NO.: RH100544JB | SHEET NO.:

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Plot Date: 9/13/2011 3:31 PM_edita k boguslowski

MASTER SHRUB/GROUNDCOVER LEGEND

TYPE 5: STORMWATER (ZONE A)

NOTES: PLANTINGS TO BE INSTALLED IN BOTTOM OF STORMWATER FACILITIES ONLY UNLESS OTHERWISE INDICATED ON PLANS. APPLY SEED MIX ONLY WHERE INDICATED ON PLANS.

	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	PERCENTAGE
FORBS/ GRASSES	Camassia leichtlini	GREAT CAMAS	1 GAL.	12" O.C.	100%
	Camassia quamash	COMMON CAMAS			
	Carex obnupta	SLOUGH SEDGE			
	Carex testacea	NEW ZEALAND ORANGE SEDGE			
	Deschampsia cespitosa	TUFTED HAIR GRASS			
	Iris tenax	OREGON IRIS			
	Juncus patens 'Elk Blue'	SPREADING RUSH			
	Juncus effusus	COMMON RUSH			
	Juncus tenuis	SLENDER RUSH			
	Scirpus microcarpus	SMALL-FRUITED BULRUSH			
	Sisyrinchium bellum	BLUE-EYED GRASS			
	Triteleia hyacinthina	WILD HYACINTH			

	BOTANICAL NAME	COMMON NAME	% PLS	APPLICATION RATE
WATER QUALITY SEED MIX	Hordeum brachyantherum	MEADOW BARLEY	25%	2 LBS./1,000SF
	Danthonia californica	CALIFORNIA OAT-GRASS	15%	
	Elymus glaucus	BLUE WILD RYE	10%	
	Bromus carinatus	CALIFORNIA BROME	10%	
	Festuca romerii	ROEMER'S FESCUE	10%	
	Deschampsia cespitosa	TUFTED HAIRGRASS	10%	
	Agrostis exarata	SPIKE BENTGRASS	10%	
	Alopecurus geniculatus	WATER FOXTAIL	5%	
	Deschampsia elongata	SLENDER HAIRGRASS	5%	

TYPE 8: SEEDING

NOTES:

	BOTANICAL NAME	COMMON NAME	% PLS	APPLICATION RATE
PERMANENT SEED MIX	Bromus carinatus	CALIFORNIA BROME	17.5%	2 LBS./ 1,000 SF
	Hordeum brachyantherum	MEADOW BARLEY	17.5%	
	Festuca rubra rubra	NATIVE RED FESCUE	9%	
	Lotus unifloiolatus	SPANISH CLOVER	2.5%	
	Deschampsia caespitosa	TUFTED HAIRGRASS	1.5%	
	Achillea millefolium	YARROW	1%	
	Agrostis exerata	SPIKE BENTGRASS	1%	

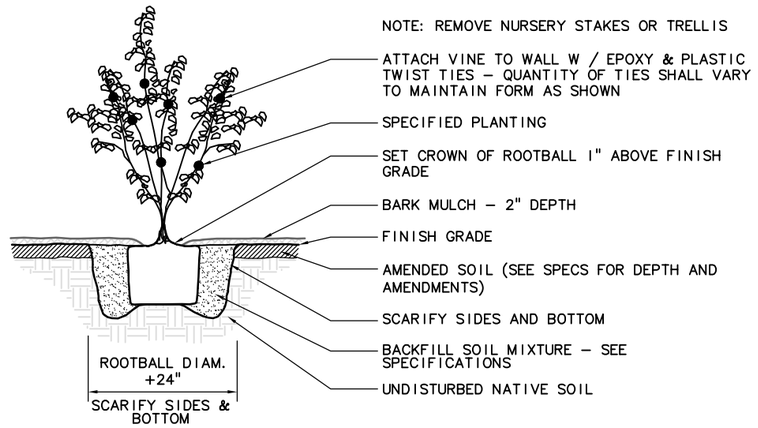
TYPE 6: STORMWATER (ZONE B)

NOTES: PLANTINGS TO BE INSTALLED ON SIDE SLOPES OF STORMWATER FACILITIES ONLY UNLESS OTHERWISE INDICATED ON PLANS.

	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	PERCENTAGE
SHRUBS	Spirea douglasii	DOUGLAS SPIREA	3 GAL.	2' O.C.	60%
	Cornus sericea 'kelseyii'	KELSEY DOGWOOD			
	Spiraea betulifolia 'Tor'	BIRCH-LEAF SPIREA			
	Other Native or Naturalized Species				
FORBS/ GRASSES	Camassia leichtlini	GREAT CAMAS	1 GAL.	12" O.C.	40%
	Camassia quamash	COMMON CAMAS			
	Deschampsia cespitosa	TUFTED HAIR GRASS			
	Polystichum munitum	SWORD FERN			

STONE COBBLE – 6-8" ROUNDED RIVER ROCK, 12" DEPTH;
PLACE GEOTEXTILE FABRIC BETWEEN SUBGRADE AND ROCK

VINE PLANTINGS – 2 GAL. CONT., SPACED 24" O.C., REFER TO DETAIL THIS SHEET.
PARTHENOCISSUS TRICUSPIDATA BOSTON IVY



VINE PLANTING
SCALE: 1/2"=1'-0"

NO.	DATE	BY CHK.	APPD.	REVISIONS

SK DESIGNED	05-03-11 DATE	
CM/AP DRAWN	05-03-11 DATE	
RT CHECKED	05-17-11 DATE	
APPROVED	DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

GREENWORKS

DAVID EVANS AND ASSOCIATES INC.

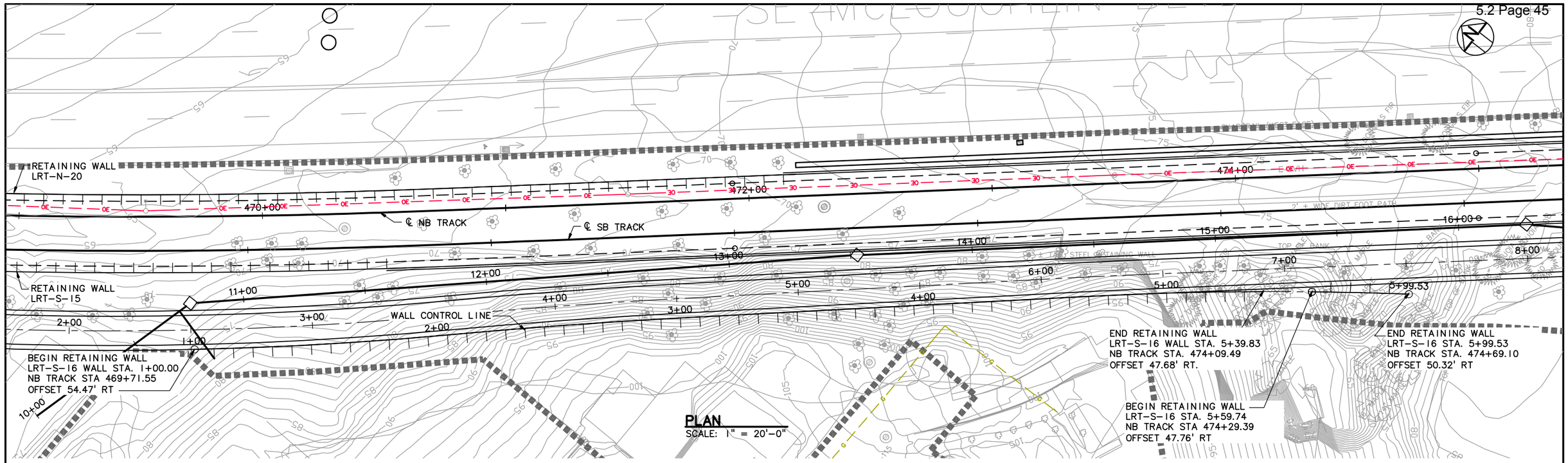
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P20
LAND USE PERMIT
TROLLEY TRAIL PATH
LANDSCAPE NOTES AND LEGEND

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
AS SHOWN	TTR-5G	RH100544JB	

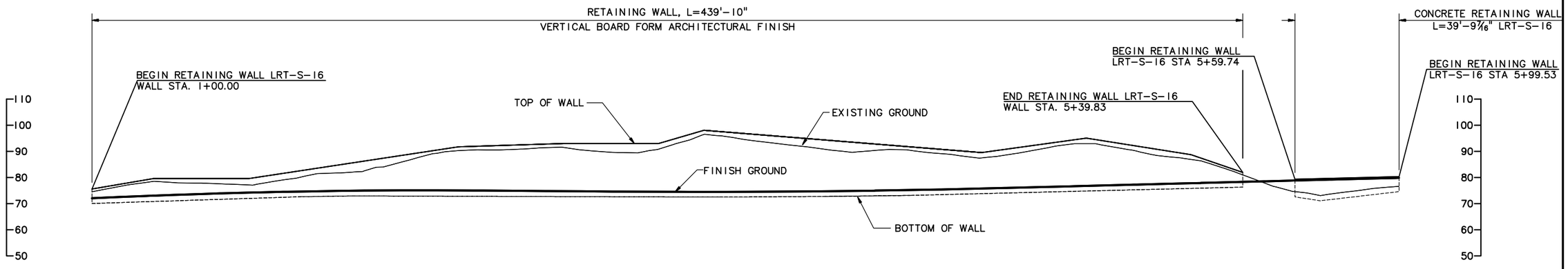
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Plot Date:9/13/2011 3:31 PM_edita k boguslawski



PLAN
SCALE: 1" = 20'-0"

GENERAL NOTES:

1. WALL CONTROL LINE IS THE BACK FACE OF WALL AT TOP OF BALLAST, UNLESS NOTED OTHERWISE.



ELEVATION
SCALE: 1" = 20'-0"

NOTE:

ALL HORIZONTAL DIMENSIONS MEASURED ALONG WALL CONTROL LINE

NO.	DATE	BY / CHK.	APPD.	REVISIONS

GAP	DESIGNED	4/27/11 DATE
JJC	DRAWN	5/4/11 DATE
TMS	CHECKED	5/22/11 DATE
.	APPROVED	.. DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

DAVID EVANS AND ASSOCIATES INC.

TRIMET — CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: | DATE: | APPROVED: | DATE:

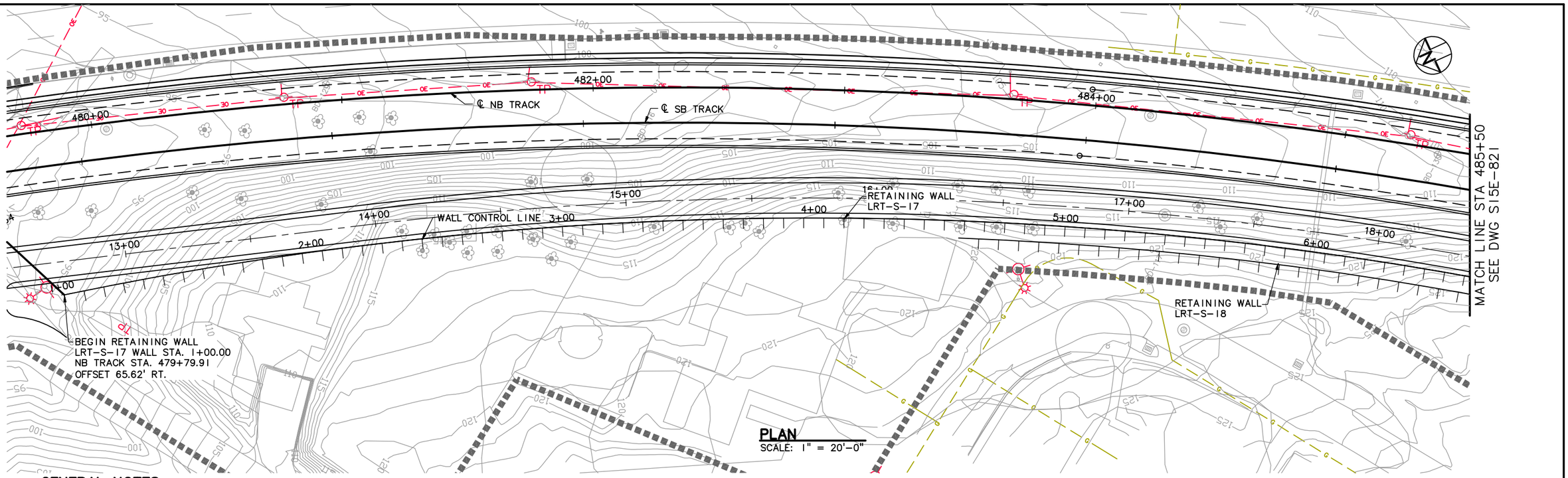
PORTLAND TO MILWAUKIE LRT
EAST SEGMENT

Exhibit P28

STRUCTURAL
MILWAUKIE – RETAINING WALLS
PLAN AND ELEVATION – LRT-S-16

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
AS NOTED	S15E-819	RH100544JB	

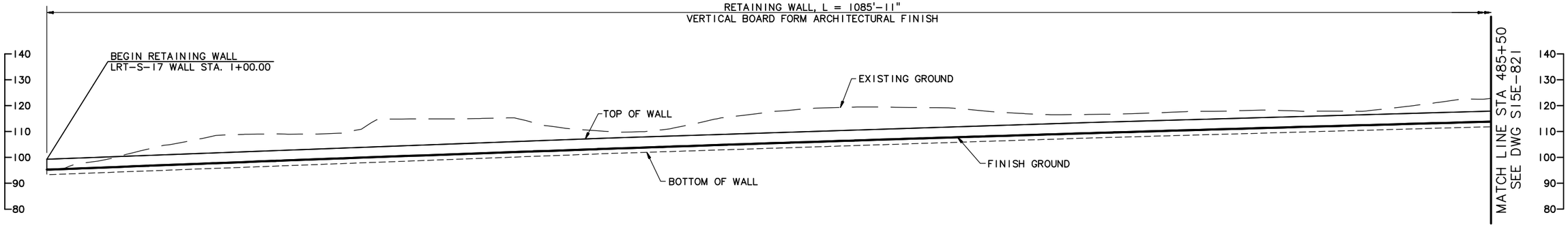
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Plot Date: 9/13/2011 3:34 PM_edita k bogusiowski



PLAN
SCALE: 1" = 20'-0"

GENERAL NOTES:

1. WALL CONTROL LINE IS THE BACK FACE OF WALL AT TOP OF BALLAST, UNLESS NOTED OTHERWISE.



ELEVATION
SCALE: 1" = 20'-0"

NOTE:
ALL HORIZONTAL DIMENSIONS MEASURED ALONG WALL CONTROL LINE

NO.	DATE	BY / CHK.	APPD.	REVISIONS

GAP DESIGNED	4/27/11 DATE	
JJC DRAWN	5/4/11 DATE	
TMS CHECKED	5/22/11 DATE	
. APPROVED	.. DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

DAVID EVANS AND ASSOCIATES INC.

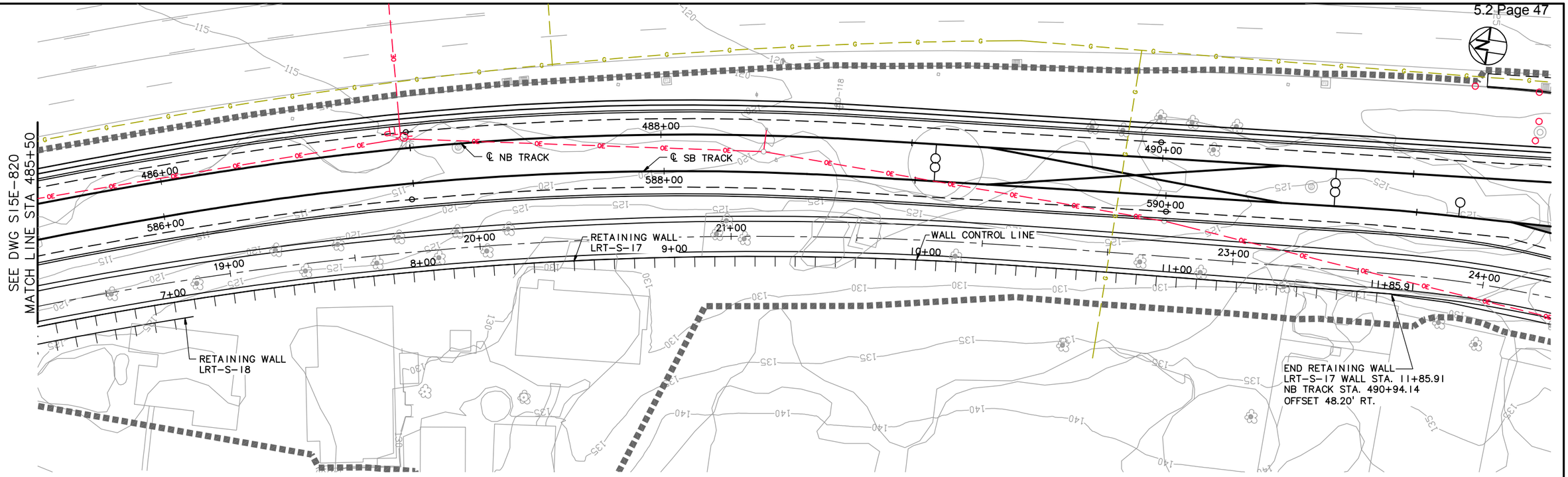
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: | DATE: | APPROVED: | DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P29
STRUCTURAL
MILWAUKIE – RETAINING WALLS
PLAN AND ELEVATION – LRT-S-17 – 1 OF 2

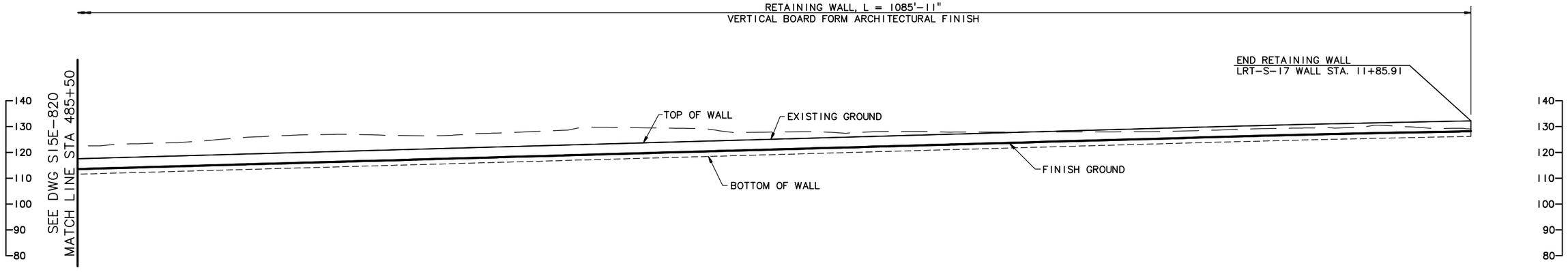
SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
AS NOTED	S15E-820	RH100544JB	

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Plot Date: 9/13/2011 3:34 PM_edita k bogusiowski



PLAN
SCALE: 1" = 20'-0"

GENERAL NOTES:
1. WALL CONTROL LINE IS THE BACK FACE OF WALL AT TOP OF BALLAST, UNLESS NOTED OTHERWISE.



ELEVATION
SCALE: 1" = 20'-0"

NOTE:
ALL HORIZONTAL DIMENSIONS MEASURED ALONG WALL CONTROL LINE

NO.	DATE	BY / CHK.	APPD.	REVISIONS

GAP DESIGNED	4/27/11	DATE
JJC DRAWN	5/4/11	DATE
TMS CHECKED	5/22/11	DATE
. APPROVED	..	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

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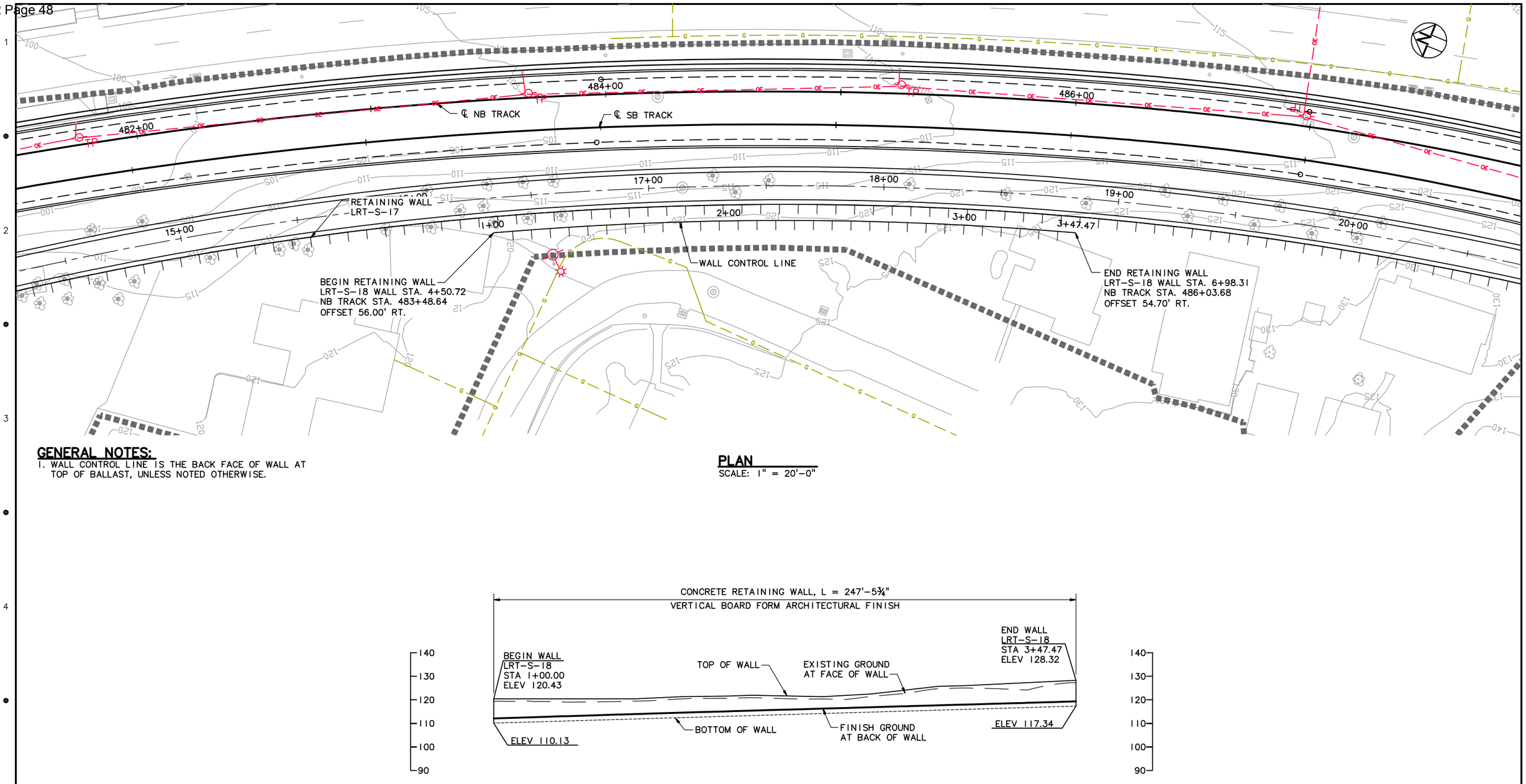
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P30
STRUCTURAL
MILWAUKIE – RETAINING WALLS
PLAN AND ELEVATION – LRT-S-17 – 2 OF 2

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
AS NOTED	S15E-821	RH100544JB	

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Plot Date: 9/13/2011 3:35 PM_edita k bogusiowski



GENERAL NOTES:

1. WALL CONTROL LINE IS THE BACK FACE OF WALL AT TOP OF BALLAST, UNLESS NOTED OTHERWISE.

PLAN
SCALE: 1" = 20'-0"

ELEVATION
SCALE: 1" = 20'-0"

NOTE:
ALL HORIZONTAL DIMENSIONS MEASURED ALONG WALL CONTROL LINE

NO.	DATE	BY / CHK.	APPD.	REVISIONS

GAP DESIGNED	4/27/11 DATE
JJC DRAWN	5/4/11 DATE
TMS CHECKED	5/22/11 DATE
. APPROVED	.. DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

DAVID EVANS AND ASSOCIATES INC.

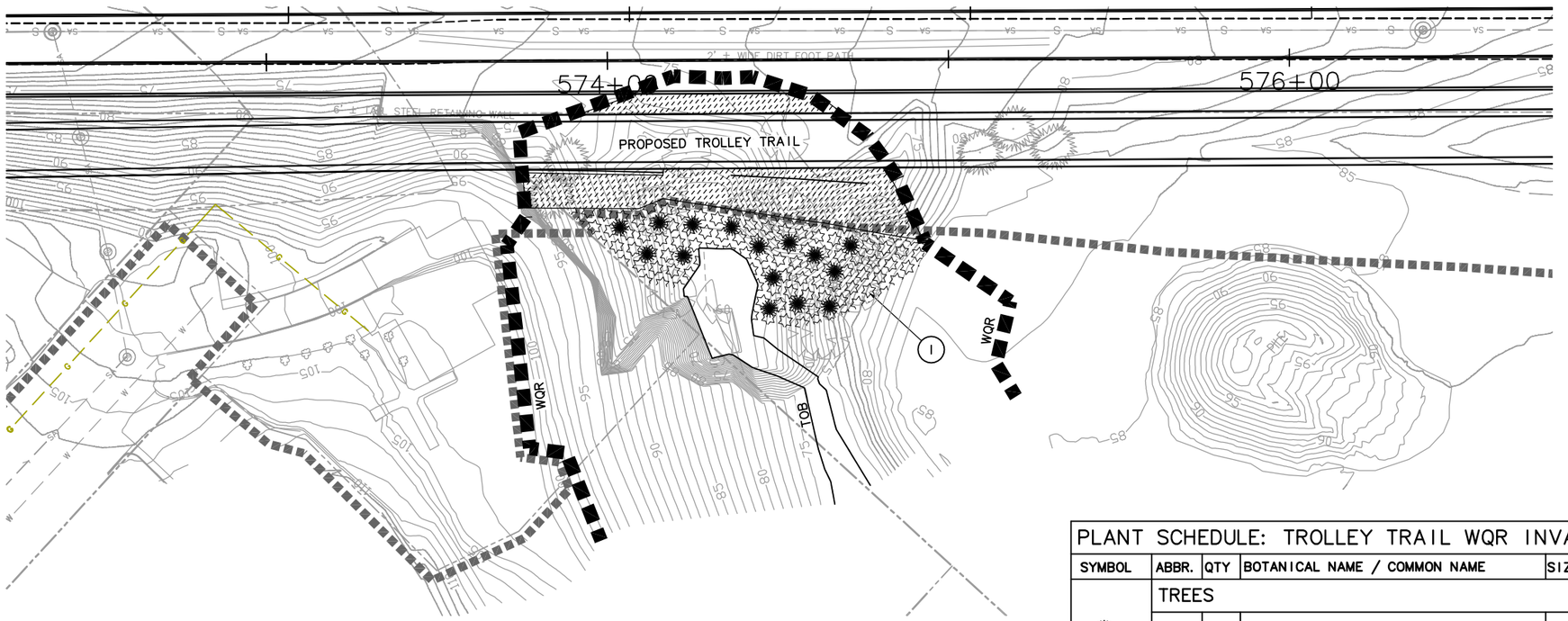
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P31
STRUCTURAL
MILWAUKIE – RETAINING WALLS
PLAN AND ELEVATION – LRT-S-18

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
AS NOTED	S15E-822	RH100544JB	

P:\T\TMTX00000127\0400CAD\Permits\Land Use Permit\3-Trolley Trail\S15E-822.dwg Sep. 13, 2011 - 1:28 PM edita k boguslowski
Plot Date: 9/13/2011 3:35 PM_edita k boguslowski



40' 20' 0' 40' 80'
SCALE: 1" = 40'

PLANT SCHEDULE: TROLLEY TRAIL WQR INVASIVE REMOVAL AND REPLANT							
SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	THPL	1	Thuja plicata – Western redcedar	4' HT.	B&B	as shown	
	SHRUBS						
	MANE	15	Mahonia nervosa – low Oregon grape	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	OECE	20	Oemleria cerasiformis – indian plum	18–24" HT.	Bareroot	4' o.c.	scattered
	POMU	50	Polystichum munitum – sword fern	1 gal.	container	4' o.c.	scattered
	RUPA	15	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SARA	10	Sambucus racemosa – red elderberry	18–24" HT.	Bareroot	4' o.c.	scattered
	SYAL	20	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SEED						

Agrostis exarata– spike bentgrass	0.14 lbs	APPLICATION RATE:
Deschampsia elongata– slender hairgrass	0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE
Glyceria elata– Western mannagrass	0.34 lbs	
	1.04 lbs	Total PLS per acre

BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Deschampsia cespitosa	TUFTED HAIRGRASS	1 GAL.	2' O.C.

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

(1) REMOVE ALL NON–NATIVE INVASIVE PLANT SPECIES WITHIN HATCHED AREA WITH HAND TOOLS ONLY. PLANT NATIVE TREES, SHRUBS AND SEED PER PLANT SCHEDULE SHOWN ON THIS SHEET.

NO.	DATE	BY CHK.	APPD.	REVISIONS

SAR DESIGNED 08–02–11 DATE
SAR DRAWN 08–02–11 DATE
EES CHECKED DATE
APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

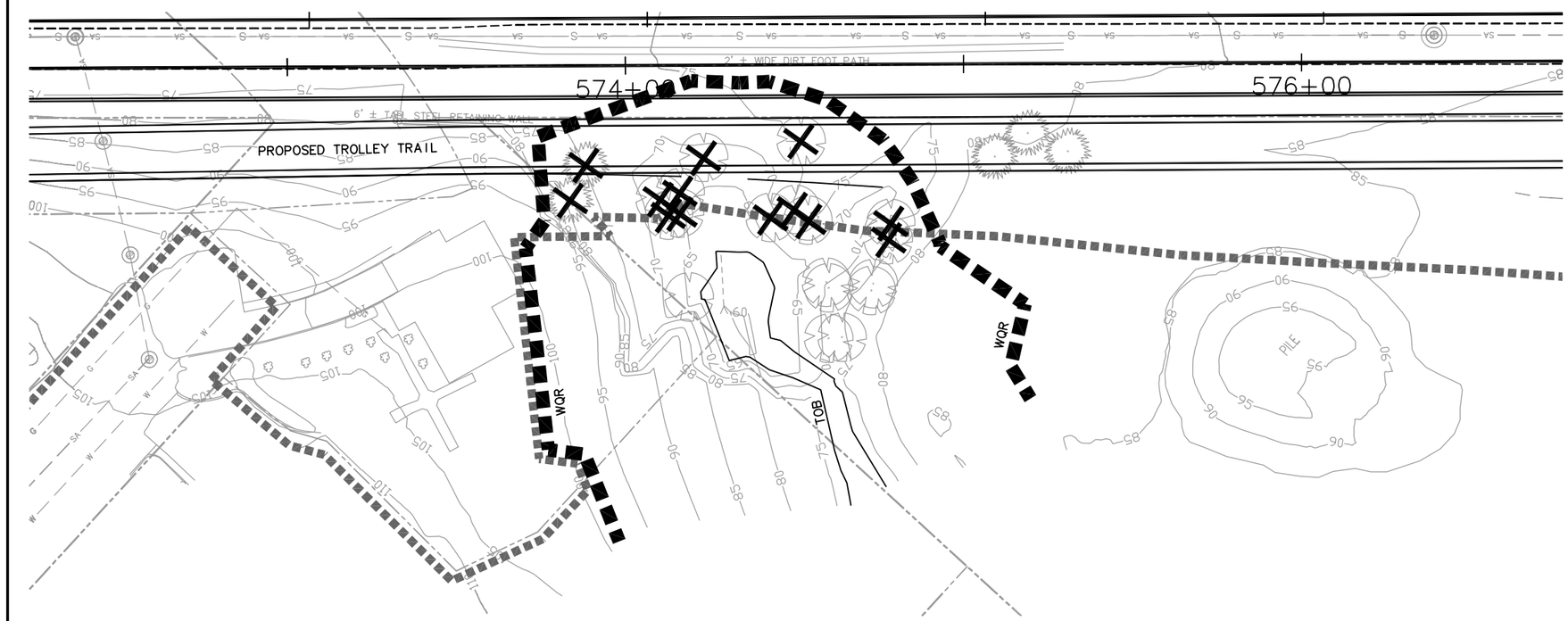
VIGIL AGRIMIS design professionals
DAVID EVANS AND ASSOCIATES INC.
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

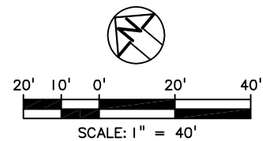
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PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P32
LAND USE PERMIT
TROLLEY TRAIL PATH
MITIGATION SITE PLAN

SCALE: AS SHOWN | DRAWING NO.: TTR–7A | CONTRACT NO.: RH100544JB | SHEET NO.:

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Plot Date:9/13/2011 3:32 PM_edita k boguslawski





Trolley Trail Tree Removal Inventory

Overstory				
Tree #	**DBH (inches)**	**Latin name**	**Common name**	**Native?**
N/A	30	*Pseudotsuga menziesii*	Douglas-fir	Y
N/A	30	*Pseudotsuga menziesii*	Douglas-fir	Y
N/A	10 (2)	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	12	*Acer macrophyllum*	bigleaf maple	Y
N/A	12	*Acer macrophyllum*	bigleaf maple	Y
N/A	12	*Acer macrophyllum*	bigleaf maple	Y
N/A	14	*Acer macrophyllum*	bigleaf maple	Y
N/A	18	*Acer macrophyllum*	bigleaf maple	Y
N/A	30	*Acer macrophyllum*	bigleaf maple	Y

LEGEND

TOB – TOP OF BANK

WQR – WATER QUALITY RESOURCES

X INDICATES TREE BEING REMOVED

NO.	DATE	BY / CHK.	APPD.	REVISIONS

SAR DESIGNED 08-02-11 DATE
SAR DRAWN 08-02-11 DATE
EES CHECKED DATE
APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals | DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P33
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED TREE REMOVAL AT WQR PLAN

SUBMITTED:	DATE:	APPROVED:	DATE:	SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
				AS SHOWN	TTR–4F	RH100544JB	

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Plot Date:9/13/2011 3:28 PM_edita k boguslawski

Portland to Milwaukie Light Rail Project

Water Quality Resource Area Report

Trolley Trail

City of Milwaukie, Oregon

Submitted to:

City of Milwaukie
10722 SE Main Street
Milwaukie, Oregon 97222

Applicant:

TriMet
4012 SE 17th Ave
Portland, Oregon 97202

Prepared by:

VIGIL AGRIMIS
design professionals
819 SE Morrison Street, Suite 310
Portland, OR 97214

Revised September 13, 2011

Portland Milwaukie Light Rail Project
Trolley Trail WQR Report

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1.0 INTRODUCTION

The Trolley Trail was designed to run along a historic rail corridor once used by a streetcar line that operated between Portland and Oregon City. When rail service ended in 1968, the idea of turning the corridor into a multi-use trail was initiated by a group of local citizens. In 2001, North Clackamas Parks and Recreation District (NCPRD) and Metro acquired a 6-mile stretch of the historic rail corridor between downtown Milwaukie and Gladstone. The Trolley Trail was originally reviewed and approved by the Planning Commission in cases CSU-08-03, WG-08-02, and DR-08-02. That case approved an alignment between Milwaukie and Gladstone.

The Trolley trail decisions of 2008 anticipated the design and proximate location of the Portland Milwaukie Light Rail line, specifically identifying certain elements of the Trail alignment that could be modified without additional review as the Rail alignment design evolved. Other elements, if modified, were identified as specifically requiring review.

In assessing the Rail alignment, a water source was found that has been identified as a new water resource that meets the applicability criteria for a Water Quality Resource Review. The site is located in Section 36, Township 1 south, and Range 1 east. The study area for this report will occur on taxlots 901 and 300.

The site includes portions of an unnamed drainage that flows via culvert under SE Mcloughlin to the northeast into Kellogg Lake. The drainage is a Secondary Water Feature as defined by the City of Milwaukie's Water Resource Regulations (Milwaukie Municipal Code 19.322). Drawings in the permitting package show the extent of the Water Quality Resource (WQR) and associated vegetated corridors.

2.0 EXECUTIVE SUMMARY

The main points of this report are summarized as follows:

- The realigned Trolley Trail will cross an unnamed drainage located in Section 36, Township 1 south, and Range 1 east on taxlots 901 and 300.
- The unnamed drainage is a Secondary Protected Water Feature as defined by the City of Milwaukie's Water Resource Regulations (Milwaukie Municipal Code 19.402).
- The WQR and associated vegetated corridor was delineated in the field. The vegetated corridor is 50 feet wide as measured from ordinary high water (OHW) and top of bank (TOB), which are in the same location.
- The vegetated corridor is currently in degraded condition.
- The project will be located above an existing culvert and no impacts will occur below OHW.
- Development in the WQR Area has been limited to the area necessary for construction and placement of the Portland Milwaukie Light Rail line, Trolley Trail, and associated facilities.

- Development of the light rail tracks and Trolley Trail will result in 2,010 sq. ft. of permanent impacts and 1,820 sq ft of temporary impacts to the WQR vegetated corridor.
- The project will remove 13 trees that are 6 inches or greater diameter at breast height (DBH) within the construction limits of the WQR vegetated corridor.
- A mitigation plan has been developed that meets 19.402.9.E. To mitigation for the construction impacts, all non-native and invasive plants will be removed from within the construction limits and an additional 2,000 sq. ft. area in the drainage. The area where non-native vegetation is removed from within the drainage will planted with an appropriate native understory that will improve thermal regulation, water quality, and wildlife habitat value.

3.0 METHODOLOGY

Vigil-Agrimis, Inc. has prepared this WQR Report to evaluate the existing condition, assess potential impacts from the proposed development, and develop a mitigation plan that would compensate for impacts to water quality and habitat resources as required in Section 19.402.

The OHW of the unammed tributary was mapped by the design team and using topographic maps and site visits. Table 19.402.9.A was used to determine the WQR boundaries.

Two site visits, on June 16, 2011, and July 1, 2011, were conducted to accurately map existing vegetation and the overall resource condition. Additionally, the location of existing natural features (wetlands, additional water sources, rock outcroppings, etc.) and trees larger than 6 inches DBH were determined in the field as required by Municipal Code Section 19.402.9(B). The limits of the resources on the site are shown in the figures included in the permitting package. These figures also show the locations of the existing trees that are 6 inches DBH or greater.

4.0 WATER QUALITY RESOURCE AREAS

The City of Milwaukie's Water Quality Resource Area Regulations include vegetated corridors and the adjacent water features, including Primary Protected Water Features and Secondary Protected Water Features. No Primary Protected Water Features are present on this site. Sections 4.1 and 4.2, below, provide descriptions of the on-site Secondary Protected Water Features and associated vegetated corridors, respectively.

4.1 Secondary Protected Water Features Existing Condition

As described in Table 1 of the MMC 19.402, Secondary Protected Water Features include intermittent streams draining 50-100 acres. The unnamed intermittent drainage was determined to be a secondary protected water feature due to the drainage size and that the drainage was dry on both site visits (conducted June 16, 2011, and July 1, 2001). This relatively small resource is not depicted on WQR Map 3. The source of the drainage is unknown, but the

drainage is conveyed through a culvert under McLoughlin Blvd and eventually discharges into Kellogg Lake.

The slope from the OHW exceeds 25%. The area within the construction limits is a steep fill slope between the culvert inlet and the road grade for SE McLoughlin Rd.

4.2 WQR Vegetated Corridors

As described in Table 1 of the MMC 19.402, Secondary Protected Water Features have an associated vegetated corridor of 15 to 50 feet wide depending on the slopes adjacent to the resource. The site has slopes steeper than 25% extending outward from the OHW. Because of the steep slopes, the WQR's vegetated corridor has been mapped extending 50 feet outward from the OHW.

The overstory includes native trees, and the shrub layer includes a mix of native and non-native species. The overall tree canopy cover is approximately 100% with bigleaf maple (*Acer macrophyllum*) as the dominant species. Total shrub cover is approximately 62% with Indian-plum (*Oemleria cerasiformis*) and invasive cherry laurel (*Prunus laurocerasus*) as the dominant two species, but there is significant coverage of the invasive Armenian blackberry (*Rubus armeniacus*) and English hawthorn (*Crataegous mongyna*). The WQR vegetated corridor on the study site is overrun by non-native invasive groundcover plants. The groundcover is 95% and is dominated by English ivy (*Hedera helix*). The percent coverage of the representative trees, shrubs, and groundcovers is detailed in the Table 1 below.

Table 1 –WQR Assessment, Trolley Trail

Botanical Name	Common Name	Percent Cover	Native?
TREES (total coverage = 100%)			
Acer macrophyllum	bigleaf maple	85%	Yes
Pseudotsuga menziesii	Douglas-fir	10%	Yes
SHRUBS (total coverage = 62%)			
Crataegus monogyna	English hawthorn	3%	No
Oemleria cerastiformis	indian-plum	20%	Yes
Prunus laurocerasus	cherry-laurel	20%	No
Rubus armeniacus	Armenian blackberry	3%	No
Rubus spectabilis	salmonberry	12%	Yes
Sambucus racemosa	red elderberry	4%	Yes
GROUNDCOVER (total coverage = 100%)			
A variety of non-native vines and herbaceous plants comprise 95% of the groundcover layer, with the native sword fern covering 5% of the site. The non-native vines include English ivy and traveller's joy. Additional non-native herbaceous species include cleavers, herb-robert, and Fendler's waterleaf.			

The vegetated corridor is in degraded condition per Table 19.402.9.E. While the overstory is primarily native, the shrub and groundcover layers contain large portions of invasive species. English ivy has grown to cover the trunks of most overstory trees. The ecological function of

this area is low, and it is a population source for the spread of very aggressive non-native groundcover plant species. Non-native invasive species in the WQR include cherry-laurel, English hawthorn, Armenian blackberry, English ivy, traveller's joy, cleavers (*Galium aparine*), Fendler's waterleaf (*Hydrophyllum fendleri*) and herb-robert (*Geranium robertianum*).

5.0 SUMMARY OF IMPACTS

The Portland-Milwaukie light rail will be located east of Trolley Trail and west of SE McLoughlin Blvd. bounded by SE Park Ave. to the south and SE River Rd. to the north. The vegetated corridor associated with a secondary WQR is located within the work limits approximately in the middle of this project stretch. Construction of the line will require grading within the WQR vegetated corridor, including a new retaining wall. The design also calls for the formalization of Trolley Trail with paving and stormwater management swales between the trail and light rail line. The new development will occur over the existing culvert, above the OHW. The area within the work limit line is a steep fill slope between the culvert inlet and the road grade for SE McLoughlin Rd.

Stormwater from the trail will sheet flow to the adjacent vegetated area which will be planted with vegetation suitable for stormwater treatment. Stormwater from the light rail line will be collected and directed to a stormwater facility just south of SE River Rd.

The new light rail alignment and associated construction will create a total of 25 acres of impervious surface, by replacing existing and adding new impervious surface. However, the project will also convert 1.03 acres of existing impervious surface to open space and 8.33 acres to pervious track ballast. Therefore, the net impervious surface gain is 15.6 acres, of which only 10.8 acres will be impervious surface where there will be automobiles or other pollutant sources. Stormwater runoff from these surfaces will still undergo treatment and will improve existing treatment across the project alignment.

In addition to stormwater treatment improvements, the construction of a light rail system, including a pedestrian/bike/bus bridge, will reduce vehicle miles traveled, vehicle-hours of delay, and vehicle hours traveled, and is therefore expected to decrease roadway pollutant inputs to project waterways over the long term. The completion of the Portland-Milwaukie Light Rail Project is expected to improve the overall long-term water quality and hydrological regime of receiving waters within the action area.

5.1 Water Quality Resources Impacts

The proposed grading will place fill in the ravine over the existing culvert but outside of the bank full area. A retaining wall will be used to reduce the amount of fill needed and the disturbance to the WQR vegetated corridor. The fill will create a new environment that will be more suited to upland species than riparian species.

The WQR and associated vegetated corridor within the construction limits is 3,830 sq. ft. The project will temporarily disturb 1,820 sq ft of vegetated corridor, and permanently impact 2,010 sq ft.

There are 13 trees within the WQR vegetated corridor, that are > 6 inches DBH, that will need to be removed from the construction limits. Trees to be removed are summarized in Table 2 and shown on the figures in the permit application. Three of these trees need to be removed for the trail. It is not possible to move the alignment of the trail to miss these trees. The remaining trees need to be removed for the retaining wall. These trees are located at the top of the drainage. Removal of these trees will result in a loss of canopy cover along the edge.

Table 2. Trees To Be Removed In the WQR Vegetated Corridor

# Trees Removed	DBH (inches)	Latin name	Common Name
2	30	*Pseudotsuga menziesii*	Douglas fir
5	10	*Acer macrophyllum*	Big-leaf maple
3	12	*Acer macrophyllum*	Big-leaf maple
1	14	*Acer macrophyllum*	Big-leaf maple
1	18	*Acer macrophyllum*	Big-leaf maple
1	30	*Acer macrophyllum*	Big-leaf maple

5.2 Alternatives Analysis

After public review and extensive analysis through the National Environmental Policy Act process and agency coordination, the governing bodies of the project sponsors, including the City of Portland, City of Milwaukie, Multnomah County, Clackamas County, Metro and TriMet, have agreed upon the overall project described and analyzed in the Final Environmental Impact Statement (FEIS, Metro July 2010) and other documents. The proposed alignment was selected based on balancing its transit benefits with environmental, construction, social and economic impacts.

Along the west side of SE McLoughlin Boulevard, the light rail project would use a portion of an old streetcar right-of-way that was purchased by Metro and the North Clackamas Parks and Recreation District for the development of the Trolley Trail, a six-mile regional multi-use path that is to extend from downtown Milwaukie to Gladstone. Light rail would operate between the trail and SE McLoughlin Boulevard. As the light rail and the trail approach SE Park Avenue, light rail leaves the Trolley Tail alignment to stay along SE McLoughlin Boulevard, while the trail continues to follow the old streetcar right-of-way to the west and continues south to Gladstone.

Placing the light rail alignment to the east on McLoughlin Boulevard would have resulted in traffic delays for motor vehicles and for light rail vehicles, negating the benefits of exclusive light rail guideways. Placing the alignment to the west of the Trolley Trail would have directly impacted the Trolley Trail project, rendering this pedestrian project inoperable. It would have also resulted in much higher costs of acquisitions of private land, engineering constraints due to steep slopes, and conflict between the light rail alignment and the Trolley Trail as they would

have crossed each other two times. These alternatives were not advanced because there were determined to be impracticable.

The construction limits have been reduced to the extent practicable. Moving the trail closer to the tracks would result in an unpleasant and unsafe environment for people using the trail, as it would result a minor fence barrier between what will be a well-travelled pedestrian path and the rail. Moving the trail closer to the rail lines would also take the trail out-of-direction, as well as break the continuity of the six foot buffer/barrier that has been agreed to between TriMet and the North Clackamas Parks and Recreation District. The light rail line and trail are located directly adjacent to McLoughlin Blvd.

5.3 Avoidance and Minimization of Impacts

The construction limits have been reduced to the extent practicable. The light rail line and trail are located directly adjacent to McLoughlin Blvd. There is no in-water work associated with this WQR area. A retaining wall will be used to reduce the footprint through the WQR vegetated corridor. A stormwater swale will be constructed between the Trail and the light rail. The remaining trail easement will be planted with appropriate trail landscaping that provides a safe and pedestrian friendly environment. While the light rail and trail do cross the unnamed stream and associated vegetated corridor, it is done in a manner that reduces impacts while allowing for the enjoyment of the resource. The project is planned in an area of the WQR that does not have wetlands, debris, or noxious materials that would make restoration more difficult.

A work plan has been devised that limits the area of impact as much as possible. Work areas will be clearly marked in the field and existing native vegetation along and outside of the construction limits will be protected and left in place. Site preparation and construction practices shall be followed that prevent drainage of hazardous materials or erosion, pollution, or sedimentation to the WQR area.

A retaining wall will be used to reduce the development through the WQR vegetated corridor. The design of this retaining wall has not occurred yet, but the general location and size are shown on the plans (included in the application package). The retaining wall will reduce the amount of trees that need to be cleared and the amount of fill required on the hill slope. Without the retaining wall, fill limits would extend further down into the drainage and require more trees to be removed.

6.0 MITIGATION

The proposed mitigation plan includes the removal of non-native species in the drainage, as outlined on the planting plans (see Appendix B). The non-native vegetation will be removed using hand tools in a 2,000 sq. ft. area. This area is proportional to the area of permanent impact to the WQR vegetated corridor. The area will be planted with an appropriate native shrub layer. The proposed plants were selected because they are shade tolerate and establish quickly so they will outcompete the non-natives and prevent them from becoming re-established. Non-native vegetation will also be removed from within the construction limits along the trail and rail.

To mitigate for the removal of the 13 trees, 15 western red cedars will be planted in the understory where the non-native vegetation will be removed. Western red cedar is the next successional tree to replace big-leaf maple. By planting the western red cedar, the drainage has been given an ecological boost in developing the next tree canopy after the big-leaf maple trees start to die out. The resulting canopy will be denser and provide more shading than currently exists.

The goal of the mitigation plans is to allow the development of a thriving, multi-storied riparian native plant community in an area currently overrun by non-native and invasive weedy species. This is a unique opportunity to augment the overall current condition habitat quality, function and value. Plant species have been carefully selected to thrive in the microclimates of this site. The planting plan provides a dense planting of robust native species that have proven to work well on restoration sites. A broad spectrum of species has been selected so that as habitat conditions evolve over time there is a mix of plants able to capitalize on emerging conditions. Proposed plantings have been designed to achieve 100% surface coverage. In addition, stormwater facility plantings will occur in the stormwater treatment facilities along the trail. The stormwater facility is outside, but on the edge of the WQR vegetated corridor.

To restore water quality functions, native trees, shrubs and groundcovers will be re-established on a portion of the drainage. By re-establishing a dense native plant community, water flowing through the area will be slowed down, allowing sediment to settle out instead of entering the adjacent stream. Revegetation, especially on the steep slopes like those in the project area, will bind the soil and reduce erosion.

To restore thermal regulation function, trees (15) and shrubs (120) will be planted within the drainage. Maximum shade will be provided by a closed canopy and a 100% surface coverage. The inclusion of evergreen trees and tall shrubs will help provide shade to the small creek.

To restore wildlife function, the density and species diversity of vegetation will be greatly increased over current conditions. The proposed plantings will provide an undisturbed corridor of vegetation along the water resource to provide wildlife with food, protective cover and access to the water. The mitigation plan includes the use of varying mature heights and forms to increase habitat structure.

The site will be permanently revegetated during the first planting season following the completion of construction. Temporary irrigation will be used to help establish plants adjacent to the trail. TriMet will monitor and maintain the site for five years after the initial planting. Maintenance will include providing mulch rings around trees and shrubs, watering, and weeding as necessary to allow the native plant community to mature to a self-sustaining condition. The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five year period the owner will replace with new plants to achieve an overall 80% survival rate. For a period of five years, TriMet will submit an annual report to the Planning Director documenting the survival of the trees and shrubs on the mitigation site.

6.1 Responsible Party

The Applicant will be responsible for the implementation of the mitigation plan as outlined in this document. Contact information for the Applicant is as follows:

Tri-County Metropolitan Transit District of Oregon
Attn: Leah Robbins
710 NE Holladay Street
Portland, Oregon 97232

7.0 PREPARERS AND CONTRIBUTORS

This report and mitigation design was prepared by the following staff from Vigil-Agrimis, Inc:

- Susan Cunningham, Sr. Biologist
- Steven Roelof, RLA
- Susie Mattke-Robinson, RLIT
- Ryan Makie, PE
- Nathan Dasler, EIT

Project design information and alternatives analysis was provided by:

- David Evans and Associates, Inc.,
- KLK Consulting, Inc.
- GreenWorks, PC

Appendix A
Site Photos
Trolley Trail WQR Report



Photo 1 - General area of impact for unnamed drainage, looking north



Photo 2 - Unnamed drainage, looking northwest from taxlot 300



Photo 3 – Unnamed drainage, looking southeast from taxlot 901

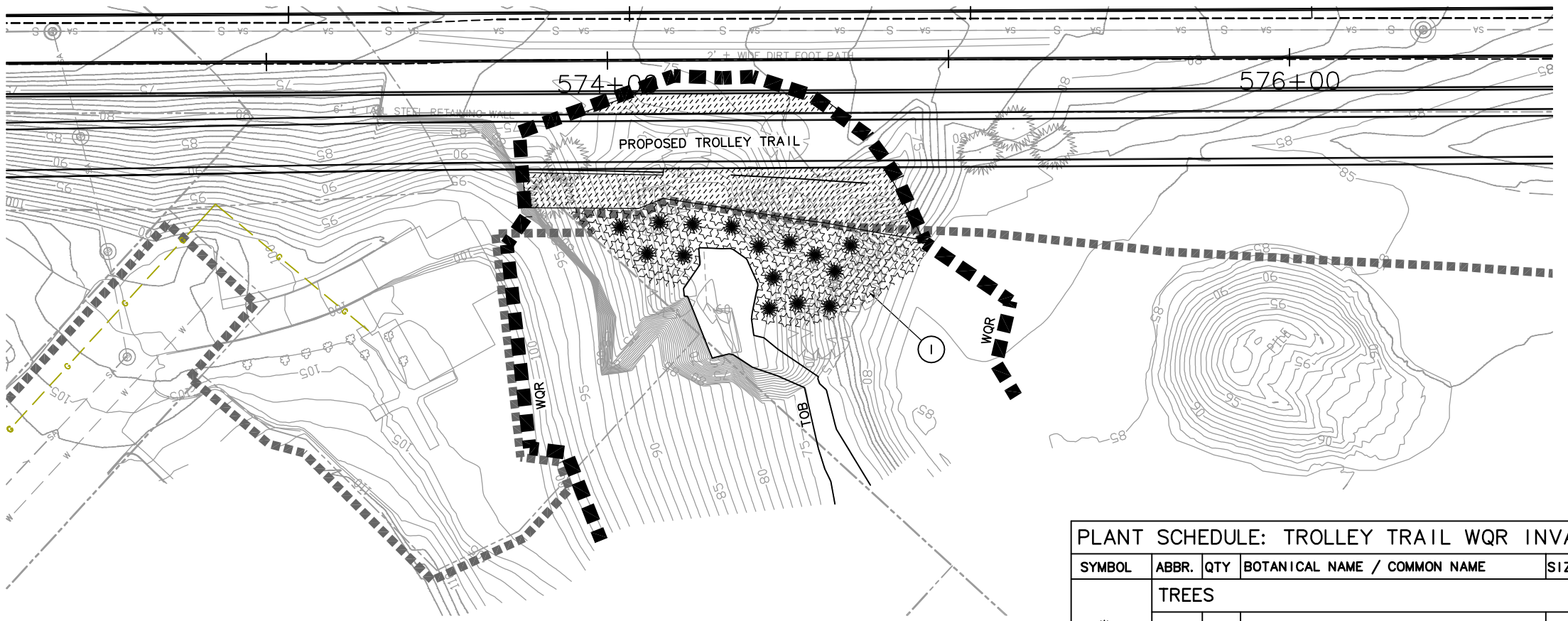


Photo 4 – Unnamed drainage, looking northeast toward McLoughlin Blvd. (culvert buried in bottom left)



Photo 5 – Existing Trolley Trail adjacent to McLoughlin Blvd. and unnamed drainage, looking south

Appendix B
Mitigation Plans
Trolley Trail WQR Report



40' 20' 0' 40' 80'
SCALE: 1" = 40'

BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Deschampsia cespitosa	TUFTED HAIRGRASS	1 GAL.	2' O.C.

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PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
MITIGATION SITE PLAN

SUBMITTED: DATE: APPROVED: DATE: SCALE: AS SHOWN DRAWING NO.: TTR–7A CONTRACT NO.: RHT00544JB ITEM NO.:

Exhibit TR1

P:\T\TMTX00000127\0400CAD\Permits\Land Use Permit\3–Trolley Trail\TTR–7A.dwg Sep. 13, 2011 – 7:28 AM jeff hammond
Plot Date:9/13/2011 7:39 AM jeff hammond

From: Gary Michael <garymic@gmail.com>
Sent: Thursday, October 06, 2011 9:17 AM
To: Shanks, Susan
Subject: Trolley Trail and Bridge Application Referrals

Hi, Susan!
I got the packets as a member of the neighborhood LUC. I saw nothing I could pick at on the Trolley Trail. I like the bridge design. It will be the best light rail bridge in the system. I take issue, however, with the attempt to make concrete walls look like stone. I have always hated such fakery. Concrete is a perfectly good material, and there are form liners which create patterns and texture without resorting to fakery. I'll be out of the country Oct. 7- 22 so I'll miss the Open House on Residential Standards. I'm interested and will check the City web site.
Gary Michael

--
garymic@gmail.com
www.garylmichaelart.com

From: Jo Anne <evenstar@hevanet.com>
Sent: Sunday, October 16, 2011 8:32 PM
To: Shanks, Susan
Subject: Comments on the applications

Hello Susan --

Here are my comments about the permit application for the Trolley Trail. I did not study the submissions for the PMLR line. They are my personal comments as I asked for input from the neighborhood, but got none. I think the volume of material is a little daunting.

I object to the removal of the three sequoias located north of the current WQR area. This is supposed to be to maintain sight lines. I would think trying to keep a *few* of the big trees in the area intact would greatly improve the 'sights' of the area. I'd like to find a way to keep them.

I would also encourage the use of native plants all along the Trolley Trail, not just in the WQR are. I find the use of Boston Ivy particularly troubling.

I studied a tiny piece of the submissions in detail, sadly all that time would allow. I focused on the 'unnamed drainage' area as I live on that same creek (and, yes, it does run year around -- we've been here for over 25 years and it's never gone completely dry). Thank you for having it promoted to a primary drainage area.

The most trouble I have with the submissions are the lack of attention to detail. I'm not a botanist by any means, but on Page 4 (Section 4.2 WQR Vegetated Corridors) they list 'cleavers' as a non-native herbaceous species. I looked on the Portland Plant List and found cleavers (Gallium
aparine) listed as a native plant. They're a pain when they stick to
everything, but native. This is *one* tiny example. In another place they
say acer macrophyllum is Douglas Fir (exhibit E3). In another place they show 15 trees to be planted on the drawing and list 'QTY 1' in the inventory (Exhibit P32) I'd like to make sure that whoever is double checking this goes over their plant eradication and planting with a fine toothed comb.
I'm also not sure it's a good idea to remove the huge big leaf maple in the area (acer macrophyllum) and mitigate them with four foot tall western red cedars because 'that's the next step for the forest anyway'.

I also couldn't find any hard evidence for how big the walls in the area will be or what they will look like.

I would encourage anyone looking at this application to spend some time on the Cascades Trail at the Oregon Zoo. We were there today with our Grandchildren and I took a couple of pictures of the 'walls' going down the steep side of the canyon that forms the trail. They are planted with all native species, are irregular, have moss growing on them and look wonderful.

I wish I had more time and stomach to spend on this. Sorry if this letter sounds disjointed.

Thank you.

Amities,

Jo Anne Bird
Chair, ISNDA

Exhibits List for Land Use Files MOD-11-01 and WQR-11-04
Trolley Trail Modification

The following documents are part of the official record for this application as of Nov 2, 2011:

1. Application
   - A. Submittal forms date stamped Aug 8, 2011 (land use application forms, property owner authorization, submittal requirements form, fee receipt)
   - B. Responses to code standards and criteria (initial submission date stamped Aug 8, 2011; final submission date stamped Sep 20, 2011)
   - C. Water quality resource report (initial submission date stamped Aug 8, 2011; final submission date stamped Sep 20, 2011)
   - D. Site plans (initial submission date stamped Aug 8, 2011; final submission date stamped Sep 20, 2011)
     - i) Existing site conditions
     - ii) Proposed site conditions
     - iii) Illustrative drawings
   - E. Letter requesting application be deemed complete (Sep 20, 2011)
   - F. Additional technical report deposit fee receipt date stamped Sep 20, 2011
   - G. Revised application materials date stamped Oct 26, 2011
   - H. Hearing notice affidavit of sign posting
2. Notification information
   - A. Application referral dated Sep 23, 2011 (Referral sent to City Hall, Ledding Library, Milwaukie Planning Department, Milwaukie Engineering Department, Milwaukie Building Official, Milwaukie Light Rail Coordinator, Clackamas County Fire District #1, North Clackamas Parks and Recreation District, Planning Commission, and Chair and Land Use Committee for Island Station Neighborhood District Association)
   - B. Hearing notice dated Oct 19, 2011 (Notice sent to property owners and occupants of properties within 300 ft of development site)
   - C. Hearing notice affidavit (Oct 19, 2011)
   - D. Hearing notice sign locations map
3. Materials from City Planning Staff
   - A. Application submittal requirements memo (Jun 27, 2011)
   - B. Letter deeming application incomplete (Sep 7, 2011)
   - C. Letter deeming application complete (Sep 27, 2011)
   - D. Staff Report (Nov 2, 2011 for Nov 8, 2011 Public Hearing)
   - E. Cover memo for applicant’s revised application materials (Nov 2, 2011)
   - F. Power point presentation for Nov 8, 2011 public hearing

4. Materials from City Consultant (ESA Northwest Biological Resources)
    A. Scope of work (Sep 2011)
    B. Peer review memo (Oct 20, 2011)
5. Comments received
    A. Milwaukie Engineering Department (Zach Weigel)
    B. Island Station resident (Jo Anne Bird)
    C. Island Station resident (Gary Michael)
6. Public comments received at Nov 8, 2011 public hearing
    A. Sign-in sheet from hearing

MILWAUKIE
Dogwood City of the West

To: **Planning Commission**

Through: **Katie Mangle, Planning Director**

From: **Susan P Shanks, Senior Planner**

Date: **November 1, 2011 for November 8, 2011 Public Hearing**

Subject: **Proposed Revised Exhibits for Nov 8 Hearing**
Project: Trolley Trail Modifications
File: MOD-11-01 and WQR-11-04
Applicant: TriMet

ACTION REQUESTED

None. The applicant has revised aspects of their Trolley Trail modification proposal. The revised exhibits should be considered within the context of the complete **MOD-11-01** and **WQR-11-04** application, which is discussed and included under separate cover.

BACKGROUND INFORMATION

The applicant has submitted a revised WQR report, lighting plan, and landscape plan. See Attachment 1 for revised exhibits as detailed below:

- **WQR Report** (with related Mitigation Site Plan & Tree Removal Plan):
  Exhibit TR1 and Exhibits P32-P33
- **Lighting Plan**: Exhibits P9-P13
- **Landscape Plan**: Exhibits P14-P20

The proposed revisions are not reflected in the Nov 8, 2011 staff report due to the lateness of the submittal.

Staff offers the following comments on the proposed revised exhibits.

1. The applicant is proposing to revise the WQR report and related mitigation and tree removal plans based on staff direction. The applicant originally classified the unnamed water feature near Wren St and McLoughlin Blvd as a secondary protected water feature. However, City

staff and the City's natural resource consultant disagreed with this classification based on information from local property owners and multiple field observations in late summer and asserted that this water feature should be classified as a primary protected water feature. The applicant has submitted a revised WQR report and related mitigation and tree removal plans that reflect the City's classification of this feature as a primary protected water feature.

The proposed revisions do not change the location of the trail or light rail alignments in this area; however, they do add an additional 40 to 50 feet of width to the WQR buffer as a result of the change in classification. This increase in total WQR area results in a theoretical increase in the extent of the project's impacts in this area. This, in turn, results in the requirement for additional mitigation due to the increased impacts. In other words, the proposed revisions result in the addition of approximately 13,620-square-feet of mitigation (for a total of 17,440 sq ft of mitigation) in this area.

The net effect of the proposed revisions is as follows:

- 8,690 sq ft of additional permanent impacts
- 4,330 sq ft of additional temporary impacts
- 13,620 sq ft of additional mitigation
- 33 additional trees

Staff recommends that the Planning Commission accept the WQR revisions proposed by the applicant. Minor changes to the recommended findings and conditions of approval are needed if the Planning Commission accepts these revisions. Staff will provide these at the Nov 8, 2011 hearing for Planning Commission consideration.

2. The applicant is proposing to revise the lighting plan based on recent energy efficient lighting research. The applicant proposes to use LED lamps instead of induction fluorescent lamps to provide more uniform lighting on the trail, reduce the number of light fixtures, and reduce energy costs.

   Staff recommends that the Planning Commission accept the lighting revisions proposed by the applicant. No changes to the recommended findings and conditions of approval are needed if the Planning Commission accepts these revisions.

3. The applicant is proposing to revise the landscape plan based on additional conversations with the North Clackamas Parks and Recreation District. The applicant proposes to use an eco-lawn seed mix instead of low ground cover and shrub plantings on either side of the trail to reduce water usage and maintenance costs. North Clackamas Parks and Recreation prefers this landscaping treatment.

   Staff has not had sufficient time to evaluate the proposed landscape plan revisions. Minor changes to the recommended findings and conditions of approval may be needed if the Planning Commission accepts these revisions. Staff will provide additional comments and any proposed changes to the recommended findings and conditions of approval at the Nov 8, 2011 hearing for Planning Commission consideration.

ATTACHMENTS

Attachments are provided only to the Planning Commission unless noted as being attached. All material is available for viewing upon request.

1. Applicant's Proposed Revised Exhibits dated Oct 26, 2011 (attached)

CONSULTING, LLC
906 NW 23RD AVENUE • PORTLAND OREGON 97210
503.227.5000

Memo

To: City of Milwaukie Planning Commission

Cc: Katie Mangle, Susan Shanks, City of Milwaukie Planning Department

From: Jeff Joslin

Date: October 26, 2011

Re: **Portland Milwaukie Light Rail Revised Submission**

INTRODUCTION

Attached are a number of substitution Exhibits for the Trolley Trail reviews. Also included Is a revised Exhibit Lists for the review set. I will first describe those exhibits to be exchanged, and then will address the way in which they clarify and/or enhance the respective application.

TROLLEY TRAIL DRAWING SUBSTITUTIONS

Please substitute Exhibit TR1 with the provided Exhibits TR1

Please substitute Exhibits P9 through P20 with provided Exhibits P9 through P20B

Please substitute Exhibits P32 and P33 with provided Exhibits P32 and P33

Note: revised exhibit list provided to substitute for earlier list, as the exhibit descriptions and numbers have changed.

Exhibit TR1, Exhibits P32 and P33

Nature of Changes

Over the course of review, it was determined that the Trolley Trail WQR was not a secondary resource, but a primary, requiring an expanded area to be subject to mitigation enhancements.

Relationship to the approval criteria

The determination that the resource is primary has expanded the area required to be mitigated. This additional mitigation has been introduced, and has been determined to meet all associated approval criteria. As the resulting enhancements have been provided over an expanded area, the result is a net benefit to the project, the Trail, and the resource than the initial proposed approach.

Exhibits P9 through P13

Nature of Changes

Since the initial application, a new lighting fixture has been identified that has a number of advantages over that earlier included. The new fixture has a similar appearance to that earlier provided, but is a light emitting diode (l.e.d.) fixture. The l.e.d. lamp is highly efficient, minimizes light spill to adjacent projects, and allows for a greater spacing between fixtures.

Relationship to the approval criteria

There are a number of criteria that speak to lighting. As the fixture is similarly appearing, less-impacting, and more efficient, it better meets all associated criteria.

Exhibits P16 through P20B

Nature of Changes

The previous landscape design for the trolley trail showed the application of low shrub/groundcover planting through all planting areas on both sides of the proposed pathway. The extent of shrub/ground cover planting has been reduced and modified to be seeded ground cover. Areas that are proposed to be seeded are now an eco-lawn seed mix preferred by North Clackamas Parks and Recreation. This seed mix is drought tolerant, stays green throughout the year and does not require regular mowing, thereby reducing maintenance costs.

Low shrub/ground covers, or 'accent planting nodes', have been maintained in the design at four strategic locations in order to enhance users' experience. These accent planting nodes are located at the northern end to provide a gateway onto the trolley trail near River Road, at Bobwhite Street, at the midpoint of the trail where users can access the trail from Sparrow Street, and around the Park Avenue Station Area.

Relationship to the approval criteria

The amount of landscaping provided is as great or greater than that earlier proposed. As per the earlier proposal, the landscaping is placed to maximally enhance the Trail experience. The design ensures nearby residents are appropriately screened from the trail, while maintaining open sight lines from McLoughlin and the LRT into the trail to maximize safety and security. The revisions better meet the applicable criteria in a number of respects:

- The plantings are more attuned to North Clackamas Parks and Recreation, which will result in greater continuity with other Trail experiences, and will facilitate maintenance.
- The provided plantings are a more refined and richer mix, which will enhance their environmental and experiential contribution.
- The manner in which the plantings emphasizes the Trail experience at places of transition and significance will enhance the overall quality of the experience.

CONCLUSION

We're grateful for the opportunity to provide you this additional information, and look forward to your review. We're also appreciative of Staff's effort to continue to work with us through this period, in order to forward to you these changes that further enhance the proposal, and advance it's consistency with the applicable approval criteria.

PORTLAND-MILWAUKIE
LIGHT RAIL PROJECT

TROLLEY TRAIL
EXHIBITS LIST

Reviews for which exhibit list applies:

MODIFICATION OF THE EXISTING DECISION for approval of a
COMMUNITY SERVICE USE REVIEW
WATER QUALITY RESOURCE REVIEW

EXHIBIT NAME	Sht. #	Ex. #	MOD	WQR
BACKGROUND				
Application Authorization		B1		
Pre Application Notes		B2		
TECHNICAL REPORTS				
WQR and HCA Report Trolley Trail		TR1		
OVERVIEW				
Vicinity/Location Map		O1		
Zoning Overlays		O2		
Review Areas/Extents		O3		
Review Extents		O4		
Elements Subject to Modification Review		O5		

EXHIBIT NAME	Sht. #	Ex. #	MOD	WQR
ILLUSTRATIVE DRAWINGS				
Trolley Trail Site Plan And Components		D1		
Trolley Trail 1 Of 3 Sections And Views		D2		
Trolley Trail 2 Of 3 Sections And Views		D3		
Trolley Trail 3 Of 3 Sections And Views		D4		
Details: Abutment & Walls & Fences		D5		
Details Walls		D6		
Tree Mitigation Site Plan		D7		
EXISTING CONDITIONS				
Existing Conditions Plan with Topography	TTR-1A	E1		
Existing Conditions Site Plan w/o Topography	TTR-1A	E2		
Existing Conditions Site Plan & Tree Inventory	TTR-1B	E3		
Existing Conditions Site Plan 1 of 2	TTR-1C	E4		
Existing Conditions Site Plan 2 of 2	TTR-1D	E5		
PROPOSED				
Proposed Development Site Plan Key	TTR-2A	P1		
Proposed Development Affected Properties Plan	TTR-2B	P2		
Impervious Area Site Plan	TTR-3A	P3		
Vegetative Worksheet Site Plan	TTR-3A	P4		
Original & Proposed Trail Site Plan	TTR-4A	P5		
Architectural and Civil Site Plan Key	TTR-4B	P6		
Architectural and Civil Site Plan 1 of 2	TTR-4C	P7		
Architectural and Civil Site Plan 2 of 2	TTR-4D	P8		

Lighting Plan and Schedule 1 of 2	TTR-4E	**P9**		
Lighting Plan and Schedule 2 of 2	TTR-4F	**P10**		
Lighting Photometric Plan 1 of 2	TTR-4G	**P11**		
Lighting Photometric Plan 2 of 2	TTR-4H	**P12**		
Lighting Fixture Specification		**P13**		
Landscape Detailed Plan	TTR-5A	**P14**		
Landscape Detailed Plan	TTR-5B	**P15**		
Landscape Detailed Plan	TTR-5C	**P16**		
Landscape Detailed Plan	TTR-5D	**P17**		
Landscape Detailed Plan	TTR-5E	**P18**		
Landscape Detailed Plan	TTR-5F	**P19**		
Landscape Notes and Legend 1 of 2	TTR-5G	**P20 A**		
Landscape Notes and Legend 2 of 2	TTR-5H	**P20 B**		
Stormwater Site Plan	TTR-6A	**P21**		
Stormwater Site Plan 1 of 2	TTR-6B	**P22**		
Stormwater Site Plan 2 of 2	TTR-6C	**P23**		
Construction Management Plan Area	TTR-8A	**P24**		
Grading and Erosion Control Plan	C15E-1219	**P25**		
Grading and Erosion Control Plan	C15E-1223	**P26**		
Grading and Erosion Control Plan	C15E-1227	**P27**		
Retaining Walls Plan and Elevation	C15E-819	**P28**		
Retaining Walls Plan and Elevation	C15E-820	**P29**		
Retaining Walls Plan and Elevation	C15E-821	**P30**		
Retaining Walls Plan and Elevation	C15E-822	**P31**		
WQR Mitigation Site Plan	TTR-7A	**P32**		
WQR Tree Removal Site Plan	TTR-4F	**P33**		

Portland to Milwaukie Light Rail Project

Water Quality Resource Area Report

Trolley Trail

City of Milwaukie, Oregon

Submitted to:

City of Milwaukie
10722 SE Main Street
Milwaukie, Oregon 97222

Applicant:

TriMet
4012 SE 17th Ave
Portland, Oregon 97202

Prepared by:

VIGIL AGRIMIS
design professionals

819 SE Morrison Street, Suite 310
Portland, OR 97214

Revised October 13, 2011

Portland Milwaukie Light Rail Project
Trolley Trail WQR Report

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Appendix A. Site Photos
Appendix B. Tree Removal Sheet
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1.0 INTRODUCTION

The Trolley Trail was designed to run along a historic rail corridor once used by a streetcar line that operated between Portland and Oregon City. When rail service ended in 1968, the idea of turning the corridor into a multi-use trail was initiated by a group of local citizens. In 2001, North Clackamas Parks and Recreation District (NCPRD) and Metro acquired a 6-mile stretch of the historic rail corridor between downtown Milwaukie and Gladstone. The Trolley Trail was originally reviewed and approved by the Planning Commission in cases CSU-08-03, WG-08-02, and DR-08-02. That case approved an alignment between Milwaukie and Gladstone.

The Trolley trail decisions of 2008 anticipated the design and proximate location of the Portland Milwaukie Light Rail line, specifically identifying certain elements of the Trail alignment that could be modified without additional review as the Rail alignment design evolved. Other elements, if modified, were identified as specifically requiring review.

In assessing the Rail alignment, a water source was found that has been identified as a new water resource that meets the applicability criteria for a Water Quality Resource Review. The site is located in Section 36, Township 1 south, and Range 1 east. The study area for this report will occur on taxlots 901 and 300.

The site includes portions of an unnamed drainage that flows via culvert under SE Mcloughlin to the northeast into Kellogg Lake. The drainage is a Primary Water Feature as defined by the City of Milwaukie's Water Resource Regulations (Milwaukie Municipal Code 19.322). Drawings in the permitting package show the extent of the Water Quality Resource (WQR) and associated vegetated corridors.

2.0 EXECUTIVE SUMMARY

The main points of this report are summarized as follows:

- The realigned Trolley Trail will cross an unnamed drainage located in Section 36, Township 1 south, and Range 1 east on taxlots 901 and 300.
- The unnamed drainage is a Primary Protected Water Feature as defined by the City of Milwaukie's Water Resource Regulations (Milwaukie Municipal Code 19.402).
- The slopes adjacent to the drainage are >25% for less than 150 feet. The width of the vegetated corridor extends 50 feet from the top of the ravine (where there is a very clear break in >25% slope).
- Wetlands are located at the bottom of the ravine. A wetland delineation was conducted to delineate wetland boundaries.
- The vegetated corridor is currently in degraded condition.
- The project will be located above an existing culvert and no impacts will occur below the bank full level or within wetland.

- Development in the WQR Area has been limited to the area necessary for construction and placement of the Portland Milwaukie Light Rail line, Trolley Trail, and associated facilities.
- Development of the light rail tracks and Trolley Trail will result in 10,700 sq. ft. of permanent impacts and 6,150 sq ft of temporary impacts to the WQR vegetated corridor.
- The project will remove 18 trees that are 6 inches or greater diameter at breast height (DBH) within the construction limits of the WQR vegetated corridor.
- A mitigation plan has been developed that meets 19.402.9.E. A mitigation plan has been developed that will compensate for adverse impacts caused by the project. The mitigation plan will enhance 6,240 sq. ft. of the ravine and create 5,050 sq. ft. of new upland forest within the WQR. The plantings will improve thermal regulation, water quality, and wildlife habitat value within the WQR.

3.0 METHODOLOGY

Vigil-Agrimis, Inc. has prepared this WQR Report to evaluate the existing condition, assess potential impacts from the proposed development, and develop a mitigation plan that would compensate for impacts to water quality and habitat resources as required in Section 19.402.

The bank full elevation of the unnamed tributary was mapped by the design team and using topographic maps and site visits. Table 19.402.9.A was used to determine the WQR boundaries.

Three site visits, on June 16, 2011, July 1, 2011, and October 10, 2011, were conducted to delineate wetland boundaries, accurately map existing vegetation, and assess the overall resource condition. Additionally, the location of existing natural features (wetlands, additional water sources, rock outcroppings, etc.) and trees larger than 6 inches DBH were determined in the field as required by Municipal Code Section 19.402.9(B). The limits of the resources on the site are shown in the figures included in the permitting package. These figures also show the locations of the existing trees that are 6 inches DBH or greater.

4.0 WATER QUALITY RESOURCE AREAS

The City of Milwaukie's Water Quality Resource Area Regulations include vegetated corridors and the adjacent water features, including Primary Protected Water Features and Secondary Protected Water Features. The drainage is considered a Primary Protected Water Features. Sections 4.1 and 4.2, below, provide descriptions of the on-site Primary Protected Water Features and associated vegetated corridors, respectively.

4.1 Primary Protected Water Features Existing Condition

As described in Table 1 of the MMC 19.402, Primary Protected Water Features include all perennial streams and streams draining greater than 100 acres, Title 3 wetlands, and natural

lakes and springs. This relatively small resource is not depicted on WQR Map 3. The source of the drainage is assumed to be fed by springs. The drainage is conveyed through a culvert under McLoughlin Blvd and eventually discharges into Kellogg Lake.

The wetland occupies a small flat area at the bottom of the ravine adjacent to the drainage. The wetland is bounded by adjacent natural slopes to the north, south and west. To the east it is bounded by fill material placed historically to support the trolley tracks. The soil is disturbed. Rounded river rock (4 to 6 inches in diameter) covers much of the area and extends up the slope to the trolley trail alignment. There is a layer of sandy clay 1- to 2-feet thick on top of the river rock in the wetland. This was likely placed here but may also be the result of a large erosive event at some point in the past. In locations adjacent to the small stream this material is being eroded exposing the rock layer.

The stream is incised up to 2 feet and the entrance to the culvert under the trolley trail and McLaughlin is buried under 2 to 3 feet of soil. Water flows underground to reach the culvert which is exposed due to a small cave in. The rock appears to create a less pervious layer below this sandy clay that holds water close to the surface. There was evidence of hydrology and hydric soils in the wetland.

The vegetation is also disturbed. English ivy (*Hedera helix*) covers the ground in upland areas and extends into the wetland around the edges. The remainder of the wetland has no vegetation.

The slope adjacent to the wetland boundary exceeds 25%. There is also evidence of dumping on the slopes including garbage, tires and slabs of concrete. There is a clear break in slope at the top of the ravine.

4.2 WQR Vegetated Corridors

As described in Table 1 of the MMC 19.402, Primary Protected Water Features have an associated vegetated corridor of 50 to 200 feet wide depending on the slopes adjacent to the resource. The slopes adjacent to the resource are >25% for less than 150 feet. The vegetated corridor was mapped at the top of the ravine (where there is a clear break in >25% slope) plus 50 feet.

The overstory includes native trees, and the shrub layer includes a mix of native and non-native species. The overall tree canopy cover is approximately 100% with bigleaf maple (*Acer macrophyllum*) as the dominant species. Total shrub cover is approximately 62% with Indian-plum (*Oemleria cerasiformis*) and invasive cherry laurel (*Prunus laurocerasus*) as the dominant two species, but there is significant coverage of the invasive Armenian blackberry (*Rubus armeniacus*) and English hawthorn (*Crataegous mongyna*). The WQR vegetated corridor on the study site is overrun by non-native invasive groundcover plants. The groundcover is 95% and is dominated by English ivy. The percent coverage of the representative trees, shrubs, and groundcovers is detailed in the Table 1 below.

Table 1 –WQR Assessment, Trolley Trail

Botanical Name	Common Name	Percent Cover	Native?
TREES (total coverage = 100%)			
Acer macrophyllum	bigleaf maple	85%	Yes
Pseudotsuga menziesii	Douglas-fir	10%	Yes
SHRUBS (total coverage = 62%)			
Crataegus monogyna	English hawthorn	3%	No
Oemleria cerastiformis	indian-plum	20%	Yes
Prunus laurocerasus	cherry-laurel	20%	No
Rubus armeniacus	Armenian blackberry	3%	No
Rubus spectabilis	salmonberry	12%	Yes
Sambucus racemosa	red elderberry	4%	Yes
GROUNDCOVER (total coverage = 100%)			
A variety of non-native vines and herbaceous plants comprise 95% of the groundcover layer, with the native sword fern covering 5% of the site. The non-native vines include English ivy and traveller's joy. Additional non-native herbaceous species include cleavers, herb-robert, and Fendler's waterleaf.			

The vegetated corridor is in degraded condition per Table 19.402.9.E. While the overstory is primarily native, the shrub and groundcover layers contain large portions of invasive species. English ivy has grown to cover the trunks of most overstory trees. The ecological function of this area is low, and it is a population source for the spread of very aggressive non-native groundcover plant species. Non-native invasive species in the WQR include cherry-laurel, English hawthorn, Armenian blackberry, English ivy, traveller's joy, cleavers (*Galium aparine*), Fendler's waterleaf (*Hydrophyllum fendleri*) and herb-robert (*Geranium robertianum*).

5.0 SUMMARY OF IMPACTS

The Portland-Milwaukie light rail will be located east of Trolley Trail and west of SE McLoughlin Blvd. bounded by SE Park Ave. to the south and SE River Rd. to the north. The vegetated corridor associated with a WQR is located within the work limits approximately in the middle of this project stretch. Construction of the line will require grading within the WQR vegetated corridor, including a new retaining wall. The design also calls for the formalization of Trolley Trail with paving and stormwater management swales between the trail and light rail line. The new development will occur over the existing culvert, outside of the bank full width of the drainage and wetland. The area within the work limit line is a steep fill slope between the culvert inlet and the road grade for SE McLoughlin Rd.

Stormwater from the trail will sheet flow to the adjacent vegetated area which will be planted with vegetation suitable for stormwater treatment. Stormwater from the light rail line will be collected and directed to a stormwater facility just south of SE River Rd.

The new light rail alignment and associated construction will create a total of 25 acres of impervious surface, by replacing existing and adding new impervious surface. However, the

project will also convert 1.03 acres of existing impervious surface to open space and 8.33 acres to pervious track ballast. Therefore, the net impervious surface gain is 15.6 acres, of which only 10.8 acres will be impervious surface where there will be automobiles or other pollutant sources. Stormwater runoff from these surfaces will still undergo treatment and will improve existing treatment across the project alignment.

In addition to stormwater treatment improvements, the construction of a light rail system will reduce vehicle miles traveled, vehicle-hours of delay, and vehicle hours traveled, and is therefore expected to decrease roadway pollutant inputs to project waterways over the long term. The completion of the Portland-Milwaukie Light Rail Project is expected to improve the overall long-term water quality and hydrological regime of receiving waters within the action area.

5.1 Water Quality Resources Impacts

The proposed grading will place fill in the ravine over the existing culvert but outside of the wetland area. A retaining wall will be used to reduce the amount of fill needed and the disturbance to the WQR vegetated corridor. At station 7+00, the retaining wall is at its maximum fill height of approximately 14 to 16 feet. Twenty feet to the north, the Trolley Trail is at grade and no wall is required. Another 20 feet to the north, the Trolley Trail is approximately 14 feet lower than the existing grade which will require a cut wall. From Station 7+00, the fill wall continues to the south for about 70 feet and gradually tapers down in height.

The complex surface elevations (going from cut slope to fill slope) made it difficult to move the alignment of the Trail and Rail line. In the cut section, the wall will be a soil nail wall, for the fill section it will most likely be a tieback wall or a cantilever soldier pile wall. The wall will have a concrete fascia. The fill will create a new environment that will be more suited to upland species than riparian species.

The WQR and associated vegetated corridor within the construction limits is 22,700 sq. ft. The project will temporarily disturb 6,150 sq ft of vegetated corridor, and permanently impact 10,700 sq ft.

There are 18 trees > 6 inches DBH within the WQR vegetated corridor that will need to be removed. Trees to be removed are summarized in Table 2 and shown on the figure in Appendix B. The surface elevations make it not possible to move the alignment of the trail to miss these trees. These trees are located at the top of the drainage. Removal of these trees will result in a loss of canopy cover along the edge.

Table 2. Trees To Be Removed In the WQR Vegetated Corridor

# Trees Removed	DBH (inches)	Latin name	Common Name
1	42	*Sequoiadendrum giganteum*	Giant sequoia
1	40	*Sequoiadendrum giganteum*	Giant sequoia
1	38	*Sequoiadendrum giganteum*	Giant sequoia
1	32	*Pseudotsuga menziesii*	Douglas fir
1	30	*Acer macrophyllum*	Big-leaf maple
2	30	*Pseudotsuga menziesii*	Douglas fir
1	19	*Pseudotsuga menziesii*	Douglas fir
1	18	*Acer macrophyllum*	Big-leaf maple
1	14	*Acer macrophyllum*	Big-leaf maple
3	12	*Acer macrophyllum*	Big-leaf maple
5	10	*Acer macrophyllum*	Big-leaf maple

5.2 Alternatives Analysis

After public review and extensive analysis through the National Environmental Policy Act process and agency coordination, the governing bodies of the project sponsors, including the City of Portland, City of Milwaukie, Multnomah County, Clackamas County, Metro and TriMet, have agreed upon the overall project described and analyzed in the Final Environmental Impact Statement (FEIS, Metro July 2010) and other documents. The proposed alignment was selected based on balancing its transit benefits with environmental, construction, social and economic impacts.

Along the west side of SE McLoughlin Boulevard, the light rail project would use a portion of an old streetcar right-of-way that was purchased by Metro and the North Clackamas Parks and Recreation District for the development of the Trolley Trail, a six-mile regional multi-use path that is to extend from downtown Milwaukie to Gladstone. Light rail would operate between the trail and SE McLoughlin Boulevard. As the light rail and the trail approach SE Park Avenue, light rail leaves the Trolley Tail alignment to stay along SE McLoughlin Boulevard, while the trail continues to follow the old streetcar right-of-way to the west and continues south to Gladstone.

Placing the light rail alignment to the east on McLoughlin Boulevard would have resulted in traffic delays for motor vehicles and for light rail vehicles, negating the benefits of exclusive light rail guideways. Placing the alignment to the west of the Trolley Trail would have directly impacted the Trolley Trail project, rendering this pedestrian project inoperable. It would have also resulted in much higher costs of acquisitions of private land, engineering constraints due to steep slopes, and conflict between the light rail alignment and the Trolley Trail as they would have crossed each other two times. These alternatives were not advanced because there were determined to be impracticable.

The construction limits have been reduced to the extent practicable. Moving the trail closer to the tracks would result in an unpleasant and unsafe environment for people using the trail, as it would result a minor fence barrier between what will be a well-travelled pedestrian path and the rail. Moving the trail closer to the rail lines would also take the trail out-of-direction, as well as break the continuity of the six foot buffer/barrier that has been agreed to between TriMet and the North Clackamas Parks and Recreation District. The light rail line and trail are located directly adjacent to McLoughlin Blvd.

5.3 Avoidance and Minimization of Impacts

The construction limits have been reduced to the extent practicable. The light rail line and trail are located directly adjacent to McLoughlin Blvd. There is no in-water work associated within this WQR area. A retaining wall will be used to reduce the footprint through the WQR vegetated corridor. A stormwater swale will be constructed between the Trail and the light rail. The remaining trail easement will be planted with appropriate trail landscaping that provides a safe and pedestrian friendly environment. While the light rail and trail do cross through the WQR area, it is done in a manner that reduces impacts while allowing for the enjoyment of the resource.

A work plan has been devised that limits the area of impact as much as possible. Work areas will be clearly marked in the field and existing native vegetation along and outside of the construction limits will be protected and left in place. Site preparation and construction practices shall be followed that prevent drainage of hazardous materials or erosion, pollution, or sedimentation to the WQR area.

A retaining wall will be used to reduce the development through the WQR vegetated corridor. The general location of the retaining wall is shown on the plans (included in the application package). The retaining wall will reduce the amount of trees that need to be cleared and the amount of fill required on the hill slope. Without the retaining wall, fill limits would extend further down into the drainage and requiring a greater area of impact to the drainage and more trees to be removed.

6.0 MITIGATION

To compensate for impacts, a mitigation plan has been developed that includes enhancing the water quality, wildlife habitat, and thermal regulation of the drainage. The goal of the mitigation plans is to enhance the development of a thriving, multi-storied riparian native plant community in an area currently overrun by non-native and invasive weedy species. Plant species have been carefully selected to thrive in the microclimates of this site. The planting plan provides a dense planting of robust native species that have proven to work well on restoration sites. A broad spectrum of species has been selected so that as habitat conditions evolve over time there is a mix of plants able to capitalize on emerging conditions. Proposed plantings have been designed to achieve 100% surface coverage. The mitigation plan meets the requirements of 19.402.9.I.

The mitigation contains three different landscape treatments: revegetation of areas temporarily disturbed by construction; creation of new Good Condition vegetated corridor by demolition of existing development and planting with a native forested plant community; and enhancement of the habitat within the drainage. The mitigation planting is proportional to the impact area.

- **Treatment 1 – Temporarily Disturbed Areas.** Two different native shrub communities will be planted in the areas temporarily disturbed by construction. The stromwater swale (to be constructed between the Trolley Trail and the Rail line will be planted with tufted hairgrass (*Deschampsia cespitosa*). Between the Rail line and McLoughlin Blvd., will be planted with creeping Oregon grape (*Mahonia repens*). Both areas will be planted to achieve 100% surface coverage. Non-native vegetation will also be removed from within the construction limits along the trail and rail.
- **Treatment 2 – Creation of Upland Forest**. TriMet has purchased a property that contains a residential house. The house will be demolished, and the portion of the property within the WQR (5,050 sq. ft.) will be planted with an upland plant community. The proposed plants have been selected because they establish quickly and represent an appropriate native transition community.
- **Treatment 3 – Enhancement of Ravine**. In the ravine, non-native plants will be removed, as outlined on the planting plans (see Appendix C). The non-native vegetation will be removed using hand tools in a 6,240 sq. ft. area. The area will be planted with 28 western red cedar trees and an appropriate native shrub layer. Western red cedar (*Thuja plicata*) is the next successional tree to replace big-leaf maple. By planting the western red cedar, the drainage has been given an ecological boost in developing the next tree canopy after the big-leaf maple trees start to die out. The resulting canopy will be denser and provide more shading than currently exists. The proposed plants were selected because they are shade tolerate and establish quickly so they will outcompete the non-natives and prevent them from becoming re-established.

To mitigate for the removal of the 18 trees, 48 trees will be planted. The mitigation design includes 20 western red cedars to be planted in the ravine and seven Douglas fir (*Pseudotsuga menziesii*), six cascara (*Thamnus purshiana*), five big-leaf maple trees, and two western red cedars to be planted in the upland area. In addition, 900 shrubs will be planted in the mitigation area. This dense planting will increase the thermal regulation function of the WQR. The inclusion of evergreen trees and tall shrubs will help provide shade to the wetland and drainage. Maximum shade will be provided by a closed canopy and a 100% surface coverage.

To restore water quality functions, native trees, shrubs and groundcovers will be re-established in a portion of the drainage. In addition, a 5,050 will be restored to native upland forest. By re-establishing a dense native plant community, water flowing through the area will be slowed down, allowing sediment to settle out instead of entering the adjacent stream. Revegetation, especially on the steep slopes like those in the project area, will bind the soil and reduce erosion.

To restore wildlife function, the density and species diversity of vegetation will be greatly increased over current conditions. The proposed plantings will provide an undisturbed corridor of vegetation along the water resource to provide wildlife with food, protective cover and access to the water. The mitigation plan includes the use of varying mature heights and forms to increase habitat structure.

The site will be permanently revegetated during the first planting season following the completion of construction. Temporary irrigation will be used to help establish plants adjacent to the trail. TriMet will monitor and maintain the site for five years after the initial planting. Maintenance will include providing mulch rings around trees and shrubs, watering, and weeding as necessary to allow the native plant community to mature to a self-sustaining condition. The target survival rate of plantings is 80%. If plant mortality exceeds 20% of the original planting quantities at any time during the five year period the owner will replace with new plants to achieve an overall 80% survival rate. For a period of five years, TriMet will submit an annual report to the Planning Director documenting the survival of the trees and shrubs on the mitigation site.

6.1 Responsible Party

The Applicant will be responsible for the implementation of the mitigation plan as outlined in this document. Contact information for the Applicant is as follows:

Tri-County Metropolitan Transit District of Oregon
Attn: Leah Robbins
710 NE Holladay Street
Portland, Oregon 97232

7.0 PREPARERS AND CONTRIBUTORS

This report and mitigation design was prepared by the following staff from Vigil-Agrimis, Inc:

- Susan Cunningham, Sr. Biologist
- Steven Roelof, RLA
- Susie Mattke-Robinson, RLIT
- Ryan Makie, PE
- Nathan Dasler, EIT

Project design information and alternatives analysis was provided by:

- David Evans and Associates, Inc.,
- KLK Consulting, Inc.
- GreenWorks, PC

Appendix A
Site Photos
Trolley Trail WQR Report



Photo 1 - General area of impact for unnamed drainage, looking north



Photo 2 - Unnamed drainage, looking northwest from taxlot 300



Photo 3 – Unnamed drainage, looking southeast from taxlot 901



Photo 4 – Unnamed drainage, looking northeast toward McLoughlin Blvd. (culvert buried in bottom left)

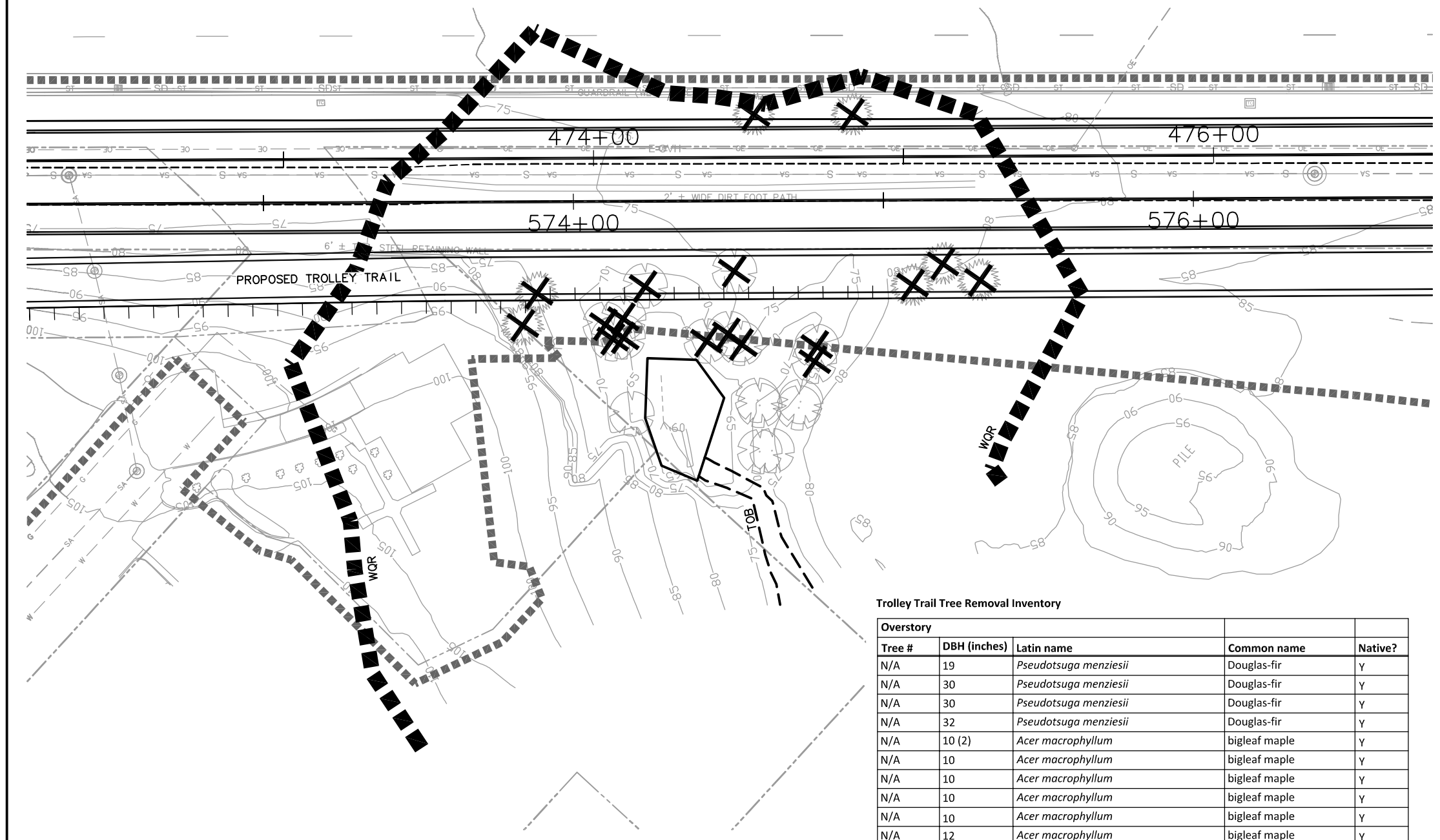


Photo 5 – Existing Trolley Trail adjacent to McLoughlin Blvd. and unnamed drainage, looking south



Photo 6. Wetland at bottom of ravine.

Appendix B
Tree Removal
Trolley Trail WQR Report



Trolley Trail Tree Removal Inventory

Overstory				
Tree #	DBH (inches)	Latin name	Common name	Native?
N/A	19	*Pseudotsuga menziesii*	Douglas-fir	Y
N/A	30	*Pseudotsuga menziesii*	Douglas-fir	Y
N/A	30	*Pseudotsuga menziesii*	Douglas-fir	Y
N/A	32	*Pseudotsuga menziesii*	Douglas-fir	Y
N/A	10 (2)	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	12	*Acer macrophyllum*	bigleaf maple	Y
N/A	12	*Acer macrophyllum*	bigleaf maple	Y
N/A	12	*Acer macrophyllum*	bigleaf maple	Y
N/A	14	*Acer macrophyllum*	bigleaf maple	Y
N/A	18	*Acer macrophyllum*	bigleaf maple	Y
N/A	30	*Acer macrophyllum*	bigleaf maple	Y
N/A	38	*Sequoiadendron giganteum*	giant sequoia	N
N/A	40	*Sequoiadendron giganteum*	giant sequoia	N
N/A	42	*Sequoiadendron giganteum*	giant sequoia	N

LEGEND

TOB – TOP OF BANK

WQR – WATER QUALITY RESOURCES

X INDICATES TREE BEING REMOVED

NO.	DATE	BY / CHK.	APPD.	REVISIONS

SAR DESIGNED	08-02-11 DATE	
SAR DRAWN	08-02-11 DATE	
EES CHECKED	DATE	
APPROVED	DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals

DAVID EVANS AND ASSOCIATES INC.

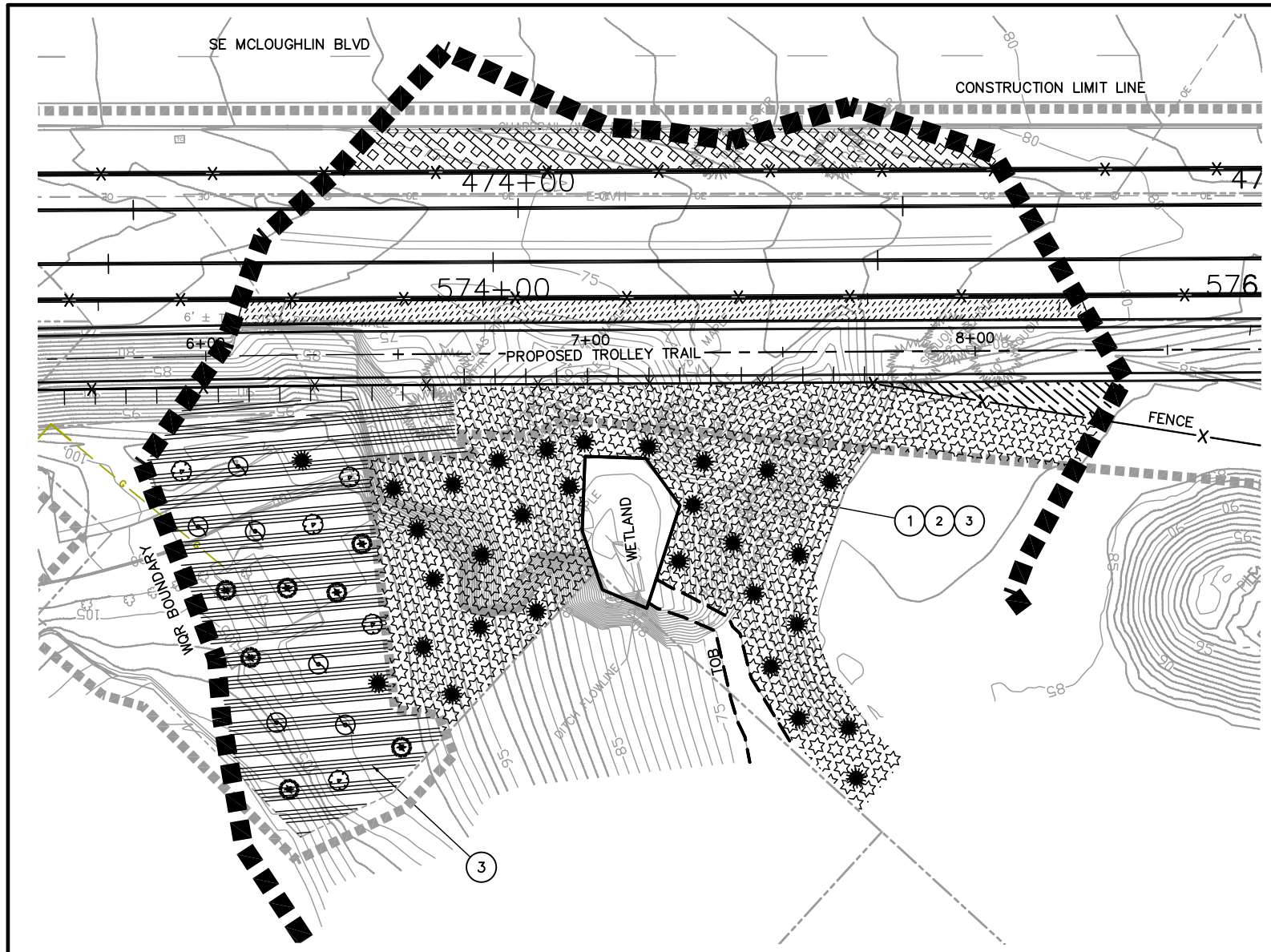
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED TREE REMOVAL AT WQR PLAN

SUBMITTED:	DATE:	APPROVED:	DATE:	SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
				AS SHOWN	TTR-4F	RH100544JB	

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Plot Date: 10/14/2011 3:51 PM jeff hammond

Appendix C
Mitigation Plans
Trolley Trail WQR Report



20' 10' 0' 20' 40'

SCALE: 1" = 20'

PLANT SCHEDULE: TROLLEY TRAIL WQR PLANTING TYPE 1							
SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	THPL	28	Thuja plicata – Western redcedar	4' HT.	B&B	as shown	
	SHRUBS						
	MANE	50	Mahonia nervosa – low Oregon grape	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	OECE	40	Oemleria cerasiformis – indian plum	18–24" HT.	Bareroot	4' o.c.	scattered
	POMU	300	Polystichum munitum – sword fern	1 gal.	container	4' o.c.	scattered
	RUPA	40	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SARA	20	Sambucus racemosa – red elderberry	18–24" HT.	Bareroot	4' o.c.	scattered
	SYAL	90	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SEED						
	Agrostis exarata– spike bentgrass			0.14 lbs	APPLICATION RATE:		
	Deschampsia elongata– slender hairgrass			0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE		
	Glyceria elata– Western mannagrass			0.34 lbs			
				1.04 lbs	Total PLS per acre		

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

PLANT SCHEDULE: TROLLEY TRAIL WQR PLANTING TYPE 2							
SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	ACMA	5	Acer macrophyllum – big leaf maple	4' HT.	B&B	10' o.c.	
	PSME	7	Pseudotsuga menziesii – Douglas–fir	4' HT.	B&B	10' o.c.	
	RHPU	6	Rhamnus purshiana – cascara	4' HT.	B&B	10' o.c.	
	THPL	2	Thuja plicata – Western redcedar	4' HT.	B&B	as shown	
	SHRUBS						
	ACCI	10	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	
	AMAL	10	Amelanchier alnifolia – serviceberry	18–24" HT.	Bareroot	4' o.c.	
	COCO	15	Corylus cornuta – beaked hazelnut	18–24" HT.	Bareroot	4' o.c.	
	MAAQ	20	Mahonia aquifolium – tall Oregon grape	18–24" HT.	Bareroot	4' o.c.	
	MANE	40	Mahonia nervosa – low Oregon grape	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	OECE	20	Oemleria cerasiformis – indian plum	18–24" HT.	Bareroot	4' o.c.	scattered
	POMU	150	Polystichum munitum – sword fern	1 gal.	container	4' o.c.	scattered
	RUPA	30	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SARA	15	Sambucus racemosa – red elderberry	18–24" HT.	Bareroot	4' o.c.	scattered
	SYAL	50	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SEED						
	Agrostis exarata– spike bentgrass			0.14 lbs	APPLICATION RATE:		
	Deschampsia elongata– slender hairgrass			0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE		
	Glyceria elata– Western mannagrass			0.34 lbs			
				1.04 lbs	Total PLS per acre		

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Deschampsia cespitosa	TUFTED HAIRGRASS	1 GAL.	2' O.C.

BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Mahonia repens	CREEPING MAHONIA	1 GAL.	30" O.C.

BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Mahonia nervosa	LOW OREGON GRAPE	1 GAL.	3' O.C.
Polystichum munitum	SWORD FERN	1 GAL.	3' O.C.

KEYED NOTES:

1. CONTRACTOR SHALL USE HAND TOOLS ONLY TO CLEAR ALL ENGLISH IVY, CHERRY LAUREL, AND CLEMATIS FROM THE HATCHED AREA. CONTRACTOR SHALL DISPOSE OF REMOVED MATERIAL AT A LEGAL OFF–SITE LOCATION.
2. IMMEDIATELY AFTER CLEARING THE AREA, THE CONTRACTOR SHALL REPLANT WITH TREES, SHRUBS, AND SEED PER PLANT SCHEDULE ON THIS SHEET.
3. AFTER PLANTING, CONTRACTOR SHALL SPREAD CLEAN STRAW MULCH OVER ENTIRE PLANTING AREA. NEW PLANTINGS SHALL NOT BE DAMAGED BY MULCH APPLICATION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL METHODS AND MATERIALS. EXTENDED WET WEATHER CONDITIONS MAY REQUIRE MAINTENANCE AND/OR REPLACEMENT OF EROSION CONTROL MATERIALS.

SAR DESIGNED	08–02–11 DATE	
SAR DRAWN	08–02–11 DATE	
EES CHECKED	DATE	
APPROVED	DATE	

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

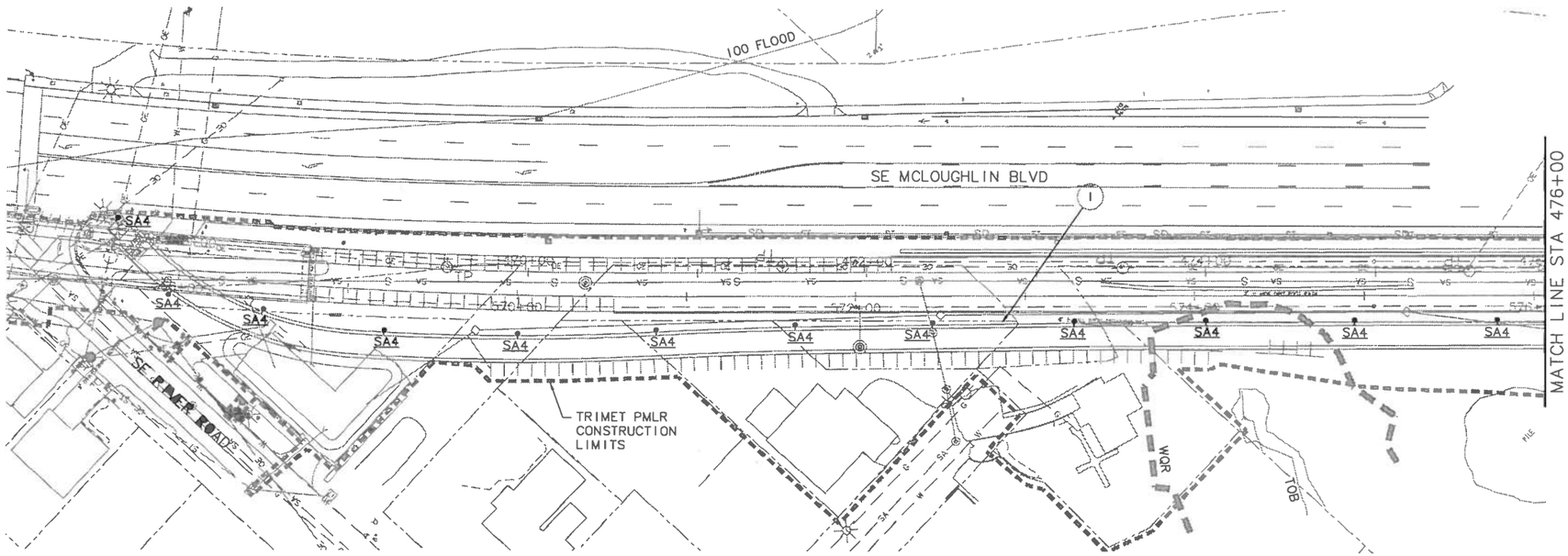
VIGIL AGRIMIS design professionals | DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
MITIGATION SITE PLAN

SUBMITTED:	DATE:	APPROVED:	DATE:	SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
				AS SHOWN	TTR–7A	RH100544JB	

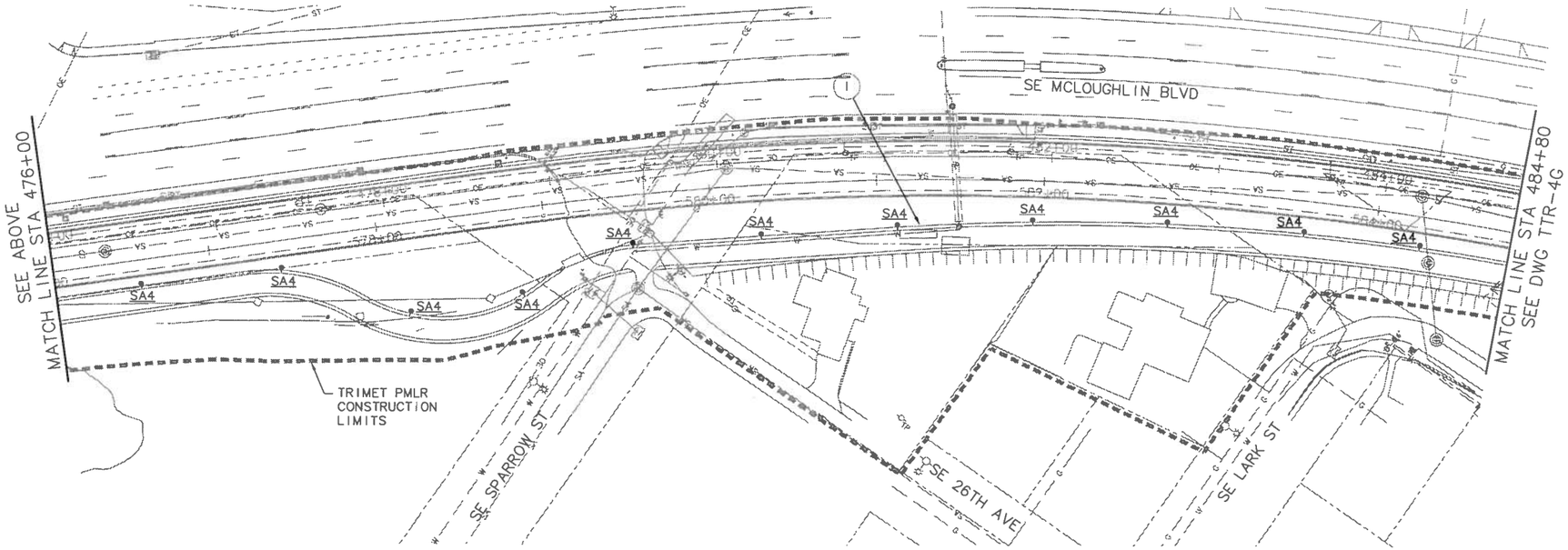
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Plot Date:10/13/2011 2:08 PM steve roelof



40' 20' 0' 40' 80'
SCALE: 1" = 80'

LIGHTING KEY NOTES

(1) TRAIL LIGHTING, TYP



40' 20' 0' 40' 80'
SCALE: 1" = 80'

NO.	DATE	BY / CHK.	APPO.	REVISIONS

IML DESIGNED	06-20-11 DATE
JTH DRAWN	06-20-11 DATE
MJH CHECKED	06-25-11 DATE
APPROVED	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

LTK Engineering Services — REYES ENGINEERING — PASSION CREATIVITY SUSTAINABILITY

SUBMITTED: DATE:

TRIMET — CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

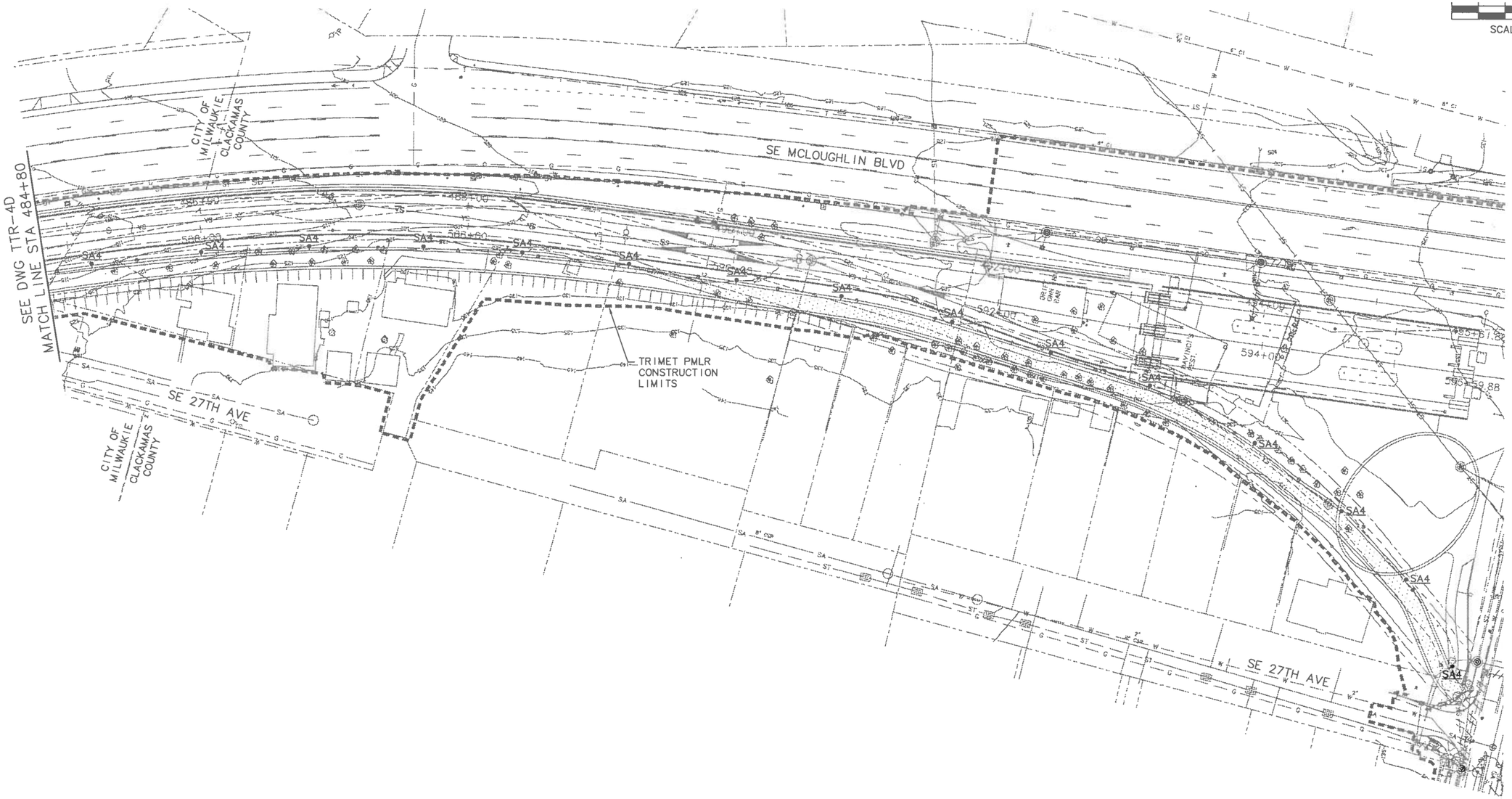
APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT LIGHTING SITE PLAN 1 OF 2

Exhibit P9

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
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NO.	DATE	BY CHK.	APPD.	REVISIONS

JML DESIGNED	06-20-11 DATE
JTH DRAWN	06-20-11 DATE
MJH CHECKED	06-25-11 DATE
APPROVED	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

LTK Engineering Services — REYES ENGINEERING — PASSION CREATIVITY SUSTAINABILITY

TRIMET — CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

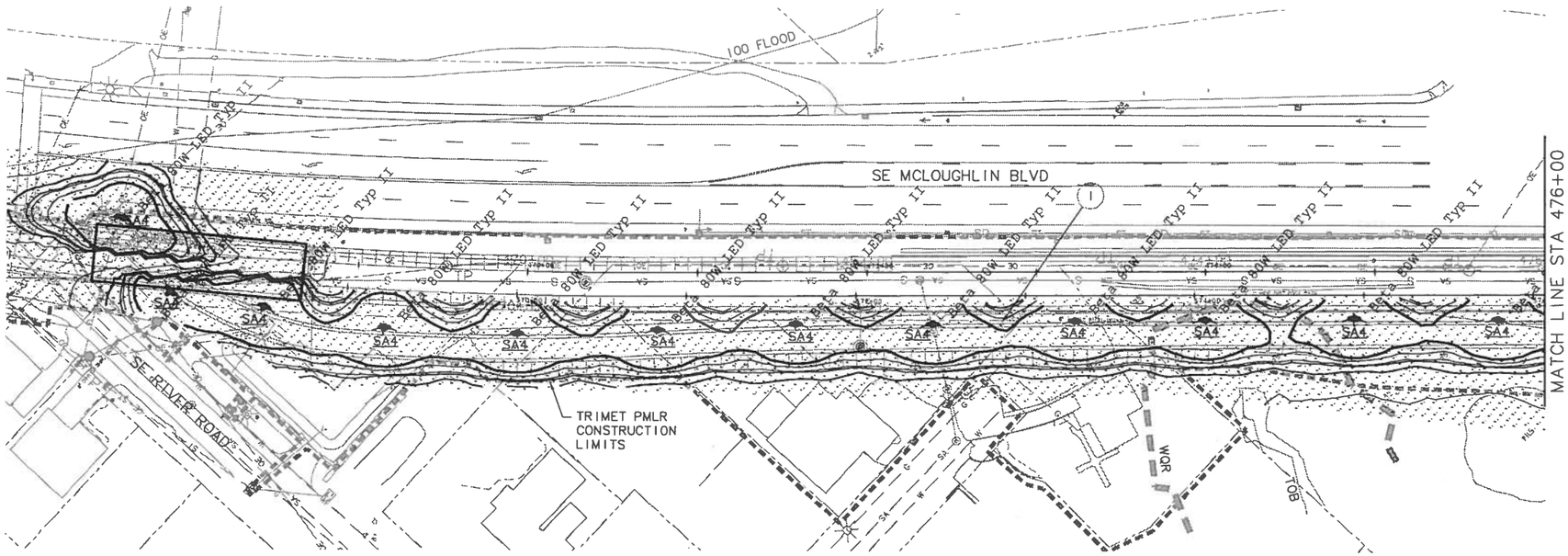
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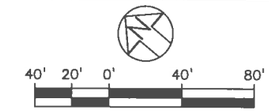
PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT LIGHTING SITE PLAN 2 OF 2

Exhibit P10

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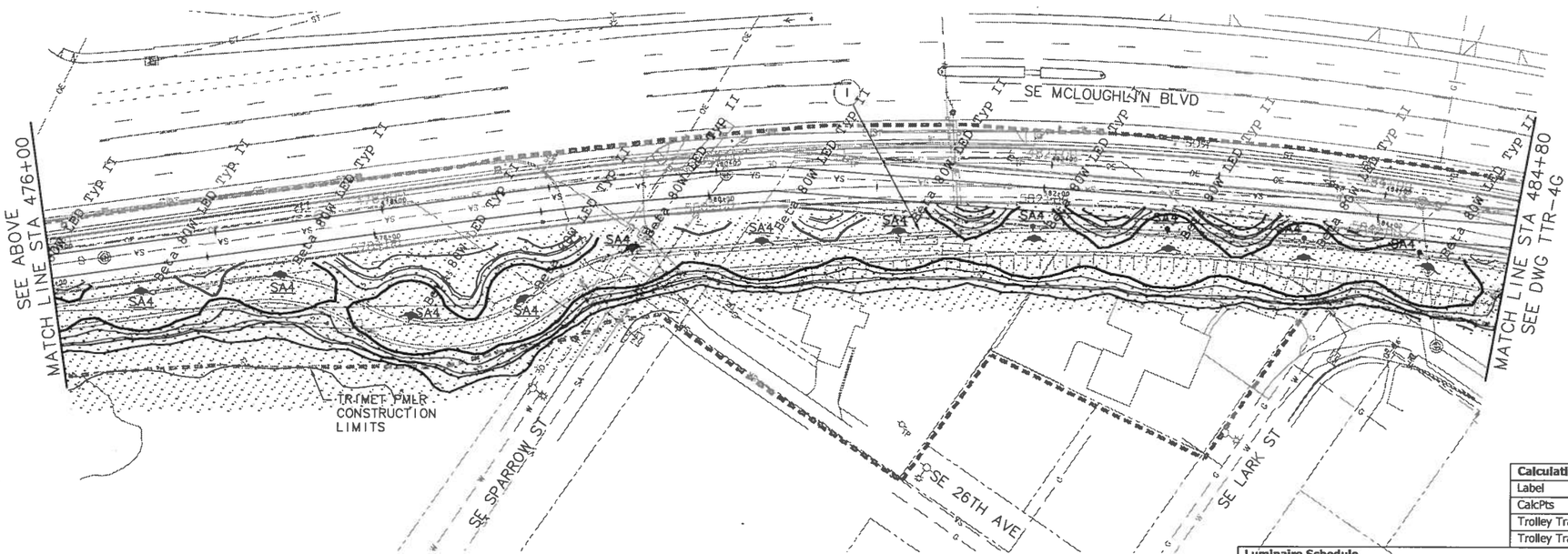
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LIGHTING KEY NOTES

(1) TRAIL LIGHTING, TYP





Trolley Trail
80 foot spacing
Illuminance (Fc)
Average = 2.29
Maximum = 4.6
Minimum = 0.5
Avg/Min Ratio = 4.58
Max/Min Ratio = 9.20

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts	Illuminance	Fc	1.00	4.6	0.0	N.A.	N.A.
Trolley Trail	Illuminance	Fc	2.25	4.2	0.0	N.A.	N.A.
Trolley Trail	Illuminance	Fc	2.29	4.6	0.5	4.58	9.20

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	LLD	LDD	BF
-	38	Beta 80W L	SINGLE	N.A.	1.000	BetaLED ARE-EDR-2M-80-C-2	1.000	1.000	1.000

NO.	DATE	BY / CHK.	APPD.	REVISIONS

IML	DESIGNED	06-20-11 DATE
JTH	DRAWN	06-20-11 DATE
MJH	CHECKED	06-25-11 DATE
	APPROVED	DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

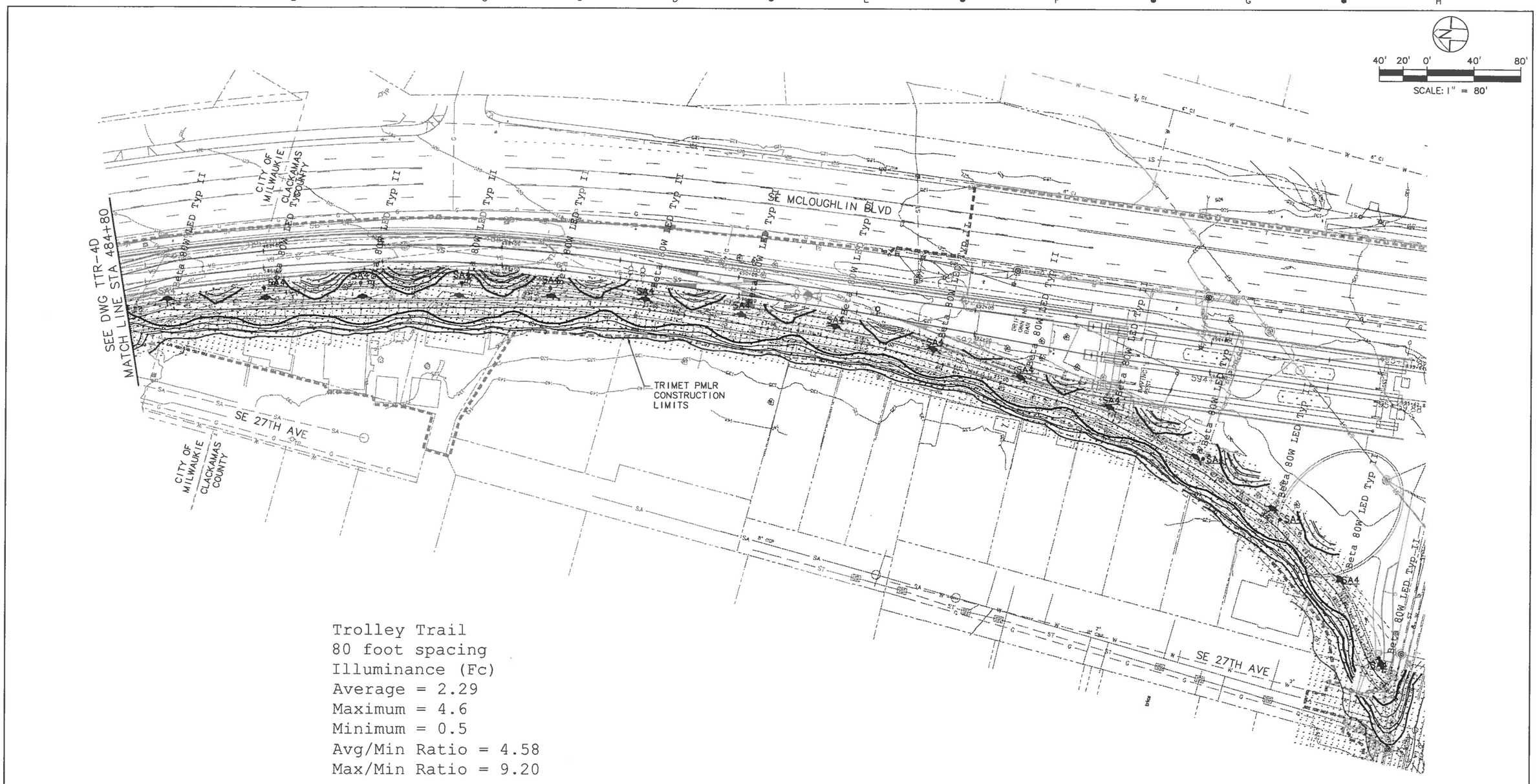
SUBMITTED: DATE: APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT LIGHTING SITE PLAN 1 OF 2

Exhibit P11

SCALE: 1" = 80' | DRAWING NO.: TTR-4G | CONTRACT NO.: RH100544JB | SHEET NO.:

P:\Projects\2011\11003 TriMet LTK PMLR Stations\Drawings\Current Drawings\2011-10-17_Trolley Trail Lighting_To Jeff Josh\TTR-4G_Photometrics.dwg, 10/18/2011 10:00:41 AM, paragas]



Trolley Trail
80 foot spacing
Illuminance (Fc)
Average = 2.29
Maximum = 4.6
Minimum = 0.5
Avg/Min Ratio = 4.58
Max/Min Ratio = 9.20

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts	Illuminance	Fc	1.00	4.6	0.0	N.A.	N.A.
Trolley Trail	Illuminance	Fc	2.25	4.2	0.0	N.A.	N.A.
Trolley Trail	Illuminance	Fc	2.29	4.6	0.5	4.58	9.20

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	LLD	LDD	BF
-	38	Beta 80W L	SINGLE	N.A.	1.000	BetaLED ARE-EDR-2M-80-C-2	1.000	1.000	1.000

NO.	DATE	BY CHK.	APPD.	REVISIONS

IML DESIGNED 06-20-11 DATE
JTH DRAWN 06-20-11 DATE
MJH CHECKED 06-25-11 DATE
APPROVED DATE

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED: DATE: APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED DEVELOPMENT LIGHTING SITE PLAN 2 OF 2

Exhibit P12

SCALE: 1" = 80' | DRAWING NO.: TTR-4H | CONTRACT NO.: RH100544JB | SHEET NO.:

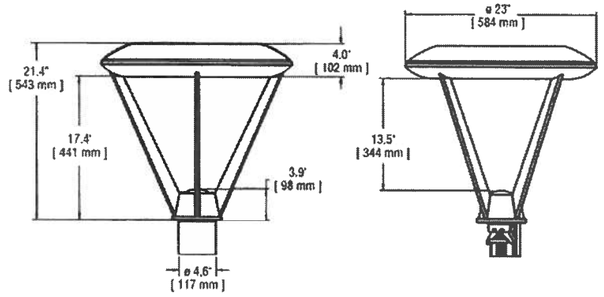
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ARE-EDR-5M-R5 THE EDGE® LED Round Area Light – Type V Medium

Rev. Date: 11/10/10

BetaLED Catalog #: ARE - EDR - 5M - R5 - - C - - - - -





Notes:

Product	Family	Optic	Mounting	# of LEDs (x 10)	LED Series	Voltage	Color Options	Factory-Installed Options Please type additional options in manually on the lines provided above.
ARE	EDR	5M[1]	R5[2]	☐ 04[3] ☐ 06[3] ☐ 08[3] ☐ 10[3] ☐ 12	C	☐ UL Universal 120–277V ☐ UH Universal 347–480V ☐ 12 120V ☐ 24 240V ☐ 27 277V ☐ 34 347V	☐ SV Silver ☐ BK Black ☐ BZ Bronze ☐ PB Platinum Bronze ☐ WH White	☐ 43K 4300K Color Temperature[4] ☐ 525 525mA Drive Current[5,6] ☐ DIM5 0–10V Dimming (525mA maximum)[7,8] ☐ F Fuse[9,10] ☐ HL Hi/Low (175/350/525, dual circuit input)[11] ☐ TL Two-Level (175/525 w/ integrated sensor control)[11,12] ☐ TL2 Two-Level (0/350 w/ integrated sensor control)[11,12] ☐ TL3 Two-Level (0/525 w/ integrated sensor control)[11,12]

Footnotes

1. IESNA Type V Medium distribution
2. Spider mount, center direct fits inside 5" round pole
3. Consist of multiple 20 LED light bars. 40, 60, 80, and 100 LED units use blanks as needed in place of populated light bars
4. Color temperature per fixture: minimum 70 CRI
5. Driver operates at 525mA instead of the standard 350mA providing a higher lumen output and a shorter life
6. Available on fixtures with 40–120 LEDs; maximum 60 LEDs with UH voltage
7. Control by others
8. Refer to dimming spec sheet for availability and additional information
9. When code dictates fusing use time delay fuse
10. Not available when UH voltage is selected
11. Refer to multi-level spec sheet for availability and additional information
12. Recommended maximum pole height is 10'; consult factory for pole heights greater than 10'

LED PERFORMANCE SPECS

# of LEDs	Initial Delivered Lumens – Type V Medium @ 6000K	B	U	G	Initial Delivered Lumens – Type V Medium @ 4300K	B	U	G	System Watts 120–277V	Total Current @ 120V	Total Current @ 230V	Total Current @ 277V	System Watts 347–480V*	Total Current @ 347V	Total Current @ 480V	L_{70} Hours** @ 25° C (77° F)
		Rating***				Rating***										
350mA (Standard) Fixture Operating at 25° C (77° F)																
40[3]	3,586 (04)	2	1	1	3,145 (04)	2	1	1	49	0.41	0.23	0.20	51	0.15	0.12	105,000
60[3]	5,379 (06)	3	1	1	4,718 (06)	3	1	1	71	0.60	0.32	0.28	74	0.22	0.17	105,000
80[3]	7,172(08)	3	1	2	6,291 (08)	3	1	1	93	0.78	0.41	0.35	96	0.28	0.21	105,000
100[3]	8,965 (10)	3	2	2	7,863 (10)	3	2	2	116	0.98	0.52	0.43	119	0.35	0.26	105,000
120	10,758 (12)	4	2	2	9,436 (12)	4	2	2	139	1.17	0.61	0.52	141	0.41	0.30	105,000
525mA Fixture Operating at 25° C (77° F)																
40[3]	4,662 (04)	3	1	1	4,089 (04)	3	1	1	69	0.58	0.31	0.27	75	0.22	0.19	61,000
60[3]	6,993 (06)	3	1	2	6,133 (06)	3	1	1	110	0.92	0.49	0.41	116	0.33	0.27	61,000
80[3]	9,324 (08)	4	2	2	8,178 (08)	3	2	2	138	1.16	0.62	0.54	145	0.42	0.32	61,000
100[3]	11,655 (10)	4	2	2	10,222 (10)	4	2	2	177	1.49	0.79	0.68	186	0.53	0.40	61,000
120	13,986 (12)	4	2	2	12,267 (12)	4	2	2	217	1.82	0.96	0.81	226	0.65	0.48	61,000

* Utilizes magnetic step-down transformer when 525mA drive current or multi-level options are selected

** For recommended lumen depreciation data see TD-13

*** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit www.iesna.org/PDF/Erratas/TM-15-07BugRatingsAddendum.pdf

NOTE: All data subject to change without notice.

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Made in the U.S.A. of U.S. and imported parts.
Meets Buy American requirements within the ARRA.

ARE-EDR-5M-R5 THE EDGE® LED Round Area Light – Type V Medium

Rev. Date: 11/10/10

General Description

Slim, low profile design minimizes wind load requirements. Fixture housing is rugged cast aluminum with integral, weather-tight LED driver compartments, spun aluminum vented cover and high performance aluminum heatsinks. Post top mounting consists of precision machined, extruded aluminum arms (4) mounted to weather tight cast lower hub with center bolt direct mount system for 5" round poles. Direct mount system provides clean hardware-less outer appearance. Five year limited warranty on fixture.

Electrical

Modular design accommodates varied lighting output from high power, white, 6000K (+/- 500K per full fixture), minimum 70 CRI, long life LED sources. 120–277V 50/60 Hz, Class 1 LED drivers are standard. 347–480V 50/60 Hz driver is optional. LED drivers have power factor >90% and THD <20% of full load. Units provided with integral 10kV surge suppression protection standard. Surge protection tested in accordance with IEEE C62.41.2 and ANSI standard 62.41.2.

Testing & Compliance

UL listed in the U.S. and Canada for wet locations. Consult factory for CE Certified products. RoHS compliant. International Dark-Sky Association approved.

Finish

Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable silver powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Bronze, black, white and platinum bronze powder topcoats are also available. The finish is covered by our 10 year limited warranty.

Fixture and finish are endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117.

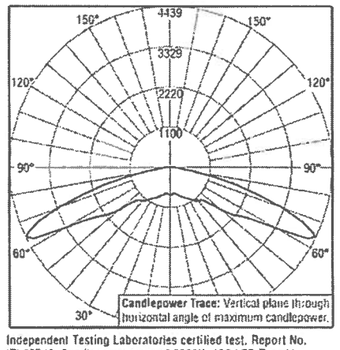
Patents

U.S. and international patents granted and pending. BetaLED is a division of Ruud Lighting, Inc. For a listing of Ruud Lighting, Inc. patents, visit www.uspto.gov.

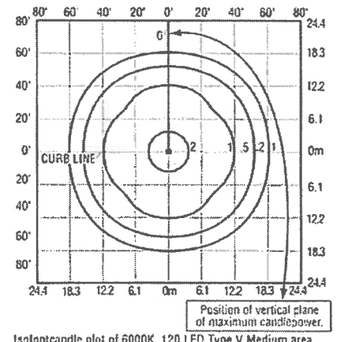
Field-Installed Accessories

Bird Spikes
☐ XA-BRDSPK

Photometrics



Independent Testing Laboratories certified test, Report No. ITL63746. Candlepower trace of 6000K, 120 LED Type V Medium area luminaire with 11,013 initial delivered lumens operating at 350mA. **All published luminaire photometric testing performed to IESNA LM-79-08 standards.**



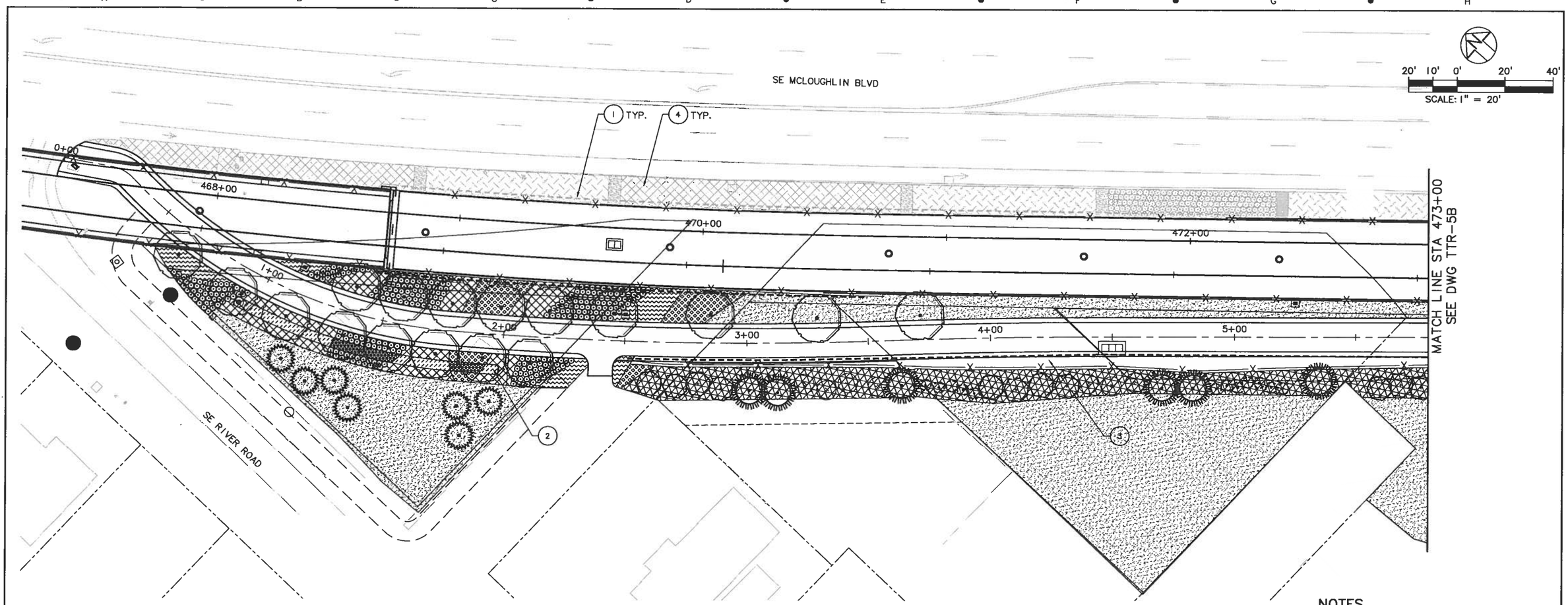
Isofootcandle plot of 6000K, 120 LED Type V Medium area luminaire at 25' A.F.G. Luminaire with 10,758 initial delivered lumens operating at 350mA. Initial FC at grade.

THE EDGE® EPA & Weight Calculations

# of LEDs	Approximate Weight 120–277V*	Post Top
Post Top Mount		
40	39.7 lbs.	1.10
60	40.9 lbs.	1.10
80	42.6 lbs.	1.10
100	43.7 lbs.	1.10
120	45.3 lbs.	1.10

1. Add 5 lbs. for transformer in 347–480V fixtures when 525mA drive current or multi-level options are selected

Exhibit P13



NOTES

1. SEE SHEETS TTR-5G AND TTR-5H FOR LANDSCAPE NOTES AND LEGENDS.

PLANTING KEY NOTES

(1) VINE PLANTING AT WALL

(2) WATER QUALITY BASIN - REFER TO CIVIL DRAWINGS. PLACE 2"DEPTH OF 1/2"-"3/4" ROUNDED RIVER ROCK MULCH TO ZONE 'A' PLANTING AREAS, PLACE 2"DEPTH BARK MULCH TO ZONE 'B' PLANTING AREAS UNLESS OTHERWISE INDICATED ON PLANS.

(3) RETAINING WALL

(4) SCREENED BACK PLANTING AREAS ARE OUTSIDE OF LAND USE REVIEW.

SK DESIGNED	05-03-11 DATE	
CM/AP DRAWN	10-19-11 DATE	
RT CHECKED	11-04-11 DATE	
APPROVED	DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

GREENWORKS

DAVID EVANS AND ASSOCIATES INC.

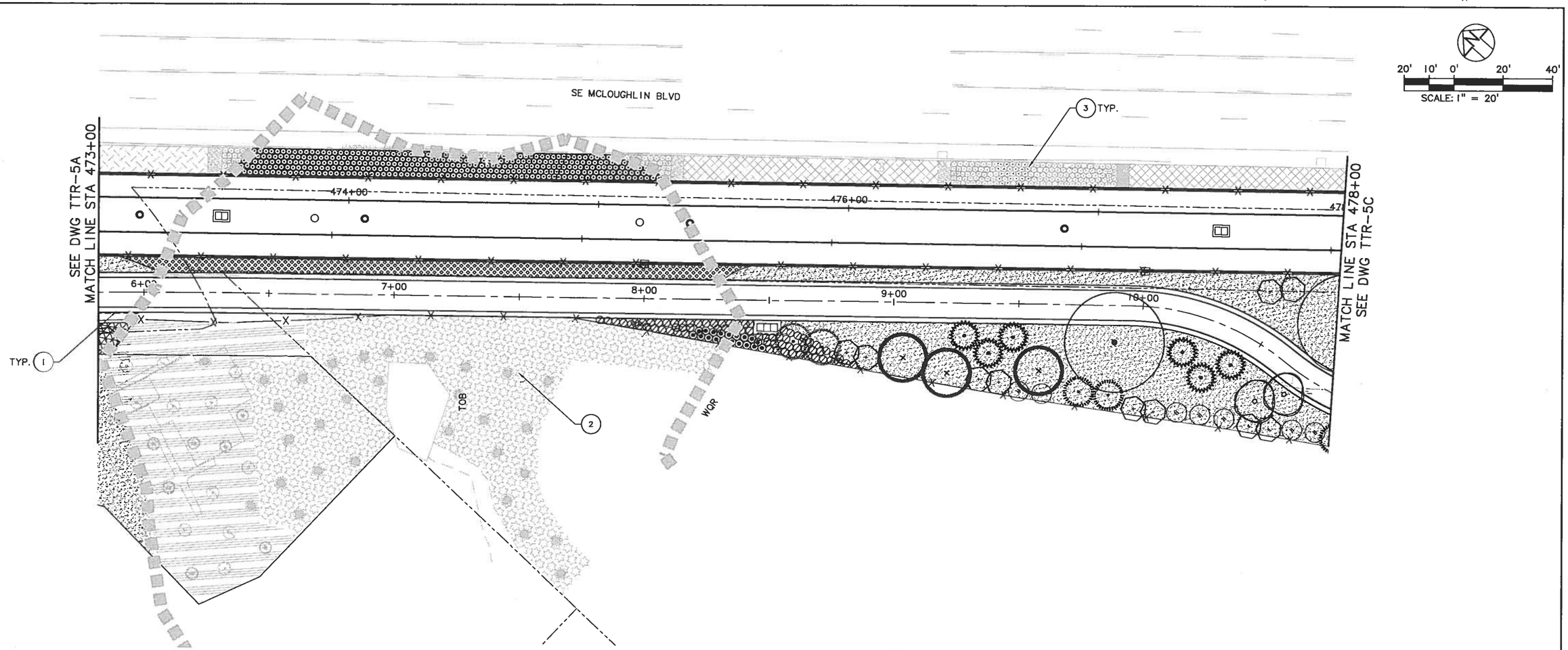
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P14
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED LANDSCAPE SITE PLAN

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1"=20'	TTR-5A	RH100544JB	

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Plot Date: 10/20/2011 12:18 PM alexandra perove



NOTES

1. SEE SHEETS TTR-5G AND TTR-5H FOR LANDSCAPE NOTES AND LEGENDS.

PLANTING KEY NOTES

(1) VINE PLANTING AT WALL

(2) REFER TO SHEET TTR-7A FOR PLANTING IN WQR.

(3) SCREENED BACK PLANTING AREAS ARE OUTSIDE OF LAND USE REVIEW.

SK DESIGNED	05-03-11 DATE	
CM/AP DRAWN	10-19-11 DATE	
RT CHECKED	11-04-11 DATE	
APPROVED	DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

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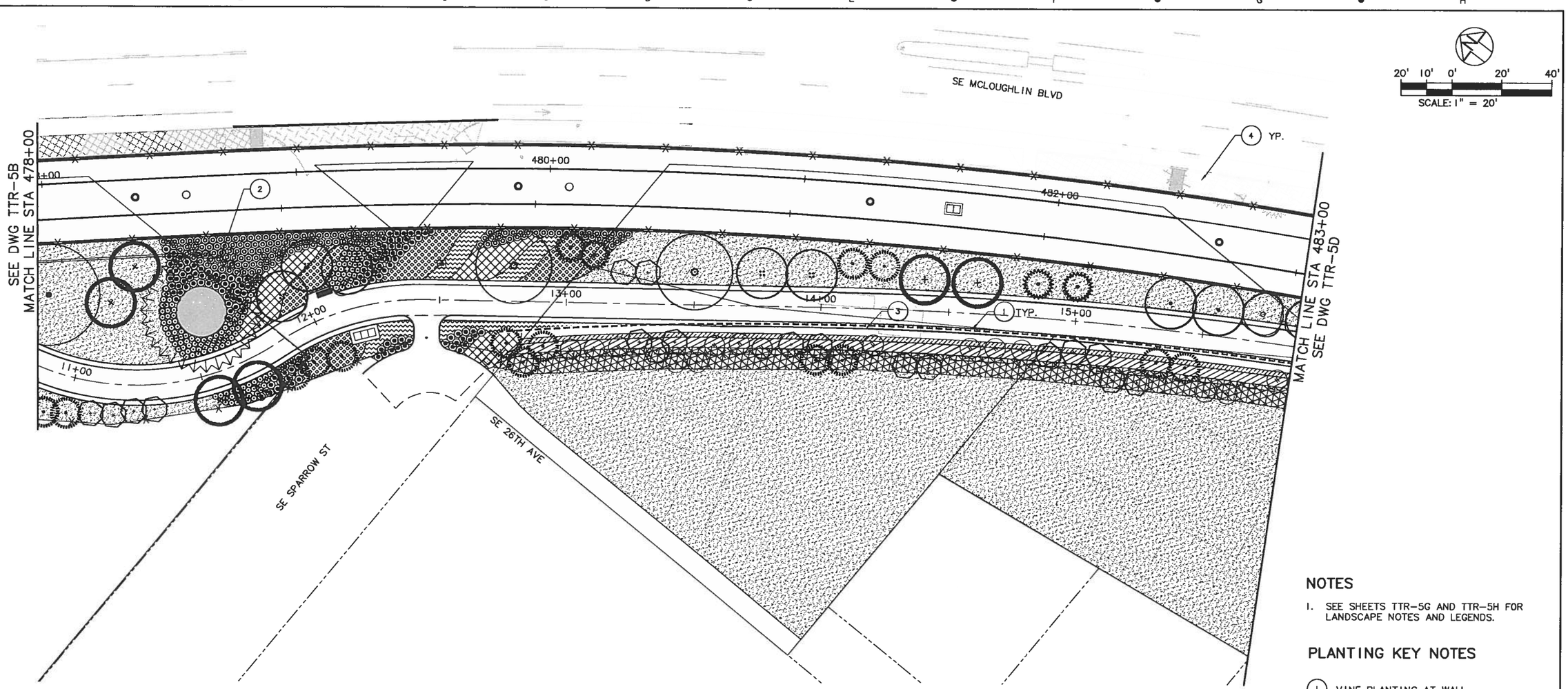
SUBMITTED: | DATE: | APPROVED: | DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED LANDSCAPE SITE PLAN

Exhibit P15

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1"=20'	TTR-5B	RH100544JB	

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Plot Date: 10/20/2011 12:19 PM_alexandra perove



NOTES

1. SEE SHEETS TTR-5G AND TTR-5H FOR LANDSCAPE NOTES AND LEGENDS.

PLANTING KEY NOTES

(1) VINE PLANTING AT WALL

(2) PRESERVE EXISTING TREE – PRIOR TO CONSTRUCTION, INSTALL 4' HEIGHT ORANGE PLASTIC CONSTRUCTION FENCING AROUND EXISTING TREES AS INDICATED ON PLANS. TREE PROTECTION FENCING SHALL BE LOCATED AROUND EACH TREE AT THE DRIPLINE, OR AT 8' DIAMETER MINIMUM. SECURE FENCING TO STEEL POSTS PLACED 6'O.C. WITH PLASTIC TIES. REFER TO SPECIFICATION SECTION 02231 FOR TREE PROTECTION.

(3) RETAINING WALL

(4) SCREENED BACK PLANTING AREAS ARE OUTSIDE OF LAND USE REVIEW.

SK DESIGNED	05-03-11 DATE	
CM/AP DRAWN	10-19-11 DATE	
RT CHECKED	11-04-11 DATE	
APPROVED	DATE	

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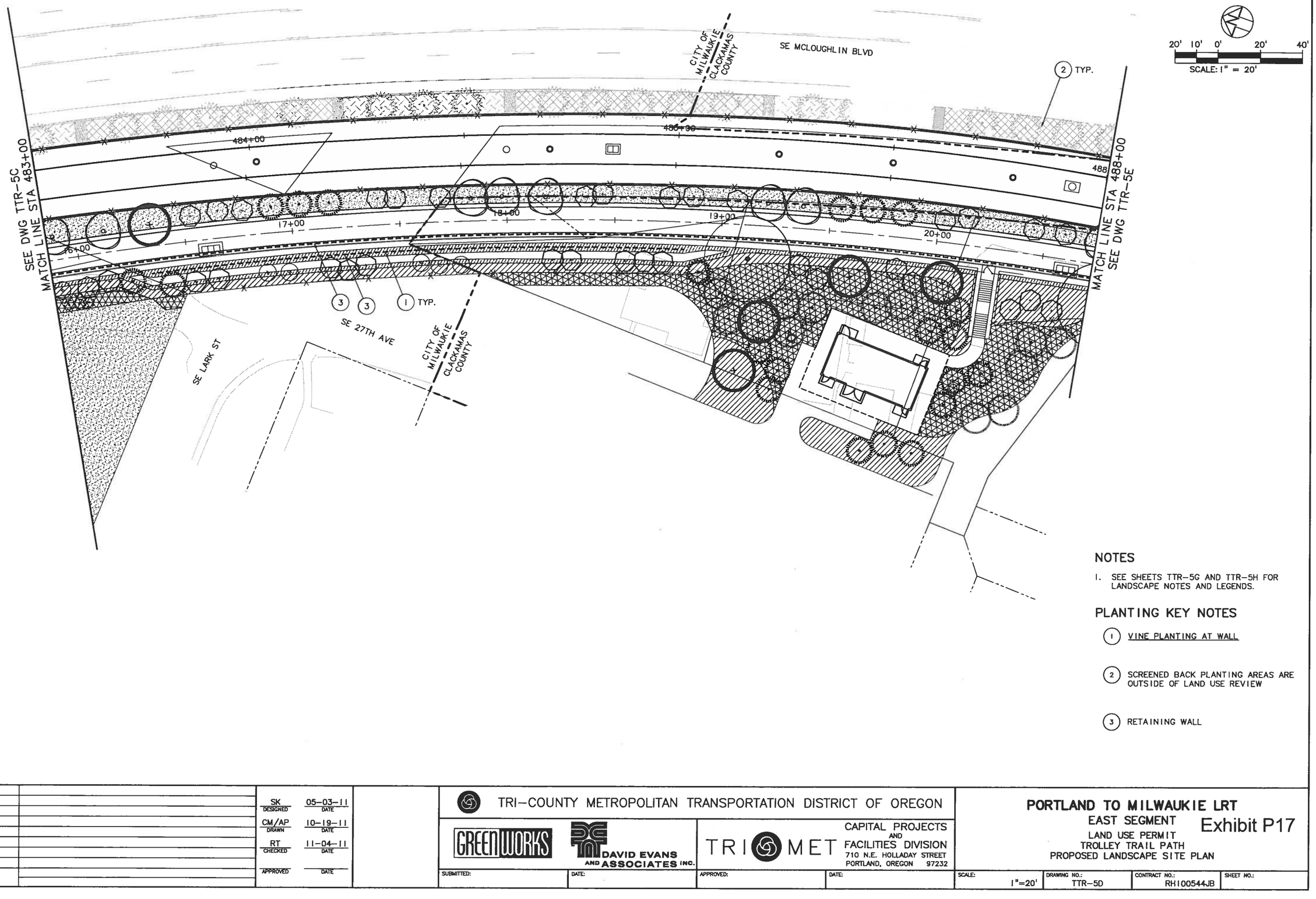
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PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED LANDSCAPE SITE PLAN

Exhibit P16

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1"=20'	TTR-5C	RH100544JB	

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Plot Date: 10/20/2011 12:19 PM alexandra perove



NOTES

1. SEE SHEETS TTR-5G AND TTR-5H FOR LANDSCAPE NOTES AND LEGENDS.

PLANTING KEY NOTES

(1) VINE PLANTING AT WALL

(2) SCREENED BACK PLANTING AREAS ARE OUTSIDE OF LAND USE REVIEW

(3) RETAINING WALL

SK DESIGNED	05-03-11 DATE	
CM/AP DRAWN	10-19-11 DATE	
RT CHECKED	11-04-11 DATE	
APPROVED	DATE	

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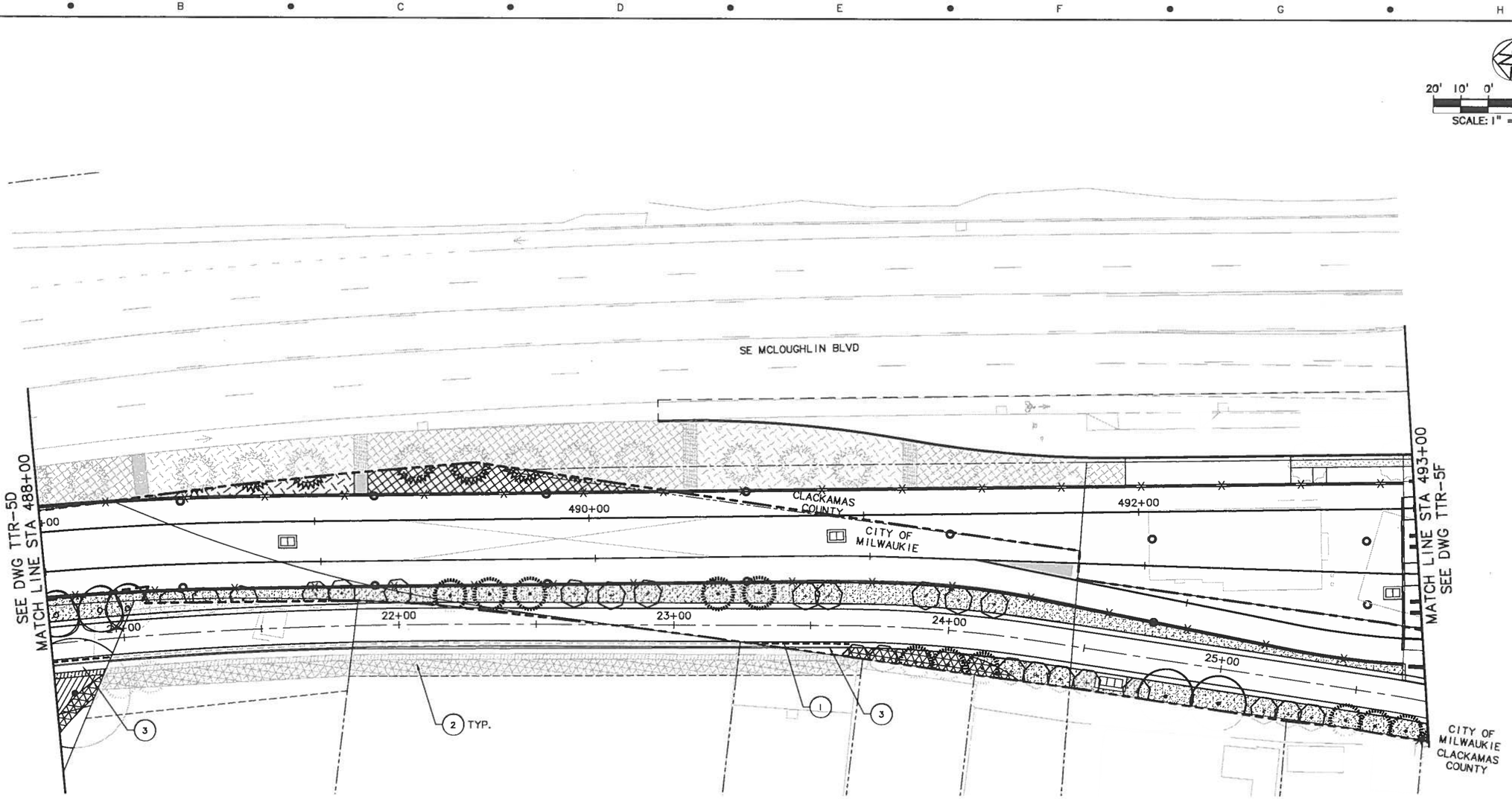
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PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED LANDSCAPE SITE PLAN

Exhibit P17

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1"=20'	TTR-5D	RH100544JB	

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Plot Date: 10/20/2011 12:20 PM alexandra perove



20' 10' 0' 20' 40'
SCALE: 1" = 20'

NOTES

1. SEE SHEETS TTR-5G AND TTR-5H FOR LANDSCAPE NOTES AND LEGENDS.

PLANTING KEY NOTES

(1) VINE PLANTING AT WALL

(2) SCREENED BACK PLANTING AREAS ARE OUTSIDE OF LAND USE REVIEW.

(3) RETAINING WALL

SK DESIGNED	05-03-11 DATE	
CM/AP DRAWN	10-19-11 DATE	
RT CHECKED	11-04-11 DATE	
APPROVED	DATE	

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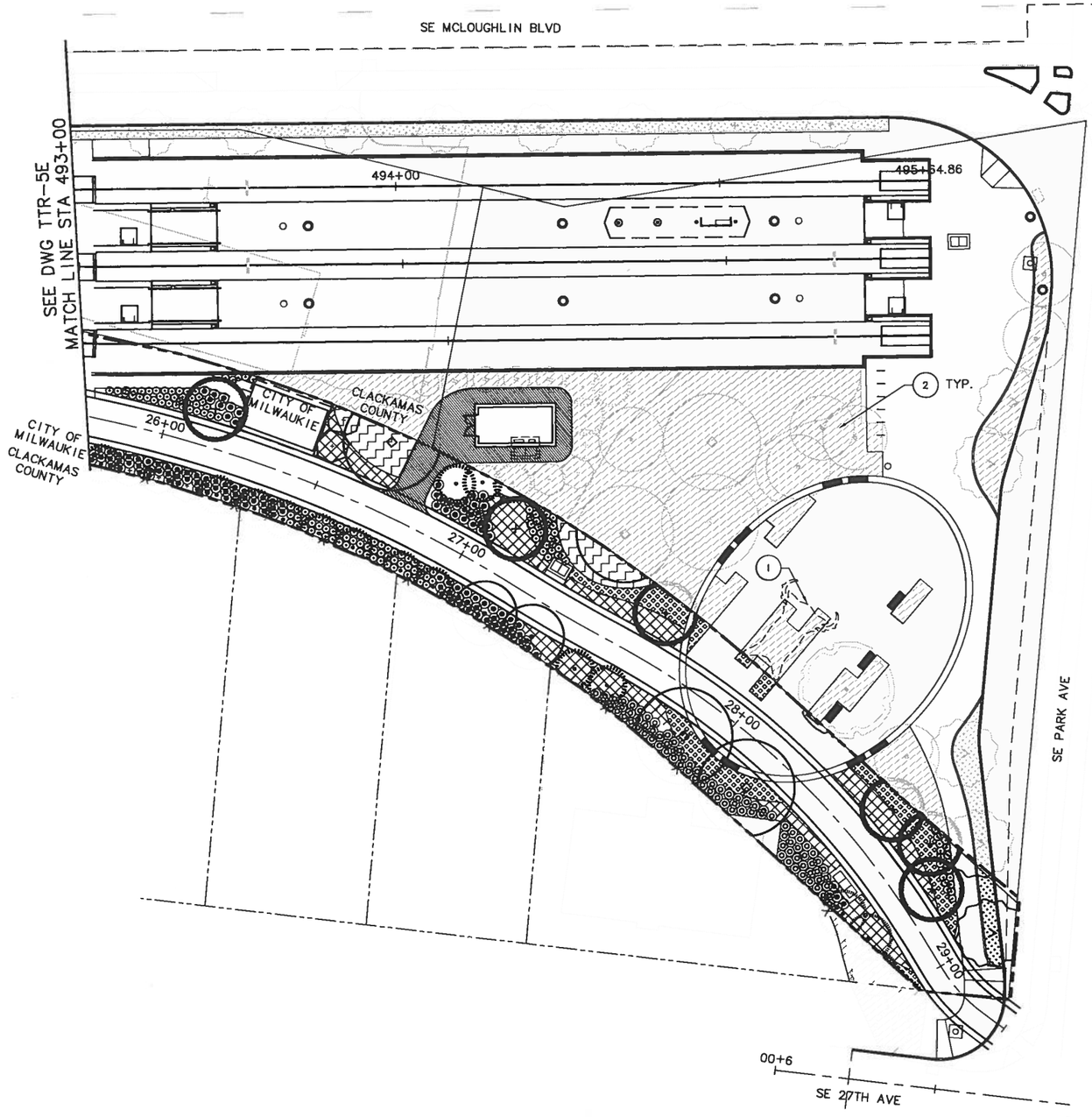
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PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED LANDSCAPE SITE PLAN

Exhibit P18

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
1"=20'	TTR-5E	RH100544JB	

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Plot Date: 10/20/2011 12:20 PM alexandra perove



20' 10' 0' 20' 40'
SCALE: 1" = 20'

NOTES

1. SEE SHEETS TTR-5G AND TTR-5H FOR LANDSCAPE NOTES AND LEGENDS.

PLANTING KEY NOTES

(1) OWNER-PROVIDED ARTWORK

(2) SCREENED BACK PLANTING AREAS ARE OUTSIDE OF LAND USE REVIEW.

SK DESIGNED	05-03-11 DATE	
CM/AP DRAWN	10-19-11 DATE	
RT CHECKED	11-04-11 DATE	
APPROVED	DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

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PORTLAND, OREGON 97232

SUBMITTED: | DATE: | APPROVED: | DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED LANDSCAPE PLAN

Exhibit P19

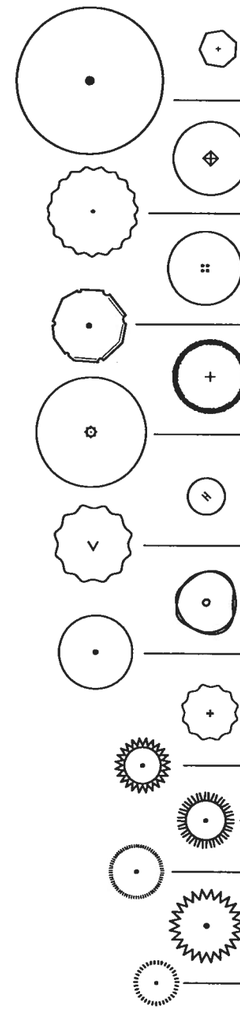
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Plot Date: 10/20/2011 12:27 PM alexandra perove

GENERAL PLANTING NOTES

1. REFER TO DRAWING NOS. L15E-002 THROUGH L15E-006 AND L15E-102 FOR PLANTING LEGENDS AND QUANTITIES.
2. REFER TO DRAWING L15E-007 FOR PLANTING SHEET LAYOUT INDEX.
3. REFER TO DRAWING NOS. L15E-300, L15E-301, AND TRIMET DIRECTIVE DRAWINGS LTM301 AND LTM302 FOR LANDSCAPE DETAILS.
4. NUMBERS IN CIRCLES ((XX))REFER TO PLANTING KEY NOTES. NUMBERS IN HEXAGONS ⟨XX⟩ REFER TO PLANTING SHEET NOTES.
5. REFER TO SPECIFICATION SECTION 02231 FOR TREE PROTECTION.
6. REFER TO SPECIFICATION SECTION 02950 FOR LANDSCAPE PLANTINGS.
7. CONTRACTOR SHALL PROVIDE TOPSOIL, SOIL AMENDMENTS, AND MULCH IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS AS PART OF THE CONSTRUCTION DOCUMENTATION PACKAGE. 12" DEPTH TOPSOIL IS REQUIRED FOR ALL SHRUB AND TREE PLANTING AREAS (EXCEPT FOR STORMWATER FACILITIES), AND 6" DEPTH TOPSOIL IS REQUIRED FOR ALL SEEDED AREAS. REFER TO CIVIL DRAWINGS FOR TOPSOIL DEPTHS IN ALL STORMWATER FACILITIES.
8. ALL PLANTS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS PROVIDED AS PART OF THE CONSTRUCTION DOCUMENT PACKAGE.
9. QUANTITIES ARE LISTED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL COUNTS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO INSTALLATION. IN THE CASE OF A DISCREPANCY BETWEEN THE LEGEND AND THE PLAN, PLANTS INDICATED ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN THE LEGEND.
10. INSTALL AND MAINTAIN TREES FURNISHED BY TRIMET ("OWNER-FURNISHED TREES"). SEE PLANTING LEGENDS FOR SPECIES AND QUANTITIES THAT WILL BE PROVIDED. COORDINATE DELIVERY AND RECEIPT THROUGH RESIDENT ENGINEER (RE).
11. CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND ROUTING OF EXISTING UNDERGROUND UTILITIES PRIOR TO STARTING EXCAVATION. REPAIR ONLY DAMAGE TO EXISTING PIPES, UTILITIES, OR RELATED FACILITIES AT THE CONTRACTOR'S EXPENSE IN A MANNER APPROVED BY THE ENGINEER.
12. ADJUST PLANT LOCATIONS SO THAT VEGETATION DOES NOT CONFLICT WITH ABOVE-GROUND UTILITIES, OR WITH TRAFFIC SIGHT LINES, SIGNS, OR OTHER APPURTENANCES.
13. PRESERVE, PROTECT, AND MAINTAIN ALL IMPROVEMENTS WITHIN WORK AREAS, INCLUDING EXISTING TREES AND VEGETATION. THOROUGHLY CLEAN ALL IMPROVEMENTS AFTER COMPLETION OF WORK.
14. PROVIDE 12" ROOT BARRIER WHERE TREES ARE WITHIN 6' OF PAVED SURFACES, CURBS, OR WALLS, AND IN ALL TREE WELLS, UNLESS OTHERWISE REQUIRED BY APPLICABLE JURISDICTIONS, OR AS INDICATED ON PLANS. REFER TO DETAIL 4, SHEET L15E-300.
15. ALL TREES TO BE BALLED AND BURLAPPED (B&B), UNLESS OTHERWISE INDICATED IN LEGEND OR IN DRAWINGS.
16. REFER TO DEMOLITION DRAWINGS FOR TREES TO BE REMOVED.
17. PROVIDE 5' DIAMETER BARK MULCH RING AT 2"DEPTH AROUND ALL TREES LOCATED IN SEEDED AREAS.

TREE PLANTING LEGEND



BOTANICAL NAME	COMMON NAME	INSTALL SIZE
Acer circinatum	VINE MAPLE	7'-8',MULTI-STEM, 3 STEM MIN.
Acer macrophyllum	BIG LEAF MAPLE	2 1/2" CAL.
Arbutus menziesii	PACIFIC MADRONE	2 1/2" CAL.
Alnus rubra	RED ALDER	2 1/2" CAL.
Amelanchier laevis 'JFS-Arb' PP 15304	SPRING FLURRY SERVICEBERRY	2 1/2" CAL.
Betula platyphylla 'fargo' pp10963	DAKOTA PINNACLE BIRCH	2 1/2" CAL.
Cornus nuttalli	WESTERN FLOWERING DOGWOOD	2 1/2" CAL.
Fraxinus latifolia	OREGON ASH	2 1/2" CAL.
Myrica californica	PACIFIC WAX MYRTLE	6'-8' HT.
Nyssa sylvatica	BLACK TUPELO	2 1/2" CAL.
Prunus emarginata	BITTER CHERRY	2 1/2" CAL.
Prunus virginiana	CHOKECHERRY	2 1/2" CAL.
Prunus sargentii 'columnaris'	COLUMNAR SARGENT CHERRY	2 1/2" CAL.
Calocedrus decurrens	INCENSE CEDAR	10-16' HT.
Pinus contorta	SHORE PINE	10-16' HT.
Pseudotsuga menziesii	DOUGLAS FIR	10-16' HT.
Thuja plicata	WESTERN RED CEDAR	10-16' HT.
Thuja plicata 'Fastigiata'	HOGAN CEDAR	10-16' HT.

SK DESIGNED	05-03-11 DATE	
CM/AP DRAWN	05-03-11 DATE	
RT CHECKED	05-17-11 DATE	
APPROVED	DATE	

TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

GREENWORKS

DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION
710 N.E. HOLLADAY STREET
PORTLAND, OREGON 97232

SUBMITTED:	DATE:	APPROVED:	DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P20-A
LAND USE PERMIT
TROLLEY TRAIL PATH
LANDSCAPE NOTES AND LEGEND

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
AS SHOWN	TTR-5G	RH100544JB	

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Plot Date: 10/14/2011 6:59 PM shawn kummer

MASTER SHRUB/GROUNDCOVER LEGEND

DECIDUOUS SHRUBS

BOTANICAL NAME	COMMON NAME	INSTALL SIZE	SPACING
Cornus sericea 'Kelseyi'	DWARF REDTWIG DOGWOOD	1 GAL.	24" O.C.

EVERGREEN SHRUBS

BOTANICAL NAME	COMMON NAME	INSTALL SIZE	SPACING
Mahonia aquifolium	OREGON GRAPE	2 GAL.	AS SHOWN
Mahonia aquifolium 'Compacta'	COMPACT OREGON GRAPE	2 GAL.	AS SHOWN
Mahonia nervosa	LONGLEAF NERVOSA	2 GAL.	AS SHOWN
Mahonia repens	CREEEPING MAHONIA	2 GAL.	AS SHOWN
Rhododendron macrophyllum	PACIFIC RHODODENDRON	5 GAL.	AS SHOWN
Polystichum munitum	WESTERN SWORD FERN	1 GAL.	AS SHOWN
Mahonia nervosa	CASCADE BARBERRY	1 GAL	AS SHOWN
Buxus microphylla 'Baby Gem'	BABY GEM BOXWOOD	1 GAL.	24"O.C.

GRASSES / PERENNIALS / GROUNDCOVERS

BOTANICAL NAME	COMMON NAME	INSTALL SIZE	SPACING
Arctostaphylos uva-ursi	KINNICKINNICK	1 GAL.	24" O.C.
Helictotricon sempervirens	BLUE OAT GRASS	1 GAL.	20" O.C.
Juncus patens	SPREADING RUSH	1 GAL.	12" O.C.
Juncus effusus	COMMON RUSH	1 GAL.	12" O.C.
Deschampsia cespitosa	TUFTED HAIR GRASS	1 GAL.	12" O.C.

TYPE 1: MEDIUM HT. PLANTING (24"-36")

NOTES: LOCATED AT TOPS OF RETAINING WALLS

	BOTANICAL NAME	COMMON NAME
	Mahonia repens	CREEPING MAHONIA
	Mahonia aquifolium 'compacta'	COMPACT OREGON GRAPE
	Polystichum munitum	SWORD FERN
	Deschampsia cespitosa	TUFTED HAIR GRASS

TYPE 2: SCREEN PLANTING (30" + HT.)

NOTES: LOCATED AT TOPS OF RETAINING WALLS

	BOTANICAL NAME	COMMON NAME
SHRUBS	Vaccinium ovatum	EVERGREEN HUCKLEBERRY
	Arbutus unedo 'compacta'	COMPACT STRAWBERRY TREE
	Mahonia aquifolium	OREGON GRAPE
	Rhododendron macrophyllum	PACIFIC RHODODENDRON
	Poylstichum munitum	SWORD FERN
	Ceanothus thyrsiflorus 'Victoria'	VICTORIA CALIFORNIA LILAC

SEED MIXES

TYPE	APPLICATION RATE
PDX ECOLOGY MIX BY HOBBS & HOPKINS Dwarf Perennial Rye Grass Hard Fescue Yarrow Micro Clover Strawberry Clover Sweet Alyssum	2 LBS./1,000 SF

LANDSCAPE MATERIALS

TYPE
BARK MULCH

VINE PLANTINGS - 2 GAL. CONT., SPACED 12" O.C., REFER TO DETAIL THIS SHEET.
PARTHENOCISSUS TRICUSPIDATA BOSTON IVY

LIMITS OF CONSTRUCTION

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Plot Date: 10/14/2011 6:58 PM shawn kummer

SK DESIGNED	05-03-11 DATE	
CM/AP DRAWN	05-03-11 DATE	
RT CHECKED	05-17-11 DATE	
APPROVED	DATE	

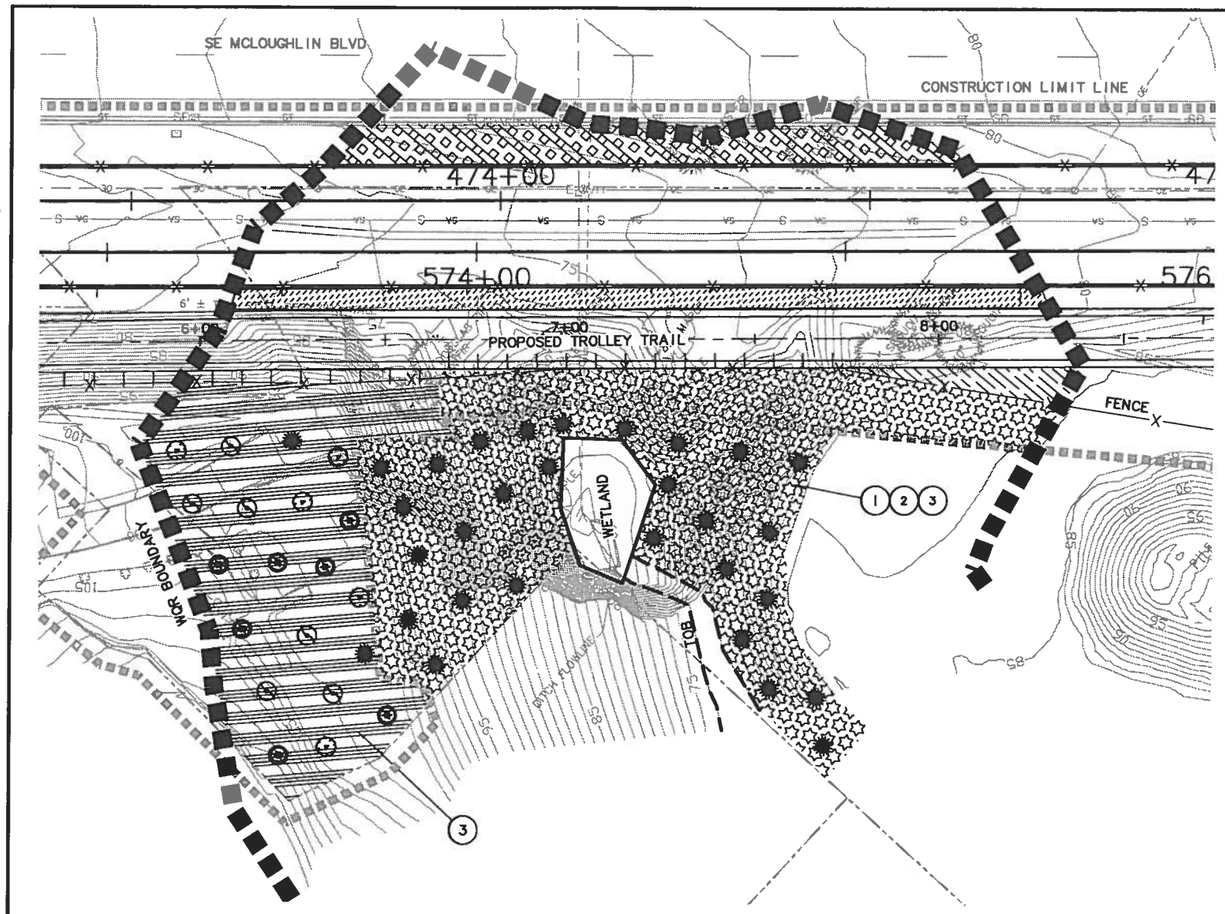
TRI-COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

GREENWORKS | DAVID EVANS AND ASSOCIATES INC. | TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION 710 N.E. HOLLADAY STREET PORTLAND, OREGON 97232

SUBMITTED: | DATE: | APPROVED: | DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P20-B
LAND USE PERMIT
TROLLEY TRAIL PATH
LANDSCAPE NOTES AND LEGEND

SCALE:	DRAWING NO.:	CONTRACT NO.:	SHEET NO.:
AS SHOWN	TTR-5H	RH100544JB	



20' 10' 0' 20' 40'
SCALE: 1" = 20'

PLANT SCHEDULE: TROLLEY TRAIL WQR PLANTING TYPE 1							
SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	THPL	28	Thuja plicata – Western redcedar	4' HT.	B&B	as shown	
	SHRUBS						
	MANE	50	Mahonia nervosa – low Oregon grape	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	OECE	40	Oemleria cerasiformis – indian plum	18–24" HT.	Bareroot	4' o.c.	scattered
	POMU	300	Polystichum munitum – sword fern	1 gal.	container	4' o.c.	scattered
	RUPA	40	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SARA	20	Sambucus racemosa – red elderberry	18–24" HT.	Bareroot	4' o.c.	scattered
	SYAL	90	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SEED						
	Agrostis exarata– spike bentgrass			0.14 lbs	APPLICATION RATE:		
	Deschampsia elongata– slender hairgrass			0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE		
	Glyceria elata– Western mannagrass			0.34 lbs			
				1.04 lbs	Total PLS per acre		

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

PLANT SCHEDULE: TROLLEY TRAIL WQR PLANTING TYPE 2							
SYMBOL	ABBR.	QTY	BOTANICAL NAME / COMMON NAME	SIZE	CONDITION	SPACING	NOTES
	TREES						
	ACMA	5	Acer macrophyllum – big leaf maple	4' HT.	B&B	10' o.c.	
	PSME	7	Pseudotsuga menziesii – Douglas–fir	4' HT.	B&B	10' o.c.	
	RHPU	6	Rhamnus purshiana – cascara	4' HT.	B&B	10' o.c.	
	THPL	2	Thuja plicata – Western redcedar	4' HT.	B&B	as shown	
	SHRUBS						
	ACCI	10	Acer circinatum – vine maple	18–24" HT.	Bareroot	4' o.c.	
	AMAL	10	Amelanchier alnifolia – serviceberry	18–24" HT.	Bareroot	4' o.c.	
	COCO	15	Corylus cornuta – beaked hazelnut	18–24" HT.	Bareroot	4' o.c.	
	MAAQ	20	Mahonia aquifolium – tall Oregon grape	18–24" HT.	Bareroot	4' o.c.	
	MANE	40	Mahonia nervosa – low Oregon grape	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	OECE	20	Oemleria cerasiformis – indian plum	18–24" HT.	Bareroot	4' o.c.	scattered
	POMU	150	Polystichum munitum – sword fern	1 gal.	container	4' o.c.	scattered
	RUPA	30	Rubus parviflorus – thimbleberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SARA	15	Sambucus racemosa – red elderberry	18–24" HT.	Bareroot	4' o.c.	scattered
	SYAL	50	Symphoricarpos albus – common snowberry	18–24" HT.	Bareroot	4' o.c.	clusters of 5
	SEED						
	Agrostis exarata– spike bentgrass			0.14 lbs	APPLICATION RATE:		
	Deschampsia elongata– slender hairgrass			0.56 lbs	Pounds of Pure Live Seed (PLS) PER ACRE		
	Glyceria elata– Western mannagrass			0.34 lbs			
				1.04 lbs	Total PLS per acre		

NOTE: PROVIDE MULCH RING AT EACH TREE AND SHRUB. MULCH RING SHALL BE 18" DIAMETER AND 2" DEPTH.

BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Deschampsia cespitosa	TUFTED HAIRGRASS	1 GAL.	2' O.C.

BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Mahonia repens	CREEPING MAHONIA	1 GAL.	30" O.C.

BOTANICAL NAME	COMMON NAME	SIZE	SPACING
Mahonia nervosa	LOW OREGON GRAPE	1 GAL.	3' O.C.
Polystichum munitum	SWORD FERN	1 GAL.	3' O.C.

KEYED NOTES:

1. CONTRACTOR SHALL USE HAND TOOLS ONLY TO CLEAR ALL ENGLISH IVY, CHERRY LAUREL, AND CLEMATIS FROM THE HATCHED AREA. CONTRACTOR SHALL DISPOSE OF REMOVED MATERIAL AT A LEGAL OFF–SITE LOCATION.
2. IMMEDIATELY AFTER CLEARING THE AREA, THE CONTRACTOR SHALL REPLANT WITH TREES, SHRUBS, AND SEED PER PLANT SCHEDULE ON THIS SHEET.
3. AFTER PLANTING, CONTRACTOR SHALL SPREAD CLEAN STRAW MULCH OVER ENTIRE PLANTING AREA. NEW PLANTINGS SHALL NOT BE DAMAGED BY MULCH APPLICATION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL METHODS AND MATERIALS. EXTENDED WET WEATHER CONDITIONS MAY REQUIRE MAINTENANCE AND/OR REPLACEMENT OF EROSION CONTROL MATERIALS.

NO.	DATE	BY CHK.	APPD.	REVISIONS

SAR DESIGNED 08-02-11 DATE
SAR DRAWN 08-02-11 DATE
EES CHECKED DATE
APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals | DAVID EVANS AND ASSOCIATES INC.

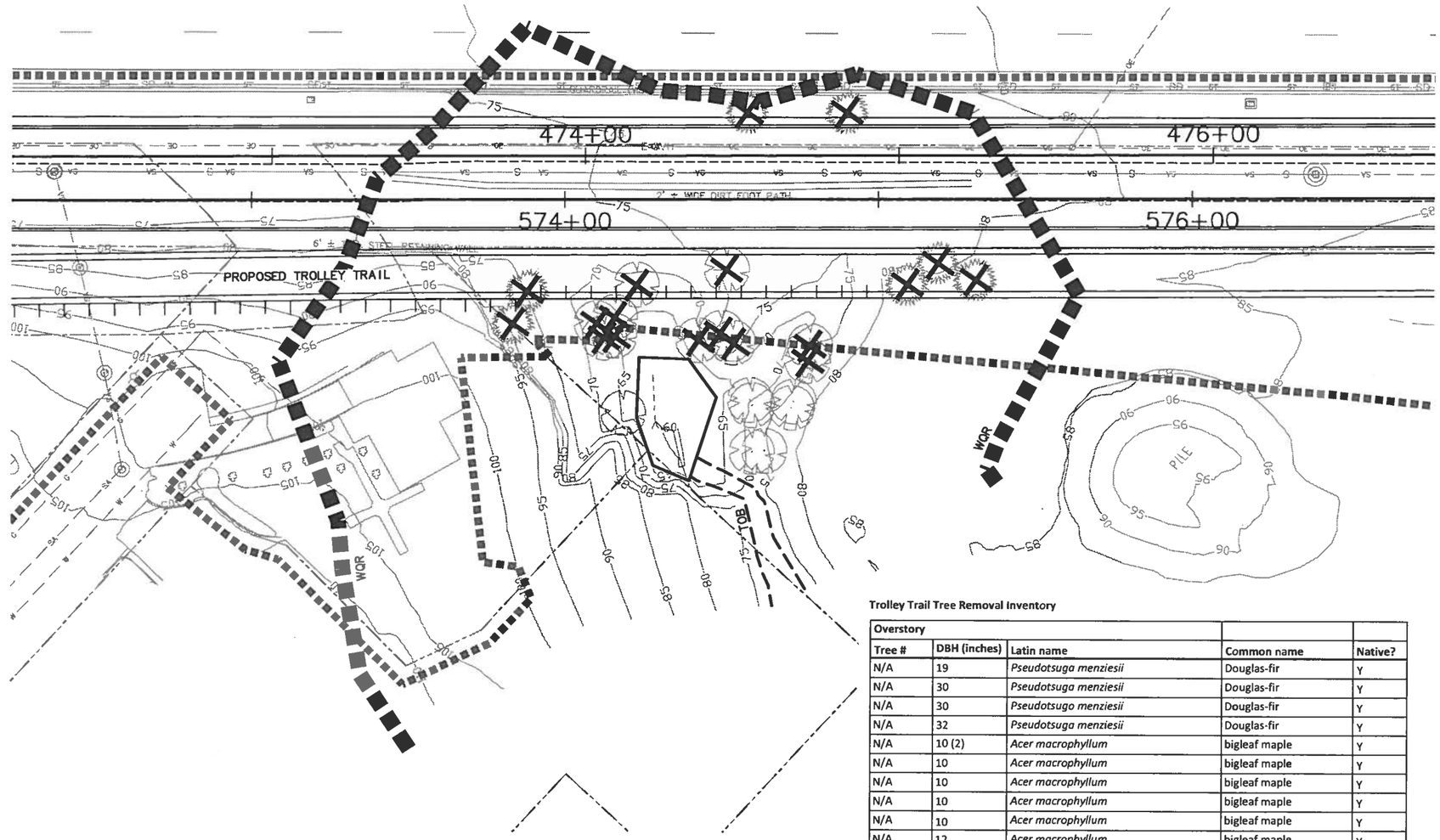
TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION 710 N.E. HOLLADAY STREET PORTLAND, OREGON 97232

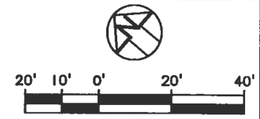
SUBMITTED: DATE: APPROVED: DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P32
LAND USE PERMIT
TROLLEY TRAIL PATH
MITIGATION SITE PLAN

SCALE: AS SHOWN | DRAWING NO.: TTR–7A | CONTRACT NO.: RH100544JB | SHEET NO.:

P:\T\TMT\X00001127\04000AD\Permits\Land Use Permit\3-Trolley Trail\TTR-7A.dwg Oct. 13, 2011 - 2:18 PM Jeff Hammond
Plot Date: 10/14/2011 1:24 PM Jeff Hammond





Trolley Trail Tree Removal Inventory

Overstory				
Tree #	DBH (inches)	Latin name	Common name	Native?
N/A	19	*Pseudotsuga menziesii*	Douglas-fir	Y
N/A	30	*Pseudotsuga menziesii*	Douglas-fir	Y
N/A	30	*Pseudotsugo menziesii*	Douglas-fir	Y
N/A	32	*Pseudotsuga menziesii*	Douglas-fir	Y
N/A	10 (2)	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	10	*Acer macrophyllum*	bigleaf maple	Y
N/A	12	*Acer macrophyllum*	bigleaf maple	Y
N/A	12	*Acer macrophyllum*	bigleaf maple	Y
N/A	12	*Acer macrophyllum*	bigleaf maple	Y
N/A	14	*Acer macrophyllum*	bigleaf maple	Y
N/A	18	*Acer macrophyllum*	bigleaf maple	Y
N/A	30	*Acer macrophyllum*	bigleaf maple	Y
N/A	38	*Sequoiadendron giganteum*	giant sequoia	N
N/A	40	*Sequoiadendron giganteum*	giant sequoia	N
N/A	42	*Sequoiadendron gigonteum*	giant sequoia	N

LEGEND

TOB – TOP OF BANK

WQR – WATER QUALITY RESOURCES

X INDICATES TREE BEING REMOVED

NO.	DATE	BY / CHK.	APPD.	REVISIONS

SAR DESIGNED 08-02-11 DATE

SAR DRAWN 08-02-11 DATE

EES CHECKED DATE

APPROVED DATE

TRI–COUNTY METROPOLITAN TRANSPORTATION DISTRICT OF OREGON

VIGIL AGRIMIS design professionals | DAVID EVANS AND ASSOCIATES INC.

TRIMET CAPITAL PROJECTS AND FACILITIES DIVISION 710 N.E. HOLLADAY STREET PORTLAND, OREGON 97232

SUBMITTED: | DATE: | APPROVED: | DATE:

PORTLAND TO MILWAUKIE LRT
EAST SEGMENT Exhibit P33
LAND USE PERMIT
TROLLEY TRAIL PATH
PROPOSED TREE REMOVAL AT WQR PLAN

SCALE: AS SHOWN | DRAWING NO.: TTR–4F | CONTRACT NO.: RH100544JB | SHEET NO.:

P:\T\TMT00000127\04000CAD\Permits\Land Use Permit\3–Trolley Trail\TTR–4F.dwg Oct. 14, 2011 – 11:52 AM Jeff Hammond
Plot Date: 10/14/2011 3:51 PM Jeff Hammond