Mt Scott Creek Restoration

Clackamas County Water Environment Services

Written Statement for
City of Milwaukie Land Use Permitting Applications
Community Service Uses
Natural Resources

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Mt. Scott Creek Restoration

Land Use Application

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1. Summary Information

Project Summary

Clackamas County Water Environment Services, North Clackamas Parks and Recreation District, Oregon Department of Fish and Wildlife, and the City of Milwaukie are seeking approval of a community service use and natural resource management plan for a habitat restoration project proposed at the confluence of Camas Creek and Mt Scott Creek in North Clackamas Park. This project involves the construction of overlooks and pathways for interpretive activities, planting of native vegetation, stabilizing stream bank with log and boulder structures, and the removal of a culvert to restore and enhance fish habitat.

Co-Applicants

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Clackamas County Water Environment Service
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City of Milwaukie Land Use Permit Applications

Community Service Use
Natural Resource Review

Pre application Conference

12-003PA, March 22, 2012

Address:

North Clackamas Park
5440 SE Kellogg Creek Drive
Tax Lot IDs - 22E06AC00100; 22E06AB00417; 22E06AB00617

Total Lot Size

47 acres

Zoning:

Community Service Use
Residential Zone R-10

2. Applicable Regulations

- Milwaukie Municipal Code (MMC) Section 19.301 Development Standards, Section 19.402 Natural Resource Review, and Section 19.904 Community Service Use (CSU).

3. Existing Conditions

Mt. Scott Creek is one of eight major sub-basins located within the 10,300 acre Kellogg / Mt. Scott Creek Watershed. The Kellogg / Mt. Scott watershed is a highly developed urban watershed that is approximately 34 percent impervious. The general challenges and concerns are typical for an urban watershed such as this one, and include fish passage issues, lack of riparian vegetation, in-stream erosion, and water quality concerns. Adult salmon, steelhead, and cutthroat trout have been documented in Mt. Scott Creek. The creek flows from the northeast corner of the watershed near Happy Valley, west to its confluence with Kellogg Creek. Our project falls within the lower reach of Mt. Scott Creek. This section of creek collects runoff from approximately 1,622 acres, and is approximately 45 percent impervious. This section of Mt. Scott Creek can be characterized as lacking in overhead canopy, deep pools, large woody debris, and can experience high summer water temperatures.

Existing Park Conditions

Just upstream of the confluence of Mt. Scott Creek and Kellogg Creek, is the 47 acre North Clackamas Park. Mt. Scott Creek flows along the northern border of the park. Within the park, Mt. Scott creek is 10 to 20 feet wide. The stream banks are generally low and rise one to two feet above the stream bed. Areas of erosion and undercutting are apparent on the banks. The creek is covered with a riparian forest that includes native species such as Red Alder, Western Red Cedar, Sitka Willow, Douglas Spiraea, and Red-Osier Dogwood. Typical infestations of non-native plant species occur throughout North Clackamas Park such as Himalayan Blackberry and large stands of English Ivy. These plants are especially prevalent within the riparian forest bordering Mt. Scott Creek.

Camas Creek is a shallow tributary to Mt. Scott Creek that originates in a palustrine emergent wetland in the northeastern portion of the park and meets Mt. Scott Creek in the western portion of the park. North Clackamas Park is divided into a northern half and southern half by Camas Creek. The small creek is covered with a mixed Oregon Ash/Oregon White Oak forest located along its banks. There is an existing culvert located at the mouth of Camas Creek as it flows into Mt. Scott Creek.

North Clackamas Park is a large community park maintained by the North Clackamas Parks and Recreation District (NCPRD). It contains a number of recreation amenities such as four baseball / softball fields, equestrian facility, picnic shelters, off-leash dog area, walking trails, and play structures. Previous successful restoration projects have taken place within the park to remove invasive non-native species and restore the creek buffers and riparian forest canopies.

4. Project Description

Water Environment Services (WES) received funds through Metro's Nature in Neighborhoods Capital Grant program to improve in-stream and riparian areas along lower Mt. Scott Creek within North Clackamas Park. The project will enhance ecological functions and habitat diversity for fish and wildlife. Additional elements of the project will improve watershed health awareness, provide community stewardship opportunities, increase educational opportunities, and enhance access to nature. Specifically, the Mt. Scott Creek Restoration project includes the following elements: 48,000 total square feet of restored and protected riparian forest habitat, 4 large woody debris installations for fish habitat - including approximately 45 logs total, 320 linear feet of stream bank stabilization and restoration (within the total 550 lf section of creek in the project area), 530 linear feet of decommissioned trail, 30 linear foot pedestrian bridge for ADA access over wetlands, 2 unique and sustainably designed creek overlooks with educational interpretive signs, 1 culvert removal and bank restoration at Camas Creek confluence for fish passage.

1. **Stream Bank Restoration** – (320 LF of stream bank improvements) Provide log stabilized banks and back will with soils and plants. Strategically place large woody debris and boulders along stream bank. Soil remediation to improve compacted soils and plant native trees, shrubs and herbaceous species.
2. **Riparian Enhancement Area** – (12,720 SF planting, 400 LF of trail decommissioning, and 540 LF of new fencing) Decommission trails and add woody debris barriers. Soil remediation to improve compacted soils. Plant native trees, shrubs and groundcover with a fence addition to protect the new planting areas.
3. **Log Jam Overlook**– (260 SF overlook, with 190 lf of new trail) Create views of the creek habitat and native vegetation. Use a naturalistic style of construction to blend the overlook into the seating. Use the log jam to create habitat opportunities in the creek.
4. **Camas Creek Confluence Overlook** – (400 SF overlook, 35 LF of trail) Create a raised overlook deck near the confluence to take advantage of views up both creeks. Offer a unique experience that reduces human impact in and around the confluence that also conveys the restoration story through interpretive signs.
5. **Culvert Removal and Restoration at Camas Creek Confluence** – (20 LF of culvert removal, 45 LF trail decommissioning, 150 LF of bank stabilization, 5,000 SF of restoration planting) Remove the culvert, other concrete debris, and asphalt path. Re-grade the confluence stream banks to stabilize them and create habitat with woody debris and boulders. Use logs to stabilize head cutting in Camas Creek with 6" maximum drops. Plant with native riparian trees and shrubs.
6. **New ADA Pedestrian Bridge** – (30 LF) Construct new pedestrian bridge across Camas Creek. Incorporate the bridge into the existing trail system and provide restoration planting in disturbed areas. The increased span of the new pedestrian bridge will allow for 130 SF of newly restored wetland and open up the Camas Creek channel. The new bridge will also provide ADA access to the playground located to the north of Camas Creek.

Partnerships

Clackamas County Water Environment Services (WES), North Clackamas Parks and Recreation District (NCPRD) and the City of Milwaukie worked together to develop a concept plan and apply for a Metro Nature in Neighborhoods capital grant in 2011. Several other partners supported the proposal, have been actively engaged in developing the project and have committed to provide financial or in-kind support for the project. These partners will continue to work together through permitting and planning for construction, as well as coordination of planting events and continued maintenance of the plantings and removal of invasive species. The following list describes each partner's role and commitment:

Organization	Role	Project Commitments
WES	Project manager	Funding toward concept development, design and construction
NCPRD	Park provider	Assistance with concept development, design and partial funding of construction, continued management of the site
City of Milwaukie	Property owner	Assistance with concept development, design and permitting, continued use of property as park and natural area
ODFW	Advisory	Assistance/participation in planning, technical expertise
Friends of Trees	Restoration planting lead	Assistance with restoration planting design and coordination of community planting events, continued maintenance of plantings
North Clack. Urban Watersheds Council	Project participants	Assist in community outreach and public involvement, provide volunteers to assist with planting and maintenance of planting
Friends of Kellogg and Mt Scott Cr.	Creek health advocates	Assist in coordinating citizen participation, invasive plant removal and ongoing maintenance of plantings
Friends of North Clack. Parks	Park support and citizen education	Assist in coordinating citizen participation, invasive plant removal and ongoing maintenance of plantings
Milwaukie Center	Park neighbor and steward	Continued support for older adults using the park, continued stewardship

In 2008-9, the Oregon Department of Fish and Wildlife (ODFW) and WES collaborated to assess the health of aquatic ecosystems in the county's urban streams. ODFW field staff conducted fish and

habitat surveys in two areas of urban Clackamas County, including Mt. Scott Creek. Fish presence and abundance were surveyed and analyzed, and habitat conditions were assessed. The reach of Mt. Scott Creek in the project area is described as "Park/rural residential/industrial; degraded riparian w/deciduous vegetation dominant; Heavy bamboo infestation through N. Clackamas Park; Small wood present w/limited key pieces; moderate fine sediment load; in-stream habitat limited by lack of complex structures; partial fish passage barrier at culvert."

ODFW also developed recommendations for restoration and protection of priority stream reaches. For the reach of Mt. Scott Creek in the project area, the report noted that "…these areas would greatly benefit from focused habitat restoration projects (particularly fish passage), increased protection of riparian/floodplain areas, increased public awareness, and outreach related to understanding of watershed health issues." The report developed objectives for this reach to improve in-stream habitat for rearing Chinook, Coho, and Steelhead; and to remove invasive vegetation and replace with natives. It called for placing large wood structures at strategic locations within Mt. Scott Reach 1 to benefit rearing juvenile salmonids from within Mt. Scott and Kellogg creeks, and outside from the Willamette River. It also called for removing invasive vegetation and replacing with natives, with an emphasis on conifers such as Western Red Cedar to greatly improve riparian zone conditions (ODFW 2009). This proposed project was developed and designed to carry out the ODFW recommendations.

See Section 4, Appendix 10 for a Letter of Support from Todd Alsbury, District Fish Biologist, ODFW-North Willamette Watershed District.

5. Community Service Use Review (Section 19.301 and 19.904)

Development Standards R-10 Residential Zone (Section 19.301)

The project site is located in an Urban Standard Density (R10) District (§19.301.1). The zone permits recreational facilities – public and/or privately owned parks and other similar uses as determined by the Planning Commission as a community service use (CSU). The project is being submitted to receive approval for a new CSU for the proposed recreational elements within the natural resource overlay. The areas of North Clackamas Park covered by the natural resource overlay are not considered to have existing approval as a CSU by the Planning Commission. Therefore, the applicant is applying for a new CSU for the small overlooks, pathways, and pedestrian bridge referred to as the recreational elements in this document.

The approval criteria of the underlying base zone (R10) do not apply to restoration or enhancement projects like the one proposed.

Community Service Use Approval Criteria (Subsection 19.904.4)

Community service use approval criteria and design requirements for this project are reviewed in the following section:

A. *An application for a community service use may be allowed if the following criteria are met:*

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

Response: These design guidelines are not applicable due to the scope of the proposed work as described in the project description and written statement above. No buildings are proposed as a part of the project.

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

Response: The hours and levels of operation will be consistent with the current hours and levels of operation at North Clackamas Park. These items are set by North Clackamas Parks and Recreation and follow the standards hours and levels of operation for parks in our region.

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

Response: No negative impacts on the neighborhood will occur due to the improvements proposed for this project. Elements of the project will improve watershed health awareness, provide community stewardship opportunities, increase educational opportunities, and enhance access to nature. The placement of the overlooks will benefit the larger park by providing a location in the park to gather and learn about the ecological enhancement of fish habitat in the Kellogg-Mt. Scott Creek Watershed. The broader community will benefit from the promotion of fish habitat at the confluence of Mt Scott Creek and Camas Creek. The removal of the culvert and restoration of the confluence will offer the highest level of habitat enhancement. Currently, the culvert presents as a hazard to the public during high water events when water rushes over the top and erodes the bank. The culvert hydraulically disconnects Camas Creek from Mt Scott Creek causing flooding in that area of the park. Although removal of the culvert will impact the park by limiting access to the north side of Camas Creek, a crossing in this

location would prevent the ability to design a space for learning at the confluence. Also, this area is needed for placement of large wood for fish habitat enhancement, to allow resting and hiding places for migrating fish, especially during high flows in Mt Scott Creek. Upgrading the pedestrian bridge upstream of the confluence will help promote access to the north side of Camas Creek at that access point. Furthermore, crossings over the Water Quality Resource and Habitat Conservation Area should be limited to alleviate erosion caused by heavy foot traffic in the natural areas of the park and to limit disturbance to fish and wildlife habitats. The restoration of Mt Scott Creek will provide a unique juxtaposition of community uses with the ball fields to the south showing the public how a healthy stream corridor looks and functions. Public access will be controlled near the stream edge which may be perceived as decreasing the public access. An interpretive sign will be posted along the trails in that area of the park to alleviate that concern by explaining the ecological benefits of protecting the stream bank. The recreational elements are located away from adjacent property boundaries. Activities related to these improvements will not increase the noise levels or cause a negative impact on the neighborhood, except potentially--temporary impacts during construction.

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

Response: The project is located within the 47-acre North Clackamas Park, along Mt. Scott Creek. Mt Scott Creek was identified by the City as a primary protected water feature. Based on multiple assessment reports, the restoration activities, trail decommissioning and bank restoration are appropriate for this reach of Mt. Scott Creek. The recreational elements are appropriate for the current park setting; the locations of the elements are supported by the proposed NCPRD Master Plan. See Section 4, Appendix 5 for North Clackamas Park Master Plan.

6. Response to Natural Resources Review (Section 19.402)

<u>Natural Resource Management Plans Review (Subsection 19.402.10)</u>

Natural resource management plan regulations apply to all properties containing protected water features as identified on the City's Water Quality Resource (WQR) and Metro's Habitat Conservation Area (HCA) maps. Both Mt. Scott Creek and Camas Creek are primary protected water features and are identified on the City's WQR/HCA maps. The reach of WQR within our project boundary is classified as Class B where the combination of trees, shrubs, and ground cover are 80% present and the canopy coverage is between 25-50%. Patches of the WQR along the stream bank are classified as Class C where bare ground and erosion is present. The plans have been prepared in accordance with standards and guidelines appropriate to natural resource agency. Oregon Department of Fish and Wildlife (ODFW) is a partner with WES in preparing the plans for this project. See description of ODFW involvement under Partnerships and Section 4, Appendix 2 for ODFW Habitat Assessment of Streams in Clackamas County. The natural resource management plans will be reviewed by the planning commission because the proposed recreational elements (pathways, pedestrian bridge, and overlooks) require approval as a Community Service Use. See General Discretionary Review (Subsection 19.402.12) of this narrative for detailed information about the proposed recreational elements.

C. Approval Criteria

Every plan prepared for approval under Section 19.402 shall demonstrate that it encourages restoration activities…

Response: The proposed project will make important alterations along Mt Scott Creek that will improve the conditions for salmanoid species. Restoration and enhancement efforts will significantly improve riparian habitat where channelization and compacted soils have caused significant channel degradation.

The project will enhance ecological functions and diversity for fish and wildlife by restoring forest riparian habitat, enhancing the stream bank with log stabilization and other woody debris, planting native plant species, decommissioning an underutilized trail and remediating compacted soils. See full description of restoration activities under the General Discretionary Review (Subsection 19.402.12) of this narrative.

D. Construction Management Plans

Response: The construction management plan addresses all items outlined in Subsection 19.402.9 and is included as a part of this application. See Section 3 of this narrative for detailed construction plans.

E. Ongoing Maintenance

Natural resource management plans shall demonstrate how ongoing maintenance is part of the associated restoration or enhancement activities.

Response: NCPRD manages and maintains North Clackamas Park, including maintenance of native vegetation that has been installed in other areas of the park. NCPRD will continue to be responsible for overall maintenance activities and to coordinate with Friends of Trees for maintenance of this area. WES has an ongoing relationship with Friends of Trees (FOT) to install restoration plantings and maintain them on multiple sites; maintenance typically continues for 3 to 5 years after installation on these partner projects. FOT recruits citizens from the neighborhoods surrounding the restoration site and beyond to volunteer in these efforts. FOT is available to serve in a similar role for this project.

<u>Development Standards (Subsection 19.402.11)</u>

A. Protection of Natural Resources during Site Development.

1. Restore the WQR and HCA Area

Response: The sole purpose of the project is to enhance the condition of existing habitat within the project area, which includes both WQR area and HCA. By approving the proposed community service use and natural resource management plan, the Planning Commission will authorize the applicant to carry out the project and its attendant mitigation measures, which will be addressed below in response to MMC 19.402.12.

2. Protect Existing Vegetation

Response: Except for the invasive vegetation that will be removed, existing vegetation will be protected and left in place to the extent possible. Where existing vegetation must be removed to allow access for equipment and materials, it will be replaced prior to completion of the project. Work areas will be marked and minimized to limit potential damage to the resource area.

3. Native Soils

Response: Native soils shall be protected and enhanced, by loosening compacted areas.

4. Erosion and Sediment Control to Prevent runoff into WQR area

Response: Erosion and sediment control measures will be installed and maintained throughout the project as shown on plan sheet L1.00 and detail sheet L3.00 of Section 3 (Plans and Graphics).

5. *Limit post-development Stormwater Flows*

Response: Minimal development is proposed, therefore, no new stormwater flows will results from this project. Furthermore, the restoration work being proposed on this project will result in a net loss of impervious surface with the removal of 1,950 SF of asphalt removal.

6. *Flag and fence the WQR and HCA area*

Response: Since restoration work will be occurring within the WQR area and HCAs, it is not practicable to flag the entire resource area. Work areas will be marked to minimize disturbance and eliminate the potential for unnecessary disturbance to the resource area.

7. *Preserve existing corridors of canopy and natural vegetation*

Response: The entire area of the project is designated as either a WQR or HCA. Construction will be phased to minimize the impacts of the new pathways, overlooks and pedestrian bridge. All work, including the restoration work, will be completed within the In-Water work period for July 15th to September 30th as established by ODFW. All areas disturbed by construction shall be restored as shown in Planting Plan. See Section 3, Plans, Sheet L2.01.

8. *Shield lights*

Response: The project is not proposing any permanent lights. In the event that site lighting is necessary during the construction, lights will be shielded to minimize impacts to other parts of the resource area on the site.

9. *Shall conform to a construction management plan*

Response: All work on the property shall conform to the construction management plan provided as part of the application. The construction management plan follows the standards outlined in 19.402.9. See Section 3 of this narrative for detailed construction plans.

B. *General Standards for Required Mitigation for WQR and HCA areas*

Response: The entire project area is designated as either WQR area or HCA. The construction of two overlooks, additional pathways, and pedestrian bridge will disturb approximately 2,120 square feet. In accordance with the mitigation requirements, the proposed project will meet and exceed the required 22 new trees and 106 new shrubs with the restoration activities. Open soil areas remaining after the tree and shrub plantings will be seeded to provide the required 100% surface coverage. Except for the removal of invasive plants and the removal of vegetation necessary to allow equipment access to the site, existing vegetation will remain in place. New plantings will increase the overall connectivity of vegetation on the site. Any impacts relating to disturbance of the resource will be mitigated on the project site. Work areas will be marked to limit unnecessary disturbance to the resource. Planting is scheduled for winter 2012-2013, a few months after the completion of in-stream work. Bare-root stock will be used for planting. Survival rates for bare-root stock are highest if planted mid-winter. As a partner in this project, Friends of Trees will lead the restoration and mitigation planting. Friends of Trees and NCPRD will monitor and maintain the trees and shrubs for at least 3 years after completion and will meet a minimum 80% survival rate. Friends of Trees and NCRPD maintain a strong partnership outside of this project and both organizations are devoted to ongoing enhancement projects within North Clackamas Park. See Section 3 of this narrative for the detailed planting plan and legend. The project will follow all Development Standards (Subsection 19.402.11) as stated above.

General Discretionary Review (Subsection 19.402.12)

The general discretionary review will provide Planning Commission specific information to analyze the impacts of development on WQRs and HCAs, including measures to prevent negative impacts and requirements for mitigation and enhancement.

Application Requirements

1. *Topographic Site Map*

Response: See Section 3, Plans, Sheet L1.00 Existing Conditions Plan for topographic information (1-ft contours as well as demarcation of the WQR and HCA area. Mt. Scott Creek and Camas Creek are both identified as "primary protected water features."

2. *Natural Features and Location of Wetlands*

Response: See Section 3, Plans, Sheet L1.00 Existing Conditions Plan for the location of the largest trees within our project area (over 6 inches in diameter at breast height). Sheet L1.00 also shows the existing wetland boundaries which have received concurrence from DSL. See Section 4, Appendix 6 for DSL Wetland Delineation and Concurrence Letter.

3. *Assessment of WQR area and HCA area*

Response: NCPRD, working with volunteers, have made initial efforts to restore and enhance the WQR corridor onsite. Several areas just outside our specific project area are in Good condition. Due to the need for restoration activities, our project area consists of Marginal condition (upper bank areas) or Poor condition (scatter patches of bare ground). The riparian area adjacent to the south bank of Mt. Scott Creek, west of the Camas Creek Confluence will benefit from restoration. Habitat deficiencies exist, including homogeneity, bank erosion, lack of large woody debris, lack of overhanging cover and invasive species. Heavy foot traffic has trampled vegetation and caused soil compaction and erosion. The HCA in the project would generally be described as mostly lawn. The HCA located to the north of the Camas Creek is mostly open lawn which is used as a dog park. A playground is also located within that area of HCA. On the southern edge of Mt Scott Creek and Camas Creek, the HCA overlaps with the WQR zone and is classified as wetland and riparian. Efforts have been made to remove invasive species in these areas but there is still a presence of invasive species within this zone of the HCA. Along the edge of the HCA, an existing asphalt path meanders around the ball fields and the HCA edge is lawn. See Section 4, Appendix 3-4 for more detailed information about the previous planning efforts that have assessed the WQR and HCA riparian area within our project area.

4. *Vegetation Inventory*

Response: See Section 3, Plans, Sheet L1.00 Existing Conditions Plan, which documents all the largest trees within our project area (over 6 inches in diameter at breast height). Approximately 60% of the project area is covered by tree canopy and another 10% by other groundcover, with several significant patches of bare ground.

A. *Alternatives Analysis*

WES retained GreenWorks PC and Inter-Fluve, Inc. to design the recreational elements and the proposed restoration plans. GreenWorks worked with WES, NCRPD, and ODFW to locate the overlooks, pathways and pedestrian bridge. These three recreational elements have been identified as elements that would offer a unique experience of the natural resource that reduces the human impact in and around Mt. Scott Creek and Camas Creek. Inter-Fluve is based in Hood River, Oregon, and has extensive experience in integrating natural science with water resources engineering to create long term sustainable design solutions for stream and river restoration. Inter-Fluve has a strong understanding of

engineered log jams and log placement, fisheries biology, hydrology, hydraulics, sediment, fluvial geomorphology, and wetland ecology. Inter-Fluve used hydrologic modeling and analysis to determine what conditions would be most suitable to salmonid fishery in this reach of Mt. Scott. The proposed management plans are based on the results of that analysis.

As required by this subsection, a proposal must provide satisfactory responses to the following criteria:

1. *No practicable alternatives*

Response: By its very nature, restoration work "disturbs" the resource area, though it does so for positive impact that enhances the resource. While some enhancement approaches may be more or less effective than others, restoration is, by definition, a positive impact to the resource. The primary alternative to enhancing the resource area on the project site is to do nothing to improve the resource, which is counter to the intent of the WQR and HCA regulations as expressed in MMC 19.402

<u>Overlook Alternative Analysis:</u>

A no-build option for the overlooks is an option. The permanent impact of an overlook takes away from the natural landscape along the stream bank. However, the design team and all stakeholders involved felt that if areas were not designed for people to gather along the stream bank erosion and compaction would continue to be an issue due to heavy foot traffic. Recreational amenities like overlooks and interpretive signage are promoted in WQR and HCA overlays because agencies like Metro wish to educate the public about the natural resources in our neighborhoods. In most cases, low-impact outdoor recreation facilities for public use including overlooks and interpretive and educational displays are limited exemptions in HCA overlays. The design team explored the alternative of only one overlook at the confluence of Mt Scott Creek and Camas Creek to limit impact. This location was maintained in this alternative because the confluence has the highest scenic value and environmental education potential. After further discussion, a secondary overlook was considered to provide a smaller more intimate space to view the natural area. The preferred alternative includes both locations to offer a diversity experience for the public along the riparian edge and provide controlled access to the natural resource in locations that appear to be highest in demand, according to current use.

<u>Bridge Alternative Analysis:</u>

A no-build option for the pedestrian bridge is not a viable alternative. The existing bridge limits access to the playground on the north side of Camas Creek because it is not ADA accessible. The width of the bridge does not meet current ADA standards of egress required for a person in a mobility device. The second alternative examined was to use the existing concrete abutments and replace the top portion of the bridge with the desired width. After careful analysis of the existing abutments it was found that the abutments would need to be extended to allow for a wider bridge on top which would impact the surrounding wetlands just as much as removing them and moving the abutments. The preferred alternative is to remove the existing abutments and lengthen the bridge to expand wetland area underneath. The new pedestrian bridge follows the same alignment as the old bridge to minimize impact to the adjacent creek channel and wetland. This alternative removes permanent impact to the WQR and enhances the wetland by opening flows and planting native wetland vegetation.

2. *Limit of Disturbance*

Response: The project is limited to the South side of the bank therefore, no river crossings will be necessary for this restoration work. The proposed project involves installing several large engineered wood habitat structures and sizeable boulders within the stream channel. This work requires that some

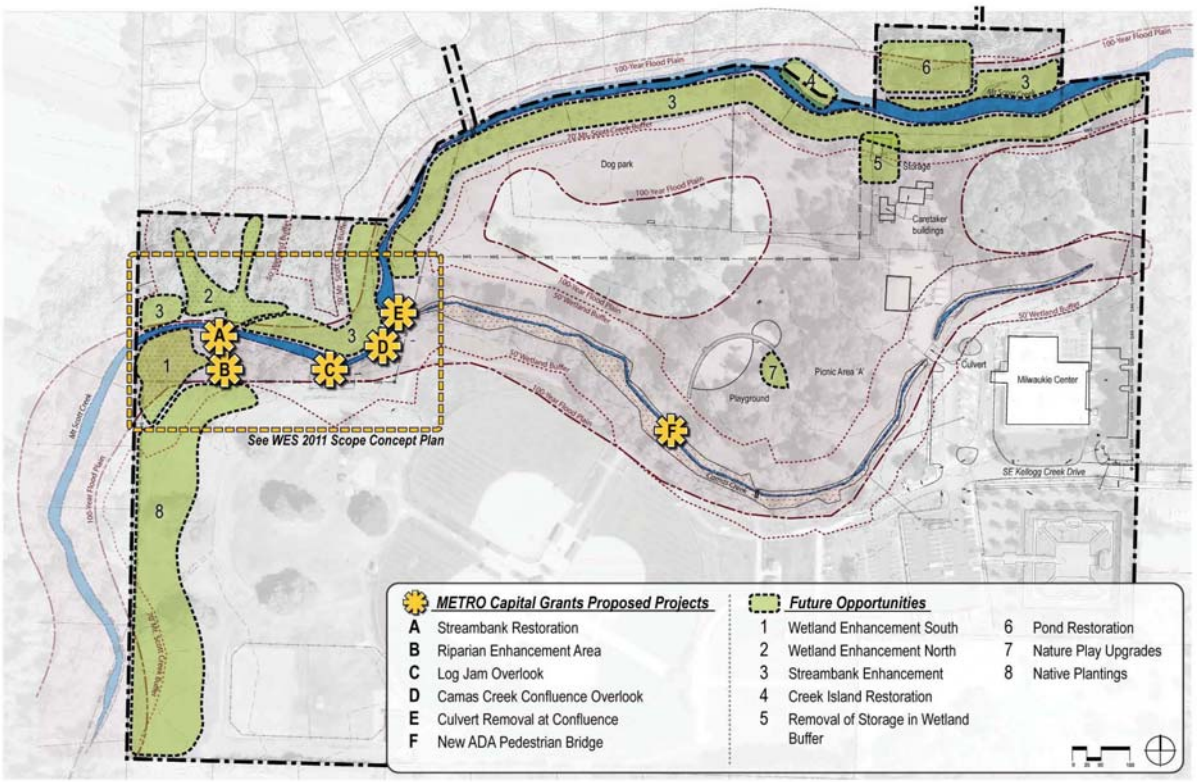
large equipment will need access to the project site. The additional disturbances from the proposed recreational elements include minimal grading for the sole purpose of providing ADA access to the new amenities and grading to remove soil from the streambank to make room for the large wood structures. As stated in the development standards, all work areas will be flagged to ensure the protection of habitat outside the work area.

3. Restoration

Response: The primary objective of the proposed project is to improve the conditions of the resource area, which is a "wildland" area (undeveloped) in Marginal to Poor condition, as categorized in MMC Table 19.402.9.C. Disturbed soil areas will be replanted with native vegetation, infilling where gaps exist. Throughout the project area, invasive plants will be removed and replaced with native vegetation selected from the schedule for "Deciduous Forested Wetlands and Floodplains" found in the Portland Plant List (see Section 4, Appendix 7). The installation of large engineered wood habitat structures and boulders in the stream itself will greatly improve the quality of fish habitat.

4. Alternative Rationale

As stated throughout this narrative, three previous studies were conducted identifying this reach of Mt Scott Creek in need of restoration and enhancement work. These studies used a set of criteria to develop a priority list of enhancement projects. (Refer to Section 4, Appendix 2, Metro Nature In Neighborhoods Capital Grant Application for a summary of the three studies that recommend the restoration work and site improvements.) The graphic below identifies all the recommended restoration and recreation projects in this stretch of creek.



Site Opportunities Map

MT. SCOTT CREEK - Clackamas County Water Environment Services

The starred areas and the green areas on the site map above represent all the opportunities addressed in the previous studies. (Refer to the Metro Grant application under the "Previous Studies" section for a summary narrative of all opportunities identified at North Clackamas Park.) Prior to the submission for the Metro Capital Grant, the design team analyzed all of the proposed options and developed priorities. An open house was held to solidify which opportunities should have the highest priority, by observing current site conditions (flooding), and talking with staff from all involved partners. In the diagram above, the starred items denote the work proposed in the Metro Capital Grant and this Land Use Application. The rationale outlined in these studies resulted in the final design work being proposed. (Review the full reports in the Section 4, the Appendix of this application.)

5. *Mitigation Plan*

a. *Adverse Impacts*

Response: This section describes the temporary and permanent impacts to the WQR and HCA area. All the project improvements are located within the WQR and HCA overlay. The permanent impacts include the two overlooks and the upgraded pedestrian bridge. All but the concrete abutments and footings for the confluence overlooks and the pedestrian bridge are constructed of permeable sustainable materials. The pin foundations used for the overlook reduce the permanent and temporary impact of the deck construction. Regarding the temporary construction impacts, the temporary construction entrance, staging area, and construction access drive are located outside the WQR and HCA overlay. Equipment will be positioned on the bank above the stream to assist with installation of the large engineered wood habitat and placement of boulders, but some in-stream work will be necessary. A temporary coffer dam will be utilized to isolate the in-stream work.

<u>New Pedestrian Bridge</u> - The existing bridge and concrete footings will be removed using a crane and excavator. New footings will be poured in place in close proximity to the existing footings and outside the wetland boundaries. Wetland incidental impact protection measures will take the form of silt fence placed along the outer edge of the wetland. No work within the identified wetlands is proposed.

<u>Culvert Removal</u> - The existing metal culvert that conveys Camas Creek under an asphalt walking trail will be removed using an excavator. This portion of the asphalt trail will be abandoned and rehabilitated (Sheet L1.00). No stream flows are anticipated in Camas Creek during the construction so flow control or dewatering measures will not be necessary. Upon removal, the area will be graded to match the existing gentle slopes. A grade control structure will be constructed at the confluence of Camas Creek and Mt. Scott Creek. Logs will be placed within Camas Creek to serve as grade controls near the confluence and prevent a head cut from forming and moving upstream within Camas Creek.

<u>Engineered Log Jams (ELJ) and Bank Stabilization</u> - The plan view of the ELJ and bank protection portions of the project are shown in Sheet C1.00. Prior to construction the entire ELJ and bank protection work area will be isolated from Mt. Scott Creek through the construction of a sand bag and plastic sheeting coffer dam. Anticipated flows at the time of construction will be between 2-4 CFS. The upstream end of the coffer dam will extend to the bank and downstream end will be left open. Biologists or other individuals experienced in fish capture and removal procedures will make several passes with seines and dip nets to herd fish out of the isolated area. Once it has been determined that no fish remain within the isolated area, the downstream end of the coffer dam will be closed and extended to the bank of the river. In order to reduce the chance of siltation, the isolated area will not be dewatered, and construction will be conducted in the wet.

The bank protection and ELJ features will be constructed using industry accepted methods with an excavator. An initial footer log will be partially buried at the level of the stream bed to serve as a base for the remaining LWD pieces. Approximately 165 CY of material will be temporarily excavated from the bank and need to facilitate footer log installation. Subsequent LWD pieces will be ballasted with buried and surface boulders and cables. Due to the urban location of the features and downstream infrastructure, the individual LWD pieces will be cabled together. Ballast and cabling details are presented in Sheet C1.01. Following the completion of construction activities, all sediment will be allowed to settle out of suspension and the coffer dam will be removed.

b. *Avoiding/Minimizing Impacts*

Response: Prior to construction, silt fence will be installed to prevent siltation of waterways and wetlands during construction. Measures to reduce impacts during the proposed in-water work will include the utilization of temporary coffer dams to isolate the work area, constructing the project within the approved in-water work window, and following appropriate fish removal operations. In addition to the erosion control measures in and around the work, the construction access plan and details (Section 3, Plans, Sheet G1.02 and Sheet L3.00) shows that the contractor will be required to install a temporary gravel construction entrance, a gravel access road, and a staging area clear of the floodplain.

c. *Mitigation Map*

Response: See Section 3, Plans, Sheet L1.00 and Sheet L3.00 for Erosion control measures to be installed. Within the project area, invasive plants will be removed and disturbed areas will be replanted and replaced with native plant species shown on Sheet L2.00, Planting Legend. Required mitigation from the recreational elements will be exceeded as stated under Development Standards (Subsection 19.402.11).

d. *Implementation Schedule*

Response: In-stream work will be conducted within the allowable window for in-water work as designated by ODFW, approximately July 15th to September 30th. The construction of the two overlooks and adjoining pathways will be constructed with in the same timeframe.

6. Application forms

Response: An application form for WQR review and the Submittal Requirements checklist are included with this submittal. The project area is comprised of several properties under the ownership of the City of Milwaukie. A copy of the deed is included in Section 4, Appendix 9.

7. Fee

Response: The application fee has been waived because the City of Milwaukie is the property owner and co-applicant on the project. However, the fee required to cover the costs of reviewing the technical report ($2,000) is included with this application submittal.

7. Other Requirements (Title 18 and Public Works Standards)

Flood Hazard Regulations (Section 18.04)

Response: In accordance with Section 18.04.170, development in the floodway will not occur. FEMA has issued an appendix (Appendix E – Policy on Fish Enhancement Structures in the Floodway) allowing a waiver of a full no-rise analysis. In lieu of a no-rise analysis, the applicant shall have a qualified professional provide a feasibility analysis and certification that the project was designed to keep any rise in the 100-year flood levels as close to zero as practically possible and that no structures would be impacted by the potential rise as outlined in the Policy. Per the City of Milwaukie's request, we have provided a preliminary analysis as demonstrated by the signed memorandum in Section 4, Appendix 8 of this narrative.

Public Works Standards (Section 2 – Stormwater Design Standards)

Response: In accordance with the thresholds stated in the Stormwater Management Manual, this project does not require the implementation of stormwater management facilities. The project is developing under 500 square feet of impervious surface; only approximately 80 square feet of impervious surface is being proposed to re-grade the existing path to provide ADA access to the new pedestrian bridge across Camas Creek. See Section 3 for construction plans.