

Summer Creek Property Master Plan



June 30, 2012

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Introduction

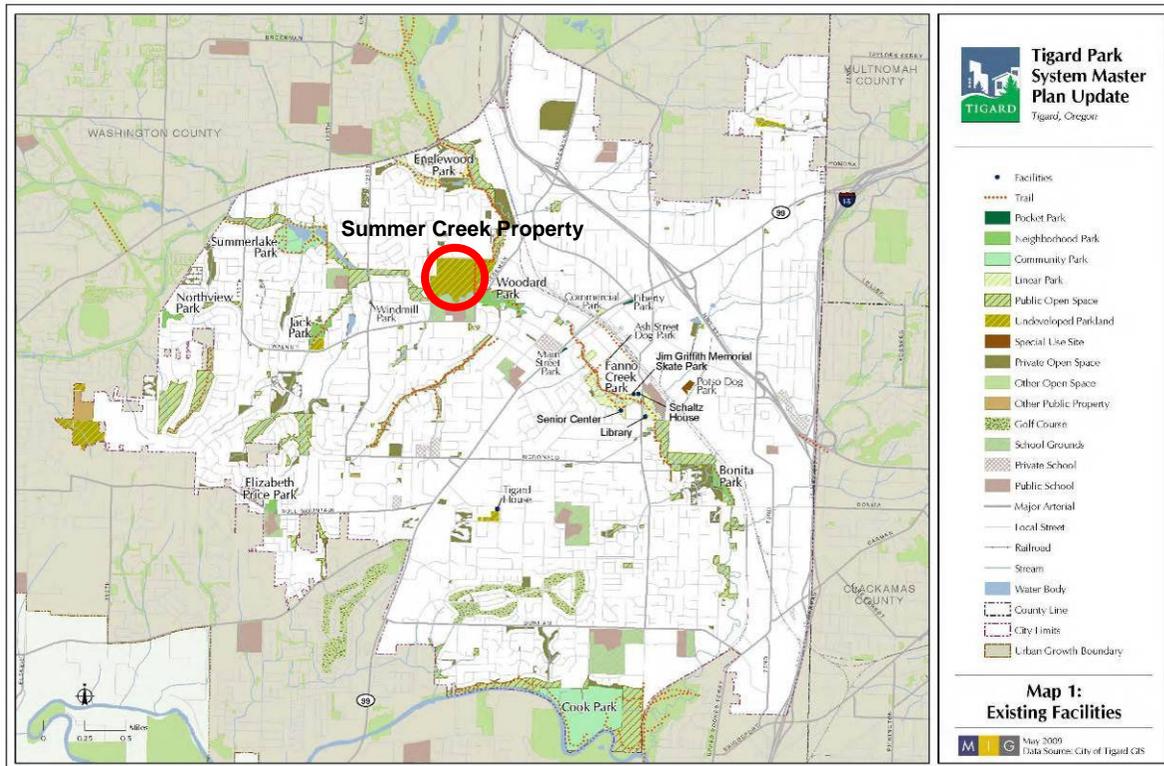
Purpose of the Master Plan

The master plan provides a long-term vision to define and facilitate limited development of the Summer Creek property as a community park and environmental education resource for the city. The master plan was needed in order to clarify a common vision among stakeholders who provided grant funding for the property acquisition and resident input received during the planning process.

The 48-acre Summer Creek property is designated as a community park in the City of Tigard's 2009 Park System Master Plan (**Figure 1**). Park properties with the community park designation are intended to provide a variety of active and passive recreational opportunities for all age groups and are generally larger in size and serve a wider base of residents than neighborhood parks. Community parks often include developed facilities for organized group activity, as well as facilities for individual and family activities. Community parks also provide opportunities for environmental education and community social activities.

The City purchased the property through multiple transactions beginning in December 2010 with over \$2.5 million in grant support for the project from multiple sources. The property contains a mix of mature forests, wetlands, open space, and existing active recreation facilities. The majority of the property will remain a natural area (approximately 35 acres, about 70 percent, are protected under a conservation easement).

Figure 1. City of Tigard's 2009 Park System Master Plan



Project History

The Summer Creek (Fowler) property is comprised of eight parcels. Key steps in the acquisition of and planning for the future of the property are described below.

- In 1974, the Tigard-Tualatin School District acquired approximately 100 acres and developed Fowler Middle School. Since this time, the District has used the open area of the site for playfields and physical education and has used the site's creeks, wooded areas and wetlands for outdoor learning.
- In 2001, the City of Tigard developed the Fanno Creek Trail which extends through the site along the eastern property boundary adjacent to Fanno Creek's outer riparian zones.
- In 2006, the School District declared the open space portion of the property surplus.
- In 2007, the Trust for Public Land negotiated with the District for an exclusive option-to-purchase agreement
- With the passage of the Parks Bond in 2010 and subsequent grant awards and public agency contributions supporting this acquisition (e.g., OWEB, Metro, CWS, Washington County), the first 42 acre property was acquired by the City from the Trust for Public Land in two transactions beginning in December 2010.
- A conservation easement was finalized between the City and Metro in early 2011 to protect a 35-acre area in the center of the site containing significant woodlands and wetlands.
- In April 2011, the City acquired three additional adjacent parcels, totaling 5 acres, along Tigard Street. These three parcels are outside of the conservation easement and are identified as nodes 1 through 3 later in the plan.
- A draft Natural Resource & Management Plan was completed and provided to Metro in January 2011 to document how each of the different habitat areas will be managed within the conservation easement.
- A draft Environmental Education Plan for the Summer Creek property was completed and provided to Oregon Watershed Enhancement Board (OWEB) in August 2011.

The Natural Resource Management Plan and Environmental Education Plan will be finalized at the conclusion of the site master planning process, and each will be informed by the master plan recommendations regarding natural resource management, site improvements and planned vegetative and habitat enhancements.

The design team consulted with the City and solicited input from key stakeholders and the public to develop a Master Plan that achieves a balance between resource protection and public access. The Master Plan addresses stakeholder interests around four development nodes in sufficient detail for implementation as funding becomes available. All proposed improvements are intended to be designed, constructed, and maintained in a low impact/sustainable manner.

Site Description and Analysis

Community parks are desired because of their high capacity for use and multiple programs. Existing amenities at the Summer Creek property include: playing fields, trails, diverse plant communities, and an education center from which Tualatin Riverkeepers currently runs an environmental education program that includes week-long summer camps and part-day field trips. These assets – Environmental Education, Natural Resources and Active Recreation – are the foundation of the master plan that will guide the phased development of the property as a community park.



Tualatin Riverkeepers

Environmental Education



Natural Resources

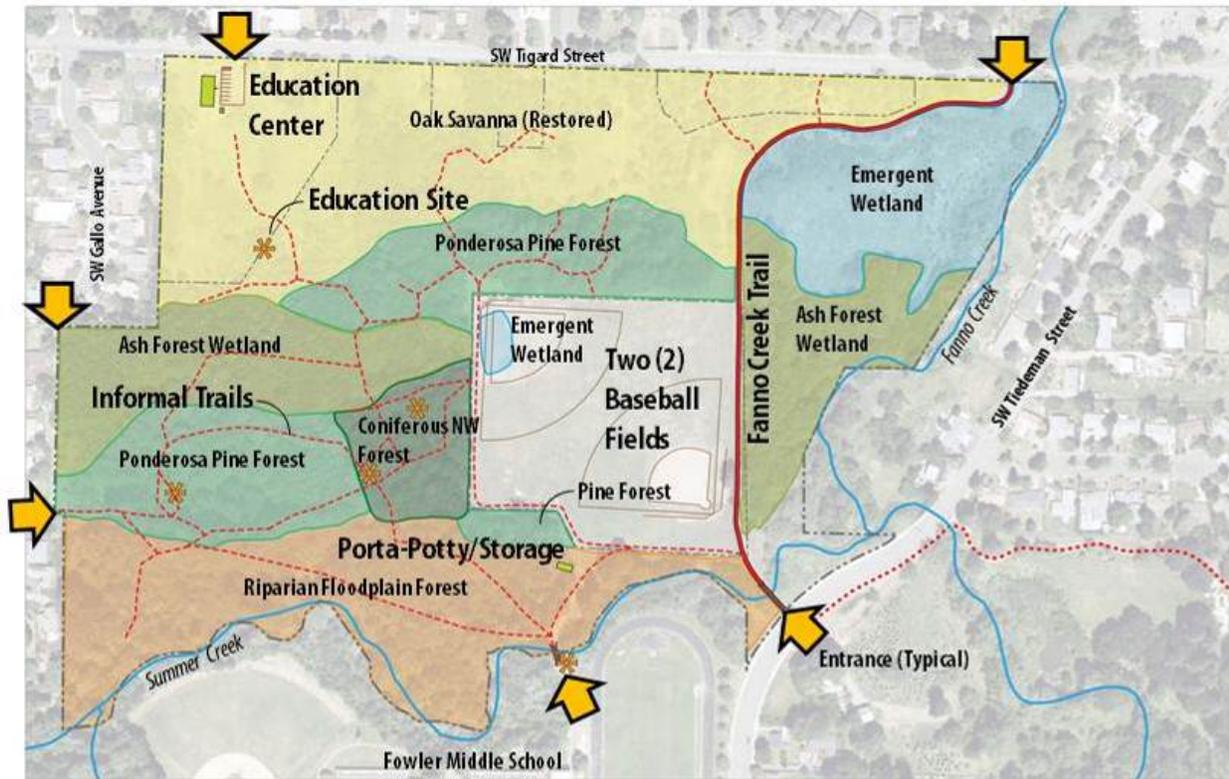


Active Recreation

The Summer Creek property will be a signature facility that will draw users from across Tigard while also serving nearby neighborhood residents. Infrastructure improvements will be needed to ensure that the park can support increased use, while minimizing impacts to the natural resources that are a large part of the park’s appeal. Improvements to support users will include: parking, restrooms, improved trails and play areas. These improvements will be designed and located to protect resources. Examples include locating trails away from sensitive nesting habitat and using boardwalks to protect wetland resources. In addition some improvements may be needed to improve the safety of park users such as providing pedestrian connections to the park along busy SW Tigard Street.

The Summer Creek property (**Figure 2**) is bordered on the west, north, and east by single- and multi-family residential development and to the south by Fowler Middle School. The property includes over 1,900 linear feet of frontage on SW Tigard Street that forms the northern property boundary. No sidewalk or planter strips exist along this property edge, and half street improvements will be required when park improvements are constructed. There is no continuous sidewalk on the north side of SW Tigard Street, so planned half street improvements along the park’s edge will significantly improve pedestrian safety.

Figure 2. Summer Creek Property Existing Conditions



The site topography consists of gentle, five percent slopes along the northern property boundary at SW Tigard Street that level out approximately 500 feet from the northern site boundary. The center of the site includes an existing playing field that is nearly flat and has two baseball diamonds.

The development of infrastructure, such as parking, restrooms, durable trails and play areas, is needed to support the level of use associated with the broad activity base provided in a community park. The natural resource setting and conservation easement at the Summer Creek property require a sensitive approach to site development that protects existing resources and their habitat functions. In addition, the developable nodes outside of the conservation easement are distributed across the site. These factors provide the context for weighing what types of activities would be appropriate at the site and how those chosen activities could be located and/or designed to best fit into the natural resource setting of the property. Key opportunities and constraints for site development are summarized below by category.



SW Tigard Street near Node 2 Looking East



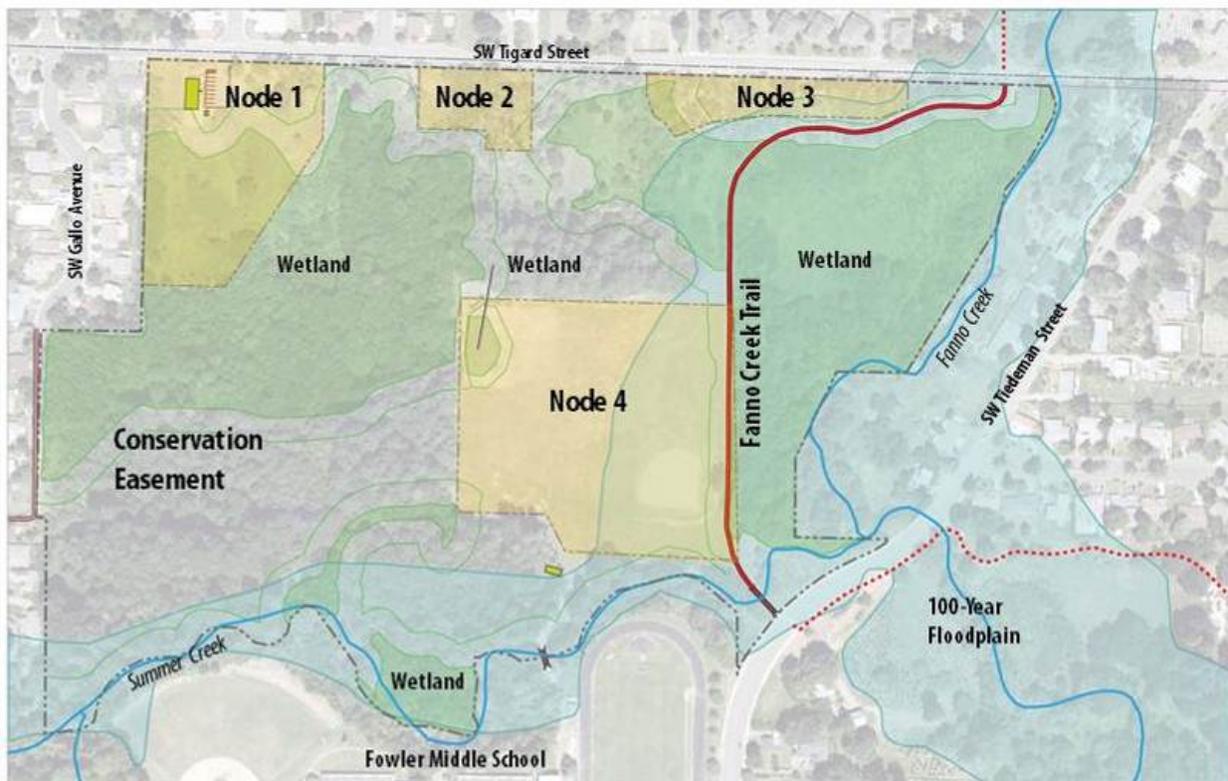
Existing Education Center from SW Tigard Street

Natural Resources

Fanno Creek flows south along the eastern edge of the property. Summer Creek flows east along the southern property boundary until it drains into Fanno Creek. Lower elevation areas near Fanno and Summer Creeks are subject to flooding. Development within floodplains is regulated to reduce flood damages. In addition to Fanno and Summer Creeks, the property is notable for its riparian forest, oak/pine woodland, forested wetlands, emergent wetlands and open meadows. Oak savannah restoration is ongoing on the property. The property is also home to a number of sensitive wildlife species including neotropical migrating birds and reptiles, including western pond and painted turtles.

A conservation easement is in place to protect 35 acres of the most sensitive areas on the property. The four nodes not protected by this easement are illustrated in **Figure 3** and represent the developable areas of the property for park elements. Trails, boardwalks, and interpretive signs and other educational elements are permitted in the conservation easement but all other development must be accommodated within the nodes.

Figure 3. Conservation Easement and Developable Nodes



- Opportunities
 - Providing habitats keeps wildlife in the urban environment
 - Providing a great escape from the urban environment
 - Increasing habitat and wildlife appreciation through recreational access
 - Teaching users about natural resources with interpretation

- Constraints
 - Providing access to habitat for education and recreation may require mitigation if resources are protected
 - Protecting sensitive habitats from over use
 - Protecting sensitive wildlife species from disturbance during breeding and other significant life stages

Environmental Education

The Tualatin Riverkeepers currently run an environmental education program at the Summer Creek property from the existing education building in the northwest corner of the site. Programs include school field trips for students from Tigard and the region and week-long summer camps.

The center has a small parking lot that can accommodate about eight vehicles. The existing lot works well for staff and volunteers and for student drop-offs from personal vehicles (summer camps). The education center currently does not have a bus drop-off for school field trips, which has limited direct access to the center and has created delays getting students to the site. The program strives to get students outside experiencing the site to the greatest extent possible so reducing the amount of time students spend walking from the bus to the education center is important.

Students spend time across the site – both on the existing informal trail network and at the education sites (**Figure 2**). Maintaining access to key locations is important.

- Opportunities
 - Improving existing education center with aesthetic modifications and bus drop-off
 - Enhancing education experience on trails while protecting resources
 - Adding a native plant propagation/community gardening area
- Constraints
 - Avoiding or minimizing vegetated corridor impacts from proposed improvements
 - Minimizing neighborhood impacts from proposed improvements

Active Recreation

Trails

The property has several existing access points. The Fanno Creek Trail (FCT) crosses the eastern part of the property. This trail serves as the primary developed access to the property. Additional access is provided from the education center in the northwest corner of the property and from the neighborhood west of the site via an easement from SW Gallo and SW 113th Avenues. The existing trail that runs east from this location is well used. Park maintenance crews access the site via Fowler Middle School over an existing bridge. The Fanno Creek Trail pedestrian bridge off SW Tiedeman Street is not vehicle rated.

In addition to the Fanno Creek Trail, a soft-surface trail network crosses the property. The southern (main) trail is a route that is heavily used by the park visitors and provides the main, east-west route into and through the park. The other soft surface trails currently serve as access for environmental education classes and the public to view the different wetland and upland habitats on the property. There is an extensive network of informal paths through the park (**Figure 1**). In many instances, these paths provide uncontrolled access to sensitive or protected natural resources, such as wetlands and sensitive riparian buffers adjacent to streams. Fewer,



Existing 3-foot wide dirt trail



Existing 5-foot wide dirt trail



Existing 8-foot wide asphalt FCT

better trails would protect the site's diverse habitats, while also providing recreation opportunities and access for education.

The 2011 Tigard Greenways Trails System Master Plan identifies two possible alignments through Summer Creek Park for a section of the proposed Summer Creek Community Trail. Once completed the Summer Creek Community Trail would connect the Fanno Creek Trail to Summer Lake.

- Opportunities
 - Simplifying the established and popular informal trail system on site
 - Improving trails to support environmental education program
 - Developing a segment of the Summer Creek Community Trail
 - Connecting the park trail network to Fanno Creek Trail
- Constraints
 - Avoiding or minimizing trails in floodplains, wetlands, and vegetated corridors
 - Avoiding or minimizing impacts to habitats from fragmentation or excessive access

Sport Fields

There are two baseball diamonds located in the center of the site. Both are poorly drained, and the westernmost field has a small delineated wetland in the infield. The conservation easement restricts active recreation activities like baseball and soccer to the existing playing field area. Sport courts and other play facilities requiring impervious surfaces are not in keeping with the natural resource setting of the site.

- Opportunities
 - Improving the existing level playing field area with better drainage will increase playability

- Leveraging existing field location (on Fanno Creek Trail) to provide pedestrian and bike access to the fields from the neighborhood and the proposed parking lot
- Constraints
 - Developing a sports complex like Cook Park is not appropriate in this natural resource setting
 - Developing active recreation other than trails is prohibited within the conservation easement
 - Placing fill and structures is discouraged in regulated floodplains, wetlands and vegetated corridors

Play Area

Play areas can be accommodated within the active nodes on the site. Nature play was deemed more appropriate than traditional play areas because of the natural resource setting. A nature play area is a space intentionally designed or designated to integrate natural components into a place for structured and unstructured play and learning. These areas provide children an important early connection with nature, create future environmental stewards, provide an opportunity for both physical and creative play, and support children’s physical, intellectual, and socio-emotional development.

Nature play areas can incorporate a broad range of elements including traditional play equipment. Some nature play elements are described in **Table 1**. Several images of nature play areas and features are included in **Appendix A**.

Table 1. Nature Play Elements

Physical Components	Activities
Adventure	Climbing and Balancing
Fantasy and Imagination	Active and Creative Play
Animal Allies	Observe and Explore
Maps	Terrain and Paths
Special Places	Hiding and Fort Building
Small Worlds	Plants, Sand, Water
Hunting and Gathering	Manipulating Loose Parts (sticks, stones)

Source: Maryland Department of Natural Resources, Pattern Book for Nature Play Spaces

- Opportunities
 - Linking natural resource context to play experience
 - Linking environmental education to play experience
- Constraints
 - Keeping nature play areas away from sensitive habitats
 - Locating nature play areas near parking and restrooms

The Planning Process

The Summer Creek property has a history of use for active recreation, environmental education and habitat conservation. Soliciting input from users and nearby residents was important to the development of the master plan. Public meetings were announced through a combination of mailers, newspaper notices and via the City web site. The City held three meetings to gather input contributing to the completion of the Master Plan. These included a key stakeholder meeting and two public meetings.



On-Site Stakeholder Meeting



Public Meeting

The City assembled a group of key stakeholders who represent the conservation, education and recreation interests at the site. An on-site meeting was held with this group to review proposed site improvements and to identify and resolve potential conflicts. Input from this meeting was used to develop two master plan concepts. Since much of the site is protected by a conservation easement, the two alternatives explored different trail densities, sidewalk treatments, nature play locations, education center improvements and playing field configurations.

Site improvements included in both concepts include:

- Aesthetic improvements to the Education Center
- Bus drop-off on SW Tigard Street at Education Center
- Community garden at the Education Center (configuration varies)
- Parking lot for 10 to 15 cars on SW Tigard Street
- Continuous sidewalk along SW Tigard Street
- Removal of the west baseball field
- Addition of a soccer field overlay (configuration varies)
- Addition of a restroom and interpretive shelter (location varies)
- Improvements to the water quality sampling area
- Paved trail connecting Fowler Middle School bridge to the Fanno Creek Trail

In general, Concept A minimized site development in the conservation easement by proposing a limited length of soft-surface trail in this area; it increased the length of boardwalk included to improve habitat connectivity. Concept B provided a more extensive soft-surface trail network

with boardwalk limited to wetland areas, as well as a paved community trail parallel to SW Tigard Street.

Two public meetings were held to elicit community feedback on the master plan. At the first meeting, an overview of the project and the site's existing conditions were presented, and the conservation, recreation and habitat goals were described. The two master plan design concepts were presented and then discussed in small breakout groups. Input from this meeting was used to refine the concepts and develop the Preliminary (Concept) Master Plan that was presented at the second public meeting.

Master Plan Concepts A and B, prepared for the first meeting, and the Preliminary Master Plan, prepared for the second meeting, are included in **Appendix B**. The comments received from the stakeholder and public meetings and via email are included in **Appendix C**.

Presentations to key stakeholders, the public and the Park and Recreation Advisory Board (PRAB) were held as indicated below. Master plan review and acceptance by City Council is anticipated for Summer 2012.

Key Stakeholder Meeting	February 8, 2012
Public Meeting	March 28, 2012
Public Meeting	May 17, 2012
PRAB Presentation & Approval	July 9, 2012

The Master Plan

The Master Plan presented to the PRAB on July 9, 2012 was shaped by the design team after considering public input. The following describes the elements of the Master Plan as graphically portrayed in **Figure 4**.

The main park entrances will be at the following locations:

- Fanno Creek Trail at SW Tigard Street
- Fanno Creek Trail at SW Tiedeman Avenue
- The Education Center

Secondary entrances are located at:

- The undeveloped ROW off of SW Gallo and SW 113th Avenues
- The bridge to Fowler Middle School

Half Street Improvements - SW Tigard Street

Half street improvements will be required on the northern property boundary along SW Tigard Street, classified as a neighborhood route. According to the Tigard Development Code *Chapter 18.810, Street and Utility Improvement Standards*, these improvements could include:

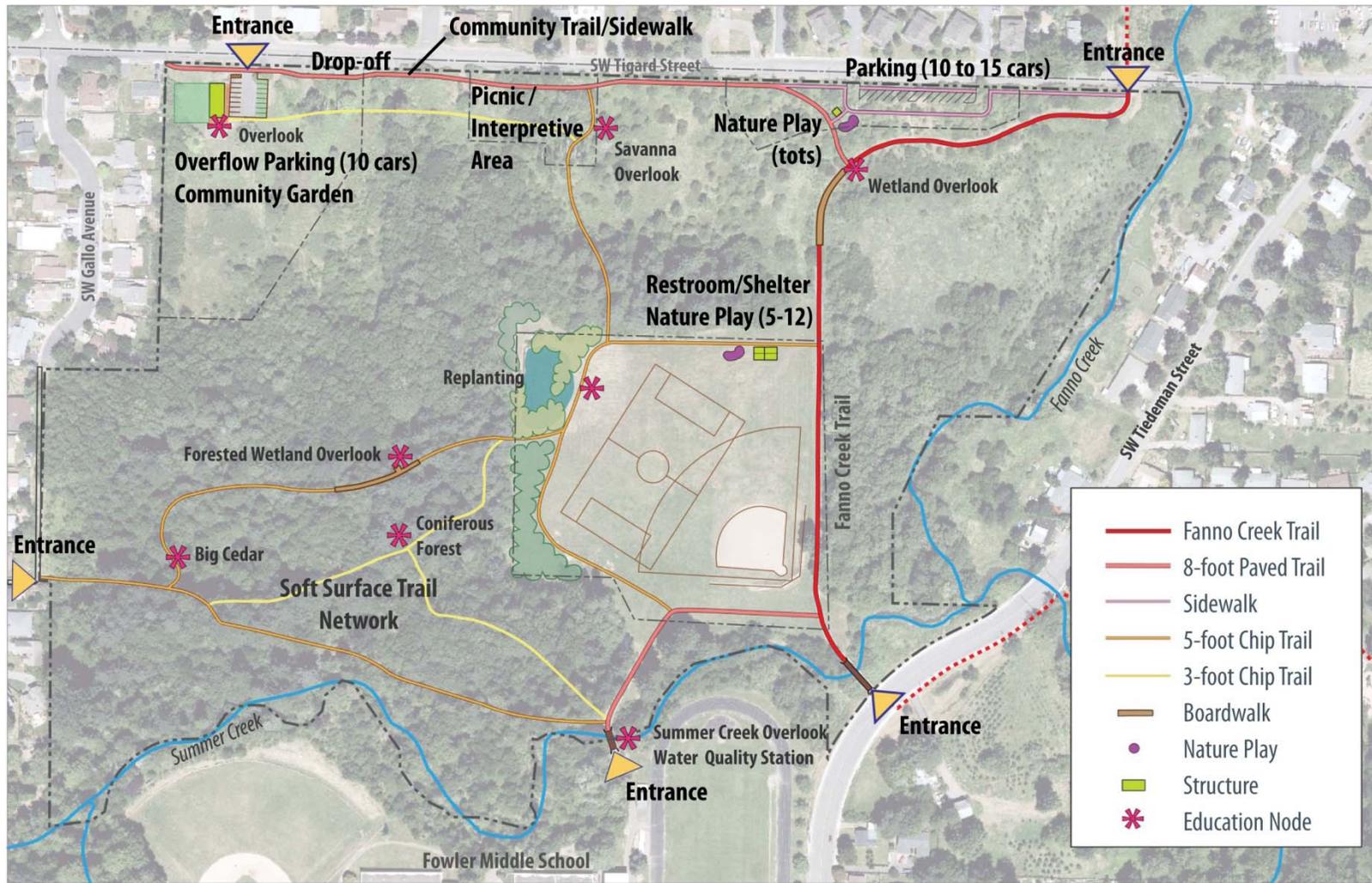
- 10-ft travel lane
- 5-ft bike lane
- 8-ft on-street parking
- Undergrounding utilities
- 5-ft planting strip
- 5-ft sidewalk

The specific improvement requirements for the Summer Creek Property will not be finalized until the land use review for the site development is completed.

Figure 4. The Master Plan

SUMMER CREEK PROPERTY Master Plan

June 2012



Trails

Changes to the existing trail system are focused on simplifying the trail system by eliminating desire line trails and resurfacing degraded, yet heavily used trails. Boardwalks will be used to limit trail impacts where trails cannot be relocated and cross sensitive areas. A clear hierarchy of trail widths and surfaces will guide users as to the appropriate use of each trail. This hierarchy of circulation consists of the four basic categories:

- 8-ft Wide Paved Trails Pedestrians, bicycles, skates, and maintenance vehicles
- 5-ft Wide Sidewalk Pedestrians and bicycles
- 5-ft Wide Chip Trails Pedestrians only
- 3-ft Wide Chip Trails Pedestrians only

New paved trails are proposed in two locations. A community trail/sidewalk will be incorporated along SW Tigard Street, and the bridge over Summer Creek from Fowler Middle School will be connected to the Fanno Creek Trail following an existing underground pipe alignment and desire-line trail.

Fanno Creek Trail (Existing 8-ft wide paved trail)

Fanno Creek Trail is an important existing feature on the property. It is an asphalt trail with a paved width of 8 feet. No changes are proposed to the alignment or width of the trail; however, the master plan proposes replacing a 400 linear foot section of the trail with a boardwalk to improve habitat connectivity for Western Pond Turtles that migrate from the wetlands along Fanno Creek to adjacent sunny, south-facing uplands. Providing connectivity via culverts, in lieu of a boardwalk, would also improve habitat conditions for this species.

Summer Creek Community Trail (8-ft wide paved trail)

The master plan accommodates the Summer Creek Community Trail proposed in the City of Tigard's 2011 Trail System Master Plan along the northern edge of the property. Since a sidewalk along SW Tigard Street will be required for land use approval, the trail alignment in the master plan was aligned to function as a sidewalk. Where site conditions permit, the trail is set back between 5 and 15 feet from SW Tigard Street. Periodic connections between the trail and the street will be provided to ensure safe access to the trail/sidewalk from the roadway. The Trail System Master Plan recommends community trails be paved or smooth surfaced, 8- to 10-foot wide with 1- to 2- foot shoulders. The proposed trail passes wetlands and areas that support a number of sensitive species, so the paved trail width proposed in the master plan (8 feet) may need to be narrowed to reduce impacts. Boardwalking sections of the trail could also be considered to reduce impacts.

Maintenance Access Route (8-ft wide paved trail)

The master plan shows a paved trail and maintenance access from Fowler Middle School that connects to the Fanno Creek Trail. This route is currently used by Parks for maintenance vehicle access because there is an existing 10-foot wide bridge over Summer Creek in this location. Bicyclists and pedestrians also use this route, and there is a visible desire-line trail in this area.

Soft Surface Trails (3- and 5-ft wide chip trails)

The master plan shows a network of 5- and 3-foot wide soft-surface trails across the site. In general, these trails follow existing informal trail alignments. The network is intended to provide access to the diverse habitats on the site for recreation and education purposes. The wider trails follow existing, well-developed trails such as the main east-west route across the southern part

of the site or provide more formal routes in areas with well used, informal trails such as the route from SW Tigard Street to the playing fields or the loop around the playing fields.

Trail Decommissioning

The remainder of the existing informal trails on the site will be decommissioned to discourage access to sensitive wetland and habitat resources on the property. Trails will be blocked and replanted to discourage continued use. Many of these trails are located in protected sensitive resources, such as wetlands and water quality buffers. Trail decommissioning in these areas will likely be required for mitigation.

Node 1: Education Center Area

Master plan elements proposed for the education center are illustrated in **Figure 5** and include:

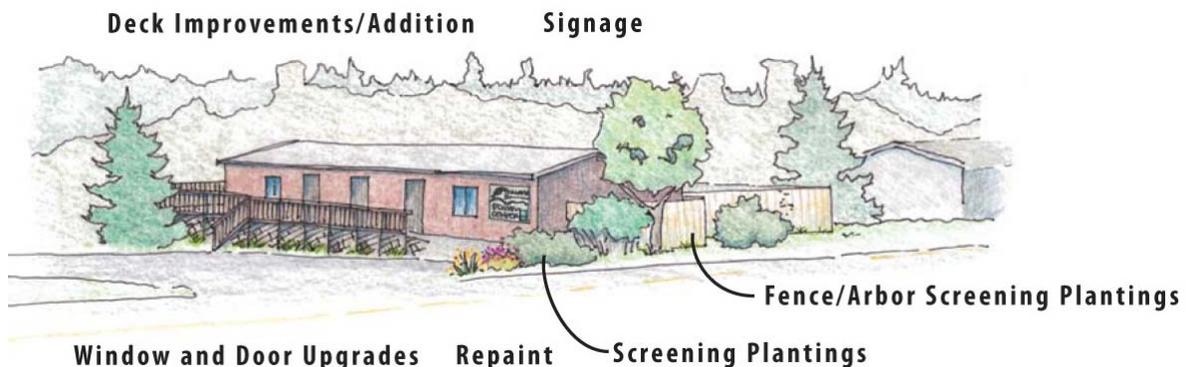
- Curb appeal improvements
- Bus turnout (pick-up - drop-off) on SW Tigard
- Larger entry deck
- Overlook (deck or on-grade)
- Overflow parking (pervious)
- Community garden

Figure 5. Education Center Area Illustrative Plan – Node 1



Curb appeal improvements could include painting the building, updating windows and doors, and adding a sign, decorative arbor, and/or vegetation screening (**Figure 6**). The building could be replaced in the future if warranted by increased use.

Figure 6. Building Improvement Illustration



Education Nodes

The trail network in the master plan has been designed to connect park users and students with the diverse plant communities and habitats on the site. A series of overlooks are located at the education nodes on the plan to provide interpretative opportunities for recreational users and as gathering locations for small student groups from the summer camp and field trip programs.

A small, soft-surface trail connects the education center with the other soft-surface trails on site to provide students with a nature experience unlike one they would have in a traditional developed park.

Community Garden

The master plan shows a community garden in the vicinity of the education center. A minimum of 15 beds are required to make this facility cost effective. Part of the garden area could be used to grow native plants and support education activities. Water will be provided from the education center. Existing parking can be used by gardeners.

Node 2 to the east along SW Tigard Street is a possible alternative or expansion location for this use. A water connection would be needed for this location, but service is available in SW Tigard Street.

Site furnishings in the education center area could include:

- Trash receptacle
- Picnic tables

The Summer Creek Community Trail alignment begins as a sidewalk in this area. This sidewalk provides a safe connection between the bus drop-off and the education center.

Node 2: Picnic/Interpretive Area

The Summer Creek Community Trail alignment passes through this area. The master plan shows a soft surface trail with an overlook branching off to the south. In addition to the community garden use mentioned above, this area could be developed to support additional interpretive information and/or picnic and bird watching activities in the future.

Site furnishings in this area could include:

- Interpretive kiosk
- Trash receptacle
- Picnic tables
- Covered bird blind

Node 3: Parking Lot Area

The Summer Creek Community Trail alignment passes west of the parking lot area before merging with the Fanno Creek Trail. A five-foot sidewalk network continues along SW Tigard Street to the Fanno Creek Trail. The master plan shows a 10 to 15 car parking lot on SW Tigard Street that will serve the community park and Fanno Creek Trail (**Figure 7**).

Figure 7. Parking Lot Area Illustrative Plan – Node 3



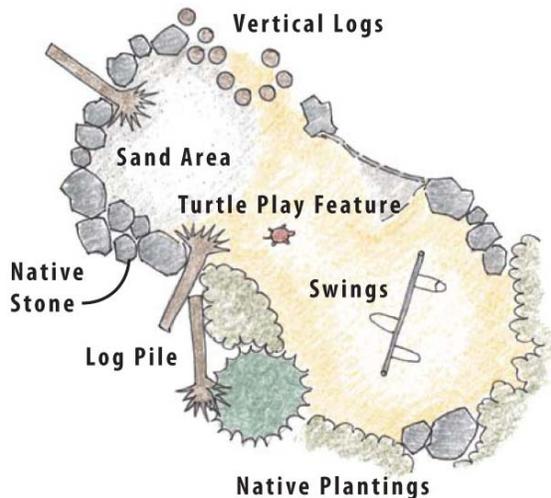
Site furnishings in this area could include:

- Trash receptacle
- Bench

Nature Play – Toddlers

A small nature play area to accommodate toddlers is located adjacent to the parking lot. An illustration of this area is included in **Figure 8**. It will provide opportunities for individual and group play. Traditional play equipment will be de-emphasized in favor of play features that are created from natural materials that reflect the ecology of the site. The physical components of the area would include hiding places, seating and loose parts to be manipulated. Activities could include: climbing, balancing, creative and imaginative play, building, digging, and connecting with nature and others.

Figure 8. Nature Play Illustrative Plan – Toddler Area



Play elements in this location could include:

- Sand play area
- Turtle climbing feature
- Stone boulders
- Paths
- Vertical logs
- Small stick and log “shelter”
- Plantings

This area could include a traditional wood chip surface with a log and stone perimeter that transitions to the surrounding landscape.

A unisex porta-potty will serve this facility, as well as the trail head.

Node 4: Sport Field Area

The master plan shows a baseball field with a soccer overlay in this area. The proposed ball fields are located on the eastern side of the open area, so active uses can be removed from the delineated wetland in the north western corner of the node. If wetland mitigation is required for the project, this area could be used for that purpose. Restoration plantings in this area would also help visually and physically buffer the conservation area from the active zone. The active recreation area is separated from the surrounding natural area by a 5-foot wide chip trail. An interpretive shelter and restroom and nature play area are located on this trail. Plantings could be selectively extended out into the active zone to provide shade to trail and play area users.

Playing Fields

Playing field improvements will include the removal of both of the existing fences, backstops and team seating areas. These will be replaced for the new baseball field following field turf and soil improvements. An irrigation system will be provided. To improve surface drainage, the fields will be graded to provide a 1- to 2-percent slope and a perimeter drainage system will be installed. A portion of the playing field areas is within the 100-year floodplain, so grading will need to consider the regulation of fill placed in this area.

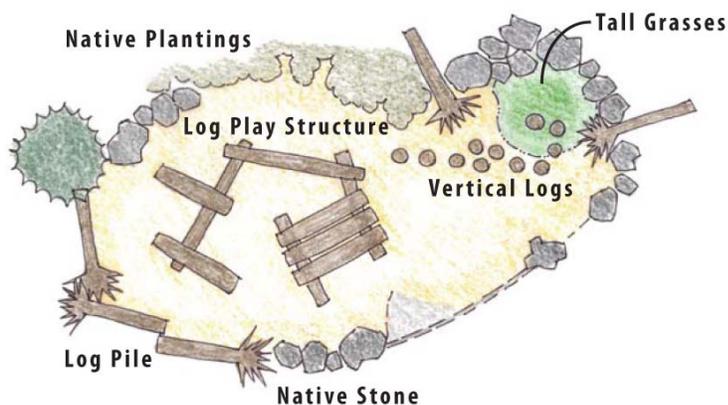
Interpretive Shelter and Restroom

An interpretive shelter with picnic tables and a restroom are located in the northeast corner of the sport field area and outside of the 100-year floodplain. This location was identified because it can serve people using the playing fields, trails and nature play areas. Connections to existing utilities appear to be readily available. Water is available at both SW Tigard Street and SW Tiedeman Street, and a sanitary sewer line crosses the property in the southeast corner.

Nature Play - Ages 5 to 12

A second nature play area is located adjacent to the playing fields (**Figure 9**). This area will accommodate youth ranging in age from 5 to 12. This location will allow parents to watch games while supervising other children in the play area. The nature play area will provide opportunities for individual and group play. Traditional play equipment will be de-emphasized in favor of play features that are created from natural materials that reflect the ecology of the site. Activities could include: climbing, balancing, creative and imaginative play, building, digging, and connecting with nature and others.

Figure 9. Nature Play Illustrative Plan – Ages 5 to 12 Area



Play elements in this location could include:

- Stone boulders
- Log climbing structure
- Vertical logs
- Plantings

This area could include a traditional wood chip surface with a log and stone perimeter that transitions to the surrounding landscape.

Low Impact Development/Sustainability

Throughout the master planning process, consideration was given to reducing the impact of park development on natural resources.

Stormwater Management

The amount of paved trail (length and width) was minimized to the greatest extent possible to reduce impervious surface and runoff generated on the site. Stormwater swales can be incorporated into the design of the half street improvements along SW Tigard Street to treat stormwater from the paved roadway, community trail/sidewalk and parking lot.

Wetland and Vegetated Corridor Mitigation

The proposed paved and soft-surface trail network has been aligned to limit impacts to sensitive resources such as wetlands and water quality buffers. A wetland delineation and natural resource assessment have been performed within the four developable nodes, so additional field investigation will be needed prior to setting final trail alignments to ensure impacts are avoided and minimized. Despite these precautions, some impacts to protected resources are likely unavoidable when providing the desired access for education.

If required, mitigation should be done on-site to the extent possible. Enhancement of the degraded wetland in the playing field area and trail decommissioning and enhancement of degraded vegetated corridors should provide adequate mitigation for foreseeable impacts.

Materials and Sourcing

The basic elements of the master plan include paving, building improvements, boardwalks, structures, play areas and planting. Locally-sourced materials should be incorporated to the greatest extent possible for all of these elements. Renewable materials like sustainable harvested lumber or synthetic lumber made from recycled materials will also improve the overall sustainability of the project. Alternatives to arsenic-based wood preservatives should be incorporated when selecting exterior lumber for boardwalks and decks. Ideally, building improvements will increase energy efficiency while improving the appearance of the structure.

Costs, Priorities and Phasing

Estimate of Probable Cost

Funds for design development, permitting and construction are needed to develop the proposed master plan.

Permitting Requirements

The City of Tigard Planning Division reviews all development projects in the city including: zoning, sensitive land permits, variances, site design reviews, conditional uses, land use appeals, and tree removal permits.

Since the Summer Creek property includes a number of protected natural resources (including wetlands, streams and floodplains), environmental assessments and permitting will be important to project implementation. The Division of State Lands and the Corps administer wetland permits. Clean Water Services regulates developments in the vegetated corridors surrounding wetlands and streams. A list of probable surveys, studies and permit applications are included below.

Surveys & Studies

- Wetland Delineation
- Natural Resources Assessment
- Tree Survey
- Archeological Investigation
- Stormwater Analysis and Report

Permit Applications

- Division of State Lands and Corps of Engineers
- Clean Water Services
- City of Tigard

Summer Creek Property Estimate of Probable Construction Costs

Estimated construction costs for the elements within the master plan could total between \$2 million and \$2.3 million in 2012 dollars. A detailed break out of costs is included in **Appendix D**.

Priorities and Phasing

Development of all of the elements included in the master plan will take a number of years and is dependent upon the availability of funding. Based on staff discussions, known priorities, and a desire to phase development to limit site disturbance, the following elements are suggested for Phase One development:

- | | |
|--|-----------------------|
| • Street Improvement & Utility Undergrounding | \$472,000 - \$576,000 |
| • Site Prep/Erosion Control/Earthwork | \$ 40,000 - \$ 50,000 |
| • Parking Lot | \$ 72,000 - \$ 86,000 |
| • Furnishings (signage, bike rack, trash cans) | \$ 22,000 - \$ 27,000 |
| • Furnishings (benches and tables) | \$ 20,000 - \$ 23,000 |
| • Landscaping (required screening) | \$ 25,000 - \$ 30,000 |
| • Restroom/Shelter Utilities | \$ 45,000 - \$ 54,000 |
| • Restroom/Shelter at ballfield | \$ 80,000 - \$ 96,000 |
| • Trails (paved) | \$120,000 - \$144,000 |
| • Education Center (building enhancements) | \$ 55,000 - \$ 66,000 |
| • Education Center Overflow Parking | \$ 15,000 - \$ 18,000 |
| • Ballfield Renovation | \$165,000 - \$200,000 |
| • Wetland Mitigation and Sensitive Area Enhancements | \$ 60,000 - \$ 72,000 |

The cost ranges above do not include mobilization, bonding and insurance, or overhead and profit. Including those items, the estimated cost for constructing Phase One is between \$1.4 million and \$1.6 million in 2012 dollars.

Public/Private Partnership Opportunities

Some improvements may be made jointly with other divisions within the City of Tigard Public Works, and/or other agencies like Clean Water Services or Metro. Elements that might fall into this category could include:

- Right-of-way improvements
- Utility improvements
- Interpretive programming, signage design, and fabrication
- Habitat enhancement

Other improvements could be made as ongoing maintenance activities or with the assistance of non-profits or volunteers. Elements that might fall into this category could include:

- Soft surface trails
- Community garden
- Some education center improvements

Appendix A

Nature Play Examples



Maryland Department of Natural Resources

Climbing



Wilsonville, OR

Balancing



Cincinnati, OH

Climbing and Balancing



Jians Nature Center Knoxville, TN

Creative Play



Climbing



Maryland Department of Natural Resources

Creative Play

Summer Creek Property Master Plan



Maryland Department of Natural Resources

Hiding



Maryland Department of Natural Resources

Connecting to Each Other



Plants, Sand, Water



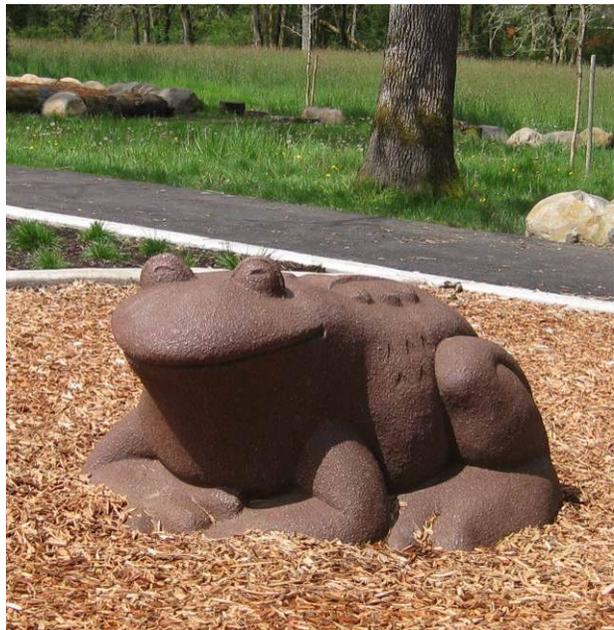
Jorgenson Park Vancouver, WA

Observe and Explore



Maryland Department of Natural Resources

Connecting to Nature



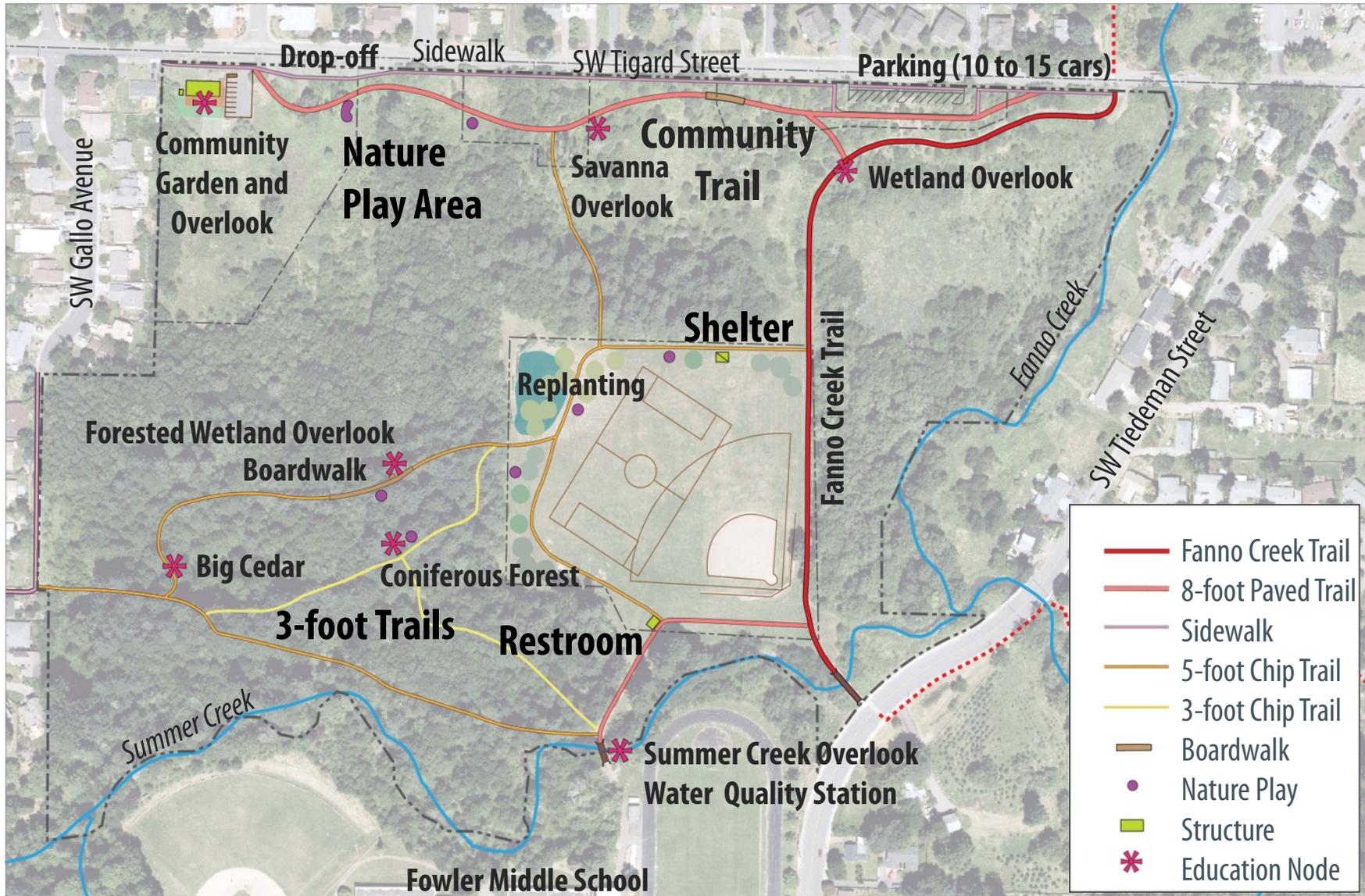
Carnille Park THPRD, OR

Animal Allies

Appendix B

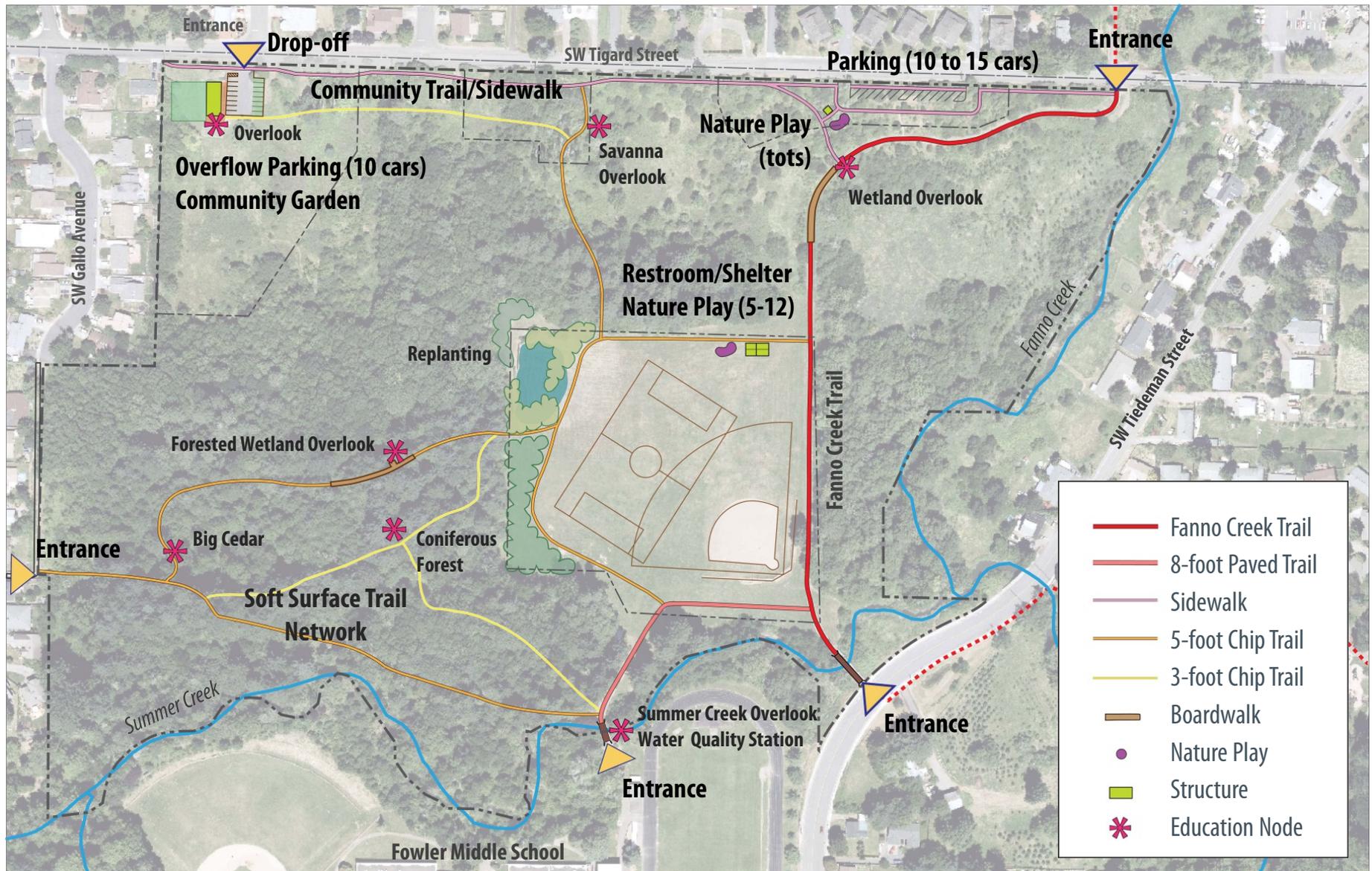
SUMMER CREEK PROPERTY MASTER PLAN

Concept B



SUMMER CREEK PROPERTY MASTER PLAN

Preliminary (Concept) Master Plan



Appendix C

Meeting Notes

Summer Creek Park Master Plan Key Stakeholder Meeting

Thursday, February 8th, 2012

Summer Creek Park Education Building and Site

2:00 - 4:30 pm

Attendees:

City of Tigard: Steve Martin, Carla Staedter, Tom McGuire and Greg Stout

City of Tigard Parks and Recreation Advisory Board: Troy Mears

Conservation Technix: Steve Duh

Vigil-Agrimis, Inc.: Paul Agrimis, Maureen Raad and Susie Mattke-Robinson

Clean Water Services: Rich Hunter

Tualatin Riverkeepers: Lori Kruz and Brian Wegener

Friends of Fanno Creek: Sue Beilke

Metro: Elaine Stewart and Robert Spurlock

Fowler Middle School: Sue Manning

Community Member: John Frewing

Ash Creek Forest Management: John Goetz

These notes focus on the group discussion that took place in the field and reflect the comments and opinions of the stakeholders in attendance. The project design team will balance these remarks with other public input in preparing the conceptual master plan design. The agenda and handouts (that follow these notes) summarize the project overview provided in the Education Center.

These notes are organized by location to make them easier to follow. For example, a comment made about trails in coniferous upland forest was included in the discussion of that location even if the comment was made at a different location.

Comments from phone interviews conducted prior to the meeting were added in a couple of locations to supplement the field notes.

Summary of Key Stakeholder Input

“High quality trails and high quality habitat will create a high quality experience”

by Carla Staedter

Habitat Types

NW Native Ecosystems and species of note on the site include:

- Oak Savannah (restored)
 - Coniferous Northwest Forest
 - Riparian Floodplain Forest
 - Emergent Wetland
 - Forested Wetland
 - Scrub-Scrub Wetland
 - Ponderosas pine
 - Camas
 - Sunny South Facing Slopes
 - Madrone
 - Reptiles
 - Birds
- Minimize habitat fragmentation caused by trails. Consider habitat patches and wildlife migration corridors (ie. wetland to upland) when selecting alignments.

- Consider boardwalks, culverts, etc. to maintain habitat connectivity.
- Decommission excess trail.
- Take advantage of on-site wetland mitigation and upland restoration opportunities. Restore plant communities on-site.

Environmental Education

Education programs being supported include:

- Tualatin Riverkeepers, field trips (all Tigard and many Washington County schools)
- Tualatin Riverkeepers, summer camps
- Fowler Middle School
- Recreation Users
- Learning is experiential: seeing, hearing, touching. Design should heighten the experience.
- Provide access to habitats for education but do so in a way that limits impact to and degradation of the resource. For education, quiet surfaces (not gravel) are important so wildlife can be heard over foot fall.
- Identify and enhance 5 to 6 major educational experiences for NW Native Ecosystems.
- Maintain fewer, but higher-quality trails
- Provide viewpoints for visual access to habitats to minimize habitat penetration by trails in sensitive areas (e.g., forested wetland).
- Provide controlled access to Summer Creek for sampling in a degraded area so other areas can be restored.

Recreation

Recreation uses being considered include:

- Education Center, drop off
- Education Center, curb appeal
- Parking for Trailhead and Park
- Summer Creek Community Trail
- Trails
- Nature Play Area
- Baseball (1 field)
- Soccer (1 field)
- Restroom
- Shelter
- Provide an accessible loop-trail alternative to the busy Fanno Creek Trail.
- Community Trail alignment is most appropriate along SW Tigard Street.
- Design trail system to discourage off-trail exploration by people and pets.
- Designed elements should be integrated into the site
- Consider incorporating interpretive elements into the design.

Location-Specific Notes

Site 1. Education Center on SW Tigard Street

Proposed Activities: Enhance building curb appeal, add garden area, provide outdoor gathering area and provide bus drop-off/turnaround.

Discussion Synopsis: There were no concerns raised by the group about the building, garden or gathering area elements.

Bus drop-off is needed at the Education Center to reduce walking time and provide safe conditions for students. Dropping students at Fowler Middle School is not an option because the walk is too far. The education goal is for students to spend 95% of their time experiencing the site. A drop off at the Education Center provides for this and will also reduce conflicts between Middle School and Environmental Education students. Summer camp students are currently dropped off at the Education center by parents. Because the wetland boundary is close to the building consider roadside pull-off in lieu of turnaround to reduce site impact.

Garden spaces uses could include: community gardens, native plant nursery (perhaps pollinator focused), eatables for summer camp and field trips.

The function of the Education Center building is to provide restrooms, lunch location in rainy weather, and storage for supplies and student gear. Curb appeal improvements do not need to be elaborate and could include adding native vegetation, expanding the deck and replacing doors.

Site 2. Nature Play Area on SW Tigard Street in Restored Oak Savanna

Proposed Activities: Nature play area and oak savanna restoration.

Discussion Synopsis: There some concerns raised by the group about including a nature play area in this location. Nature play was supported but this location (near traffic on SW Tigard Street and away from parking, park entry, and public services) were seen as problematic for safety reasons. Distributing play experiences around the site in different “ecosystems” was suggested though this might not provide children with the opportunity to meet and play with others in a designated nature play area. Consolidating play and environmental education uses would concentrate disturbance and reduce impacts to wildlife. Would a nature play area at the Education Center distract from education activities?

If nature play is located along SW Tigard the design should provide a vegetated buffer/separation between the play area and street traffic. A dense native vegetation buffer along SW Tigard St will also protect oak savannah restoration site from weed seed. Traffic is loud when cars are present. Locating activity area away from street will help.

Half-street improvements may be required. A continuous sidewalk will probably be needed in addition to the Community trail for local traffic. Try to integrate infrastructure into site. Runoff currently flows off SW Tigard St into the site. Consider

using low impact development techniques (no curb and gutter, vegetated filter strip) to keep this water on-site.

Design trails to discourage roaming off-leash dogs and desire-line trails. Seasonal closures could protect habitat during breeding season but would be difficult to enforce. Fencing could be used to keep users out of sensitive areas.

Preserve open reptile basking habitats on south-facing slopes. Jackson Bottoms has good examples.

Consider integrating habitat elements into the design of the developed locations along SW Tigard St.

Since non-native English hawthorn are being removed, consider planting native hawthorn (these may hybridize with the non-native species) or other fruit-bearing trees like Serviceberry and Cascara to provide bird habitat.

A covered bird watching location could be a nice amenity.

Site 2.5/3.5. Forested Wetland Boardwalk

Proposed Activities: Trails and environmental education.

Discussion Synopsis: There were no concerns raised by the group about environmental education in this location.

Habitat fragmentation and uncontrolled access were big concerns in this area. Creating a spur trail instead of a through trail was preferred. An elevated boardwalk would keep people on the trail and out of sensitive areas while allowing a unique user experience.

Boardwalk nodes would need to accommodate 10 students. Design elements could include blind-like handrails and decking that allows the user to see open water below them.

Accessing the forested wetland from the south will be the least impactful to wetlands. If access is provided from this location, upland forest fragmentation should be limited.

Site 4. Skills Area in Coniferous Northwest Forest

Proposed Activities: Trails, environmental education and skills course.

Discussion Synopsis: There were no concerns raised by the group about environmental education in this location.

Site currently vandalized (graffiti and fort building) and is devoid of understory vegetation. The hope is that vandalism will decrease with increased foot traffic. The size of the gathering area could be constrained by adding large wood at the perimeter. This would provide a nature play opportunity and would allow for education about the role of large wood. Replanting under the dense canopy would likely be challenging in the deep shade of this location.

Summer Creek Park is an important habitat site for ponderosa pines. These will be replaced by Douglas fir and cedar over time without management these species.

Selectively thinning them in this area could benefit ponderosa pine and provide a source of large wood.

Is it appropriate to keep skills activity here?

The existing trail network includes a through trail to SW Gallo and 113th Avenues. This trail should remain as it is an established site accesses. A nice loop is possible in this area but trail decommissioning is needed. Impacts to the riparian forest should be minimized when selecting trail alignments.

Site 5. Water Quality Sampling Area in Summer Creek Riparian Floodplain Forest

Proposed Activities: Paved trail, environmental education (water quality sampling), restroom and shelter (outside the 100-year floodplain).

Discussion Synopsis: There were no major concerns raised by the group about the activities proposed in this area.

The existing platform does not function for water quality sampling as it is too high. Currently the banks on either side of the creek are degraded due to uncontrolled access. A defined access for education is needed either on the north or south side of the creek to reduce habitat degradation. Adding to the existing stair and platform would consolidate impacts in one location. Water surface elevation fluctuates and should be factored into platform design. Incorporating historic flood elevations in to the design could be used as a teaching tool in this area.

Asphalt and concrete paving surfaces were discussed for a trail connecting the Fanno Creek Trail with the bridge to Fowler Middle School. Maintenance currently accesses the Park from Fowler Middle School. Concrete is more expensive but longer lived, while asphalt is less expensive and consistent with other paved surfaces in the Park. National Marine Fisheries Service may object to asphalt in the 100-year floodplain.

Site 3. Playing Field

Proposed Activities: Remove northwest baseball backstop, add a soccer overlay in the outfield area of the southeast baseball field and provide a trail.

Discussion Synopsis: There were some concerns raised by the group about the proposed activities in this area. There was some opposition to adding a soccer overlay as this would extend the recreational use season.

The reconfigured playing fields will leave much of the northwest corner available for native plantings. The small wetland in this area would not be impacted by proposed activities and provides a good opportunity for on-site mitigation.

Walkers use the west and north edges of the field to create a loop off of the Fanno Creek Trail. Developing a paved loop trail in this area would take advantage of sunny southern aspect and serve the active recreation areas and restroom.

This trail alignment passes the riparian floodplain forest of Summer Creek, coniferous northwest forest, forested wetland, camas, quaking aspen, and ponderosa pine forest and so provides good interpretive opportunities.

Site 6. Parking on SW Tigard Street

Proposed Activities: Parking lot for Fanno Creek Trail and Community Park.

Discussion Synopsis: It was after 4:00 by the time we reached this location so discussion was brief. No major concerns were raised by the group about the activities proposed in this area though adding paving to the site was a concern.

Summer Creek Park will function as a Community Park and so will serve people from across Tigard. During acquisition, this parcel was targeted specifically to provide parking in order to limit the impact of additional cars on the surrounding neighborhood. Concentrating parking will allow for controlled access to the Park using designated trails. Low impact development techniques could be used in the parking lot design to limit impacts and provide an educational opportunity.

There is a desire line trail used by children living north of SW Tigard St when accessing the Park and walking to school. A paved path connecting the parking lot to the Fanno Creek Trail in this area would formalize this route. An overlook of the Fanno Creek wetland could be incorporated to add an interpretive element.

Summer Creek Community Trail

Proposed Activities: Provide trail alignment in the park.

Two alignments are proposed for this trail in the Tigard Greenway System Master Plan. One alignment follows SW Tigard St and one crosses the south side of Summer Creek Park connecting SW Gallo Ave to the Fanno Creek Trail. This trail was discussed at several sites.

Discussion Synopsis: Habitat fragmentation and increased traffic (bike and ped) were concerns for the southern alignment.

Paving the southern alignment was not favored. Integrating the trail into the area along the northern alignment was preferred. A vegetated buffer between the trail and SW Tigard would increase the sense of separation from the road.

Modifications to the Fanno Creek Trail alignment and design could reduce wetland impacts and barriers to species migration.

END

Meeting Notes

Summer Creek Property Master Plan Public Meeting
Wednesday March 28, 2012
Tigard PW Building – 8777 SW Burnham Street
7:00 - 8:30 pm

Attendees:

See Sign in Sheet

Project Overview:

Following brief introductions and welcoming remarks, a presentation was given to share information about the site's conditions, constraints and current use, with special focus toward the extent of wetlands and the variety of habitat types. A range of potential park amenities was noted that include the upgrade and re-configuration of existing sports fields and the construction of a restroom, interpretive shelter, natural play area and trails. The majority of the park, approximately 35 acres, will remain as open space – a significant portion of which will undergo restoration. Two master plan concepts were discussed and review, and special attention was directed toward enhancements at the education center and a potential parking area off Tigard Street. These concepts were used during the group break-out sessions to elicit public feedback.

Break-Out Exercise – Group 1 (10 people: 5 men and 5 women)

Education Center

The group was generally in favor of the proposed improvements at the Education Center. Environmental Education perspective preferred the bus drop-off to be located near the education center, with forty days annual usage. Some parents do not want children to have long walk through the site to education center from a drop-off at Fowler Middle School.

The curb appeal improvements proposed for the existing double-wide structure were well supported.

Walking Trails

The group was interested in providing some accessible trails (strollers, etc.). Paved trails could be pervious pavement. Some members of the Group really liked the notion of a loop trail using the sidewalk along SW Tigard Street and a Community Trail offset from SW Tigard in a serpentine pattern.

Others mentioned that the area along SW Tigard Street is a sensitive habitat area. Need to be aware of that when considering a busy trail.

Maintaining access from the neighborhood southwest of the park is important.

Nature Play Area

The Nature Play Area was supported but concerns were raised about not making it too brushy or wild so that parents can easily observe children at play and keep them safe. There were folks in favor of both proposed locations (near parking) but there was some concern that the play area might be a distraction if located near the education center. Locating the play area near parking and restrooms was recommended.

Playing Field

The group supported the proposed baseball field and soccer field overlay.

Parking on SW Tigard Street

This group was split on parking on SW Tigard. Some prefer looking at the education center location as an alternative to keep development away from habitat, and would like upland scrub/shrub habitat enhancements within the proposed parking area. Others expressed a need to improve safety along SW Tigard and saw an opportunity to provide needed parking adjacent to the Fanno Creek Trail.

Summer Creek Community Trail

A paved sidewalk/trail along SW Tigard Street is needed for safety of children and others moving along the corridor. Some voiced a desire for a planted buffer along this trail to separate it from SW Tigard Street.

Traffic moves quickly on SW Tigard, often exceeding the 25 mph posted speed limit. Traffic calming and cross walks or crossing signal could be helpful for pedestrians and bikes crossing on the Fanno Creek Trail. A raised crossing for the Fanno Creek Trail was offered as one potential means to improve safety.

(See comments under walking trails)

Safety

The group discussed vandalism of existing site (plantings and tree tagging) and had concerns about future facilities (restrooms). Prior homeless camps and prior use of the environmental education parking lot for parties and other activities were a concern. A park ranger or patrol program like THPRD's could help.

Other

A park sign should be installed.

A phased development approach was discussed. This would allow for a simple start and slow growth in to the site.

Break-Out Exercise – Group 2 (8 people: 7 men and 1 woman)

Summer Creek Community Trail

The group felt that it was redundant to have both a sidewalk and paved trail parallel to SW Tigard Street. Something in between Concept A and Concept B was preferred. A wider meandering sidewalk set further off the street with a planted screen

separating it from the road was preferred. Access points for people crossing the street should be incorporated into the design (could swoop back to curb rather than have spur sidewalks).

If there is a bike lane on SW Tigard do we need a multi-modal trail in the park?

From an Environmental Education perspective there was concern about having student's first nature experience be on a paved path as this is more of an Urban Park than Nature experience.

Nature Play Area

The preferred location for this activity was adjacent to both parking and restrooms. No designated park parking lot location is available near the ball fields (the proposed restroom location), though limited on-street spaces are available. There is parking at Fowler Middle School but only on SW Walnut Street.

There are restrooms at the Education Center, but they are only available when the building is unlocked. A port-a-potty could be provided at either the Education Center or at the proposed parking lot location to serve the play area.

From an Environmental Education perspective there was concern about locating the Nature Play Area at the Education Center because parking is needed at that facility when it is in use.

Walking Trails

Unpaved walking trails were the preferred amenity for the group. They favored the more extensive trail network in the southwest part of the site and liked the boardwalk elements that were proposed. They liked trails that follow existing alignments (where people want to go). Questions were asked about if providing accessible trails was required. But the group did not advocate for this.

Parking on SW Tigard Street

Given the amount of use that the proposed soccer and baseball fields will attract, the group felt that more parking might be needed. There was a desire to look more closely at the Education center to see if additional spaces could be provided there.

Education Center

The group was generally in favor of the proposed improvements at the Education Center.

Water Quality Sampling Area

Improvements are needed here to make sampling possible.

Playing Field

The neighborhood already had a lot of night- lighting and noise from the playing fields at Fowler Middle School. Not having lit fields at the park was a preference that is in keeping with habitat conservation goals for the property.

Safety

There was a question about security lighting in the park. Steve Martin responded that the only place it might be appropriate was on the Fanno Creek Trail because it is considered a transportation corridor. The group supported this limited approach and did not advocate for including lighting in the plan. The biggest concern relative to lighting was for children walking to school.

Off-Leash Dogs/Cats

There was concern voiced about the amount of damage done to habitat and species by uncontrolled pets. Providing an off-leash area was briefly discussed but didn't seem to solve the real problem. It also seemed inconsistent with Habitat Conservation goals and would require a considerable amount of land.

END

Meeting Notes

Summer Creek Property Master Plan, Public Meeting Number 2

Thursday May 17, 2012

Tigard PW Building – 8777 SW Burnham Street

7:00 - 8:30 pm

Attendees:

See Sign in Sheet

Project Overview:

The meeting began with brief introductions, welcoming remarks, and an update on where the Summer Creek Property is in the master planning process. This was followed by a presentation that reviewed existing site conditions, constraints and uses, with special focus on the variety of habitat types, including wetlands found on the site. The Concepts presented at Public Meeting Number 1 were reviewed and the presentation summarized the feedback received from stakeholders and the public thus far. The presentation then reviewed the modification made to the earlier concepts to create the Concept Master Plan. The Concept Master Plan presentation and discussion was followed by a more detailed discussion of the education center improvements and the two nature play areas. Following the presentation there was an informal group discussion of the Concept Master Plan followed by a brief open house that allowed for more one-on-one discussion. Feedback received at the meeting is summarized below by topic.

Discussion During the Presentation:

Parking

The Concept Master Plan shows parking for 10 to 15 cars near the Fanno Creek Trail and an additional 8 to 10 car overflow parking area at the Education Center. There was concern that additional parking may be required. The City will likely require parking along SW Tigard Street but a resident suggested that off-street parking would be preferable due to the high traffic speeds on SW Tigard Street and unsightliness of parked cars.

The overflow parking spaces at the environmental education center were discussed briefly. The proposed paving material is a pervious pavement like grasscrete. There was support for this but traditional asphalt was also suggested as a better choice. Expanding parking in this area and/or the flexible use area was also discussed.

Playing Field

The location and orientation of the ballfields was generally supported. It was suggested that drainage be carefully considered in the baseball backstop area as well as on the soccer field. Soil amendments and drainage improvements may be required to improve playability.

Restrooms

Restroom location should consider the cost of providing water and sewer to the location. There was support for the proposed location from a use point-of-view (central, near the ballfields, away from Fowler Middle School, near parking lot).

Education Center

The proposed curb appeal improvements to the education center were generally favored and were not discussed at length.

Community Garden

Community garden space proposed near the education center will be used by both the education center (to grow native plants) and the public (as community garden space). There was concern that 15 beds would not be enough to satisfy demand. Adding more beds at the education center and/or expanding the garden in the flexible use area were discussed as options.

Bird Watching

A covered bird viewing area (like the amenity at Jackson Bottoms Wetland Preserve) would be appealing. Adding a cover to the proposed education center deck was discussed. Providing for this in the flexible use area farther from the road was also discussed and was preferred.

Nature Play Area

Nature play materials choice with regard to maintenance was discussed. Maintenance staff raised concerns about sand and seasonal water (mud) near restroom and parking lot. Maintenance has experienced difficulties with these materials and keeping public restroom facilities clean and in working order. Restrooms will likely be open year round. Wood chip materials are preferred to sand in play areas. Maintenance staff was also concerned that moveable parts would make park maintenance more difficult.

The group generally favored nature play. One participant voiced a preference for play elements with a rustic look. Another felt the vertical logs were reminiscent of cut trees. Concerns were raised about the longevity of wood structures, such as the log pile, with natural material breaking down over time. Swings and rocks with engraved animal characters were supported. Both nature play and traditional play structures were acceptable. Rock features were favored.

Trails

There was support for the trail network on the site and for the proposed boardwalk and forested wetland overlook which provides views into the wetland while protecting habitat.

It was suggested that the proposed 6-foot sidewalk/community trail along the SW Tigard Street be widened to 8 feet to better serve as a community trail.

Restoration and Mitigation

Restoration efforts will be focused on the Oak Savanna area in the north and west part of the site, as it includes many slow-growing species. Restoration east of the Fanno Creek Trail is not included in the master plan.

Protection of the wetland mitigation area near the ballfield was discussed. Fencing was discussed as was using signing and education in lieu of fencing.

Water Quality Sampling Area

The need to improve the water quality testing area was mentioned as an important component to support environmental education.

Phased Development

It was suggested that construction be phased such that heavy construction is completed early in the phasing to avoid impacts to restored areas of the site.

END

Appendix D

Estimate of probable Construction Costs -- Master Plan

June 30, 2012

Item	Quantity	Unit	Unit Price	Cost	Cost Plus 20%
Mobilization					
Mobilization (7% of Construction Cost)	1	LS	\$30,119.00	\$30,119	\$36,143
			Subtotal:	\$30,119	\$36,143
Construction Survey & Staking					
	1	LS	\$10,000.00	\$10,000	\$12,000
			Subtotal:	\$10,000	\$12,000
Clearing & Grubbing					
Clearing & Grubbing	43,970	SF	\$0.25	\$10,993	\$13,191
Misc. Tree Removal	10	EA	\$400.00	\$4,000	\$4,800
				\$14,993	\$17,991
Porta-potty					
Concrete Pad (for unisex accessible porta-potty)	300	SF	\$5.00	\$1,500	\$1,800
Screening (for porta-potty)	65	LF	\$45.00	\$2,925	\$3,510
				\$4,425	\$5,310
Restrooms/Interpretive Shelter					
Water Meter	1	LS	\$5,000.00	\$5,000	\$6,000
Water Line - 3/4 inch	500	LF	\$25.00	\$12,500	\$15,000
Sanitary Line - 4 inch	500	LF	\$35.00	\$17,500	\$21,000
Electric Connection (for restroom)	1	LS	\$10,000.00	\$10,000	\$12,000
Restroom/Interpretive Shelter (4 seats)	1	LS	\$80,000.00	\$80,000	\$96,000
				\$125,000	\$150,000
Site Furnishings					
Bench (6 foot)	7	EA	\$1,800.00	\$12,600	\$15,120
Picnic Table	6	EA	\$4,000.00	\$24,000	\$28,800
Litter Receptacle	6	EA	\$1,500.00	\$9,000	\$10,800
Entry Signage	3	EA	\$5,000.00	\$15,000	\$18,000
Interpretive Signage	10	EA	\$6,000.00	\$60,000	\$72,000
Bollards	2	EA	\$500.00	\$1,000	\$1,200
Loop Bike Rack	4	EA	\$500.00	\$2,000	\$2,400
				\$123,600	\$148,320
Nature Play Areas					
Toddler Area (at parking lot)	1	LS	\$40,000.00	\$40,000	\$48,000
Age 5-12 Area (at playing field)	1	LS	\$50,000.00	\$50,000	\$60,000
				\$90,000	\$108,000
Playing Fields					
Soccer Field (Partial Overlay)	1	LS	\$70,000.00	\$70,000	\$84,000
Baseball Field Improvements	1	LS	\$90,000.00	\$90,000	\$108,000
Baseball Field Backstop Removal (2)	1	LS	\$5,000.00	\$5,000	\$6,000
				\$165,000	\$198,000
Boardwalks					
Boardwalk (Fanno Creek Trail)	1	LS	\$150,000.00	\$150,000	\$180,000
Handrail for Fanno Creek Boardwalk	800	LF	\$115.00	\$92,000	\$110,400
Boardwalk (Soft Surface Trails)	1,200	SF	\$118.00	\$141,600	\$169,920
Water Quality Sampling Improvements	1	LS	\$14,000.00	\$14,000	\$16,800
				\$397,600	\$477,120
Parking Lot					
Driveway Apron	2	EA	\$1,500.00	\$3,000	\$3,600
Asphalt Paving (with base)	10,500	SF	\$6.00	\$63,000	\$75,600
Parking Lot Signage	4	EA	\$500.00	\$2,000	\$2,400
Concrete Wheel Stops	12	EA	\$100.00	\$1,200	\$1,440
Striping	1	LS	\$2,500.00	\$2,500	\$3,000
				\$71,700	\$86,040
Concrete					
Abutments	6	EA	\$400.00	\$2,400	\$2,880
				\$2,400	\$2,880

Item	Quantity	Unit	Unit Price	Cost	Cost Plus 20%
Trails					
Paved (8-foot asphalt-Maintenance Access)	4,160	SF	\$6.00	\$24,960	\$29,952
Paved (8-foot asphalt-Community Trail)	11,600	SF	\$6.00	\$69,600	\$83,520
Paved (6-foot concrete-Sidewalk)	5,000	SF	\$5.00	\$25,000	\$30,000
Soft Surface (5-foot chip-SW Tigard St to Fields)	520	LF	\$3.00	\$1,560	\$1,872
Soft Surface (5-foot chip-Around Fields)	1,140	LF	\$3.00	\$3,420	\$4,104
Soft Surface (5-foot chip-Southwest)	2,130	LF	\$3.00	\$6,390	\$7,668
Soft Surface (3-foot chip-North)	660	LF	\$2.00	\$1,320	\$1,584
Soft Surface (3-foot chip-Southwest)	1,230	LF	\$2.00	\$2,460	\$2,952
				\$134,710	\$161,652
Half Street Improvements					
Half Street Improvements	1	LS	\$472,000.00	\$472,000	\$566,400
				\$472,000	\$566,400
Education Center Improvements					
Paint	1	LS	\$15,000.00	\$15,000	\$18,000
Deck	1	LS	\$15,000.00	\$15,000	\$18,000
Screening Vegetation & Fence	1	LS	\$25,000.00	\$25,000	\$30,000
Community Garden	1	LS	\$30,000.00	\$30,000	\$36,000
Overflow Parking	1	LS	\$15,000.00	\$15,000	\$18,000
				\$100,000	\$120,000
Permanent Fencing					
Split Rail Fence	350	LF	\$40.00	\$14,000	\$16,800
				\$14,000	\$16,800
Erosion & Sediment Controls					
Erosion & Sediment Controls	1	LS	\$25,000.00	\$25,000	\$30,000
				\$25,000	\$30,000
Planting					
Required Screening & Trees (new lot)	1	LS	\$25,000.00	\$25,000	\$30,000
Replanting (baseball field)	1	LS	\$40,000.00	\$40,000	\$48,000
Wetland & Buffer Mitigation	1	LS	\$60,000.00	\$60,000	\$72,000
				\$125,000	\$150,000
Miscellaneous					
Parking Lot Lighting (2 lights)	1	LS	\$15,000.00	\$15,000	\$18,000
				\$15,000	\$18,000

Subtotal:	\$1,880,428	\$2,256,513
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CONSTRUCTION SUBTOTAL	\$1,920,547	\$2,304,656
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OVERHEAD AND PROFFIT (7%)	\$134,438	\$161,326
BONDING AND INSURANCE (2%)	\$38,411	\$46,093

TOTAL	\$2,093,396	\$2,512,075
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DESIGN SERVICES (10%)	\$209,340	\$251,207
PERMITTING SERVICES (4%)	\$83,736	\$100,483
INFLATION (3%)	\$62,802	\$75,362

(assume summer 2013 construction)

GRAND TOTAL	\$2,449,273	\$2,939,128
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