

Introduction

The Fanno Creek Park Master Plan is an analysis of one section of the Fanno Creek Greenway Trail system just east of Hall Boulevard and directly abutting property to the south planned for the development of a new Library for the City of Tigard. The site is 9.7 acres of gently sloping land with a mix of open pasture, scrub/shrub and large trees. Fanno Creek divides the site into three distinct sections: a northern portion with a backwater slough from Fanno Creek; an eastern section of predominantly wet, forested areas; and a southern portion of large trees and open space directly adjacent to the proposed Library site.

The Fanno Creek Greenway Trail, itself, has been in planning and implementation for years and extends in sections over 15 miles from the Tualatin River to Willamette Park in Portland. Over half of the trail has been completed, utilizing a mixture of on-street and off-street routing. The Fanno Creek Park Master Plan helps fill in a missing link in this greenway trail, extending the park beyond Hall Boulevard toward its destination at the Tualatin.

Through a joint effort of the team of Murase Associates, KPFF Consulting Engineers, PBS Environmental Engineers; City staff; and interested citizens, this Master Plan has been developed to guide the long term development and protection that will occur in this area. Facilities and improvements identified in the Master Plan will help integrate the park into the larger Fanno Creek trail system as well as serve to connect this valuable green space with adjacent public facilities and adjacent properties.

A Master Plan also serves as a means to better understand the complexities of this unique place and to guide future decision-making. It prioritizes development opportunities and protected areas within the study area. The resultant recommendations contained in this report will significantly expand the variety and quality of recreational opportunities within the Tigard community as well as protect valuable land for people and wildlife. These enhancements will improve the livability of the community and attractiveness to the area's residents. This Master Plan report describes the public and planning process that was undertaken by the design team and results in recommendations for future work on the site.



meadow near future library



northern meadow



Fanno Creek



backwater pond

Project Goals

Prior to the development of a master plan team for the Fanno Creek Park property, two public meetings were held to establish some initial goals and program elements for the proposed Library and adjacent park property. The two public meetings were on March 5, 2002 and October 16, 2002. The meetings resulted in a number of suggestions about the type and quality of spaces and elements on the site, including:

- Provide signs for the park
- Provide access to trail from library parking lot
- Keep open space as large as possible
- Provide a big buffer along Fanno Creek
- Purchase more land east of the site for open space
- Provide a series of pathways developed for education/recreation
- Have family-oriented use in open space
- Provide environmental education for professionals
- Natural environment is special
- Maintain wildlife habitat corridors
- Look at endangered species concerns
- Provide outdoor auditorium band shell
- Provide benches and picnic tables
- Provide meditation maze
- Look at existing house as cultural center

These ideas were the basis of further discussions with the City of Tigard and interested citizens during the first and second public meetings and resulted in a series of goals for the park. The goals serve as a benchmark and reminder of priorities as the master plan process moves forward.

The goals are:

- Develop a trail system to link the community and connect to Fanno Creek that provides accessibility for all people of all ages and physical abilities.
- Provide a variety of educational opportunities about the natural environment and local history.
- Preserve, enhance and restore the natural resources to promote wildlife habitat and improve water quality.
- Create uses and activities to strengthen the sense of community and compliment the library
- Design a safe and secure park



meadow



pond



pond

Site Analysis



Site Analysis *continued*

The site is divided into three distinct areas with Hall Boulevard creating an edge to the west of the property:

The northern portion of the site contains a backwater slough that extends from Fanno Creek to the north and continues under Hall Boulevard to create a pond near City Hall and the existing Library. There is a small pond surrounded by a mature stand of native oaks in the center of this northern area. To the west of the pond is an open meadow of mixed grasses that appears managed by recent grazing or mowing. The remaining area is a mixture of trees and scrub/shrub. The property to the east of this area is in private ownership and remains undeveloped. The adjacent site to the north is leased by the school district as a parking lot for school buses and has a significant visual impact on the site. The existing Fanno Creek Trail ends on the west side of Hall Boulevard, presenting a formidable barrier for the continuation of the trail. With an average of 16,000 vehicles per day on this roadway, the design of this crossing is vital to creating a safe connection across the roadway.

The eastern portion of the site is primarily a mixture of mature deciduous and evergreen trees. Although no wetlands have been delineated in this area, the ground surface is heavily inundated with water from Fanno Creek's consistent flooding. This area is separated from the western side of the site by Fanno Creek and is not readily accessible from the Hall Boulevard side of the park.

The southwest corner of the site sits adjacent to the site of the proposed new library building and is dominated by a large bowl-shaped meadow. A mixture of scrub/shrub exists along the river and a small wetland has been delineated to the south.

Clean Water Services (CWS) has established a 50-foot setback around Fanno Creek and the adjacent wetland. Except for creek crossings and small trails, development within this zone is prohibited. Trails and crossings that impact this area will be subject to planting mitigation on a 1:1 basis in addition to the 50-foot buffer. Buffer plantings will be a mixture of native vegetation, subject to CWS guidelines. Under a separate agreement with the City, a condition of approval for the new library will require planting within this buffer along the library side of the creek.

The one hundred-year floodplain occupies a significant portion of the study area, with the new library planned right to its edge on the southern side. The presence of the floodplain will limit the amount of development that can occur on the site. Earthwork activity within the floodplain will need to be permitted to ensure that a decrease in the available flood area for the creek does not occur.



wetland



existing greenway trail

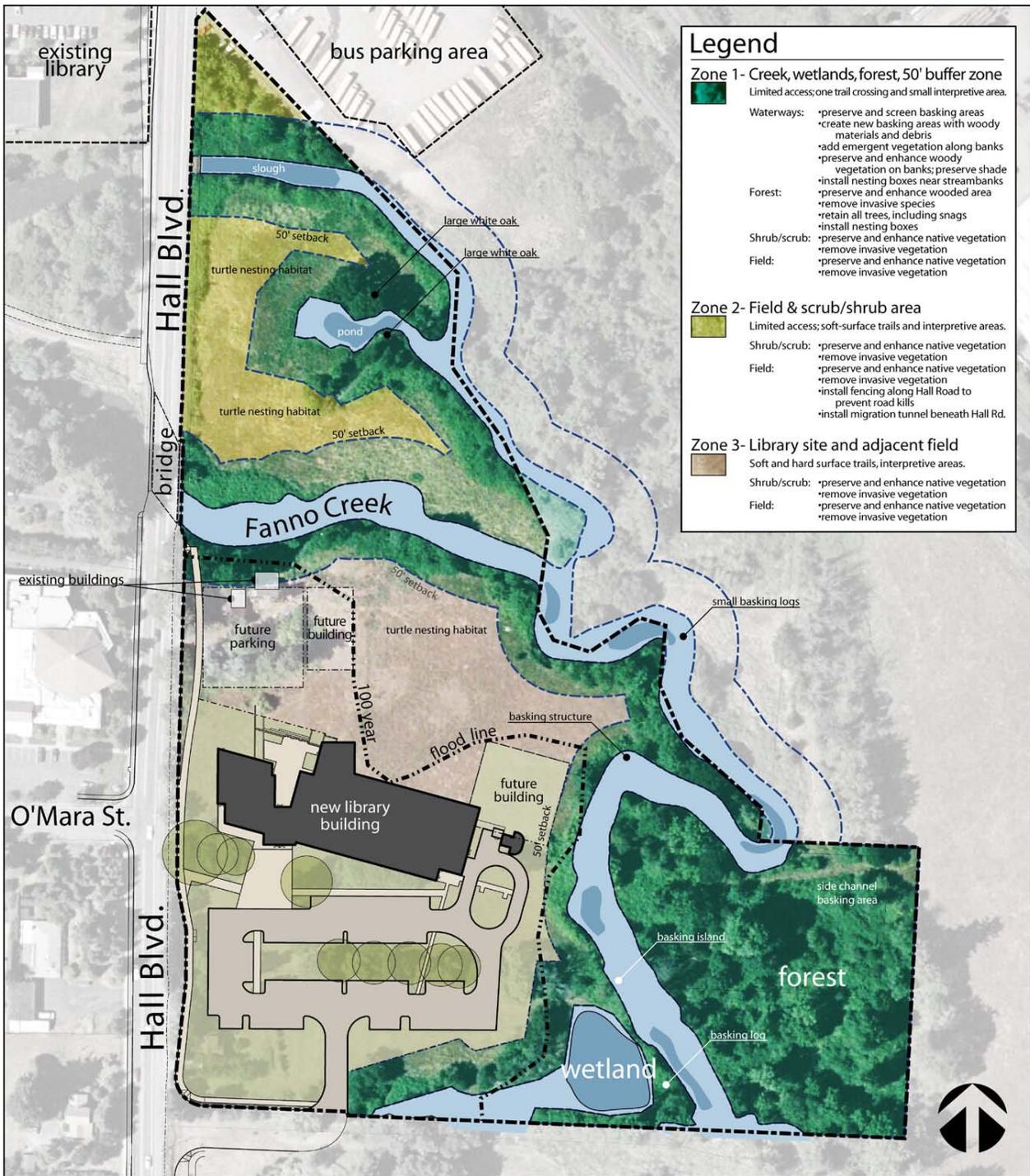
Site Analysis *continued*

The site’s natural areas offer significant habitat opportunities for this quickly urbanizing area. The following table provides an initial look at some general guidelines that helped guide conversations about the restoration work during the public process. This chart illustrates the general site areas, actions that could be taken to improve habitat, and the environmental benefits that can be expected from those actions:

Area	Action	Environmental Benefit
Stream	Stream bank restoration	
	Grade bank to shallower slope.	Reduces peak flows; reduces erosion; slows water, creating habitat for some fish, amphibians, and reptiles; increases in-stream habitat diversity
	Plant with native riparian plants such as willows, red-osier dogwood, alder, and cottonwood.	Increases habitat diversity; shades stream banks.
	Control Himalayan blackberry	Creates space for native plants, which serve as better habitat for wildlife.
	Widen vegetated zone adjacent to stream in some areas.	Increases habitat diversity and shade, reduces human disturbance to wildlife; creates travel corridor; serves as cover and shelter for wildlife; increases bank stability.
	Increase emergent vegetation within stream.	Creates habitat and forage for waterfowl; increases habitat diversity for aquatic invertebrates; traps sediments.
Shrub/scrub area	Install nest boxes in trees adjacent to stream.	Creates reproductive sites for cavity-nesting birds such as wood ducks, hooded mergansers, bufflehead, and wood peckers.
	Control Himalayan blackberry.	Creates space for native plants, which serve as better habitat for wildlife.
	Add large woody debris	Creates habitat for amphibians, reptiles, and small mammals; shelters developing plants; serves as a source of soil nutrients; traps sediments.
	Preserve snags	Creates habitat for bats and birds, especially cavity-nesters and large birds of prey.
Field	Plant native trees, shrubs, and herbs	Increases plant diversity; creates habitat for a variety of wildlife including songbirds, deer, and small mammals.
	Remove and control non-native pasture grasses.	Creates space for native plants, which serve as better habitat for wildlife; increases habitat diversity.
	Arrange plantings in clumped distribution with high vertical diversity.	Increases structural habitat diversity; creates a variety of breeding sites, cover types, and microclimates
	Limit mowing to distinct areas	Reduces physical disturbance to wildlife; increases plant and wildlife habitat diversity.
	Remove Scots broom	Creates space for native plants, which serve as better habitat for wildlife; increases habitat diversity.
Wetland	Remove purple loosestrife	Creates space for native plants, which serve as better habitat for wildlife; avoids widespread invasion.
	Shade banks by planting native trees or shrubs	Increases habitat diversity; creates cover and shelter from the elements.
	Add herbaceous vegetation in mudflats along water line	Increases habitat diversity; reduces erosion.
Forest	Increase emergent vegetation within pond	Creates habitat and forage for waterfowl; increases habitat diversity for aquatic invertebrates; traps sediments.
	Remove Himalayan blackberry	Creates space for native plants, which serve as better habitat for wildlife; avoids widespread invasion.
	Preserve snags and large woody debris	Creates habitat for bats and birds, especially cavity-nesters and large birds of prey.

Wildlife/Habitat Analysis

Environmental Protection and Enhancement Zones



Murase Associates

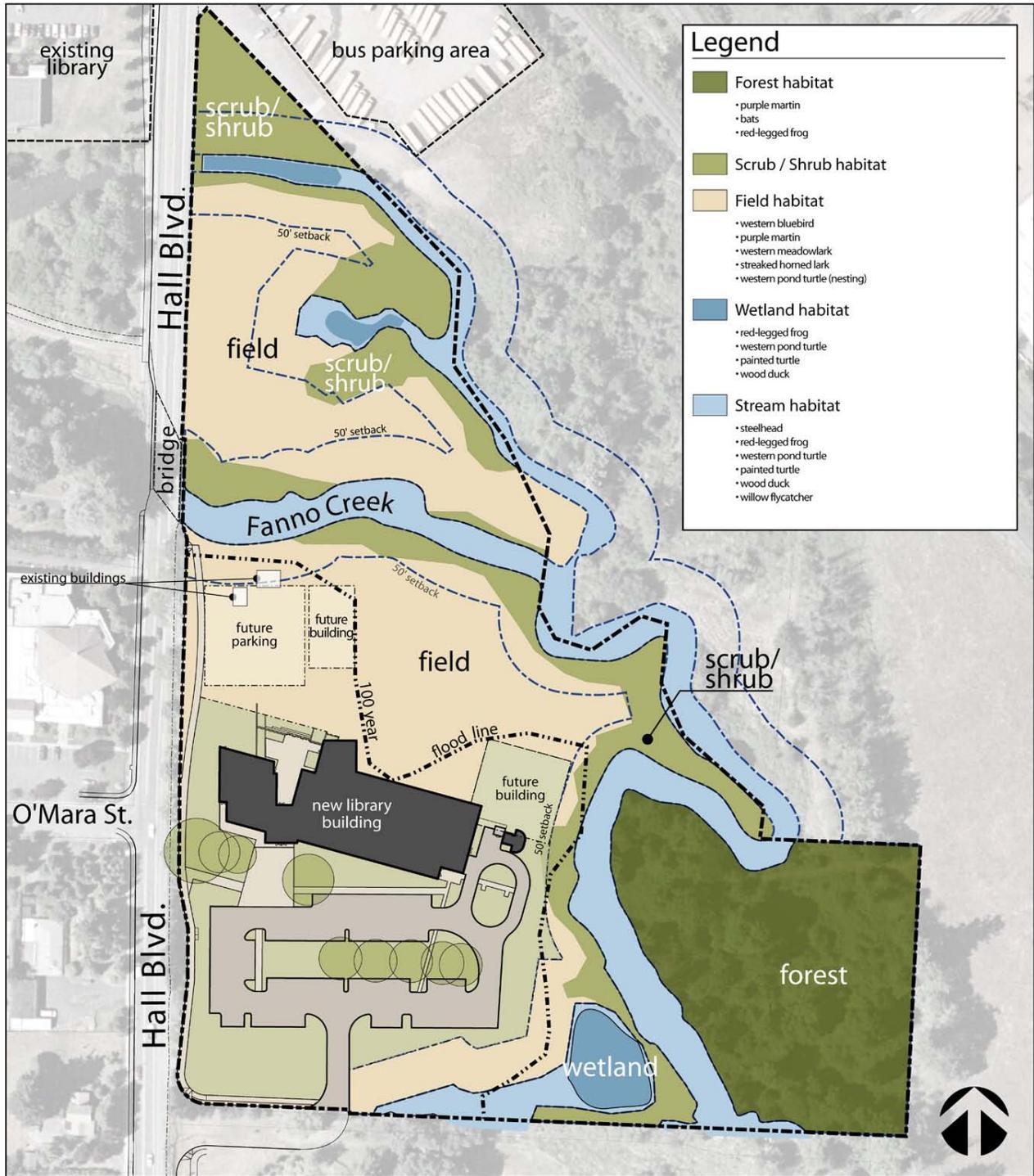
City of Tigard, Oregon

Fanno Creek Park

second public meeting, April 3rd, 2003

Wildlife/Habitat Analysis *continued*

Site Habitats and Existing Conditions



Wildlife/Habitat Analysis *continued*

We have completed an assessment of sensitive areas at the Tigard Library Master Plan site. The assessment included (1) talking with Sue Bielke and other local biologists; (2) reviewing existing information on threatened, endangered, and sensitive species; and (3) visiting the site to determine the potential presence of listed or sensitive species or habitats. Setbacks and recommendations were based on the results of the assessment. This summarizes the species-specific recommendations provided on the following tables and only presents those relating to the trail location, buffers, or preserving specific habitats.

Setbacks/Buffers

From a regulatory standpoint, there is no requirement for buffers other than the 50-foot buffer required by Clean Water Services, however, fish and wildlife species that would benefit from buffers currently inhabit or could potentially inhabit the Fanno Creek Park site. Some examples include the pond and painted turtles. Turtles, for example, can be easily frightened by human activity causing them to avoid using certain areas. Other species may or may not change their behavior due to human activity. Some species will clearly avoid areas just because certain habitat requirements are not met, which might be related to the presence of buffers. The greater the human presence and activity in an area, the fewer wildlife species will be found in that area.

Buffers can provide important benefits to species and habitats at the site, including reducing invasion by non-native plant species, reducing disturbance by human activity, and providing shade and large woody debris to the creek. The buffer requirements of Clean Water Services should be viewed as the minimally acceptable buffers along streams and wetlands. Larger buffers in these areas would enhance these habitats. To prevent possible adverse effects to habitat for steelhead - federally listed as threatened - existing trees within 100 feet of the creek should not be removed.

Recommendations

Although buffers are not required to protect certain species or habitats, the city may want to protect or buffer some areas to enhance fish and wildlife. The following recommendations provide optional measures the city could implement to enhance fish and wildlife habitat.

- Preserve the forested area east of creek and scrub-shrub area north of the open water area
- Preserve the wetland, open water, and backwater pond
- Keep trail away from basking areas (areas of large woody debris in the stream) and use plantings to screen basking areas from people
- Preserve field habitat for turtle nesting. The northern field provides the most suitable locations for turtle nesting based on connections with the backwater pond and open water area.



small animal trail at pond

Wildlife/Habitat Analysis *continued*

List of “sensitive species” that may be found on the site

“Sensitive species” are defined as any plant or animal appearing in *Rare Threatened and Endangered Plants and Animals of Oregon* (ONHP 2001).

This list includes species classified as follows:

- Federally threatened, endangered, proposed threatened or endangered, candidates for listing as threatened or endangered, or species of concern.
- On the Oregon Natural Heritage Program lists, and
- Listed critical, vulnerable, or peripheral or naturally rare under the ODFW threatened and endangered species program.

No recommendations have been provided for sensitive plant species, because no sensitive plants species have been confirmed to be present on the master plan site. The following table describes potential animal species that may be present within the project site, their habitat, and recommended action:

Animals

Scientific Name	Common Name	Status	Habitat type	Habitat Present in Project Area	Recommended Action
Amphibians					
<i>Bufo borealis</i>	Western toad	SV	Marshes, small lakes, dry forests, shrub thickets, streams	<ul style="list-style-type: none"> ○ Wetland ○ Scrub/shrub areas ○ Fanno Creek 	<ul style="list-style-type: none"> ○ Preserve the forest area east of creek and scrub-shrub area north of open water area
<i>Rana aurora aurora</i>	Red legged frog	SOC	Wooded areas near streams	<ul style="list-style-type: none"> ○ Forest ○ Wetland ○ Slough ○ Backwater pond ○ Fanno Creek 	<ul style="list-style-type: none"> ○ Preserve the forest area east of creek and scrub-shrub area north of open water area ○ Add emergent vegetation to shoreline of wetland
<i>Rana pretiosa</i>	Oregon spotted frog	FC	Perennial ponds and slow-moving streams, usually herbaceous plant communities.	<ul style="list-style-type: none"> ○ Wetland ○ Slough ○ Backwater pond 	<ul style="list-style-type: none"> ○ Preserve wetland, open water, and backwater pond ○ Plant emergent vegetation along margins of these water bodies
Reptiles					
<i>Chrysemys picta</i>	Painted turtle	SC	Marshes, slow rivers, ponds, and lakes. Basking habitat includes logs, branches, and emergent vegetation.	<ul style="list-style-type: none"> ○ Fanno Creek ○ Wetland ○ Slough ○ Backwater pond 	<ul style="list-style-type: none"> ○ Keep trail away from identified instream basking areas ○ Buffer basking areas with shrubs or other dense growth ○ Add basking structures to open water areas ○ Plant emergent vegetation in wetland and backwater pond ○ Install fencing along road to prevent road kills on Hall Blvd ○ Create migration tunnel under Hall Blvd.
<i>Emys marmorata marmorata</i> *	Western pond turtle	SOC, SC		<ul style="list-style-type: none"> ○ Fanno Creek ○ Wetland ○ Fanno Creek side channel ○ Fields 	<ul style="list-style-type: none"> ○ Keep trail away from identified instream basking areas ○ Buffer basking areas with shrubs or other dense growth ○ Preserve field habitat as nesting area ○ Improve field by planting native grasses and shrubs ○ Add basking structures ○ Plant emergent vegetation in wetland ○ Acquire adjacent fields (tax lots 2S1010001200 and 2S102DA00500) and preserve as basking areas
<i>Contia tenuis</i>	Sharptail snake	SV	Moist coniferous or deciduous forest, grassy areas at forest edge, under rocks and LWD Peak activity Mar – June	<ul style="list-style-type: none"> ○ Forest edges 	<ul style="list-style-type: none"> ○ Preserve forest and provide buffer area around forest

Wildlife/Habitat Analysis *continued*

Birds					
Aix sponsa	Wood duck	None	Wooded areas next to water	<ul style="list-style-type: none"> ○ Fanno Creek ○ Backwater slough 	<ul style="list-style-type: none"> ○ Preserve woody vegetation along creek ○ Place nest boxes on trees overhanging creek and backwater pond
<i>Chordeiles minor</i>	Common nighthawk	SC	Forage everywhere		
<i>Empidonax traillii brewsteri</i>	Little willow flycatcher	SOC, SU	Willows at stream edges. Thickets at forest clearings, tall bushy vegetation near water	<ul style="list-style-type: none"> ○ Very limited areas along Fanno Creek ○ Sighted on property to south adjacent to wetland 	<ul style="list-style-type: none"> ○ Plant willows along edges of wetland
<i>Eremophila alpestris</i>	Streaked horned lark	FC, SC	Areas of little to no vegetation (agricultural land, pastures, grasslands)	<ul style="list-style-type: none"> ○ Field 	<ul style="list-style-type: none"> ○ Preserve field habitat
<i>Melanerpes formicivorus</i>	Acorn woodpecker	SOC	Large oaks, other broadleaves may be present	<ul style="list-style-type: none"> ○ None 	<ul style="list-style-type: none"> ○ None
<i>Progne subis</i>	Purple martin	SOC, SC	Cavities adjacent to open areas	<ul style="list-style-type: none"> ○ Forest contains many cavities, crevices, snags, and broken top trees for nesting ○ Fields for foraging 	<ul style="list-style-type: none"> ○ Preserve forest ○ Place nest boxes in forest
<i>Sialis mexicana</i>	Western bluebird	SV	Clearcuts with snags, farms, riparian woodland; need cavities	<ul style="list-style-type: none"> ○ Forest contains many cavities, crevices, snags, and broken top trees for nesting ○ Fields for foraging 	<ul style="list-style-type: none"> ○ Place nest boxes in forest and on posts in fields
<i>Sturnella neglecta</i>	Western meadowlark	SC	Grasslands, pastures, meadows, adapted to agriculture.	<ul style="list-style-type: none"> ○ Field 	<ul style="list-style-type: none"> ○ Preserve field habitat
Mammals					
<i>Lasionycteris noctivagans</i>	Silver-haired bat	SOC, SU	Forested areas, hollow trees, bark	<ul style="list-style-type: none"> ○ In hollow trees and under bark in forest 	<ul style="list-style-type: none"> ○ Preserve forest
<i>Myotis thysanoides</i>	Fringed myotis	SOC, SV	Conifers, caves, crevices, buildings, forested riparian areas	<ul style="list-style-type: none"> ○ In crevices, forested wetland 	<ul style="list-style-type: none"> ○ Preserve forest
<i>Thomomys bulbivorus</i>	Canas pocket gopher	SOC	Grassy areas, pastures, roadsides, agricultural lands	<ul style="list-style-type: none"> ○ Field 	<ul style="list-style-type: none"> ○ Preserve field habitat
Fish					
<i>Oncorhynchus mykiss</i> *	Steelhead	FT		<ul style="list-style-type: none"> ○ Stream 	<ul style="list-style-type: none"> ○ Protect existing trees within 100 feet of creek ○ Plant shrubs and trees where to expand the vegetated buffer along the creek

Sources:

- Csuti, B., and coauthors. 1997. The Atlas of Oregon Wildlife. Oregon State University Press, Corvallis, Oregon.
- Leonard, W. P., H.A. Brown, L.L.C. Jones, K. R. McAllister, and R. M. Storm. 1993. Amphibians of Washington and Oregon. Seattle Audubon Society, Seattle, Washington.
- Maser, C. 1998. Mammals of the Pacific Northwest from the coast to the High Cascades. Oregon State University Press, Corvallis, Oregon.
- NatureServe. 2002. An on-line encyclopedia of life. <http://www.natureserve.org/explorer/>. Accessed March 21, 2003.
- ORNHP (Oregon Natural Heritage Program). 2001. Rare threatened and endangered plants and animals of Oregon. Oregon Natural Heritage Program, Portland, Oregon.
- Storm, R. M., and W. P. Leonard. 1995. Reptiles of Washington and Oregon. Seattle Audubon Society, Seattle, Washington.

*Documented by ORNHP as being present near the study area.

C: Candidate for listing under ODA (Oregon Department of Agriculture)

FC: Federal candidate for listing

FT: Federally listed as threatened

ONHP List 1: threatened with extinction or presumed to be extinct throughout their entire range

ONHP List 2: threatened with extirpation or presumed to be extirpated from Oregon

ONHP List 3: may be threatened or endangered in Oregon or throughout their range, but more data are needed

SOC: Federal species of concern

SC: State candidate

SU: State rank unknown

SV: State vulnerable species

Wildlife/Habitat Analysis *continued***Plants**

Scientific Name	Common Name	Status	Habitat Type	Known in Willamette Valley? ¹	Known in Washington County? 1	Habitat Present in Project Area
<i>Aster curtis</i>	White-topped aster	SOC	Grassland lowlands	Yes	No	Fields
<i>Carex comosa</i>	Bristly sedge	ONHP List 2	Marshes, lakeshores, wet meadows	Yes	No	Wetland, wet pockets in field
<i>Castilleja levisecta</i>	Golden paintbrush	LT	Open grasslands below 300 feet	Yes	No	Field
<i>Cimicifuga elata</i>	Tall bugbane	ONHP List 1	Mature, mesic coniferous or mixed forests	Yes	No	Forest
<i>Delphinium leucophaeum</i>	White rock larkspur	SOC	Open ground, moist low meadows, fencerows and ditches. 125 – 250 ft	Yes	Yes	Field, especially wet pockets
<i>Erigeron decumbens</i> var. <i>decumbens</i>	Willamette daisy	LE	Grasslands	Yes	No	Fields
<i>Horkelia congesta</i>	Shaggy horkelia	SOC	Open sandy or rocky flats to open woods	Yes	Yes	Fields, forest
<i>Lomatium bradshawii</i>	Bradshaw's lomatium	LE	Seasonally wet prairie and grassland	Yes	No	Wet pockets in field
<i>Montia howellii</i>	Howell's montia	C	Moist lowlands	Yes	No	Wetland, wet pockets in field,
<i>Polygonum punctatum</i>	Water smartweed	ONHP List 3	Moist places	Yes	No	Wetland, stream, slough
<i>Pyrocoma racemosa</i> var. <i>racemosa</i>	Racemose pyrocoma	ONHP List 2	Meadows, open places; Willamette Valley	Yes	No	Field
<i>Rorippa columbiae</i>	Columbia cress		Margins of bodies of water inundated during the growing season	Yes	No	Stream, wetland, slough
<i>Sidalcea campestris</i>	Meadow sidalcea		Dry fields, fencerows, roadsides	Yes	Yes	Fields
<i>Sidalcea nelsoniana</i>	Nelson's sidalcea	LT	Open areas such as streams, roadsides, and meadows. Seasonally inundated.	Yes	Yes	Wetland, wet pockets in field, stream
<i>Verbena hastata</i>	Blue verbena		Moist low places, ditches	Yes	No	Wetland, stream, slough
<i>Wolffia borealis</i>	Dotted water-meal		Damp ground, swamps	Yes	No	Wetland, wet pockets within fields
<i>Wolffia columbiana</i>	Columbia water-meal		Fresh water	Yes	No	Wetland

Note: The species *Quercus garryana* (Oregon white oak) has no status, but as a plant community it is quite rare. The individuals on the Tigard Library site are especially large and should be preserved because of their uniqueness. PBS recommends that oak trees be protected to prevent further damage by wildlife.

Sources:

- WNHP (Washington Natural Heritage Program). 2003. Field guide to selected rare plants of Washington. <http://www.wa.gov/dnr/htdocs/fr/nhp/refdesk/fguide/htm/fgmain.htm>. Accessed March 21, 2003.
- Hitchcock, C. L., and A. Cronquist. 1976. Flora of the Pacific Northwest. Tenth Edition. University of Washington Press, Seattle, Washington.
- Pojar, J., and coauthors. 1994. Plants of the Pacific Northwest coast; Washington, Oregon, British Columbia and Alaska. Lone Pine Publishing, Vancouver, British Columbia, Canada.
- NatureServe. 2002. An on-line encyclopedia of life. <http://www.natureserve.org/explorer/>. Accessed March 21, 2003.

¹ According to Oregon Natural Heritage Program, 2001.

First Public Meeting

On February 26, 2003 at 7:30 pm, the first of two public meetings was held at the Tigard City Hall. The team presented drawings showing existing site conditions and habitat types as well as a list of goals developed from the previous October 16, 2002 Library Site Public Meeting. The purpose of this initial public meeting was to solicit additional thoughts about program, concerns about site development, or other ideas that could affect the direction of the Master Planning effort. Although public turnout at this initial meeting was low, many constructive comments and suggestions resulted from this meeting.

Public comments and questions:

- Problem with trail connections across Hall Blvd. It cuts access to site
- Lots of existing native vegetation (trees and shrubs) on site which should be preserved.
- Nesting area in the floodplain should be preserved
- There was some confusion as to the total size of the site, whether or not the library site itself is included in the acreage for the park, and whether or not the forest is included in the site.
- If the streambank is regraded, will existing trees and shrubs be removed? Regrading should be done with as little impact on existing trees and shrubs as possible.
- Species of significance: frog, turtle may use site
- Was there American Indian usage of the site?
- Some areas should have no public use, just habitat, especially where sensitive species are concerned.
- Keep trails away from ponds as much as possible.
- More signage: unique habitats, preservation, no disturbance. Could utilize children's art.
- Education opportunities, links to livability.
- Volunteers, slide shows, tours on site, bird walks.
- Existing house could be used as a staging point to speak to areas on the north side of the site, the ponds and backwaters
- Connections need to be made to the library itself
- Do we have funding for trails?
- Mix of hard surfacing and soft surfacing
- 50' setback from creeks
- Don't overdevelop trails; too much access means degradation of habitat.
- Trails with buffers, to avoid sensitive areas
- Would be nice to be able to see the creek from trails; bridges might be nice.
- Signage along trails, possibly designed in cooperation with schoolkids
- Improve the crossing at hall, possibly beneath the street
- Maybe run the paved trail on the east side of the creek rather than through the site itself, save the site for lower-impact trails and interpretive.
- Minimize paved trail by utilizing the parking lot.
- Trails with buffers – need to identify where the sensitive areas exist
- Be conservative in solutions
- Trails could go beneath street

First Public Meeting public attendance:

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Second Public Meeting



On April 3, 2003 at 7:30 pm, the second public meeting was held at the Tigard City Hall. The purpose of this meeting was to present three alternative design concepts based on input from the previous Public Meeting as well as to solicit comments about those options or other ideas that

may need to be considered. The design team presented three distinct schemes showing the location of the primary connecting trail, secondary trails, and boardwalks. In addition, a number of locations were discussed regarding interpretive area locations and small group gathering areas. Additional buffer areas were shown; however detailed planting or stream bank improvements were not analyzed in detail. A brief summary of the options follows:

Scheme A

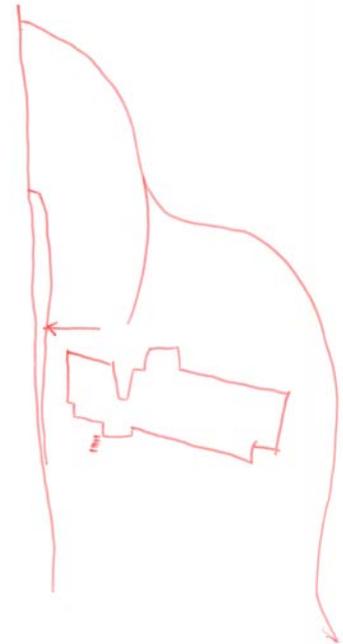
This scheme showed the primary trail very close to the library and a central gathering space at the base of the bowl area. Pathways in the northern portion of the site were minimized, but included a small boardwalk. A series of native plant gardens that integrate storm water from Hall Boulevard were integrated into the plan as well as an overlook on the east edge of the site.

Scheme B

This scheme showed the primary trail crossing Fanno Creek toward the east end of the site. Secondary trails create a series of arc-shaped paths that terminate in various overlook conditions near water. The northern section of the site includes a longer boardwalk. The storm water runoff from Hall Boulevard is treated in a more structured series of channels. The larger gathering/interpretive space is located to the east of the open meadow “bowl”.

Scheme C

This scheme showed the primary trail crossing the creek immediately from the north and maintaining a close proximity to the proposed library. An optional future path was shown branching off the main path toward the eastern forest area in anticipation of an alternate path connection that was under consideration further to the south. To the north, a gathering space was developed that integrates a water garden that is connected to the backwater slough (see illustration). In addition, secondary pathways venture further to the east in the northern section.

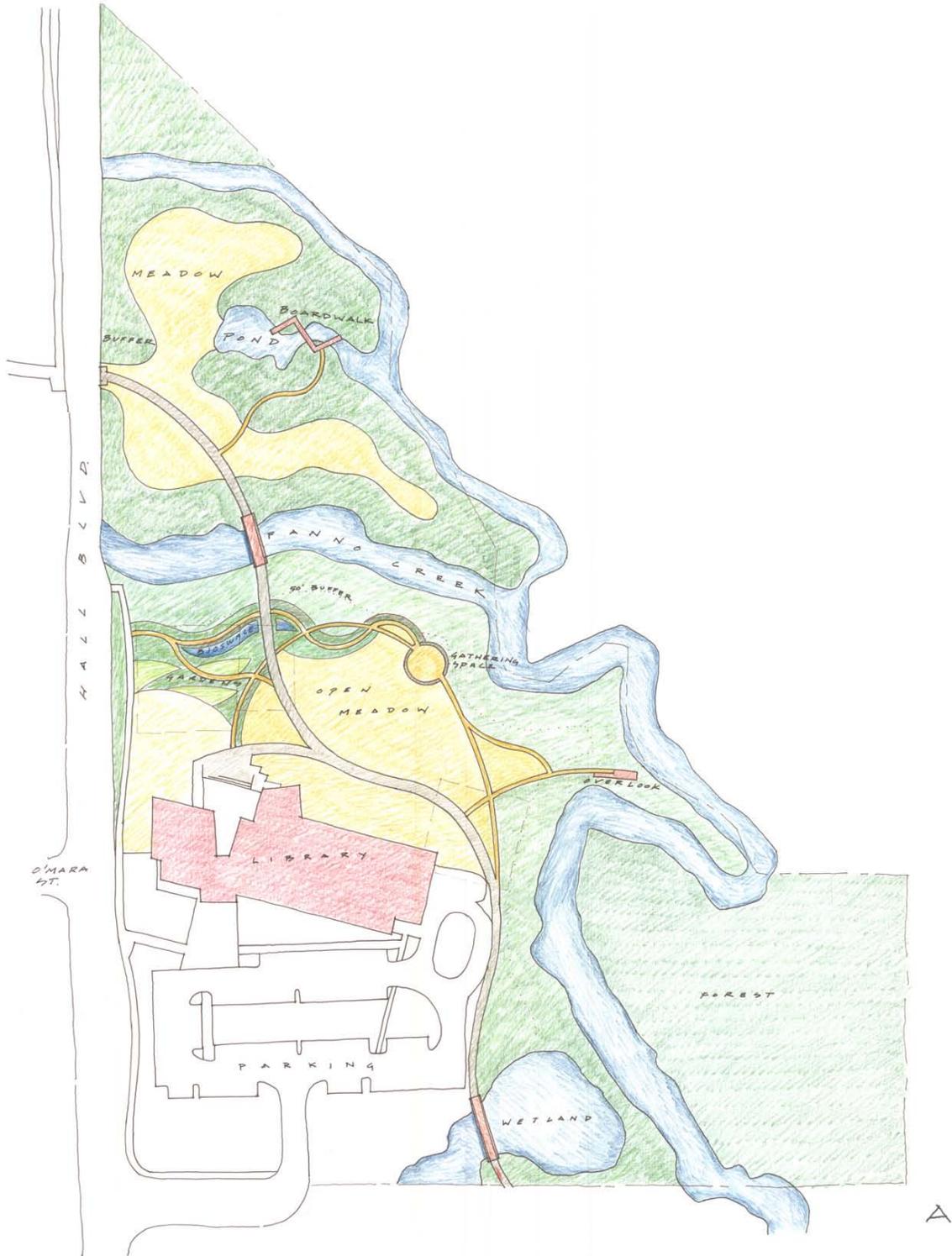


preferred diagram from second public meeting



Scheme C gathering area

Second Public Meeting *continued*



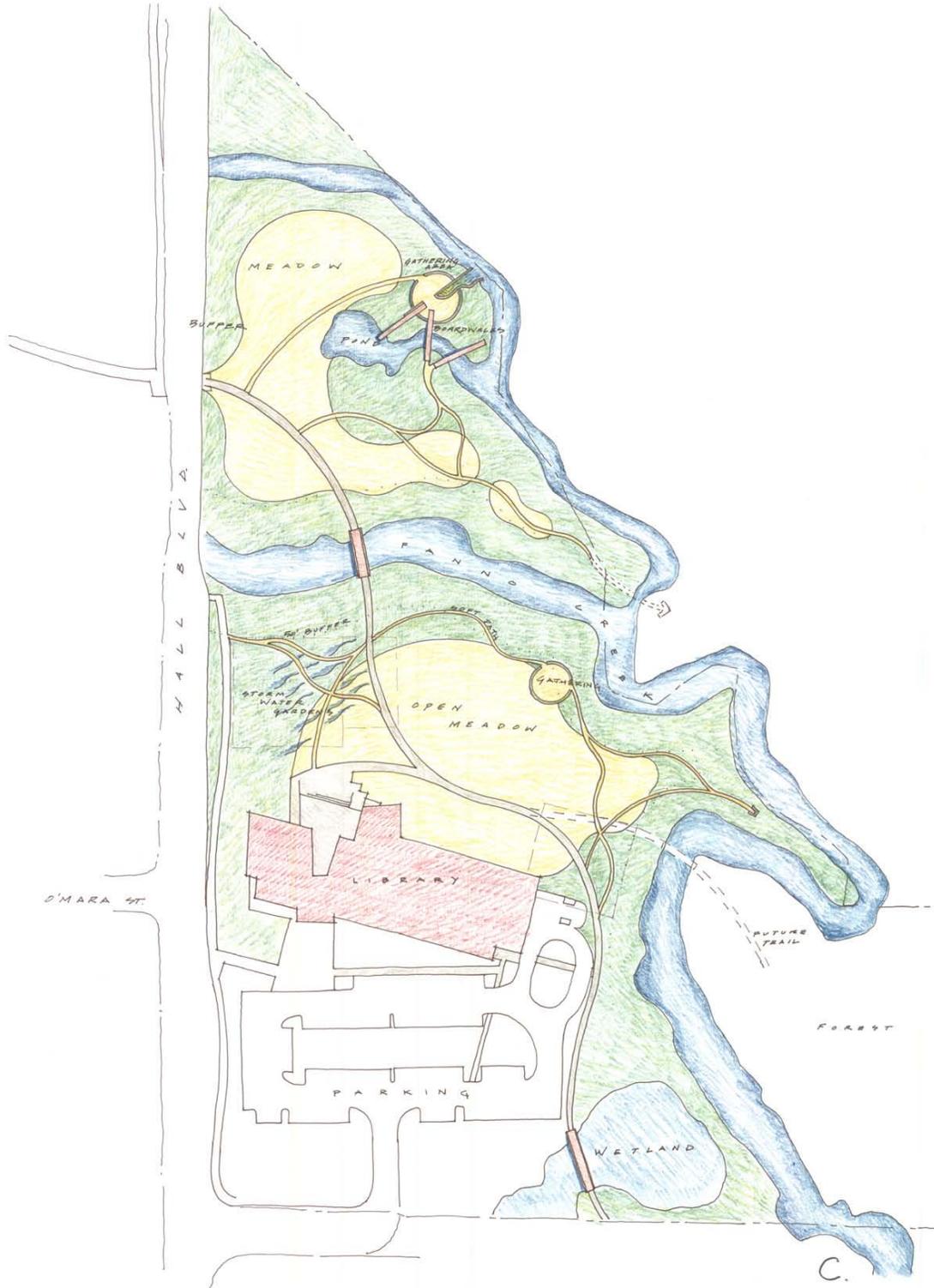
Scheme A

Second Public Meeting *continued*



Scheme B

Second Public Meeting *continued*



Scheme C

Second Public Meeting *continued*

Public comments and questions:

- Some picnicking is desirable – promoting positive activity in the park reduces elicited behavior.
- Hardscape path alignment should be further from Library (Scheme B preferred).
- Changes to Hall Street biofiltration swale should not include moving within future building pad.
- Team should evaluate potential runoff problems from adjacent bus parking area to the north of project area.
- Creek crossing should occur as close to Hall Blvd as possible (Schemes A & C preferred)
- Look at crossing Fanno Creek along Hall Blvd to prevent disturbance of turtle habitat on northern section of site.
- Some don't prefer introducing bike traffic along Hall Blvd for safety reasons. May require short term improvements to bridge for access and ADA improvements.
- Minimize extent of soft trails, especially on Schemes B & C. Find essential trail movement – don't try to do too much on such a small site.
- Prefer gathering on library site on Scheme B.
- Some preferred gathering space on Scheme A.
- Soft paths don't need to be looped.
- Like boardwalks to keep people from moving into sensitive areas.
- Some people like loops for safety and visual interest – more variety.
- Could introduce fence to prevent dogs and people from entering turtle habitat.
- It is important to give people educational opportunities near pond.
- Need connection from hardscape trail to Hall Blvd on Library side of creek to allow connection to front area bicycle parking.

A quick sketch was developed to illustrate a fourth option for the primary trail alignment (see page 13). This allowed the trail crossing of Fanno Creek to occur toward the western edge of the site away from sensitive habitat and also allowed the trail to stay as far from the library as possible to preserve the bowl-shaped meadow.

Second Public Meeting public attendance:

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Final Concept

As a result of the two public meetings a final Master Plan drawing was completed. The plan is a culmination of planning efforts by the Master Plan consultant team members and input from interested citizens and City staff. The plan strikes a balance between the programmatic needs of the park as a linear greenway system and the protection of the natural resources found on the site. It incorporates the sketch generated at the end of the last meeting and reduces the number of secondary pathways while still maintaining access to some habitat areas for educational and interpretive programs.

Primary Trails

A primary paved trail connects the site from north to south to the existing Fanno Creek Greenway Trail system as it winds down from the north near the existing City Hall Building and existing Library. The trail crosses Hall Boulevard to the north and immediately crosses Fanno Creek to avoid potential sensitive turtle habitat near the northern pond. The trail wraps around the edge of the natural bowl area below the proposed library and directly adjacent to the edge of the 50' river setback. The trail then heads to the south and crosses the wetland with a boardwalk before connecting with the adjacent property to the south. The decision to keep the primary trail on the west side of Fanno Creek was made to avoid the sensitive habitat areas of the forest on the east.

The trail will need to accommodate two-way pedestrian and bicycle traffic. The minimum acceptable width for a small multi-modal path is 10-feet and is consistent with the existing greenway trail. The surfacing should be asphalt to match the existing greenway trail, but could be designed using permeable asphalt to allow water infiltration.

Secondary Trails

One important function of the greenway trail is its connectivity to adjacent land uses. Access between the proposed library and the greenway trail provides opportunities for library programs to expand into the habitat areas of the park. A 5-foot asphalt trail will provide a connection on the north side of the library to the sidewalk on the Hall Boulevard right-of-way to allow bicycle access to the parking areas on the south side of the building.

Soft Trails

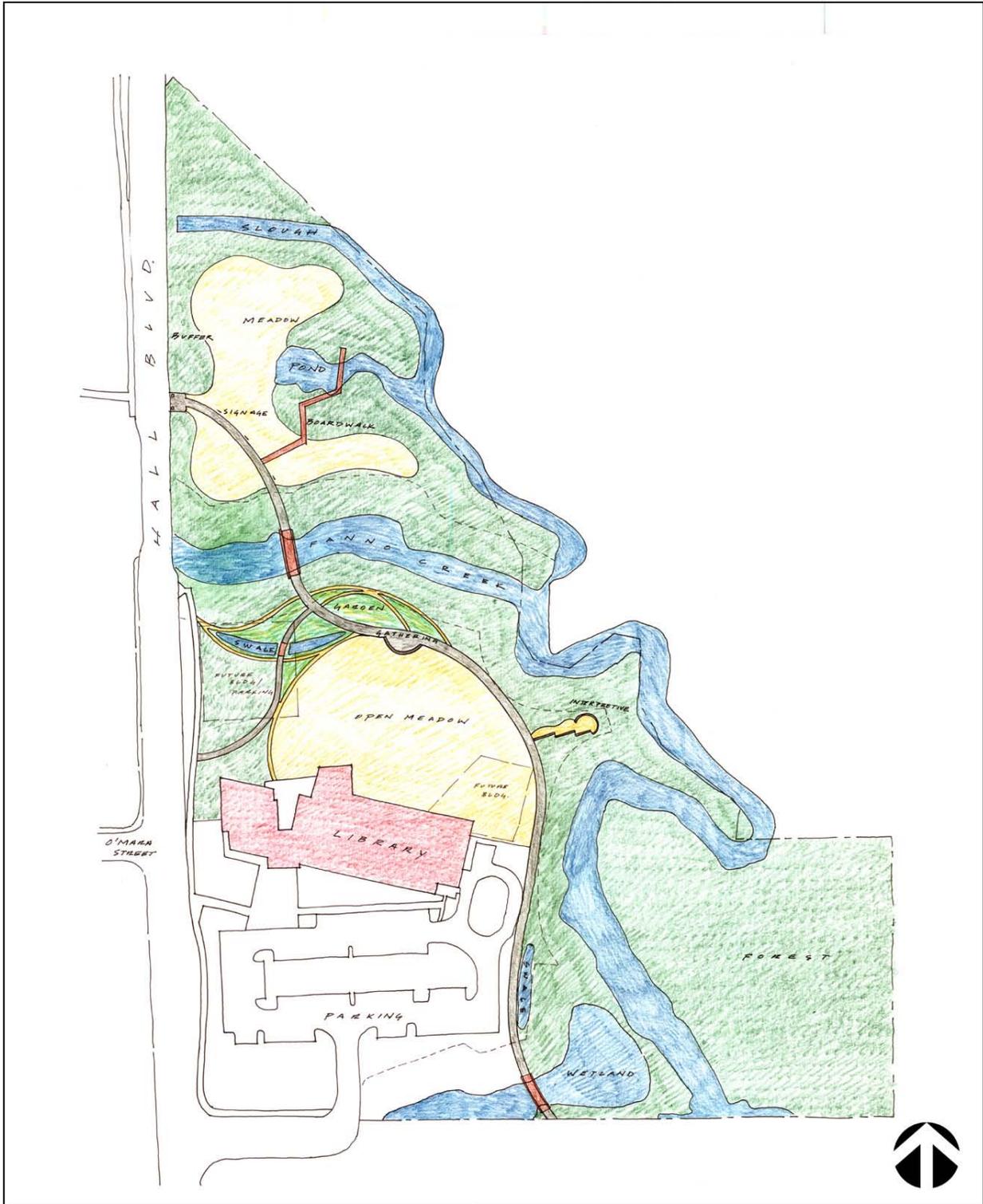
A third level of trail development allows access to informal areas such as gathering spaces, interpretive areas or special garden areas. These paths are 4-feet wide and are made of (fully accessible) fine crushed gravel.

Trail Crossing at Hall

Funding is currently being secured for a signalized trail crossing at Hall Boulevard. Trail crossings should visually indicate the presence of pedestrian activity and could include bollards or stone pillars to mark their presence along the roadway and prevent vehicular access. An 8-foot wide refuge island is under consideration at the centerline of Hall Boulevard and could serve as a visual indicator of pedestrian movement. Details of standard marking elements are available through the Metro Regional Parks and Greenspaces program.

Final Concept continued

Master Plan



Murase Associates

City of Tigard, Oregon

Fanno Creek Park

April 21st, 2003

Final Concept *continued*

Bridges

The single bridge crossing on the north end of the site provides opportunities for directly viewing the river. The actual span needed to cross the river with a bridge will need to be determined with additional survey work, but appears to be approximately 50-feet in length. From a design standpoint, the bridge is a wonderful opportunity for a unique expression of materials or some of the unique qualities of the site.

Boardwalks

A boardwalk is indicated on the north side of the site providing a connection from the primary trail to the backwater pond. Because this is an area of potential turtle-nesting habitat, a boardwalk is used to encourage visitors to stay out of the meadow and habitat areas. The boardwalk terminates at the pond and could provide seating areas beneath the large existing oak trees as well as opportunities for interpretive signs that describe the local history and ecology. The boardwalks should be 5-feet in width and made of wood. The boardwalk providing access over the wetland area could also be incorporated with interpretive signs or seating. This boardwalk should be 10-feet wide to match the primary trail width.

Interpretive and Gathering Areas

Both the boardwalk at the pond and a unique area to the northeast of the proposed library site provide interesting opportunities for interpretive and gathering. The larger gathering space could be an area of crushed stone paving and a series of stone walls that provide both group and individual seating areas. The walls provide a physical barrier to prevent disturbance of naturalized areas, but provide a sense of permanence and durability to the space. Additional opportunities exist in these areas for interpretive signage or art display, for example birdhouses made by local school or community organizations.

Bowl

The open meadow area just north of the proposed library will be left as open space with a small space at the center of its bowl-shaped topography. This small space could be defined by a low stone wall and could serve as a focal point for group gatherings or perhaps just a place to pull off the primary trail during a bike ride.

Final Concept *continued*

Stream Restoration and Buffer Planting

Restoration opportunities in and around Fanno Creek could offer long term water quality improvement, improved in-water habitat, and improved plant and animal habitat along its edges. Currently Fanno Creek is severely undercutting its banks. Its steep sides lack opportunities for all but minimal vegetation to take hold. This channeling effect of the stream and lack of in-water vegetation to slow down stream flows has compounded erosion problems and has created a lack of space for water during flood events.

Regrading the stream bank to flatten the stream profile would help slow water flows, provide more flood storage capacity, and provide areas for planting improvements. Stabilization of the creek channel may need to be considered along the entire creek, especially where stream currents tend to erode banks. Because there are some existing trees along the bank, an effort should be made to incorporate those plantings into the grading concepts. Smaller trees could be temporarily removed and replanted. Redeveloping the creek channel will also provide opportunities to remove invasive plant species.

Regardless of the extent of work within Fanno Creek itself, Clean Water Services will likely require additional planting within the 50 foot buffer. As a condition of approval for the new library project, the south side of the Creek will be replanted using a mixture of native plant species. This work is being conducted independently of this Master Plan effort. Improved native planting efforts should also be considered around the backwater pond. Other planting restoration efforts or plans to remove invasive plant species could be coordinated through cooperation between the City and private organizations, such as Fans of Fanno Creek.

Visual Mitigation should be provided on the north end of the site to screen the existing bus parking area. Native evergreen trees that grow in excess of 30-feet will need to be planted along the north end of the site on either side of the backwater slough. Additional buffer planting of both native trees and shrubs could be provided along Hall Boulevard to provide spatial definition of the meadow area and visual and noise protection between the trail and street. Visual access at the trail crossing on Hall Boulevard will need to be considered when providing this additional buffer planting.

Signage

Wayfinding along the trail should be coordinated with efforts along the entire length of the Fanno Creek Greenway. A January 2003 report entitled "Fanno Creek Greenway Trail Action Plan" available through Metro Regional Parks and Greenspaces contains invaluable information regarding trail signage templates. (http://www.metro-region.org/library_docs/parks_green/fannoplan.pdf)

Additional signage should be considered giving directions to the library from the primary trail as well as interpretive signs in various locations in the park. Signs indicating the possible presence of nesting turtles should be implemented when the primary trail is constructed.

On April 23, 2003 the Tigard Planning Commission voted to recommend to City Council approval of the Master Plan

*Final Concept continued*Planning Commission Meeting

On April 23, 2003 the design team presented the final Master Plan to the Tigard Planning Commission. The Tigard Planning Commission voted to recommend to City Council approval of the Master Plan. One question was raised regarding the ability for police monitoring of the park from Hall Boulevard. A subsequent meeting with the Police Department resulted in approval of the plan without changes.

Overseeing Agencies for work in Fanno Creek

The approval process for work along Fanno Creek or adjacent wetlands will depend upon the extent of work proposed for each phase of development. Grading in excess of 50 cubic yards within the zone of ordinary high water typically triggers a joint application process through the Army Corps of Engineers and the Division of State Lands. The application process can take as little as 45-60 days under the Nationwide Permitting Process or 120 days under Individual Review, depending upon the extent of work. Both agencies review the application materials individually and look at the location and type of impacts that will occur (e.g. removal of vegetation or impact on river flow or flooding) and what mitigation may be required. Often, the land owner will be required to monitor mitigation efforts for five years after completion of work.

Oregon Division of Fish and Wildlife will review impacts on riparian vegetation and habitat under the DSL review process. The presence of endangered species will require review by NOAA Fisheries under the Army Corps of Engineer review process.

Documents required for these reviews will include earthwork design and cut/fill calculations, a site plan showing extent of proposed improvements, determination of “mean high water” and “ordinary high water”, cross sectional views, planting plans, details, and other information deemed necessary to effectively evaluate the potential impacts and mitigation measures of the project. Because project review through both the Corps of Engineers and DSL are analyzed on a case-by-case basis, additional information may be requested depending upon the level of environmental impact. The proposed improvements illustrated within this Master Plan will likely trigger this approval process, but are likely to benefit water quality and habitat along Fanno Creek. We anticipate likely approval of these improvements assuming a complete submittal package.

Clean Water Services will review all work within the 100-year flood plain and specifically within the 50-foot buffer along Fanno Creek and the wetlands.

Contacts:

Division of State Lands
Collin MacLaren
(503) 378-3805

U.S. Army Corps of Engineers
Cathy Harris
(503) 808-4387

Clean Water Services
Phone: (503) 846-3553

Final Concept *continued*Library Project Conditional Use Permit

The conditions of approval required after an April 7, 2003 public hearing before the City of Tigard Land Use Hearings Officer requires construction of the Fanno Creek Greenway Trail. The following language is an edited summary of those portions which directly relate to the Fanno Creek Park Master Plan”

THE FOLLOWING CONDITIONS SHALL BE SATISFIED PRIOR TO ISSUANCE OF THE SITE AND/OR BUILDING PERMITS:

Submit to the Planning Department (Brad Kilby, 639-4171, ext. 388) for review and approval:

- a letter from a registered professional engineer that indicates that any encroachments made by this proposal will not increase the flood levels during the base flood discharge.
- 10. Prior to the issuance of building permits for the building, the applicant shall show that it is making a continuing, diligent, good faith effort to identify an alignment for a pedestrian/bicycle path along Fanno Creek that will not be below the elevation of an average annual flood.

THE FOLLOWING CONDITIONS SHALL BE SATISFIED PRIOR TO FINAL BUILDING INSPECTION:

Submit to the Planning Department (Brad Kilby, 639-4171, ext. 388) for review and approval:

- 21. Prior to the issuance of a final occupancy permit, the applicant shall provide adequate financial assurances, in the form of a cash deposit, a bond or inclusion of the project on a city 5-year capital improvements project list, to ensure construction of that portion of the Fanno Creek Greenway Trail that crosses the property. No portion of the trail shall be below the elevation of an average annual flood.

Cost Estimate

ORDER OF MAGNITUDE COST INFORMATION			
		<i>Unit</i>	<i>Unit Cost Range</i>
Site Work			
	Streambank Restoration (including regrading bank, stabilization, erosion control, revegetation, habitat	lf of bank	\$100-\$200
	Buffer Planting (excluding streambank planting)	sf	\$1.00-\$2.00
	Meadow Restoration	sf	\$0.15-\$0.25
	Special Garden Planting	sf	\$3.00-\$4.00
	Trees	ea	\$200-\$300
	Primary Path (10' wide AC)	lf	\$15-\$20
	Secondary Path (5' wide bark or gravel)	lf	\$7.50-\$10
	8 foot-wide Wood Boardwalk/Overlook	lf	\$175-\$225
	Pedestrian Bridge (10' wide wood and steel)	ls	\$60,000-\$85,000
	Stone Walls at Gathering Areas	lf	\$130-\$160
	Fencing	lf	\$30-\$60
	Interpretive Signs	ea	\$100-\$2,000
	Benches	ea	\$1,000-\$1,200
	Picnic Tables	ea	\$1,000-\$1,200