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HanmiGlobal Partner

Edith Moulton Park

planning & design

Schematic Master Plan

FEBRUARY 2015

CITY OF KIRKLAND WASHINGTON

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Part I

Project Background

INTRODUCTION

Project Description

Edith Moulton Park is a 26-acre remnant farm parcel that was initially developed as a park by King County. The park is located at 108th Avenue NE and NE 137th Street in a newly annexed portion of the Juanita Neighborhood of Kirkland. The park contains mature forested areas, wetlands, Juanita Creek and a tributary, a degraded access drive and parking lot, lawn area, and small picnic shelters. The park is crossed by a number of footpaths. The park is in a residential neighborhood adjacent to Helen Keller Elementary School and other schools are located nearby.

Edith Moulton, who grew up on the property and experienced farm life there, donated it to King County in the 1960s with the objective of saving some natural areas as places for children to play.

Funding for the creation and implementation of a new vision for Edith Moulton Park will be by voter-approved park levy funds. The preliminary budget of $1 million may be distributed as follows:

- $100,000 for design by December 2013
- $100,000 for design by December 2014
- $800,000 for construction in 2015

Edith Moulton Park Neighborhood Context Map

HISTORY OF SITE

Jennie and Jeanie Moulton lived on the Moulton family farm from approximately 1900 until their deaths in 1934 and 1954, respectively. Historic photographs depicting the Moulton family and farm can be found in Historic Resources Report prepared by Historical Research Associates in January 2014.

In 1920, the Moulton family was briefly honored by an attempt to rename the road in front of their property. The ½ mile section

of what is now 108th Avenue NE, which runs north and south along the border of the Moulton property, was to be renamed Miss J. E. Moulton Road after Edith's aunt Jeanie in 1920. Though it appears from County records that the renaming proposition was ultimately rejected, the road appears as such in an early copy of the Atlas of Seattle.

Assessor's records from 1939 describe the Moulton family residence as a single-family dwelling, 1 ½ stories tall, with four rooms on the first floor and three rooms above (Figure 4.2 and 4.3 in the Historic Resources Report). The house included three modest, single-story porches. Materials were simple—wood floors, plasterboard walls or bare studs, a stone fireplace, a shingle roof, and exterior walls clad in shiplap. There was no plumbing in the house and associated buildings included an outhouse and storage shed. The house never included electricity or a telephone. Historic photos show a modest Craftsman-style bungalow with wide eaves supported by knee braces, recessed porches, and mature plantings near the entry. The record also refers to 15 fox pens made of construction wire. The foxes shared the property with what the assessor's record refers to as a combination of orchard, cleared pasture, uncleared stump land, and 2nd growth.

Edith Moulton (Left)

Edith Moulton retained her association with the farm throughout her life. Though she was a busy, working woman, she returned to the farm on weekends, and cared for the property after Jennie Moulton passed away in 1934, and Jeannie passed away in 1954. After 1954, the house stayed empty except during the times when Edith stayed there.

Edith Moulton was negotiating the sale of her property to King County for a public park when she was diagnosed with breast cancer in the early 1960s. She realized that her health was worsening and would not have the opportunity to benefit from the sale of the land, wrote Tvrdy. Upon her death on September 20, 1967, at the age of 69, Edith Moulton willed her 20-acre property to King County to be used as a public park.

Today, Edith Moulton Park encompasses 26 acres with expanses of maintained lawns, forested areas, trails, parking lots, and a long gravel path on the former driveway. The park is bordered by residential development and a local elementary school. None of the former buildings associated with the Moulton family property remain. The farmhouse was destroyed during a fire a year after Edith Moulton's death and was later removed. Evidence of the other features associated

with the property may have been modified or removed during renovations by King County in the late 1960s and thereafter. Other modifications include improvements to walking paths/ trails and the existing driveway, and installation of rock walls, parking lots, and a picnic area.

PROJECT PURPOSE

The park functions as both a home to a diverse population of flora and fauna and an outdoor refuge to a large community. In order to protect the ecological and social value the park provides, it is important to evaluate what features of the park may be suffering degradation or could be improved. In doing so, it assures that the park may continue to serve as a valued green space within an urban setting.

In an effort to guide design decisions, a theme was developed to remember the purpose of the park that Edith Moulton intended:

Honor Edith Moulton's Legacy by Conserving Wilderness for Children to Enjoy

WORK PHASES

Planning and design of Edith Moulton Park includes three distinct phases of work as identified below.

Phase 1
Inventory and Site Assessment, Development of a Park Design Program

Phase 2
Schematic Design and Implementation Program

Phase 3
Design Development, Permitting, Bidding, and Construction Support

This document details the work performed on Phase 1 and Phase 2. Phase 3 (future) is described in summary in anticipation of performing this work in 2015.

Part II

Proposed Improvements

PROGRAM ELEMENTS

The proposed improvements to Edith Moulton Park are grouped in this section according to the geographic area in which they would be located. The improvements are grouped into the **Great Lawn Area**, **Moulton Home Site**, and **Forested Interior**. Each of the proposed program elements is explained with background information on the purpose and includes pertinent community input.

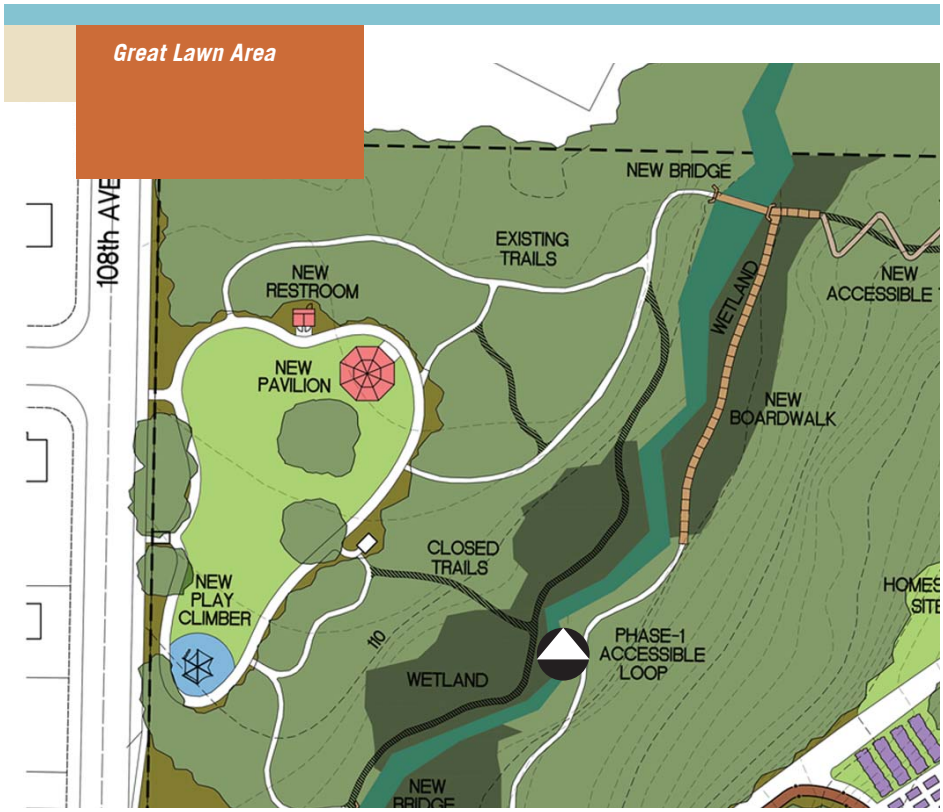
Great Lawn Area

As proposed in the schematic design, the great lawn area along 108th Avenue NE would contain a pavilion, restroom, natural play structure, and roadway frontage improvements along 108th Avenue NE. The great lawn area was selected for these improvements because it is the only non-forested part of the park with easy access to parking and with good surveillance from neighbors, vehicle occupants, and police patrols. These four main elements—parking, pavilion, restroom, and play structure are intentionally grouped together because they are complimentary uses.

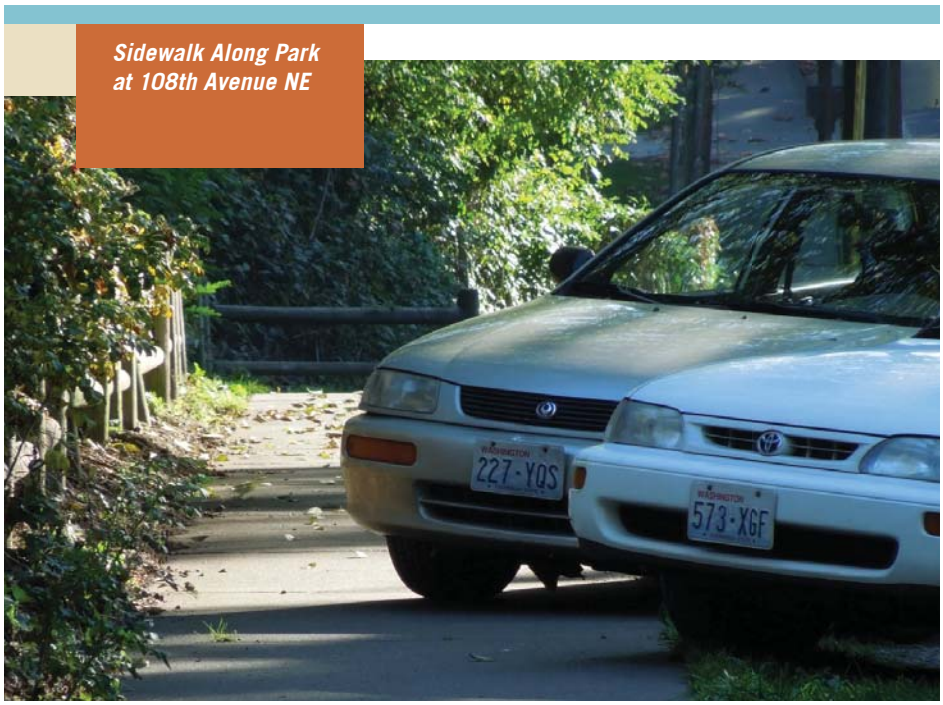
Roadway Frontage (parking) Improvements

Currently, there is a sloping gravel parking strip along 108th Avenue

Overall Site Plan Schematic Design Level



Great Lawn Area



Sidewalk Along Park at 108th Avenue NE

NE fronting the park. A concrete sidewalk separates the gravel parking from the great lawn. Compact cars can be parked perpendicular to the roadway; however, larger vehicles only fit on the gravel strip when parked at approximately a 60 degree (or less) angle. Occasionally, drivers will park parallel to the roadway or perpendicular to the roadway, but overhang the sidewalk. The sidewalk is a safe route to Helen Keller Elementary School, adjacent to Edith Moulton Park to the north, and should not be impeded with parked vehicles. Because parking stalls are not delineated and the gravel strip is too narrow, parking is currently hap hazard, inefficient, and creates unsafe conditions when vehicles park over the sidewalk or protrude into the northbound travel lane of 108th Avenue NE.

Kirkland Public Works will require frontage improvements as part of a development review and permit process for the park improvements. By code, vehicles may not be parked in a manner that requires backing out onto 108th Avenue NE. In fact, 108th Avenue NE is planned as a green-way street focusing on bike- and pedestrian-friendly connections and minimizing cut-through traffic. The Public Works Department will likely require an eight foot (parallel) parking lane and six foot bike lane on 108th Avenue NE. Although a parallel parking arrangement

reduces the overall net parking, parallel parking creates a safer sidewalk and will be safer for bikes because vehicles will not be backing out onto the roadway.

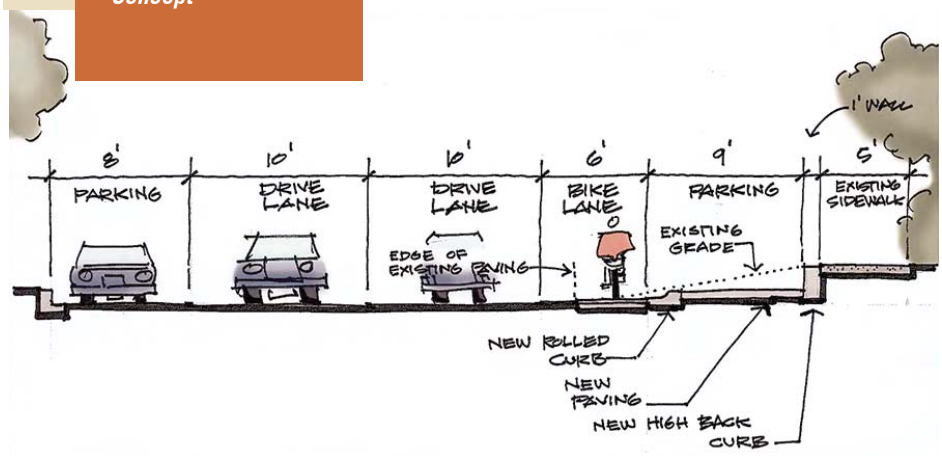
In addition to safety improvements, the addition of a bike lane and parallel parking present an opportunity to correct a less-than-desirable cross slope in the parking strip. The addition of a high-back curb (taller than the typical six inch height) next to the sidewalk will decrease the cross slope and protect the sidewalk from encroaching vehicles. A rolled curb and gutter will likely be needed between the added bike lane and parallel parking. In total, the improvements will consist of two concrete curbs, approximately five feet of additional asphalt paving for the bike lane and an eight foot width of paving for the parallel parking. The accessible parking stalls will have a ramped access to the sidewalk and park entries without a curb.

Pavilion

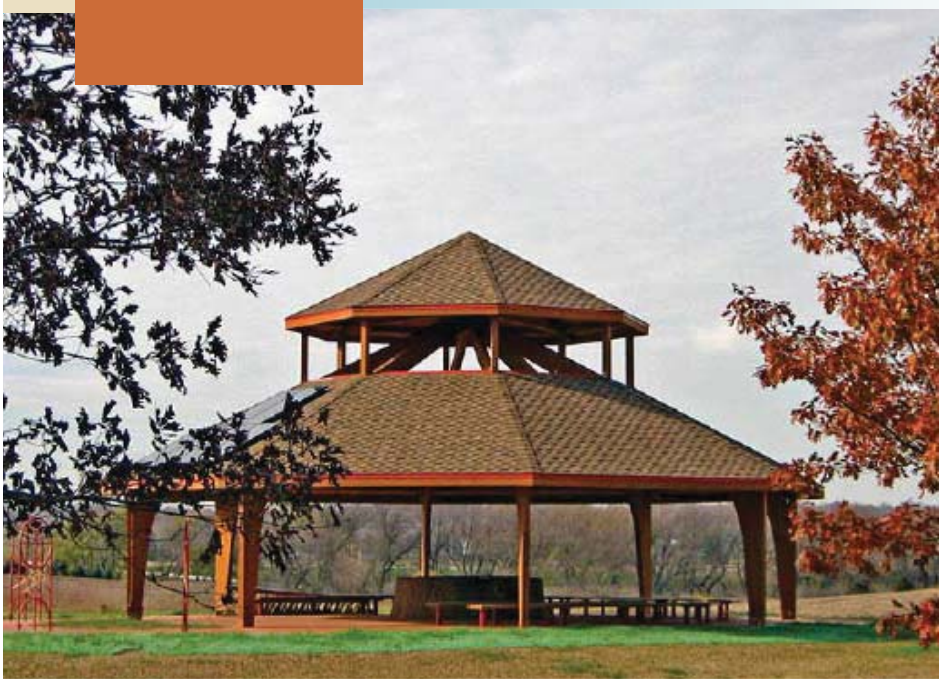
The pavilion was conceived as providing an out of the weather place for gatherings, appropriate for a natural setting. Design criteria for the pavilion include:

- An aesthetic iconic focal point for the great lawn.
- Constructed with natural materials appropriate for the setting.

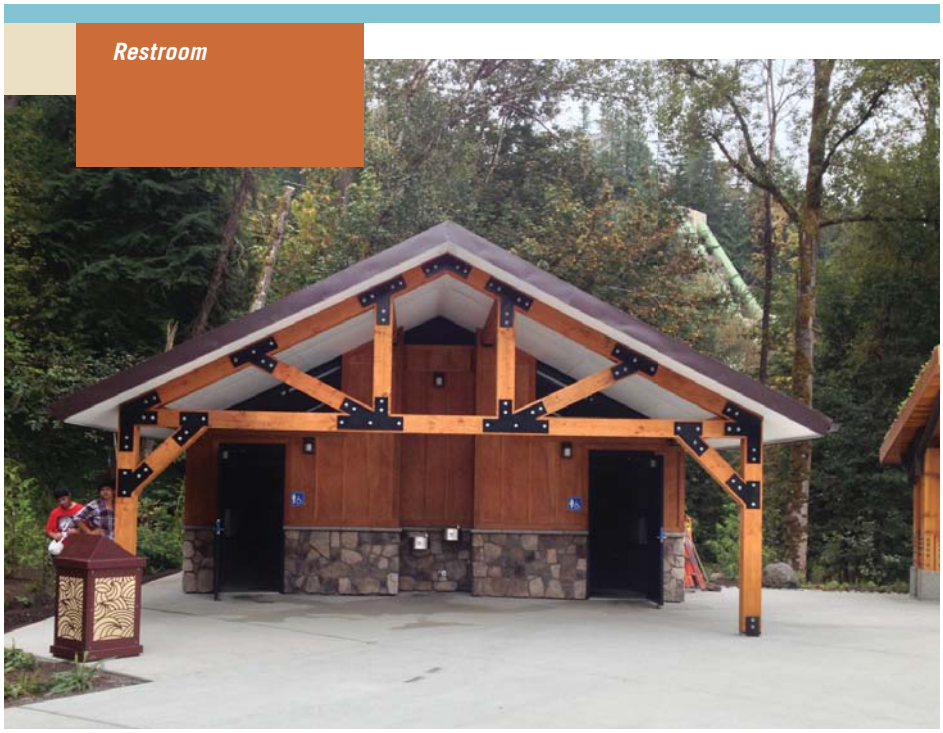
Parking Area Concept



Octagonal Pavilion



- Largely transparent so that the forested area behind the pavilion will remain visible when viewed from the lawn and 108th Avenue NE.
- Providing enough space for 40 people (could include movable picnic tables to create a more flexible space for events).



- Approximately 40 foot by 40 foot to accommodate approximately 40 people.
- Two pavilion shapes were examined, a square hip-roofed structure and an octagon form—community feedback was that a simpler, unadorned structure is preferred and that the octagonal structure fit within the existing great lawn loop trail. Overall, the timber-framed examples of pavilions were well received.

Restroom

Community input on the restroom was both in favor of a restroom in the park, but there was also concern about the potential for misbehavior associated with the facility. Some community meeting attendees said that a restroom was necessary for students to visit, especially from the nearby Helen Keller Elementary School. Constructing a pavilion where community and private events could be scheduled also necessitates providing a nearby restroom. The final design should consider community concerns about non acceptable behavior potentially occurring at the restroom. Accordingly, the restroom is sited between the pavilion and the street so that there is a lot of visibility of the restroom facade from the street. While it is important to have visibility of the restroom doors, the remaining three sides should be slightly tucked back into the wooded edge to avoid having the restroom visually encroach into the great lawn and detract from the uncluttered view. Unlike the pavilion and play structure, the restroom cannot be transparent.

The style and appearance of the restroom building needs to be appropriate for a natural wooded setting in a residential neighborhood. The style and materials should also compliment, but not compete with, the pavilion design. The restroom roof should match the pavilion roof and wood siding and trim should be featured. A small building with separate men's and woman's rooms is recommended. A prefabricated and site-assembled building is typically the most effective and cost-efficient option for parks. The fixtures recommended for Edith Moulton Park will be based on facilities in other Kirkland parks. The restroom will require a side sewer service, water line, and power from 108th Avenue NE, which are included in the cost estimate.

Play Structure

With about 24 acres of forest and a couple acres of lawn, there are plenty of natural play opportunities like climbing trees, walking along downed logs, and stepping into the creek. However, including a pavilion in the park creates the need for a closer, more observable and probably cleaner play opportunity. This is especially true for kids that come with adults that may be attending

Play Structure

a function at the pavilion. The play structure could provide a natural play-like activity close to the pavilion for kids with limited time or not dressed for total outdoor adventure play.

The selection criteria for the play structure include:

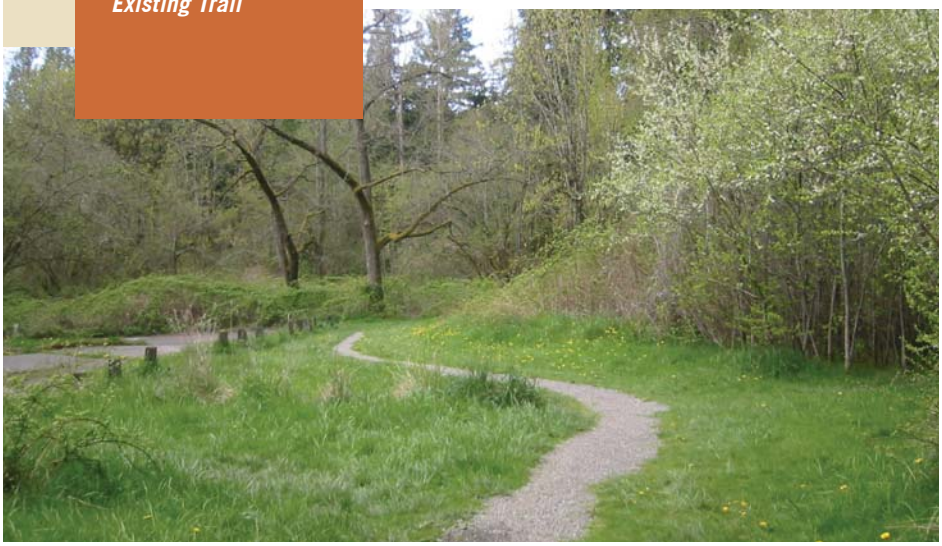
- Be highly transparent so that the lawn area or forest can be seen through the structure with minimal impact to the natural scenic quality of the park.
- No brightly-colored parts.
- Accommodate a range of ages and the number of kids that might be expected to attend a function at the pavilion and use the play structure.

For these reasons (transparency, natural play-like activity, and wide age range for use) a dome-shaped climbing structure is recommended for the great lawn.

The climbing structure should be located close enough to the pavilion so adults can keep an eye on the kids, but far enough away so that the kids feel a sense of independence from the adults and so that the noise from the climbing structure does not affect more quiet events such as neighborhood meetings. Climbing structures require a fall zone around base of the structure and perimeter. A prescribed depth of wood play chips and containment edge for the chips are also needed. Because of apparent high ground water, the wood chip base around the climbing structure should be raised above existing grade. A low modular block wall is recommended as a durable containment edge that will also serve as a low sitting wall.

Other Incidental Improvements

There are other potential improvements that could be made to the great lawn area, including adding an overlay of asphalt



Existing Trail

paving to the existing loop trail around the lawn, adding root barrier along the paved trail near large trees, and refreshing the entry gate and interpretive sign at the main entry. In addition, some of the shrubs along the rail fence, separating the lawn from the street, should be removed to facilitate better surveillance of the lawn area including future pavilion, restroom, and play structure. These optional improvements are also included in the cost estimate.

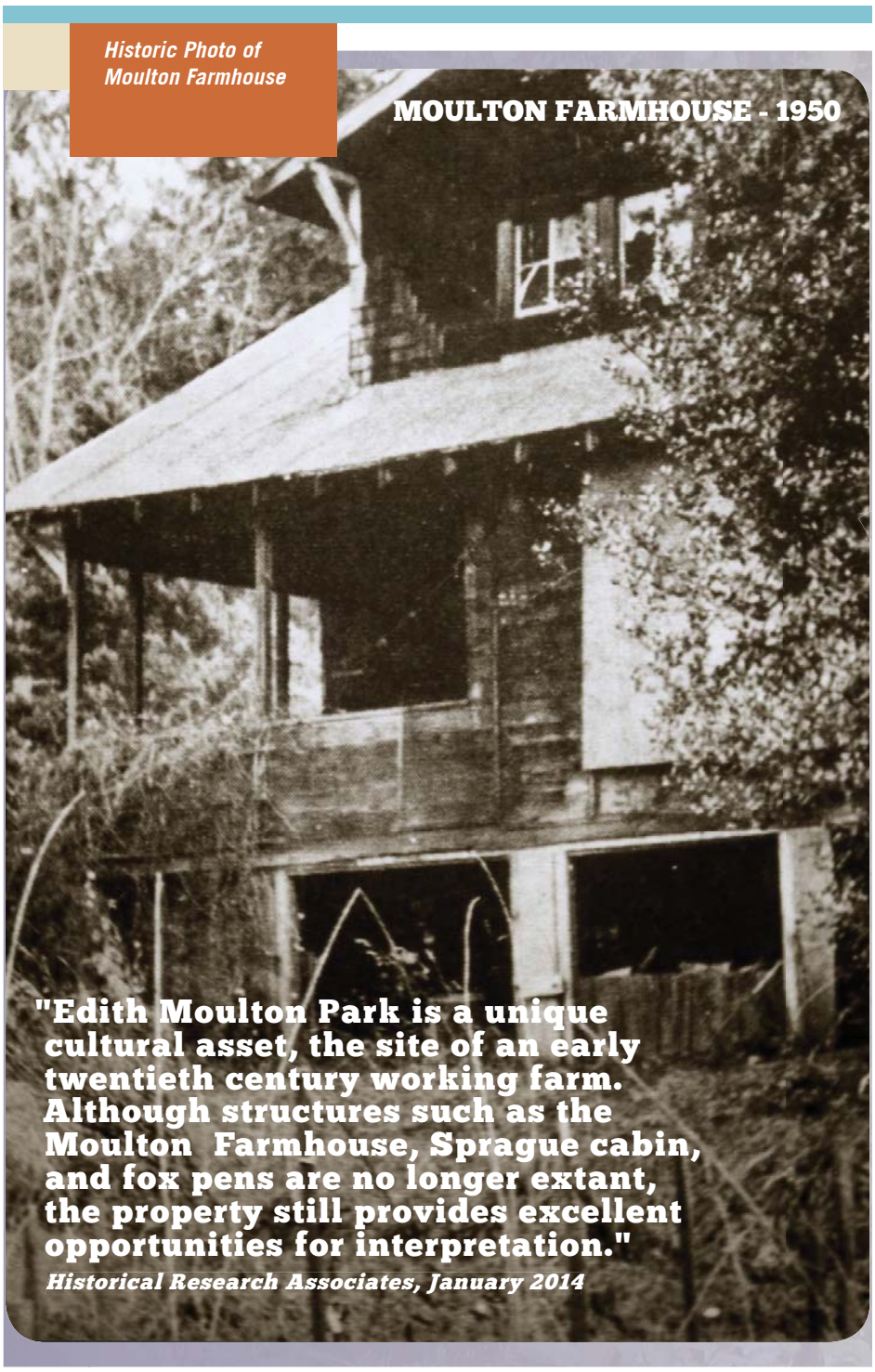
Moulton Home Site Area

The original location of the Moulton home and out-buildings is within the south half of the park property and accessed via a now degraded asphalt-paved driveway. The driveway intersects with 108th Avenue NE in the southwest corner of the park and runs northeasterly through a deciduous forest to the old King County constructed parking lot. The actual home site is generally at the east end of the parking lot. Improvements to the Moulton home site area are proposed to be in keeping with the historic use of the property and include a community orchard and P-Patch along with historic interpretation.

A community P-Patch and orchard will require horticultural maintenance tasks be performed on a regular basis to be successful. Accordingly, the City of Kirkland may prefer to delay a complete build-out of the P-Patch and orchard improvements until such time as an organization such as Seattle Tilth is in place and ready to assume responsibility for the ongoing maintenance and operation of the Moulton Home site area.

In the interim, there are site work tasks that could prepare the site for future garden plots and orchard tree planting. The preliminary site work could include:

- Removal of the degraded asphalt paving in the driveway and parking lot.
- Installation of a water line from 108th Avenue NE to the kiosk area.
- P-Patch subbase preparation, including drain tiles.
- Soil amendment and cover crop planting.
- Construction of a kiosk.
- Fencing and trail construction.
- Establishing the Moulton Home site interpretive space.

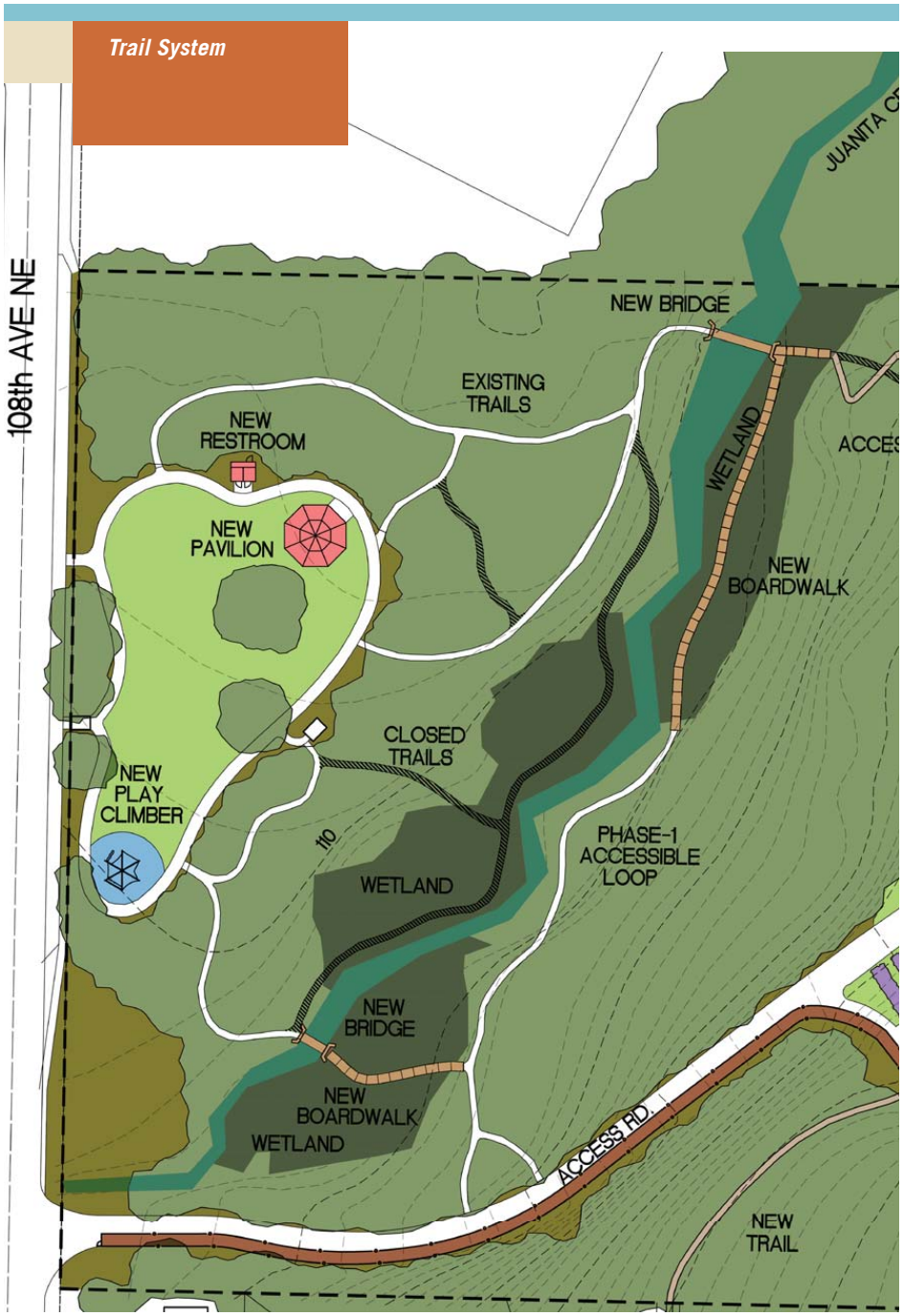


Historic Photo of Moulton Farmhouse

Removing Degraded Asphalt Driveway and Parking

Because the paving is heaved and broken from root intrusion, it should be removed rather than repaired. The existing paved driveway is about 20 feet wide and includes a catch basin and storm drain pipe. The likely outfall for the piped runoff is Jaunita Creek near 108th Avenue NE although that needs to be confirmed during design. The schematic design plan recommends that the piped storm drain system be decommissioned and a more natural drainage approach taken to handle runoff from the orchard/P-patch and driveway. A natural drainage approach also avoids the potential for direct discharge of any pollutants into the creek. This natural drainage approach will likely consist of a series of interceptor biofiltration swales and grass shoulders, which allow dispersed runoff to flow and infiltrate.

The existing 20 foot driveway will be converted to a single-lane gravel maintenance access drive and a six to eight foot wide off-leash dog trail. A gravel top course should replace the degraded asphalt. The regraded driveway should have a cross-slope that conducts runoff to grassed shoulders on the downhill (north) side of the driveway so that runoff does not collect and erode the gravel surface.



Pedestrians can either use the maintenance access or the off-leash dog trail. In addition to resurfacing, the driveway entry at 108th Avenue NE should be narrowed and reconfigured with a new vehicle swing gate and off-leash portal.

Installation of a Water Line from 108th Avenue NE to the Kiosk Area

Water is needed for irrigation and drinking at the orchard/P-patch. This will require a meter, backflow preventer, and drain valve near the intersection of the driveway and 108th Avenue NE. The water line should extend through the P-Patch and orchard and left for future hose bib and irrigation valve installation.

P-Patch Subbase Preparation Including Drain Tiles

The existing parking lot will have the asphalt layer removed and be regraded as necessary. Depending on the porosity of the subsoils, drain tiles could be added to the P-Patch area to make sure excess water is drained away. Otherwise, excess irrigation water and precipitation should be allowed to infiltrate the subbase of the old parking lot.

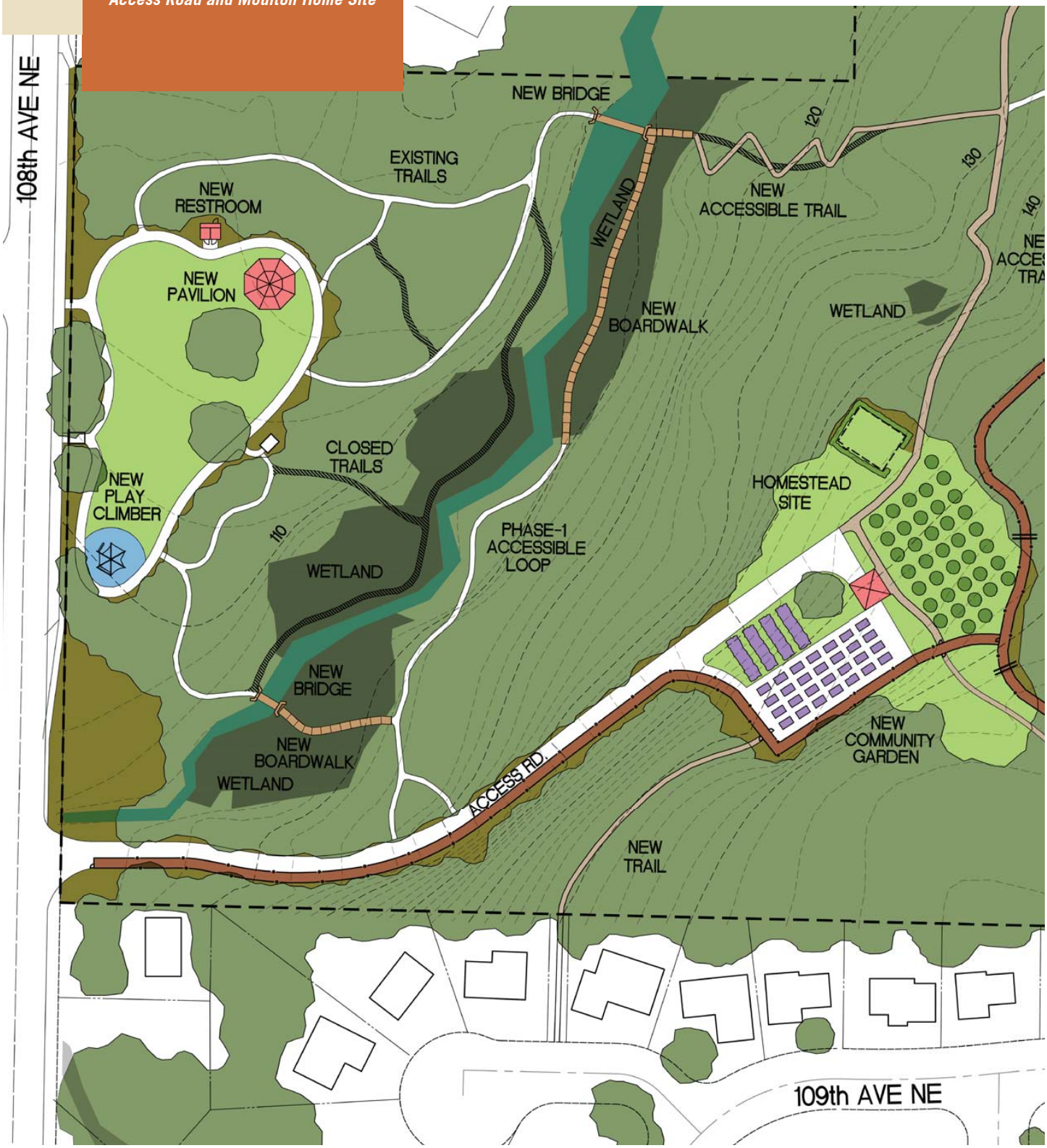
Soil Amendment and Cover Crop Planting

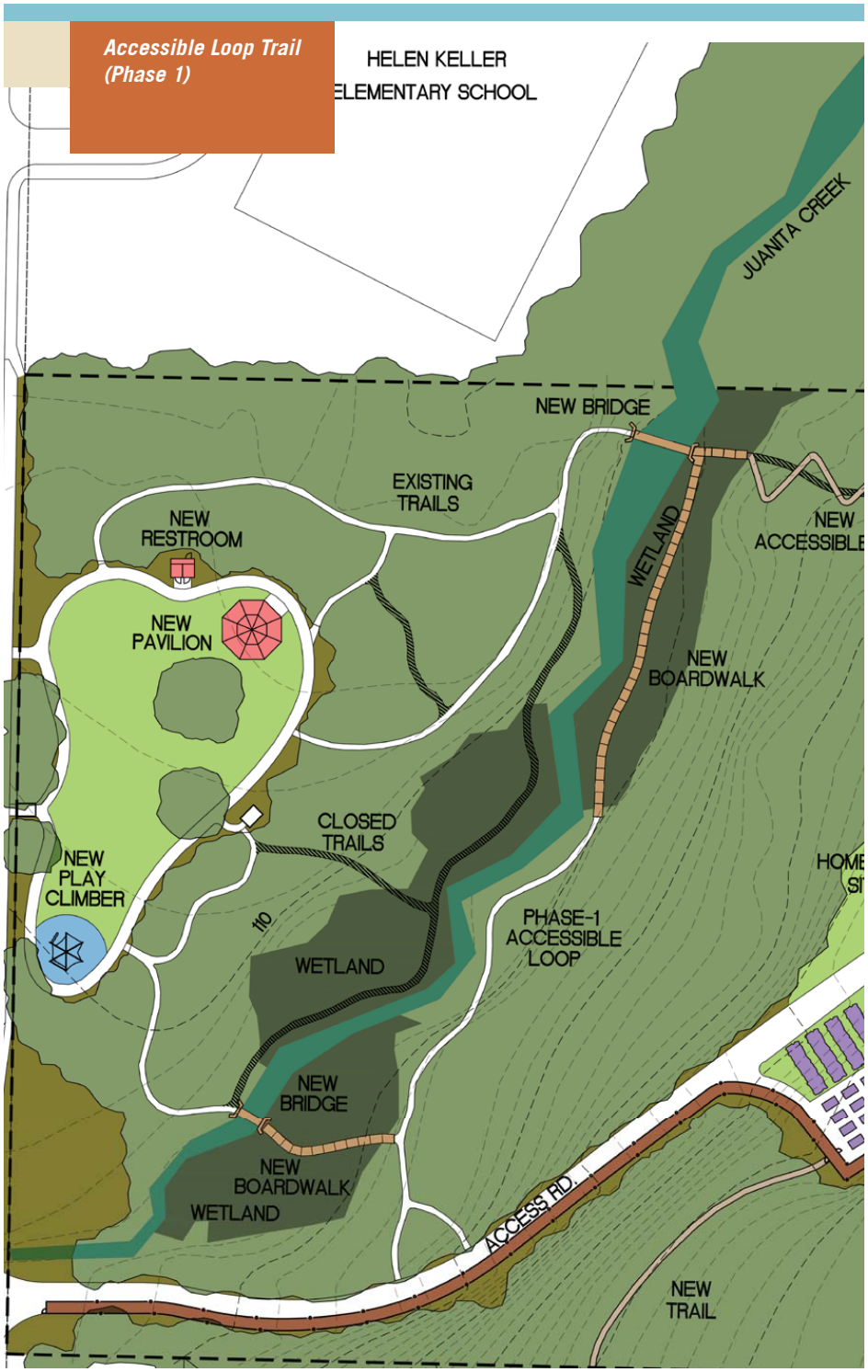
The orchard and berry planting areas need to be cleared and grubbed of existing vegetation; soil amendments such as compost, lime, and organic fertilizers added as appropriate; and a cover crop planted to minimize erosion and weed infestation.

Fencing and Trail Construction

Any fencing needed to enclose the P-Patch or off-leash dog trail

Access Road and Moulton Home Site





should be constructed prior to the orchard/P-Patch opening. This work could be part of a construction contract for the kiosk, driveway, water line, and other listed improvements.

Establishing Moulton Home Site Interpretives

Schematic design calls for the original location of the Moulton home to be delineated with walls of espaliered fruit trees where the original house once stood. In addition, a stone header (flush to the ground) or curb could be set where the old building foundation once stood to add a sense of permanence to the espalier walls. Interpretive panels explaining the history of the site and surrounding area could be installed on the walls and a picnic table and benches could be included in the recreated Moulton home.

Construction of a Kiosk

A kiosk is needed as a gathering point, secure tool shed, and a place to post notices for volunteers and P-Patch participants. The kiosk could have a section of overhanging roof for rain protection. The construction will have to be secure, durable, and vandal-resistant.

Forested Interior

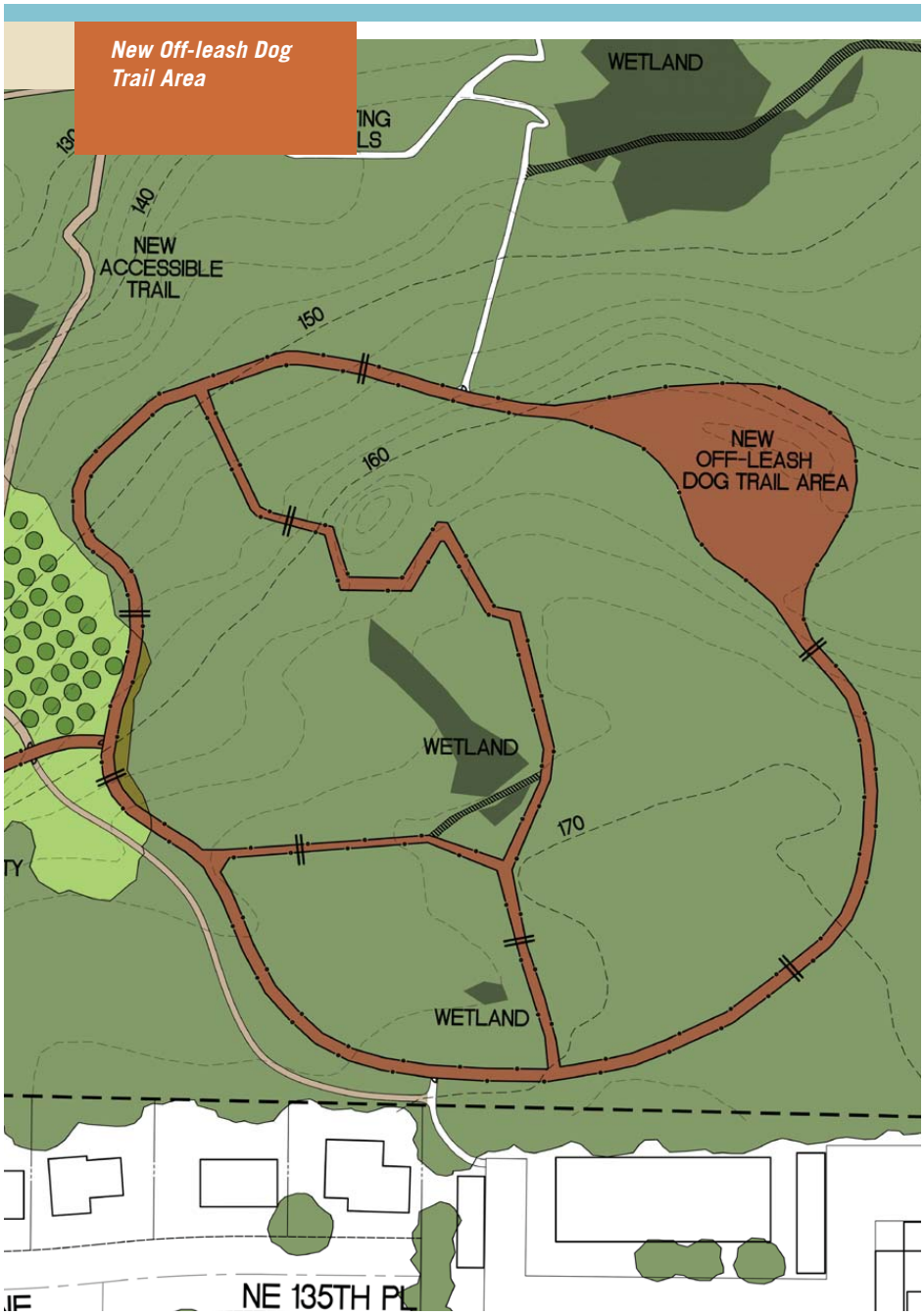
The forested interior of the site makes up the majority of the park acreage excluding the great lawn and Moulton home site. As proposed, the forested interior portions will have program elements limited to trail improvements (new trails, trail restoration, trail decommissioning, and habitat restoration).

Accessible Loop Trail (Phase 1 and Future Phases)

The existing paved trail in the great lawn is essentially flat and meets American's Disabilities Act (ADA) standards. As proposed, the great lawn loop trail would serve as the starting point for a second accessible loop trail, which includes upgrading an existing trail through the deciduous forest, for people of varying abilities, by improving accessibility of the existing trails along Juanita Creek—the most popular of the park's trails.

Upgrading existing trails in upland areas to ADA standards consist of widening the trail to four feet and placing a fine compacted crushed rock material that provides a suitable surface for all users. Existing trails crossing delineated wetlands associated with Juanita Creek will need to be converted to raised structures, essentially boardwalks, to have minimal impact on sensitive areas and to avoid a lengthy and complex permitting process required when placing fill in a wetland. The existing trails should be decompacted and planted with low native plants. Raised boardwalk structures would be constructed on pin piles—two inch diameter galvanized pipes driven into the ground at depths specified in the geotechnical analysis.

The recommended boardwalk structure should consist of galvanized steel beams and stringers with galvanized steel grating for the decking. All galvanized surfaces should be treated with a commercially available solution called Natina, which creates a natural brown patina and provides a more natural appearance to the structure.



Dog Off-Leash Trail

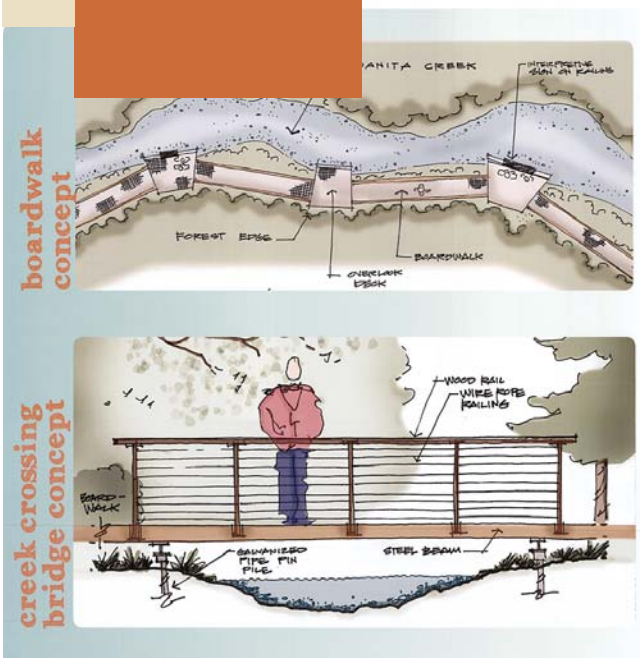
Many dogs visit Edith Moulton Park with their owners. Some

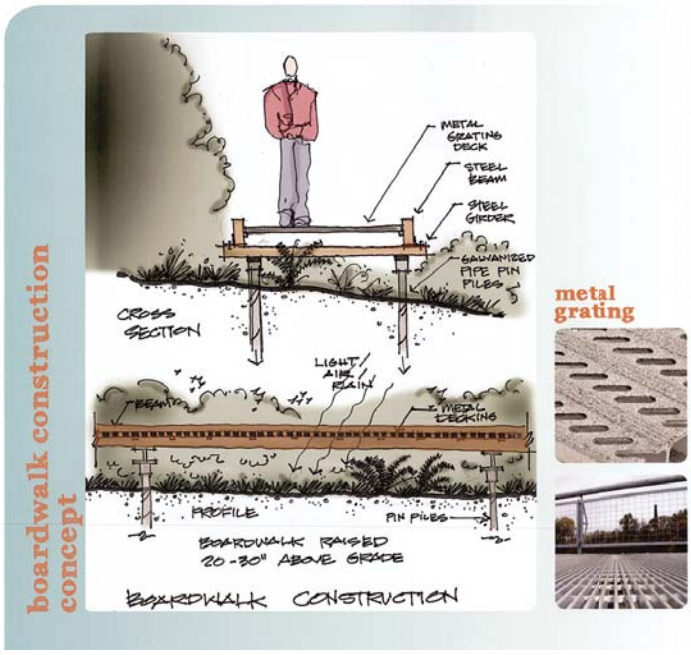
dogs are walked on leads, although a significant number are allowed to walk off-leash. While most off-leash dogs are well-behaved and under the voice control of their handlers, other off-leash dogs may not be appreciated by some visitors using the park trails and great lawn. In addition, off-leash dogs using the creek contribute to the degradation of the stream banks and the addition of potentially harmful bacteria from fecal matter getting into the creek. Off-leash dogs are also more likely to contribute to wildlife displacement and sensitive vegetation damage by trampling.

In accordance with City of Kirkland policy, this master planning effort for Edith Moulton Park examined the feasibility of creating an off-leash area. A 5,000 square foot off-leash area was considered at the south end of the great lawn and a 15,000 square foot area was considered near the Moulton home site as a replacement for the old parking lot and adjacent brushy area. The community response, (especially from dog owners), was that they were too small. Converting a large forested part of the park to an open off-leash area would be contradictory to the basic tenets of the project goals to preserve the forested portions of the park. Likewise, we heard from the community that large portions of the great lawn should not be converted to an off-leash area. An off-leash dog trail however, could fulfill the apparent desire to have dogs off-leash with minimum potential impact to the creek and upland habitat.

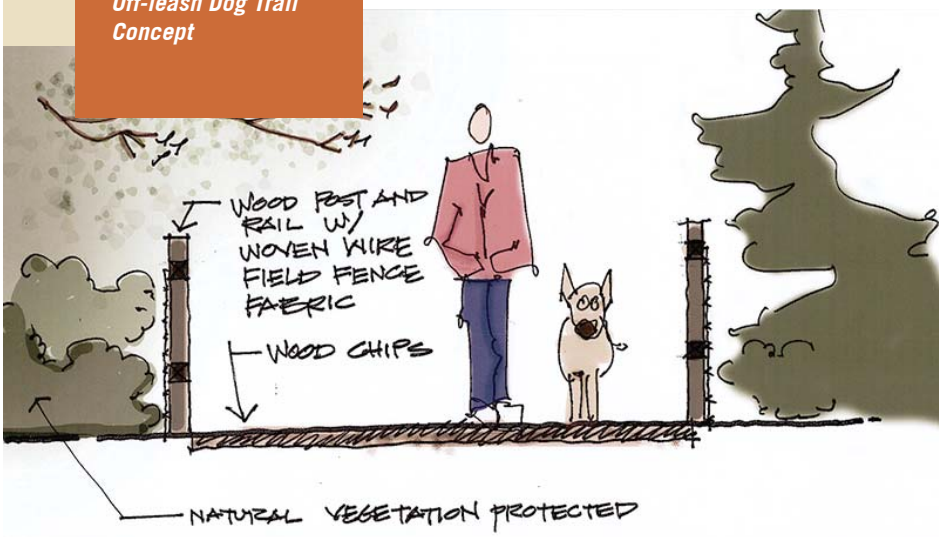
As proposed, a 3,200 linear foot (0.6 mile) off-leash dog trail would be constructed in the southern portion of the park. The intent is that the off-leash trail is a shared trail to be used by both dog walkers and walkers without dogs who don't mind sharing. A trail, versus a large open off-leash area, has the advantage of preserving the forested understory that will surround the trail. In fact, the off-leash dog trail loop section occupies roughly six acres of forest in the southeast corner of the park while the trail itself will enclose only 0.22 acres. The enclosed trail allows for enjoyment of the forested southeast corner

Trail Concepts





Off-leash Dog Trail Concept



with only minor direct impact considering that about ½ of the dog trail follows existing trails alignment.

The off-leash trail will consist of an access to 108th Avenue NE along the old driveway with a loop through the upland coniferous forest in the southwest corner of the park. Approximately one-third of the off-leash trail (about 800 feet) would be new trail and the remaining two-thirds constructed in the same alignment of existing trails and the existing driveway. The roughly 800 feet of new trail is in an area of the park where construction of a new trail was requested by some community members as a means of patrolling a reportedly under-visited and occasionally misused section of the park.

The off-leash dog trail would consist of a six foot wide trail with post and rail fencing on both sides. The six foot dimension is recommended as the minimum needed to allow two people with dogs to comfortably pass.

Entries would be gated with self-closing gates so that dogs don't inadvertently escape the off-leash trail enclosure. The fencing along the trail is necessary to avoid damaging this area of important upland and wetland habitat. Attendees at the third community meeting voiced a preference for a wood post and field fence rather than and chain link fence. A field fence has large enough openings that mice, squirrels, and other small animals can pass through the fence. The fence height will be 48 inches as is typical with other similar facilities.

The trail should include culvert crossings for animals that don't fit through the fence or that wouldn't typically climb over the fence. In addition to the fenced trail, a small fenced open area could be

Existing Trail

included if an area is available that would not require extensive conversion from forest understory to off-leash use. The trail surface will be covered with six inches of arborist mulch to minimize erosion and provide a substrate to absorb and effectively trap dog urine and incidental fecal matter to avoid infiltration into the near surface groundwater or moving off the trail via stormwater surface flow.

Trail Decommissioning

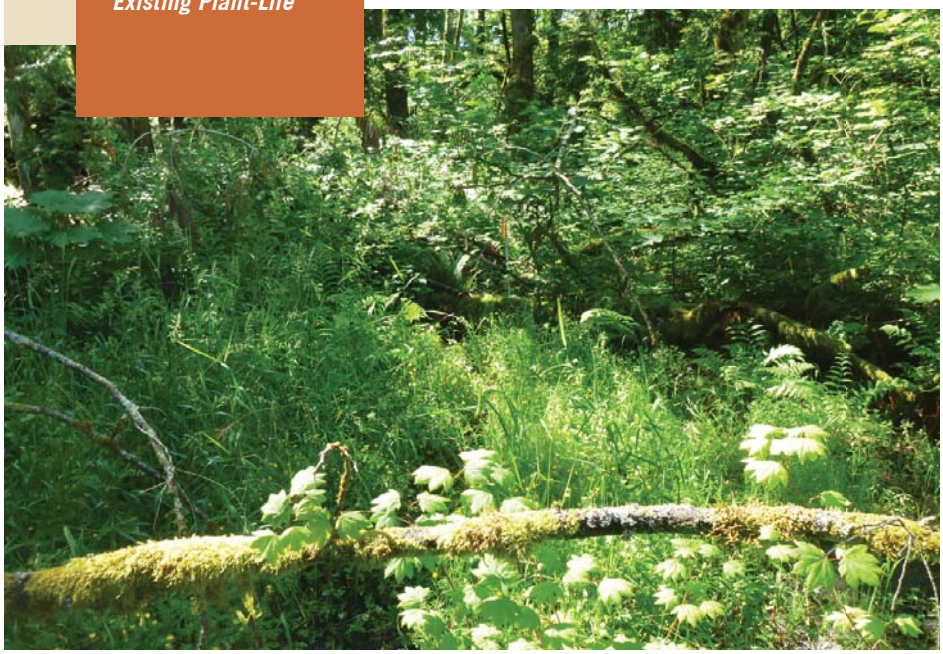
Over the years since King County first opened the Edith Moulton property as a park, a number of trails have been formally and organically built and more naturally worn through repeated use throughout the park. There is evidence that some trails existed on the property before it became a park—particularly a north/south trail from the original home site. As it happens, social trails or unplanned trails develop that often duplicate other trails. Too many trails are not a good thing because trails, through human presence, tend to fragment wildlife habitat. In addition, some of existing trails at Edith Moulton pass through sensitive wetlands and stream buffers. Along Juanita Creek for example, there are trails on both the east and west sides of the creek that provide essentially the same experience for trail users yet have twice the impact. Similarly, a little-used trail in the north half of the site doesn't make any useful connection and is within a creek tributary buffer. This trail in the north half and one of the creek side trails and is proposed for removal. The overall site plan shows where trails are proposed for decommissioning. Trail decommissioning would be accomplished by stacking and intertwining branches and brush near trail intersections and loosening compacted soil and replanting the trails with native plants.

Habitat Restoration

Habitat restoration will occur in two forms at Edith Moulton Park—the first is restoration as required for compensatory mitigation related to permit approvals and the second is longer-term restoration to be completed outside of any construction contracts for improvements at the park.

Restoration required as mitigation will be directly tied to construction of the park project elements, such as trail improvements occurring within wetlands, wetland buffers, and stream buffers. Therefore, mitigation work needs to be coincident with the trail or other improvements. Longer-term restoration, not related to permit approvals, can be accomplished by a coordinated non-profit/volunteer effort such as the Green Kirkland Partnership. The Green Kirkland Partnership is an alliance between the City of Kirkland, nonprofit partners, businesses,

Existing Plant-Life



and the community. The Partnership's goal is to restore more than 400 acres of natural areas in the City of Kirkland, including portions of Edith Moulton Park. The majority of the restoration efforts are being or will be accomplished by volunteers.

Mitigation-Related Restoration

Proposed trail improvements in Edith Moulton Park could trigger permit requirements for compensatory mitigation—most likely in the form of wetland creation/restoration, wetland enhancement, and stream/wetland buffer enhancement. The extent of mitigation is expected to be minimal; however, the specific amount and location of mitigation will not be known until 60 percent design plans are developed and submitted for the required permits and SEPA review. As proposed, the Phase 1, the accessible loop trail as proposed includes:

- 1,300 linear fee (approximately) of decommissioned and restored trails, including 400 linear feet of existing trail in wetlands that will be restored and converted to an elevated boardwalk structure.
- 1,100 linear feet (approximately) of existing trail that will be widened and resurfaced with crushed rock to ADA standards.

Although the project is theoretically self-mitigating in the sense that there will be more trail closed and restored than is being upgraded, a large portion of the upgraded trails will be located in stream and wetland buffers. That work on trails in buffers could have an adverse impact to the function of the buffers, and may need to be compensated for with buffer enhancement. Buffer enhancement could include:

- Removing invasive species such as Himalayan blackberry.
- Adding habitat structures such as logs or stumps.
- Planting native tree, shrub, and herbaceous species.

Very minor impacts are expected to be associated with the elevated boardwalk structure, as pin pile structures have a small footprint and the decking material (grate) allows light to pass to the ground.

Part III

Cost Estimate

ALL PROPOSED IMPROVEMENTS

Item Description	Quantity	Unit	Unit Price	Amount
PAVILLION				
Surveying	1	LS	$8,500	$8,500
Record Drawings (minimum bid $400)	1	LS	$400	$400
Spill Prevention, Control, and Countermeasures Plan	1	LS	$1,000	$1,000
Mobilization	1	LS	$84,600	$84,600
Clearing and Grubbing	1	LS	$5,000	$5,000
Removal of Structure and Obstruction	1	LS	$31,200	$31,200
HMA Pavement Removal (driveway and parking lots)	*2,600*	*SY*	*$12*	
Sawcutting	1,000	LF	$3	$3,000
GRADING				
Roadway Excavation, Including Haul	200	CY	$20	$4,000
STORM DRAINAGE				
Schedule A Culvert Pipe, 24” Diameter (animal crossing)	40	LF	$60	$2,400
SURFACING AND PAVEMENT				
Crushed Surfacing Base Course	300	TN	$30	$9,000
Main Trail	*48*	*TN*		
Roadway	*160*	*TN*		
Shelter Pad	*37*	*TN*		
Phase 2 Accessible Loop	*27*	*TN*		
Crushed Surfacing Top Course	100	TN	$30	$3,000
Main Trail	*48*	*TN*		
Accessible Loop Trail	*27*	*TN*		
HMA CL. 1/2” PG 64-22	300	TN	$110	$33,000
108th Avenue NE Edge	*228*	*TN*		

PHASE 1 IMPROVEMENTS–CONTINUED

Item Description	Quantity	Unit	Unit Price	Amount
SIDEWALK AND CURB				
Cement Concrete High Back (12") Curb	1,000	LF	$30	$30,000
Precast Sloped Mountable Curb	1,000	LF	$25	$25,000
Cement Concrete Sidewalk Ramp	4	EA	$1,500	$6,000
TRAFFIC				
Project Temporary Traffic Control	1	LS	$21,000	$21,000
Traffic Control Labor	*112*	*HR*	*$50*	
Temporary Construction Signage	*504*	*SF*	*$20*	
Other Temporary Traffic Control	*1*	*LS*	*$5,000*	
Permanent Signing Roadway	1	LS	$1,600	$1,600
New Sign	4	EA	$400	
Crosswalk	40	SF	$7	$280
TESC AND PLANTING				
Inlet Protection	5	EA	$70	$350
Wattle	2,000	LF	$5	$10,000
High Visibility Silt Fence	1,000	LF	$5	$5,000
ESC Lead	90	DAY	$100	$9,000
Street Cleaning	50	HR	$120	$6,000
Soil Amendment and Seeding - Upland Seed Mix	100	SY	$6.50	$650
Soil Amendment and Seeding - Cover Crop Seed Mix	2,000	SY	$5.75	$11,500
Soil Amendment and Wetland Buffer Restoration		SY	$20	
Trail Decommissioning (decompact and plant)	1,300	LF	$5	$5,850
Bark or Wood Chip Mulch	400	CY	$35	$14,000
Roadway Excavation Including Haul	200	CY	$20	$4,000
STRUCTURES				
Phase 1 North Bridge	1	LS	$16,000	$16,000
Phase 1 South Bridge	1	LS	$8,000	$8,000
Phase 2 Bridge	1	LS	$20,000	$20,000
Schedule A Culvert Pipe, 24" Diameter (animal crossing)	40	LF	$60	$2,400
OTHER ITEMS				
Minor Changes	15,000	EST	$1	$15,000
Split Rail Fence with Wire Field Fence Attached	6,400	LF	$15	$96,000

PHASE 1 IMPROVEMENTS–CONTINUED

Item Description	Quantity	Unit	Unit Price	Amount
Interpretive Signage	5	EA	$8,000	$40,000
Pavilion, Including Cement Concrete Pad	1	LS	$45,000	$45,000
Picnic Table	9	EA	$2,350	$21,150
Bench, Including Cement Concrete Footings	3	EA	$1,400	$4,200
Litter Receptacle Including Cement Concrete Pad	4	EA	$1,250	$5,000
Access Control Gate	1	EA	$7,000	$7,000
Galvanized Steel Boardwalk	370	SF	$85	$31,450
Galvanized Steel Patina Application	1	LS	$4,000	$4,000
Restroom, Including Power	1	EA	$115,000	$115,000
Water Service to Restroom, Pavilion, and P-Patch	1	LS	$16,000	$16,000
Dome Climbing Structure Including Base Material	1	EA	$43,500	$43,500
24" Height Circular Modular Block Wall Enclosure	200	SF	$30	$6,000
Kiosk/Tool Shed Structure	1	EA	$17,000	$17,000
Espaliered Moulton Home Site with Furnishings	1	LS	$4,500	$4,500
Subtotal				*$846,130*
20% Contingency				*$169,226*
Sales Tax (9.6%)				*$97,474*
Total Estimated Construction Cost [1]				*$1,112,830*

[1] NOTES

Construction costs are based on 2014 unit prices.

Construction cost assumes no stormwater detention/water quality facilities will be required.

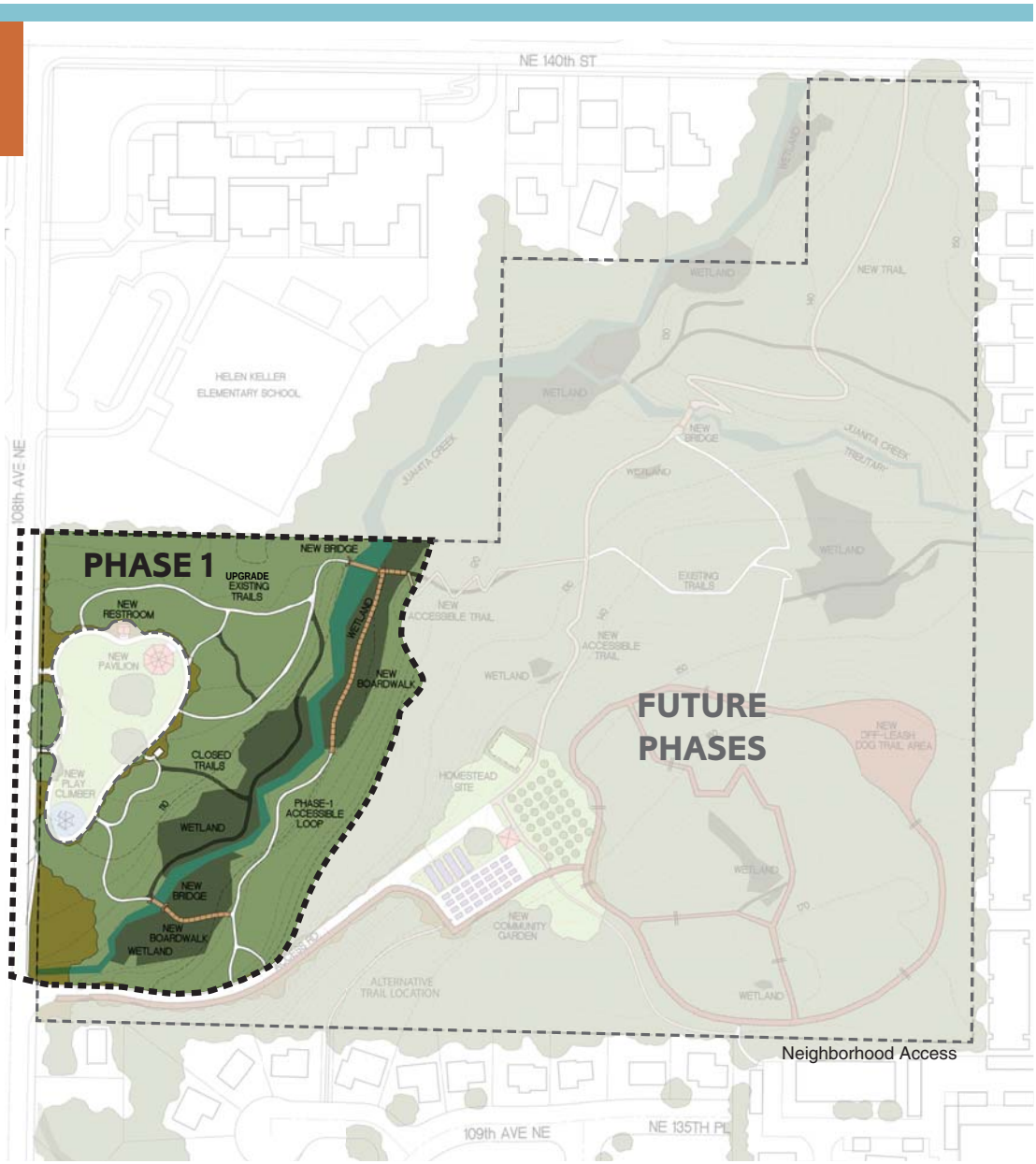
Wetland mitigation cost do not include costs associated with long-term monitoring.

Part IV

PHASING BOARD

Phasing Strategy

Overall Site Plan (Phased) Schematic Design Level



CONSOLIDATED COST ESTIMATE

Phase 1 Improvements

Item Description	Amount
ROADWAY FRONTAGE AND PARKING IMPROVEMENTS	
Including excavation, grading, curbs, asphalt, striping, and ADA ramps plus traffic control and sediment control	$211,460
ACESSIBLE LOOP TRAIL	
Including boardwalks (two sections), two bridges, upgrading existing trails, closing trails, and wetland buffer mitigation	$213,000
WATER AND SEWER SERVICE STUBS	
For future restroom, pavilion, and irrigation at community orchard and p-patch (avoids cutting and trenching new road frontage improvements)	$36,000
Subtotal Phase One	*$460,460*
20% Contingency	*$92,092*
Sales Tax	*$53,045*
Total Phase One	*$605,597*

CONSOLIDATED COST ESTIMATE–CONTINUED

Future Improvements

Item Description	Amount
Great Lawn Area	
PAVILLION	
Including concrete slab, power, picnic tables, and lawn repair	$53,000
RESTROOM	
Pre-fabricated / site-built type on concrete slab including water meter, power, side sewer, and landscape restoration	$120,000
CLIMBING STRUCTURE	
Including retaining wall and surfacing	$48,000
INCIDENTAL IMPROVEMENTS	
Including asphalt overlay existing loop trail, upgrade entry gate, interpretive, planting, etc.	$20,000
Moulton Home Site Area	
ACCESS IMPROVEMENTS	
Including removing old driveway paving, grading and drainage, and resurfacing	$39,000
P-PATCH AND ORCHARD	
Construct p-patch and orchard including tool shed, irrigation, water meter, clearing, and soil improvements	$67,000
HISTORIC INTERPRETATION	
Interpretive features including panels, granite header marking the old home site, espaliered house outline, and site furnishings	$35,000
Forested Interior	
ACESSIBLE LOOP TRAIL PHASE 2	
Including new trails, upgrading existing trails, one bridge, some interpretation	80,000
DOG OFF-LEASH TRAIL	
Including upgrading existing trails, new trail, fencing, animal culverts, and surfacing	96,000
HABITAT MITIGATION	
Invasive plant removal and replanting with natives and wildlife structures (rock piles, brush piles, snags, etc.)	40,000
Subtotal Future Phases	*$598,000*
20% contingency	*$119,600*
Sales Tax	*$57,408*
Total Future Phases	*$775,008*

Part V

Phase 1- Develop Park Design Program

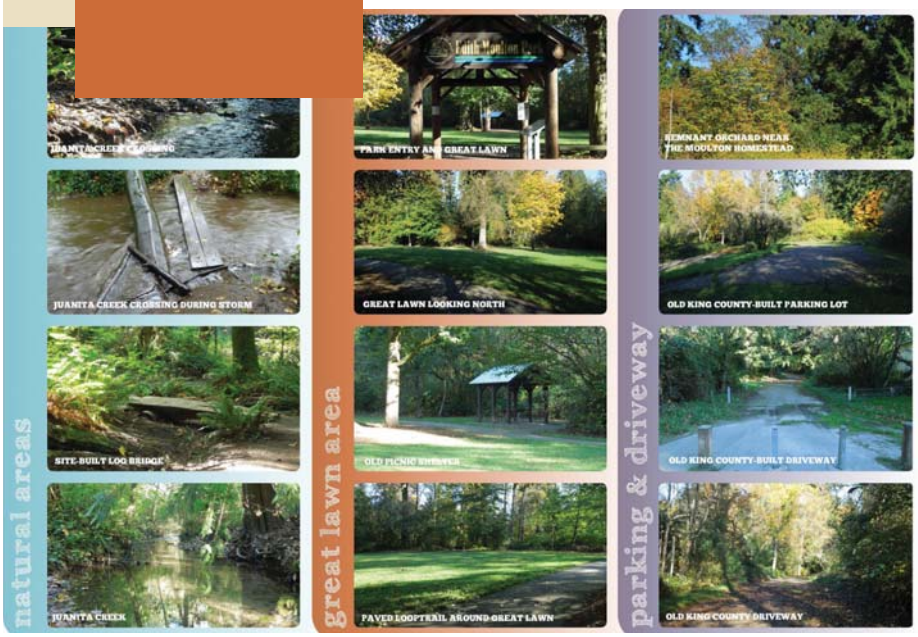
TASK 1.1 PROJECT START-UP

This task involved finalizing a work plan and a communications plan (public and stakeholder involvement plan), defining project goals and objectives, kicking off the project in a meeting with the City team, assessing existing conditions, and ongoing project management and coordination.

Task 1.1 Subtasks

1. To grasp a better understanding of the site, information was gathered, included past planning documents, GIS maps, existing surveys and assessor's maps, utility maps, historic plans and documents, as-builts, and other data and information. Past plans from King County were scanned. These documents provided data for base maps that we used to research and design features of the park.
2. Next, a kick-off site visit meeting with the City team, design team, and Park Board members was held. The meeting focused on review of project parameters, the communications plan (community involvement strategy), and the proposed work plan (project timetable and products/deliverables). Also, existing conditions were discussed including stream, wetland and upland habitat conditions, and existing park infrastructure. The design team and Park Board walked the park together discussing these topics.
3. Finally, a preliminary vision, goals, and objectives for the master plan were prepared to share with Parks staff and the Park Board.

Site Photos



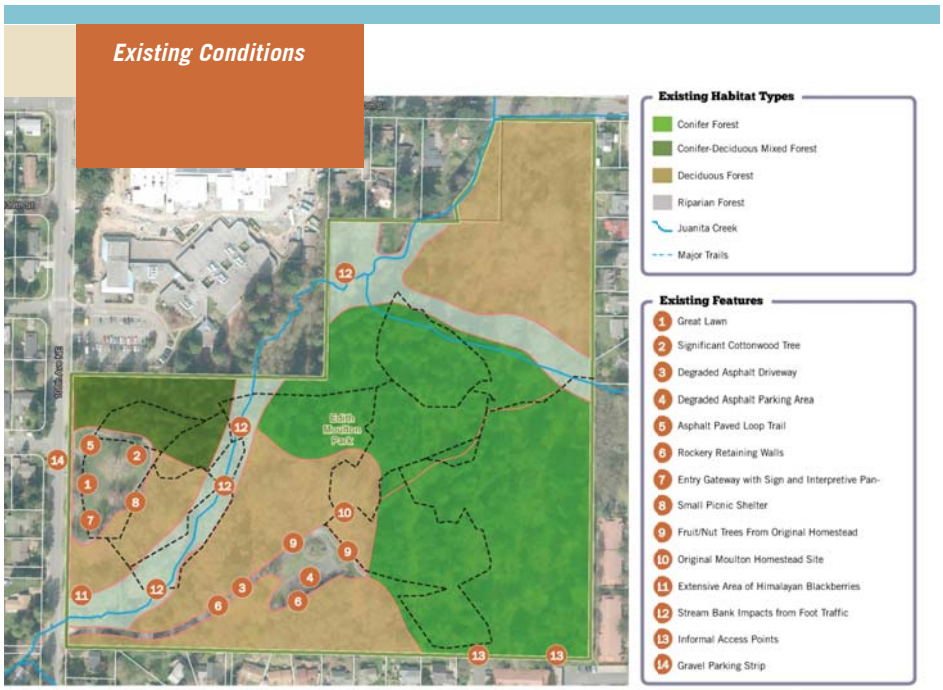
TASK 1.2 EXISTING CONDITIONS

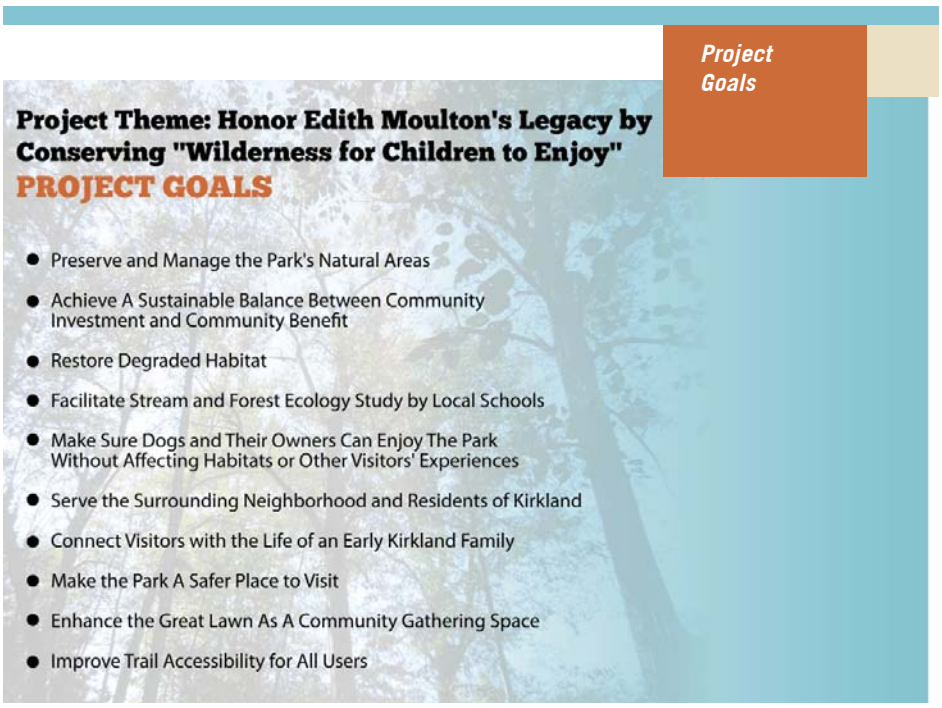
This task completed an inventory and assessment of the park and surrounding context. Base mapping used existing aerial mapping and GIS sources and the base map information provided in old King County maps. Otak biologists delineated the wetland

boundaries and stream location. The stream and wetland locations were field-surveyed and merged into the base mapping. Buffers were added per City of Kirkland code.

Task 1.2 Subtasks

1. To map the existing conditions of the site, a comprehensive review of background information was conducted along with site reconnaissance. In order to map the trails and site features, a hand-held GPS unit was used along with aerial photography and GIS data.
2. To obtain biological and other natural resource information, a variety of sources were used, including: USFWS, NOAA/NMFS, WDFW, and WDNR. Wetlands were delineated using the Washington State Wetlands and Identification Delineation Manual (Ecology 1997) and Corps of Engineers supplement, as required by the City of Kirkland, Washington State Department of Ecology (Ecology), and/or the US Army Corps of Engineers (USACE). The delineated wetland boundaries and data plots within the park property were flagged as well.
3. Streams on the project site were flagged at the ordinary high water mark (OHWM) and the stream habitat was characterized within representative reaches located on the project property. Field measurements were taken for the purpose of assessing habitat unit complexity and habitat information for compliance with the Endangered Species Act (ESA).
4. Otak surveyed the flagged wetland boundaries and stream location. The survey information was used to prepare a map layer.
5. An Existing Conditions Inventory and Analysis Package were prepared. Base mapping was updated to create a detailed existing conditions map showing natural and man-made features, including topography, wetlands, streams, buffers, trees and vegetation, utilities, structures, and other features as necessary for the purposes of master planning and permitting. A supporting narrative site inventory and analysis was prepared to accompany the mapping, with photos illustrating existing conditions.
6. A draft historic and cultural resources report was prepared and integrated with key findings into the existing conditions analysis. Findings related to site history and the Moulton family were integrated into interpretive themes and concepts for the park.
7. Draft vision, goals, and objectives were then revised based on input from Parks staff and Park Board members.





Project Goals

8. Communication and coordination with various local, state, and federal permitting authorities was necessary to understand regulatory issues and constraints, particularly related to sensitive areas, creek access, and recreation activities. Otak conducted meetings (some as phone interviews, some site visits) with agency representatives, including:
    - Parks and Community Services staff
    - Public Works staff
    - Planning staff
    - Park Board members
    - US Army Corps of Engineers biologist
    - Washington Department of Fish and Wildlife

TASK 1.3 DRAFT AND FINAL PARK DESIGN PROGRAM

As part of the work under this task, the team confirmed vision, and goals and objectives for the park, completed a detailed assessment of issues and opportunities (Opportunities and Challenges Assessment), and developed the design program.

Task 1.3 Subtasks

1. Graphics were prepared for Community Workshop #1, which occurred on January 22, 2014. This workshop focused on gathering input on the vision, goals, and objectives for the park, as well as key issues, opportunities,

Community Workshop

necessities, and wish list items. During the workshop the design team gathered information about park visitor experiences, their knowledge of park use, and the type of fish and wildlife observed. Conversations with park neighbors about their observations of when and how the park is currently being used were useful in understanding the parks usage. Community interest in various types of potential improvements to the park was also determined. After the workshop, input received was documented in a brief workshop summary memorandum.

2. The Park Board was briefed of Community Workshop #1 results and then reviewed and discussed draft park program ideas. A draft program for the park was developed that considered how potential improvement scenarios and alternatives might achieve the program.
3. Coordinating with the City, preparation for Community Workshop #2 began, which focused on getting input on the draft program for the park and potential improvement solutions. Community Workshop #2 took place on April 30, 2014. Document input received was documented in a brief workshop summary memorandum.
4. The Park Board was provided a briefing of Community Workshop #2 results and they reviewed a refined draft program for the park.
5. The Phase 1 deliverable package was finalized and prepared for Park Board and City Council presentation and review.

Sensitive Areas Map

Phase 2- Develop Schematic Design

TASK 2.1

This task focused on development and analysis of schematic design alternatives and selection of preferred solutions. The overall outcome of this task is the completed schematic design. This schematic design package includes a summary of Phase 1 work efforts, as well as illustrations, sketches, and reference images of design alternatives and preferred approaches. A narrative supporting the proposed design, along with cost estimates and cost analysis information also was included. Our schematic design package integrates a variety of considerations, including recreation and interpretive opportunities, habitat and natural area enhancement and protection, drainage and water quality opportunities, site engineering, and utility considerations.

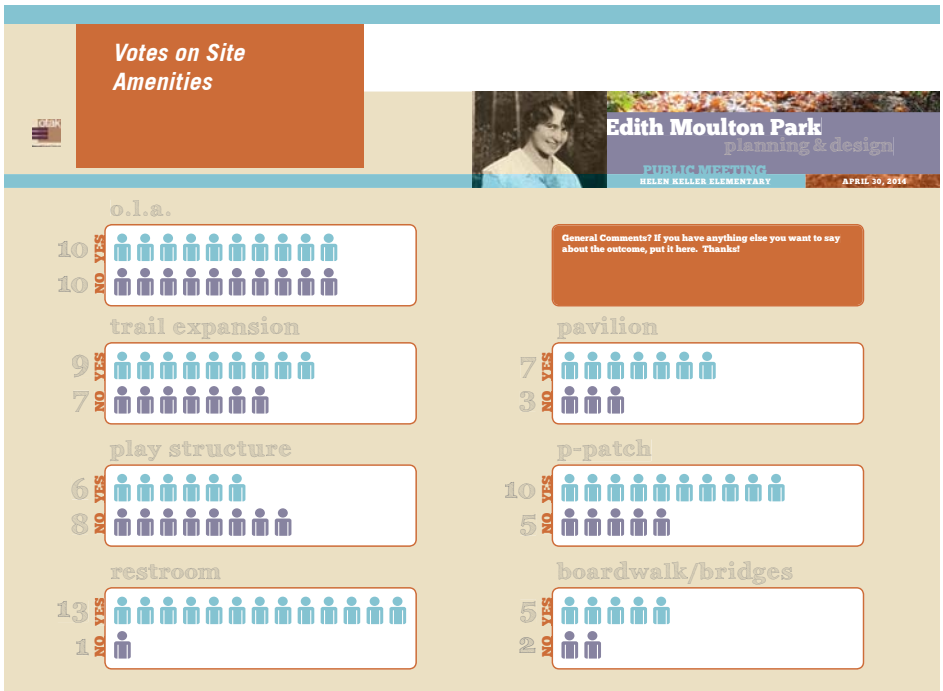
Task 2.1 Subtasks

1. The design team assisted the Park Board in establishing evaluation criteria for schematic alternatives. For this task, we used a goals achievement matrix that relates back to the previously agreed upon goals and objectives for the project. Each of the schematic alternatives was viewed as moving toward or away from the goals.

Site Elements

2. A meeting with the Parks staff occurred to review schematic design alternatives. The team also spoke with agency representatives and permitting authorities to review initial schematic design direction to inform the permitting strategy for the project.
3. The design team then coordinated with Parks staff and prepared for Community Workshop #3, which occurred on July 22, 2014 and focused on gathering input on the draft schematic design alternatives analysis and selecting a preferred or hybrid schematic design alternative. Afterwards, a document input that was received was put in a brief workshop summary memorandum.

4. The design team then met with Parks staff and Park Board to review Community Workshop #3 results and confirm direction for draft schematic design. Briefing was also provided to the City Council regarding Community Workshop #3.
5. Refinements to the draft schematic design were then made based on Parks staff and Park Board input.
6. An updated cost estimate and operational models were completed along with a draft phasing program for development of the park that identifies priorities for improvements, responsibilities for improvements, a timeline for implementing improvements, and scope and schedule of the permitting process.
7. Met with City permitting authorities to review draft schematic design and phasing program.
8. Met with Park Board to present draft schematic design and phasing program.
9. Finalized schematic design and phasing package, including Phase 1 products and Phase 2 schematic design.
10. Revised cost estimates.
11. Assisted with Park Board review and approval process.
12. Assisted with City Council review and approval process.
13. Prepared draft SEPA Checklist. The purpose of preparing the checklist was to determine if there is more information needed on potential impacts that could occur during the next phase of work.



Deliverables

- Goals achievement matrix for schematic design evaluation
- Three schematic design alternatives, including: plan and sections graphics, perspective sketches, concept drawings, and reference images along with a narrative for park features and interpretive elements
- Line item cost estimates for each of the three schematic design alternatives
- Operation and maintenance cost model (assist Parks staff)
- Draft narrative of Phase 1 work, schematic design alternatives, and regulatory criteria
- Community Workshop #3 presentation materials
- Community Workshop #3 summary
- Permitting process scope and schedule
- Final schematic design and phasing package including Phase 1 and Phase 2 schematic design
- Revised cost estimate
- Draft SEPA Checklist

City of Kirkland Participation

- Review and comment on draft deliverables.
- Scheduling and handling of logistics (public notices, invitations, etc.) for community workshops.
- Scheduling of Park Board and City Council reviews and involvement.
- City permit review input.
- Prepare for community workshops.

Phase 3- Design Development

TASK 3.1 GEOTECHNICAL WORK AND TOPOGRAPHIC SURVEY

We propose to complete the site topographic survey and geotechnical work at the outset of Phase 3. From the approved schematic design, we can approximate the limits of work and perform a subsurface investigation where any paving or footings would be located and prepare a topographic survey of the areas where more intensive site development is proposed. The site survey will identify and locate natural and built features, including topography, vegetation, utilities, structures, and other features, and will bring in the previously surveyed wetlands and stream corridor. With this data, the final design base maps will be created and work can begin on the 30 percent plan set.

Tasks

1. Prepare draft and final geotechnical report.
2. Prepare topographic survey and base map.

TASK 3.2 DESIGN DEVELOPMENT

This task will advance the preferred schematic design plan to the design development level (approximately 30 percent completion) and prepare a draft design development package. The design development stage is where design solutions, details, materials, and construction methods are developed and decisions made about elements to move forward into construction. The cost estimate and operation model developed previously will be updated to the design development level.

Subtasks

1. Prepare the design development package, which will include plan and section graphics, perspective sketches, and design development drawings and details, cut sheets and other information, including a narrative describing proposed park features such as interpretive elements, and design templates.
2. Review draft design development package with Parks staff.
3. Meet with Park Board to present and review design development package.
4. Meet with agency representatives and permitting authorities to review at pre-application meetings (for permits not already initiated at the end of Phase 2).
5. Coordinate with the City and prepare for Community Workshop #4, which will focus on getting input on the draft design development package.
6. Attend and facilitate Community Workshop #4; document input received in a brief workshop summary memorandum.
7. Meet with Parks staff and Park Board to review

Community Workshop #4 results and confirm direction for final design.

8. Provide briefing to City Council regarding Community Workshop #4 results and direction for final design.
9. Make refinements to and finalize design development package based on Parks staff and Park Board input.

TASK 3.3 PREPARE AND PROCESS PERMITTING & REGULATORY APPROVALS

Based on the assessment of permitting requirements completed in Phase 2, we will develop required permitting and regulatory approval packages and provide assistance during the review and approvals processes.

Subtasks

1. Develop required permitting and regulatory approval packages in draft form for City staff review.
2. Coordinate City staff review of permitting packages/ applications.
3. Finalize permitting and regulatory approval packages based on City staff review comments. (Some of this work may occur concurrently with final design and final design plans at the 60 percent or more complete levels will be submitted with applications as required.)
4. Submit permit and approval applications and coordinate with regulatory agencies and departments during their review.

TASK 3.4 FINAL PLANS, SPECIFICATIONS AND ESTIMATES (PS&E)

This task involves preparation of final PS&E for the project, advancing the design development package to the 60 percent, 90 percent, and 100 percent (for bidding) levels.

Subtasks

1. Prepare 60 percent PS&E. At 60 percent, the design and construction documents will contain a complete layout of the project elements with most design details. Specifications will be in rough form with bid items identified and the cost estimate prepared.
2. Submit any long review period permits such as a Section 404 permit or Hydraulic Project Approval if required at the 60 percent design level; identify required permits; and prepare, submit, and secure all regulatory permits or approvals as necessary to complete work.
3. The City may wish to hold a public open house/ neighborhood meeting at the 60 percent design stage. This is early enough to address public comments in the design process before finalizing the plans for construction. It would also provide another opportunity to touch base with the community on progress toward implementation.
4. Prepare 90 percent PS&E. At 90 percent, the construction documents are nearly complete with only minor details to be completed. In preparing this package, our designers will focus on the information a contractor needs to bid and construct—a critical detail in minimizing ambiguities and providing the clarity needed for tight bids. At this stage, the complete bid and technical specification manual will be assembled, comprised of the City's boilerplate bid, contracting documents, and technical special provisions to the base standard specifications. The cost estimate will be updated and the documents submitted to the City for final review.

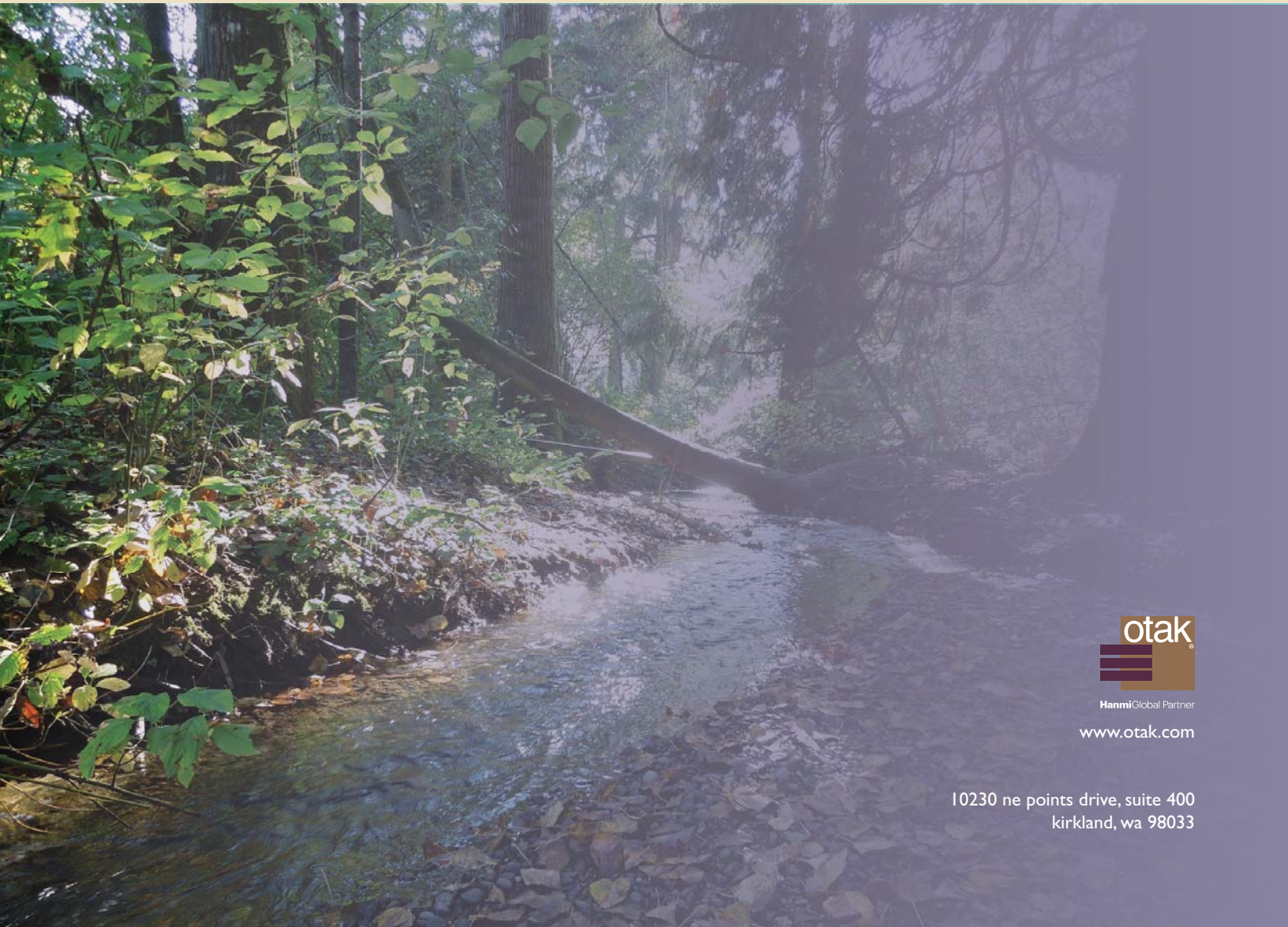
5. Prepare 100 percent PS&E. At this stage, prior City review comments and edits will be incorporated and the construction documents complete. A hard copy of the final PS&E package will be submitted to the City prior to producing documents for construction bidding.
6. Develop final drawings and construction specifications.

TASK 3.5 BID AND CONSTRUCTION SUPPORT SERVICES

This task includes bidding the project and construction services.

Subtasks

1. Prepare bid specification package, conduct pre-bid conference, assist with addenda, etc. It may be helpful during the bid process to hold a site walk to explain limitations on access, sensitive areas, staging areas, etc.
2. Construction services may include periodic construction observation; organize, attend, and summarize weekly or bi-weekly progress meetings; provide written clarifications of drawings and specifications; review and recommend approval of contractor; prepare change orders and make recommendations for their approval; prepare project completion punch list items; and ensure contractor provides drawings documenting the construction plans and provides required product specifications, maintenance, and operating manuals to the City.



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