Golden Gardens Park Concept Plan





Final Report

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Eugene Parks & Open Space

Acknowledgments

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1. Project Overview

> *The Golden Gardens Park Concept Plan balances community recreation needs with ecological health and economic development opportunities.*

Golden Gardens is a 223-acre park in northwest Eugene on the northern edge of the Bethel neighborhood. The Golden Gardens Park Concept Plan articulates a shared vision to guide the park's future development, building upon planning efforts and feasibility studies that began as early as 2005. The proposed design includes three major elements that balance community recreation needs with ecological health and economic development opportunities:

- a **sports complex** with fields suitable for local leagues and regional tournaments,
- a **conservation area** with wildlife habitat enhancements and passive recreation improvements around the park's existing ponds and remnant wetland areas, and
- a **neighborhood park** with features designed primarily for people living within a half-mile of the park.

The Concept Plan establishes the overall uses and locations of the park's amenities. The design represents the culmination of more than twenty years of research, community input, and collaboration with technical experts. Key decisions in the process included identifying desired park amenities and balancing the allocation of space to different land uses and activities across the site. Additional steps were taken to analyze potential sports field materials, plan habitat protections and enhancements, and establish costs and a phasing plan for the design's implementation. Due to the large size of the park and the scale of its proposed development, the Golden Gardens Park Concept Plan is likely to be implemented across several phases over an undetermined time period, with initial development occurring as early as 2028.

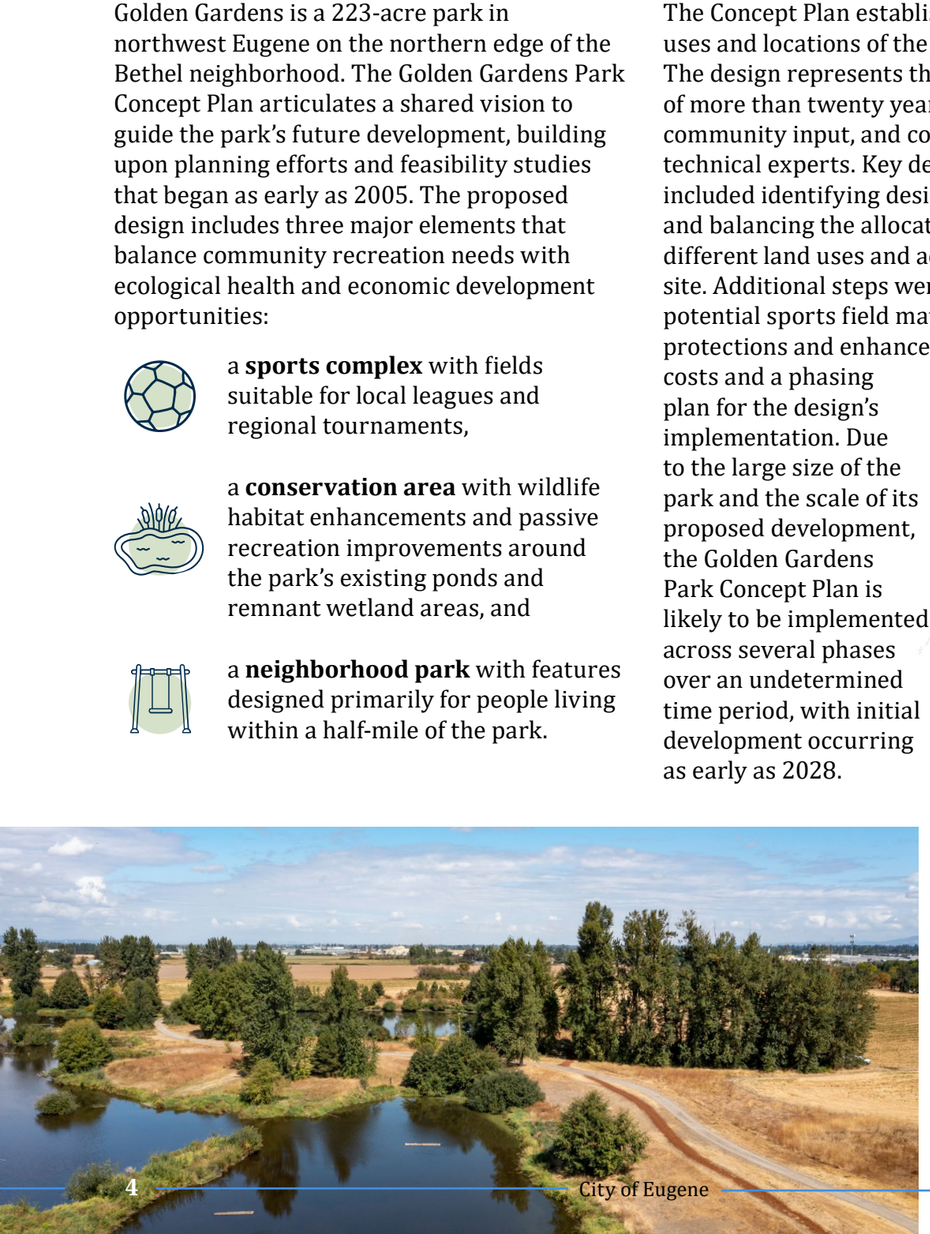




Figure 1. Golden Gardens Park Concept Plan diagram. See pages 18-19 for more details.

2. Background

Existing Conditions

Golden Gardens Park is a 223-acre, undeveloped community and neighborhood park located in the City of Eugene's Bethel neighborhood between Clear Lake Road and Jessen Drive. The park site comprises seven tax lots within the Urban Growth Boundary and outside City Limits. The subject properties are currently zoned Agriculture (AG) but designated as Parks and Open Space by the Eugene-Springfield Metropolitan Area General Plan. Upon annexation into City Limits, the park site will be automatically rezoned to Public Land (PL).

The project site was historically defined by upland prairie, scattered trees, and some seasonally wet areas. Today, the site is dominated by agricultural fields cultivated for non-native grass seed production. A channelized creek dredged by the U.S. Army Corps of Engineers in the mid-20th century flows east to west along the park's southern boundary. Three man-made, open-water ponds, totaling approximately 20 acres, lie at the center of the site, remnants of a 43-acre gravel quarry that was used by Lane County for the construction of Beltline Road in the 1960s. The channel and ponds are now lined with stands of cottonwood trees and other riparian vegetation, which support bird and wildlife species, including the native northwestern pond turtle (NWPT).



The northwestern pond turtle is a State sensitive species and Oregon Conservation Strategy species with a remnant population at Golden Gardens Park. In fall 2023, the U.S. Fish and Wildlife Service announced a proposal to list the northwestern pond turtle as a threatened species under the Endangered Species Act; their final rule is expected to be issued in spring 2025. The three open-water ponds at Golden Gardens Park are focal areas for the diverse habitat needs of the NWPT. Over the past decade, habitat conservation efforts by the City of Eugene and Oregon Department of Fish and Wildlife (OFDW) have included the installation of nesting enclosures, individual nest protection cages, and predator exclusion fencing, resulting in an increased turtle population.

Golden Gardens is currently enjoyed as a natural area park by residents of Eugene's Bethel neighborhood and others across the community. Existing amenities are limited to the site's interior and southern edge, including a mile-long, soft-surface walking path around the ponds, emergency access roads and ramps to each pond, and the Jessen Multiuse Path, which was constructed in 2018. Currently, visitors can only access Golden Gardens Park from the south; vehicles park along Jessen Drive to access existing amenities.



Figure 2. Aerial imagery of existing conditions at Golden Garden Park.

Figure 3. Site history graphic timeline.

Land Acknowledgement

Eugene is located within the traditional homelands of the Southern Kalapuya. Following the Willamette Valley Treaty of 1855, Kalapuya people were forcibly removed to the Coast Reservation in Western Oregon.

Today, descendants are citizens of the Confederated Tribes of Grand Ronde Community of Oregon and the Confederated Tribes of the Siletz Indians of Oregon.

PRECOLONIAL LANDSCAPE

Kalapuya peoples actively managed the landscape in this area of the Southern Willamette valley for thousands of years before European settlement. This landscape was characterized by steep slopes of wooded conifer forest and buttes, hillsides, and riverine flatlands with open, grass-dominated prairie and oak savannah.







SETTLER AGRICULTURAL LAND USE BEGINS

LANE COUNTY OWNERSHIP

Gravel Pits

Golden Gardens Park was used in the 1950s to excavate gravel for the construction of Beltline Road.

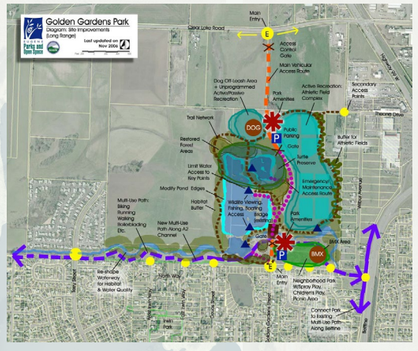
PITS TO PONDS

CITY OF EUGENE OWNERSHIP, 1974

The City acquired 36 acres from Lane County for park and open space uses.

1994-2005 DROWNINGS

Johnny Emory, 17, in 1994.
Ryan Lambert, 12, in 2000.
Nick Davis, 13, and Britton Shepherd-Davis, 15, in 2005.



PARK IMPROVEMENTS & LONG-TERM VISION, 2005-09

The drownings catalyzed efforts to increase safety, improve habitat, and promote more activity at the park. This work included improving emergency access, altering the pond banks, removing invasive species, and planting native species.

EUGENE PARKS SYSTEM PLAN, 2018

The City identified sports and recreation facilities and habitat enhancement at the park as future budget priorities.

Sports and Recreation Complex Feasibility Study, 2016-17

The 2016-2017 Feasibility Study for a Potential New Multi-Use Sports and Recreation Complex confirmed local market demand for new sports facilities and identified Golden Gardens Park as the only suitable City-owned land for the complex.

NEXT PHASE

The City is creating a concept plan to direct future development of the entire 223-acre park, including protection and enhancement of existing natural resources.



Past Planning Efforts

The City of Eugene acquired the park's first 36 acres from Lane County in 1974. An Interim Management Plan was developed in 2005 to guide City staff on public access, recreation, and natural resource management activities at the park. The Golden Gardens Park Concept Plan will replace the 2005 Interim Management Plan.

In the mid-2000s, a series of drownings at the ponds catalyzed efforts to improve public safety, protect habitat, and promote more activity at the park. In 2006, a long-range vision was developed with input from neighbors, community groups, and other local stakeholders. The vision proposed an eight-field sports complex, a BMX track, a dog park, neighborhood park amenities, and continued habitat enhancements with recreational trails. Funding from a Parks and Open Space bond measure allowed the City to purchase 170 additional acres of land surrounding the ponds in 2007. The bond also allowed the City to improve the ponds with enhanced wildlife habitat and user safety features in 2009. In the years that followed, much of the added acreage was farmed for grass seed production under a lease agreement with the City. Agricultural activities surrounding the ponds ceased in 2023.

Eugene's Parks and Recreation System Plan (2018) identifies Golden Gardens Park as a site for a multiuse sports and recreation complex with fields that can accommodate both daily play and local and regional youth and adult leagues and tournaments. The System Plan also identifies the southeast corner of the Golden Gardens property as a potential location for a neighborhood park that could meet the day-to-day recreation needs of underserved residents in the Bethel area.

Project Purpose

The City of Eugene currently lacks field space to accommodate the demand for youth and adult sports at all levels, informal and competitive. The shortage of fields forces teams to vie for limited space, creating accessibility and equity issues citywide and requiring teams to travel to other parts of the state to enjoy the physical, mental and social benefits of team sport.

The 2016-2017 Feasibility Study for a Potential New Multi-Use Sports and Recreation Complex confirmed local market demand for new sports facilities and identified Golden Gardens Park as the only suitable City-owned land for the complex. In 2018, voters overwhelmingly approved a Park and Recreation Bond measure which included plans for the site's development as a sports complex.

Building this facility in the Bethel area eliminates a major barrier to sports participation and access to quality playing fields for a community that has been historically underserved by public resources. Additionally, expected revenue from non-residents traveling to the area for regional tournaments will increase local spending on lodging and dining, generating more revenue for existing businesses while making new services in the Bethel area more economically viable.

The Golden Gardens Park Concept Plan responds to the 2017 feasibility study and 2018 bond measure with a comprehensive vision for the design, use, and location of future park amenities. The project aims to balance community recreation needs with ecological health and economic development opportunities. Following the conceptual planning process, additional analysis will be undertaken to refine design materials, implementation phases, and facility operations. For development of this scale, the Concept Plan is likely to be implemented across several phases over an undetermined time period, with initial development occurring as early as 2028.

How will a new sports complex benefit Eugene? [1]

Diamond Field Sports Participation



28
New Tournaments

18%
Estimated Growth in Local League Participation

Rectangle Field Sports Participation



17
New Tournaments

14%
Estimated Growth in Local League Participation

Local Economic Growth

413,000
Annual Attendees

183
New Jobs
(Full Time and Part Time)

$7.1 million
Annual Earnings for Eugene Economy

1 2016-2017 Feasibility Study for Potential New Multi-use Sports Facilities in Eugene-Springfield, Oregon (Phases 1-2)



> *Building this facility in the Bethel area eliminates a major barrier to sports participation and access to quality playing fields for a community that has been historically underserved by public resources.*

Figure 4. Preliminary layout and program considerations.



3. Process

> *Focused feedback from underrepresented community members and broader input from public meetings and associated surveys is vital to making informed design decisions and striking a balance between habitat preservation and recreation development.*

Project Timeline

The Golden Gardens Park Concept Plan process began in Fall 2022 with a series of stakeholder meetings and technical site analysis. A robust public involvement process was conducted across the following two years, concurrent with multiple iterations of design development.

The Concept Plan represents the culmination of three major rounds of community input and design refinement:

1. ***Understanding needs, desires, priorities***
2. ***Preliminary design concepts***
3. ***Design concept refinement***



Public Involvement

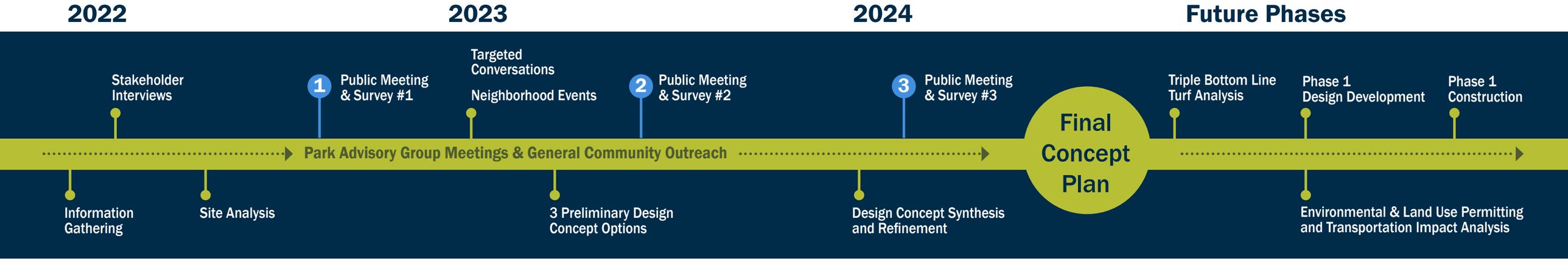
Goals

The Golden Gardens Park Concept Plan aims to achieve an equitable and intentional balance between community recreation needs, economic development interests, ecological health considerations, local resident desires, and citywide accessibility goals. Thus, collecting and responding to input from diverse perspectives and interest groups is critical to the project's success. The City of Eugene's Public Participation Guidelines informed the project's public involvement strategies in addition to the following goals:

- Gather perspectives from a broad and diverse group of people, including people who usually don't attend public meetings. Consider all input, not just the loudest opinions.
- Thoughtfully consider community input, respond in a timely way, and explain the reasoning behind park decisions.
- Understand the needs of different park users so that the final park design reflects the park's diverse users and prioritizes the needs of underserved communities.



- Build relationships and encourage collaboration among different park users.
- Raise awareness about the park's future development.
- Determine the elements of park design for a capital fundraising effort.



Methods

The development of the Golden Gardens Park Concept Plan was guided by a City staff-led Project Team and advised by a Park Advisory Group (PAG). The advisory group comprised roughly 10 representatives of key stakeholder organizations and interest groups, including the Active Bethel Community (ABC) neighborhood association, Bethel School District, sports programs, ecologists and environmental advocates, and existing park users and neighbors. Design decisions were directly informed by PAG recommendations and broader community input collected through stakeholder interviews, focus groups, in-person tabling events, public open houses, and digital surveys. For a more detailed description of the public involvement process, see Appendix B.

- Interviews (9)
- Advisory Group Meetings (3)
- Public Surveys (3)
- Focus Groups (3)
- Neighborhood Events (5)
- Public Meetings (3)

Key Findings

Focused feedback from underrepresented community members and broader input from public meetings and associated online surveys is vital to making informed design decisions and striking a balance between habitat preservation and recreation development. The following desires and concerns are among the many identified through the community engagement activities described above.

Top Needs and Desires

- Sports facilities sufficient for tournaments
- Habitat area conservation and enhancement
- Neighborhood park amenities
- More trails and paths
- Bathrooms
- Equitable access

Top Concerns

- Loss of existing park experience
- Wildlife and environmental impacts
- Neighborhood impacts (noise, lights, traffic)
- Undesirable use (litter, off-leash dogs, overnight use)
- Maintenance costs



Preliminary Concepts

Three preliminary design concepts were presented to the public during the spring of 2023. The Project Team collected community feedback in response to the designs through an online survey, a public event, and interactive activities designed to hear more from demographics underrepresented at community events. In general, the Amarillo concept garnered the most support of the preliminary design options, though many expressed interest in specific elements of each option. While the online survey outcomes provided clear direction on the overall design, the in-person events were an opportunity to listen to community emotions and excitement about the future park. Public response to these preliminary concepts directly informed the refined design concept presented in the following section.



Amarillo (54% Preference)

Elements of the Amarillo concept that generated positive public response include its larger natural area, nature play features, looped trail around the ponds, and consolidation of similar sports field types.



Azul (26% Preference)

The Azul concept's strengths include a greater amount of parking, appealing diamond field configuration, indoor batting cages, more trails, greater distance between the western property edge and parking area, and the multipurpose court location further from residential neighborhoods.



Verde (19% Preference)

Participants liked Verde because its multipurpose field provided more flexibility and space for rectangle fields and nature play

4. Design Plan

Guiding Principles

The proposed design for Golden Gardens Park represents the culmination of many years of staff research, expert consultation, iterative design and planning, and public involvement. The following principles guided the development of the refined conceptual design:

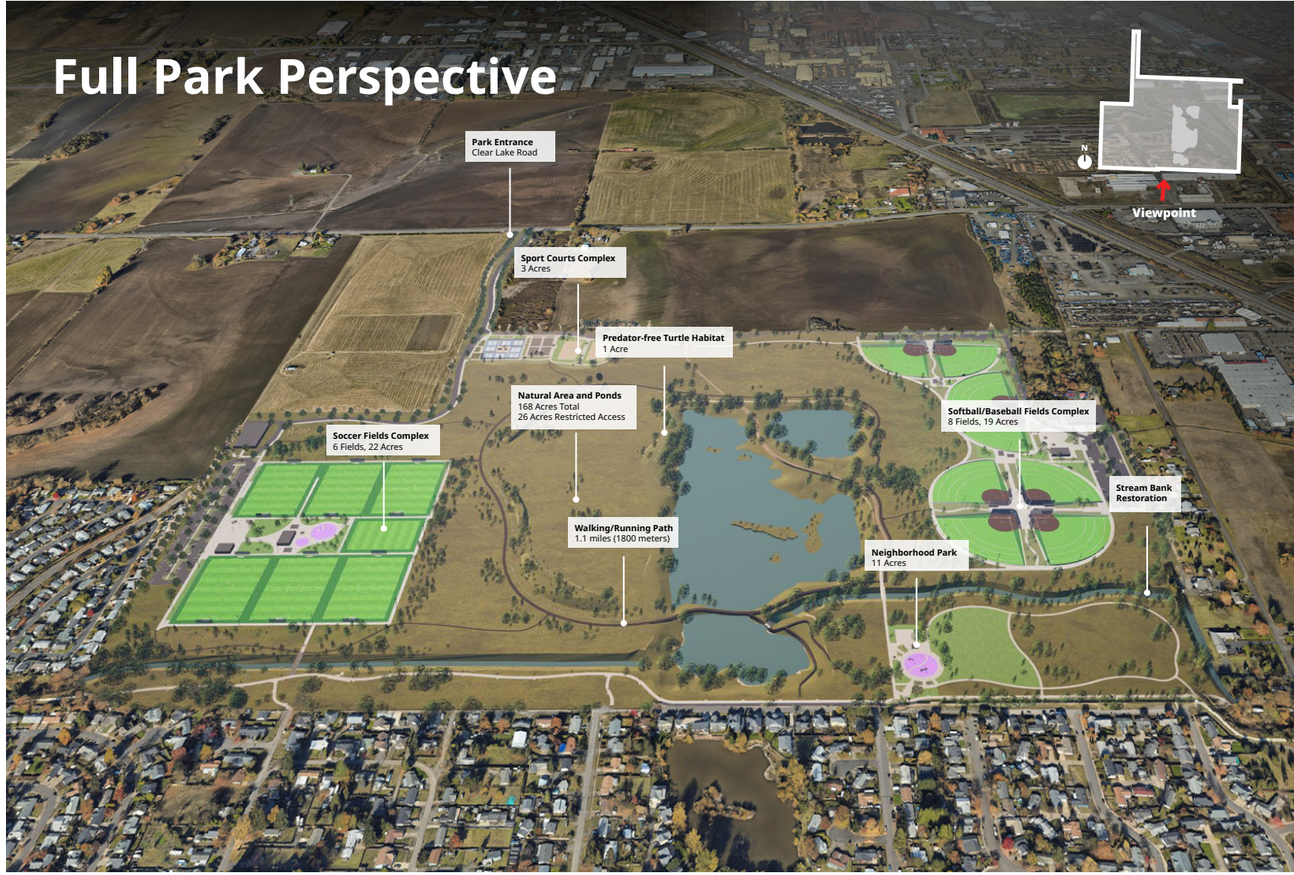
- *Address community needs for sports facilities, neighborhood park amenities, and wildlife habitat conservation.*
- *Balance development of the park with protection and enhancement of existing natural resources.*
- *Balance local neighborhood considerations with broader community needs related to recreation and economic development.*

Refined Concept

The refined design vision for Golden Gardens Park can be conceptualized through three primary zones: the **sports complex**, dispersed around the perimeter of the park; the **natural area and open space**, centrally located around the existing ponds; and the **neighborhood park**, located in the southeast corner abutting Jessen Drive.

Primary access to the park will occur off Clear Lake Road on the north side of the property. The neighborhood park will be accessible from Jessen Drive on the south side.

The design satisfies the city's recreational facility needs while maximizing natural areas and buffers between northwestern pond turtle habitat and the developed spaces.





Sports Complex (44 Acres)

The quantity, size, and configuration of the sports fields and related amenities have the capacity to support sports tournaments and City-sponsored recreation programs to meet current and projected demand. The proposed sports facilities address the City of Eugene's decades-long field shortage while promoting healthy, active lifestyles and improving access to recreation opportunities for Bethel area youth.

- Rectangle Fields: 22 Acres
- Diamond Fields: 19 Acres
- Sport Courts: 3 Acres

Natural Area (168 Acres)

Existing habitat, tree stands, and native plants are preserved and enhanced to the maximum extent feasible. Vegetative screening and raised berms will provide visual and noise barriers between the natural area and surrounding sports facilities. Additional habitat protection and restricted access fencing will be implemented to further reduce threats to turtle nesting areas. Recreation amenities will be limited to soft-surface trails, relocated farther away from current nesting sites for the NWPT.

- Restricted Access Preserve: 26 Acres
- Loop Trail: 1.1 Miles (1800 meters)

Neighborhood Park (11 Acres)

Neighborhood park amenities will serve local residents with active and passive recreation opportunities while providing accessible routes to other parts of the park. Developed facilities will be located on the west side of the neighborhood park, while the east side will be preserved and enhanced as a native prairie.

- Developed Area: 1 Acre
- Multiuse Lawn: 2 Acres
- Natural Area: 8 Acres

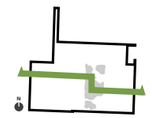


Figure 5. Section diagram of proposed design concept.



Golden Gardens Site Plan

PROJECT BOUNDARY

FENCING, HEIGHT 4-8'

FIELD NETTING, HEIGHT 20-40'

WATER BODIES

PRESERVED HYDRIC SOILS

EXISTING NATIVE PLANTS

EXISTING TREES

PROPOSED TREES

PROPOSED STORMWATER TREATMENT

SHADE STRUCTURE

SPECTATOR SEATING

SHIELDED FIELD LIGHTING

R RESTROOMS

C CONCESSIONS

A FUTURE TERRY ST EXTENSION (NOT IN PROJECT)

CIRCULATION

PAVED VEHICLE DRIVE

PAVED PEDESTRIAN PATH

UNPAVED PEDESTRIAN PATH

EXISTING MAINTENANCE ROAD

VEHICLE ACCESS

1. PRIMARY PARK ENTRANCE: CLEAR LAKE ROAD
2. SECONDARY PARK ENTRANCE: TERRY STREET
3. HEAD-IN PARKING 733 STALLS INCLUDING 23 ADA
4. OVERFLOW PARKING CAPACITY FOR 220
5. SEASONAL GATE CLOSURE

PARK OPERATIONS

6. WEST OPERATIONS AND MAINTENANCE FACILITY
7. EAST OPERATIONS AND MAINTENANCE FACILITY

NATURAL AREA

8. NORTHWESTERN POND TURTLE IMPORTANT HABITAT
9. NESTING ENCLOSURE / PREDATOR FENCING
10. BERMING / SCREENING
11. STREAMBANK RESTORATION

SPORTS COMPLEX

12. RECTANGLE FIELDS (6) 345' X 225'
13. WARM-UP FIELD
14. DIAMOND FIELDS (8) 200' - 300' ADJUSTABLE
15. U10 SOCCER FIELD (4) 195' X 135'
16. CHAMPIONSHIP FIELD SEATING FOR 500 EACH
17. MULTIPURPOSE COURTS (4) TENNIS / (16) PICKLEBALL
18. BASKETBALL COURTS (4)
19. SAND VOLLEYBALL (8)
20. PUMP TRACK
21. PLAYGROUND
22. FOOD TRUCK PLAZA

NEIGHBORHOOD PARK

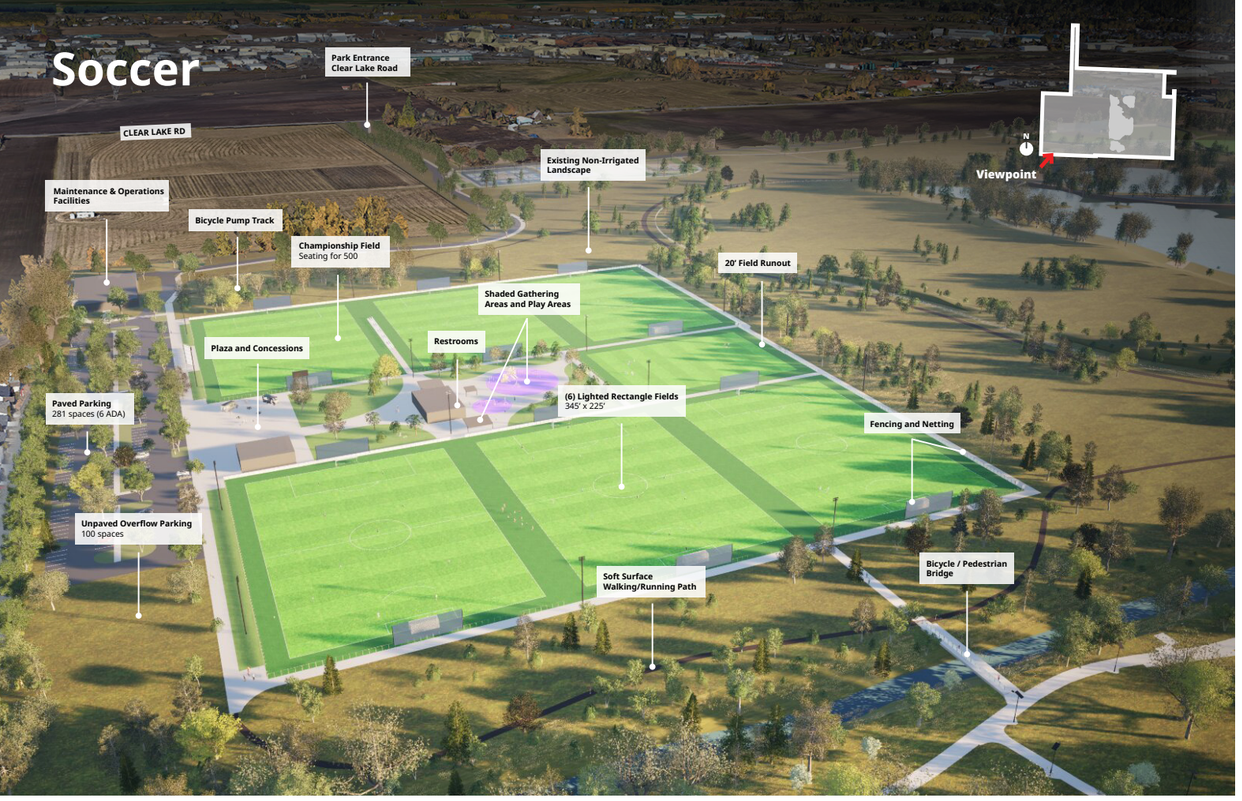
23. NATURE-THEMED PLAYGROUND
24. HALF COURT BASKETBALL
25. OUTDOOR EXERCISE EQUIPMENT
26. IRRIGATED LAWN

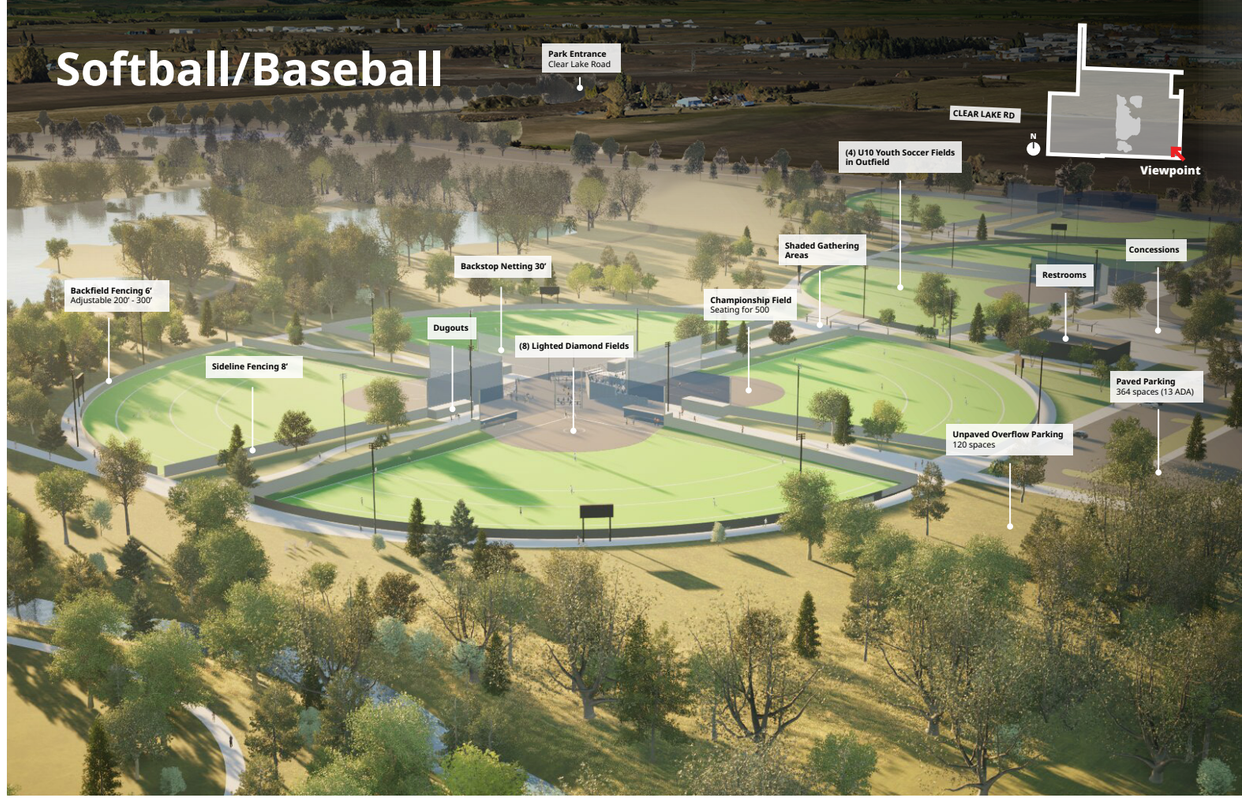
0' 200' 500' 1,000'

NORTH



Figure 6. Site plan diagram of Golden Gardens Park refined conceptual design.





Sports Complex

The proposed sports complex responds to the 2017 feasibility study, which identified local market demand for up to 16 synthetic turf fields. The multi-use sports complex is designed to: (1) provide a public resource for Eugene residents by accommodating local sports and recreation programs with an extended playable season; (2) attract regional tournaments, competitions, and meets with non-local participants and attendees; and (3) generate additional revenue to enhance services citywide, including sports and recreation programs and facilities. The complex includes six (6) rectangle fields for hosting soccer, ultimate frisbee lacrosse, field hockey, football, etc.; eight (8) diamond fields for baseball and softball; and a range of sports courts for tennis, pickleball, volleyball, and basketball. Each area is supported by dedicated parking and is located on the outer edges of the park property to maximize the park's protected natural area.

SOCCER

Fields

- Six (6) rectangle fields: 345'x225'
- Seating for 500 at one (1) field
- One (1) warm-up area

Parking

- 280 permanent, 100 overflow

Amenities

- Small playground
- Concessions and restroom
- Plaza for food trucks and events
- Shade structures
- Bicycle pump track
- Maintenance and operations facility

Required Setbacks

- Residential Property: 200'
- Main Pond: 0'
- A-2 Channel: 0'

Proposed Buffers

- Main Pond: 1,000'
- A-2 Channel: 175'

BASEBALL / SOFTBALL

Fields

- Eight (8) diamond fields, adjustable 200-300' outfield fence
- Outfields support U10 soccer
- Seating for 500 at one (1) field

Parking

- 360 permanent, 120 overflow

Amenities

- Restrooms
- Plaza for food trucks
- Shade structures

Required Setbacks

- Residential Property Line: 200'
- Main Pond: 0'
- North Pond: 0'
- A-2 Channel: 0'

Proposed Buffers

- Main Pond: 320'
- North Pond: 435'
- A-2 Channel: 120'

SPORT COURTS

Courts

- Sixteen (16) pickleball / Four (4) basketball
- Eight (8) sand volleyball
- Four (4) basketball

Parking

- 90 permanent, 100 overflow

Amenities

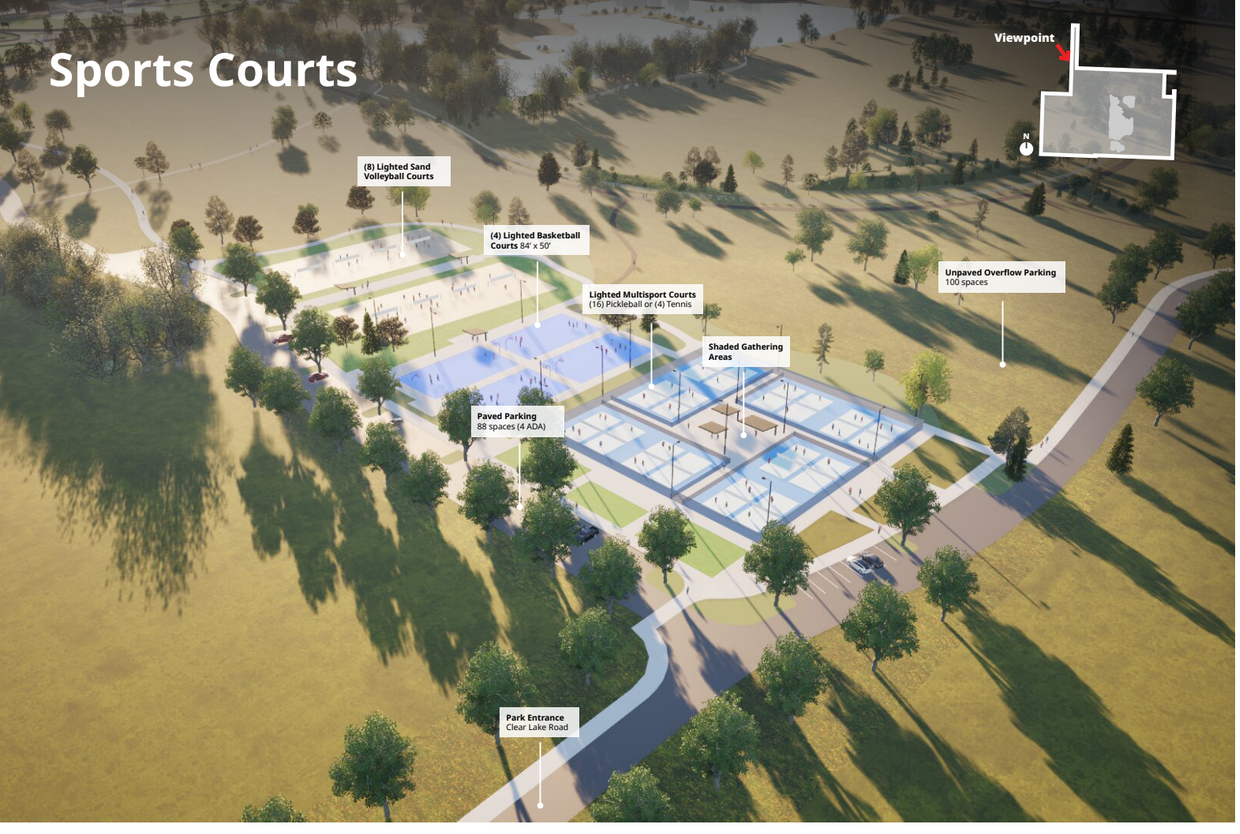
- Shaded gathering areas

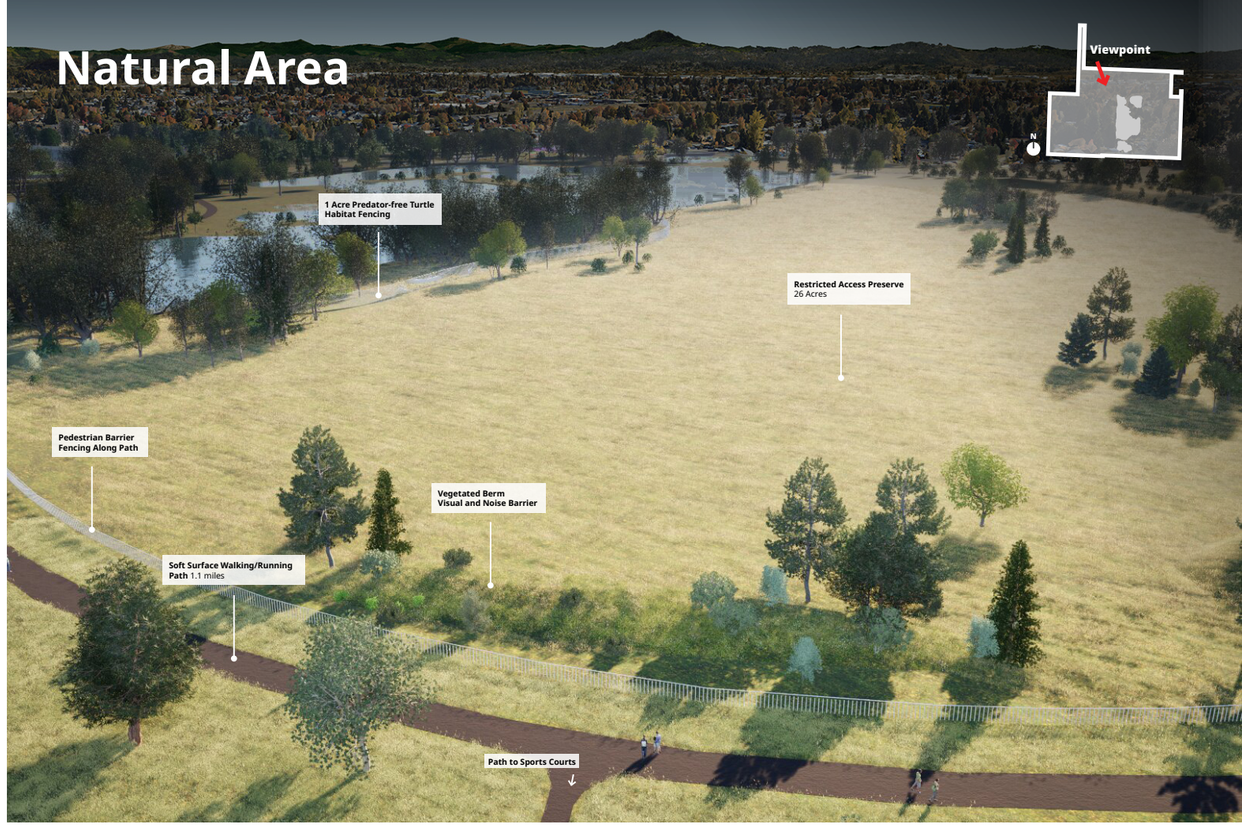
Required Setbacks

- Main Pond: 0'

Proposed Buffers

- Main Pond: 610'





The proposed design relocates the existing soft-surface loop trail further away from existing habitat and NWPT nesting sites, expands the protected natural area with restricted access fencing, and adds vegetated berming to enhance visual screening and noise barriers.







NATURAL AREA

The City is committed to preserving the existing natural resources at Golden Gardens, including ponds, waterways, riparian habitat, and upland slopes which provide important nesting habitat for the northwestern pond turtle and other local wildlife. All current design recommendations are based upon the best available information related to the protection of the northwestern pond turtle, including limiting movement within their line of sight. In response, the proposed design relocates the soft-surface loop trail further away from existing habitat and nesting sites, expands the protected natural area with restricted access fencing, and adds vegetated berming to enhance visual screening and noise barriers.

Furthermore, areas previously cultivated for monocultural grass seed production will be allowed to return to a more natural state. City ecologists have mapped native plant populations present on the site, which will be preserved to the maximum extent possible; where native plant populations must be impacted during development, there is an opportunity to salvage and relocate them on site. Vegetative screening on the perimeter of the natural area buffers will comprise native tree and shrub species that require minimal maintenance once established. These will provide appropriate habitat for native pollinators, birds, and other wildlife species.

- Restricted access preserve
- Soft-surface loop trail
- Protective habitat fencing
- Vegetated berm for screening

NEIGHBORHOOD PARK

The southeast corner of the Golden Gardens property will be reserved for a smaller park space serving residents of the immediate neighborhood with conventional park amenities. The design responds to input from local neighbors who expressed the desire to balance developed recreation equipment with an enhanced native prairie. A flexible, irrigated lawn space in the center of the neighborhood park will separate the developed amenities from the unirrigated meadow, providing a gentle transition between active and passive recreation opportunities for local residents.

- Play area
- Half-court basketball
- Picnic shelter
- Restroom enclosure
- Fitness area
- Multiuse lawn (irrigated)
- Meadow (unirrigated)
- Soft surface walking loop







The City is committed to preserving the existing natural resources at Golden Gardens. Areas that were previously cultivated for monocultural grass seed production will be allowed to return to a more natural state. City ecologists have mapped native plant populations present on the site, which will be preserved to the maximum extent possible.

5. Implementation

The realization of the Golden Gardens Park Concept Plan, as illustrated on pages 18-19, is proposed to occur over multiple phases of permitting, design refinement, and construction. This section summarizes relevant permitting processes, improvements, and costs associated with each phase of implementation.

Permitting

Land Use

The park site is designated Parks and Open Space by the Eugene-Springfield Metropolitan Area General Plan, but is located outside the City Limits and will require annexation to extend urban services to the park. Upon annexation, the site will automatically be rezoned to the Public Land (PL) base zone with /CAS Commercial Airport Safety and /WQ Water Quality overlay designations. According to EC 9.2683, park and recreation uses and facilities in the PL zone are subject to the permit requirements of the Park, Recreation and Open Space zone detailed in EC Table 9.2630. Development of the park site as envisioned by the concept plan will require Site Review or Conditional Use Permit approval due to the inclusion of lighted athletic areas for soccer, softball, baseball, basketball, volleyball, and pickleball.[2]



Environmental

The subject site contains three significant riparian corridor water resource sites and one locally significant wetland resource site identified in the Goal 5 Water Resources Conservation Plan. The resource sites are not designated for protection by the Goal 5 Water Resources Conservation Plan. However, the design limits development in these areas. The wetlands and ponds are likely regulated as waters of the state by the Oregon Department of State Lands and federally by the U.S. Army Corps of Engineers. A wetland delineation report and concurrence process will be required prior to development. If regulated, the wetlands on site impacted by improvements will require removal/fill permit approval.

Additionally, the park site supports one of the largest remnant populations of Northwestern Pond Turtle (NWPT) in the Willamette Valley. NWPT is currently being considered for listing by the U.S. Fish and Wildlife Service (USFWS) as a threatened species under the Endangered Species Act (ESA). The announcement is expected before April 2025. If NWPT is listed as threatened, USFWS will release a 4(d) rule that allows land managers and others to carry out certain activities that support the conservation of the species (such as wildfire suppression, habitat restoration, and non-native species removal) without violating the ESA. It is unknown whether USFWS will designate critical habitat for the species. A National Environmental Policy Act (NEPA) process is required for a listed species under the ESA when a proposed federal action may affect the species or its designated critical habitat.

2 Site Review approval is required if the use is defined as a Community Park. Conditional Use Permit approval is required if the park classification is changed to a Metropolitan Park. See Appendix E for more information.

Summary

The realization of the Golden Gardens Park Concept Plan is dependent upon the completion of the following processes, associated reports, and permits.

Planning Processes:

- Type IV Annexation to incorporate the park site within the City Limits
- Type III Conditional Use Permit (CUP) or Type II Site Review (SR) for athletic uses
- Type II Traffic Impact Analysis (TIA) Review for associated transportation impacts

Permits and Reports:

- NEPA Environmental Assessment (EA) or Environmental Impact Statement (EIS) and consultation with state and federal agencies (dependent on ESA species listing)
- State/Federal Wetland Delineation Study/ Report and agency concurrence
- State/Federal Joint Permit Application (JPA) for impacts to wetland/water of the state
- DEQ 1200-C Permit
- Traffic Impact Analysis report (included with TIA)
- Stormwater Drainage Study for site development (included with CUP or SR)

Phasing

Public Improvements

Transportation

The primary access point and entry drive to Golden Gardens Park will occur off Clear Lake Road to the north. The Eugene 2035 Transportation System Plan (TSP) describes a planned upgrade to Clear Lake Road between Highway 99 and Terry Street. Site development may incur improvement costs for these planned upgrades to Clear Lake Road; however, because the scope and timing of improvements are unknown, costs are not included.

The TSP also identifies the extension of Terry Street to Clear Lake Road as a planned project. The future extension of Terry Street may serve as a secondary access point to Golden Gardens Park. Site development may incur a portion of the improvement costs for this planned extension; however, scope and timing are unknown, and costs are not included.

Utilities

Early phases of development will involve connecting to existing water and wastewater services adjacent to the site. Water service is available surrounding the site and will be extended to the site as part of development. Wastewater extensions to the site are planned from two locations along the southern boundary of the park, including an existing pump station at W Irwin Way and a manhole at the intersection of Jessen Drive and Golden Gardens Street. Stormwater runoff from impervious surfaces on the site will be treated by vegetative stormwater management facilities consistent with the Eugene Stormwater Management Manual. Additionally, two stormwater system improvement projects are expected to be completed in the vicinity of the park by 2032. These planned projects, coupled with the A-2 channel, provide multiple connection points for stormwater discharge. See Appendix E for more information.

Phase 1

Construction of the park is planned to begin with the rectangle fields, natural areas, sports courts, and neighborhood park. Specific amenities and improvements occur in subphases, as described below. Public improvements are included in subphase 1A. Tree plantings and landscape improvements surrounding the featured amenities are included with each subphase.

Golden Gardens Phasing Plan

PROJECT BOUNDARY

Phase 1A

Includes:
3 rectangle fields, field lighting, parking, vehicle access drive, soft surface loop path, Natural Area fencing, predator-free turtle habitat fencing, pond protective fencing, Natural Area berming/screening, landscape improvements, tree plantings, pedestrian bridge

Phase 1B

Includes:
3 rectangle fields, 1 warm up area, shade structures, restroom, playground, concessions, food truck plaza, maintenance facility, parking, field lighting, landscape improvements, tree plantings

Phase 1C

Includes:
Neighborhood park amenities, playground, picnic shelter, restroom enclosure, half court basketball, exercise station, multiuse irrigated lawn, seating, concrete paths, soft surface paths, unirrigated meadow

Multisport courts (pickleball or tennis), basketball courts, sand volleyball courts, parking, shade structures, field lighting, bicycle pump track, landscape improvements, tree plantings

Phase 2A

Includes:
4 diamond fields (including championship field), vehicle access drive, shade structures, parking, food truck plaza, restroom, auxiliary maintenance building, field lighting, channel restoration, landscape improvements, tree plantings

Phase 2B

Includes:
4 diamond fields, 4 U10 soccer fields (included in outfield of diamond fields), shade structures, field lighting, parking, landscape improvements, tree plantings

0' 200' 500' 1,000'



Phase 1A

Phase 1A includes the vehicle access entry drive from Clear Lake Road to the south, following the park's west side. Construction of the rectangle fields sports complex will begin with the three southernmost fields, the southern half of the supporting parking area, the pedestrian bridge crossing the A-2 channel, and associated landscape improvements. Phase 1A also encompasses natural area enhancements, including the soft-surface pedestrian loop trail relocation, protective fencing around sensitive habitat areas, the natural area preserve, vegetated berms for screening, and additional tree plantings.

Phase 1B

Phase 1B includes the remaining rectangle fields and warm-up area, as well as the complex's central spectator plaza featuring shade structures, restrooms, play equipment, concessions, a food truck plaza, tree plantings, and associated landscaping. The west maintenance facility and remaining parking for the rectangle fields complex are also included in this phase.

Phase 1C

Phase 1C includes the sport courts, bicycle pump track, and neighborhood park. Construction of the sport courts complex includes shared pickleball and tennis courts, basketball courts, sand volleyball courts, and associated lighting and shade structures. Construction of the neighborhood park includes play equipment, a restroom enclosure, a covered picnic shelter, half-court basketball, exercise station, paved and soft-surface pedestrian paths, irrigated lawn, and native prairie enhancements.

Phase 2

Phase 2 focuses on the east side of the park and the diamond fields complex. Public improvements are included in subphase 2A.

Phase 2A

Phase 2A includes construction of the diamond fields sports complex and the four southernmost fields, including the championship field. Supporting parking, shade structures, restrooms, a food truck plaza, trees, vegetative berm for screening, and an auxiliary maintenance building accompany this phase. Vehicle access is also extended from the Clear Lake Road entry drive to the diamond fields, following the northern and eastern boundaries of the park. Phase 2A also includes realignment and enhancement of the A-2 channel bordering the neighborhood park to improve ecological function.

Phase 2B

Phase 2B includes the remaining four diamond fields, parking, shade structures, pathway connections, and tree plantings.

Costs and Funding

The first phase of construction is planned to be funded by a combination of 2018 Park bonds and System Development Charge (SDC) funds. The timing of the construction of future phases is dependent on additional capital fundraising efforts. Funding sources may include bonds, grants, private sponsorships, donations, and other sources not specified.

Operations and maintenance of the first phase of construction will be supported by various park operating funds. As development progresses, the expected revenue from regional tournaments hosted at the sports complex will help subsidize the park's operation and maintenance costs over the long term and will generate additional revenue.

The following table summarizes the estimated costs of implementing each phase as outlined in the phasing plan. Total Construction Costs encompass site preparation and demolition, utilities, materials, installation, contractor overhead, and related contingencies. Total Project Costs combine construction costs with owner costs, including design and engineering fees, permitting fees, and other administrative expenses. The Total Budget (With Escalation) combines Total Construction Costs with Total Project Costs and applies a 2.8% cost increase per year to account for economic inflation, assuming that phases will be delivered every two years.[3] For a more detailed breakdown of the costs and information about what is included in each estimate, see Appendix D.





Conclusion

Comprehensive realization of the Golden Gardens Park Concept Plan will take multiple years to complete. The first phase of construction is estimated to begin in 2028, following land use approvals, environmental permitting, and funding availability. Each subsequent phase will involve design refinement and additional studies as the project is implemented.

The park size, array of improvements, and magnitude of cost make this project one of the most significant investments in parks, recreation, and open space facilities the City has undertaken. The park design includes three major elements that balance community recreation needs with ecological health and economic development opportunities. Once realized, the park will deliver needed recreation services for the neighborhood, community, and region.

Cost Estimate Summary Table

PHASE	TOTAL CONSTRUCTION COST	TOTAL PROJECT COST	TOTAL BUDGET (WITH ESCALATION[3])
PHASE 1A (2028)	$18,179,164	$24,332,112	$26,433,772
PHASE 1B (2030)	$16,096,993	$21,545,206	$24,735,245
PHASE 1C (2032)	$10,985,166	$14,703,223	$17,838,747
PHASE 2A (2034)	$25,673,194	$34,362,583	$44,057,904
PHASE 2B (2036)	$15,431,706	$20,654,744	$27,986,210
	$86,366,223	**$115,597,868**	**$141,051,878**

3 Escalation rate is based on CBRE's 40-year (1983-2023) historical US average of 2.8% annual increase to construction costs.

Appendix A.

Existing Conditions and Site Analysis Report

June 2023 (rev.)
Preface added January 2025

GOLDEN GARDENS, Eugene, OR

Existing Conditions & Site Analysis



Prepared by

Biohabitats
CASCADIA BIOREGION

for

Eugene

Biohabitats
CASCADIA BIOREGION

PREFACE
TO THE JUNE 2023 EXISTING CONDITIONS & SITE ANALYSIS

In the June 2023 Existing Conditions and Site Analysis ("Report") for Golden Gardens Park (City of Eugene, OR) contained herein, Biohabitats identified the following *ecological opportunities*:

- Carefully design northwestern pond turtle (*Actinemys marmorata*; NWPT) habitat buffer and align buffer guidelines with current turtle conservation efforts by the City and Oregon Department of Fish & Wildlife (ODFW);
- Integrate water management into design;
- Restore landscape diversity, working with on-site soil patterns and complexity to prioritize restoration areas; and
- Highlight the relationships between humans and nature.

The last bullet acknowledges the multiple objectives of the Golden Gardens Park development. As stated on page 21, "habitat needs will need to be balanced with recreational objectives."

Preliminary recommendations (page 23) for meeting the above opportunities include:

- **Respond to NWPT buffer recommendations.** ODFW guidance for NWPT buffer distances are 1640 ft for major infrastructure (e.g., paved roads) and 492 ft for minor infrastructure (e.g., trails, picnic tables). The design meets the 1640-ft recommendation for major infrastructure (Jessen Drive to the south, which is closer to the ponds than 1640 ft, is pre-existing). The design does not meet the 492-ft guideline for minor infrastructure in all areas (the eastern side of the ponds, the south side of the main pond, or the south pond). However, the buffer widths on the west side of the main pond, including the primary NWPT nesting area, far exceed the 492-ft guideline, integrate NWPT habitat improvements and protection such as berms and additional native vegetation, and preserve a substantial extent of hydric soil that was also identified as an ecological opportunity.
- **Integrate a living infrastructure approach to water management** by maintaining hydrologic support of the ponds and other water sources and managing the Park adaptively.
- **Restore landscape diversity by restoring habitat.** As described above, conservation and restoration are integrated into the design.

Biohabitats understands that the City and ODFW have invested significantly in conservation of NWPT and there is no intention of discontinuing these efforts. All parties are additionally aware that the NWPT is proposed for listing under the Endangered Species Act and are prepared to comply with the formal rules appurtenant to that action.

As ecosystem stewards, Biohabitats always considers design from a starting point of *ecosystems as the sole stakeholder*. As urban ecologists, we recognize that there must be a balance between community needs and ecological benefit, a balance that informs designs supporting both equity and habitat objectives. We feel that, with the current design, the City upholds this holistic intention and is responsible to the northwestern pond turtle, other ecosystem opportunities at Golden Gardens Park, and to the varied health and recreational interests of the community.

Susan K. Sherrod, Ph.D.
Biohabitats
30 January 2025

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APPENDICES

1 Introduction

The City of Eugene is developing a Master Plan for Golden Gardens Park, located on the northwest edge of Eugene (Lane County), Oregon. The Master Plan process will develop concepts for development of the 223-acre park into a complex including sports facilities, a neighborhood amenity including passive recreation opportunities and a playground, and long-term habitat protection for the northwestern pond turtle (*Actinemys marmorata*). The northwestern pond turtle, which has a large remnant population at Golden Gardens Park, is a State sensitive species and Oregon Conservation Strategy species. This Existing Conditions & Site Analysis will provide ecological guidance for the Master Plan.

Biohabitats visited Golden Gardens Park (Golden Gardens, or the park) on January 9-10, 2023. Prior to the visit we compiled site information that is reported herein, including information on geology, soils, hydrology, site history, sensitive species, and vulnerability to climate change. While on-site we spoke with Lauri Holts (Ecologist with the City of Eugene Parks and Open Space), evaluated all drainages and locations of suspected historic drainages, habitat types and quality, stressors, character of abutting land parcels, and considered opportunities for ecological enhancement as part of this Master Planning process.

In order to guide the most thoughtful approach to future development at Golden Gardens, Biohabitats explored and identified sensitive and heritage components of the landscape to prioritize for protection, as well as best opportunities to enhance ecological function and site-wide climate resilience. Opportunities at Golden Gardens emphasize concepts of ecological *protection, restoration,* and *connection*, including people and nature. The result is a vision of natural areas integrated with and supported by the recreation community.

Land Acknowledgement

The land occupied by Golden Gardens Park is recognized as part of the traditional lands of the Chelamela; the Confederated Tribes of Siletz Indians; the Confederated Tribes of Grand Ronde; the Cayuse, Umatilla, and Walla Walla; and the Kalapuya peoples.[1] More information on the relationship between indigenous peoples and their lands can be found at Native Land Digital,[1] https://willamettebotany.org, and other sources. This planning process offers an opportunity for the community of Eugene to honor the original caretakers of these lands and strive to understand and model their stewardship. For example, the plan could state a goal of integrating

[1] Native Land Digital. Accessed 23 January 2023 at https://native-land.ca/

indigenous knowledge as available, community outreach and education, and/or collaborating with tribal nation representatives in the development process.

Ecological Approach to Planning: Multiscale Analysis

Integrating ecological opportunities and constraints into site master planning requires understanding ecosystem processes within the greater context of the surrounding area. For example, the patterns of water as it enters and leaves a site, the presence of a particular species and habitat connectivity, and local climate patterns all are relevant considerations. The ecological planning approach for Golden Gardens uses this multiscale analysis, in space and time, to understand and identify site-specific features within a landscape and regional context. Using this approach lays the foundation for stewarding the park with a long-term focus on water, soil, plants, and wildlife to support ongoing resilience for natural and human communities alike. The descriptions below begin with a large-scale setting to set the stage for an understanding of ecological function at Golden Gardens Park.

2 Regional History and Context

Landform History

The physical history of the region traces back to the end of the Pleistocene, as the "Missoula Floods" washed down the Columbia River when lakes in Montana burst their glacier dams (Figure 1).[2] The powerful floodwaters reshaped topography as they pushed into the Willamette Valley. As each successive flood created a large backwater lake in the Valley, fine sediments settled out in layers, creating the Calapooyia Surface, also called the Willamette Formation.

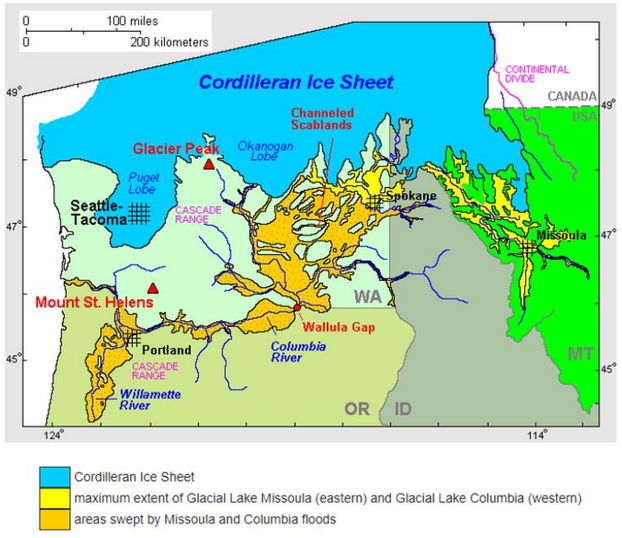


Figure 1. Missoula Floods. The Willamette River is at bottom left.

[2] Robbins, W.G. 2021. Willamette Valley, Oregon Encyclopedia. The Oregon Historical Society.

This formation was followed by the eruption of Mount Mazama (in today's Crater Lake National Park to the southeast), depositing ash across the Pacific northwest. The ash has transformed over time into the gray formation known as Malpass Clay.[3]

The Willamette Formation and Malpass clay layers cover the majority of the valley floor (Figure 2). The water table is "perched" on top of these low-permeable layers, creating a poorly draining system and therefore prime conditions for ponds and wetlands[4]. The perched water table, combined with 45" average annual precipitation, results in frequent inundation, flooding, and surface saturation.[3] There is also a deeper regional aquifer connected to the Willamette River with a slower recharge rate.[5]

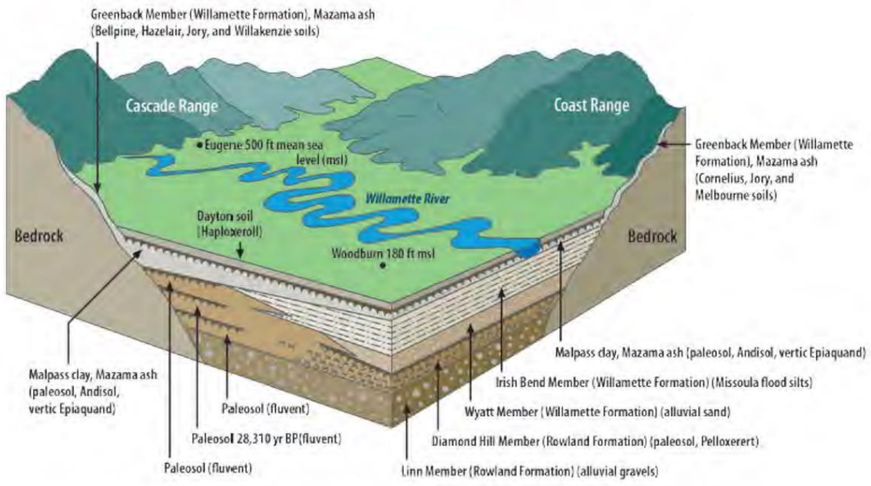


Figure 2. Geology of the Willamette Valley looking south. Malpass Clay is indicated as a shallow soil layer.

[3] Baitis, K.E., G.J. Retallack, and M.E. James. 2015. U.S. Bureau of Land Management, National Operations Center, Denver, CO. Accessed 29 January 2023 at https://www.blm.gov/sites/default/files/documents/files/Library_BLMTechnicalNote447.pdf

[4] [unnamed author] Land and Water in West Eugene. 2020. Available 26 Jan 2023 at https://www.eugene-or.gov/DocumentCenter/View/56793

[5] During the 1920s, federal spending on public projects included planning for the Willamette River basin. The United States Army Corps of Engineers built dams on the Willamette for flood control, navigation, and irrigation water storage, greatly altering hydrology of the valley.

Level III and IV Ecoregions

Eugene, OR, is located in the Willamette River and Tributaries Gallery Forest (Level IV) of the Willamette Valley (Level III) ecoregion.[6] The Willamette Valley lies between the high-elevation Cascades and the lower, rain-drenched Coast Range (Figure 3). Long and narrow, the valley extends ~120 miles from Eugene to Portland, its relatively flat, alluvial plain sprinkled with groups of low basalt hills. The mild climate combined with the rich, healthy soil makes this area ideal for agriculture.[7]

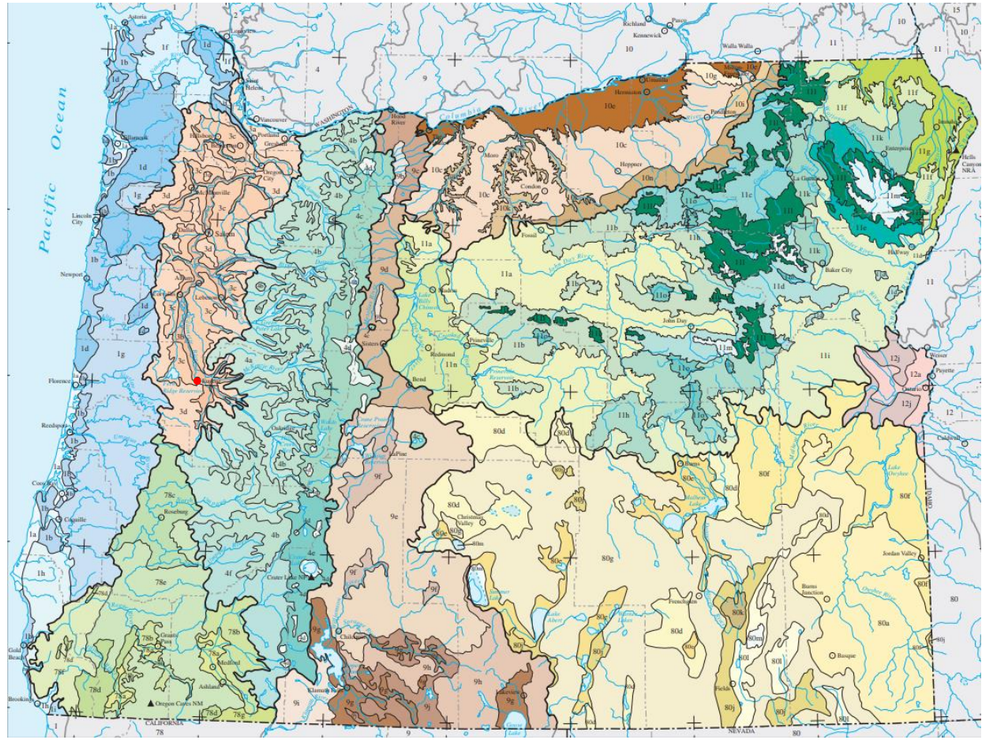


Figure 3. Eugene (red dot) is in the Willamette River and Tributaries Gallery Forest (Level IV) of the Willamette Valley (Level III) ecoregion.[6] The Willamette Valley (peach) lies between the Cascades (green) and Coast Range (blue) Level III ecoregions.

[6] Thorson, T.D., Bryce, S.A., Lammers, D.A., Woods, A.J., Omernik, J.M., Kagan, J., Pater, D.E., and Comstock, J.A., 2003. Ecoregions of Oregon (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,500,000).

[7] ODFW. Willamette Valley – Oregon Conservation Strategy. Accessed on 26 January 2023 at Willamette Valley – Oregon Conservation Strategy

The more localized Level IV ecoregion (Willamette River and Tributaries Gallery Forest) includes the broad historic floodplains that once featured meandering, low-gradient channels, oxbow lakes, meander scars, and extensive wetlands (Figure 4). Riparian forests of ash (*Fraxinus* sp.), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), alder (*Alnus* sp.), and bigleaf maple (*Acer macrophyllum*) grew in its fertile soils. Other landforms in the Willamette Valley are the terraces, hills, buttes, and foothills that originally supported prairie, oak savanna, and coniferous forests.

Migratory Birds

Eugene is directly along the Pacific flyway for birds flying from the arctic to the southern tropics (Figure 5). Some of the most distant migrants are the olive-sided flycatcher (*Contopus cooperi*), the Iceland gull (*Laurus glaucoides*), and the whimbrel (*Numenius phaeopus*).[8] A list of Lane County birds maintained by the Lane County Audubon Society is in Appendix A.

Climate Resilience

Climate resilience is becoming an increasingly important consideration for planning, and it is useful to consider scenarios for local climate change based on model projections. The perspectives provided here can provide the basis for development of strategies to build local, habitat-scale resilience.

One model shows that with unchanged greenhouse gas emissions, Eugene's climate in the year 2080 will be similar to that of Granite Bay, CA (near Sacramento; Figure 6), with summers 13.8°F warmer and 86.2% drier than Eugene.[9] Another mapping tool is the Terrestrial Climate Resilience index developed by The Nature Conservancy (Figure 7).[10] This index maps site resilience based on local landscape diversity and connectedness relative to other sites in the same ecoregion, i.e., the Willamette River and Tributaries Gallery Forest (Figure 3).

The open space around the ponds of Golden Gardens range from 'slightly more resilient' to 'slightly less resilient' (Fig. 7, left), the more resilient locations likely reflecting water relationships (see Figure 8). Locally Golden Gardens has greater resilience than the surrounding urban and agricultural development (Fig. 7, left). Regionally the park is in a low-resilience

[8] Smith, Melanie A., John Mahoney, Erika J. Knight, Lotem Taylor, Nathaniel E. Seavy, O'Connor H. Bailey, Marco Carbone, William DeLuca, Nicolas S. Gonzalez, Miguel F. Jimenez, Gadalia M. W. O'Bryan, Nalini Rao, Chad J. Witko, Chad Wilsey, and Jill L. Deppe. 2022. Bird Migration Explorer. National Audubon Society, New York, NY. Accessed on 23 January 2023 at birdmigrationexplorer.org.

[9] Fitzpatrick, M., University of Maryland Center for Environmental Science – Appalachian Lab. Accessed 24 January 2023 at https://fitzlab.shinyapps.io/cityapp/

[10] TNC Resilient Land Mapping Tool accessed 25 January 2023 at https://maps.tnc.org/resilientland/

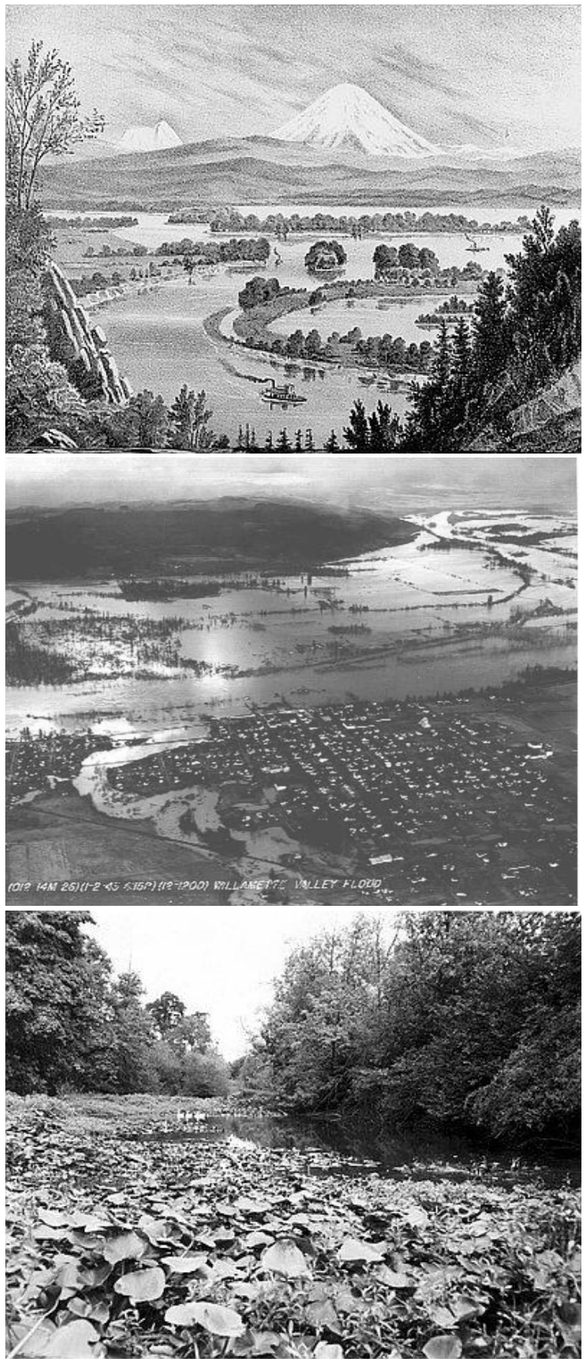


Figure 4. Scenes of the Willamette River, top to bottom: **"Mouth of the Willamette" sketch, Cleveland Rockwell, 1883** (Oreg. Hist. Soc. Research Libr., OrHi 76413); **1943 flood demonstrating floodplain function** (OR State Archives, Photo ID OWR0084, Accession 92A-006); **Willamette River oxbow pond, Aug 1956** (Oregon State University Library, Ext. and Exp. Sta. Comm., P120:5730).

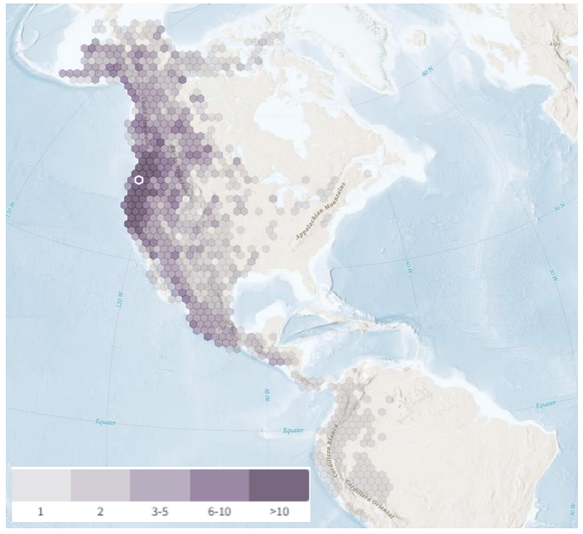


Figure 5. Numbers of tagged migratory birds connecting Eugene, OR (outlined in white) to other locations; note that Russia is not shown. Nations connected to Eugene via migratory birds are Canada, Mexico, El Salvador, Guatemala, Honduras, Ecuador, Peru, Costa Rica, Nicaragua, Colombia, Bolivia, Brazil, Panama, Venezuela, and Russia.[8]

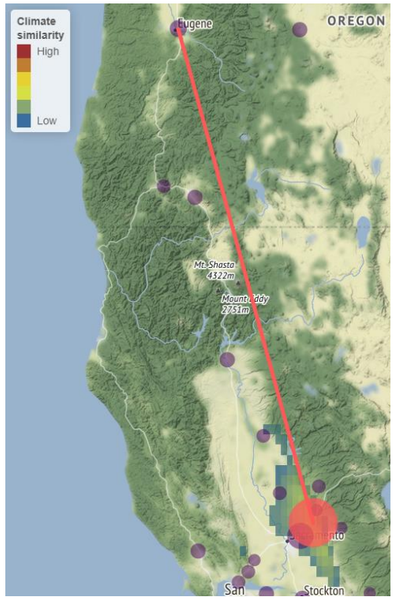


Figure 6. The Eugene climate is modeled to be most like that of Granite Bay, CA, in 2080 under an unchanged emissions scenario.[9]

location relative to much of the valley (Fig. 7, right), indicating its potential to contribute to regional connectivity and diversity as a habitat 'stepping stone.' These mapping tools help inform resilience planning by focusing on habitat potential. For example, an objective to protect connected and high-value areas such as drainages and their riparian zones will be important for local- and large-scale biodiversity conservation.

3 Golden Gardens Park: Site Analysis

Geology

The majority of Golden Gardens Park is underlain by Quaternary older alluvium (see geology figure in Appendix B). These sedimentary deposits are unconsolidated and usually include a variety of grain sizes ranging from silt to gravel. The southwest corner of the park is classified as Pleistocene terrace, which is also sedimentary; most of this formation is associated with the Oregon coast. (The Quaternary period spans 2.58 million years ago to the present; the Pleistocene epoch was the earlier part of the Quaternary, 2.58-0.012 million years ago.)

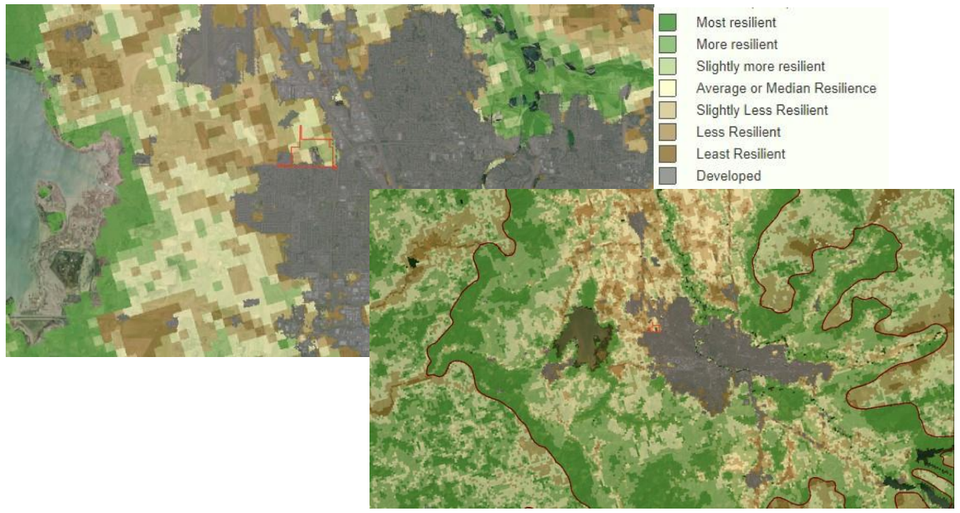


Figure 7. Terrestrial resilience of Golden Gardens Park (red polygon) at landscape (left) and regional (right) scales (the long southern edge of the park is ~1 mi long). The resilience scale is based on local habitat diversity and degree of fragmentation.[10] The open space around the ponds of Golden Gardens range from 'slightly more resilient' (light green) to 'slightly less resilient' (tan); the ponds themselves are not factored in because the tool accounts for terrestrial resilience only.

Hydrology

Our understanding of site hydrology is based on field observations and review of FEMA floodplains, literature, soils, aerial imagery, and topography.

Surface Water

The project area is in the Amazon Creek (Hydrologic Unit Code [HUC] 12) watershed (figure in Appendix B). Amazon Creek flows from its headwaters in south Eugene to the northwest where it joins the Long Tom River, which in turn converges with the Willamette approximately 20 miles to the north of Eugene.

Surface water features at Golden Gardens are summarized below and are shown in Figure 8.

- The park has three open-water **ponds** with a total surface area of approximately 20 acres. A culvert connects the central pond to the south pond, and two parallel 18" culverts drain the northeast pond into the main pond. A small outfall discharges at the southeast corner of the south pond, but the water source and piping were not evaluated.

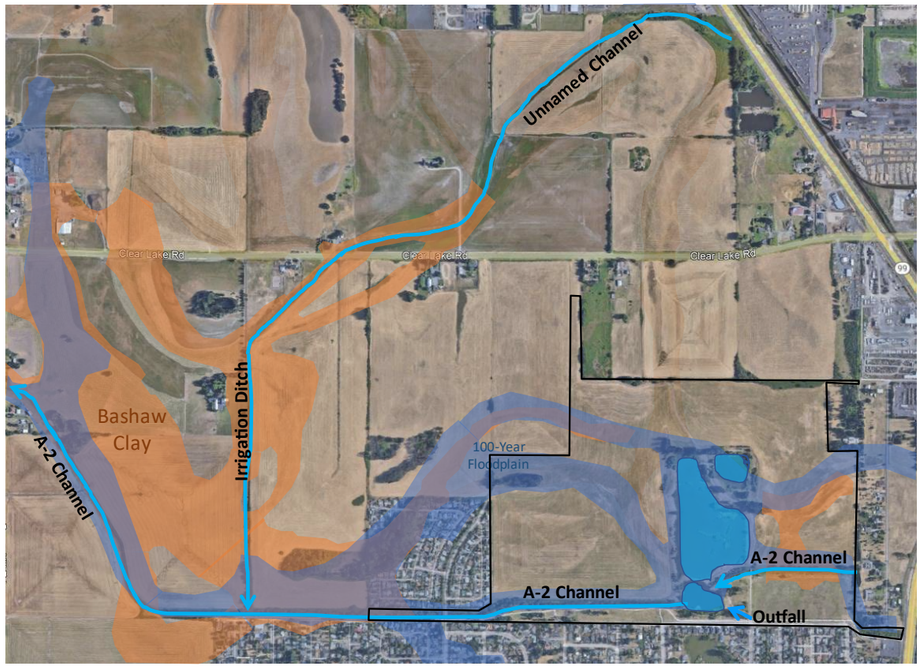


Figure 8. Bashaw clay soils (orange hatch) associated with surface and ground water, FEMA 100-year floodplain (blue hatch), and ditches (turquoise lines with black labels: the A-2, an outfall near the A-2, and an unnamed irrigation ditch to the north of the site). Compare the Bashaw clay soils to Figure 12 and see text.

- The **A-2 channel** enters at the southeast corner of the property and discharges into the small southern pond. The A-2 has been modified and straightened to its current alignment along the southern boundary of the project area. This and many other creeks throughout the Eugene area were dredged by the United States Army Corps of Engineers as part of the Valley-wide "basin planning" in the 1940s and '50s, with the goal of draining the area and preventing flooding of agricultural and developed areas. West of the pond, the A-2 continues to flow west parallel to Jessen Drive, and then northwest to where it discharges into Amazon Creek approximately 1.5 miles west of the project area.
- Intermittent **surface flow paths**[11] corresponding to the FEMA 100-year floodplain include an east-central flow path in a shallow swale north of A-2. Water was not observed during Biohabitats' site visit but based on topography (Figure 9) and the

[11] National Hydrology Database (NHD)



Figure 9. Topography (2' contours) and intermittent surface flow paths (blue) at Golden Gardens and surrounding area.

existence of a channel, it is expected that water enters and flows into the north pond during high precipitation events. The western intermittent flow paths may drain sheet flow from the agricultural fields toward the west. Note that the floodplain information suggests surface water/groundwater interaction along flow paths that normally do not carry open water.

Groundwater

Understanding groundwater patterns is important for understanding the pond characteristics at Golden Gardens and for future habitat protection and planning considerations. Based on

literature review, the groundwater beneath the project site is an unconfined sand and gravel aquifer (also sometimes called a water table aquifer). In these types of systems, precipitation infiltrates in upland areas to recharge groundwater, and the groundwater moves through the subsurface, generally following the topography, until reaching a discharge points. Groundwater discharge occurs where the ground surface intersects the aquifer, and water is released into seeps or springs that feed into lakes, streams, and wetlands. Water table aquifers will fluctuate with seasonal and annual climate variations. Droughts and human water management practices (e.g., diversion ditches, wells, sump pumps, and storm sewers) can cause significant long-term changes in the water table.

No onsite groundwater data were found for this assessment. Available historical mapping of regional groundwater from 1969 and 1970 (Figure 10) depicts the general direction of flow in the vicinity of the site. Based on this mapping, groundwater flow in the vicinity of Golden Gardens is toward the northwest and Amazon Creek. Along it course, groundwater discharges into the ponds at Golden Gardens. At the park, the relatively flat land is underlain by a gently-sloping water table which, based on historic mapping, is believed to be about 10-15 ft below the ground surface.

Figure 10 also illustrates how groundwater levels change seasonally. The groundwater beneath Golden Gardens Park in September 1969 was about 369-375 ft above sea level (asl) while in January 1970 it rose to approximately 374-389 asl. Notice too how the flow patterns and directions also vary slightly. Although the subsurface hydrology has likely changed in the last 50 years due to development, fundamental patterns such as the overall northwesterly direction of groundwater flow are expected to be the same.

Figure 11 is a conceptual cross-section of the stratigraphy of the park's geology and groundwater based on survey data. Along the cross-section, the water surface in the main pond was reported at approximately 368 ft above sea level with a bottom depth of approximately 356 ft. The cross section captures high and low groundwater levels (information from Figure 10) as well as surface water of the pond. The relationships of these water resources underscores the fact that protecting and managing the pond and its habitat will require consideration of groundwater resources as well. Additional information about subsurface stratigraphy and depth to water table will be gathered from geotechnical borings and can improve our understanding of park hydrology.

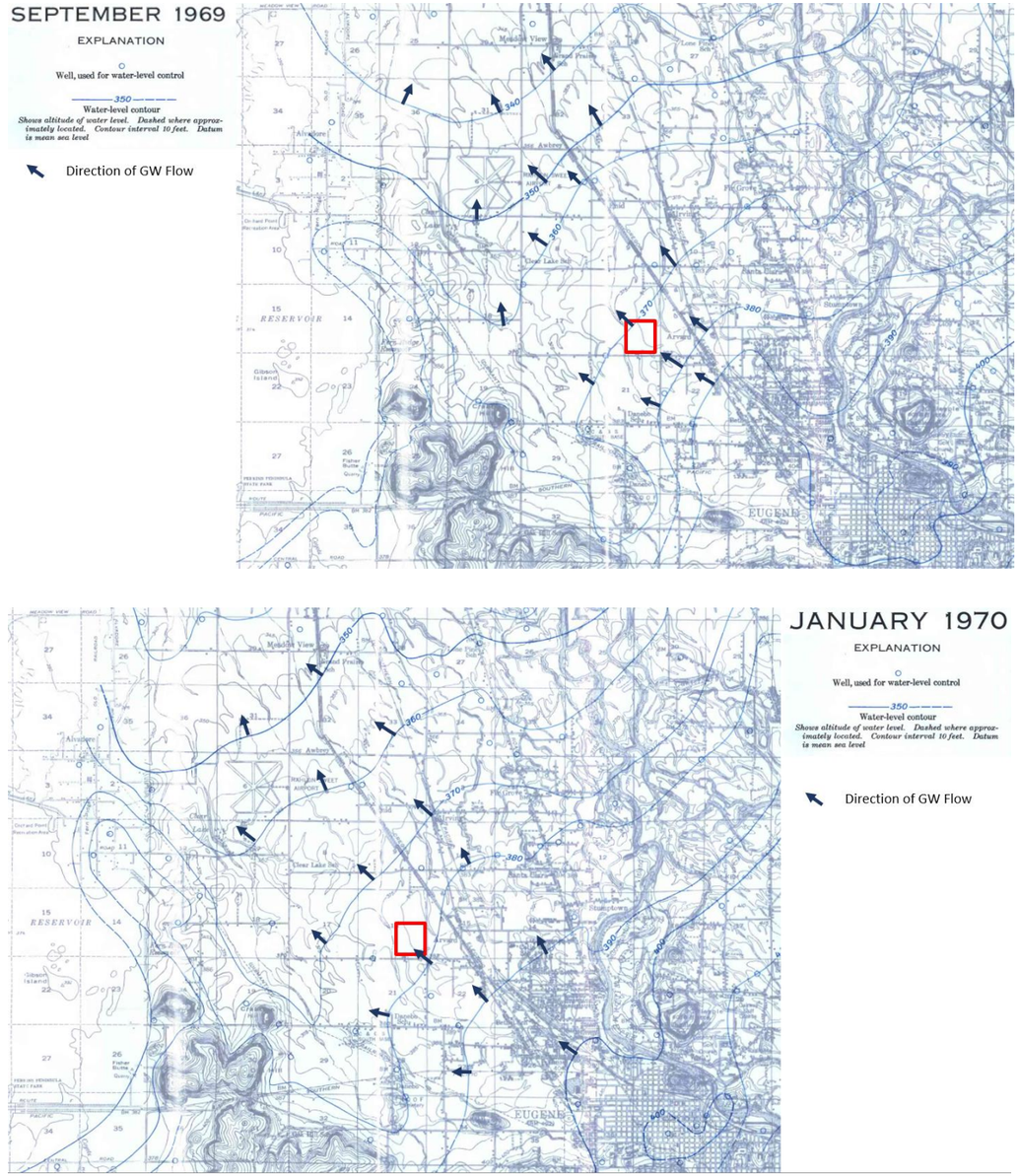


Figure 10. USGS September 1969 (top) and January 1970 (bottom) maps of groundwater contours. The red rectangle is Golden Gardens Park and navy arrows indicate the direction of groundwater flow.

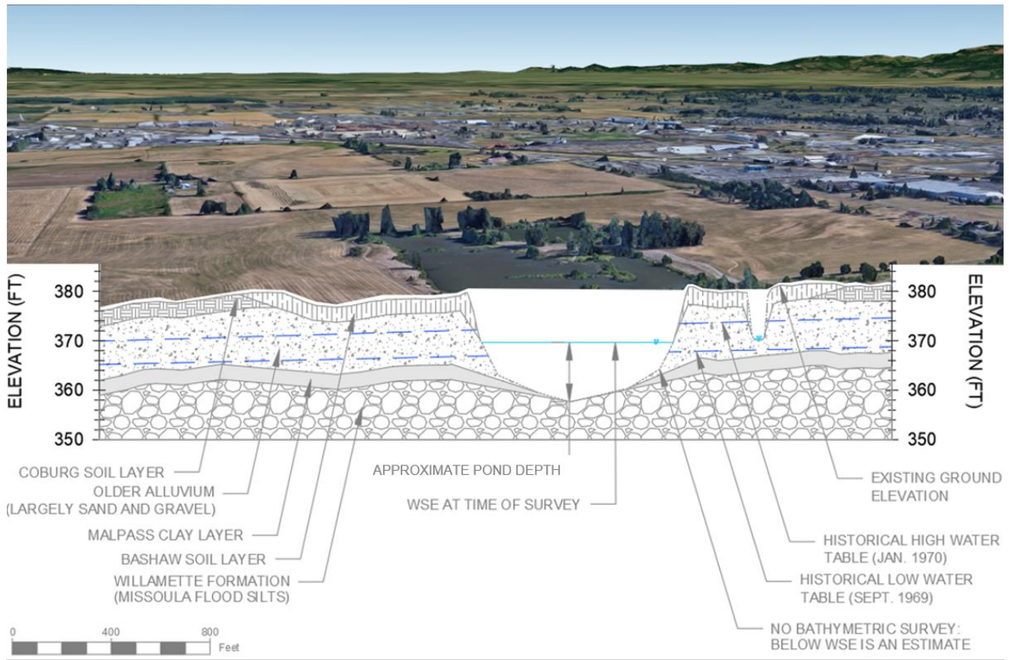


Figure 11. Conceptual water, soil, and geologic stratigraphy at Golden Gardens Park based on best information. Groundwater levels are from the USGS reports illustrated in Figure 10.

Soils

The soils at Golden Gardens are relatively complex (Figure 12). The 8 soil types mapped by the NRCS[12] are described below (except for 21.4 acres of water and 16.0 acres classified as pits, which are not described). For all soils at Golden Gardens, the depth to a restrictive feature is reportedly over 80”, and all but Bashaw silty clay and Awbrig silty clay loam (the first two described) are associated with soils of 0-3% slopes. Bashaw silty clay and Awbrig silty clay loam are also the only ones that are *hydric* (exhibiting features typical of wetland soils).

Bashaw silty clay represents 38.6 acres (17.0%) of the project area. This hydric soil is associated with the drainages that sweep across the site from east to west (Figures 8, 9, 12) and, along with forested land cover and surface saturation observed in the field, suggest the possibility of a historic or groundwater drainage extending to the north from the large pond (see also the middle left photo in Figure 13). These soils are found in alluvial fans, terraces,

[12] Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Accessed 24-26 January 2023 at http://websoilsurvey.sc.egov.usda.gov/

and floodplains. Typically the top 41” of these soils are clay and 41-63” are silty clay, the high clay component making them poorly drained. Slopes are 0-1%.

Awbrig silty clay loam, 0-2% slopes (17.9 acres, 7.9%) appear somewhat associated with the drainages on-site, although not as strongly as the Bashaw silty clay. The Awbrig soils are associated with terraces on depressions, with a typical profile of 0-7” silty clay loam, 7-18” clay, 18-29” silty clay, 29-48” silty clay loam, and 48-60” clay loam. These soils are poorly drained and hydric.

Coburg silty clay loam characterizes 64.7 acres (28.6%) of the project area. There is not a clear pattern to the distribution of this soil type across the site, except that they are associated with stream terraces. A typical profile is 0-18” silty clay loam, 18-53” silty clay, and 53-64” fine sandy loam and they are moderately well drained.

Malabon silty clay loam (40.9 acres, 18.0%) is associated with terrace landforms. There are two areas of this soil type at Golden Gardens, one dominating the west-central portion of the

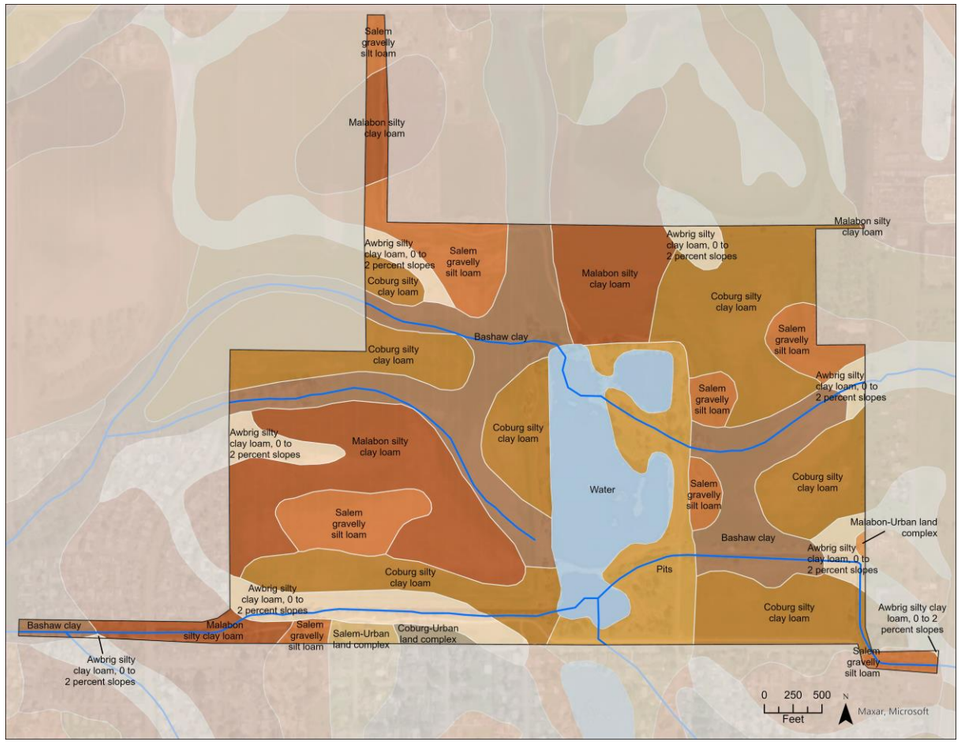


Figure 12. Soils and drainages (NHD Flowlines) at Golden Gardens Park. Only the A2 channel along the southern boundary has perennial flow.

park and the other in the north-central portion. A typical profile is 0-12” silty clay loam, 12-42” silty clay, and 42-60” clay loam and they are well-drained.

Salem gravelly silt loam comprises 24.6 acres (10.8%) in 5 pockets around the site, three east of the ponds, one to the west, and one to the northwest. Like the Coburg silty clay, these are associated with stream terraces. Typical profiles are 0-7” gravelly silt loam, 7-26” gravelly clay loam, and 26-60” very gravelly sand. These soils are well-drained.

Three soils with significant (30-45%) disturbed components are as follows:

Salem-Urban land complex (1.3 acres, 0.6%) soils are found in a small patch along the southern park boundary, between Salem gravelly silt loam soils and the Coburg-Urban land complex. As such, it appears to combine features of both adjacent soils. This soil type is associated with stream terraces and exhibits gravel throughout its profile (0-7” gravelly silt loam, 7-26” gravelly clay loam, 26-60” very gravelly sand) so is well-drained.

Coburg-Urban land complex (1.1 acres, 0.5%) is adjacent to the Salem-Urban land complex along the southern boundary and also associated with stream terraces. On its other side is Awbrig silty clay loam. This is a moderately well-drained soils with a typical profile of 0-18” silty clay loam, 18-53” silty clay, and 53-64” fine sandy loam.

Malabon-Urban land complex (0.2 acres, 0.1%) is found on the eastern boundary of the park, tucked on the inside curve of Awbrig silty-clay loam. Its associated landform is terraces and it is well-drained with a typical profile of 0-12” silty clay loam, 12-42” silty clay, 42-60” clay loam.

Recent Land Use and Land Cover

The ponds at Golden Gardens were excavated in 1960s as gravel quarries for construction of Beltline Road. Once decommissioned they were allowed to fill with water, and today, open water occupies 21.4 acres (9.4%) of the project area.

Following a trend started in the early 20th century, by the early 1980s more than 30% of cropland in the Willamette Valley was dedicated to seed-grass production.[2] The lands surrounding the ponds at Golden Gardens have supported agriculture for at least the last half-century.

Land cover changes during the period of available aerial photography (1994-present) are shown in Figure 13. Significantly, the parcel in the southeast corner (the ‘Babb’s property’) was cleaned up of debris including dump piles, abandoned cars, and invasive species in about 2007, and later graded (~2012). During the 2006-2011 window, the peninsula in the largest pond

Golden Gardens Existing Conditions & Site Analysis

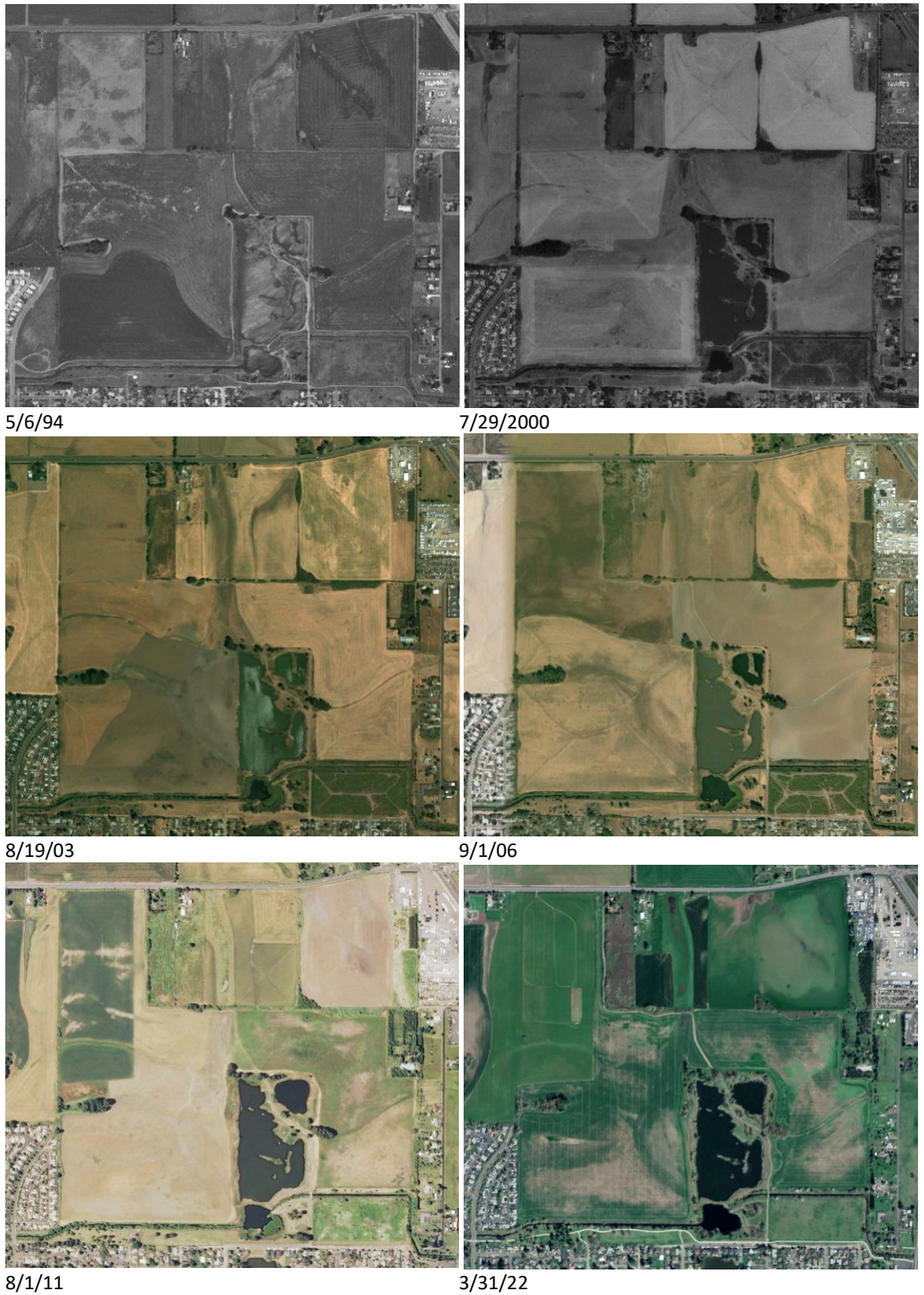


Figure 13. Time series of photographs of Golden Gardens Park. ©Google Earth.

became an island. Additional observations of land cover changes (or lack thereof) over time are discussed below.

Plant Community Types

The three main plant community types at Golden Gardens Park are emergent wetlands, riparian forest, and non-native herbaceous grassland (currently cultivated). Adding to landscape diversity are the open water ditches and ponds that support the emergent and riparian vegetation.



Figure 14. The large pond at Golden Gardens, with emergent wetlands in the foreground, 9 Jan 2023.

Limited areas of **emergent wetland** are at the edges of the ponds (Figure 14). These support sedges (*Carex* spp.), rushes (*Juncus* spp.), cattail (*Typha latifolia*), reed canarygrass (*Phalaris arundinacea*), and other wetland species. The City of Eugene (City) has repeatedy attempted restoration of these fringe wetlands. Vegetation establishment is hampered by the appeal of the fresh habitat for carp spawning; the tail fanning associated with the spawn sloughs off the unconsolidated soil and has resulted in low plant establishment. Recent restoration efforts have used temporary fencing to protect the newly installed plants from disturbance.

Due to the greater uniformity and steepness of their banks, the ditches at the park do not offer the same wetland opportunities as the ponds. Both of these surface water types, however, support narrow **riparian forests**. These are characterized by species such as alder (*Alnus* sp.), Pacific willow (*Salix lucida* spp. *lasiandra*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), birch (*Betula* sp.), and red osier dogwood (*Cornus sericea*). The riparian forests are not particularly dense nor vertically complex (i.e., with numerous canopy layers). Reed canarygrass is a dominant understory component.

The consistency of riparian tree cover since 1994 is noteworthy (Figure 13). For example, there is a stand of cottonwood trees on the western boundary whose extent seems unchanged (Figure 15, top). In some aerials (not shown) plow lines curving around the stand suggest that

its extent has been maintained by agricultural management. It is possible that it serves as a windbreak. Other stands of trees that have not increased in extent include one at the southeast corner of the north pond that extends to the east (Figure 15, middle) and another stand at the northwest corner of the large pond. The west stand appears to be at the western end of a groundwater flow line and the stand adjacent to the north pond is associated with a surface water drainage (Figures 8, 13). These limited stands appear to be opportunities to increase the extent of the riparian forest (Figure 15, bottom) and, as a result, landscape habitat diversity.

The **non-native herbaceous fields** surrounding the ponds reflect site and Valley history of seed grass production. At the time of Biohabitats' visit the grasses had been recently harvested and appeared to be a species monoculture. These homogeneous areas do not have superficial indicators of underlying soil differences (Figure 16).

Habitat

Golden Gardens Park hosts a significant number of charismatic animal species including bald eagle and other raptors, blue and green heron, and river otter (iNaturalist observations are compiled in Appendix C). The hallmark wildlife



Figure 15. Riparian forests of limited extent. (Top) At the western boundary of the park, (middle) at the southeast corner of the north pond, (bottom) rough approximation of riparian forests (blue) at Golden Gardens. Associated flow paths (Figs. 8, 9, 12, 13) indicate an opportunity to extend the forests.



Figure 16. Field cultivated for grass seed, possibly fescue. Photo was taken facing east at juncture between Salem gravelly silt loam and Bashaw clay, soil differences not detectable at the surface.

species of Golden Gardens, however, is the northwestern pond turtle (*Actinemys marmorata*), the only native turtle in the Eugene area.

The northwestern pond turtle (NWPT), which is a State sensitive species and Oregon Conservation Strategy species, has a large remnant population at Golden Gardens Park of 50-60 individuals and has been the focus of intensive conservation efforts by the City and the Oregon Department of Fish and Wildlife (ODFW) for over ten years. Efforts have included nesting area exclosures to keep out predators such as coyote, raccoon, and skunk; individual nest protection cages; and habitat improvement for juvenile turtles. Since the predator exclusion fence was built three years ago, hatchling survival has increased exponentially.

NWPT relies on still or slow-moving water as well as prairie, oak savanna, and forest for nesting or overwintering. Although females have been observed to move 1312 ft (400 m) or more to find an appropriate nesting location, nesting is usually near (within 164 ft/50 m of) water. At Golden Gardens all documented nests have been within about 164 ft (50 m) of water, including the A-2 channel (nest maps are available through the City of Eugene). Nests are dug in bare or herbaceous areas. At Golden Gardens (and perhaps other areas), the NWPT shares nesting sites with ground-nesting bees.

The NWPT overwinters at the bottom of ponds, in undercut banks, and under 2-4 inches (5-10 cm) of leaf litter, whether in a riparian area or another area with good opportunities for refuge. Hatchlings and juveniles are associated with shallow water and emergent wetland such as that shown in Figure 17, at the northwest corner of the large pond.

The three open-water ponds, consisting of a single large and two small ponds, are focal areas for the diverse habitat needs of NWPT. The large pond (Figures 14, 18, and cover photo) is ~15.0 acres including the island, the north pond is ~2.7 acres, and the south pond is ~2.5 acres.

Basking opportunities such as logs, rocks, and emergent vegetation are important for the turtle and are permanent fixtures at Golden Gardens (Figure 18).



Figure 17. Ideal habitat for juvenile NWPT at Golden Gardens. The wetlands and woody overgrowth provide refugia and protection from potential predators including heron.

NWPT stressors at Golden Gardens include predation, competition for habitat, and water quality. Terrestrial predators (including coyote, skunk, and raccoon) target nests while aquatic predators such as great blue and green heron and bullfrogs are population stressors for hatchlings and juveniles. Competition is presented by the red-eared slider turtle (*Trachemys scripta elegans*) which needs many of the same habitat elements as NWPT, such as basking opportunities and food (e.g., insect larvae, crustaceans, small fish). Last, water quality is a stressor for NWPT and other aquatic wildlife at Golden Gardens; algal blooms indicative of high nutrients can be toxic to aquatic wildlife, especially those that consume algal biomass. Historically the ponds were infested with large-flower primrose willow (*Ludwigia grandiflora* ssp. *hexapetala),* an Oregon List B noxious weed, but control efforts by the City of Eugene have been largely successful.

4 Opportunities and Constraints

The Golden Gardens Park Master Planning process is an important opportunity for the City to formalize ecological goals for the site in perpetuity. Below are several types of opportunities for ecological conservation and enhancement at Golden Gardens, all of which are mutually supportive.

1. Given the significant resources and ongoing efforts by the City and ODFW dedicated to turtle conservation, **carefully designing NWPT habitat buffer** and aligning buffer guidelines with current turtle conservation efforts will bring significant ecological value to the Master Planning process.

2. **Integrating water management** throughout the design will help protect water quality with features such as low-impact development and green infrastructure and support habitat through climate and land use changes. City of Eugene regulations for building near FEMA 100-year floodplains will need to be understood and incorporated.
3. **Restoring landscape diversity** not only supports regional biodiversity but also specifically supports the NWPT, as the turtle requires all of the habitat types that naturally occur at the park. Four habitats should be the focus of enhancement and restoration: channels, riparian forest, wetlands, and prairie. **Working with on-site soil patterns and complexity** (Figure 12) **to prioritize restoration areas** will support this opportunity.
4. **Highlighting the relationships between humans and nature** will continue to support long-term stewardship of the park and local natural values.

Concentrated regional urban development (Figure 7) and the planned upcoming development for Golden Gardens Park are undeniable challenges to habitat and ecological function. Planning and design will also need to account for likely climate change trends and their implications for hydrology, temperature, and habitat quality for dependent species. For example, it is not uncommon in urbanized ponds and waterways to see increased algae blooms from nutrient runoff, increased temperatures, and higher stress from invasive species. Many of these stressors can be avoided or mitigated through planning and design strategies as noted below. Preliminary recommendations for pursuing these opportunities are in the following section.



Figure 18. Turtle (species indistinguishable) basking on log, left center of photo. Biohabitats 9 Jan 2023.

5 Integrating Ecological Goals with Site Design

This section is an early exploration of how the landscape story at Golden Gardens Park can be told through ecological protection, connection, and restoration. Ecological goals may be presented as follows:

- *Protect* existing high-quality habitat and supporting processes such as hydrology. This includes areas where the NWPT is active and habitat types that contribute to landscape diversity (e.g., open water, forest, wetland).
- *Connect* habitats that have been fragmented. Fragmentation has occurred by land management practices of the last century, specifically of hydrologic connections across the landscape (Figures 8, 9, 11, 12, 13) and the habitats they originally supported.
- *Restore* the natural extent of native habitat types. This includes riparian forests that appear truncated by current land management practices (Figure 15) and upland prairie.

Below are preliminary recommendations for meeting the opportunities outlined in the previous section and the proposed ecological goals above. Recommendations are presented as layers for the benefit of building on the concept gradually as well as helping to isolate different strategies.

Design for Minimum NWPT Habitat Buffer. This recommendation embraces the goals of *Protection* and *Restoration*. A key local document providing guidance for best management practices in and around NWPT habitat is ODFW's *Guidance for Conserving Oregon's Native Turtles including Best Management Practices*.[13] This and a 1994 habitat report[14] recommend that NWPT habitat buffer widths be at least:

- 1640 ft (500 m) for major infrastructure (e.g., paved roads)
- 492-1312 ft (150-400 m) for native vegetated habitat
- 492 ft (150 m) for minor infrastructure (e.g., trails, picnic tables)

These buffer widths at Golden Gardens are illustrated in Figure 19. Seasonal closures of overwintering and nesting habitat are also recommended.

Understanding that habitat needs will need to be balanced with recreational objectives, site-specific buffer design is recommended to use the following strategies:

[13] ODFW. 2015. Guidance for Conserving Oregon's Native Turtles including Best Management Practices. Oregon Dept. of Fish and Wildlife. 99 pp.

[14] Holland, D. 1994. The Western Pond Turtle: Habitat and History. Final Report. US DOE, Bonneville Power Administration Project No. 92-068.



Figure 19. 492-foot (150 m) buffer around the ponds at Golden Gardens.

- Design for minimum 492-ft (150-m) buffer around existing NWPT habitat.
- Seek opportunities to extend NWPT to 1312-1640 ft (400-500 m).
- Enhance and/or restore protected turtle habitat areas so they are less likely to disperse beyond the protection zone.
- Utilize vegetation, fences, and educational signs to discourage human encroachment.

Integrate a Living Infrastructure Approach to Water Management. Maintaining hydrologic support of the ponds and other water-dependent habitats will help reduce negative impacts from development. Additional information on site-specific conditions from geotechnical borings or other engineering analyses may help inform design alternatives. However, given the uncertainties of future impacts, including climate, Adaptive Management of the park is also recommended to monitor and have a system in place to respond to changing pond and habitat conditions.

Restore Landscape Diversity by Restoring Habitat. This recommendation embraces the goals of *Connection* and *Restoration*. Figure 20 is the essence of this idea, but it is understood that the hydrologic connections may require bypass features. Strategies include:

- Realign Channel A-2 for a more sinuous, naturalized form.

Biohabitats
CASCADIA BIOREGION

MEMORANDUM

Date: November 12, 2024
To: Colin McArthur, Cameron McCarthy
From: Susan Sherrod, Ph.D., Biohabitats
Subject: Consideration of Golden Gardens Park Design Concept

This memorandum is in response to consideration of the Working Design Concept for the Golden Gardens Park Master Plan ("design") dated July 30, 2024, and community feedback on the design. Community members specifically request that the City of Eugene (1) expands the Golden Gardens natural area to include a 500-ft minimum buffer from all surface water and (2) avoid construction in or on historic drainages and riparian areas. These requests are based on the Oregon Department of Fish and Wildlife Best Management Practices for the northwestern pond turtle (*Actinemys marmorata*; NWPT) and an *Existing Conditions and Site Analysis* report provided by Biohabitats, Inc. (June 2023, rev.; "Biohabitats report" or "2023 report").

Biohabitats acknowledges and appreciates the investment of community stakeholders in alignment with its mission to *restore the earth and inspire ecological stewardship*. The value of public oversight is immeasurable and Biohabitats honors this dialogue with the intention to be objective and transparent.

Community stakeholders identified two design concerns – buffer widths and riparian protection – that correspond to two recommendations in the Biohabitats report. As a threshold matter, please note, as stated on p. 23 of that report, that the recommendations offered to the City of Eugene (City) were qualified as preliminary.

Biohabitats responds to the specific community requests as follows. In the 2023 report, we cited ODFW guidance for buffer distances of

- 1640 ft for major infrastructure (e.g., paved roads). The design meets this recommendation (note that Jessen Drive to the south, which is closer to the ponds than 1640 ft, is pre-existing).
- 492 ft for minor infrastructure (e.g., trails, picnic tables). The design does not meet this guideline for all areas (the eastern side of the ponds, the south side of the main pond, or the south pond); however, the buffer widths on the west side of the main pond, including the primary NWPT nesting area, far exceed the 492-ft guideline, integrate NWPT habitat improvements and protection such as berms and additional native vegetation, and preserve a substantial extent of hydric soil that was also identified as an ecological opportunity.

Biohabitats understands that the City and ODFW have made significant investments in NWPT conservation and there is no intention of discontinuing these efforts. All parties are additionally aware that the NWPT is proposed for listing under the Endangered Species Act and are prepared to comply with the formal rules appurtenant to that action.

Stakeholder review also requested that no construction occur in or on historic drainages or riparian areas. We concur that this would be ideal; however, as outlined starting on p. 21 of the Biohabitats report, "habitat needs will need to be balanced with recreational objectives" (p. 23) in this planning process.

We reiterate the ecological opportunities identified in the Biohabitats report:

- Carefully design NWPT habitat buffer and align buffer guidelines with current turtle conservation efforts by the City and ODFW;
- Integrate water management into design;
- Restore landscape diversity, working with on-site soil patterns and complexity to prioritize restoration areas; and
- Highlight the relationships between humans and nature.

As ecosystem stewards, Biohabitats always considers design from a starting point of *ecosystems as the sole stakeholder*. As urban ecologists, we recognize that there must be a balance between community needs and ecological benefit, a balance that informs designs that support both equity and habitat objectives. We feel that the City upholds this holistic intention and is responsible to the northwestern pond turtle, other ecosystem opportunities at Golden Gardens Park, and to the varied health and recreational interests of the community with the current design.

Biohabitats remains available to consider additional information pertaining to the opportunities and needs of Golden Gardens Park.

Appendix B.

Public Process Report

Public Process Report B-2

Survey Summary 1 ..... B-10

Survey Summary 2 ..... B-23

Survey Summary 3 ..... B-33

Event Summary 1 ..... B-40

Event Summary 2 ..... B-43

Summary

The public involvement process that informed the Golden Gardens Park Concept Plan drew on a variety of engagement methods from in-depth conversations with small groups to large public events to casual connections at community events. Specific activities were designed to engage with diverse perspectives interested in and impacted by the park development.

- 20,000+ individuals were invited to events and meetings via email, social and traditional media, flyers, lawn signs, and mailed postcards.
- 3,000+ people actively participated in a meeting, survey, or conversation about the project.
- Participants spent a total of 1,500+ hours learning about the project and providing input.
- Outreach included active connections to 28+ groups and organizations affiliated with the project through activities or geographic proximity, including neighboring residents, conservation advocates, sports groups, economic development interests, school communities, and local youth and families.







Engagement Activities

9 *Stakeholder Interviews*

9 *Targeted Outreach Events*

130+ participants

32+ hours

Locations included day care, elementary school spring carnival, youth soccer games, alternative high school lunch, school PTO meetings, Latin-owned restaurant and food trucks, and Bethel neighborhood annual celebration.

3 *General Public Events*

400+ participants

Event 1: 130 Hybrid
Event 2: 70 In-Person and 35 Online
Event 3: 100 In-Person and 50 Online

3 *Online Surveys*

1,800+ Responses

English and Spanish
Gift Card Incentives



3 *Focus Groups*

Sports

Ecology

Mobility Device Users

3 *Project Advisory Group Meetings*

11 Groups Represented

Active Bethel Community (ABC)
Bethel School District Safe Routes to School
Beyond Toxics
Boys and Girls Club of Emerald Valley
Family who lost loved ones at Golden Gardens
Kidsports
Long Tom Watershed Council
Oregon Department of Fish and Wildlife
Travel Lane County Sports Commission
Willamette Resources & Educational Network (WREN)
Willamette Valley Babe Ruth Baseball & Ted Normal Memorial Complex



17 *Additional Groups Engaged*

350 Eugene
Bethel School District Staff
Bountiful Bethel
Emerald Challengers
Emerald Valley Pickleball Club
Eugene Frontrunners
Grab It NFL Flag Football
Lane United Football Club
Lane Youth Soccer Association
MVP Elite Football
Prairie Mountain School Staff
Meadow View K-8 PTO
Malabon Elementary PTO
Sheltercare
Wednesday Wheelers
Willamette High School Staff
Willamette Valley Youth Football & Cheer

Spreading the Word

2,200 *Postcards*

mailed to addresses within 0.5 miles of park

30+ *Social Media Posts*

on Facebook and Instagram, plus two Spanish language videos posts through La E-Kiss "Aquí en la ciudad"

18 *Email Updates*

to project subscribers; 695 recipients by December 2024

13 *Articles and Mentions*

in local news media

2 *Project Webpages*

with project description, public involvement timeline diagram, site map, FAQs, etc. (English and Spanish); 7,800+ views.

2 *Neighborhood Association Meetings*

with members and/or leadership.

Many *Paper Flyers*

about engagement opportunities posted throughout Bethel

Public Involvement Rounds

1. Round 1: *Vision*
2. Round 2: *Preliminary Designs*
3. Round 3: *Refined Design*

Key Takeaways

1 Round 1: Vision

Needs & Desires

Sports Facilities

- Sufficient for tournaments for youth and adult programs (field size, lighting, spectator seating, concessions/food truck capacity)
- High demand for diamond fields (baseball, softball) and rectangle fields (soccer, football, lacrosse, ultimate frisbee, rugby) with synthetic turf preferred for year-round use
- Pickleball, basketball, and volleyball facilities also desired

Natural Area Conservation

- Habitat enhancement for the threatened northwestern pond turtle with increased vegetation and noise and light mitigation around most critical habitat areas.
- Educational and interpretative elements

Neighborhood and General Park Amenities

- Play areas
- Picnic facilities and benches
- Outdoor exercise equipment
- Dog park
- Restrooms
- Connecting paths, loop trails
- Memorial or tribute to boys who drowned at the park in 1990s and 2000s

Equitable Access

- Across demographic groups, abilities, and transportation modes

Concerns

Negative impacts of increased development and human activity on existing park experience (quiet, peaceful, beautiful place to walk, fish, relax)

Negative impacts of increased development and human activity on wildlife

Negative impacts to adjacent neighbors (noise, lights, traffic)

Undesirable use (litter, off-leash dogs, vandalism, overnight use)

Maintenance costs and ability to maintain





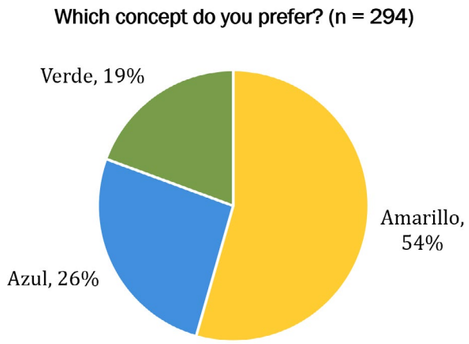


2 Round 2: Preliminary Design Concepts









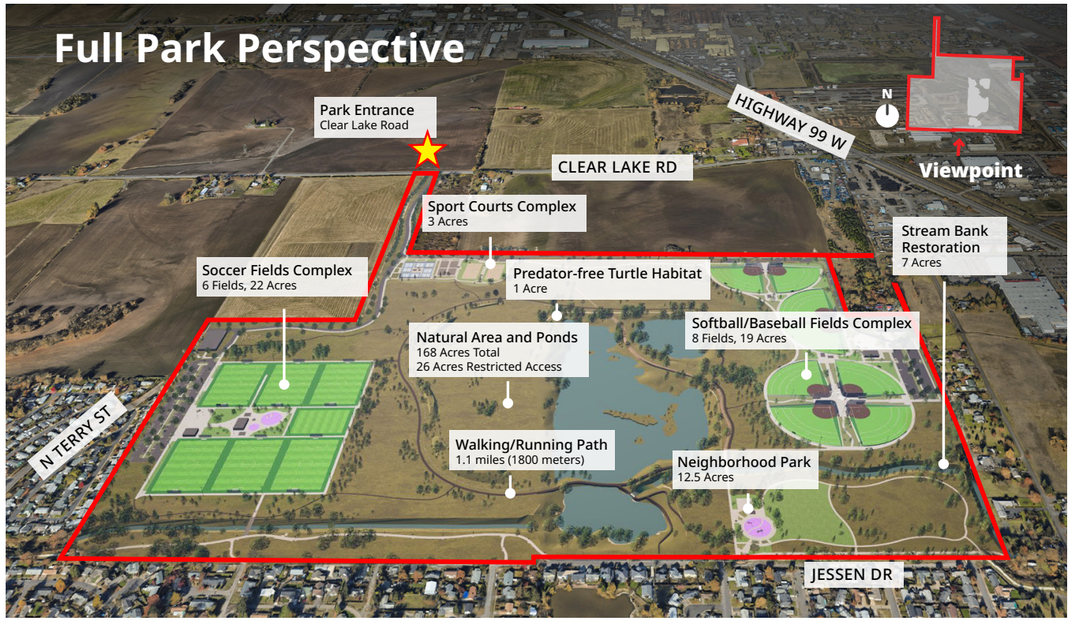
General Preferences

- Amarillo preferred of three concepts
- Larger natural area with more separation between ponds and sports facilities
- Diamond and rectangle fields located in separate areas
- Rectangle fields on west side
- Playgrounds appreciated near sports facilities
- Neighborhood park amenities were liked

Mixed Opinions

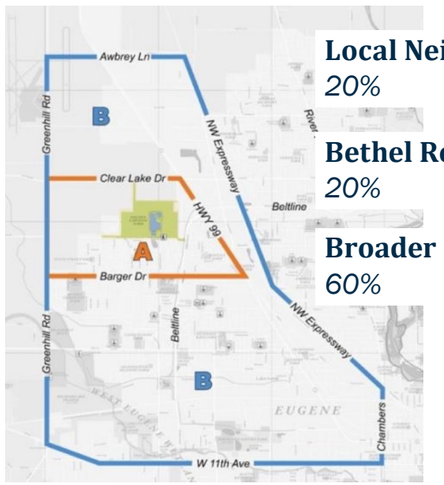
- Mixed opinions about parking quantity
- Mixed opinions about a dog park
- Managed RV parking not desired

3 Round 3: Refined Design Concept



1,000+ Responses

Where do respondents live?



Local Neighbors (A)
20%

Bethel Residents (B)
20%

Broader Community
60%

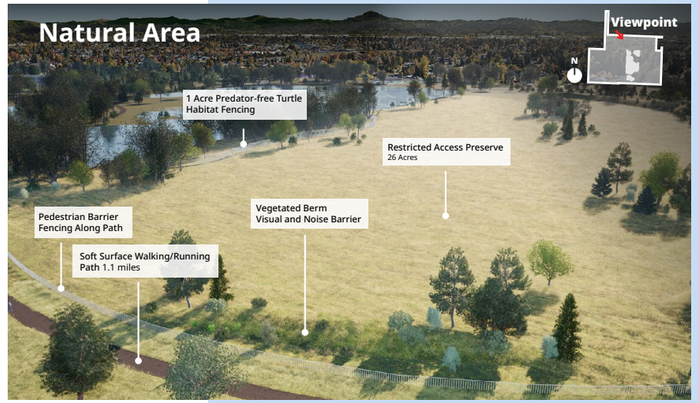
Most likely to visit....

Natural Areas
87%

Neighborhood Park
64%

Sports Complex
60%

Favorite Features



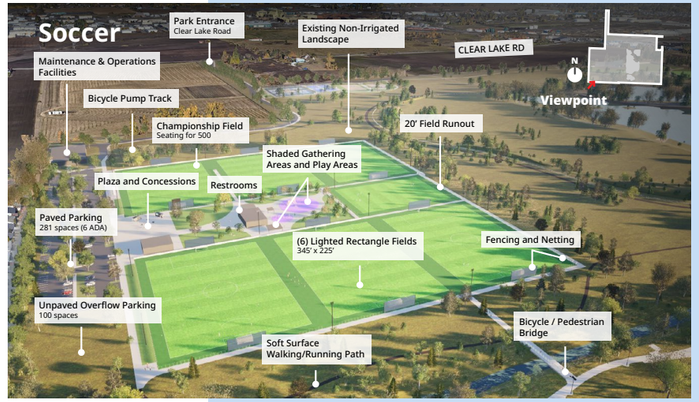
Natural Area:

1. **Protected Pond Turtle Habitat**
2. **Pedestrian Path**



Neighborhood Park:

1. **Walking Path**
2. **Play Area**



Sports Complex

1. **Rectangle Fields**
2. **Pickleball / Tennis Courts**

Golden Gardens Park Concept Plan
SURVEY 1 RESULTS SUMMARY

Golden Gardens Park was identified in Eugene's 2018 Parks and Open Space System Plan for development of a regional sports complex and neighborhood park. The park also has valuable wildlife populations after years of collaborative efforts to improve habitat in and around the site's former gravel pits.

In winter 2023, staff used a survey on the City's Engage Eugene website to better understand community visions, needs, and priorities for the future park, which has more than doubled in size to 223 acres since the last community visioning effort more than 15 years ago.

This report summarizes results of key questions and highlights any differences among demographic groups. The report is divided into sections:

- Respondent demographics
- Park spaces and amenities
- Park vision
- Project awareness

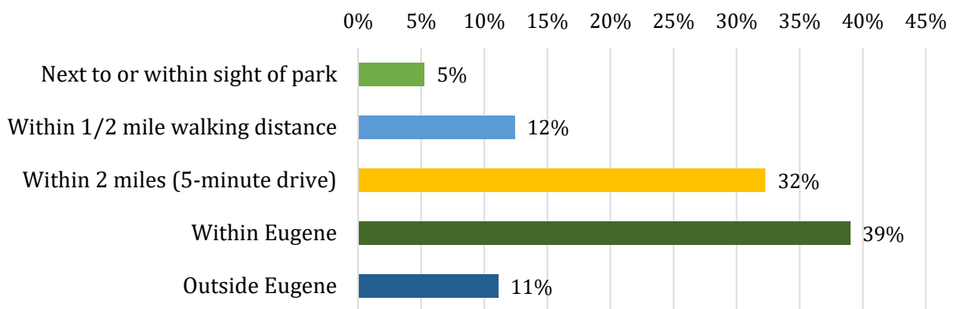
RESPONDENT DEMOGRAPHICS

The survey received 685 total responses from a diverse mix of residents. The survey is not a statistically representative sample, and responses are not weighted to accurately represent the community. The results offer some insight, however, into how residents feel about the future of the park.

The number of respondents who answered each question is shown in parentheses in the figure title (n = X). Respondents were not required to use an Engage Eugene account, and it is possible some took the survey more than once.

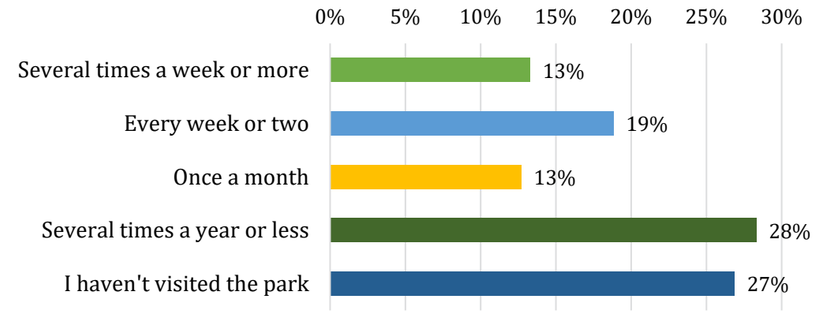
In addition to typical demographics, the survey asked respondents how close they live to the park and how often they visit. Figure 1 shows the largest group lives in Eugene more than 2 miles from the park. Half (50%) live within 2 miles of the park, including 5% next to or within sight of the park and 12% within a half-mile (the service area for the neighborhood park portion of the proposed park).

Figure 1. How close to the park do you live? (mandatory, n = 685)



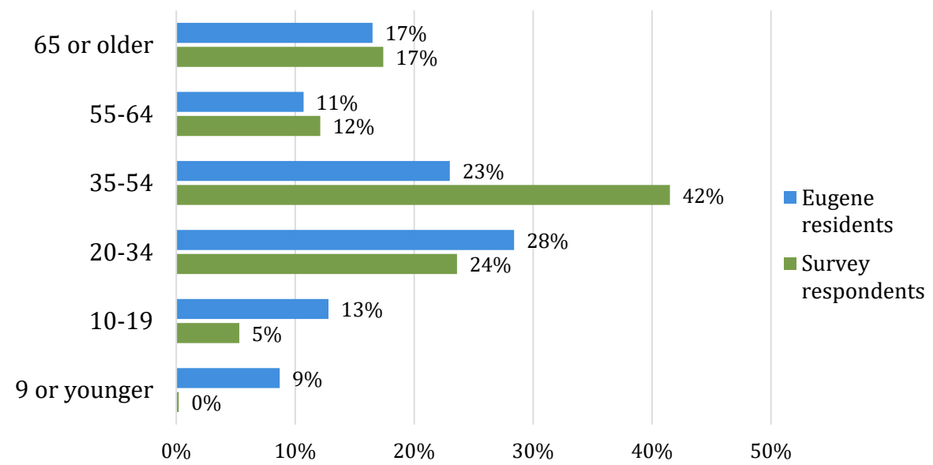
About 45% of respondents visit the park monthly or more often. Figure 2 shows more than half (55%) visit the park infrequently (28% visit a few times a year or less, and 27% have never visited).

Figure 2. About how often do you visit the park? (mandatory, n = 685)



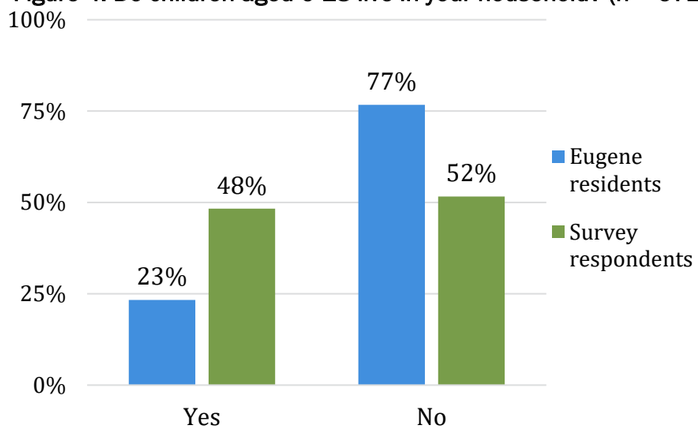
Respondents skew older than the City's population. Figure 3 shows youth are underrepresented, with just one respondent (0.1%) 9 or younger and 36 respondents (5%) aged 10-19. The largest group were aged 35-54.

Figure 3. How old are you? (n = 678)



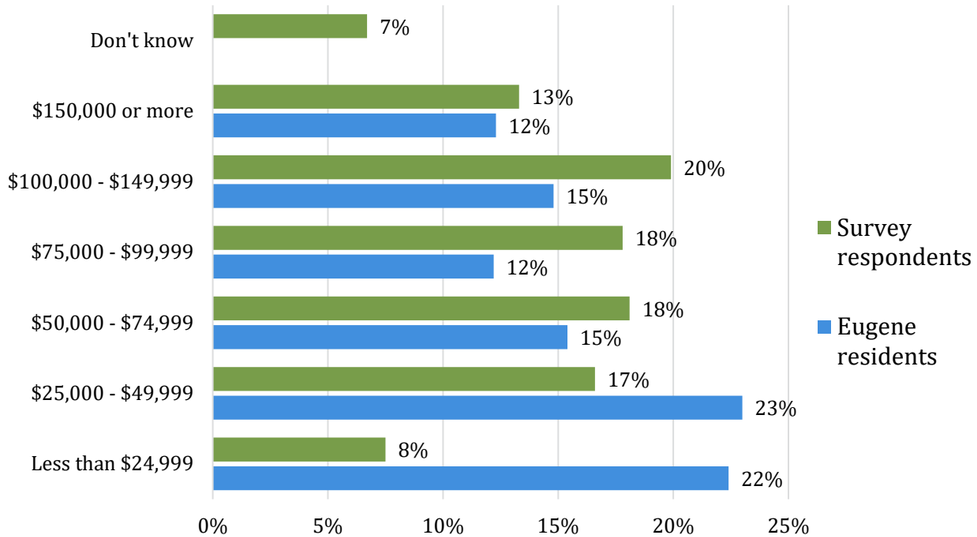
Most respondents (52%) do not live with children. However, Figure 4 shows respondents are more likely to live with children than the average Eugene resident.

Figure 4. Do children aged 0-18 live in your household? (n = 672)



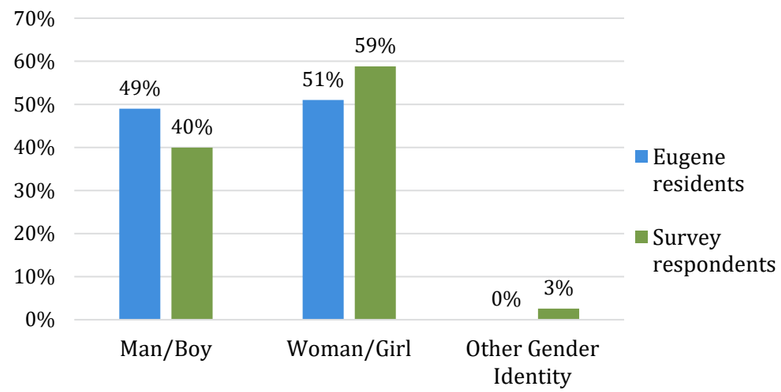
Middle- and high-income respondents are overrepresented. Figure 5 shows a quarter have annual household incomes under $50,000, compared to half of Eugene residents. A third of respondents earn between $50,000 and $99,999, and just under a third earn $100,000 or more. For reference, the area median income (AMI) in 2022 for Eugene-Springfield was $55,800 per year for a one-person household and $79,600 per year for a four-person household.

Figure 5. What is your annual household income? (n = 652)



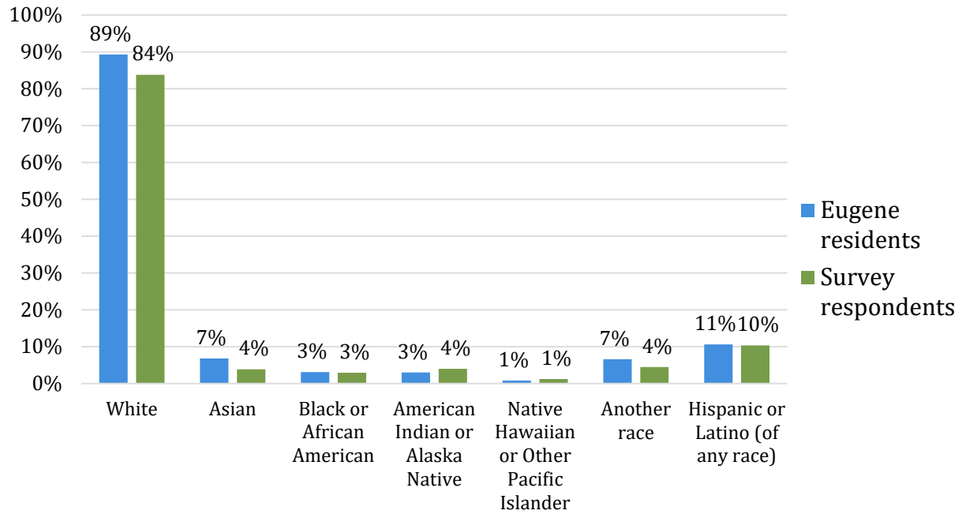
More respondents identified as women/girls, and men/boys are underrepresented compared to the City's population (Figure 6). About 3% of respondents identify with another gender (not an available answer in the Census survey).

Figure 6. What is your gender identity? (select all that apply) (n = 663)



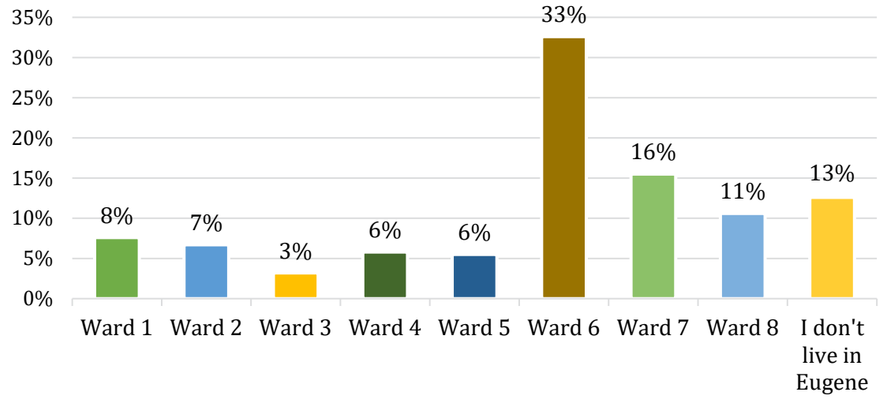
Most respondents are white (84%). The next most selected racial/ethnic identity was Hispanic/Latino (10%). About 5% of respondents chose more than one racial/ethnic group. Figure 7 shows how survey respondents compare with all Eugene residents.

Figure 7. What is your racial/ethnic identity? (select all that apply) (n = 648)



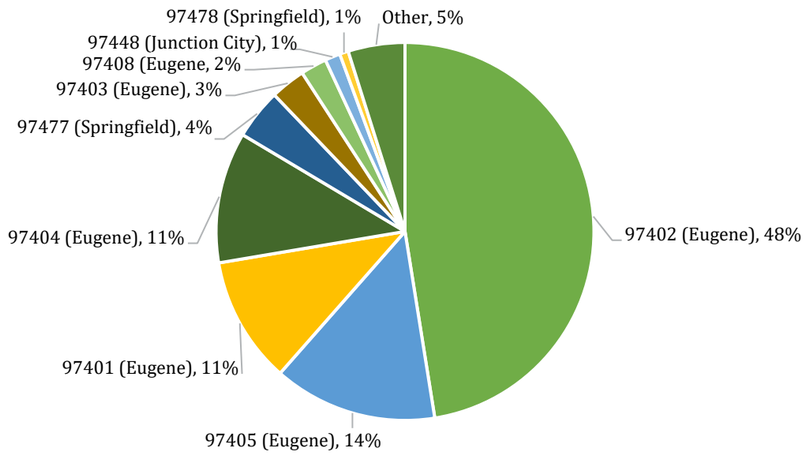
Respondents include residents from all eight City Council wards. Figure 8 shows the largest group live in Ward 6 (33%), which is in Bethel where the park is located. This was followed by adjacent ward 7 (16%), which includes the River Road, Santa Clara, Trainsong, and Whiteaker neighborhoods, and then ward 8 (11%), which includes more of Bethel and the West Eugene and Churchill areas.

Figure 8. What City Council ward do you live in? (n = 659)



Most respondents are from the Eugene-Springfield area as shown in Figure 9 by zip code data. The "other" category includes one or two respondents each from zip codes associated with Cheshire, Coburg, Cottage Grove, Dexter, Dunes City, Elmira, Fall Creek, Florence, Harrisburg, Milwaukie, Myrtle Creek, Oakridge, Roseburg, Salem, Sweet Home, and Veneta. This was the most skipped question. More than a quarter chose not to answer.

Figure 9. What is your zip code? (n = 534)



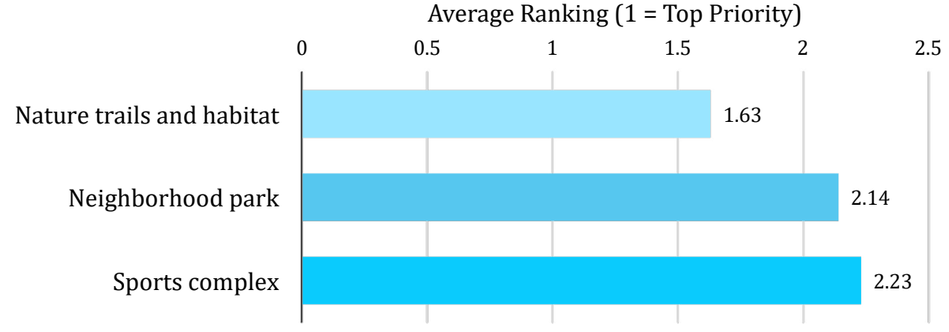
PARK SPACES AND AMENITIES

The remaining question summaries include general results and highlighted differences, if any, among demographic groups.

Park Space Priorities

When asked to prioritize the proposed park's three primary spaces, most respondents ranked the habitat and trails area highest. Figure 10 shows the neighborhood park was ranked second highest by the average respondent followed by the sports complex.

Figure 10. How would you prioritize the proposed park's three primary spaces? (mandatory, n = 685)



In contrast to English survey takers, Spanish survey takers (2% of respondents) ranked the sports complex highest on average followed by the nature trails and habitat area and then the neighborhood park.

While most demographics ranked the neighborhood park second highest, on average, a few groups ranked the sports complex second highest. Respondents who identify as Hispanic/Latino (10% of respondents) ranked the sports complex second highest (closest to the nature trails and habitat area) of any demographic group. Other groups who ranked the sports complex higher than the neighborhood park include those living more than 2 miles (or a 5-minute drive) from the park, those under age 35, and those who identify with a non-white racial or ethnic group.

Respondents who ranked the natural trails and habitat area first (55%) are more likely to near the park and are slightly more likely to visit frequently (or have visited), be older, be lower income, identify as women/girls, and identify as white. These respondents were less likely to live with children.

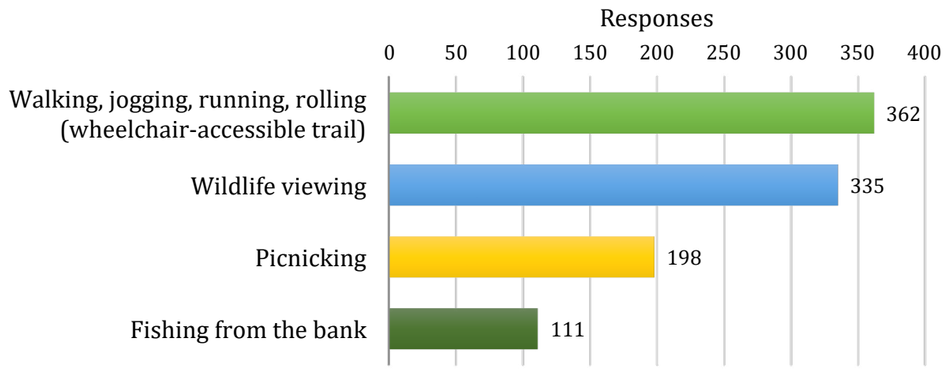
Respondents who ranked the sports complex first (32%) are less likely to live near the park or have visited, are more likely to be younger, live with children, and identify as men/boys, and are slightly more likely to be higher income.

Respondents who ranked the neighborhood park first (12%) are more likely to live within 2 miles, to not frequent the park, to be younger, and to live with kids, and are slightly more likely to be higher income, to identify as women/girls, and to identify with non-white racial/ethnic groups.

Nature Trails and Habitat Area

Within the proposed park's nature trails and habitat area, Figure 11 shows trail use (walking, jogging, running, rolling) is the most important activity to respondents followed by wildlife viewing.

Figure 11. Within parts of the natural areas open to people, which activities are important to you and your household to include? (select all that apply) (n = 432)



For those 55 and older, wildlife viewing was the most important activity to include. For respondents who took the survey in Spanish, fishing and picnicking were the most important activities to include. For Hispanic/Latino respondents (who mostly took the survey in English), wildlife viewing and physical activity were the top activities followed more closely by picnicking and fishing than for respondents as a whole.

The open-ended comment question about improvements to this part of the park received 220 responses. Results are summarized below:

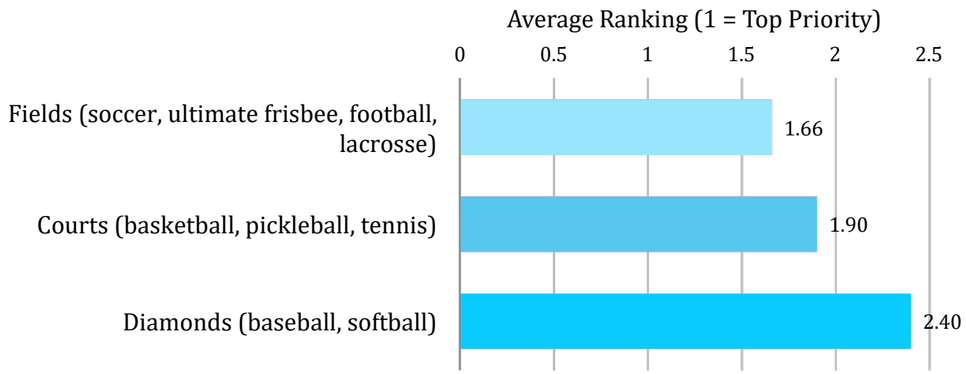
- Desired by many:
  - More wildlife habitat area and minimal development. Suggestions include:
    - Reduction in sports field number and/or facility size
    - 1,000-foot buffer
    - Picnic space as buffer
    - Oak savannah, wetlands, and meadow
    - More info from wildlife specialists and local environmental organizations such as Nearby Nature
    - Wildlife data monitoring that shows positive impacts
    - More native plantings including pollinator plantings (Hendricks Park mentioned as one example)
    - Partnership with volunteer groups
  - Signs or informational features about:
    - Wildlife (turtles, birds, fish, plants, flowers, pollinators, etc.)
    - Park rules (swimming, fishing, algae/other risks, dog rules, areas where humans not permitted)
    - Native tribes
    - Park history
    - Trails, distance markers
  - More trails:
    - Alton Baker (Pre's) and Amazon Park (Rexius) trails mentioned as examples
    - Connection from paved trail along Jessen on west side of ponds
    - Trail closures during more sensitive times (large events, turtle reproductive season)
    - Trails suitable for cross-country meets with different grades and a section large enough for a starting line (75-100 feet wide and 250-300 feet long)
  - More picnic facilities
  - More benches
    - Strategically placed in scenic locations (not with trees in front)
    - Some covered benches
  - Accessibility for people experiencing disabilities and using mobility-assistance devices (e.g. wheelchairs)
- Desired by few:
  - Memorial for the people who died in the ponds and others
  - Pedestrian bridge over channel on west side of ponds
  - Boardwalk near/over the water (Delta Ponds as example)
  - More meandering channel
  - Wildlife viewing blind
  - More waste bins
  - Ability to organize gatherings such as plein air painting
  - Bicycle path around/near ponds connecting to other bike paths
  - Butterfly enclosure (Elkton Community Education Center mentioned as example)
  - Community garden
  - Disc golf course
  - An environmental education center with an indoor classroom/display area and outdoor amphitheater that showcases sustainable practices and promotes community improvement projects run in partnership with WREN, Cascade Raptor Center, and/or others
  - Roller hockey rink
  - Sand volleyball
  - Pickleball courts
  - Restrooms
- Mixed opinions
  - Path lighting for accessibility/safety at night (Amazon Park mentioned as example). Some want minimal/no lighting to avoid disturbing wildlife.
  - Some don't like bark trail material because it stains, gets stuck in shoes, and is less accessible for those with disabilities.
- Not desired
  - Trout stocking
  - Motorized boats including toy boats
  - Tripping hazards on paths
  - Pesticides
  - Algae bloom
  - Artificial turf fields and associates negative impacts

- Litter, including needles
- Illicit use
- Crowds
- Vehicle noise
- No sports facilities and/or minimal change at the park (40-50 comments)

Sports Complex

Within the proposed park's sports complex area, Figure 12 shows respondents ranked rectangle fields highest, on average, followed by courts and then diamonds.

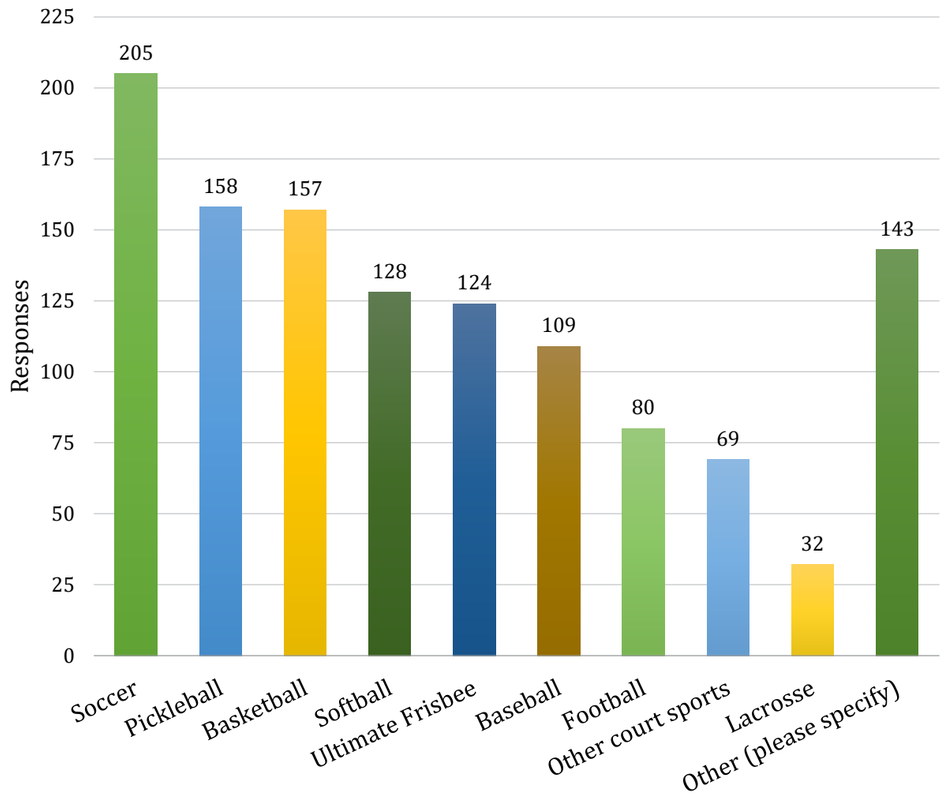
Figure 12. Which sport facility types are most important to you and your household to include? (rank 1-3 with 1 as most important) (n = 409)



One demographic group, those who live within a half mile of the park, ranked courts highest, on average, followed by rectangle fields and then diamonds.

Soccer was the most important sport to include for respondents. Other sports in the top five were pickleball, basketball, softball, and ultimate frisbee, as shown in Figure 13.

Figure 13. Which sports are most important to you and your household to include? (choose top 5) (n = 431)

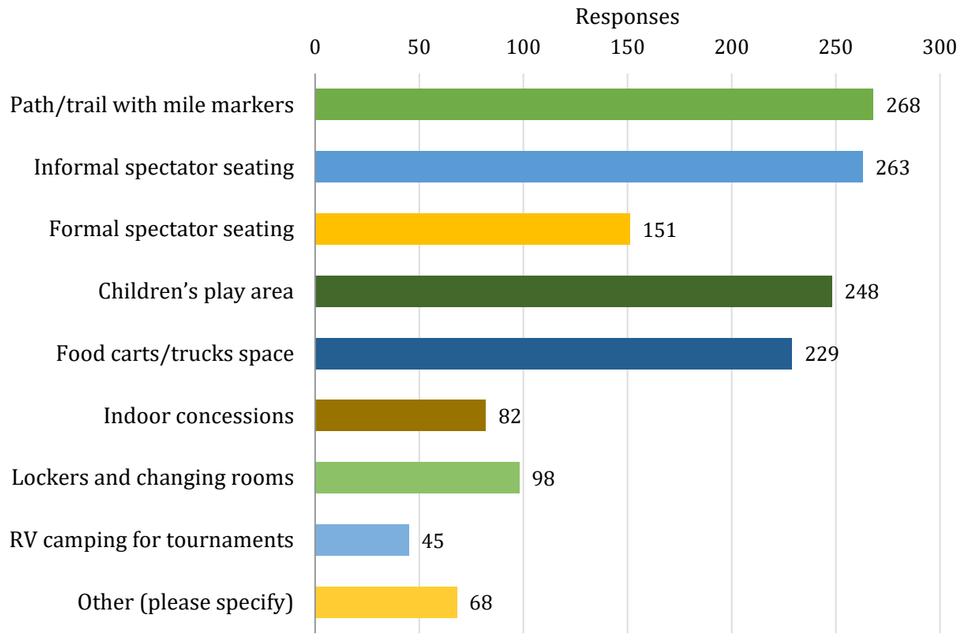


Sports listed in the "other" comment option are summarized below in order of most mentioned. This list shows outdoor volleyball is more important to survey takers to include than the least chosen rectangle field sport, lacrosse.

- Volleyball (outdoor) (42 comments)
- Disc golf (16)
- Volleyball (indoor or unspecified) (15)
- Tennis (15)
- Roller hockey/staking (10)
- Biking, BMX (9)
- Running/walking (9)
- Other (4 or fewer): badminton, futsal, golf/putt-putt, racquetball, rock climbing, tetherball, skateboarding, swimming, water sports
- No sports (18 comments)

Path/trail mile markers were the most chosen sport facility accessory, followed by informal spectator seating, a children's play area, and space for food carts/trucks. Figure 13 shows how more respondents chose informal over formal seating and food carts/truck space over indoor concessions.

Figure 13. Which sport facility accessories are most important to you and your household to include? (choose top 5) (n = 447)

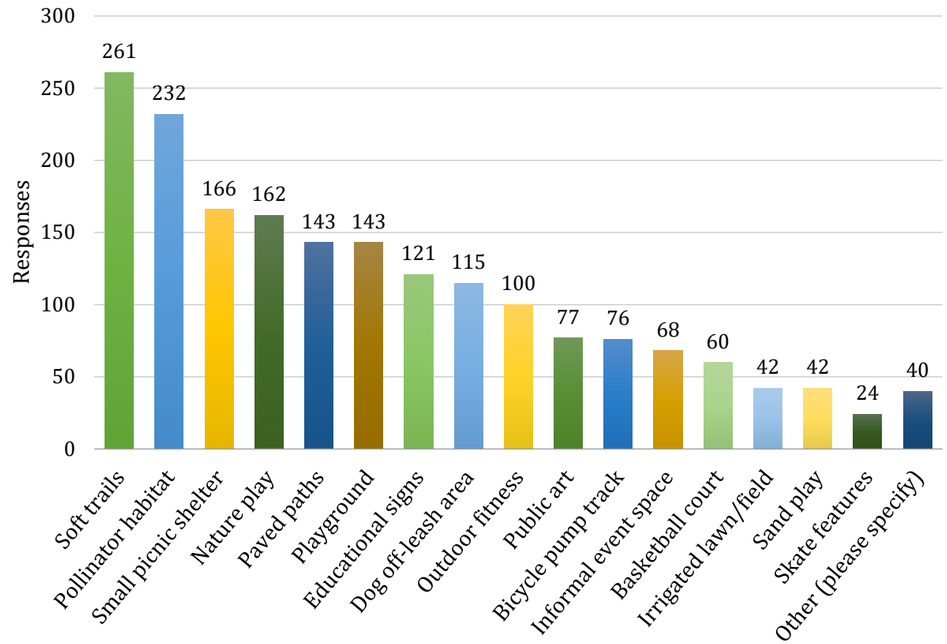


In the "other" comments, respondents noted desire for no sports facilities (18 comments), bathrooms, outdoor volleyball, disc golf, roller hockey/skating, and field lighting.

Neighborhood Park

The top five neighborhood park amenities were soft trails, meadow/pollinator habitat, small picnic shelter, nature play, paved paths, and playground (the last two received equal selections).

Figure 14. Which amenities are most important to you and your household to include in the neighborhood park? (choose top 5) (n = 426)



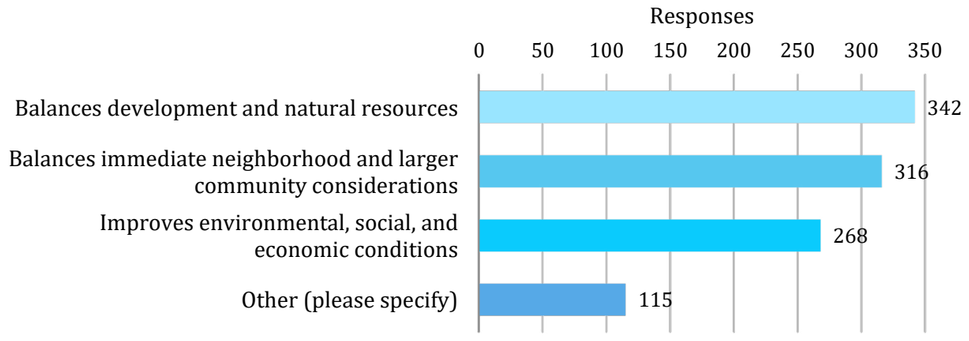
For respondents who live within a half mile of the park, the typical neighborhood park service area, the top five amenities were soft trails, meadow/pollinator habitat, small picnic shelter, dog off-leash area, and playground.

In the "other" comments, respondents desired disc golf, bathrooms, outdoor volleyball, spray/splash play, and a roller hockey/skating area. Desire for no development was expressed in 11 comments.

PARK VISION

Respondents could choose multiple options for their ideal park vision including an "other" open-comment option. Most respondents desire a park that balances development and natural resources. Many respondents also desire a park that balances considerations of the immediate neighborhood with the larger community and that improves social, economic, and environmental conditions.

Figure 15. My ideal Golden Gardens Park _____. (check all that apply) (n = 670)



In the "other" comments, respondents expressed desire for no/minimal development as well as for specific sports facilities, other park amenities, and accessibility.

The final open-ended question asking for any other comments, suggestions, questions, etc. received 271 comments. Respondents expressed more desire for no/minimal development as well as for specific facilities and amenities.

PROJECT AWARENESS

Respondents heard about the project from a variety of sources, summarized below in order of most chosen (total responses/mentions in parentheses). Facebook was the most common source.

1. Facebook (213 responses/mentions)
2. Email (148)
3. City website (119)
4. Sign in park (75)
5. Postcard (49)
6. Newspaper (28)
7. Instagram (26)
8. Radio (6)
9. Other (please specify) (195)
    a. Word of mouth: friend, family, neighbor, coworker (~62)
    b. Other social media (34): Reddit (21), Nextdoor (8), Meet Up (3), Twitter (1), other (1)
    c. School flyer, blog/newsletter, field trip, PTO meeting (23)
    d. Direct outreach (14): at food trucks near school (8), at Petersen Barn day care (4), and through Alex Reyna (2)
    e. Sports group or teammate (13): ultimate frisbee (5), volleyball (3), pickleball (1), softball (1), other (3)
    f. Neighborhood association (9)
    g. TV news (5)
    h. Other online news (2)
    i. City transportation newsletter (1)

Most respondents (85%) did not attend the first project meeting on January 24 in person or remotely.

Golden Gardens Park Concept Plan

Survey 2 Results Summary

Golden Gardens Park was identified in Eugene's 2018 Parks and Open Space System Plan for development of a regional sports complex and neighborhood park. The park also has valuable wildlife populations after years of collaborative efforts to improve habitat in and around the site's former gravel pits.

In spring 2023, staff used a survey on the City's Engage Eugene website to better understand community preferences and feedback on draft designs for the future park. This report summarizes results of key questions and highlights any differences among demographic groups. The report is divided into sections:

- Respondent demographics
- Draft design feedback
- Project awareness

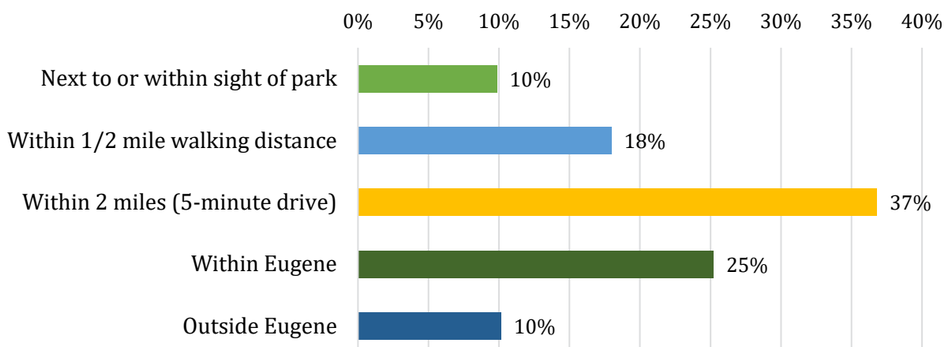
RESPONDENT DEMOGRAPHICS

The survey received 345 total responses from a diverse mix of residents. The survey is not a statistically representative sample, and responses are not weighted to accurately represent the community. The results offer some insight, however, into how residents feel about the future of the park.

The number of respondents who answered each question is shown in parentheses in the figure title (n = X). Respondents were not required to use an Engage Eugene account, and it is possible some took the survey more than once. Significant differences in respondent demographics from survey 1 are highlighted below.

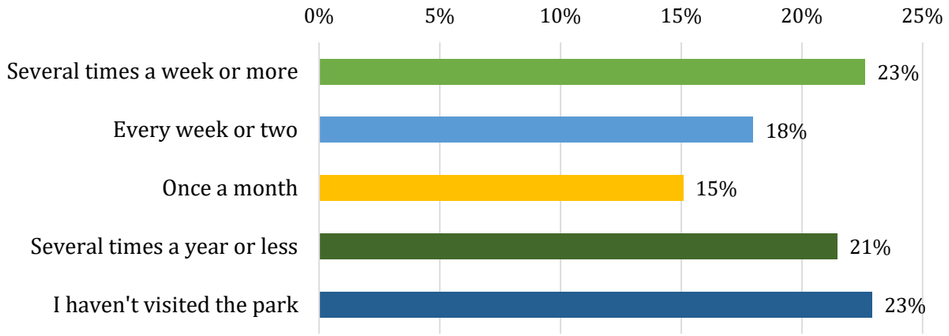
In addition to typical demographics, the survey asked respondents how close they live to the park and how often they visit. The largest group lives within 2 miles (5-minute drive) but more than a half-mile (5-6 block walking distance) from the park. Including those living next to or within sight and those within a half mile, Figure 1 shows about two-thirds of respondents live within 2 miles of the park, an increase from survey 1 in which about half of respondents lived within 2 miles.

Figure 1. How close to the park do you live? (mandatory, n = 345)



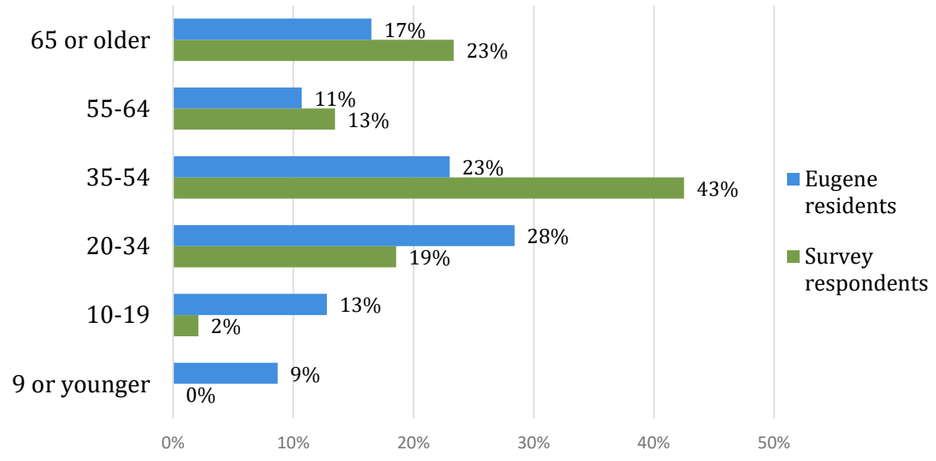
More than half (56%) of respondents visit the park monthly or more often. Figure 2 shows 21% visit a few times a year or less, and 23% have never visited.

Figure 2. About how often do you visit the park? (mandatory, n = 345)



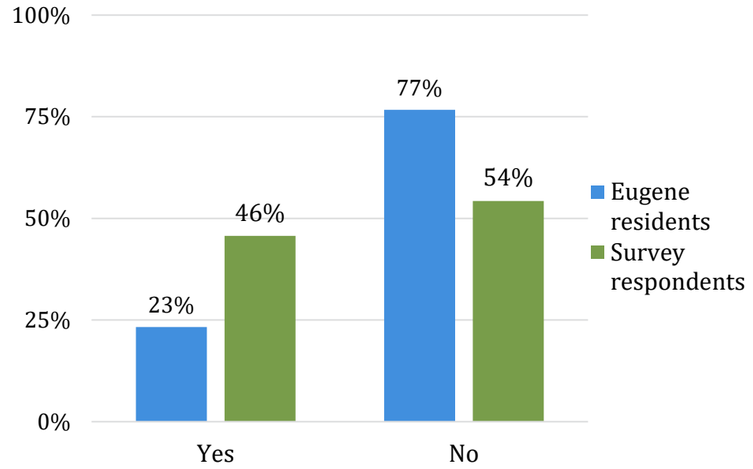
Respondents skew older than the City's population. Figure 3 shows youth are underrepresented, with no respondents 9 or younger and seven respondents (2%) aged 10-19. The largest group were aged 35-54.

Figure 3. How old are you? (n = 334)



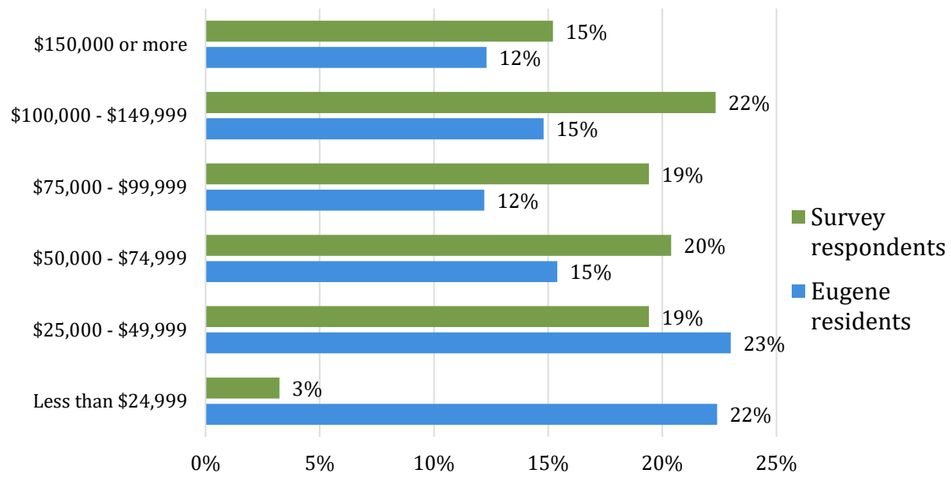
Most respondents (54%) do not live with children. However, Figure 4 shows respondents are more likely to live with children than the average Eugene resident.

Figure 4. Do children aged 0-18 live in your household? (n = 337)



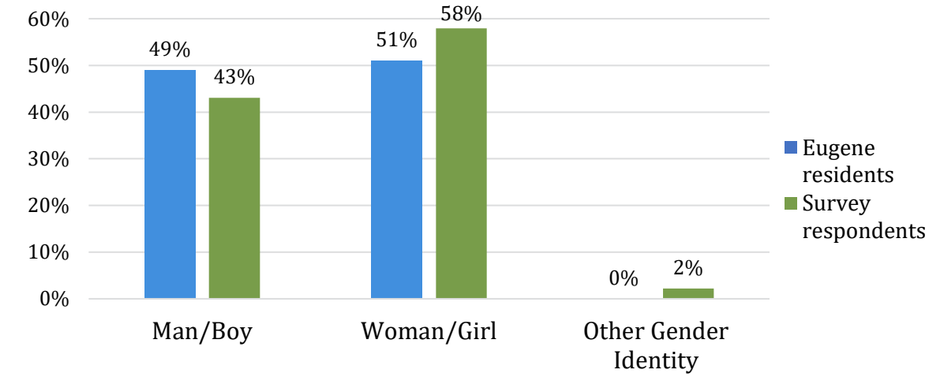
Middle- and high-income respondents are overrepresented. Figure 5 shows less than a quarter have annual household incomes under $50,000, compared to half of Eugene residents. For reference, the 2022 area median income (AMI) for the Eugene-Springfield area was $55,800 per year for a one-person household and $79,600 per year for a four-person household.

Figure 5. What is your annual household income? (n = 309)



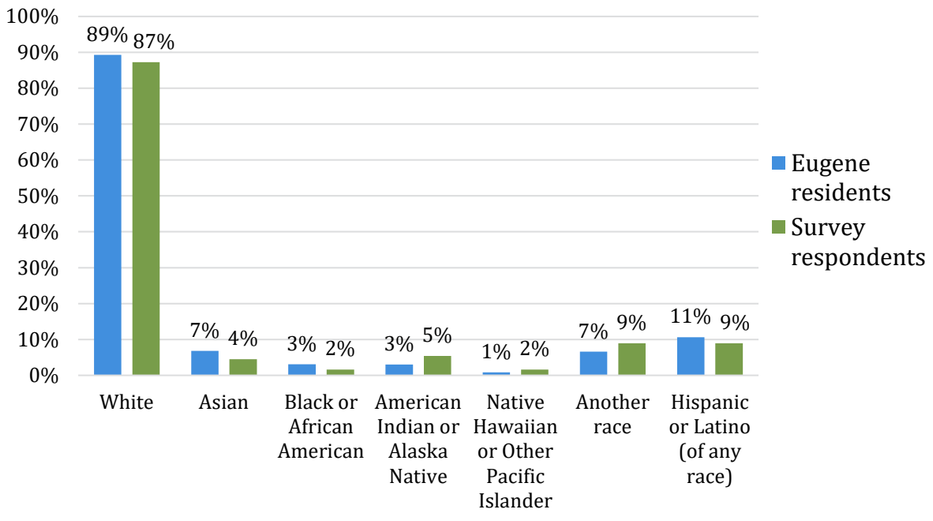
More respondents identified as women/girls, and men/boys are underrepresented compared to the City's population (Figure 6). About 2% of respondents identify with another gender (not an available answer in the Census survey).

Figure 6. What is your gender identity? (select all that apply) (n = 316)



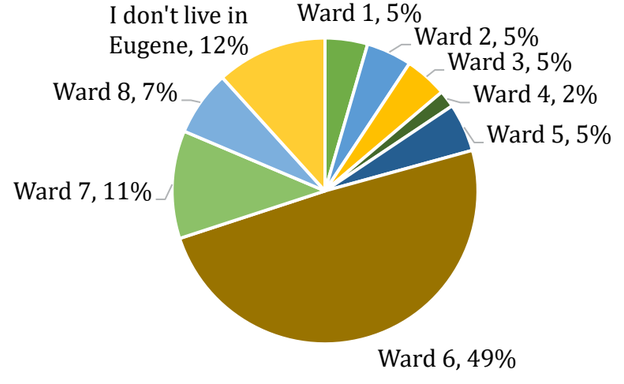
Most respondents are white (87%). The next most selected racial/ethnic identity was Hispanic/Latino (9%) followed by another race/ethnicity (7%). About 9% of respondents chose more than one racial/ethnic group, and two respondents chose every category. Figure 7 shows how survey respondents compare with all Eugene residents.

Figure 7. What is your racial/ethnic identity? (select all that apply) (n = 313)



Respondents include residents from all eight City Council wards. About half (49%) live in Ward 6, which is in Bethel where the park is located, an increase from survey 1 in which 33% of respondents lived in Ward 6. Figure 8 shows this was followed by adjacent ward 7 (11%), which includes the River Road, Santa Clara, Trainsong, and Whiteaker neighborhoods, and then ward 8 (7%), which includes more of Bethel and the West Eugene and Churchill areas.

Figure 8. What City Council ward do you live in? (n = 333)



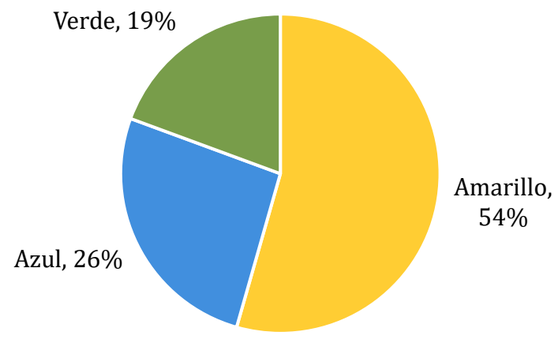
DRAFT DESIGN FEEDBACK

The remaining question summaries include general results and highlighted differences, if any, among demographic groups.

Overall Preference

Slightly more than half of respondents chose Amarillo as their preferred draft design. Figure 10 shows about a quarter preferred Azul, and the remaining respondents chose Verde.

Figure 10. Overall: Which concept do you prefer? (n = 294)



When asked why they chose that draft design, respondents provided 228 comments.

Those who chose Amarillo mostly said they liked the greater amount of natural area. Some noted they wanted sand volleyball, some said they liked the way different sports field types were grouped together (diamonds vs. rectangles), and some expressed more general support.

Those who chose Azul mostly noted they appreciated the amount of sports fields (especially the amount of diamonds for softball). Some said they liked the layout and use of space generally. Some noted the parking layout, and a few noted the dog park location.

Those who chose Verde mostly noted they appreciated the sports fields (especially the multipurpose fields) and amount of possible rectangle fields. Some noted they liked the pump track and/or nature play area, and some noted they liked the plan more generally.

Preference in Park Subcategories

In addition to being the most preferred draft design overall, Amarillo was most preferred in the park subcategories: access and parking, conservation area, neighborhood park, and sports complex. In the access and parking, sports complex, and overall categories, Azul was the second most chosen preference. In the conservation area and neighborhood park categories, Verde was the second most chosen.

For respondents who live within a half mile of the park, the typical neighborhood park service area, the top preference for neighborhood park was Amarillo. This was the same for respondents living within 2 miles.

Feedback on Specific Features in Each Draft Design

Just over half (53%) of respondents chose to view more detailed questions about each draft design.

Respondents rated specific aspects of the three draft designs using a five-point Likert scale ranging from like very much to dislike very much. Results are summarized below, with aspects not present in that draft omitted due to lack of clarity:

- Amarillo features
  - Mostly like
    - Vehicle parking locations
    - Footbridge locations
    - Diamond fields location/configuration
    - Rectangle fields location/configuration
    - Multipurpose courts location
    - Dog park in sports complex
    - Amount of open space
    - Separation of natural space and developed areas
    - Bark trail locations
    - Playground location in neighborhood park
    - Nature play
    - Half-court basketball
    - Outdoor exercise equipment
    - Sand volleyball
  - Mostly dislike
    - Managed RV parking
- Azul features
  - Mostly like
    - Vehicle parking locations
    - Footbridge locations
    - Rectangle fields location/configuration
    - Multipurpose court location
    - Amount of open space
    - Separation of natural space and developed areas
    - Bark trail locations
    - Playground location in neighborhood park
    - Dog park in neighborhood park
    - Half-court basketball
    - Outdoor exercise equipment in neighborhood park
  - Mostly dislike
    - Managed RV parking
    - Diamond fields location/configuration
- Verde features
  - Mostly like
    - Footbridge locations
    - Dog park in sports complex
    - Amount of open space
    - Separation of natural space and developed areas
    - Bark trail locations
    - Playground location in neighborhood park
    - Nature play
    - Pump track
  - Mixed opinions
    - Vehicle parking locations
    - Diamond fields location/configuration
    - Rectangle fields location/configuration
    - Multipurpose fields (diamond/rectangle)
    - Multipurpose court location
  - Mostly dislike
    - Managed RV parking

Notably, managed RV parking was mostly disliked across all three concepts. Also, while most respondents liked the vehicle parking locations, diamond and rectangle field locations/configurations, and multipurpose court location in Amarillo and Azul, those aspects in Verde drew more mixed opinions, and Verde's multipurpose field (for both diamond and rectangle field sports) received mixed ratings.

Most Liked Features in Each Draft Design

Respondents who chose to view more detailed questions were asked what they liked most about each draft design. These three open-ended questions received 338 comments. The list below summarizes high-level takeaways with the number of comments mentioning that topic in parentheses:

- Amarillo
    - Size/separation of nature area (~60)
    - Sports field layout (~35, mostly diamonds and rectangles separated and consolidated, some noted prefer rectangle fields on west side)
    - Trail (7-8, loop around ponds without being too close to sports facilities)
    - Dog park location (8)
    - Sand volleyball in neighborhood park (6)
    - Nature play (3)
    - RV idea generally (2)
    - General don't like (9)
- Azul
    - Sports fields (~25, mostly number of diamonds [15], especially for softball, and location/clustering, also indoor batting [5])
    - Parking (15-20, mostly amount, some layout/access)
    - Dog park (10, mostly location, some proximity to playground)
    - Natural space (8, some noted interpretative area close to Jessen, multiple interpretative areas desired)
    - Neighborhood park (7, mostly outdoor exercise equipment location)
    - Path/trail (~5, mostly longer/more trails around ponds)
    - General don't like (20)
- Verde
    - Sports fields (26, mostly multipurpose fields, some more rectangle fields/rectangle fields on both sides, some clustering of diamond fields, diamond field outfields closest to natural area)
    - Natural space (13, mostly noting it as best part of park, some noting interpretative area location)
    - Neighborhood park (11, mostly pump track)
    - Dog park location (7-8)
    - General don't like (16)

Least Liked Features in Each Draft Design

Respondents who chose to view more detailed questions were also asked what they liked least about each draft design. These three open-ended questions received 353 comments. The list below summarizes high-level takeaways with the number of comments mentioning that topic in parentheses:

- Amarillo
    - Parking (~35-40, not enough, too spread out)
    - Sports fields (~28, mostly number of fields, some desiring more rectangle/multipurpose fields than diamonds, some wanting diamonds all closer together, 2-3 wanting diamonds and rectangles on both sides)
    - Nature area (14, mostly wanting larger natural area, some wanting more native plantings and restoration work)
    - RV parking (12)
    - Neighborhood park amenities (10, including 3 lack of pump track, 2 sand volleyball, 2 lack of event space, 2 lack of bathroom)
    - Trails (9, not enough, removal/change from west side of pond)
    - General don't like (~17)
- Azul
    - Sports fields (38, mostly too many, especially diamond fields, some diamond field layout, a few not enough rectangle fields)
    - Nature area (24, mostly size, some concerns about artificial turf)
    - Parking (20, some too much, some not enough, some concerned about baseballs hitting cars, a few about location next to private property)
    - Trails/paths (5, want more and closer to natural area vs. sports facilities)
    - RV parking (5)
    - General don't like (~17)
- Verde
    - Sports facilities (~30, mostly too many fields, some not enough rectangle fields, a few not enough diamonds, indoor batting > outdoor, a few want courts closer to neighborhood)
    - Trails/paths (~15-20, not enough, need loop, want trail closer to natural area and farther from sports facilities)
    - Parking (~10, not enough, a few about too close to private property)
    - Nature area (~15, not large enough)
    - Neighborhood park (~12, 5 pump track, 3 lack of volleyball, 2 lack of restroom)
    - RV parking (8)
    - Lack of memorial (2)
    - General don't like (~17)

The final open-ended question asking for any other comments, suggestions, and questions received 196 comments, a decrease from 271 comments in survey 1. The list below summarizes high-level takeaways with the number of comments mentioning that topic in parentheses:

- General do not like (~48)
- Natural area (~38, mostly desire to preserve existing natural area and/or increase the space between the pond area and sports facilities, some suggestions for ecological enhancements and other improvements)
- Sports facilities (29, desire for courts closer to neighborhood, sports fields father from neighborhood, specific diamond field aspects, and more rectangle and multipurpose fields; mixed opinions on turf)
- Neighborhood park amenities (28, desire for sand volleyball, nature play, bathrooms, pump track, dog park)
- Car parking, access (22, concern about traffic, desire for more car parking, lots farther from homes, close ADA access,)
- General support (~20)
- RV parking (15, mostly concerns, do not like)
- Paths, trails (12, desire for more trails, ability to loop around ponds on trails without being too close to sports facilities, ADA trail)
- Dog park (12, mixed opinions about location in neighborhood park and near playgrounds and recreation facilities; some suggest more than one dog area)
- Bathrooms (8, mostly desire for bathroom in neighborhood park)

PROJECT AWARENESS

Respondents heard about the project from a variety of sources, summarized below in order of most chosen (total responses/mentions in parentheses). Facebook was the most common source.

1. Facebook (106 responses/mentions)
2. Email (90)
3. Sign in park (77)
4. City website (54)
5. Postcard (22)
6. Newspaper (14)
7. Instagram (12)
8. Radio (4)
9. Other (please specify) (87)
    a. Word of mouth: friend, family, neighbor, coworker (~47)
    b. Direct outreach (12)
    c. Sports group or teammate (10): softball (4), ultimate frisbee (2)
    d. Neighborhood association (7)
    e. School flyer, blog/newsletter, field trip, PTO meeting (3)
    f. Other social media (Nextdoor): (1)
    g. TV news (1)
    h. Other online news (1)

Most respondents (68%) had not attended a meeting in person or remotely about the project (offered in January and May), a decrease from survey 1 in which 85% of respondents had not attended a meeting about the project.

TG TURELL GROUP

CITY OF EUGENE PARKS AND OPEN SPACE DIVISION

GOLDEN GARDENS SURVEY #3

December 2024

SUMMARY

Community members weighed in on the Golden Gardens Park design through a survey collected online and on paper. With over a thousand people weighing in, this park is of great interest to many people. The survey shows support for the design, with people indicating they are likely to visit the natural areas (87%), the neighborhood park (64%) and the sports complex (60%). Additionally, a majority of participants feel the design is representative of the community's needs.

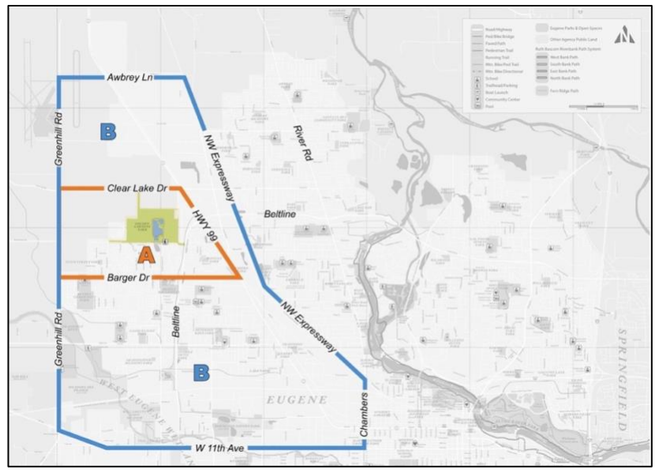
In providing feedback on the performance of the Parks and Open Space Division in its objective to create a plan that is responsive to the needs and input of the community, respondents scored the City with a weighted average of 3.04 points (with "extremely well" as 4 points, "somewhat well" as 3 points, "not so well" as 2 points, and "not at all well" as 1 point.)

Covering a large geographic space of 223 acres, the park design offers something for everyone. The entire community has a high interest in the natural areas (87%), with nearly all those closest to it indicating they are likely to visit (94%). Interest in the neighborhood park is very high (80%) among those living closest to it. Nearly every respondent (97%) who indicated they go to parks to play on courts or fields indicated they are likely to use the sports complex.

This proposed park design achieves its goal of balancing the needs and interests of people who visit parks for different purposes.

KEY FINDINGS

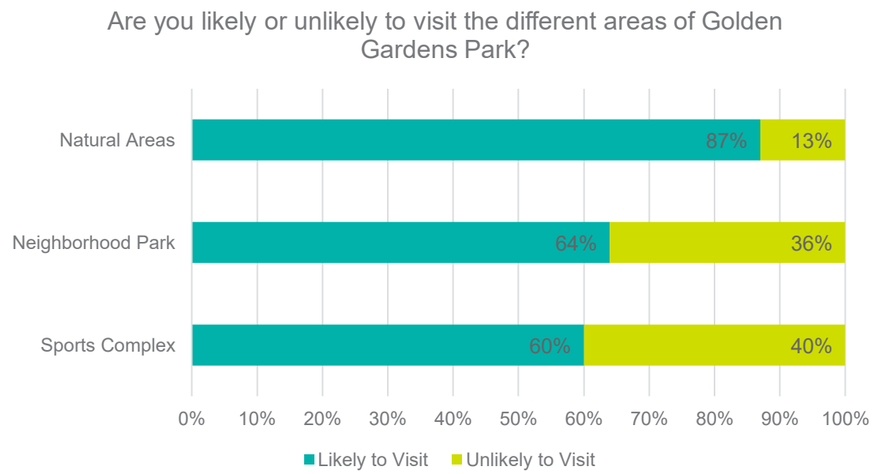
A fifth (20%) of survey respondents live in the immediate area of the park (Area A), and another fifth (20%) live in the greater Bethel area (Area B). The remaining three-fifths (60%) live outside of the Bethel area (60%). All responses were analyzed to understand if proximity to the proposed park affected



respondents' answers. All responses to the survey are included in Appendix A and are segmented for the responses for each area of residence. The paper version of the survey is included in Appendix B.

COMMUNITY INTEREST

This proposed park is of great interest to many in the community, with 1,065 responses submitted. Nearly all respondents, regardless of where they live, indicated they are likely to visit the proposed park's natural areas (87%), and most said they were interested in the neighborhood park (64%) and the sports complex (60%).



Those who live in Area A are more likely to visit the neighborhood park (80%), than those who live in Area B (63%) or outside of the Bethel area (58%). Conversely, those who live outside of the Bethel area are more likely to visit the sports complex (67%) than those who live in Area B (54%) or those in Area A (48%).

ASPECTS LIKED MOST AND LEAST

Respondents were asked to indicate which aspects of each park area they liked the most and least. If there were no elements they liked or didn't like, they were instructed to select "none." The following table shows the specific aspect of each park area that were selected most as an aspect that they liked. In all areas, most respondents selected "none" when asked to identify elements they liked the least, indicating that most respondents are happy with the proposed design.

	Liked Most	Liked Least
Neighborhood Park	Walking path	None
Natural Area	Protected pond turtle habitat	None
Sports Complex	Rectangle courts and multisport courts	None

PARK AREAS AND RESPONDENT CHARACTERISTICS

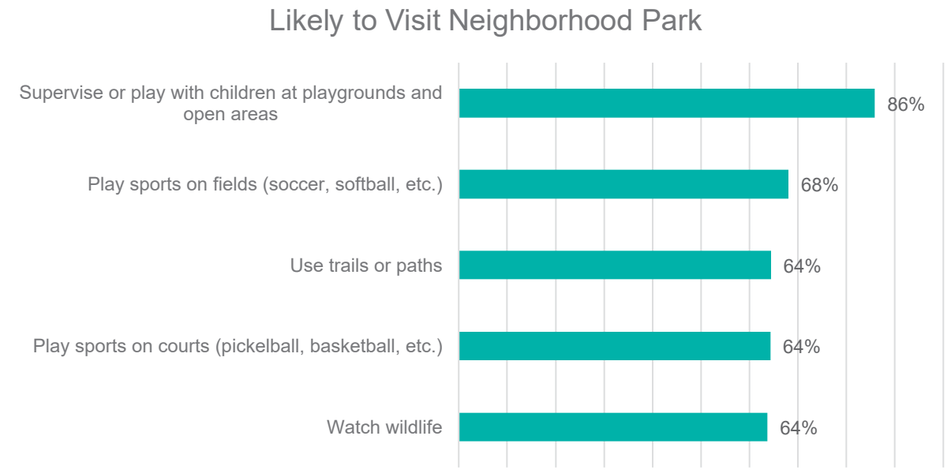
The survey asked respondents about their demographic characteristics such as age, race/ethnicity, if they own or rent their homes, along with what they do in parks. In the analysis, we correlated characteristics with which areas of the park they indicated they were likely or unlikely to visit, as well as what aspects of the design they liked most and least.

NEIGHBORHOOD PARK

The neighborhood park drew the most interest from those who live nearest it, Area A, with 80% of these residents indicating they are likely to use it. The walking path and the playground are the aspects most liked by those living in Area A. Unsurprisingly, people who indicated they are typically in parks to supervise or play with children at playgrounds and open areas are significantly more likely to go to the neighborhood park (86%), as well as people aged 25 to 34 (71%) and 35 to 44 (75%).

Those who are there to supervise or play with children most liked the playground (60%). The group with the highest level of something they disliked were those who watch wildlife, 22% of whom did not like the irrigated lawns.

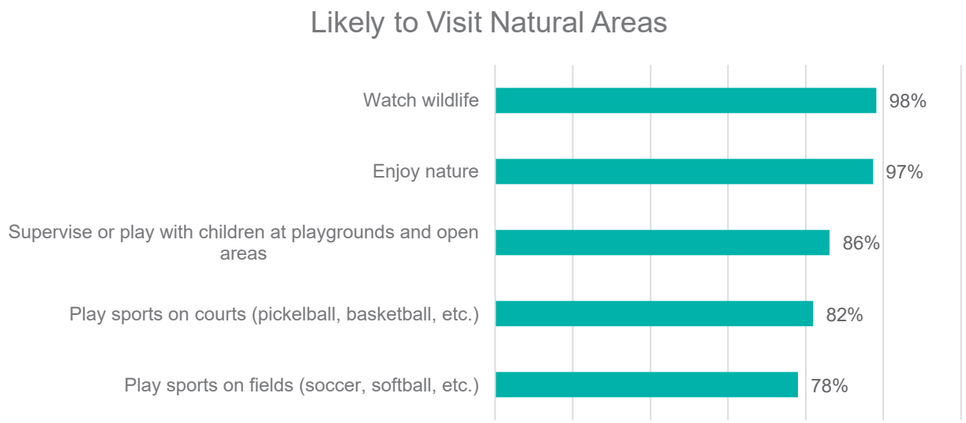
The following chart shows how five groups of park users responded is their likelihood for visiting the neighborhood park. A similar chart is shared for each area of the park. These five groups are the most likely to visit one or more areas of the park. These illustrate how the proposed park design offers something that will be highly used by those it is designed to serve. The responses of all segments are included at the end of Appendix A.



NATURAL AREAS

The natural areas, which 87% of respondents indicated they are likely to visit, are most likely to be visited by those who watch wildlife (98%), enjoy nature (97%) and relax (97%). Those who play sports are less likely to visit, but still 82% of those who use courts and 78% of those who play sports on fields indicated they are likely to visit the natural areas.

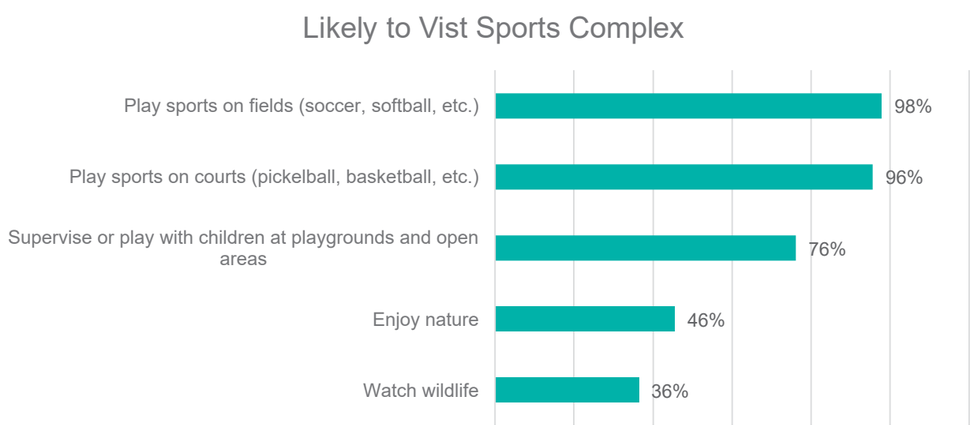
While the protected pond turtle habitat was supported by most segments, those who watch wildlife supported it most strongly (49%). No group had a strong negative sentiment for any aspect of the natural areas, which constitute 168 acres of the proposed park's total 223 acres.



SPORTS COMPLEX

Of those who play sports on fields or on courts, almost all said they were likely to visit the sports complex (97%). These groups also found little they didn't like with the sports complex design.

The segment least likely to use the sports complex are those who watch wildlife, with only 36% indicating they were likely to visit the sports complex. This segment is also the most likely to select an aspect of the sports complex that they least like with 43% of this group indicating they liked none of the proposed aspects of the sports complex.



Unsurprisingly, as people age, they are less likely to visit the sports complex, with 54% of those age 65 to 74 and 67% of those 75 year or older indicating they are unlikely to visit the sports complex. The age brackets of respondents range from 11 and under to 75 years and older.

Those who play sports on fields most liked the rectangle fields (43%) and diamond fields (29%), while those who play sports on courts most liked the multisport courts (36%). The group with the highest level of something they disliked were those who volunteer at parks, 35% of whom did not like the diamond fields.

PROJECT FEEDBACK

The survey sought feedback from the community on how well the Parks and Open Space Division did in its task of creating a plan that is responsive to the needs and input of the community.

To facilitate understanding the results, potential responses are weighted with "extremely well" as 4 points, "somewhat well" as 3 points, "not so well" as 2 points, and "not at all well" as 1 point. A fifth option of "I don't know" was also offered and is not included in the weighted average.

Preceding this survey, the City of Eugene Parks and Open Space Division engaged with the community multiple times culminating in this proposed park plan. The survey asked about the communication and design process to understand how the community has experienced the community input part of this park design process.

Survey respondents scored Parks and Open Space highest in developing a design that responded to the community's needs, with most respondents indicating that the design responded to the community's needs extremely well or somewhat well. For all three communication-focused questions, as well as responding to community input, respondents rated the performance just below somewhat well. The lowest score received was in explaining the trade-offs and constraints.

The following table shows the weighted average to each question asking how well Parks and Open Space did in each area, based on the experience of the respondent.

	Weighted Average
Communicate about the process?	2.95
Gather community input?	2.98
Explain trade-offs and constraints?	2.67
Respond to community input?	2.85
Develop a design that responded to the community's needs?	3.04

WRITE-IN COMMENTS

Just over 400 people wrote in comments about the Golden Gardens Park design. Sentiments included support for the park design, opposition to the park design, respondents' ideas, requests for additional sports to be included in the design, concerns about lights, and worries about how long the park design has already taken and the long timeline for completing the project. All responses have been shared with the Parks and Open Space Division.

Positive themes include:

- Support for sports complex

- Appreciation of walking paths
- Enthusiasm for protected pond turtle habitat

Negative themes include:

- Environmental concerns
- Criticism for sports complex with a preference for maintaining a natural space
- Concerns about traffic and noise

DEMOGRAPHICS AND SENTIMENT

HOMEOWNERS AND RENTERS

Most respondents own their own home (85%). This is much higher than expected, with just under half of Eugene residents owning their own home (See data source).

The 15% of respondents who rent differ significantly than homeowners in the following ways. Renters:

- Supported the neighborhood park and the sports complex to a higher degree.
- Evaluated the processes in the park development more positively, with a significantly higher weighted average than homeowners in every category except for explaining trade-offs and constraints.
- Skewed younger, with 36% of renters falling into the 25 to 34 age group. While 91% of homeowners are 35 years or older, 49% of renters are 34 years or younger.

AGE

The following describes differences in responses based on age of respondents.

- Younger people (under 55) are more likely to visit the sports complex and are most supportive of the design. They are more likely to use playgrounds, play on sports fields and courts, spend time in parks with family and friends and picnic.
- Older people (over 55) are more likely than younger people to indicate they watch wildlife. People ages 65 and older are least supportive of the sports complex.
- All age groups enjoy being in nature in parks and use walking and pedestrian paths throughout the proposed park.
- People ages 25 to 34 and those over 75 years old are most supportive of the protected pond turtle habitat.
- People ages 25 to 44 are more supportive of the communications of the park development process, of the gathering of community input, explaining trade-offs and constraints, responding to community input and the development of a design that responded to community needs.

PROXIMITY TO PARK

People who live closest to the proposed park (Area A) are different than people who live further away yet still in the Bethel area (Area B) or people who live outside of the Bethel area in the following ways.

- Liked the protected pond turtle habitat in the natural area more than the other residential areas.
- Indicated to a significantly level that they are more likely to watch wildlife, with 61% of those in Area A indicating they engage in this activity. In addition, they are significantly more likely to indicate that they walk/exercise a dog (54%) and picnic (24%). Whether this is true of all who live in this area or are the characteristics of those who chose to take this survey is impossible to determine, since this survey was not designed to collect a representative sample of the residents.
- Indicated to a significant level that they are less likely to play on sports fields (25%) or on courts (20%) than others who participated in the survey.
- Liked the fewest features in the sports complex, with their dislike spread across most features.
- Scored the performance of Parks and Open Space lower in all categories.

METHODOLOGY

From Oct. 21 through Dec. 8, 2024, Turell Group oversaw a survey of residents of the City of Eugene on behalf of the Parks and Open Space Division. The survey was designed to understand the area's response to the proposed Golden Gardens Park design. Of the 1,065 evaluated respondents, 979 were submitted through the online English version of the survey and 41 were submitted in English by paper. Forty-five were submitted through the Spanish-language version online. Forty-five (45) responses were disqualified as likely being orchestrated by the same individual and are not included in the 1,011 evaluated responses.

After the survey closed, we discovered that the acreage cited in the survey tools was incorrect. The acreage cited in this report is correct. The survey tools in Appendix A and B are what the public saw in the survey. Future references to the acreage should be careful to use the acreage noted in the report and not in the survey too.

RESEARCH METHODOLOGY

The survey was available online and via printed copies, which were available at a community meeting about the proposed project. Both the online and printed surveys were available in English and Spanish. The survey took approximately 5 minutes to complete.

Participants could elect to participate in a drawing for a $50 gift certificate to Jerry's Home Improvement Center. The drawing was completed by Turell Group and was awarded by the Parks and Open Space Division.

All survey questions were analyzed for correlation with frequency of park use, age, gender, race/ethnicity, area of residence, language chosen to complete the survey and if they rent or own their home.

To reduce any effects of participants' unintentional preference for the first option listed, in the online version, options for multiple choice questions were presented in a random order, and Likert scale questions were flipped (low-to-high, then high-to-low) each time the question was presented to a new participant in the online survey.

LIMITATIONS

Any sampling of opinions or attitudes is subject to a margin of error. The margin of sampling error represents the difference between the sample and the entire population. For this study, the sampling error is +/- 3% at a 95% confidence interval. This means there is a 95% probability that the sample taken for this study falls within this margin of error if all residents of the area were surveyed. Due to rounding, some percentages do not add up to 100%; in the survey responses provided in the Appendix, results may add up to 99% or 101%.

Participants self-selected to participate and may not be a representative sample of all residents.

TURELL GROUP

Turell Group is a full-service marketing and communications agency in Eugene, Oregon, that offers independent research as a service. Its staff has provided unbiased research and communications services for more than two decades. The agency is non-partisan, independent and specializes in supporting organizations primarily in Oregon.

Golden Gardens Park Concept Plan

Public Event 1 Summary

As part of the Golden Gardens Park Concept Plan public involvement process, the City of Eugene held the first of three proposed public events on Tuesday, Jan. 24, 2023, from 5:30–7 p.m. in the Willamette High School media center and remotely via Zoom. The meeting is summarized in the following sections below:

- Project Overview
- Q&A
- Group Discussions
- Wrap Up & Next Steps

PROJECT OVERVIEW

City of Eugene landscape architect and project manager Mark Kosmos thanked participants for engaging with the Golden Gardens Park planning process and shared ways to provide more input and to receive project updates. Kosmos and Carolyn Burke, City parks and natural resources planning manager, provided background including the park size and location and the project's history, goals, and timeline. For more detail, watch the video recording of the meeting from 2:17 to 23:00.

Q&A

Project staff answered questions from in-person and remote participants. Participants' questions and concerns are paraphrased and organized by topic below:

- Wildlife and conservation area
  - Will construction scare the wildlife?
  - Can new construction be far away from the habitat areas? Why not create a 150-foot minimum buffer?
  - I'm concerned about endangered lupine and butterflies.
  - I'm concerned about wildlife and habitat loss.
  - I do not want sports facilities, but if they are added, vegetation should also be added to support wildlife including migrating birds.
  - I'm concerned about increased noise ruining the conservation area ambiance.

- Neighboring property impacts
  - Will the unpaved section of Jessen Drive adjacent to the park be paved? This should be included in the project.
  - Will there be a buffer between the park and neighboring properties on Wilbur Road?

- Sports facilities
  - Why is the timeline so long? I'm concerned my child won't benefit from the new sports facilities.
  - Would the fields be artificial turf or grass?
  - I'd like turf fields because they enable more sports activity and may be easier to maintain, which can reduce injuries.
  - I don't want 24-hour light pollution. How has the City managed sports facility lighting elsewhere?
  - Why can't the City add artificial fields at the Shasta or Meadowview schools? I'm concerned about noise pollution.

- Other features
  - Can the park incorporate memorials?
  - Would there be more pedestrian or vehicle bridges from the ponds to the southern edge of the park? Would there be more bicycle access and trails?
  - Would any tribal members gather native plant species?
  - I'd like easy-walk pathways, abundant native plants, picnic tables, and informative signs about the area's history and wildlife similar to Delta Ponds.

- Costs and funding
  - How would maintenance be budgeted for?
  - I think funding would be better used maintaining and upgrading existing fields.

GROUP DISCUSSIONS

In-person participants separated into seven groups with project staff as facilitators/notetakers. Participants were asked to introduce themselves, share how they prioritize the park's three main spaces, and describe their ideal park. The following summarizes notes from these discussions:

- Most participants lived near the park and/or were existing park users. Some participants were affiliated with local sports groups and schools. Most said they love the existing habitat area (ponds, views, oak meadow) and park experience. Some said they walk, take photos, watch wildlife (variety of birds, otters, beavers), and/or fish at the park.

- Most participants said they prioritized the habitat area, understood the need for some sports facilities, and would be excited about some neighborhood park amenities. One person noted their ideal park is "family-friendly, budget-friendly, and as wild as possible."

- Stronger desire for:
  - Habitat protection/expansion, native plant enhancement
  - Sports facilities far from habitat area and neighboring homes
  - Playgrounds, play areas
  - Restrooms
  - Bike facilities
  - More trails (paved and unpaved)
  - Dog off-leash area
  - Everything ADA accessible

- Some desire for:
  - Integrated neighborhood park and habitat area
  - Pedestrian bridge on west side

  - Public use of ponds (paddleboat access)
  - Sports: Soccer, softball, ultimate frisbee, disc golf, grass volleyball, tennis courts, pickleball
  - Field reservation system
  - All-weather parkour/American ninja climbing walls, bouldering
  - Exercise stations
  - Splash pads
  - Community gathering spaces
  - Community center
  - Community garden
  - Pollinator habitat
  - Lighting at night
  - Habitat area to stay dark at night
  - More trees
  - Speed bumps on Golden Gardens Road

- Concerns:
  - Losing wildlife access/experience unique to Golden Gardens in Eugene
  - Increased noise
  - Light pollution, impacts
  - Environmental impacts from fields (fertilizer, spraying, turf chemicals)
  - Traffic, speeding/safety around park
  - Crime, undesired use by houseless neighbors
  - Maintenance costs, City's budget/ability to maintain well
  - Infrastructure connections with/for adjacent property owners

WRAP UP & NEXT STEPS

Group members reported out on key takeaways from their discussions. Kosmos encouraged participants to visit the project website where they can find and take the project's first survey and sign up for project updates. He thanked attendees for their time and engagement with the project.

Golden Gardens Park Concept Plan

Public Event 2: Three Draft Designs

Summary

As part of the Golden Gardens Park Concept Plan public involvement process, the City of Eugene held the second of three proposed public events in May with in-person and remote meeting options on separate days. The in-person meeting was **Tuesday, May 2, 2023,** from 5:30–7 p.m. in the Prairie Mountain School cafeteria, and roughly 75 community members attended. The remote meeting was **Wednesday, May 11,** from 12–1 p.m., and about 15 to 20 community members attended. Both meetings are summarized in the sections below:

- Project Overview and Draft Designs
- Q&A/General Comment
- Group Discussions
- Wrap Up & Next Steps

PROJECT OVERVIEW & DRAFT DESIGNS

Mark Kosmos, a City landscape architect and the project manager, provided background information including the park location and size and the project's history, goals, and timeline. Alli Langley, a project consultant, provided an overview of the project's public involvement process and an update on public input gathered so far. Then she presented the three draft designs and their key similarities and differences. For more detail, please watch the video recording of the remote meeting from 1:09 to 23:40.

Q&A/GENERAL COMMENT

Project staff answered questions from in-person and remote participants. Participants' questions and comments from both meetings are paraphrased and organized by topic below:

- Wildlife and conservation area
  - I support fewer sports fields to have more natural area.
  - I support focusing on enhancing more of what is in the park now.
  - I support more trails and more visual barriers between the natural area and sports fields, such as big berms and vegetation, for cross-country team use.
  - What are the criteria for deciding the amount of buffer space around the natural area? Is this based on data from other parks? I'm concerned about increased light and noise.
  - Will the existing bark path be maintained, expanded, or reduced?
  - I support having a contiguous soft bark path.
  - Will people still be allowed to fish? How will desire for pond turtle and other wildlife conservation and desire for fishing and pond-based recreation be balanced?
  - How will the geese that migrate to this area be accommodated?
  - I'm concerned about negative impacts to wildlife from increased noise and light.

- Sports facilities
  - Diamond fields should be suitable for senior softball.
  - How quickly can outfield fences and mounds be changed for different leagues?
  - I'm concerned that a sports complex is inconsistent with past effort and community visioning when the Bethel community helped improve safety at ponds.
  - Why does one draft not include the lower number of sports fields explored in the 2017 feasibility study?
  - I support sports facilities to meet younger generations' needs.

- Neighborhood park amenities
  - Could bathrooms be included near the playground in the neighborhood park? Many families need them. Parents choose playgrounds based on easy restrooms access.

- Neighboring property impacts
  - I'm concerned about impacts to nearby neighbors from increased noise and light.

- Vehicle parking and traffic
  - What are the impacts of more vehicle traffic in the neighborhood? I'm concerned about inadequate parking and would like more traffic analysis.
  - Will there be a signal at Clear Lake Road? I'm concerned about traffic.
  - Who is the RV area meant to serve? I'm concerned about long-term use given issues with lack of housing.

- Funding and public involvement process
  - When would park construction happen and is the parks levy on the current ballot related?
  - I'm concerned that younger people are not present at these public meetings and their perspectives are not voiced or heard at meetings.
  - I'm concerned about the perspectives of WREN (Willamette Resources & Educational Network) and Beyond Toxics about the draft designs.

- General support:
  - I support building valuable public amenities for the working-class community.
  - "Let's get as much natural area as possible and get the best of both worlds [support for youth sports fields and for protecting existing natural area]."

GROUP DISCUSSIONS

In-person participants used a discussion guide at their tables and were encouraged to take notes and give those to staff at the end of the meeting. Remote participants were split into six breakout discussion groups with a staff member facilitating and taking notes. In both meetings, participants were asked to introduce themselves and share initial impressions about the draft designs including which design they preferred and why, aspects they found valuable, and potential issues they saw. They were also asked to share their takeaways from listening to others. The following summarizes notes from both in-person and remote group discussions:

- Specific design preferences:
  - Most participants shared general comments about the draft designs rather than about different aspects of the three drafts.
  - Participants who expressed a preference for a draft design mostly preferred Amarillo though some preferred Azul and Verde. Many liked different elements of different drafts.
  - Participants liked Amarillo because of the greater amount of natural area/open space, nature play, loop trail around the ponds farther from sports facilities, and consolidation of similar sports field types.
  - Participants liked Azul because of its greater amount of parking, diamond field configuration (especially for tournaments), indoor batting cages, larger amount of trails, larger space between the western property edge and car parking, and the multipurpose court location next to parking and farther from residential land.
  - Participants liked Verde because of its multipurpose field that provided more flexibility and space for rectangle fields and nature play.

- Stronger desire for:
  - Larger amount of natural area and open space.
  - More buffer between natural area and sports facilities with berms, varied topography, plantings, and other strategies and more information about buffer decision-making.
  - More paths/trails and ability to loop around the ponds without going through/near the sports facilities.
  - Sports facilities, generally, for kids and sports groups.
  - Accessibility for those underserved by traditional paths and facilities.
  - Larger amount of vehicle parking and/or more information about parking amount.
  - Bike racks and bike path connections.

- Some desire for:
  - More amenities, desirable features, and activity generally in an underserved part of town.
  - More benches, picnic facilities, signs, and educational elements in the natural area.
  - Ability to bike on trails/paths around ponds.
  - Specific sports facilities: rectangle fields, diamond fields, pickleball courts, and multipurpose fields.
  - A greater amount of rectangle fields with field size flexibility for youth sports groups.
  - Artificial turf so that fields are playable in wetter seasons.
  - Restrooms and pavilions spread around the sports facilities.
  - Specific neighborhood park amenities: sand volleyball, nature play, and outdoor exercise equipment.
  - A bathroom in the neighborhood park near the sidewalk/rec path for children, families, parents, and caretakers.
  - More footbridges as shown in Azul and Verde.
  - Dog park in neighborhood park or close to residential land.
  - Dog park separated from playground for safety.
  - More than one dog park or designated area for dogs to relieve themselves in/near neighborhood park and sports facilities.
  - RV park with host and clear and enforced rules around shorter-term stays.
  - More trees generally.

- Mixed opinions:
    - Some preferred fewer sports fields if there was an option for improving existing fields and/or adding sports fields at other parks. Others said greater number of fields are needed to address shortage and community need.

- Concerns about:
    - Natural area buffer and insufficient conservation of wildlife including pond turtles, eagles, geese, ducks, other birds, and rodents.
    - Light pollution, increased ambient light, dark sky protections.
    - Noise pollution, increased noise.
    - Chemical pollution from pavement and artificial turf.
    - RV park attracting undesirable use and insufficient revenue to warrant potential issues and enforcement challenges.
    - Public safety:
        - Someone noted they saw someone fishing with a crossbow at the park and thought this could be harmful and threatening and shouldn't be allowed.
        - Residents with marginalized identities (LGBTQ, BIPOC, etc.) use the park and would not feel safe if sports complex built.
    - Traffic.
    - Parking lots too close to adjacent residential land.
    - Trash.
    - Development generally negatively impacting the current park experience unique in Eugene and this part of town.

WRAP UP & NEXT STEPS

Participants and staff facilitators shared key takeaways from their group discussions. Staff encouraged participants to visit the project website to take the second survey and sign up for project updates. He thanked attendees for their time and engagement with the project.

Appendix C.

Synthetic and Natural Turf Analysis Report

Sustainability Commission Memo..... C-2

Attachment A: Synthetic and Natural Turf Analysis Report C-3

Attachment B: Matrix..... C-29

Eugene Public Works
Parks & Open Space

Memorandum

Date: 11.12.2024

To: Sustainability Commission

From: Carolyn Burke, Parks and Natural Resource Planning Manager

Mark Kosmos, Landscape Architect

Subject: Golden Gardens Park and Triple Bottom Line Analysis of Field Surfacing Options

The City of Eugene Parks and Open Space and Recreation Divisions are in the community engagement phase of a concept plan for Golden Gardens Park. The plan is comprised of three central features: a neighborhood park, a protected habitat and natural resource area, and a sports complex. For additional information on the concept planning process, please visit: https://engage.eugene-or.gov/goldengardens

A key decision point in the project is determining the material surfacing choice for the fourteen sports fields that are currently proposed. This decision has garnered much interest in the community and the City has committed to a study to fully understand the ramifications and trade-offs of this choice through a triple-bottom lens analysis of equity, environment, and economics. We are pleased that the Sustainability Commission has agreed to participate in this process, bringing another perspective and a publicly transparent approach to this analysis.

At the November 20th Sustainability Commission, staff will present an overview of the current draft concept plan and next steps for the project. Then we will focus in on the sports field material options, getting input into the various considerations that need to be evaluated in this work. Following this work session, staff and project consultants will collect the data and work to collate the information into a digestible and comprehensive draft report. This draft report will be brought back to the Commission for input and review. The desired outcome of this study is a publicly transparent and thoughtful analysis of the choices that can lead to a confident and well-reasoned decision.

Two attachments are included for your review to provide initial research and a framework for consideration:

- Attachment A is a draft report from Cameron McArthy that presents broad research on the topic of field surfacing based on scientific, academic, and local information sources. The report is a selective and focused review of widely cited literature. It is not a complete and comprehensive analysis, but is useful in understanding the factors involved when assessing which surface may be best on a location-by-location basis.

- Attachment B is a draft matrix that catalogs various factors which should be considered in this analysis. This matrix includes factors that were included in the Cameron McCarthy draft report and additional factors recommended by the City's Triple Bottom Line Analysis Consultant, Parametrix. The Sustainability Commission is explicitly asked to review and provide feedback on this matrix, which will guide data collection and research moving forward.

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Synthetic and Natural Turf Analysis Report

Materials Refinement Plan for the Golden Gardens Park Concept Plan

February 25, 2025



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1. Introduction

This report analyses field surfacing choices and associated environmental, social, and economic considerations.

1.1 Overview

Artificial ("synthetic") turf with crumb rubber infill and natural turf ("turfgrass") are the surface materials predominantly used in sports field applications. The Sports and Athletic Field Construction market is a $4.2 billion industry in the United States. The wide variety of synthetic and natural turf product options on the market and the volume of information, misinformation, and opinions on the two surfaces combined with the materials used in construction, operation, and maintenance make optimal product selection a complex undertaking. Comparing synthetic and natural turf involves many context-based criteria. Therefore, decision-making requires considering the benefits and drawbacks of the surface material each time a new sports field is constructed.

This report analyses field surfacing choices based on environmental, social, and economic considerations. Specifically, the report is an in-depth analysis of synthetic turf with crumb rubber infill and turfgrass. The report's analysis uses selected scientific, academic, and local information sources to inform the material selection decision. The report is not a recommendation for a field surface, nor does it identify specific products and installations. It is also not a Risk Assessment for the two materials or promotes a one-size-fits-all approach. The report presents broad research on the topic to inform a deeper understanding of how the field surface material choice may affect the social equity, environmental health, and economic prosperity of the community.

1.2 Limitations

The research included in the analysis only considers content generated within a date range between the years 2019 and 2024 (approximately a five-year window), with the exception of relevant local reports, including the 2018 Eugene Parks System Plan, the 2017 Eugene-Springfield Sports Facilities Study Phase 2 Report, and the 2016 Eugene-Springfield Sports Facilities Study Report. This range was selected because the use of third-generation synthetic turf has produced a multitude of studies in the past decade, with the most recent publications synthesizing past bodies of research. Therefore, using the last five years of research and data, previous research before 2019 is included by default. For articles related to lifecycle cost of both surface types, the search window expanded across a 10-year horizon due to the small body of research that exists. Search engines used for data gathering included Google Scholar, Scopus, and Web of Science, focusing on peer-reviewed academic journal articles and reports from organizations independent from the Sports and Athletic Field Construction industry.

The analysis focuses on studies conducted in the U.S.; however, in many cases, research was collected outside the country. Locally relevant studies comparing synthetic and natural turf specific to the Willamette Valley region are not prevalent. The analysis is particularly useful in understanding the factors involved when assessing which surface may be best on a location-by-location basis.

2. Social Equity

The social equity section considers the provision of adequate recreational opportunities in a safe and healthy environment.

2.1 Recreational Opportunities

The 2018 Eugene Parks System Plan found that a "growing number of stakeholders that utilize sports fields – Kidsports, youth club sports, adult recreation leagues, and informal pick-up game participants – all have great difficulty finding adequate field space" and that the "problem is exacerbated in the fall and spring when [natural turf] fields can become unplayable."[1] The plan notes the interest in seeing more sports fields added to the systems, specifically the construction of a sports complex that can host local and regional tournaments. The plan recognizes that an "important consideration in the scheduling of sports fields is to have "non-scheduled" times when fields are available for informal pick-up games. Soccer, in particular, is a sport that is central to Latino and other cultures world-wide. Local research has shown that costs associated with sports leagues and formalized scheduling of facilities are barriers to Latinos utilizing park and field facilities."[2] The plan includes Project B5 Multi-field Sports Complex at Golden Gardens Park, which has a priority rating of 1 (1-10 year time frame) and 2 (11-20 year time frame), reflecting a phased project.[3]

The 2017 Feasibility Study for A Potential New Multi-Use Sports and Recreation Complex by Conventions, Sports, and Leisure (CSL) analyzed the market, programmatic, financial, and economic feasibility of new multi-use sports facilities in Eugene and Springfield, Oregon. Phase One analyzed market demand and programmatic aspects. Phase Two analyzed location, operation, construction costs, economic impacts, and funding aspects.

The CSL study found a strong need for a high-quality baseball/softball and soccer/multi-sport facility with 16 fields is the greatest market need in the Eugene-Springfield area and that Golden Gardens Park is an "excellent/very good" site for the complex. Within the regional area, Les Schwab Sports Park, operated by Willamalane Park and Recreation District, is the largest multi-sport complex with four rectangle fields, two of which accommodate baseball and softball. This complex does not meet the region's need for outdoor field space.[4] The CSL study determined that there is a clear market for a sports field complex of 10-12 diamond fields and 4-6 rectangle fields in Eugene.[5]

Regarding existing baseball/softball fields (diamond fields), the CSL study found that "[t]here are more than 600 teams and 8,200 players currently utilizing baseball/softball fields throughout the Eugene-Springfield market for league games. This resulted in an estimated 216,600 people attending the more than 6,900 games played throughout a typical year, of which, approximately 18 percent (more than 39,400 people) originated from outside of the cities of either Eugene or

1 Eugene Parks System Plan, 83
2 Eugene Parks System Plan, 85
3 Eugene Parks System Plan Appendix, A-7
4 Eugene Parks System Plan, 83
5 Feasibility Study, Phase One, 81

Springfield."[6] The CSL study estimated that a sports complex "would be expected to attract 28 new tournaments and more than 15,700 incremental players, of which, an estimated 71 percent would originate from outside of the Eugene-Springfield market" and that additional baseball/softball fields "would be expected to attract nearly 202,700 incremental attendees, of which, nearly 119,600 (59 percent) would be non-local."[7]

Regarding existing soccer fields (rectangle fields), the CSL study found that "an estimated 1,070 teams and 13,000 players currently utilize multisport rectangle fields throughout Eugene and Springfield for various league play, consisting of over 8,400 soccer, football (flag and tackle), rugby, lacrosse and ultimate Frisbee games. An estimated 275,900 people participated and/or attended these games, with approximately 37,200 of these attendees coming from outside of the Eugene-Springfield market."[8] The CSL study estimated that the "latent demand for multisport rectangle fields would account for approximately 14 percent growth among existing teams, serving an additional 1,960 participants" and that "[f] urther opportunities may exist for increasing usage among developing sports such as lacrosse, rugby, and field hockey."[9]

2.2 Safe and Healthy Environments

Chemical Exposure

A 2024 joint report by the U.S. EPA and CDC states that the makeup of crumb rubber infill used in artificial turf can result in chemical exposure, however these exposures pose a limited threat to public health and safety (volume 1, page xxix):

- Only small amounts of organic chemicals are released from crumb rubber into the air through emissions. When measured during active play at the outdoor fields, some next-to-field concentrations in air showed no difference compared to background samples while others were somewhat higher.
- Only small fractions of metals are released from crumb rubber into biological fluids (about 3% for gastric fluid, and less than 1% for saliva, sweat, etc.) compared to 100% bioaccessibility. (Bioaccessibility is measured as the amount of chemical release from a solid, compared with bioavailability, which is the amount available for absorption, or uptake, in the body.)
- In a biomonitoring pilot study, concentrations for metals in blood were similar to the general population.
- No differences in PAH metabolites in urine were observed in a biomonitoring study between study participants using natural grass fields and those on synthetic turf fields with crumb rubber infill.

The EPA & CDC report supports other study findings by the Netherlands National Institute for Health and Environment[10] and the European Chemicals Agency[11] and may be of further use for risk assessment. These studies generally conclude health risks from playing on synthetic turf fields with crumb rubber infill are negligible due to the small amounts of the harmful substances released.[12]

While concentrations of metals and PAH metabolites are shown to be below harmful amounts and well below estimated background exposures in residential environments[13], the EPA & CDC authors note the study is not adequate to determine risk. Ultimately, the results are consistent with recent studies, and there were no observed differences in PAH concentrations compared to natural grass athletic fields.[14]

Public perception of chemical exposure is another important factor relating to health and safety. Natural turf remains the baseline to compare all other field surface materials. There is a "living/non-living" comparison associated with the two materials that underpin public perception, usually favoring natural turf over synthetic turf[15] regardless of additional data.

Injury

Bodily injury is another component of understanding turf. A systematic review and meta-analysis of injuries sustained on synthetic compared to natural turf published in 2023 found that "the overall incidence of football [soccer] injuries is lower on artificial turf than on grass. Based on these findings, the risk of injury can't be used as an argument against synthetic turf when considering the optimal playing surface for football."[16] Incidence of medical treatment and imaging following American college football games shows a difference between synthetic and natural turf playing fields, especially from a financial perspective: "The significantly lower incidence of elective imaging and surgical procedures following competitive play on heavyweight synthetic turf surfaces translates to lower health care costs from less severe trauma than observed on natural grass surfaces."[17] In the context of this article, only American football was studied, so direct comparisons with soccer, softball, and baseball turf applications may not be possible. However, observed data suggests natural turf is not necessarily a safer playing surface with respect to user injury.

Another literature review, published in a Poland-based journal, notes that other risk factors specific to the incident leading to injury are a greater determinant than the differences between two well-maintained fields, whether synthetic or natural turf, noting that reaching a conclusion between the two surfaces as an "extrinsic risk factor" is difficult based on the current research data.[18]

Heat

While physical injury may be reduced on synthetic turf, surface temperatures pose a greater risk to users of synthetic turf compared to natural turf: "Where artificial turf sports fields are installed, managers need to consider the effect of the elevated surface temperatures and apply management strategies to address this critical health issue in their heat policies."[19] According to a 2021 study in Hong Kong, children are particularly vulnerable. The study showed that children reach dangerous levels of heat stress faster on synthetic turf than on natural turf.[20]

A sample of three leading synthetic turf manufacturer websites acknowledge heat absorption as an issue, and that technology widely used in the industry has not delivered a solution to cool turf to a comparable air temperature as on natural turf fields. However, published work as of July 2024 demonstrate promising new technology, not yet available, using stored water in a base layer below the turf, finding "the water storage and capillary fed artificial turf system is successful in providing ample water for cooling by surface evaporation. Through evaporation, the surface temperature of the fields was significantly lowered when compared to the conventional artificial turf and approached the values of natural grass."[21]

Products available today include alternative and specialized infill products that retain more water, thereby allowing evapotranspiration to cool the surface temperature at the

6 Feasibility Study, Phase One, ES-5
7 Feasibility Study, Phase One, ES-6
8 Feasibility Study, Phase One, ES-6
9 Feasibility Study, Phase One, ES-6
10 Oomen, 38
11 ECHA, 64
12 U.S. EPA & CDC/ATSDR, xxix
13 U.S. EPA & CDC/ATSDR, 13
14 U.S. EPA & CDC/ATSDR, 14
15 Barnes, 11
16 Kuitunen, 1
17 Sterling, 2
18 Mandorino, 45
19 Vyrlas, 200
20 Liu, 1
21 van Huijgevoort, 9

field. However, a synthisis of 2023 and prior heat stress data published on synthetic turf concludes that while specialized turf and infill products on the market today reduce temperatures at the turf level, further reasearch is required to understand what effect these cooling features have on thermal stress experienced by field users in the overall playing environment.[22]

Rubber infill and use of a shock pad underlayment, have been shown to increase surface temperature more than systems without a pad or rubber infill.[23]

In summary, while public perception may favor natural turf, there are important safety factors to consider from a public health standpoint. Recent research in athlete and user safety of athletic fields indicates an overall lower incidence of injury on synthetic turf compared to natural turf fields. When considering only recreational or amateur athletes, there does not seem to be a difference in injury risk when a sport is played on either surface.[24] Natural turf has cooler surface temperatures than synthetic turf; however, promising new technologies are emerging or coming to market that have the potential to futher reduce temperatures at synthetic turf fields beyond products currently on the market. These technologies come with an increased investment cost. There is potential that this cost increase may be offset by reduced maintenance of special infill or the reduction of watering to control temperature of synthetic turf systems.

There is a gap in public perception research that is important to note. What seems absent is a distiction between “natural lawn” found in greenspaces like public parks and urban/ suburban spaces and the more resource intensive sand-based athletic field to which we can more closely compare the performance characteristics of the two materials designed for competetive sports.



22 Singh, 1250
23 Singh, 1246
24 Kuitunen, 1

3. Environmental

The environmental section considers natural resources, pollution and waste, climate change, and resource use.

3.1 Natural Resources

Pollution

While proper field maintenance and care can mitigate the flow of potentially harmful substances into aquatic systems, this flow is explored in a 2024 article on artificial/ natural turf and microplastics. In a lifecycle analysis the crumb rubber studied was found to contribute “much lower” factors, such as duration, exposure, and bioavailability, in a marine environment than other sources of microplastics like HDPE.[25] The article ultimately calls for further study of how various chemicals from rubber infill can impact downstream ecosystems, which may pose risks that contradict the recycled material’s designation as a positive climate impact, discussed in the next section.

An isolated, lab-based study sampling crumb rubber infill sports fields in Norway suggests the crumb rubber has potential to release harmful chemicals in saltwater, and that toxicity decreases with increased salinity.[26] Other research looking at organisms in freshwater sediments suggest “minimal effect” of rubber particles in their lab-based study.[27] Results appear to vary by species studied and the type of aquatic habitat sampled.
A lifecycle assessment of synthetic turf and natural turf athletic fields conducted in Europe modeled high ecotoxicity for aquatic fresh water. Figure 3.1.1 illustrates that synthetic turf contributed most of the impact, presumably due to fiber and crumb rubber migration; natural turf contributed two-thirds of its impact during construction activity, with the other third ascribed to turf cutting activity.[28] Synthetic turf with infill had a greater impact on freshwater and terrestrial habitat, while natural turf had a greater impact on marine habitats and water resource depletion.

While reserach gaps exist in understanding the leaching mechinisms of tire granules in turf infill[29], studies of stormwater carrying tire particles from roadways identify toxicity to some freshwater organisms.[30] The potential for rubber infill turf to contribute to this ongoing issue is an important motivator to implement control measures for material migration, isolate and treat stormwater runoff at fields and to carefully consider the type of infill chosen by decision-makers.

For analysis purposes, it is helpful to summarize the various pathways, found in the cited research, that promote dispersion of material “biproducts” directly from athletic fields into the surrounding landscape, as illustrated in Table 3.1. The right column lists a few top mitigation strategies found in the research. Figure 3.1.2 illustrates the various pathways for infill migration.

A. Infill carried by high winds from the field surface or equipment; however, “quantification does not seem to be feasible as all influencing factors are highly variable.”[31]

25 Zeilerbauer, 15
26 Halsband, 13
27 Carrasco-Navarro, 189
28 Russo, 7
29 Bø, 9
30 Brinkmann, 336
31 Kole, 5

Table 3.1. Dispersion of Material Biproducts Pathways

For more information on each pathway see the associated letter superscript.

Dispersal Pathway	Bioproduct Impact (Artificial Turf)	Bioproduct Impact (Natural Turf)	Cited Mitigation Strategy
Windblown	Movement of infill[A]		
Radiation/off-gas	VOCs from crumb rubber infill[C]	GHGs from turf-grass fertilizers[B]	Using a precise application of organic, non-urea-based, Nitrogen. Frequent testing to minimize excess application.
Combustibles emission	Fossil fuel used throughout the lifecycle[D]	Fossil fuel used during lifecycle[E]	Utilizing all electric equipment. Consider biochar for excess turf-grass clippings or other carbon-ization method (Kuronuma, 9). Source organic fertilizers as close to site as possible.
Tracking	Movement of infill, mainly on body and on maintenance equipment[F]		Europe is leading in published guidance on this topic. See links below. ESTC-Infill-Containment-Guide.pdf Determining measures to minimize infill migration
Leaching and runoff	Infill or micro-plastics carried by stormwater runoff and into aquatic environments[G]	Nitrogen and Phosphorous fertilizers into groundwater[H]	Only use P fertilizer when lab testing requires it. Use low-input turfgrass species (Phillips, 11). Stormwater filtration and subgrade drainage in vegetated stormwater facilities for both turf types. Filter catch basins where infill may migrate.
Edge migration	Movement of infill at edges into adja-cent soil strata[I]		See link under Tracking, above.
End-of-Life	Movement of infill in transport of turf rolls to recycling or disposal	Emissions caused by decomposition of organic matter, bioavailability of soil sequestered carbon.	Besides maximizing lifespan, on-site sorting of sand to minimize import of new material and disposal of old turfgrass with carbonization method. Artificial turf should be loaded on-field and contained in heavy-duty bags to avoid material dispersal.

B. Natural turf fertilizers, such as nitrogen converted to N2O, can be released as greenhouse gas (GHG): "For the GHG emissions from energy and resource use, GHG emissions from fertilizer application accounted for 44% of the total."[32] These are not released in concentrations known to be harmful to humans but contribute to broader climate impacts.

C. VOC emissions from recycled rubber infill were shown in a 2022 study of recycled rubber infill in Japan to be below the lower limit of quantification for known carcinogenic compounds. Other "substances with limited risk," as defined by IARC, were identified in the same study, however, exposure risk is not well understood for these substances.[33] It is unclear whether these emissions present any direct risk to wildlife. Further, detectable odor from rubber infill emission, while potentially harmless, presents a community concern especially during heat events when odors are more likely to be noticeable.[34]

D. Artificial turf emissions are offset due to reuse of recycled tires as infill, lowering the contribution of GHG emissions overall.

E. Natural turf has a larger impact on emissions across its lifecycle compared to artificial turf, "mainly due to the emissions linked to the quantity of aggregates (handling and transport of sand) used as filling material in the construction phase."[35]

F. While infill is shown to stick to footwear, clothing, skin, and hair which is transported off field, this pathway only amounts to 2.5% of annual infill loss. The maintenance practice of brushing the turf, assuming 26 brushings per year, amounts to almost 32% of annual infill loss, the highest among known quantified pathways for infill. (Dispersal of infill at field edges next to open landscape and dispersal due to water runoff were the next highest pathways accounting for 11% and 10% of annual loss respectively.[36]) However, the largest contribution of tire rubber into the environment comes from roadways via vehicle tires and asphalt.[37] Under good and responsible field management practices, environmental dispersal can be avoided.

G. Water runoff was noted as the fourth highest pathway for infill dispersal, with snow removal being the largest listed in the cited literature review, see Tracking above. Fibers and shock pad particles may also move this way based on fibers found in marine samples.[38] In another article fiber loss was noted as measuring near 1/64th of an inch annually at a field.[39]

H. Natural turf fertilizers contribute to eutrophication in aquatic environments downstream of suburban areas[40] by moving through runoff and leaching, exacerbated by sand-rich well-draining soils typical of high-performance fields.[41]

I. Movement of infill at the edges of an artificial turf field occur when there is no effective barrier, and infill can disperse and settle into the soil layers and subsequent organisms.[42] Stockpiles were not addressed specifically, however infill refilling is listed as a contributing pathway to infill distribution outside of the field via equipment and transport.[43]

In summary, the nature and scale of pollution depend on a variety of factors inherent to synthetic turf and natural turf fields. While mitigation measures are possible in both cases, the makeup of the surrounding environment and habitat is a key determinant in assessing pollution impacts.

32 Kuronuma, 9
33 Sakai, 6
34 Hayes, 9
35 Russo, 6 & 7
36 Kole, 8
37 Halle, 1
38 De Haan, 7
39 Kole, 7
40 Tiwari, 1
41 Bock, 17
42 Kole, 8
43 Kole, 5

3.2 Climate

Materials

Various lifecycle studies compare synthetic and natural turf as it pertains to impact on greenhouse gases (GHGs). The most recent study, published in 2022, found that "... artificial turf appears significantly more advantageous than natural turf in terms of practicability and hours of play/use, but when the analysis approach is shifted to the entire lifecycle, the results appear ambiguous."[44] This study considers contribution to global GHG effect and demonstrates that both surface types generate an overall similar environmental footprint. However, due to the various ways each material contributes to greenhouse emissions at different lifecycle stages, interventions to reduce environmental footprint can differ. It is difficult to conclude that one surface type has a significantly lower global or regional environmental impact. Differences may be more noticeable at a local level, which is not represented in the literature.

In terms of lifecycle environmental impact, the construction phase of sand based natural grass fields contributes to most of the material's impact. Lifecycle analysis of crumb rubber infill produces a net negative contribution to the turf system because it diverts end-of-life tire material from the landfill or incineration.[45] Use of virgin plastics is a larger impact concern for synthetic turf systems, something that may improve with technology advancements in the industry. Natural turf fields exhibit most of their emissions from aggregate production, primarily sand, fertilizer production, and irrigation use during seed production and turf maintenance. Use of sand during field construction, replacement, and continual topdressing is a challenge for natural turf athletic fields to reduce GHG contributions given routine topdressing is necessary for top performance and extending the life of the field.[46] On material emissions alone, synthetic turf apears to contruibute less impact, however, the envinormental contamination by microplastics and rubber infill outweigh lifecycle impacts derived from natural turf fields, when considering impacts before calculating for hours of field use.

Maintenance

Specific to maintenance, mowing is the largest source of GHG emissions for natural turf, while fertilizer application is the second largest.[47] Synthetic turf likewise uses grooming equipment and irrigation to cool and neutralize static charge that builds up on the surface. Consequently, using irrigation to cool the surface of synthetic turf requires an amount of water equivalent to natural turf field irrigation, reducing the low-water-use benefit artificial turf would otherwise achieve.[48] Alternative or specialized infill designed to cool turf requires less water and was discsused in section 2.2, under subsection Heat.

Data on organic and synthetic fertilizers for turfgrass also shows tradeoffs: while organic fertilizers improve soil health and accumulate more organic matter in the soil as carbon sequestration, they can emit excess GHGs due to the additional microbial activity in storage and the cumulative transportation of solid organic fertilizers like manure. However, sampled emissions are highly variable and the cited study concludes that a general emission factor cannot be derived. Ultimately, a case-by-case review of a fertilizer company's "energy sources and CO2 valorization upon fertilizer production, proper storage practices, and better management of application" is likely to provide information for decision making.

Usage

How much and how often a field is used also has an impact on its greenhouse gas impact, "particularly because different types of turf for sports fields allow for different maximum annual usage hours. If the number of annual usage hours is identical, the natural turf without drainage causes the lowest total environmental impacts and the filled [EPDM infill presumed] artificial turf causes the highest total environmental impacts according to the Ecological Scarcity Method 2013. However, since natural and hybrid turf allows for fewer hours of use, on average an artificial turf causes lower greenhouse gas emissions and a lower total environmental impacts per hour of use according to the Ecological Scarcity Method than a natural or hybrid turf."[49] Figure 3.2.1 illustrates environmental impact per hour of use for different turf across life cycle stages.

Selecting maximum or average hours of usage for synthetic and natural turf fields is highly variable per sports facility. Using the Phase Two of a Feasibility Study for a Potential New Multi-use Sports & Recreation Complex in Eugene-Springfield, Oregon Exhibits 3, 4, and 5 (Fig. 3.2.2) providing an approximate total hour of usage, we can extrapolate by assuming 2 hours per league or tournament game, practice slot, and camp session totaling slightly over 1,000 hours per field per year. This context helps to frame where this proposed sports complex fits within the conclusions stated by Itten, et. al. (2022), "... for high intensity of use, artificial turf is more environmentally sustainable, and for less intensive use, a form of natural grass is. In general, the chosen sites should allow for the highest possible number of annual usage hours."[50]

In summary, the impacts of synthetic turf and natural turf fields on greenhouse gas emissions depend largely on material, maintenance, and usage decisions and numbers. As noted, while mitigation measures are possible, the unique blend of these decisions will inform the scale of greenhouse gas impact.



44 Russo, 9
45 Russo, 2
46 Fidanza, 8
47 Braun, 6
48 Kanaan, 1
49 Itten, 4
50 Itten, 6

4. Economic

The section considers the lifecycle cost of the material and the economic opportunities from resulting from sports fields.

4.1 Lifecycle Cost

Lifecycle cost is generally underrepresented in literature. The most recent study published in 2017 in the International Turfgrass Society Research Journal is a local precedent from western Oregon that generally supports previous conclusions, noting that "[t]he cost-per-hours of player use suggests that synthetic infill fields can be as cost-effective as natural grass fields with a $0.20 difference between natural grass and synthetic infill fields. The combined expenses of synthetic fields may have been greater than those of natural grass but with enough player use they can be more cost effective than natural grass."[51]

The conclusion by Daviscourt (2017) supports other research on environmental impact, like Russo (2022) and Itten (2021), that for underutilized fields, natural grass is less impactful on average for environmental and economic factors (Fig. 4.1.1). However, fully utilized synthetic turf fields will perform more consistently and for greater hours annually, offsetting the same factors cited.

Other studies note the lower cost of natural turf, although they provide data in terms of annual or end-of-life cost and mention the importance of field-use hours. Studies omitting a use intensity factor limit the conclusions drawn. Furthermore, it is unclear the degree natural turf fields are performing when compared to infilled synthetic turf fields. One study indicates the largest need of administrators and managers of natural turf fields in the U.S. is for field reconstruction, as well as additional funding (Fig. 4.1.2).[52]

This underscores the need to develop anticipated hours of use for the proposed fields to confirm the current high-intensity use assumption. This will help define the potential economic and environmental benefits of synthetic turf. Further defining soccer, softball, baseball, and other recreational opportunities and associated use hours or demand for field space provides additional granularity when determining the net benefit of artificial and natural turf applications.



51 Daviscourt, 378-379

52 Yue, 893

4.2 Economic Opportunities

As noted, the 2018 Eugene Parks System Plan includes a sports field complex at Golden Gardens Park, and the 2017 CSL study determined a market demand for 14-18 sports fields (both rectangle and diamond). The Golden Gardens Park Concept Plan includes 14 sports fields consisting of 6 rectangle fields and 8 diamond fields.

The CSL study estimated the economic benefit of the proposed sports complex at $14.2 million annual total output. This estimate includes direct spending plus indirect/induced spending in a stabilized year of operation, which the study assumed at the fifth full year of operation. Other economic benefits of the sports complex include "between $7.1 million and $5.2 million in earnings (or personal income)" and "between 183 and 134 full and part-time jobs, respectively, throughout the Eugene-Springfield economy."[53]

The CSL study demonstrates the economic benefit of a sports complex with 14 fields. The study assumes a high level of utilization across all the fields, which underscores the need to prioritize extended use and year-round playability as key determinants in field material selection.

53 Feasibility Study, Phase Two, 28



5. Conclusion

The following summarizes key social, environmental, and economic findings.

Social

- Contrary to evidence of safety, a national survey of public perception shows general favor to natural turf over synthetic turf in a comparison of the two materials.
- Within the Eugene-Springfield area, a growing number of stakeholders that utilize sports fields have great difficulty finding adequate field space. The problem is exacerbated in the fall and spring when natural turf fields can become unplayable. The greatest recreational market need in the area is a high-quality baseball/softball and soccer/multi-sport facility complex with 16 fields. Golden Gardens Park is an "excellent/very good" site for the complex.
- Evidence of chemical exposure to inhaled and ingested particles from synthetic turf with crumb rubber infill has shown no differences to or in some cases lower concentrations in the human body than "background" sources of pollutants such as a residential environment or diet.
- Evidence of bodily injury for amateur and recreational level sports demonstrates third-generation synthetic turf is at as safe as natural turf.
- Heat absorption, particularly for black crumb rubber infill synthetic turf, is a concern. Products are on the market to improve surface cooling. Tracking and mitigating surface temperature on synthetic turf is recommended, with mitigated temperatures approaching but not reaching that of natural turf.

Environmental

- Use of crumb rubber, recycled tires, lowers the overall environmental footprint compared to virgin synthetic infills, but disproportionately impacts toxicity of aquatic and terrestrial habitat compared to natural turf according to a lifecycle environmental impact study.
- Crumb rubber in aquatic and terrestrial soil environments can leach chemicals, the concentration of which is below those attributed to other sources of microplastic pollution. Guidelines to reduce migration of turf infill to virtually zero through design, management, and end-of-life disposal are available.
- Construction of a sand-based natural turf field and its maintenance generates emissions above those produced by a synthetic turf system. Mitigation methods exist to reduce pollution from maintenance activities, but recommendations to reduce impact of extractive services to produce and transport sand have not been identified in the literature.
- When comparing the lifecycle of the two surface materials in usage hours, synthetic turf field with a high intensity of use performs better (measured in greenhouse gas input into the environment).
- Cooling synthetic turf using only irrigation requires about an equivalent amount of water as irrigation of a natural turf athletic field. Special fiber and infill products reduce water use for cooling.

Economic

- The lifecycle cost for a single natural turf field is less compared to the same size synthetic turf field, synthetic fields costing roughly double. However, when adjusting for available usage hours, synthetic turf is as cost effective as natural turf.
- Expect synthetic turf field construction to cost about 3 times more than natural turf field construction; however, natural turf maintenance cost is about 3 times more than synthetic turf maintenance over the use period, about 8 to 10 years depending on manufacturer warranty.
- The top needs described by managers of natural turf athletic fields in the U.S. are for field replacement and additional funding, suggesting the industry baseline for cost of maintenance and frequency of field replacement may need to be higher.
- The estimated the economic benefit of a sports complex is $14.2 million annual total output. Other economic benefits include between $7.1 million and $5.2 million in personal income earnings and between 183 and 134 full and part-time jobs, respectively, throughout the Eugene-Springfield economy.

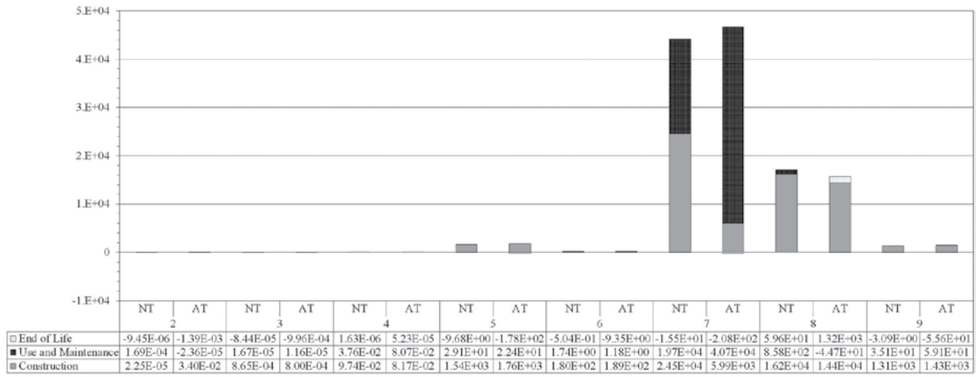


FINDINGS + CONSIDERATIONS SUMMARY TABLE

	General		Synthetic Turf with Crumb Rubber Infill	Natural Turf
Social				
Recreational Opportunities	• Consider daily and yearly hours of use to meet community needs, and if fields are planned for intensive, high-impact use. • Evaluate whether existing field inventory is sufficient to support additional hours to reduce the demand for new fields.		• Synthetic turf supports over 1,000 hours of use per year, allowing for a high intensity of use with minimal impact from climate (weather) events. • Consider how maintenance resources may limit hours of use, and unmitigated excess heat during hot summer days may limit hours of play.	• Consider anticipated annual hours of use, whether more natural turf fields are needed to accommodate those hours, and if that area is available. • Consider maintenance resources and local climate to determine estimated daily and annual hours of use a natural turf field can support.
Safe and Healthy Environments	• Consider whether community public perception favors natural turf over synthetic turf. • Consider magnitude of heat absorption and temperature concerns in local environment.		• Chemical exposure from contact, inhalation, and ingestion of rubber infill are below the threshold for harm to humans. • Consider alternatives to rubber infill and how heat absorption is mitigated (alternative infill materials and light irrigation are standard materials and methods).	• Report uses a sand-based performance field as the basis of comparison, which is a professional product. Consider how injury risk may increase for amateur and recreational fields due to level of impact and ways to mitigate that risk. • Consider heat mitigation during high temperature days such as irrigating later in the morning.
Environmental				
Natural Resources	• Consider noise pollution from maintenance equipment and electric equipment. • Consider how the field's stormwater is separated from surrounding groundwater and overland flow without diverting stormwater off-site (if feasible).		• Target migration pathways to prevent materials from entering waterways and soils, such as field design, transport and storage of materials, and equipment cleaning.	• Consider regular testing of soil and turfgrass for nutrients and fine-tune fertilizer applications to only what is necessary.
Climate	• Consider local sourcing of materials to the greatest extent feasible. • Consider all electric equipment for maintenance.		• Consider intensity of field use. Construction of a synthetic turf field contributes more environmental impact per square foot than a natural turf field, however that impact is reduced by increased hours of use.	• Consider turfgrass species requiring less fertilizer, ways to capture carbon in grass clippings, and frequent testing to target fertilizer use. • Consider the sourcing, storage, and application practices of organic solid fertilizers to reduce excess.

Economic				
Lifecycle Cost	• The lifecycle cost for a single natural turf field is less compared to the same size synthetic turf field. When adjusting for available usage hours, synthetic turf is as cost effective as natural turf. • Natural turf maintenance cost is about 3 times more than synthetic turf maintenance over the use period, about 8 to 10 years depending on manufacturer warranty.		• Consider whether hours of use per field are above 900hr/yr. High intensity use fields are less costly per hour of use over the field lifespan. • Consider maintenance practices that minimize infill loss and early wear of the turf fibers. • Consider including necessary costs to prevent environmental impact such as on-site sorting of materials and bagging of turf to be removed during field replacement.	• Consider whether hours of use per field are below 900hr/yr. A single natural turf field is a lower initial cost than a synthetic turf field. • Consider maintenance practices and regular testing to minimize invasive species, compaction, and other issues that reduce field lifespan. • Consider how often replacement of sod and sand bedding will occur to maintenance performance.
Economic Opportunities	• Use annual revenue to support operation. • Identify benefits to the local economy including full and part-time jobs using key determinants such as numbers of events, utilization of field space, and year-round playability.		• Quantify economic benefits from numbers of events on fields, utilization of field space, and year-round playability, other off-site economic benefits, and jobs.	• Quantify economic benefits from numbers of events on fields, utilization of field space, and year-round playability, other off-site economic benefits, and jobs.

Figures



	2 NT	2 AT	3 NT	3 AT	4 NT	4 AT	5 NT	5 AT	6 NT	6 AT	7 NT	7 AT	8 NT	8 AT	9 NT	9 AT
End of Life	-9.45E-06	-1.39E-03	-8.44E-05	-9.96E-04	1.63E-06	5.23E-05	-9.68E+00	-1.78E+02	-5.04E-01	-9.35E+00	-1.55E+01	-2.08E+02	5.96E+01	1.32E+03	-3.09E+00	-5.56E+01
Use and Maintenance	1.69E-04	-2.36E-05	1.67E-05	1.16E-05	3.76E-02	8.07E-02	2.91E+01	2.24E+01	1.74E+00	1.18E+00	1.97E+04	4.07E+04	8.58E+02	-4.47E+01	3.51E+01	5.91E+01
Construction	2.25E-05	3.40E-02	8.65E-04	8.00E-04	9.74E-02	8.17E-02	1.54E+03	1.76E+03	1.80E+02	1.89E+02	2.45E+04	5.99E+03	1.62E+04	1.44E+04	1.31E+03	1.43E+03

Fig. 4. Analysis of the other PEF impact categories of natural turf vs artificial turf.
2 - Ozone depletion, WMO model, ReCiPe [kg CFC-11 eq.]
3 - Human toxicity cancer effects, USEtox (without long-term) [CTUh]
4 - Human toxicity non-canc. Effects, USEtox (without long-term) [CTUh]
5 - Acidification, accumulated exceedance [Mole of H+ eq.]
6 - Particulate matter/Respiratory inorganics, RiskPoll [kg $PM_{2.5}$eq.]
7 - Ecotoxicity for aquatic fresh water, USEtox (without long-term) [CTUe]
8 - Ionising radiation, human health effect model, ReCiPe (corrected) [U-235 eq.]
9 - Photochemical ozone formation, LOTOS-EUROS model, ReCiPe [kg NMVOC eq.]

Figure 3.1.1
Russo et al. EIA Review (2022)

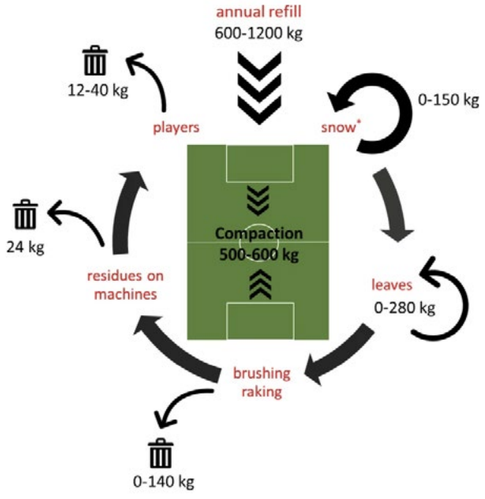


Figure 3.1.2
Verschoor et al. Environ Sci Eur (2021)

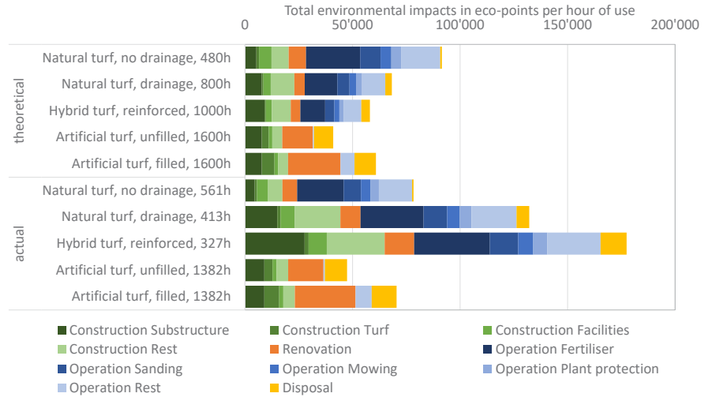


Fig. S.2: **Total environmental impacts of the different turf sports fields per theoretical and actual**

Figure 3.2.1
Iten et al. IUNR (2020)

ESTIMATED UTILIZATION - LEAGUES, PRACTICES AND CAMPS
Eugene Sports Complex - Scenario 1a (Core Complex)

	Initial Year 1	2	3	4	Stabilized Year 5
LEAGUE ATTENDANCE					
Number of Seasons per Year	3	3	3	3	3
Number of Divisions in Leagues	12	14	16	16	16
Number of Teams per Division	10	10	10	10	10
Total Teams Per Season	120	140	160	160	160
Average Players per Team	14	14	14	14	14
Total Players per Season	1,680	1,960	2,240	2,240	2,240
Games per Season	12	12	12	12	12
Spectators per Team	1.5	1.5	1.5	1.5	1.5
SUBTOTAL - LEAGUE ATTENDANCE	**90,720**	**105,840**	**120,960**	**120,960**	**120,960**
PRACTICE ATTENDANCE					
League Teams per Season	120	140	160	160	160
Average Practices per Week per Team	1	1	1	1	1
Number of Available Weeks	36	36	36	36	36
Practice Slots Required (Leagues)	4,320	5,040	5,760	5,760	5,760
% of Practices held at Complex	50%	50%	50%	50%	50%
Total League Practices at Complex	2,160	2,520	2,880	2,880	2,880
Community Use Factor	1.25	1.25	1.25	1.25	1.25
Total Annual Practice Slots Rented	2,700	3,150	3,600	3,600	3,600
Average Players per Team	14	14	14	14	14
Spectators per Player	0.5	0.5	0.5	0.5	0.5
SUBTOTAL - PRACTICE ATTENDANCE	**56,700**	**66,150**	**75,600**	**75,600**	**75,600**
CAMP ATTENDANCE					
Number of Camps per Year	10	13	14	15	15
Campers per Session	50	60	70	80	90
Total Annual Campers	500	780	980	1,200	1,350
Days per Camp	5	5	5	5	5
Sessions per Camp	2	2	2	2	2
Spectators per Player	0.5	0.5	0.5	0.5	0.5
SUBTOTAL - CAMP ATTENDANCE	**7,500**	**11,700**	**14,700**	**18,000**	**20,250**
TOTAL ATTENDANCE	**154,920**	**183,690**	**211,260**	**234,560**	**216,810**

ESTIMATED UTILIZATION - IN-HOUSE TOURNAMENTS
Eugene Sports Complex - Scenario 1a (Core Complex)

	Initial Year 1	2	3	4	Stabilized Year 5
IN-HOUSE TOURNAMENTS:					
Soccer/Lacrosse/Field Hockey:					
Small	2	2	2	2	2
Medium	1	1	1	1	1
SUBTOTAL	3	3	3	3	3
Softball					
Small	2	2	2	2	2
Medium	2	2	2	2	2
SUBTOTAL	4	4	4	4	4
Baseball					
Small	2	2	2	2	2
Medium	0	0	0	0	0
SUBTOTAL	2	2	2	2	2
TOTAL ANNUAL IN-HOUSE TOURNAMENTS	**9**	**9**	**9**	**9**	**9**
TEAMS PER TOURNAMENT:					
Soccer/Lacrosse/Field Hockey:					
Small	64	64	64	64	64
Medium	100	100	100	100	100
Softball:					
Small	24	24	24	24	24
Medium	64	64	64	64	64
Baseball:					
Small	24	24	24	24	24
Medium	64	64	64	64	64
PLAYERS PER TEAM:					
Soccer/Lacrosse/Field Hockey	15	15	15	15	15
Softball	15	15	15	15	15
Baseball	15	15	15	15	15
SPECTATORS PER PARTICIPANT	2.5	2.5	2.5	2.5	2.5
DAYS PER TOURNAMENT	2.5	2.5	2.5	2.5	2.5
TOTAL ANNUAL ATTENDANCE FOR IN-HOUSE TOURNAMENTS	**42,375**	**42,375**	**42,375**	**42,375**	**42,375**

ESTIMATED UTILIZATION - THIRD PARTY TOURNAMENTS
Eugene Sports Complex - Scenario 1a (Core Complex)

	Initial Year 1	2	3	4	Stabilized Year 5
THIRD-PARTY TOURNAMENTS:					
Soccer/Lacrosse/Field Hockey:					
Small	7	8	9	9	9
Medium	3	4	5	5	5
SUBTOTAL	10	12	14	14	14
Softball:					
Small	4	5	6	6	6
Medium	2	3	4	4	4
SUBTOTAL	6	8	10	10	10
Baseball:					
Small	2	3	4	4	4
Medium	2	3	4	4	4
SUBTOTAL	4	6	8	8	8
TOTAL ANNUAL THIRD-PARTY TOURNAMENTS	**20**	**26**	**32**	**32**	**32**
TEAMS PER TOURNAMENT:					
Soccer/Lacrosse/Field Hockey:					
Small	64	64	64	64	64
Medium	100	100	100	100	100
Softball:					
Small	24	24	24	24	24
Medium	64	64	64	64	64
Baseball:					
Small	24	24	24	24	24
Medium	64	64	64	64	64
PLAYERS PER TEAM:					
Soccer/Lacrosse/Field Hockey	15	15	15	15	15
Softball	15	15	15	15	15
Baseball	15	15	15	15	15
SPECTATORS PER PARTICIPANT	2.5	2.5	2.5	2.5	2.5
DAYS PER TOURNAMENT	2.5	2.5	2.5	2.5	2.5
TOTAL ANNUAL ATTENDANCE FOR THIRD-PARTY TOURNAMENTS	**107,625**	**139,500**	**171,375**	**171,375**	**171,375**

Figure 3.2.2
Phase Two of a Feasibility Study for a Potential New Multi-use Sports & Recreation Complex in Eugene-Springfield, Oregon
Exhibits 3, 4, and 5

Table 8. Cost of providing a single hour of use to a person in dollars for five natural grass and five synthetic infill fields, collected in 2014 and 2015 in Oregon.

Field	Field type	Annual equivalent†	Annual hour amount	Dollar amount‡
		US$		US$
1	Natural grass	119,000	24,200	4.90
2	Natural grass	27,600	6,000	4.60
3	Natural grass	96,000	33,400	2.90
4	Natural grass	95,000	34,300	2.80
5	Natural grass	26,000	11,700	2.20
6	Synthetic infill	163,000	69,300	2.40
7	Synthetic infill	143,000	16,900	8.40
8	Synthetic infill	133,000	63,900	2.10
9	Synthetic infill	133,000	63,800	2.10
10	Synthetic infill	179,000	137,000	1.30
Mean	Natural grass	73,000	21,900	3.50 NS§
Mean	Synthetic infill	150,000	70,100	3.30 NS

† Costs (with the exception of installation) were inflated by 3% each year and brought back to their present value with a 4% discount rate. The annual equivalent is presented to allow for comparisons between the different periods of different lengths.

‡ Calculated by taking the cost of the annual equivalent and dividing it by the annual hours of player use for five natural grass and five synthetic infill fields.

§ NS, no significant differences at the 0.05 probability level.

Figure 4.1.1
Daviscourt et al. ITSRJ (2017)

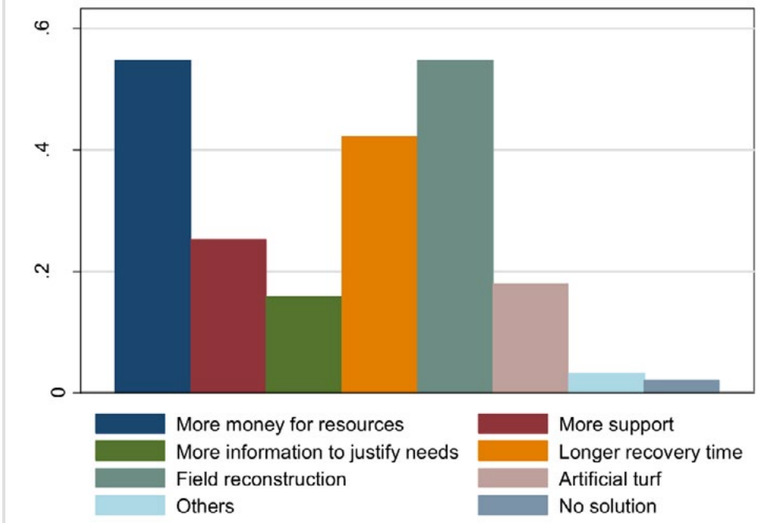


Fig. 3. Opinions of administrators and managers regarding potential solutions that could overcome the biggest challenges associated with natural turfgrass fields (N = 95). Other solutions included avoiding pest/animal destruction and having more fields.

Figure 4.1.2
Yue et al. HortScience (2024)

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Category	Aspect	Sub Aspect	Deep Sub Aspect	Considerations
Social				
	Recreational Opportunities		Emotional Benefit and health benefit	•Consider daily and yearly hours of use to meet community needs, and if fields are planned for intensive, high-impact use. •Evaluate whether existing field inventory is sufficient to support additional hours to reduce the demand for new fields. • Synthetic turf supports over 1,000 hours of use per year, allowing for a high intensity of use with minimal impact from climate (weather) events. • Consider how maintenance resources may limit hours of use, and unmitigated excess heat during hot summer days may limit hours of play. •Consider anticipated annual hours of use, whether more natural turf fields are needed to accommodate those hours, and if that area is available. •Consider maintenance resources and local climate to determine estimated daily and annual hours of use a natural turf field can support.
		Baseball/ Softball		Regarding existing baseball/softball fields (diamond fields), the CSL study found that "[t]here are more than 600 teams and 8,200 players currently utilizing baseball/softball fields throughout the Eugene-Springfield market for league games. This resulted in an estimated 216,600 people attending the more than 6,900 games played throughout a typical year, of which, approximately 18 percent (more than 39,400 people) originated from outside of the cities of either Eugene or Springfield."6 The CSL study estimated that a sports complex "would be expected to attract 28 new tournaments and more than 15,700 incremental players, of which, an estimated 71 percent would originate from outside of the Eugene-Springfield market" and that additional baseball/softball fields "would be expected to attract nearly 202,700 incremental attendees, of which, nearly 119,600 (59 percent) would be non-local."
		Soccer/ Rectangle Fields		Regarding existing soccer fields (rectangle fields), the CSL study found that "[a]n estimated 1,070 teams and 13,000 players currently utilize multisport rectangle fields throughout Eugene and Springfield for various league play, consisting of over 8,400 soccer, football (flag and tackle), rugby, lacrosse and ultimate Frisbee games. An estimated 275,900 people participated and/or attended these games, with approximately 37,200 of these attendees coming from outside of the Eugene-Springfield market."8 The CSL study estimated that the "latent demand for multisport rectangle fields would account for approximately 14 percent growth among existing teams, serving an additional 1,960 participants" and that "[f]urther opportunities may exist for increasing usage among developing sports such as lacrosse, rugby, and field hockey."
	Safety and Health			•Consider Operators and Users Consider whether community public perception favors natural turf over synthetic turf. •Consider magnitude of heat absorption and temperature concerns in local environment. •Chemical exposure from contact, inhalation, and ingestion of rubber infill are below the threshold for harm to humans. •Consider alternatives to rubber infill and how heat absorption is mitigated (alternative infill materials and light irrigation are standard materials and methods). •Report uses a sand-based performance field as the basis of comparison, which is a professional product. Consider how injury risk may increase for amateur and recreational fields due to level of impact and ways to mitigate that risk. •Consider heat mitigation during high temperature days such as irrigating later in the morning.

	Chemical exposure -	*** Metals** *** PAH Metabolites**	
		*** PFAS Exposure**	
		*** Microplastics**	
	Injury		
	Heat		
		Operators	
		Users	
Cultural Importance			Consider by major demographic group. Careful with assumptions here.

Environmental			
	Natural Resources		•Consider noise pollution from maintenance equipment and electric equipment. •Consider how the field's stormwater is separated from surrounding groundwater and overland flow without diverting stormwater off-site (if feasible). •Target migration pathways to prevent materials from entering waterways and soils, such as field design, transport and storage of materials, and equipment cleaning. •Consider regular testing of soil and turfgrass for nutrients and fine-tune fertilizer applications to only what is necessary
	Water Pollution		
		Crumb Rubber	* Water runoff - inerts
		Microplastics	
		Ecotoxicity	
		Metals	
		PAH Metabolites	
		Nitrogen fertilizer runoff	
	TURTLES		
	Exposure Pathway		Frequency X Duration x Consequence
		Windblown	
		VOCs	
		Maintenace Equipment Fuel Emissions - Air toxics	
		Tracking on shoes	
		Leaching and Runoff	
		Edge Migration	

Climate			•Consider local sourcing of materials to the greatest extent feasible. •Consider all electric equipment for maintenance. •Consider intensity of field use. Construction of a synthetic turf field contributes more environmental impact per square foot than a natural turf field, however that impact is reduced by increased hours of use. •Consider turfgrass species requiring less fertilizer, ways to capture carbon in grass clippings, and frequent testing to target fertilizer use. •Consider the sourcing, storage, and application practices of organic solid fertilizers to reduce excess.
	Materials	**Production Emissions-Embodied**	
		CAPEX - Transport	
		Fertilizer Production	*Nitrogen production GHGs
	Maintenance	**OPEX- Transport Sand**	
		Vehicle Trips and Maintenance Equipment	Fuel combustion emissions - GHGs
		Fertilizer Use	* N2O GHGs
	Usage	**Visits by vehicle**	Using the Phase Two of a Feasibility Study for a Potential New Multi-use Sports & Recreation Complex in Eugene-Springfield, Oregon Exhibits 3, 4, and 5 (Fig. 3.2.2) providing an approximate total hour of usage, we can extrapolate by assuming 2 hours per league or tournament game, practice slot, and camp session totaling slightly over 1,000 hours per field per year. This context helps to frame where this proposed sports complex fits within the conclusions stated by Itten, et. al. (2022),

Economic	
Life Cycle Cost	•The lifecycle cost for a single natural turf field is less compared to the same size synthetic turf field. When adjusting for available usage hours, synthetic turf is as cost effective as natural turf. •Natural turf maintenance cost is about 3 times more than synthetic turf maintenance over the use period, about 8 to 10 years depending on manufacturer warranty. •Consider whether hours of use per field are above 900hr/yr. High intensity use fields are less costly per hour of use over the field lifespan. •Consider maintenance practices that minimize infill loss and early wear of the turf fibers. •Consider including necessary costs to prevent environmental impact such as on-site sorting of materials and bagging of turf to be removed during field replacement. •Consider whether hours of use per field are below 900hr/yr. A single natural turf field is a lower initial cost than a synthetic turf field. •Consider maintenance practices and regular testing to minimize invasive species, compaction, and other issues that reduce field lifespan. •Consider how often replacement of sod and sand bedding will occur to maintenance performance.
Life Cycle Cost	
Life Cycle Revenue	
Net Cost or profit per unit	
Economic Opportunities	•Use annual revenue to support operation. •Identify benefits to the local economy including full and part-time jobs using key determinants such as numbers of events, utilization of field space, and year-round playability. •Quantify economic benefits from numbers of events on fields, utilization of field space, and year-round playability, other off-site economic benefits, and jobs. •Quantify economic benefits from numbers of events on fields, utilization of field space, and year-round playability, other off-site economic benefits, and jobs. •The CSL study determined that there is a clear market for a sports field complex of 10-12 diamond fields and 4-6 rectangle fields in Eugene.
Community Economic Benefit	
Local Economy FTEs	
Facility Wages/FTEs	

Appendix D.

Phasing and Costs Report

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Scope of Work

The project includes the development of Golden Gardens Park located in Eugene, Oregon, through phased development consisting of five phases.

Source Documents

The cost report is based on the following documents:

- City of Eugene Golden Gardens Park Master Plan Cost Report, November 5, 2024, prepared by DCW
- Phasing Diagram, January 24, 2025
- Refined Design Concept, December 6, 2024

Procurement

It is anticipated that the project will be delivered by City procurement processes in multiple phases. Phases are assumed to be delivered every two years, beginning in 2028. All costs are in 2025 dollars. Cost escalation is based on a 40-year (1983 - 2023) historical US average of 2.8%.

Table CR-1. Project Cost Estimate

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
OVERALL SUMMARY
PHASING PLAN 2025-01-24

ITEM	TOTAL CONSTRUCTION COST	TOTAL PROJECT COST[1]	TOTAL BUDGET (WITH ESCALATION[2])
PHASE			
Phase 1A (2028)	$18,179,164	$24,332,112	$26,433,772
Phase 1B (2030)	$16,096,993	$21,545,206	$24,735,245
Phase 1C (2032)	$10,985,166	$14,703,223	$17,838,747
Phase 2A (2034)	$25,673,194	$34,362,583	$44,057,904
Phase 2B (2036)	$15,431,706	$20,654,744	$27,986,210
	$86,366,223	**$115,597,868**	**$141,051,878**

1. Total Project Cost includes construction costs + owner costs (design and engineering fees, permitting fees, and other administrative expenses).
2. Assumed Escalation Rate of 2.8% Compounded Anually

Golden Gardens Phasing Plan

PROJECT BOUNDARY

Phase 1A

Includes:
3 rectangle fields, field lighting, parking, vehicle access drive, soft surface loop path, Natural Area fencing, predator-free turtle habitat fencing, pond protective fencing, Natural Area berming/screening, landscape improvements, tree plantings, pedestrian bridge

Phase 1B

Includes:
3 rectangle fields, 1 warm up area, shade structures, restroom, playground, concessions, food truck plaza, maintenance facility, parking, field lighting, landscape improvements, tree plantings

Phase 1C

Includes:
Neighborhood park amenities, playground, picnic shelter, restroom enclosure, half court basketball, exercise station, multiuse irrigated lawn, seating, concrete paths, soft surface paths, unirrigated meadow

Multisport courts (pickleball or tennis), basketball courts, sand volleyball courts, parking, shade structures, field lighting, bicycle pump track, landscape improvements, tree plantings

Phase 2A

Includes:
4 diamond fields (including championship field), vehicle access drive, shade structures, parking, food truck plaza, restroom, auxiliary maintenance building, field lighting, channel restoration, landscape improvements, tree plantings

Phase 2B

Includes:
4 diamond fields, 4 U10 soccer fields (included in outfield of diamond fields), shade structures, field lighting, parking, landscape improvements, tree plantings

0' 200' 500' 1,000'

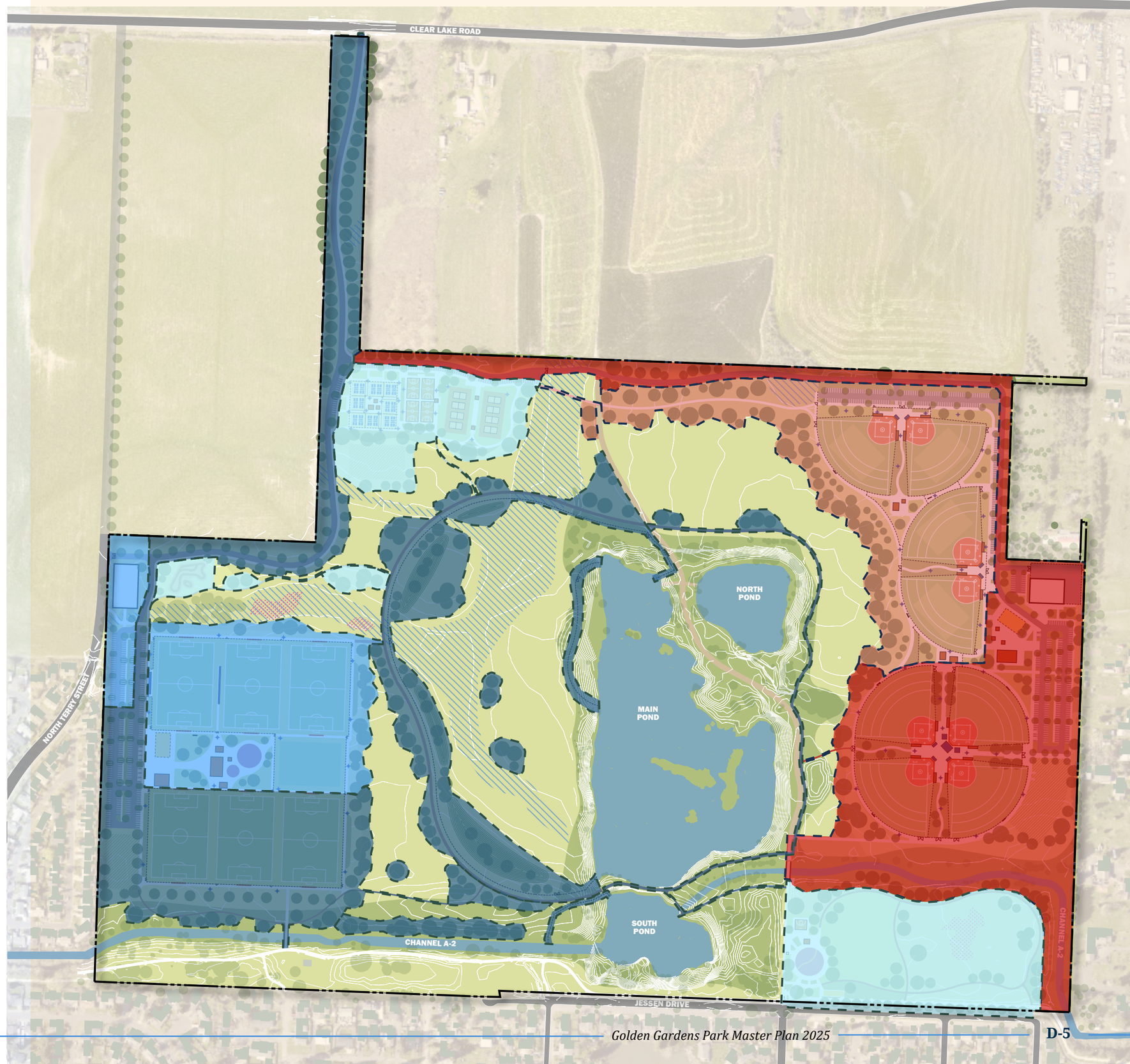


Table CR-2. Phase 1A Cost Estimate Summary

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1A SUMMARY
PHASING PLAN 2025-01-24

ITEM	%	ITEM COST	SUBJECT COST	TOTAL COST
DIRECT CONSTRUCTION COSTS				
Site Preparation and Demolition			$2,144,644	
Site Improvements			$9,796,848	
Site Utilities			$2,042,479	
Estimated Direct Construction Cost (DCC)			**$13,983,972**	
INDIRECT CONSTRUCTION COSTS				
General Conditions and Requirements	12%	$1,678,077		
Bonds & Insurance	2%	$279,679		
Overhead & Profit	6%	$839,038		
Construction Contingency	10%	$1,398,397		
Estimated Indirect Construction Cost (ICC)			**$4,195,192**	
TOTAL ESTIMATED CONSTRUCTION COST (DCC + ICC)				**$18,179,164**
OWNER SOFT COSTS				
Design Fees	9%	$1,258,557		
Design Contingency	30%	$4,195,192		
Permits & Administration	5%	$699,199		
Estimated Owner Soft Cost (OSC)			**$6,152,948**	
TOTAL ESTIMATED PROJECT COST (DCC + ICC + OSC)				**$24,332,112**
ESCALATION				
Escalation to 2028	2.8%	$2,101,661		
Estimated Escalation			**$2,101,661**	
TOTAL ESTIMATED BUDGET (WITH ESCALATION TO 2028)				**$26,433,772**

Table CR-3. Phase 1B Cost Estimate Summary

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1B SUMMARY
PHASING PLAN 2025-01-24

ITEM	%	ITEM COST	SUBJECT COST	TOTAL COST
DIRECT CONSTRUCTION COSTS				
Site Preparation and Demolition			$925,142	
Site Improvements			$7,594,049	
Maintenance Building (west)			$1,391,000	
Concessions/Equipment Building			$220,800	
Restroom Building			$1,092,300	
Site Utilities			$1,159,011	
Estimated Direct Construction Cost (DCC)			**$12,382,302**	
INDIRECT CONSTRUCTION COSTS				
General Conditions and Requirements	12%	$1,485,876		
Bonds & Insurance	2%	$247,646		
Overhead & Profit	6%	$742,938		
Construction Contingency	10%	$1,238,230		
Estimated Indirect Construction Cost (ICC)			**$3,714,691**	
TOTAL ESTIMATED CONSTRUCTION COST (DCC + ICC)				**$16,096,993**
OWNER SOFT COSTS				
Design Fees	9%	$1,114,407		
Design Contingency	30%	$3,714,691		
Permits & Administration	5%	$619,115		
Estimated Owner Soft Cost (OSC)			**$5,448,213**	
TOTAL ESTIMATED PROJECT COST (DCC + ICC + OSC)				**$21,545,206**
ESCALATION				
Escalation to 2030	2.8%	$3,190,039		
Estimated Escalation			**$3,190,039**	
TOTAL ESTIMATED BUDGET (WITH ESCALATION TO 2030)				**$24,735,245**

Table CR-4. Phase 1C Cost Estimate Summary

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1C SUMMARY
PHASING PLAN 2025-01-24

ITEM	%	ITEM COST	SUBJECT COST	TOTAL COST
DIRECT CONSTRUCTION COSTS				
Site Preparation and Demolition			$1,144,619	
Site Improvements			$5,584,326	
Site Utilities			$1,721,183	
Estimated Direct Construction Cost (DCC)			**$8,450,128**	
INDIRECT CONSTRUCTION COSTS				
General Conditions and Requirements	12%	$1,014,015		
Bonds & Insurance	2%	$169,003		
Overhead & Profit	6%	$507,008		
Construction Contingency	10%	$845,013		
Estimated Indirect Construction Cost (ICC)			**$2,535,038**	
TOTAL ESTIMATED CONSTRUCTION COST (DCC + ICC)				**$10,985,166**
OWNER SOFT COSTS				
Design Fees	9%	$760,512		
Design Contingency	30%	$2,535,038		
Permits & Administration	5%	$422,506		
Estimated Owner Soft Cost (OSC)			**$3,718,056**	
TOTAL ESTIMATED PROJECT COST (DCC + ICC + OSC)				**$14,703,223**
ESCALATION				
Escalation to 2032	2.8%	$3,135,524		
Estimated Escalation			**$3,135,524**	
TOTAL ESTIMATED BUDGET (WITH ESCALATION TO 2032)				**$17,838,747**

Table CR-5. Phase 2A Cost Estimate Summary

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 2A SUMMARY
PHASING PLAN 2025-01-24

ITEM	%	ITEM COST	SUBJECT COST	TOTAL COST
DIRECT CONSTRUCTION COSTS				
Site Preparation and Demolition			$1,870,321	
Site Improvements			$12,238,164	
Maintenance Building (east)			$1,391,000	
Restroom Building			$1,092,300	
Site Utilities			$3,156,826	
Estimated Direct Construction Cost (DCC)			**$19,748,611**	
INDIRECT CONSTRUCTION COSTS				
General Conditions and Requirements	12%	$2,369,833		
Bonds & Insurance	2%	$394,972		
Overhead & Profit	6%	$1,184,917		
Construction Contingency	10%	$1,974,861		
Estimated Indirect Construction Cost (ICC)			**$5,924,583**	
TOTAL ESTIMATED CONSTRUCTION COST (DCC + ICC)				**$25,673,194**
OWNER SOFT COSTS				
Design Fees	9%	$1,777,375		
Design Contingency	30%	$5,924,583		
Permits & Administration	5%	$987,431		
Estimated Owner Soft Cost (OSC)			**$8,689,389**	
TOTAL ESTIMATED PROJECT COST (DCC + ICC + OSC)				**$34,362,583**
ESCALATION				
Escalation to 2034	2.8%	$9,695,321		
Estimated Escalation			**$9,695,321**	
TOTAL ESTIMATED BUDGET (WITH ESCALATION TO 2034)				**$44,057,904**

Table CR-6. Phase 2B Cost Estimate Summary

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 2B SUMMARY
PHASING PLAN 2025-01-24

ITEM	%	ITEM COST	SUBJECT COST	TOTAL COST
DIRECT CONSTRUCTION COSTS				
Site Preparation and Demolition			$1,266,130	
Site Improvements			$8,599,662	
Site Utilities			$2,004,751	
Estimated Direct Construction Cost (DCC)			**$11,870,543**	
INDIRECT CONSTRUCTION COSTS				
General Conditions and Requirements	12%	$1,424,465		
Bonds & Insurance	2%	$237,411		
Overhead & Profit	6%	$712,233		
Construction Contingency	10%	$1,187,054		
Estimated Indirect Construction Cost (ICC)			**$3,561,163**	
TOTAL ESTIMATED CONSTRUCTION COST (DCC + ICC)				**$15,431,706**
OWNER SOFT COSTS				
Design Fees	9%	$1,068,349		
Design Contingency	30%	$3,561,163		
Permits & Administration	5%	$593,527		
Estimated Owner Soft Cost (OSC)			**$5,223,039**	
TOTAL ESTIMATED PROJECT COST (DCC + ICC + OSC)				**$20,654,744**
ESCALATION				
Escalation to 2036	2.8%	$7,331,465		
Estimated Escalation			**$7,331,465**	
TOTAL ESTIMATED BUDGET (WITH ESCALATION TO 2036)				**$27,986,210**

Table CR-7. Phase 1A Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1A DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Site Preparation and Demolition					
General Requirements					
Construction entrance and temp. site access	1	EA	$10,000.00	$10,000	
Wheel wash	18	MO	$850.00	$15,300	
Temporary facilities	18	MO	$1,800.00	$32,400	
Site protection	1	LS	$20,000.00	$20,000	
Erosion control	1744965	SF	$0.10	$174,496	
Survey-construction	1	LS	$50,000.00	$50,000	
Demo - clear and grub	1744965	SF	$0.18	$314,094	
Demo - misc., allow	1	LS	$50,000.00	$50,000	
Site Earthwork					
Site cut - 1' depth ave., stockpile	64628	CY	$20.00	$1,292,566	
Base aggregates	4129	CY	$45.00	$185,788	
Grading and compaction	64628	CY	$0.30	$19,388	
Total Site Preparation and Demolition					**$2,144,644**
Site Improvements					
Roadways					
Clear Lake Road improvements				NIC	
Asphalt, 4" thk.	80226	SF	$5.00	$401,132	
Curb - standard	3394	LF	$35.00	$118,790	
Striping	80226	SF	$0.55	$44,124	
Signage - directional	1	LS	$15,000.00	$15,000	
Vehicle access gate, allow	2	EA	$9,650.00	$19,300	
Parking Lots					
Asphalt, 4" thk.	69896	SF	$5.00	$349,482	
Curb - standard	3367	LF	$35.00	$117,845	
Striping	69896	SF	$0.55	$38,443	
ADA - signs	10	EA	$850.00	$8,500	
ADA - ramp, incl. detection pad	5	EA	$1,950.00	$9,750	
Overflow parking	31500	SF	$3.00	$94,500	
Pedestrian Paving					
Concrete - 4" thk	72823	SF	$11.50	$837,465	
Bark trail (new)	74238	SF	$6.50	$482,544	
Bark trail (reconstruction)	8000	SF	$4.00	$32,000	
Pedestrian connection bridge, prefab. (allow)	1554	SF	$215.00	$334,110	

Table CR-7. Phase 1A Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1A DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Rectangle Fields					
3 Synthetic Turf Rectangle Fields	306075	SF	$14.00	$4,285,050	
Fence - 4' ht.	2070	LF	$52.25	$108,158	
Goal Fence - 20' ht	360	LF	$285.00	$102,600	
Gate - single	2	EA	$2,200.00	$4,400	
Gate - double	4	EA	$4,500.00	$18,000	
Equipment				NIC	
Misc. Structures					
Fence - 8' (nesting enclosure west side of ponds)	713	LF	$210.00	$149,730	
Fence - 4' (along trail on west side of ponds)	3630	LF	$52.25	$189,668	
Access gate	4	EA	$960.00	$3,840	
Landscape Improvements					
Trees, allow	225	EA	$850.00	$191,250	
Plant Bed					
Topsoil - soil amendment (stockpile)	644	CY	$20.00	$12,889	
Mulch - 3" depth	161	CY	$40.00	$6,444	
Shrubs - 1 gal., 24" O.C.	4350	EA	$11.50	$50,025	
Irrigation - planting beds	17400	SF	$2.50	$43,500	
Lawn					
Soil preparation	1580	CY	$55.00	$86,912	
Lawn - Irrigated	11166	SF	$1.75	$19,541	
Stormwater Planting					
Trees - small	8	EA	$150.00	$1,197	
Topsoil - 18" depth	882	CY	$80.00	$70,536	
Mulch - 3" depth	147	CY	$40.00	$5,878	
Shrubs - 1 gal., 24" O.C.	3968	EA	$11.50	$45,628	
Berming and Screening					
Berm - soil from stockpile	20058	CY	$20.00	$401,160	
Screening - Shrubs 1gal., 48" O.C.	46299	EA	$11.50	$532,441	
Natural Area					
Hydroseed - meadow mix	3337563	SF	$0.15	$500,634	
Wetland Mitigation	0.49	AC	$132,000.00	$64,384	
Total Site Improvements					**$9,796,848**

Table CR-7. Phase 1A Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1A DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Site Utilities					
Water					
Phase 1A WS - distribution pipe, incl. trenching and backfill	1	LS	$27,500.00	$27,500	
Phase 1A WS - connection	4	EA	$3,500.00	$14,000	
Phase 1A WS - hose bib	7	EA	$900.00	$6,300	
Sanitary Sewer					
SS - connection	3	EA	$3,500.00	$10,500	
SS - distribution pipe, incl. trenching and backfill	375	LF	$125.00	$46,875	
SS - ancillary	1	LS	$12,500.00	$12,500	
Stormwater Management					
SW - pipe, devices, and control structures	1	LS	$386,804.28	$386,804	
Site Lighting and Power Distribution					
Distribution	1	LS	$620,000.00	$620,000	
Site Lighting					
Access drive, allow	25	EA	$8,500.00	$212,500	
Parking lot, allow	23	EA	$8,500.00	$195,500	
Field Lights	6	EA	$85,000.00	$510,000	
Total Site Utilities					**$2,042,479**
Estimated Direct Construction Cost (DCC)					**$13,983,972**

Table CR-8. Phase 1B Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1B DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Site Preparation and Demolition					
General Requirements					
Construction entrance and temp. site access	1	EA	$10,000.00	$10,000	
Wheel wash	18	MO	$850.00	$15,300	
Temporary facilities	18	MO	$1,800.00	$32,400	
Site protection	1	LS	$20,000.00	$20,000	
Erosion control	618370	SF	$0.10	$61,837	
Survey-construction	1	LS	$50,000.00	$50,000	
Demo - clear and grub	618370	SF	$0.18	$111,307	
Demo - misc., allow	1	LS	$50,000.00	$50,000	
Site Earthwork					
Site cut - 1' depth ave., stockpile	22903	CY	$20.00	$458,052	
Base aggregates	2431	CY	$45.00	$109,376	
Grading and compaction	22903	CY	$0.30	$6,871	
Total Site Preparation and Demolition					**$925,142**
Site Improvements					
Roadways					
Terry Street improvements					
Asphalt, 4" thk.	4548	SF	$5.00	$22,738	
Curb - standard	0	LF	$35.00	$0	
Striping	4548	SF	$0.55	$2,501	
Signage - directional	0	LS	$15,000.00	$0	
Vehicle access gate, allow	1	EA	$9,650.00	$9,650	
Parking Lots					
Asphalt, 4" thk.	22862	SF	$5.00	$114,310	
Curb - standard	1565	LF	$35.00	$54,775	
Striping	22862	SF	$0.55	$12,574	
Pedestrian Paving					
Concrete - 4" thk	103841	SF	$11.50	$1,194,176	

Table CR-8. Phase 1B Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1B DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Rectangle Fields					
1 Natural Turf Rectangle Field	102700	SF	$10.00	$1,026,996	
2 Synthetic Turf Rectangle Fields + Warmup Field	268187	SF	$14.00	$3,754,623	
Bleachers, allow	11	EA	$10,000.00	$110,000	
Scoreboard	1	EA	$8,000.00	$8,000	
Fence - 4' ht.	2510	LF	$52.25	$131,148	
Goal Fence - 20' ht	360	LF	$285.00	$102,600	
Gate - single	2	EA	$2,200.00	$4,400	
Gate - double	10	EA	$4,500.00	$45,000	
Equipment - OFOI				NIC	
Shade Structures (2 to 3)					
Buildout, complete	1761	SF	$185.00	$325,785	
Play Areas					
Play surface - engineered wood fiber, 12" depth	9978	SF	$3.85	$38,414	
Filter fabric layer	9978	SF	$0.85	$8,481	
Curb	478	LF	$35.00	$16,713	
Playground equipment - allow	1	LS	$200,000.00	$200,000	
Landscape Improvements					
Trees, allow	44	EA	$850.00	$37,400	
Plant Bed					
Topsoil - soil amendment (stockpile)	317	CY	$20.00	$6,330	
Mulch - 3" depth	79	CY	$40.00	$3,165	
Shrubs - 1 gal., 24" O.C.	2136	EA	$11.50	$24,569	
Irrigation - planting beds/stormwater	8546	SF	$2.50	$21,364	
Lawn	1				
Lawn - Irrigated	50911	SF	$1.75	$89,094	
Soil preparation	1886	CY	$55.00	$103,708	
Stormwater Planting					
Trees - small	8	EA	$150.00	$1,219	
Topsoil - 18" depth	898	CY	$80.00	$71,850	
Mulch - 3" depth	150	CY	$40.00	$5,988	
Shrubs - 1 gal., 24" O.C.	4042	EA	$11.50	$46,478	
Total Site Improvements					**$7,594,049**

Table CR-8. Phase 1B Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1B DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Maintenance Building (west)					
Foundations	3000	SF	$12.00	$36,000	
Superstructure	3000	SF	$85.00	$255,000	
Exterior enclosure	3000	SF	$30.00	$90,000	
Roofing	3000	SF	$20.00	$60,000	
Interior construction	3000	SF	$15.00	$45,000	
Interior finishes	3000	SF	$12.50	$37,500	
Plumbing systems	3000	SF	$20.00	$60,000	
Mechanical systems	3000	SF	$45.00	$135,000	
Fire protection	3000	SF	$6.50	$19,500	
Electrical systems	3000	SF	$55.00	$165,000	
Equipment	3000	SF	$15.00	$45,000	
Furnishings	3000	SF	$3.00	$9,000	
Maintenance Building - Covered Outdoor Storage (west)					
Foundations	2000	SF	$12.00	$24,000	
Superstructure	2000	SF	$85.00	$170,000	
Exterior enclosure	2000	SF	$30.00	$60,000	
Roofing	2000	SF	$20.00	$40,000	
Electrical systems	2000	SF	$55.00	$110,000	
Equipment	2000	SF	$15.00	$30,000	
Total Maintenance Building (west)					**$1,391,000**
Concessions/Equipment Building					
Foundations	800	SF	$11.00	$8,800	
Superstructure	800	SF	$73.00	$58,400	
Exterior enclosure	800	SF	$26.00	$20,800	
Roofing	800	SF	$17.00	$13,600	
Interior construction	800	SF	$13.00	$10,400	
Interior finishes	800	SF	$11.00	$8,800	
Plumbing systems	800	SF	$17.00	$13,600	
Mechanical systems	800	SF	$39.00	$31,200	
Fire protection	800	SF	$6.00	$4,800	
Electrical systems	800	SF	$47.00	$37,600	
Equipment	800	SF	$13.00	$10,400	
Furnishings	800	SF	$3.00	$2,400	
Total Concessions/Equipment Building					**$220,800**

Table CR-8. Phase 1B Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1B DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Restroom Building					
Foundations	2200	SF	$20.00	$44,000	
Superstructure	2200	SF	$120.00	$264,000	
Exterior enclosure	2200	SF	$90.00	$198,000	
Roofing	2200	SF	$22.00	$48,400	
Interior construction	2200	SF	$45.00	$99,000	
Interior finishes	2200	SF	$35.00	$77,000	
Plumbing systems	2200	SF	$60.00	$132,000	
Mechanical systems	2200	SF	$55.00	$121,000	
Fire protection	2200	SF	$4.50	$9,900	
Electrical systems	2200	SF	$40.00	$88,000	
Equipment	2200	SF	$5.00	$11,000	
Total Restrooms					**$1,092,300**
Site Utilities					
Water					
Sanitary Sewer					
Stormwater Management					
SW - pipe, devices, and control structures	1	LS	$394,010.65	$394,011	
Sound system - Championship Field				NIC	
Site Lighting and Power Distribution					
Site Lighting					
Parking lot, allow	20	EA	$8,500.00	$170,000	
Field Lights	7	EA	$85,000.00	$595,000	
Total Site Utilities					**$1,159,011**
Estimated Direct Construction Cost (DCC)					**$12,382,302**

Table CR-9. Phase 1C Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1C DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Site Preparation and Demolition					
General Requirements					
Construction entrance and temp. site access	1	EA	$10,000.00	$10,000	
Wheel wash	18	MO	$850.00	$15,300	
Temporary facilities	18	MO	$1,800.00	$32,400	
Site protection	1	LS	$20,000.00	$20,000	
Erosion control	893957	SF	$0.10	$89,396	
Survey-construction	1	LS	$50,000.00	$50,000	
Demo - clear and grub	893957	SF	$0.18	$160,912	
Demo - misc., allow	1	LS	$50,000.00	$50,000	
Site Earthwork					
Site cut - 1' depth ave., stockpile	33110	CY	$20.00	$662,190	
Base aggregates	989	CY	$45.00	$44,488	
Grading and compaction	33110	CY	$0.30	$9,933	
Total Site Preparation and Demolition					**$1,144,619**
Site Improvements					
Sports Courts & Pump Track (Northwest)					
Pedestrian Paving					
Concrete - 4" thk	52360	SF	$11.50	$602,145	
Multisport Courts					
Sports netting incl. posts - allow	16	LS	$1,700.00	$27,200	
Bench, allow	8	EA	$3,000.00	$24,000	
Surfacing, allow	28800	SF	$16.00	$460,800	
Gate - single	8	EA	$2,200.00	$17,600	
Fence - 8' ht., perimeter	760	LF	$86.00	$65,360	
Fence - 4' ht., interior	720	LF	$52.25	$37,620	
Sand Volleyball					
Sports netting - allow	8	LS	$8,500.00	$68,000	
Sand, drainage	409	CY	$110.00	$44,990	
Basketball, Full Court					
Basketball hoop	8	EA	$6,500.00	$52,000	
Bench	8	EA	$3,000.00	$24,000	
Surfacing, allow	16800	SF	$16.00	$268,800	

Table CR-9. Phase 1C Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1C DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Shade Structures					
Buildout, complete	1521	SF	$185.00	$281,385	
Pump Track					
Buildout, complete	8791	SF	$42.00	$369,222	
Landscape Improvements					
Trees, allow	43	EA	$850.00	$36,550	
Plant Bed					
Topsoil - soil amendment (stockpile)	1087	CY	$20.00	$21,738	
Mulch - 3" depth	272	CY	$40.00	$10,869	
Shrubs - 1 gal., 24" O.C.	7337	EA	$11.50	$84,370	
Irrigation - planting beds/stormwater	29346	SF	$2.50	$73,365	
Lawn					
Lawn - Irrigated	74523	SF	$1.75	$130,415	
Soil preparation	2760	CY	$55.00	$151,806	
Stormwater Planting					
Trees - small	1	EA	$150.00	$185	
Topsoil - 18" depth	136	CY	$80.00	$10,894	
Mulch - 3" depth	23	CY	$40.00	$908	
Shrubs - 1 gal., 24" O.C.	613	EA	$11.50	$7,047	
Neighborhood Park (Southeast)					
Roadways					
Jessen drive, renovation of existing					
Demo - material, allow	1025	SF	$3.20	$3,280	
Curb - standard	1025	LF	$35.00	$35,875	
Trees, allow	35	EA	$850.00	$29,750	
Pedestrian Paving					
Concrete - 4" thk	32900	SF	$11.50	$378,350	
Basketball, Half Court					
Basketball hoop	1	EA	$6,500.00	$6,500	
Bench	2	EA	$3,000.00	$6,000	
Surfacing, allow	2100	SF	$16.00	$33,600	

Table CR-9. Phase 1C Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1C DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Play Areas					
Play surface - engineered wood fiber, 12" depth	9849	SF	$3.85	$37,919	
Filter fabric layer	9849	SF	$0.85	$8,372	
Curb	590	LF	$35.00	$20,664	
Playground equipment - allow	1	LS	$300,000.00	$300,000	
Misc. Structures					
Phase 1C Exercise equipment, allow	1	LS	$50,000.00	$50,000	
Shade Structures					
Buildout, complete	480	SF	$185.00	$88,800	
Landscape Improvements					
Trees, allow	37	EA	$850.00	$31,450	
Plant Bed					
Topsoil - soil amendment (stockpile)	2410	CY	$20.00	$48,205	
Mulch - 3" depth	603	CY	$40.00	$24,103	
Shrubs - 1 gal., 24" O.C.	16269	EA	$11.50	$187,096	
Irrigation - planting beds/stormwater	65077	SF	$2.50	$162,693	
Lawn					
Lawn - Irrigated	124451	SF	$1.75	$217,789	
Soil preparation	4609	CY	$55.00	$253,511	
Eco-Lawn					
Eco-Lawn - Irrigated	220111	SF	$1.50	$330,167	
Soil preparation	8152	CY	$55.00	$448,375	
Stormwater Planting					
Trees - small	1	EA	$150.00	$103	
Topsoil - 18" depth	76	CY	$80.00	$6,044	
Mulch - 3" depth	13	CY	$40.00	$504	
Shrubs - 1 gal., 24" O.C.	340	EA	$11.50	$3,910	
Total Site Improvements					**$5,584,326**

Table CR-9. Phase 1C Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 1C DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Site Utilities					
Water					
Sanitary Sewer					
Stormwater Management					
SW - pipe, devices, and control structures	1	LS	$106,182.61	$106,183	
Site Lighting and Power Distribution					
Field Lights	19	EA	$85,000.00	$1,615,000	
Total Site Utilities					**$1,721,183**
Estimated Direct Construction Cost (DCC)					**$8,450,128**

Table CR-10. Phase 2A Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 2A DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Site Preparation and Demolition					
General Requirements					
Construction entrance and temp. site access	1	EA	$10,000.00	$10,000	
Wheel wash	18	MO	$850.00	$15,300	
Temporary facilities	18	MO	$1,800.00	$32,400	
Site protection	1	LS	$20,000.00	$20,000	
Erosion control	1399967	SF	$0.10	$139,997	
Survey-construction	1	LS	$50,000.00	$50,000	
Demo - clear and grub	1399967	SF	$0.18	$251,994	
Demo - misc., allow	1	LS	$50,000.00	$50,000	
Site Earthwork					
Site cut - 1' depth ave., stockpile	51851	CY	$20.00	$1,037,013	
Base aggregates	5512	CY	$45.00	$248,062	
Grading and compaction	51851	CY	$0.30	$15,555	
Total Site Preparation and Demolition					**$1,870,321**
Site Improvements					
Roadways					
Asphalt, 4" thk.	96417	SF	$5.00	$482,086	
Curb - standard	4184	LF	$35.00	$146,440	
Striping	96417	SF	$0.55	$53,029	
Signage - directional	1	LS	$15,000.00	$15,000	
Parking Lots					
Asphalt, 4" thk.	57062	SF	$5.00	$285,310	
Curb - standard	5156	LF	$35.00	$180,460	
Striping	57062	SF	$0.55	$31,384	
ADA - signs	10	EA	$850.00	$8,500	
ADA - ramp, incl. detection pad	5	EA	$1,950.00	$9,750	
Overflow parking	53671	SF	$3.00	$161,014	
Pedestrian Paving					
Concrete - 4" thk	144195	SF	$11.50	$1,658,247	

Table CR-10. Phase 2A Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 2A DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Diamond Fields					
4 Synthetic Turf Dimond Fields	330902	SF	$14.00	$4,632,629	
Fence - 4' ht.	4009	LF	$52.25	$209,470	
Fence - 30' ht.(backstop)	783	LF	$285.00	$223,144	
Gate - single	0	EA	$2,200.00	$0	
Gate - double	7	EA	$4,500.00	$31,500	
Dugout	8	EA	$15,000.00	$120,000	
Bleachers, typ.	7	EA	$10,000.00	$70,000	
Scoreboards	4	EA	$8,000.00	$32,000	
Foul Poles (pair)	4	EA	$3,600.00	$14,400	
Equipment - FOIO				NIC	
Shade Structures					
Buildout, complete	675	SF	$185.00	$124,875	
Landscape Improvements					
Trees, allow	162	EA	$850.00	$137,700	
Plant Bed					
Topsoil - soil amendment (stockpile)	3498	CY	$20.00	$69,964	
Mulch - 3" depth	875	CY	$40.00	$34,982	
Shrubs - 1 gal., 24" O.C.	23613	EA	$11.50	$271,548	
Irrigation - planting beds/stormwater	94452	SF	$2.50	$236,129	
Lawn					
Lawn - Irrigated	17039	SF	$1.75	$29,819	
Soil preparation	2619	CY	$55.00	$144,040	
Stormwater Planting					
Trees - small	10	EA	$150.00	$1,464	
Topsoil - 18" depth	1079	CY	$80.00	$86,300	
Mulch - 3" depth	180	CY	$40.00	$7,192	
Shrubs - 1 gal., 24" O.C.	4854	EA	$11.50	$55,825	
Channel Restoration					
Trees - bare root	2238	EA	$15.00	$33,575	
Mulch - 3" depth	149	CY	$40.00	$5,969	
Shrubs - plug	14151	EA	$3.50	$49,529	
Earthwork, grading	283418	SF	$9.00	$2,550,762	
Wetland Mitigation	0.26	SF	$132,000.00	$34,126	
Total Site Improvements					**$12,238,164**

Table CR-10. Phase 2A Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 2A DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Maintenance Building (east)					
Foundations	3000	SF	$12.00	$36,000	
Superstructure	3000	SF	$85.00	$255,000	
Exterior enclosure	3000	SF	$30.00	$90,000	
Roofing	3000	SF	$20.00	$60,000	
Interior construction	3000	SF	$15.00	$45,000	
Interior finishes	3000	SF	$12.50	$37,500	
Plumbing systems	3000	SF	$20.00	$60,000	
Mechanical systems	3000	SF	$45.00	$135,000	
Fire protection	3000	SF	$6.50	$19,500	
Electrical systems	3000	SF	$55.00	$165,000	
Equipment	3000	SF	$15.00	$45,000	
Furnishings	3000	SF	$3.00	$9,000	
Maintenance Building - Covered Outdoor Storage (east)					
Foundations	2000	SF	$12.00	$24,000	
Superstructure	2000	SF	$85.00	$170,000	
Exterior enclosure	2000	SF	$30.00	$60,000	
Roofing	2000	SF	$20.00	$40,000	
Electrical systems	2000	SF	$55.00	$110,000	
Equipment	2000	SF	$15.00	$30,000	
Total Maintenance Building (east)					**$1,391,000**
Restroom Building					
Foundations	2200	SF	$20.00	$44,000	
Superstructure	2200	SF	$120.00	$264,000	
Exterior enclosure	2200	SF	$90.00	$198,000	
Roofing	2200	SF	$22.00	$48,400	
Interior construction	2200	SF	$45.00	$99,000	
Interior finishes	2200	SF	$35.00	$77,000	
Plumbing systems	2200	SF	$60.00	$132,000	
Mechanical systems	2200	SF	$55.00	$121,000	
Fire protection	2200	SF	$4.50	$9,900	
Electrical systems	2200	SF	$40.00	$88,000	
Equipment	2200	SF	$5.00	$11,000	
Total Restrooms					**$1,092,300**

Table CR-10. Phase 2A Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 2A DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Site Utilities					
Water					
WS - distribution pipe, incl. trenching and backfill	1	LS	$27,500.00	$27,500	
WS - connection	5	EA	$3,500.00	$17,500	
WS - hose bib	8	EA	$900.00	$7,200	
Sanitary Sewer					
SS - connection	4	EA	$3,500.00	$14,000	
SS - distribution pipe, incl. trenching and backfill	375	LF	$125.00	$46,875	
SS - ancillary	1	LS	$12,500.00	$12,500	
Stormwater Management					
SW - pipe, devices, and control structures	1	LS	$473,251.25	$473,251	
Sound system - Championship Field				NIC	
Site Lighting and Power Distribution					
Distribution	1	LS	$620,000.00	$620,000	
Site Lighting					
Access drive, allow	25	EA	$8,500.00	$212,500	
Parking lot, allow	43	EA	$8,500.00	$365,500	
Field Lights	16	EA	$85,000.00	$1,360,000	
Total Site Utilities					**$3,156,826**
Estimated Direct Construction Cost (DCC)					**$19,748,611**

Table CR-11. Phase 2B Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 2B DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Site Preparation and Demolition					
General Requirements					
Construction entrance and temp. site access	1	EA	$10,000.00	$10,000	
Wheel wash	18	MO	$850.00	$15,300	
Temporary facilities	18	MO	$1,800.00	$32,400	
Site protection	1	LS	$20,000.00	$20,000	
Erosion control	893527	SF	$0.10	$89,353	
Survey-construction	1	LS	$50,000.00	$50,000	
Demo - clear and grub	893527	SF	$0.18	$160,835	
Demo - misc., allow	1	LS	$50,000.00	$50,000	
Site Earthwork					
Site cut - 1' depth, average	33094	CY	$20.00	$661,872	
Base aggregates	3699	CY	$45.00	$166,443	
Grading and compaction	33094	CY	$0.30	$9,928	
Total Site Preparation and Demolition					**$1,266,130**
Site Improvements					
Parking Lots					
Asphalt, 4" thk.	72696	SF	$5.00	$363,479	
Curb - standard	4230	LF	$35.00	$148,050	
Striping	72696	SF	$0.55	$39,983	
ADA - signs	3	EA	$850.00	$2,550	
ADA - ramp, incl. detection pad	2	EA	$1,950.00	$3,900	
Vehicle access gate, allow	0	EA	$9,650.00	$0	
Pedestrian Paving					
Concrete - 4" thk	127035	SF	$11.50	$1,460,906	
Diamond Fields					
4 Synthetic Turf Dimond Fields	330902	SF	$14.00	$4,632,629	
Fence - 4' ht.	4712	LF	$52.25	$246,202	
Fence - 30' ht.(backstop)	747	LF	$285.00	$212,767	
Gate - single	3	EA	$2,200.00	$6,600	
Gate - double	7	EA	$4,500.00	$31,500	
Dugout	8	EA	$15,000.00	$120,000	
Bleachers, typ.	4	EA	$10,000.00	$40,000	
Scoreboards	4	EA	$8,000.00	$32,000	
Foul Poles (pair)	4	EA	$3,600.00	$14,400	
Equipment - FOIO				NIC	

Table CR-11. Phase 2B Cost Estimate Detail

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
PHASE 2B DETAIL
PHASING PLAN 2025-01-24

ITEM	QTY	UNIT	UNIT COST	ITEM COST	TOTAL COST
DIRECT CONSTRUCTION COSTS					
Shade Structures					
Buildout, complete	2418	SF	$185.00	$447,330	
Landscape Improvements					
Trees, allow	103	EA	$850.00	$87,550	
Plant Bed					
Topsoil - soil amendment (stockpile)	2300	CY	$20.00	$46,007	
Mulch - 3" depth	575	CY	$40.00	$23,004	
Shrubs - 1 gal., 24" O.C.	15527	EA	$11.50	$178,565	
Irrigation - planting beds/stormwater	62110	SF	$2.50	$155,274	
Lawn					
Lawn - Irrigated	48267	SF	$1.75	$84,467	
Soil preparation	1788	CY	$55.00	$98,322	
Stormwater Planting					
Trees - small	8	EA	$150.00	$1,206	
Topsoil - 18" depth	888	CY	$80.00	$71,073	
Mulch - 3" depth	148	CY	$40.00	$5,923	
Shrubs - 1 gal., 24" O.C.	3998	EA	$11.50	$45,976	
Total Site Improvements					**$8,599,662**
Site Utilities					
Stormwater Management					
SW - pipe, devices, and control structures	1	LS	$389,751.21	$389,751	
Site Lighting and Power Distribution					
Site Lighting					
Field Lights	19	EA	$85,000.00	$1,615,000	
Total Site Utilities					**$2,004,751**
Estimated Direct Construction Cost (DCC)					**$11,870,543**

Table CR-12. Notes

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
NOTES
PHASING PLAN 2025-01-24

ITEM	NOTES
Site Preparation and Demolition	
General Requirements	
Construction entrance and temp. site access	
Wheel wash	
Temporary facilities	
Site protection	
Erosion control	
Survey-construction	
Site Demolition and Relocations	
Demo - misc., allow	
Site Earthwork	
Site cut - 1' depth ave., stockpile	
Base aggregates	Roadways, parking lots, pedestrian paving; excludes fields
Grading and compaction	Roadways, parking lots, pedestrian paving; excludes fields
Site Improvements	
Roadways	
Asphalt, 4" thk.	
Curb - standard	
Striping	
Signage - directional	Assumes half of signage is installed in Phase 1A secound half is installed in Phase 2A
Parking Lots	
Asphalt, 4" thk.	
Curb - standard	
Striping	
ADA - signs	
ADA - ramp, incl. detection pad	
Overflow parking	
Pedestrian Paving	
Concrete - 4" thk	
Bark trail (new)	
Bark trail (reconstruction)	
Rectangle Fields	
Synthetic Turf Rectangle Fields	
Bleachers, allow (small)	
Fence - 4' ht.	
Goal Fence - 20' ht	
Gate - single	
Gate - double	
Equipment	Excludes Goals
Diamond Fields	
Synthetic Turf Dimond Fields	1-5/8" turf with infill, 2" leveling aggregate, 6" base aggregate, drainage, geotextile fabric, compacted subgrade
Fence - 4' ht.	
Fence - 30' ht.(backstop)	
Gate - single	
Gate - double	
Dugout	
Bleachers, typ.	
Bleachers, championship (small)	
Bleachers, championship (large)	
Equipment - FOIO	Bases, rubber, mound excluded

Table CR-12. Notes

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
NOTES
PHASING PLAN 2025-01-24

ITEM	NOTES
Maintenance Building (west)	
Foundations	
Superstructure	
Exterior enclosure	
Roofing	
Interior construction	
Interior finishes	
Plumbing systems	
Mechanical systems	
Fire protection	
Electrical systems	
Equipment	
Furnishings	
Maintenance Building (east)	
Foundations	
Superstructure	
Exterior enclosure	
Roofing	
Interior construction	
Interior Finishes	
Plumbing systems	
Mechanical systems	
Fire protection	
Electrical systems	
Equipment	
Furnishings	
Concessions	
Foundations	
Superstructure	
Exterior enclosure	
Roofing	
Interior construction	
Interior finishes	
Plumbing systems	
Mechanical systems	
Fire protection	
Electrical systems	
Equipment	
Furnishings	
Restrooms	
Foundations	
Superstructure	
Exterior enclosure	
Roofing	
Interior construction	
Interior finishes	
Plumbing systems	
Mechanical systems	
Fire protection	
Electrical systems	
Equipment	
Shade Structures	
Buildout, complete	

Table CR-12. Notes

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
NOTES
PHASING PLAN 2025-01-24

ITEM	NOTES
Landscape Improvements	
Trees, allow	Includes trees in Phase 2A.
Plant Bed	
Topsoil - soil amendment (stockpile)	Assumes 1' depth of soil amendment.
Mulch - 3" depth	
Shrubs - 1 gal., 24" O.C.	
Irrigation - planting beds/stormwater	
Lawn	
Lawn - Irrigated	
Soil preparation	Assumes 1' depth of soil preparation.
Stormwater Planting	Area of stormwater facilites based on a 0.03 stormwater sizing factor applied to area of fields and hardscape.
Trees - small	
Topsoil - 18" depth	
Mulch - 3" depth	
Shrubs - 1 gal., 24" O.C.	
Channel Restoration	Assumes 283,418 sf of channel restoration area
Trees - bare root	
Mulch - 3" depth	
Shrubs - plug	
Earthwork, grading	Recontouring channel
Wetland Mitigation	Average cost per acre, off-site mitigation
Site Utilities	
Water	
WS - distribution pipe, incl. trenching and backfill	
WS - connection	
WS - hose bib	Assumes 1 per field and warm up field
Sanitary Sewer	Included in Phases 1A and 2A. Connection to Phase 1B buildings is included in building's plumbing systems line item.
SS - connection	
SS - distribution pipe, incl. trenching and backfill	
SS - ancillary	
Stormwater Management	
SW - pipe, devices, and control structures	Multiply lump sum by percentage of total hardscapes and fields included within the phase.
Sound system - Championship Field	Sound system excluded
Site Lighting and Power Distribution	
Distribution	Conduit and wire, incl. trenching and backfill
Site Lighting	
Access drive, allow	
Parking lot, allow	
Field Lights	

Table CR-1. Project Cost Estimate

GOLDEN GARDENS PARK CONCEPT PLAN
CITY OF EUGENE

CONCEPT LEVEL COST ESTIMATE
OVERALL SUMMARY
PHASING PLAN 2025-01-24

ITEM	TOTAL CONSTRUCTION COST	TOTAL PROJECT COST[1]	TOTAL BUDGET (WITH ESCALATION[2])
PHASE			
Phase 1A (2028)	$18,179,164	$24,332,112	$26,433,772
Phase 1B (2030)	$16,096,993	$21,545,206	$24,735,245
Phase 1C (2032)	$10,985,166	$14,703,223	$17,838,747
Phase 2A (2034)	$25,673,194	$34,362,583	$44,057,904
Phase 2B (2036)	$15,431,706	$20,654,744	$27,986,210
	$86,366,223	**$115,597,868**	**$141,051,878**

1. Total Project Cost includes construction costs + owner costs (design and engineering fees, permitting fees, and other administrative expenses).
2. Assumed Escalation Rate of 2.8% Compounded Anually

Appendix E.

Permitting Analysis Report

CAMERON McCARTHY
LANDSCAPE ARCHITECTURE & PLANNING

City of Eugene
Golden Gardens Park

To: Craig Carnagey
Carolyn Burke
Mark Kosmos
City of Eugene Parks and Open Space

From: Colin McArthur, AICP

Date: April 16, 2025

Subject: **Golden Gardens Park**
Permitting Analysis Memorandum

OVERVIEW

The City of Eugene is in the Conceptual Design phase for Golden Gardens Park. This memorandum includes a land use, environmental, and urban services analysis based on the proposed program that identifies the local, state, and federal land use and permit approvals required for the park's development.

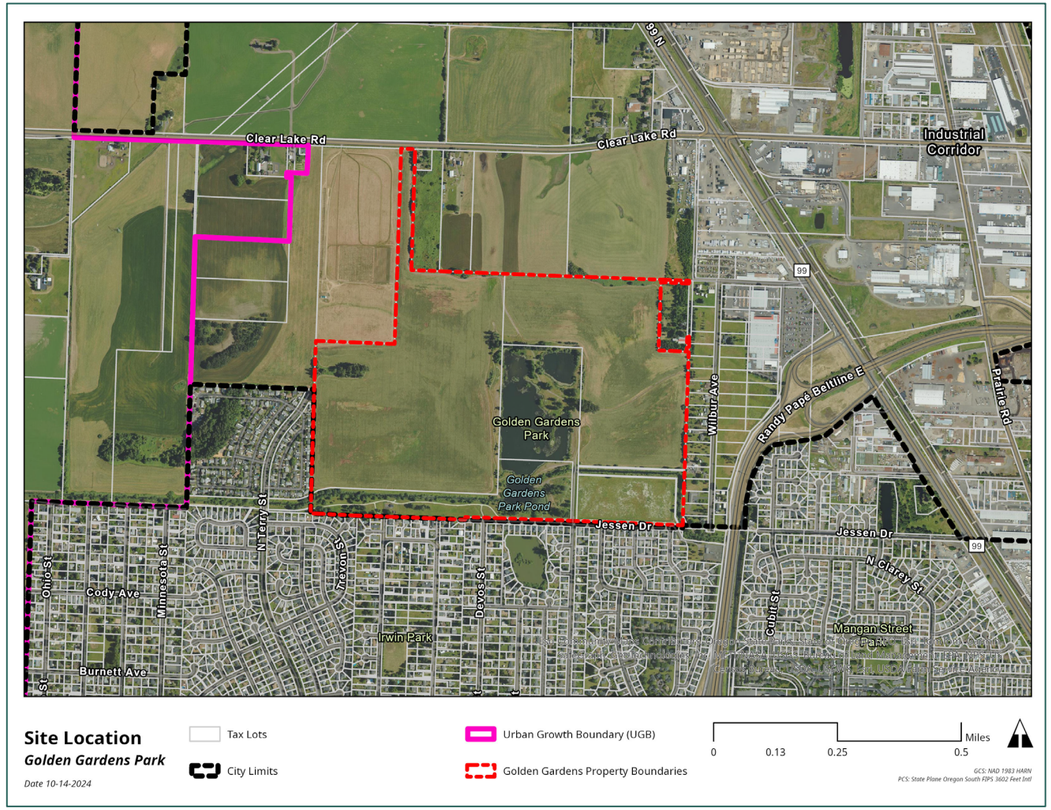
Golden Gardens Park (site, subject site, park site) is 222.72 acres in size and comprised of seven tax Lots. The park site is located within the Urban Growth Boundary (UGB) and outside the City Limits Boundary. The park is located within the 924-acre Clear Lake area, part of an adopted expansion of Eugene's UGB. The area is envisioned as a green employment center offering large sites for low-impact manufacturing, light industrial uses, offices, commercial services, and health and technology uses, as well as a new elementary school and development of the park. The overall development strategy for the Clear Lake area includes a green infrastructure system planned to manage stormwater, protect wetland and floodplain resources, and mitigate impacts to natural resources and the environment.

This memorandum is based upon previous work including, but not limited to:

- 2017 Feasibility Study for a Potential New Multi-Use Sports and Recreation Complex
- 2018 Parks, Recreation, and Open Space System (PROS) Plan.
- 2024 Golden Gardens Park Master Plan Refined Design Program
- 2024 Golden Gardens Park Master Plan Refined Design Concept

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Map 1. Site Location



LAND USE ANALYSIS

Plan and Zone Designations, City of Eugene

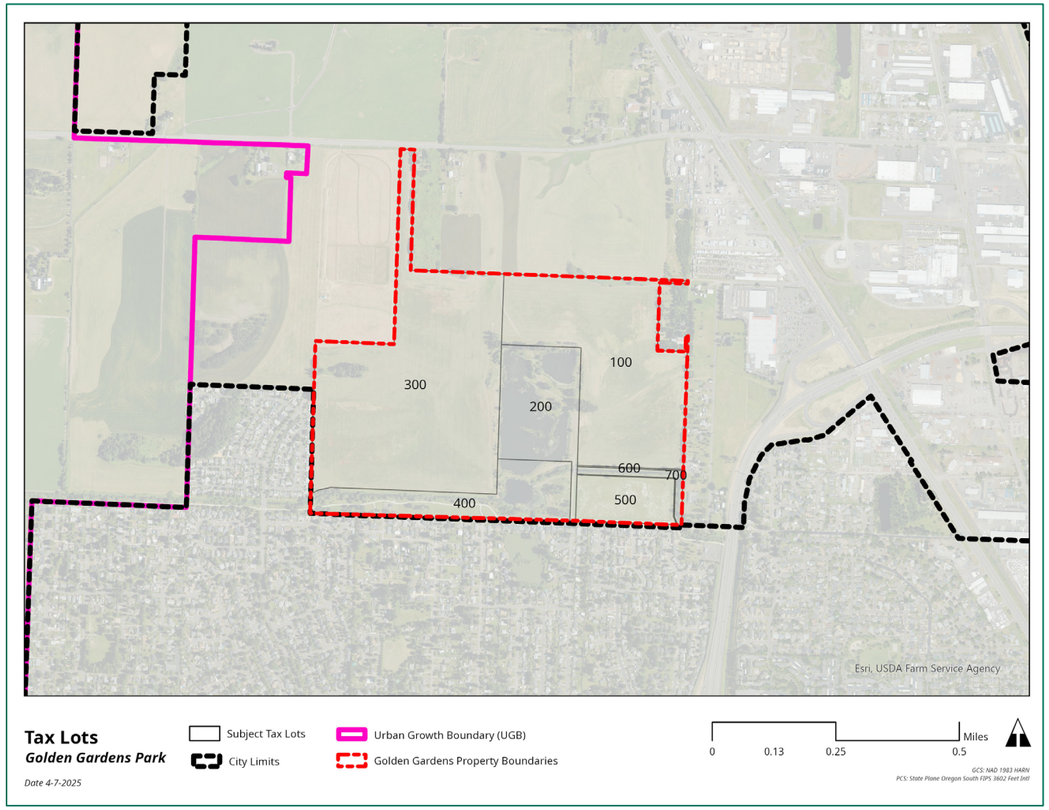
As mentioned above, Golden Gardens Park (site, subject site, park site) is 222.72 acres in size and comprises seven tax lots, shown below in Table 1 and Map 2. The park site is located within Eugene's UGB and outside the City Limits Boundary.

Table 1. Tax Lots

MAP NO.	TAX LOT NO.	PLAN DESIGNATION	ZONING DESIGNATION	SIZE (ACRES)
17-04-16-00	00100	Parks & Open Space	AG Agriculture	61.98
17-04-16-00	00200	Parks & Open Space	AG Agriculture	24.73
17-04-16-00	00300	Parks & Open Space	AG Agriculture	96.60
17-04-16-00	00400	Parks & Open Space	AG Agriculture	24.03
17-04-16-00	00500	Parks & Open Space	AG Agriculture	11.83
17-04-16-00	00600	Parks & Open Space	AG Agriculture	0.59
17-04-16-00	00700	Parks & Open Space	AG Agriculture	2.96
TOTAL				**222.72**

City of Eugene
Golden Gardens Park
Permitting Analysis Memorandum
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Map 2. Tax Lots



Plan Designation

The park site is designated Parks and Open Space by the Eugene-Springfield Metropolitan Area General Plan (Metro Plan) Diagram. The City of Eugene is replacing the Metro Plan Diagram with a Land Use Designation Map, as part of the work to complete the Envision Eugene Comprehensive Plan. Ordinance No. 20584 changed the plan designation of six tax lots within the park site from Agriculture to Parks and Open Space. Tax Lot 00600's shape and location are characteristic of an easement or reserve strip. The Tax Lot is assumed to have the Parks & Open Space designation applied or to not be a legal tax lot.

Zone and Overlay Designations

The park site is currently zoned AG Agriculture with /UL Urbanizable Land and /CAS Commercial Airport Safety overlay designations. The park site is outside the City Limits and will require annexation approval to extend urban services to the park. The site is within the Clear Lake area and, upon annexation, will be automatically rezoned to the base zone depicted in Figure 9.7820(3)(c), which is PL Public Land. Ordinance No. 20584 shows the proposed zoning upon annexation as PL Public Land with /CAS Commercial Airport Safety and /WQ Water

Quality overlay designations. The /UL Urbanizable Land overlay zone designation will be automatically removed upon annexation.

The /CAS Commercial Airport Safety overlay zone is intended to prevent the creation or establishment of obstructions that are a public nuisance, danger to persons or property, or a hazard to air navigation. Eugene Code (EC) Figure 9.4130(3) specifies that the maximum height of structures and objects shall normally be the same as the zone to which the /CAS overlay zone is applied.

The /WQ Water Quality overlay zone is intended to protect and improve the physical integrity of water quality function within and adjacent to otherwise unprotected waterways. The subject site contains three significant riparian corridor water resource sites and one locally significant wetland resource site identified in the Goal 5 Water Resources Conservation Plan (see Map 5). Table 2 displays the sites, their protection level, and associated setback distance. Although the resource sites are not protected by the plan, the ponds and waterways within the park are regulated and protected as waters of the state by the Oregon Department of State Lands and, potentially, federally by the U.S. Army Corps of Engineers.

Table 2. Goal 5 Water Resource Sites

SITE NO.	SITE NAME	TYPE	SIZE (ACRES)	PROTECTION LEVEL	SETBACK
CL-R-1*	A-2 Channel	Riparian	10.73	None	0’
CL-R-2*	A-2 Channel	Riparian	16.20	None	0’
CL-R-3	A-2 Channel	Riparian	11.44	None	0’
CL-W-14	Clear Lake Wetlands	Wetland	27.11	None	0’

*Water Resource sites CL-R-1 and CL-R-2 include portions of the ponds located in the park. Map 5 shows the portion of the ponds included within these sites.

Refinement Plan

Due to relatively recent inclusion in the Urban Growth Boundary (2017), the subject site is not within the boundaries of an adopted refinement plan.

Parks and Recreation System Plan

The 2018 Parks, Recreation, and Open Space System Plan (PROS Plan) identifies Golden Gardens Community Park as the proposed site of a new sports complex. Appendix A Projects by Planning District: Bethel Parks and Recreation identifies four planned projects associated with the existing Golden Gardens Community Park:

- Project #B2 Golden Gardens Park general park development
- Project #B3 Golden Gardens Park running trail
- Project #B4 Golden Gardens Park habitat restoration
- Project #B5 Multi-field sports complex (Golden Gardens)

Project #B5 is based on analysis in the 2017 Feasibility Study for a Potential New Multi-Use Sports and Recreation Complex, which indicates a strong need for a regional sports complex. The feasibility study determined a clear market for a sports field complex of 10-12 diamond fields and 4-6 rectangular fields. Golden

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Gardens Community Park was identified as being able to accommodate such a use pending additional public engagement, feasibility, and conceptual design work. Phase Two of the feasibility study identified two scenarios for further analysis that are the basis for the Feasibility and Conceptual Design Study.

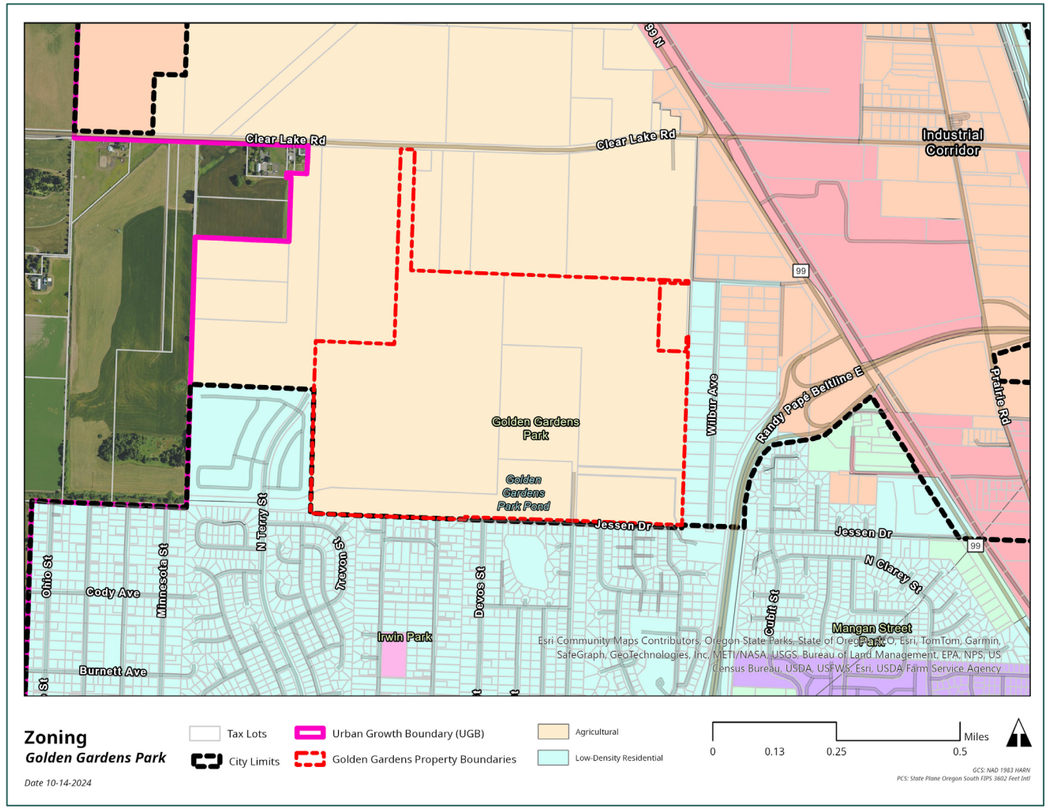
Transportation System Plan

The Eugene 2035 Transportation System Plan was completed before the adoption of Ordinance No. 20584, which established and expanded the Urban Growth Boundary for employment, parks, and schools and included the subject site. The subject site has frontage on Clear Lake Road to the north and the planned extension of Terry Street to the west. The Attachment B Street Classification Map classifies Clear Lake Road and Terry Street as Major Collector streets. Exhibit D to Ordinance No. 20584 amended the TSP to include two planned projects affecting these streets.

PROJECT	DESCRIPTION	LOCATION	LENGTH (MILES)	COST
MM-17	Upgrade Clear Lake Road consistent with City of Eugene design standards, including provision of two travel lanes, center turn lane, sidewalks on both sides of the road, and planting strips	Terry Street to Highway 99	1.0	$4.3M
MM-18	Extend Terry Street to Clear Lake Road consistent with major collector standards	Existing Terry Street to Clear Lake Road	.5	$8.7M

Depending on the final alignment of the streets, additional right-of-way dedication may be required upon development. The site's development may incur improvement costs for the planned upgrade of Clear Lake Road and the planned extension of Terry Street.

Map 3. Zoning Map Designation



Land Use Approvals

The park's development, as envisioned by the Refined Design Concept, will require Site Review or Conditional Use Permit approval due to the inclusion of athletic areas for soccer, softball, baseball, basketball, volleyball, and pickleball. Site Review approval is required if the park remains classified as a Community Park. Conditional Use Permit approval is required if the park classification is changed to a Metropolitan Park.

PL Land Use and Permit Requirements

As noted previously, upon annexation, the park site will be automatically rezoned to PL Public Land. The PROS Plan classifies the park site as a Community Park. In addition, the Refined Design Concept shows that a portion of the park site, the southeast corner, is proposed to be developed as a Neighborhood Park. However, the planned program and expected regional draw of the park more closely align with the definition of a Metropolitan Park, and in the future, Eugene Parks and Open Space may consider changing the definition to that category.

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EC 9.2620 defines Community Park as:

> *"Larger in size than a neighborhood park and meeting recreational needs of more than one neighborhood, a community park serves as a destination that usually includes on site parking. Community parks are generally developed for active and passive recreation uses and may include recreation centers, swimming pools, sports fields, and other community-based facilities. Community parks are sometimes located adjacent to schools where site amenities can be shared."*

EC 9.2620 defines Metropolitan Park as:

> *"A park that meets the recreational needs of the city as a whole, often including a variety of active as passive recreation opportunities as well as the preservation of natural landscapes, unique natural resources, special botanical display, and open space. Although metropolitan parks are usually large, they can include small areas that are part of a larger metropolitan park network, as found along the Willamette River and the south hills ridge line parks. Metropolitan parks usually include on site parking."*

EC 9.2682 permits public uses, operated by the public agency that owns the land, in the PL Zone, except for the intensification of uses that require Site Review or a Conditional Use Permit according to EC 9.2683. Parks and recreation facilities are listed as examples of uses that require a site review or a conditional use permit.

EC 9.2683(2) requires Site Review for uses located within 300 feet of residential land that will generate the need for a Traffic Impact Analysis. The park site is located within 300 feet of residential land, and the proposed development is expected to necessitate Traffic Impact Analysis review according to EC 9.8670 Applicability.

EC 9.2683(3) lists uses subject to Conditional Use Permit approval if those uses are within 300 feet of land zoned residential. EC 9.2683(3)(b) requires Conditional Use Permit approval for Entertainment and Recreation uses in community parks according to Table 9.2630. The Refined Design Concept includes one Entertainment and Recreation use listed in the table, Amplified Sound System (permanently installed), for the championship diamond field, which abuts residential land to the east. However, the championship field is setback 200 feet from the property line, and home plate is approximately 500 feet from the property line. Based on that dimension, the proposed sound system is expected to be located further than 300 feet from the property line, and Conditional Use Permit approval is not required.

PRO Land Use and Permit Requirements

EC 9.2631(2) specifies that uses requiring Site Review comply with the special setbacks in Table 9.2640. The Refined Design Concept includes the following uses that are subject to compliance with special setbacks:

- Concessions Stand, permanent structure
- Trail (paved and non paved)
- Natural Area or Environmental Restoration
- Park Furnishings
- Picnic Shelters
- Restrooms
- Accessory Uses; examples include maintenance activities and storage.
- Parking Area directly related to a primary use on the same development site

The Refined Design Concept includes one use, Athletic Area, outdoors, lighted that is permitted subject to an approved Site Review (Community Park) or conditional use permit (Metropolitan Park). As noted, the park is currently classified as a Community Park, and accordingly, Site Review approval is required.

The Refined Concept Plan conforms to setbacks listed in Table 9.2640 PRO Zone Special Setbacks, the most significant of which is a setback of 200 feet from property zoned residential for lighted, outdoor, athletic areas. The park site abuts property zoned residential on the east, south, and west sides. The proposed soccer fields, softball fields, baseball fields, and pickleball courts are subject to this requirement and conform.

ENVIRONMENTAL

Wetland and Riparian Resources

As noted previously, the park site contains locally significant wetlands and riparian corridor sites that are listed in the Goal 5 Water Resources Conservation Plan. Eugene's Open Waterways Maintenance Plan identifies the ponds and connected waterways as "open waterways." Ordinance 20584 amended the City's Water Quality Waterways Map to include the ponds, the A-2 Channel, and an unnamed tributary extending east off-site toward Beltline Road. The Goal 5 Water Resources Conservation Plan assigns none of the features a protection level. The A-2 channel, ponds, and wetlands are likely regulated as waters of the state by the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (ACE). A wetland delineation reporting and concurrence process is planned prior to development. The Refined Design Concept proposes impacts to wetlands on-site, which, if regulated, will require removal/fill permit approval from DSL and, potentially, ACE.

Other Natural Resources

In 2005, the City of Eugene Ecological Services Team implemented an Interim Management Plan for 36 acres within the park site, including the ponds, former borrow pits, and surrounding areas. The borrow pits have functioned as ponds since their creation in the 1950s and support a diversity of plant and animal species and communities. The plan will remain in effect until a more comprehensive planning process is undertaken and a management plan is developed. The plan includes strategies and recommended actions that support existing uses while minimizing impacts on valuable or sensitive habitats. The plan identifies riparian vegetation and turtle nesting areas within and surrounding the ponds for protection and enhancement.

In 2019, the City of Eugene Natural Resource staff prepared the Golden Gardens Natural Resources to Protect memorandum, which identifies important natural resources on the park site and actions to consider for future site development. Notes on Natural Resources to Protect listed in the memo include:

- A restoration project was conducted on the park site in 2008 that included habitat restoration, habitat improvement, native tree and shrub plantings, and enhanced public access and safety.
- The park site supports one of the largest remnant populations of Western Pond Turtle in the Willamette Valley, which is a sensitive State species, an Oregon Conservation Strategy species, and considered for federal listing.
- The ponds and A-2 Channel provide habitat for migratory and resident animal species.
- The site contains pockets of mature cottonwoods scattered around the ponds that are important habitat islands.

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- The site has a history of harmful algal blooms and invasive aquatic weeds and is connected to the A-2 Channel that joins the Long Tom River, highlighting the importance of water quality improvements.

The actions for future site development listed in the memo, which were used as a basis for design work in the Refined Design Concept, include:

- Create a buffer within which both active and passive activities are excluded around Western Pond Turtle habitat.
- Move the current bark path adjacent to the nesting habitat on the west bank a minimum of 250' to the west to create a buffer between human and dog activity and turtle nesting activity.
- Consider building fencing to exclude humans and dogs from sensitive nesting habitat.
- Enhance native turtle nesting by adding top soil to improve nesting success.
- Place and anchor additional large woody debris for adult basking.
- Protect mature cottonwoods and other mature native vegetation.
- Protect water quality of ponds and A-2 channel.
- Add interpretive signs about harmful algal blooms. Discourage people from swimming and allowing dogs to swim in the ponds to reduce risk of illness (or death in the case of dogs).
- Add additional signage about keeping dogs on leash, including interpretive signage about wildlife disturbance caused by dogs especially during nesting season.
- Create an off-leash area somewhere on the site (away from the natural area) to provide a legitimate place for people to let their dogs run.
- Consider lighting, motion, and noise when siting sports facilities and playgrounds to minimize disturbance to wildlife in the ponds and along the A-2 channel.
- Convert portions of A-2 channel upstream of the emergency access bridge and downstream of the ponds to a more natural, meandering creek with gently sloping banks.
- Update kiosk entrance at Jessen Street to include site map, interpretive signage, Jessen Path route and other information.

Northwestern Pond Turtle

As noted, the park site supports one of the largest remnant populations of Northwestern Pond Turtle (NWPT) in the Willamette Valley.

NWPT is currently being considered for listing by the U.S. Fish and Wildlife Service (USFWS) as a threatened species under the Endangered Species Act (ESA). The announcement is expected before April 2025. When the announcement is made, if NWPT is listed as threatened, USFWS will also announce the date the listing becomes effective, typically 30 days after the announcement. Following the listing, USFWS will also release a 4(d) rule that allows land managers and others to carry out certain activities that support the conservation of the species (such as wildfire suppression, habitat restoration, and non-native species removal) without violating the ESA. It is unknown whether USFWS will designate critical habitat for the species.[1]

[1] Critical habitat is the specific areas within the geographic area, occupied by the species at the time it was listed, that contain the physical or biological features that are essential to the conservation of endangered and threatened species and that may need special management or protection. Critical habitat may also include areas that were not occupied by the species at the time of listing but are essential to its conservation. (U.S. Fish and Wildlife Service)

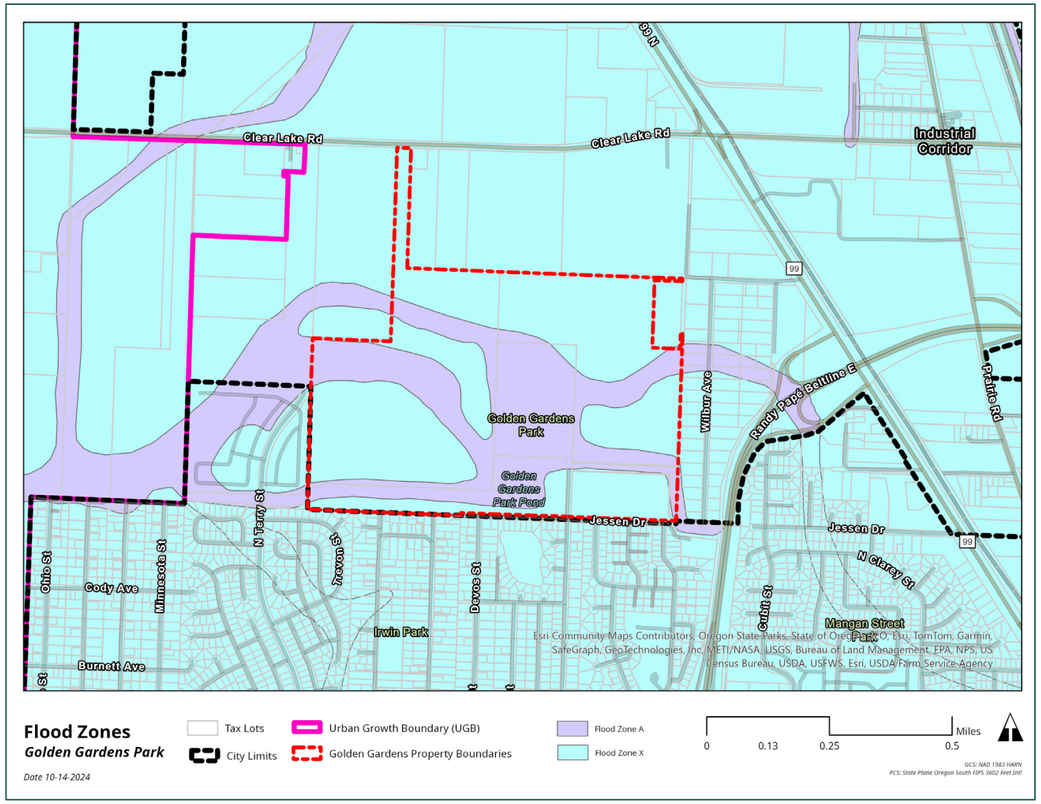
A National Environmental Policy Act (NEPA) process is required for a listed species under the ESA when a proposed federal action may affect the species or its designated critical habitat. The NEPA process is used to assess and mitigate impacts for federal actions that may include funding, permitting, or construction and could potentially impact a listed species. Actions include construction projects, permits, grants, and regulatory decisions.

The NEPA process typically involves an Environmental Assessment (EA) or Environmental Impact Statement (EIS) to evaluate the potential direct, indirect, and cumulative effects on the species and its habitat. Consultation under the ESA with the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS), as appropriate, under Section 7 of the ESA, is also required. This consultation often overlaps with the NEPA process, as the effects on listed species are analyzed in the NEPA environmental review.

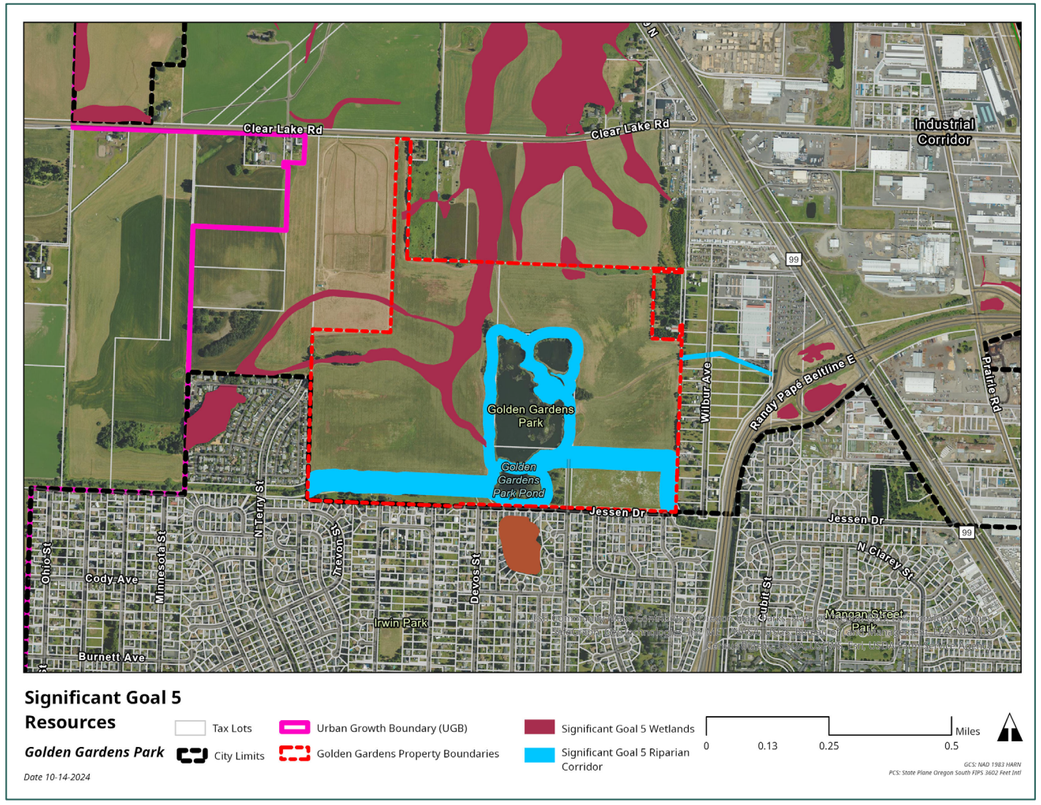
The proposed project involves construction that may affect a listed species and, likely, federal permitting, including but not limited to wetland removal-fill permits. The analysis assumes that an NEPA process, including an EA or EIS along with consultation with federal and state agencies, will be required for the project, contingent upon the listing of NWPT under the ESA.

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Map 4. Flood Zones



Map 5. Significant Goal 5 Resources



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URBAN SERVICES

Stormwater

Exhibit C-1 to Ordinance No. 20584 includes amendments to the Eugene Metropolitan Area Public Facilities and Services Plan (PFSP). The exhibit identifies two stormwater system improvement projects in the vicinity of the subject site that are planned to be completed between 2022 and 2032:

- Project No. 62 Clear Lake Road Channel/Culvert Improvements
- Project No. 63 New Open Channel West of Terry Street (includes estimated acquisition cost)

These planned projects, coupled with the existence of the A-2 Channel along the southern edge of the park site, provide multiple connection point opportunities for site development and associated stormwater discharge, and there is sufficient capacity in the system to convey stormwater from the site. The Refined Design Concept assumes that stormwater runoff from impervious surfaces on the site will be treated by vegetative stormwater management facilities consistent with the Eugene Stormwater Management Manual (SWMM) and that the site is of sufficient size to accommodate on- site treatment, detention, and retention.

Wastewater

City of Eugene Public Works prepared a Wastewater Study for the Clear Lake area as part of the Clear Lake Development Strategy, which accompanied the expansion of the Urban Growth Boundary. That study shows planned wastewater extensions to the park site from two locations:

- 8” wastewater line extension from an existing 48” manhole at the intersection of Jessen Drive and Golden Gardens Street
- 10” wastewater line extension from an existing pump station at the end of W Irwin Way

Additional wastewater service is available in the vicinity of the site via a planned 10” line extension in N Terry Street to the west, an 8” line extension in Wilbur Avenue to the east, and a 12” line extension in Clear Lake Road to the north. The study further assures that there will be sufficient capacity in the system, upon extension to the site, to provide wastewater service.

Water

Water services to the Clear Lake Expansion Area are addressed in the findings for Statewide Planning Goal 11 – Public Facilities and Services. Based on Eugene Water and Electric Board (EWEB) analysis, no planned projects are necessary to provide water service to the Clear Lake Expansion Area. Additional infrastructure improvements may be necessary and will be addressed through EWEB’s master plans and capital improvements programs (CIP) or be the responsibility of the development. Water service is available surrounding the site and will be extended to the site as part of development.

Erosion Control and Stormwater Management

An Oregon Department of Environmental Quality (DEQ) 1200-C permit for Erosion Control and Stormwater Management is required for construction projects that disturb more than 1 acre of land. The permit is designed to manage the impacts of stormwater runoff and erosion during construction activities to protect Oregon's water quality. All phases of the project are larger than 1 acre and expected to require 1200-C permits.

PERMITTING SUMMARY

The Refined Design Concept illustrates that the realization of the vision for Golden Gardens Park is dependent upon the completion of the following processes, associated reports, and permits.

- Planning processes:
  - Type IV Annexation to incorporate the park site within the City Limits
  - Type III Conditional Use Permit (CUP) or Type II Site Review (SR) for athletic area uses
  - Type II Traffic Impact Analysis (TIA) Review for associated transportation impacts
- Permits and Reports:
  - NEPA Environmental Assessment (EA) or Environmental Impact Statement (EIS) and consultation with state and federal agencies
  - State/Federal Joint Permit Application (JPA) for impacts to wetland/water of the state
  - DEQ 1200-C Permit
  - State/Federal Wetland Delineation Study/Report and agency concurrence
  - Traffic Impact Analysis report (included with TIA)
  - Stormwater Drainage Study for site development (included with CUP or SR)