



SAN JOSE  
**PARKS, RECREATION &  
NEIGHBORHOOD SERVICES**

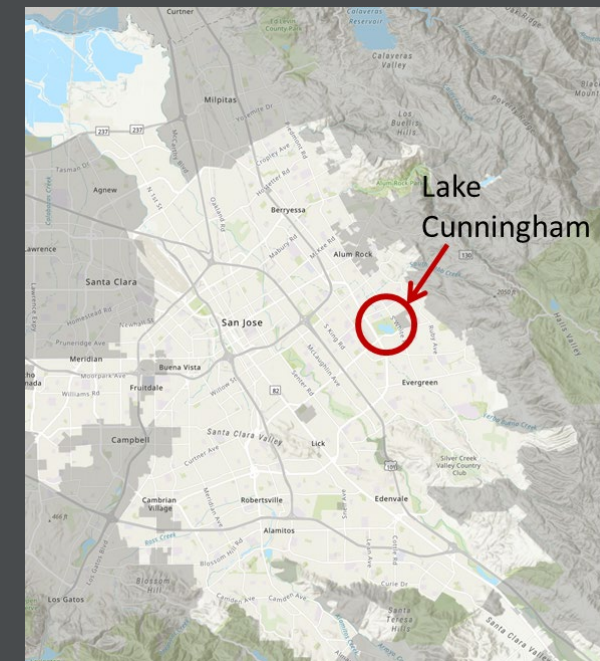
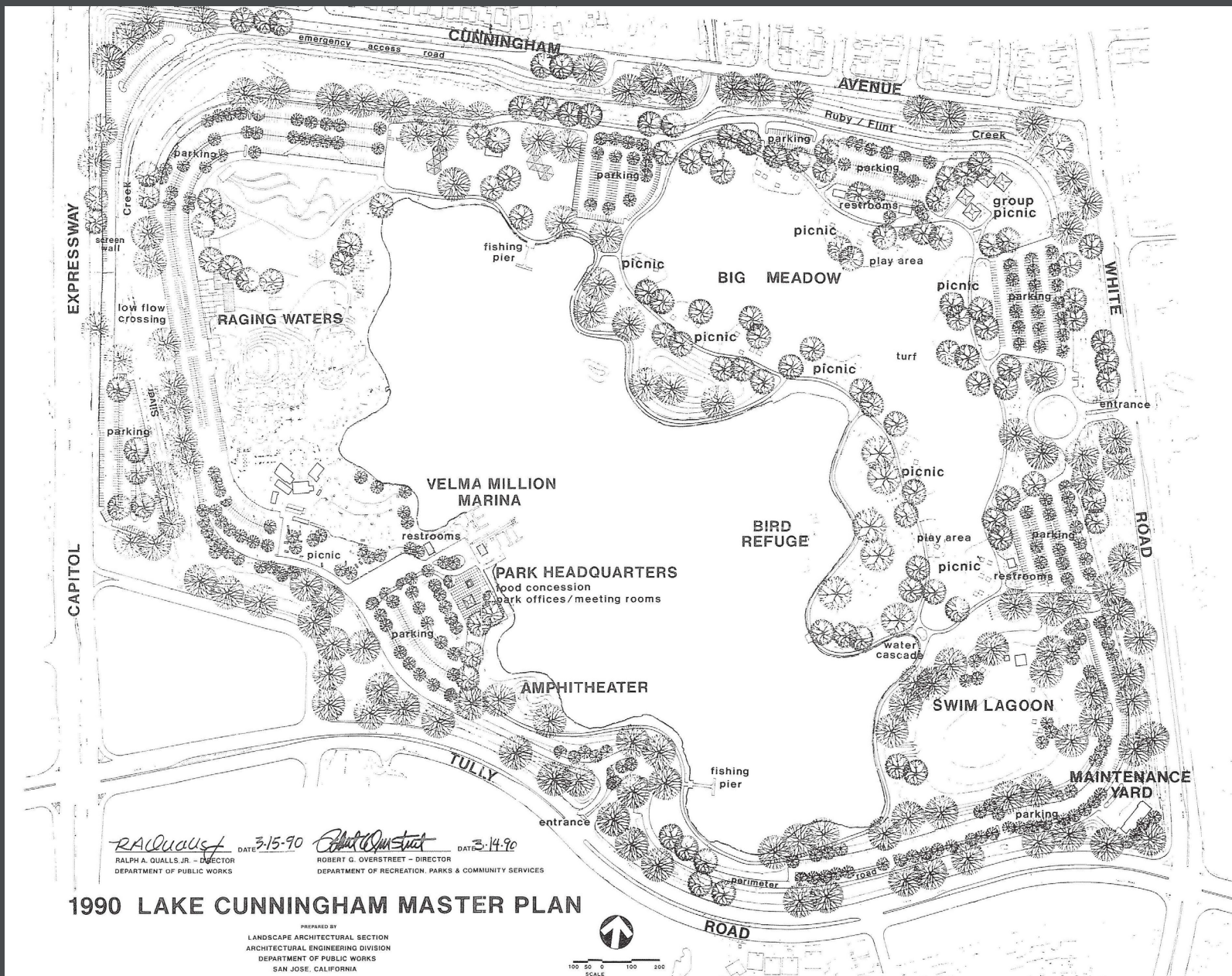
# **Lake Cunningham Shoreline and Water Quality Study**

**City Council**

**March 14, 2023**

**Presented by:**

**Sara Sellers, Interim Deputy Director, [sara.sellers@sanjoseca.gov](mailto:sara.sellers@sanjoseca.gov)**

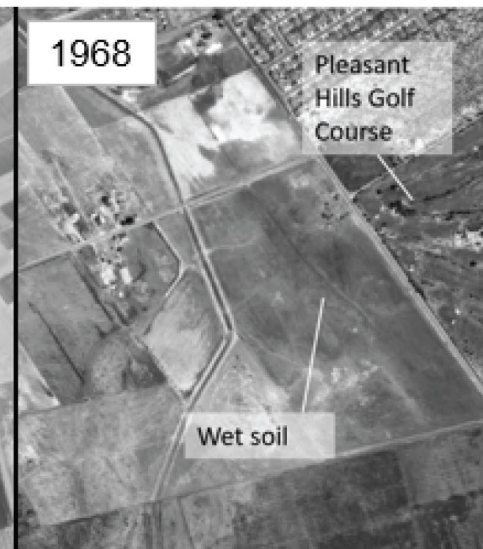
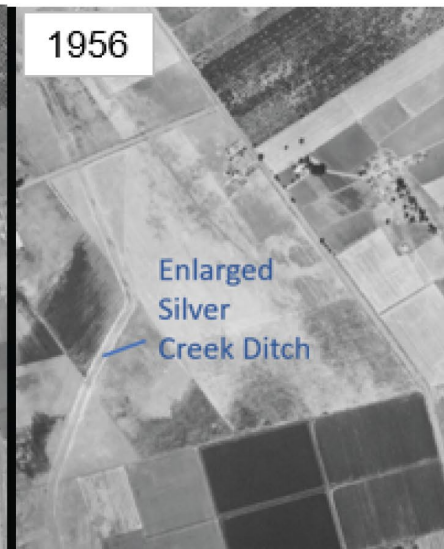
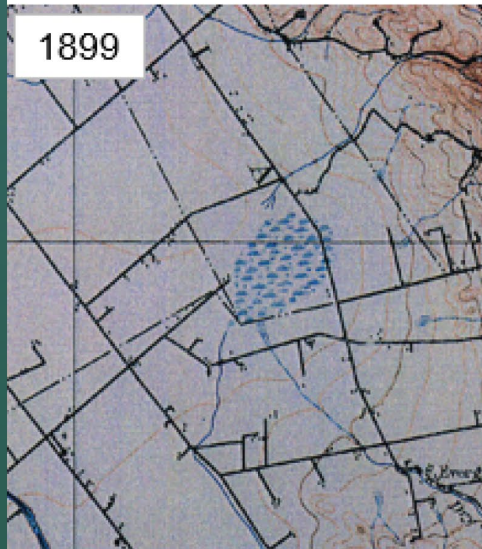
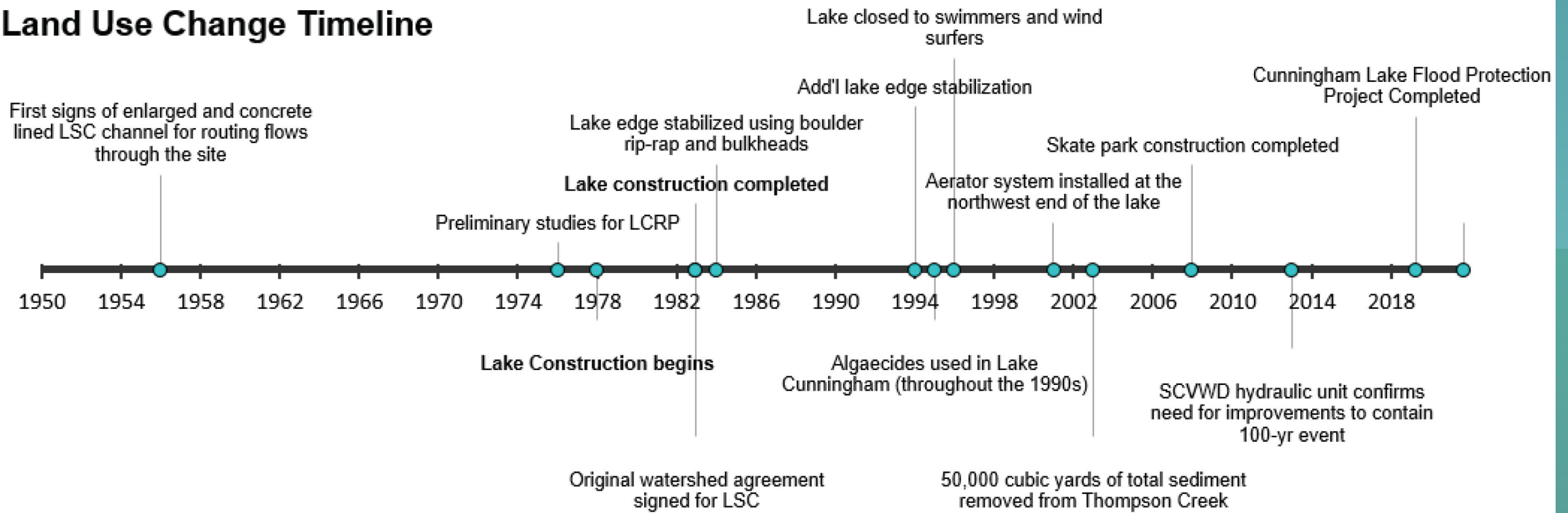


## Lake Cunningham Master Plan

- Guided development of flood detention basin; and
- Recreational facility.



# Land Use Change Timeline





# Shoreline and Water Quality Study

## Analysis:

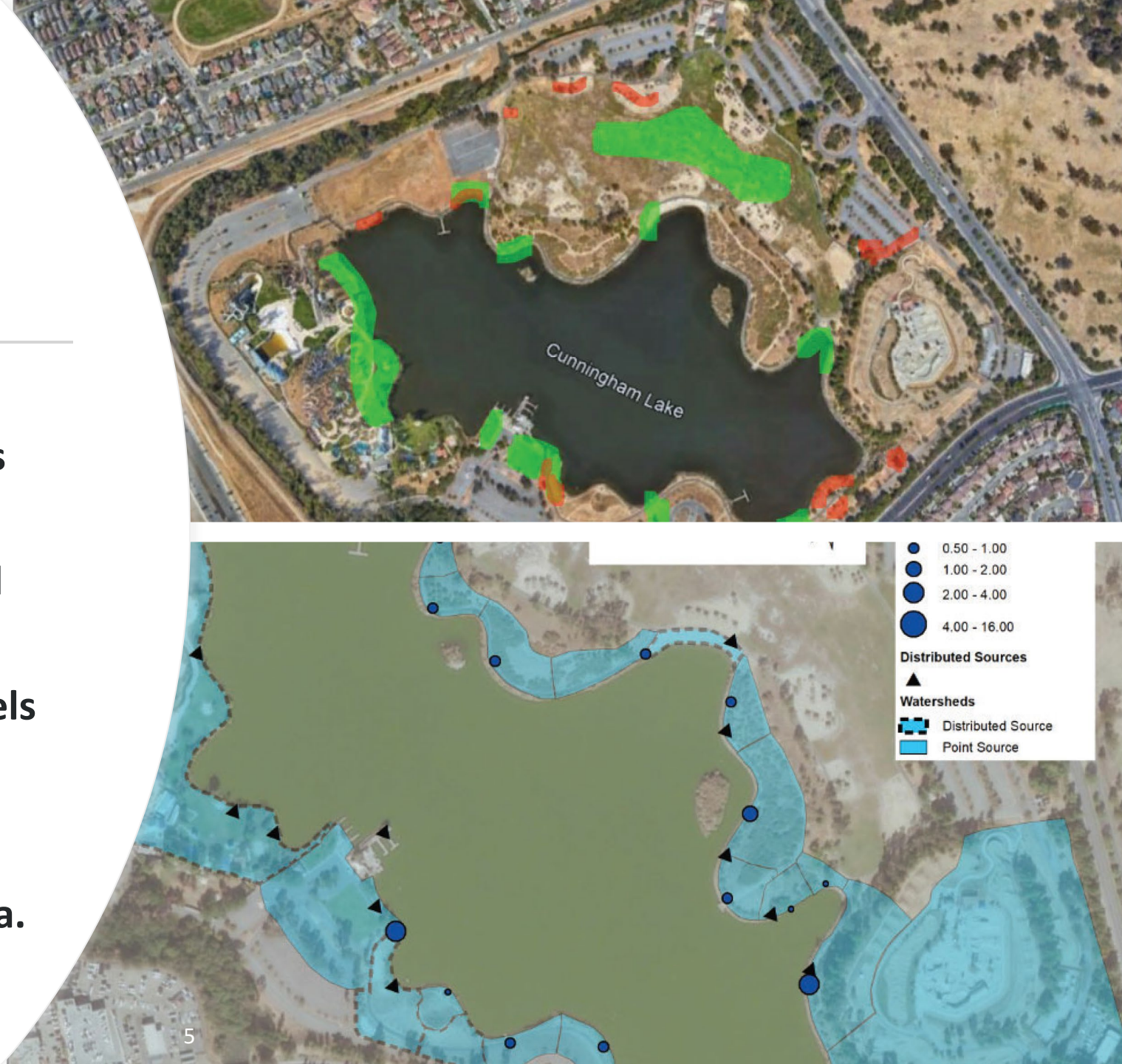
- Water Quality
- Water Sources
- Water Quality Recommendations
- Shoreline Erosion
- Rough Order of Magnitude Construction Costs





# Water Quality Issues are primarily from:

- **Physicochemical Parameters:** Increased lake water temperatures and thermal stratification.
- **Geochemical Parameters:** Elevated pH levels.
- **Trophic Parameters:** Increased levels of nitrogen and phosphorus which contribute to increased algae growth.
- **Pathogens:** Increased fecal bacteria.





# RECOMMENDATIONS



## Alternative 1: Internal Treatments and Focused Park Improvements

- Algaecide treatments
- Treatment of lakebed sediments
- Turf replacement
- Fertilizer reduction
- Bioswale implementation

Construction Rough Order of  
Magnitude:

- \$1.2M to \$1.8M
- **Excludes City soft costs, consultant fees and hardcost contingency**



## Alternative 2:

Internal Treatments, Focused Park Improvements, Path Stabilization, and Shoreline Wetlands

- Builds on Alternative 1;
- Regrade northeastern hills;
- Relocate shoreline path;
- Create wetland bench along shoreline;
- Plant riparian and upland trees.

Construction Rough Order of Magnitude:

- \$5M to \$9M for 10 acres of shoreline wetland;
- \$12M to \$20M for 17.5 acres of shoreline wetland;
- **Excludes City soft costs, consultant fees, and hardcost contingency.**

0 125 250 500 Feet



### Pavement Failure

- Major
- Minor

### Relocated Path Alignment

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### Habitats

- ▭ Limits of Hill Grading
- ▨ Potential Pilot Wetland Bench
- ▭ Potential Wetland Bench



## Alternative 3:

Internal Treatments, Focused Park Improvements,  
Path Stabilization, Shoreline Wetlands, and Big  
Meadow Wetland Enhancement

- Builds off Alternative 1 and 2;
- Construct flow-through wetland in Big Meadow.

Construction Rough Order of Magnitude:

- \$5M to \$9M for 10 acres of shoreline wetland;
- \$12M to \$20M for 17.5 acres of shoreline wetland;
- \$3M to \$5M for concurrent 19-acre Big Meadow wetland
- **Excludes City soft costs, consultant fees, and hardcost contingency.**

0 125 250 500 Feet



-  Convert Big Meadow
-  Raise Path
-  Raise Picnic Areas
-  Future Pump Station
-  Future Pump Flow



# Conclusion

- Staff will continue to work with Consultant to conduct further water quality tests, refine cost estimates, and establish a recommended phasing approach.







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