



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

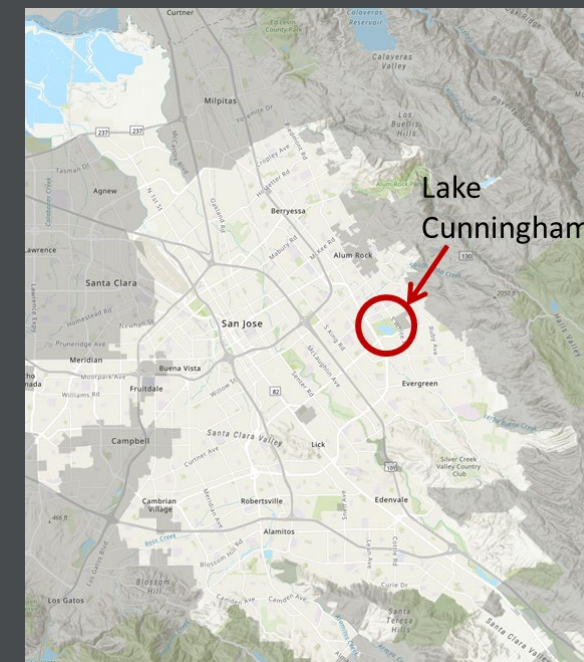
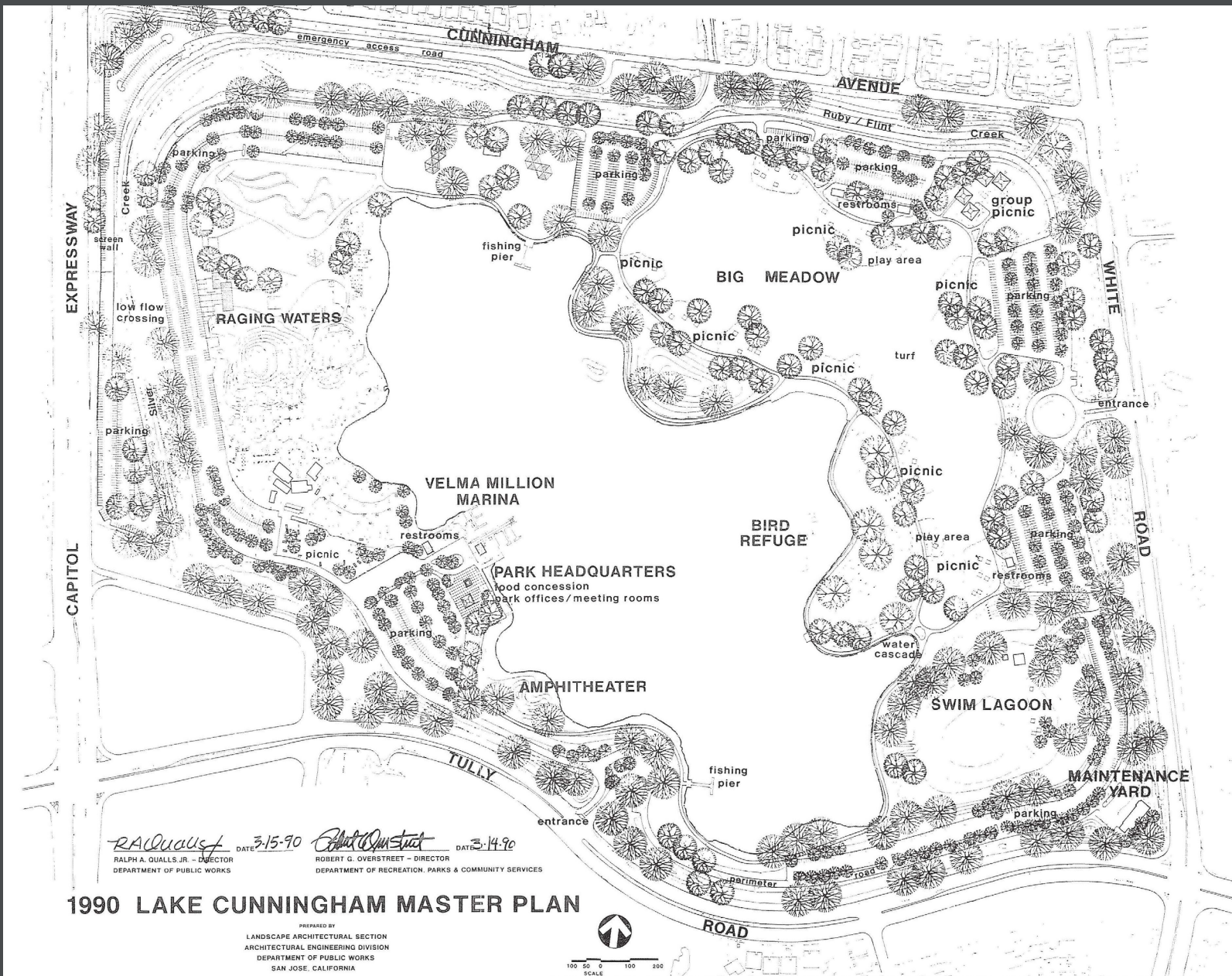
Lake Cunningham Shoreline and Water Quality Study

City Council

March 14, 2023

Presented by:

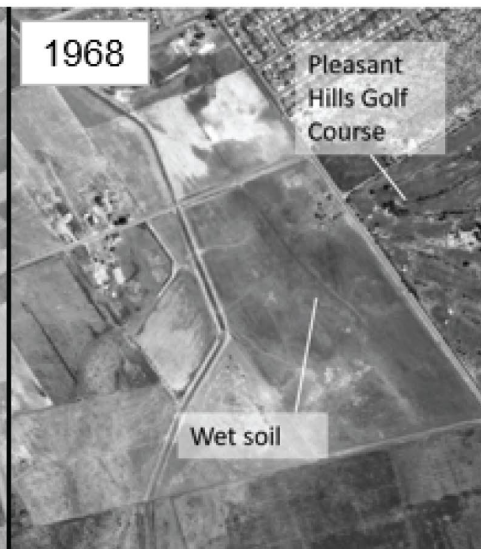
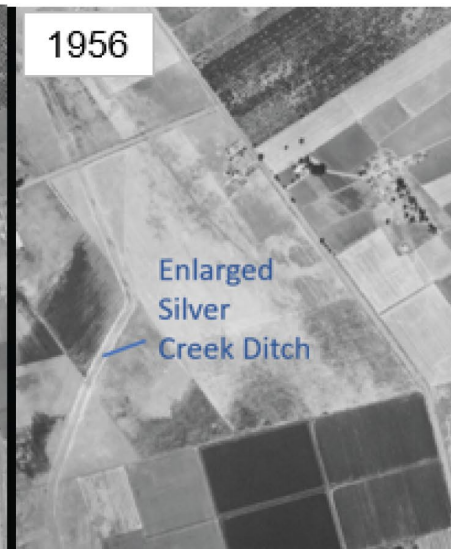
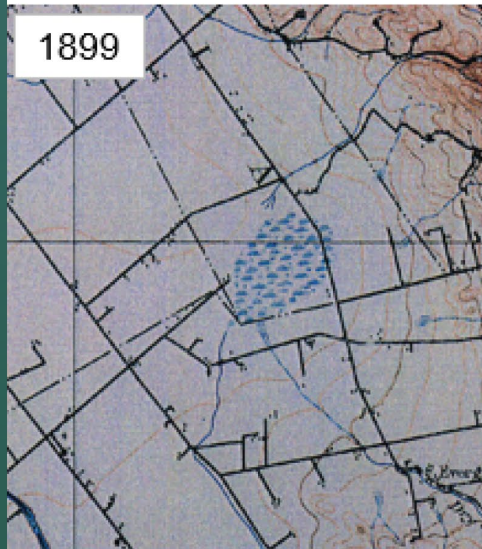
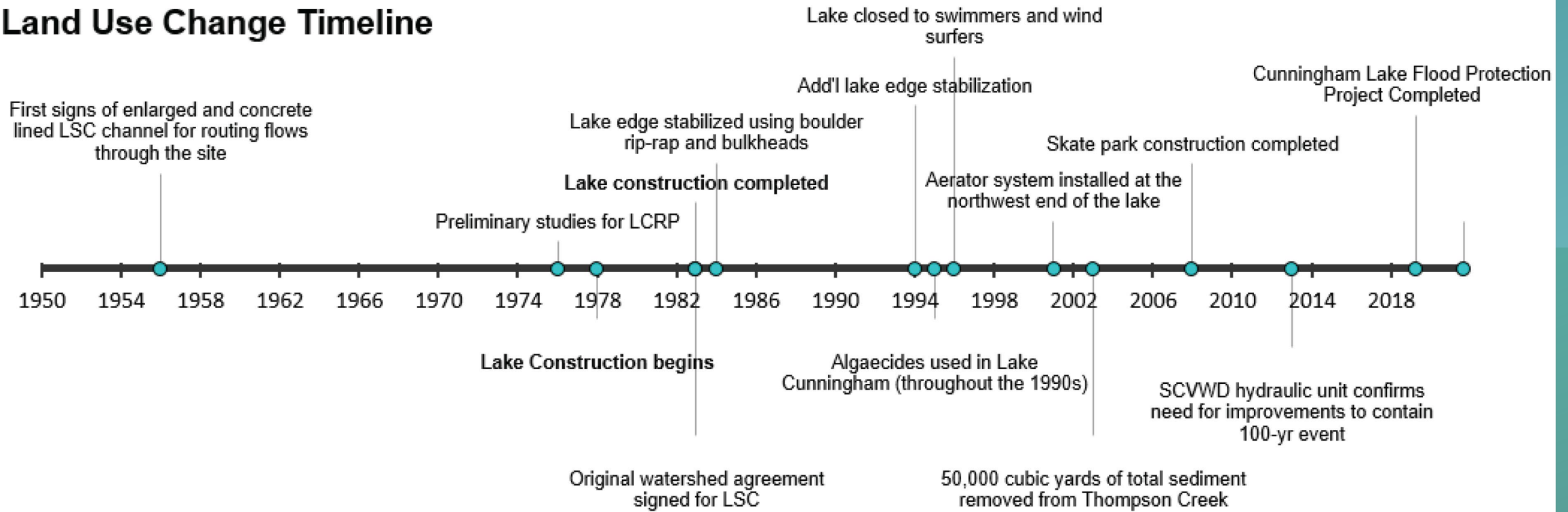
Sara Sellers, Interim Deputy Director, sara.sellers@sanjoseca.gov



Lake Cunningham Master Plan

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

Land Use Change Timeline



Shoreline and Water Quality Study

Analysis:

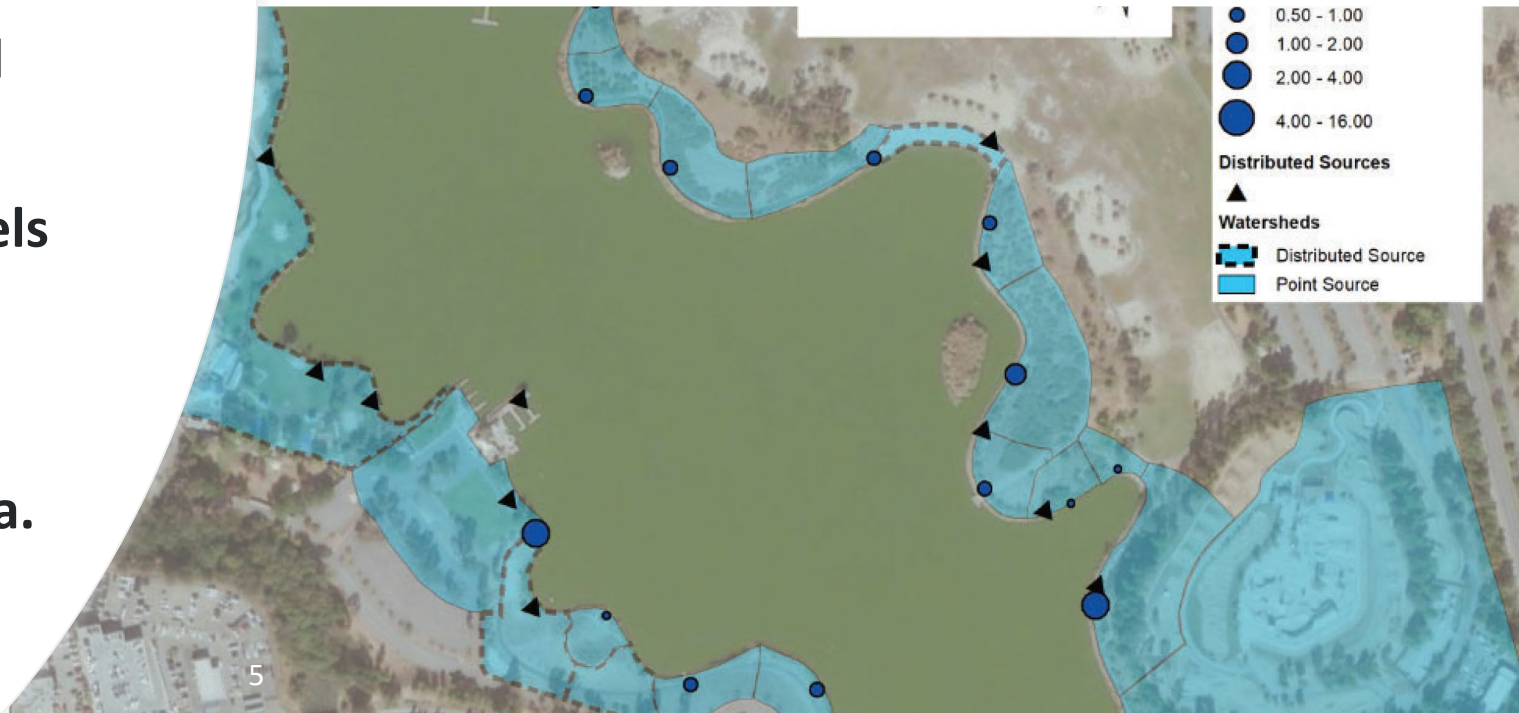
- Water Quality
- Water Sources
- Water Quality Recommendations
- Shoreline Erosion
- Rough Order of Magnitude Construction Costs



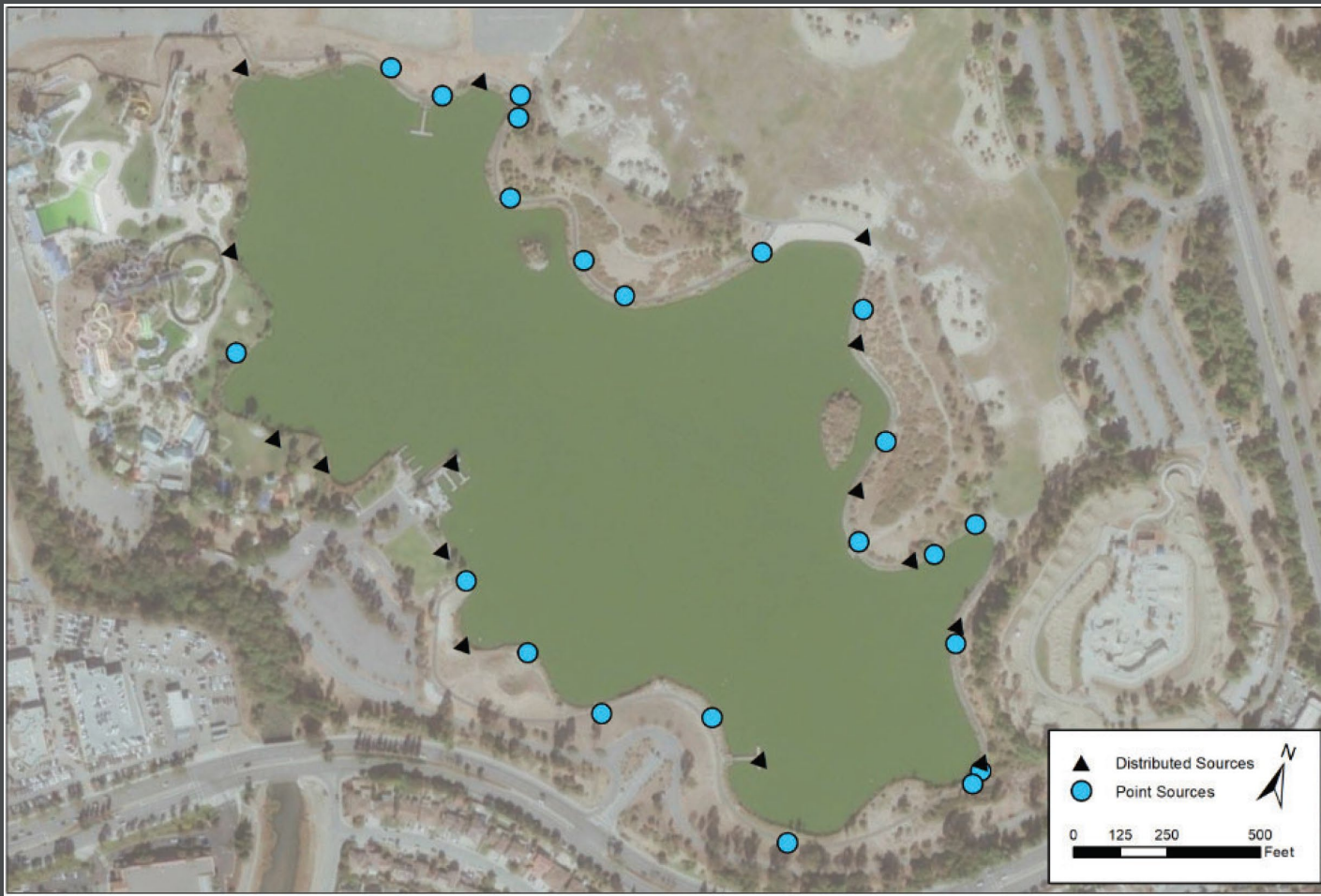
SOURCE: SCWWD (2015)

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



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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