HAINES CITY

Rain Garden Bio-swale Project

FSA December 2018 Conference

Small Scale Projects Provide Valuable Stormwater Quality Improvements

Southwest Florida Water Management District

CHASTAIN SKILLMAN

Takeaways

- Small Under-Utilized Properties can Contribute Positive Benefits through Creativity and Design
- Small Actions Add up to Community-Wide Awareness and Savings

  (cost, environmental and wellness)
- Opportunity for Community Education & Involvement
- Grant Funding may be Available for Your Community

Presentation Outline

- City of Haines City Water Quality Goals
- Site Context and Site Selections
- Plan Development
- Cost and Implementation

City of Haines City Water Quality Goals

- The City's Environmental Goal is to **Protect our natural amenities** by encouraging **proactive** environmental initiatives to safeguard our natural resources.
- This project will help **reduce the level of nutrients** that enter the City's waterbodies to ensure **safe, sustainable drinking water** for generations to come.

City of Haines City Water Quality Goals

- Problems with the City's waterbodies
  - Lack of education
  - Overuse of fertilizers = too high levels of nutrients entering waterbodies
  - Excessive amounts of trash being washed into storm inlets

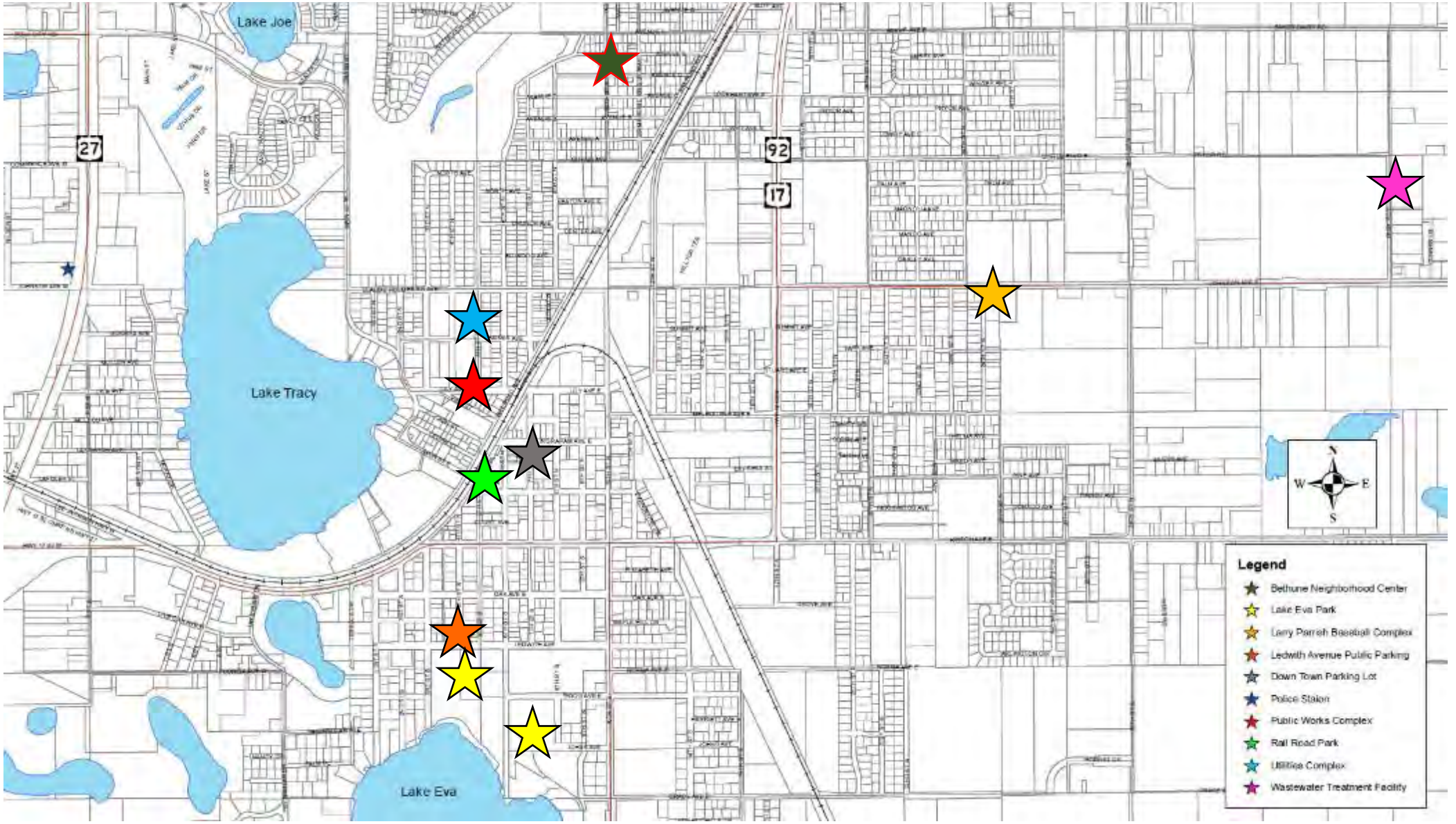
- Initiatives
  - To increase Public awareness of the importance of our waterbodies and
  - To prevent solid waste reaching local waterbodies
  - Community Involvement to Reduce Nutrient Levels

Site Context and Site Selections

Criteria for site selection

- City Owned Property
- Contributing to Receiving Water Body Requiring Nutrient Reduction
- No Treatment in Place

Site Context and Site Selections



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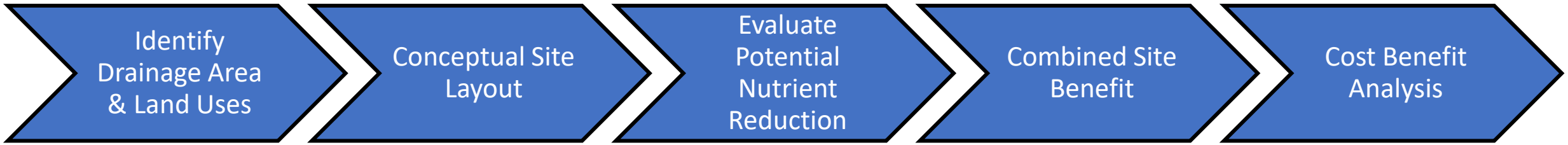


Plan Development

Survey

Soils

Analysis & Design

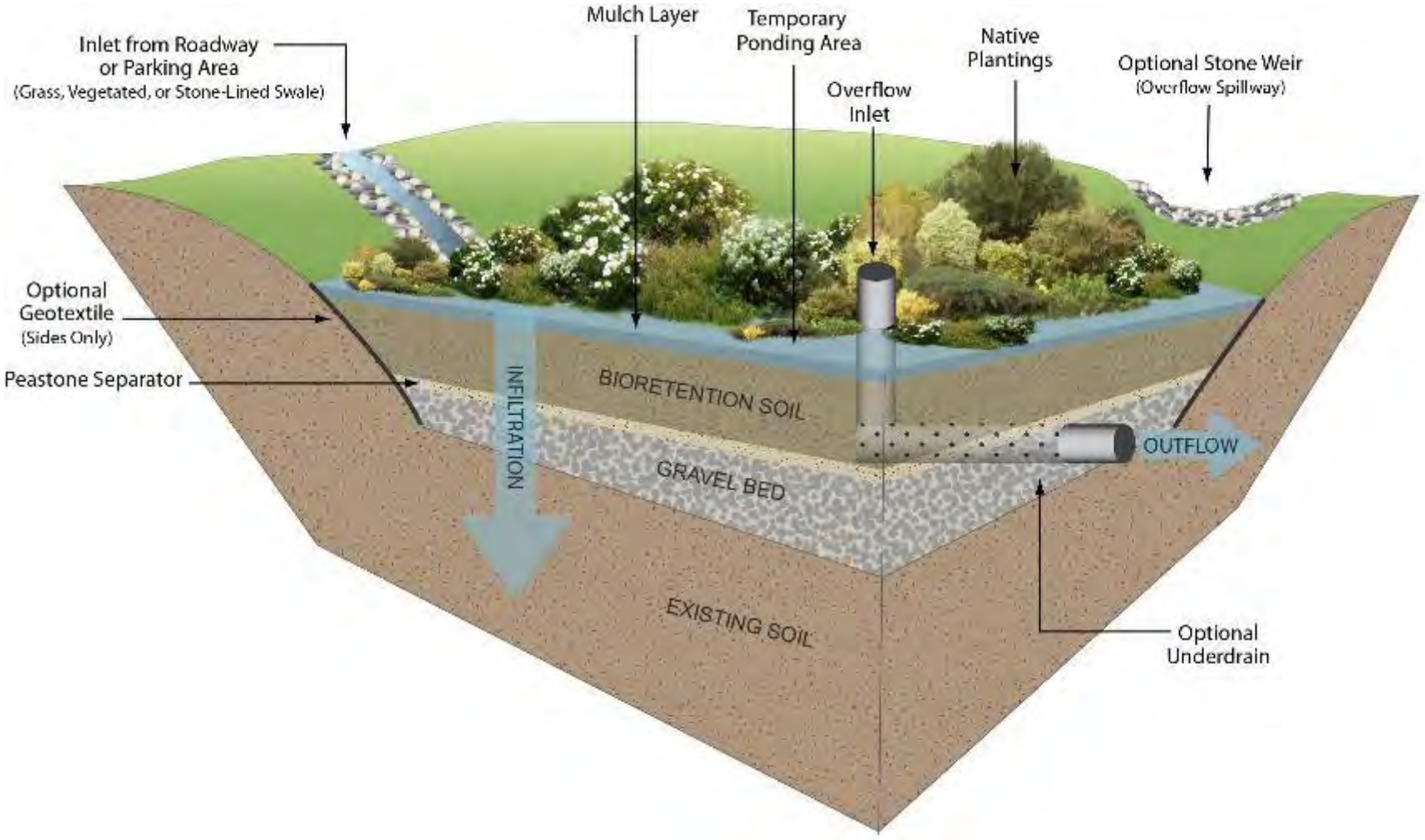
Landscape

Opinion of Cost

Cost Benefit Analysis

Landscape Considerations

- Soils/Drainage
- Aesthetics
- Right Plant in Right Place
- Maintenance



Landscape

Sabal Palm

Dahoon Holly

Pond Cypress

Saw Palmetto

Dwarf Fakahatchee

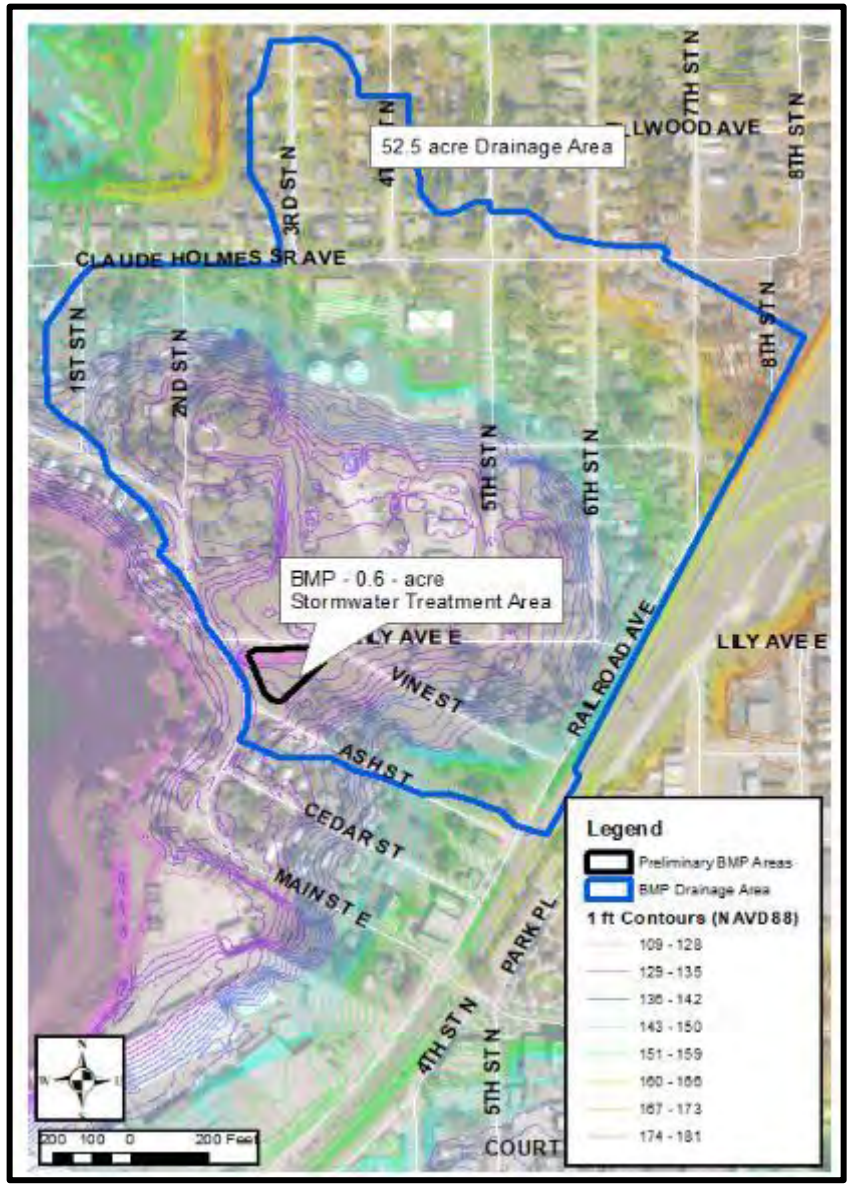
Cord Grass

Perennial Peanut

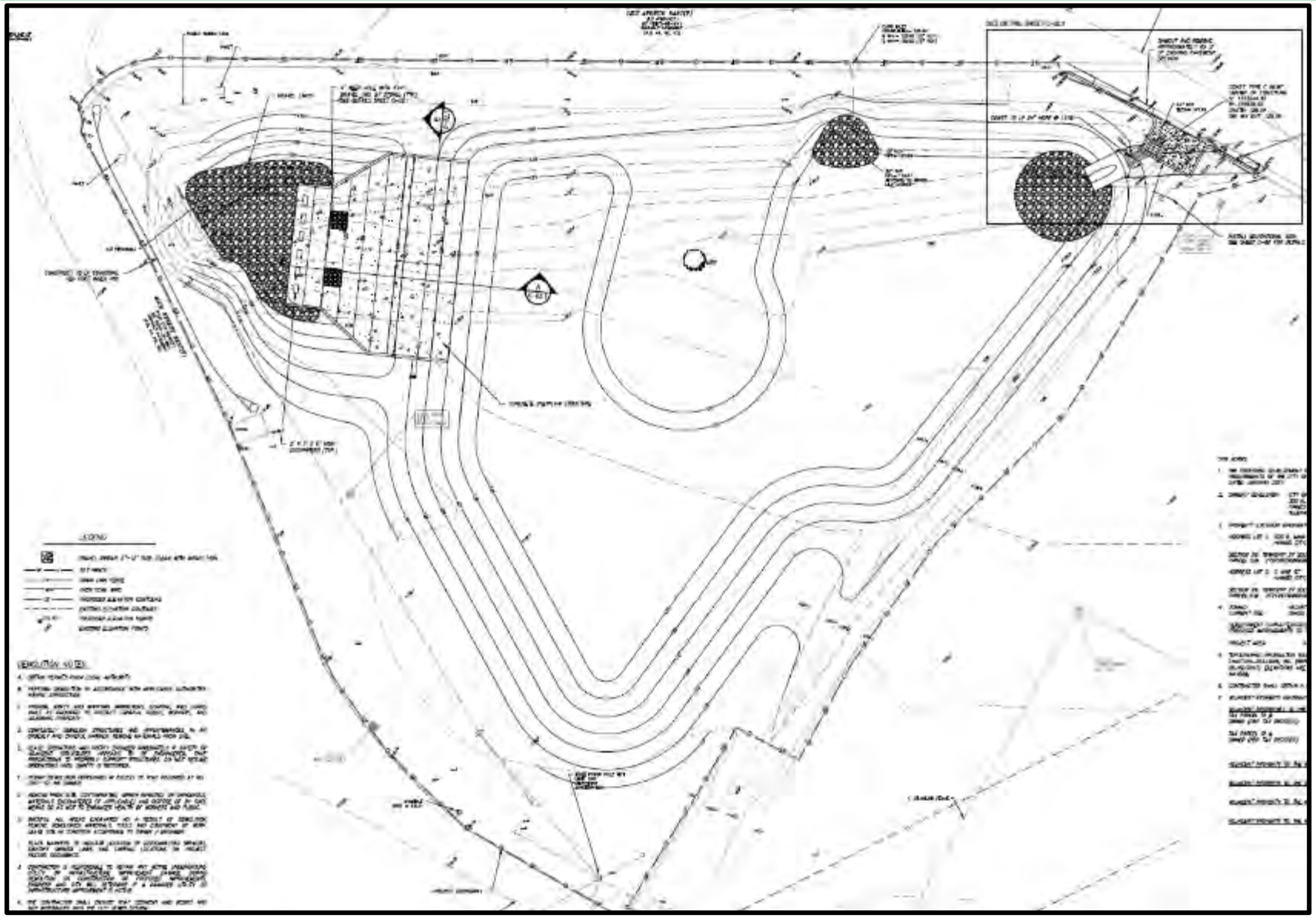
Location Map

Lake Tracy Site

Lake Tracy BMP Project Area



Lake Tracy Site



Lake Tracy Site

Lake Tracy Site

Lake Tracy Site

Lake Tracy Site

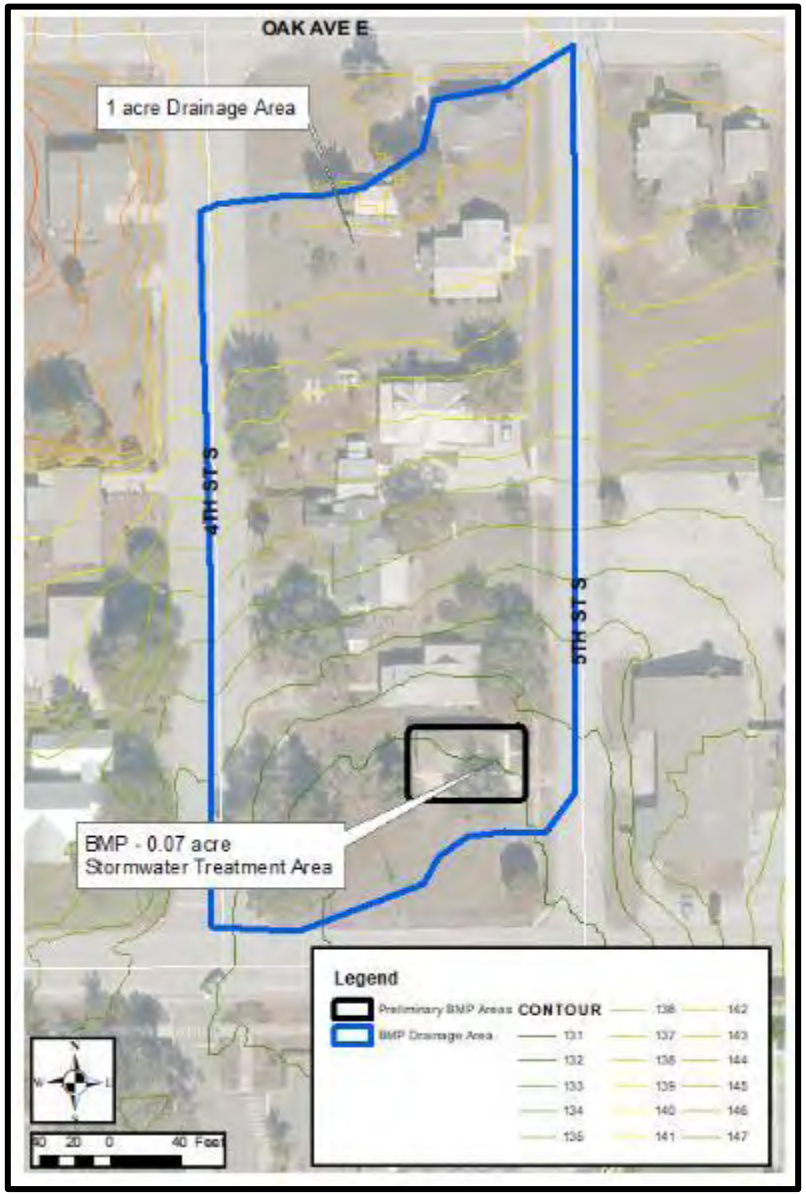
Challenges

- Pushing Site Area for Maximum Benefit (Major Contributor)
- Allow Conveyance through Site

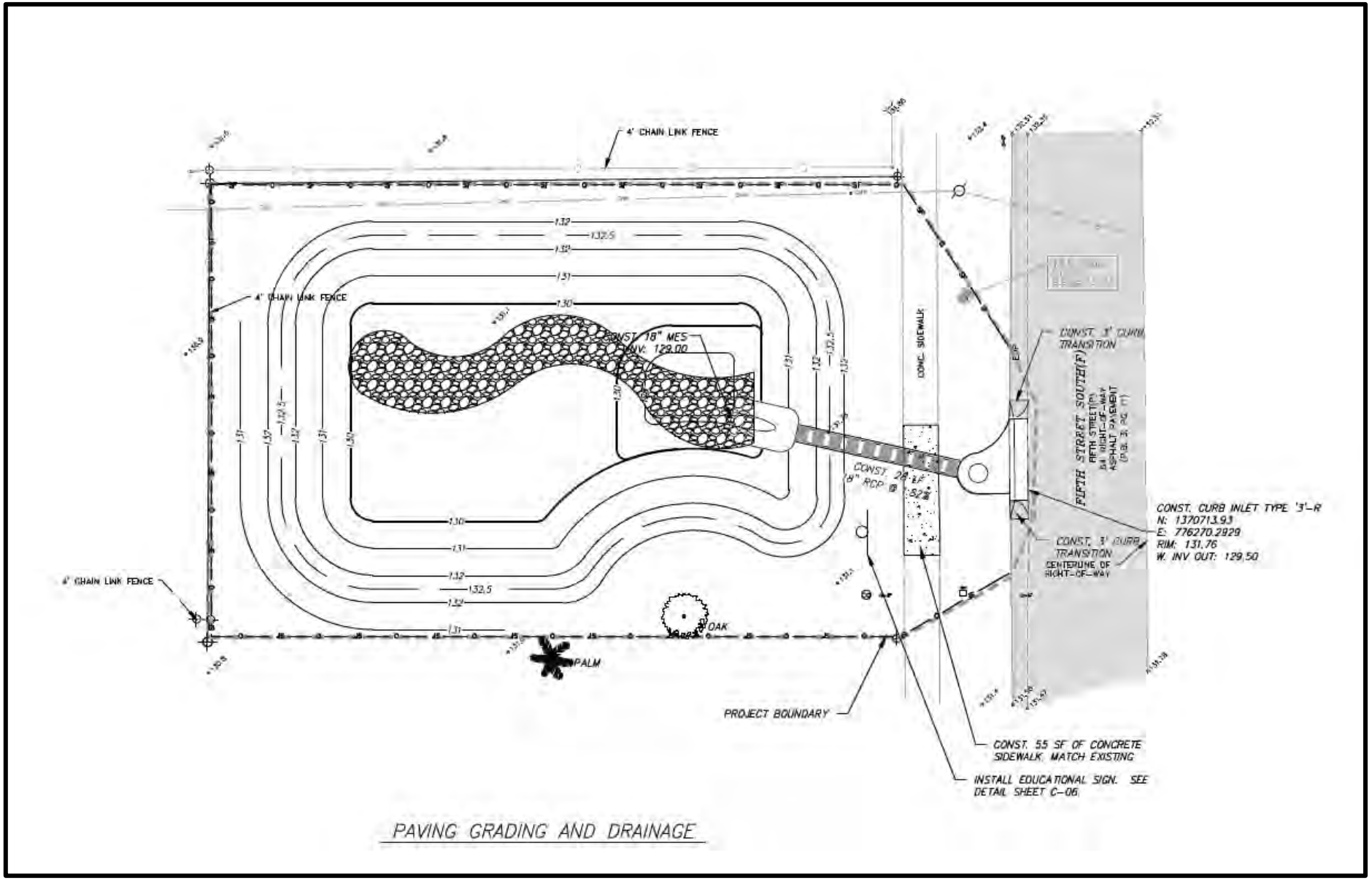
Location Map

Ledwith Avenue Site

Ledwith Avenue Site Project Area



Ledwith Avenue Site



Ledwith Avenue Site

Ledwith Avenue Site

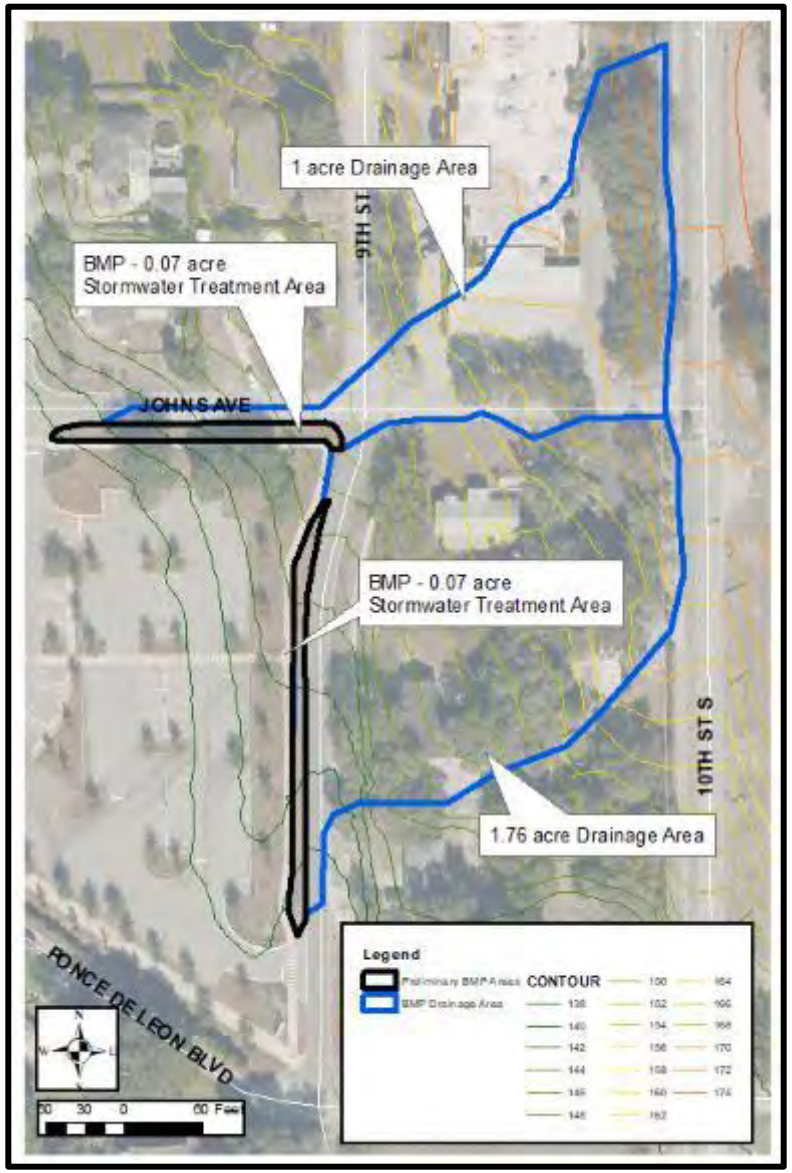
Challenges

- Small Area
- No Outfall
- Offsite Impacts

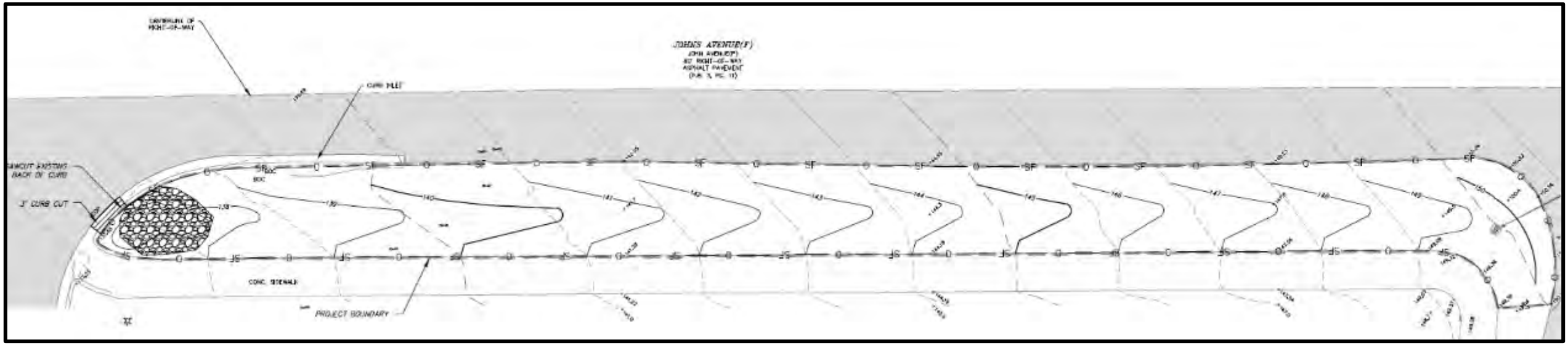
Location Map

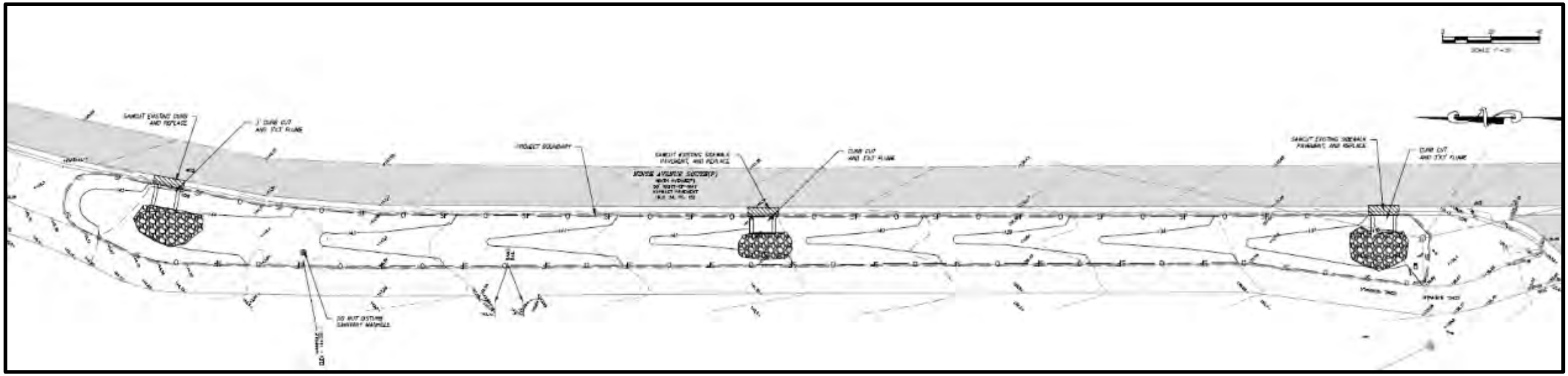
Ledwith Avenue Site

Johns Avenue & 9th Street Project Areas



Johns Avenue & 9th Street Site





Johns Avenue & 9th Street Site

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Summary of Cost/Benefit

BMP Name	Opinion of Cost	Area Treated	$/acre	TN Reduction (lbs)	$/lb TN	TP Reduction (lbs)	$/lb TP	TSS Reduction (lbs)	$/lb TSS
Lake Tracy/Public Works	$162,871	52.49	$3,102	2,153	$76	328	$496.21	4,5792	$4
Ledwith Avenue	$44,869	1.99	$22,547	200	$224	31	$1,447.01	2,625	$17
Johns Avenue	$36,434	1.01	$36,073	88	$413	13	$2,758.90	1,427	$25
9th Street	$36,803	1.76	$20,910	196	$188	30	$1,227.30	3,014	$12
Total	$280,977	57.25	$4,908	2,638	$107	402	$698	52,858	$5