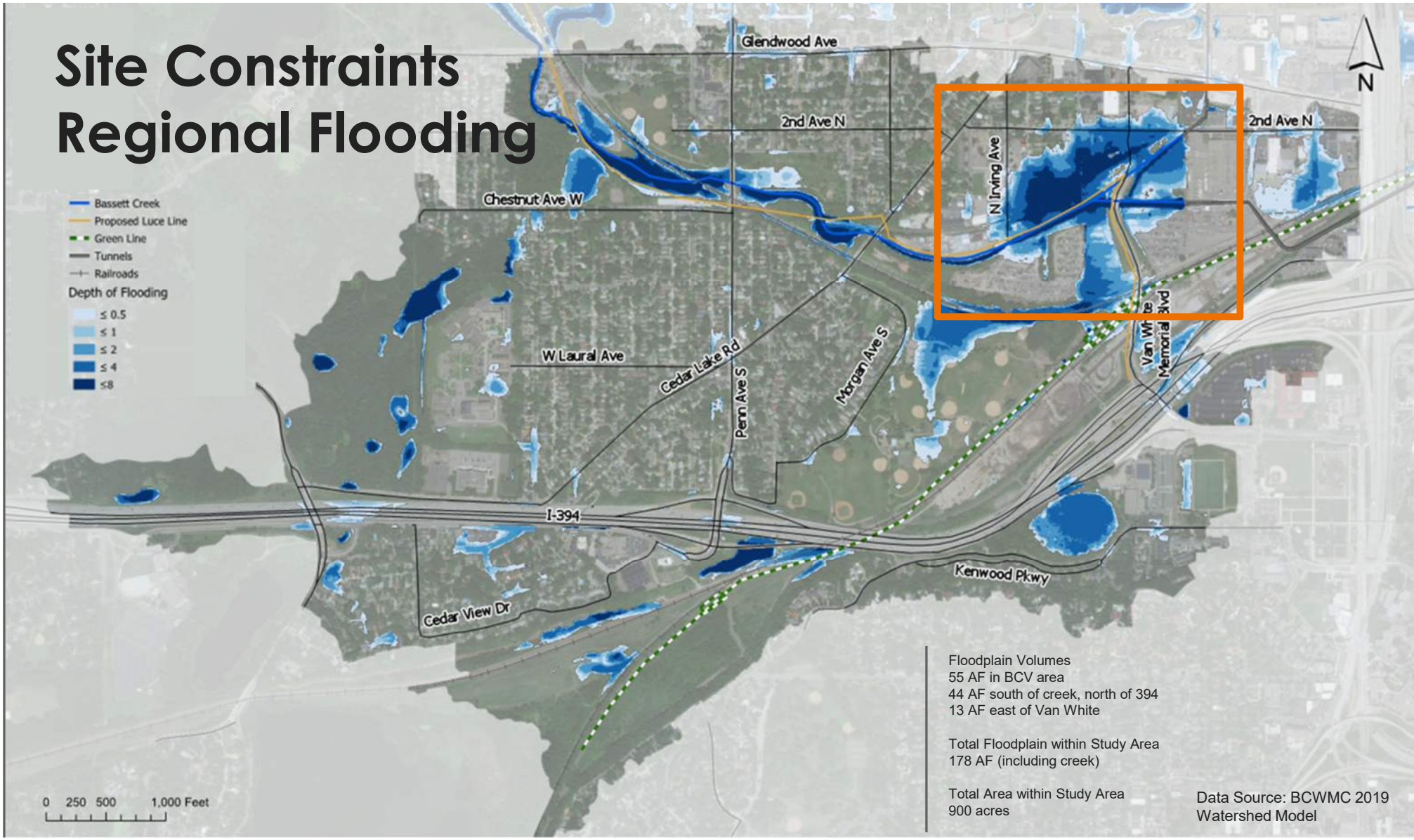
Stantec

Bassett Creek Valley Floodplain Feasibility Study

Grounding in the Valley

- Site Constraints
- Desired Outcomes
- Precedents
- Potential Solutions

Site Constraints
Regional Flooding



Floodplain Volumes
55 AF in BCV area
44 AF south of creek, north of 394
13 AF east of Van White

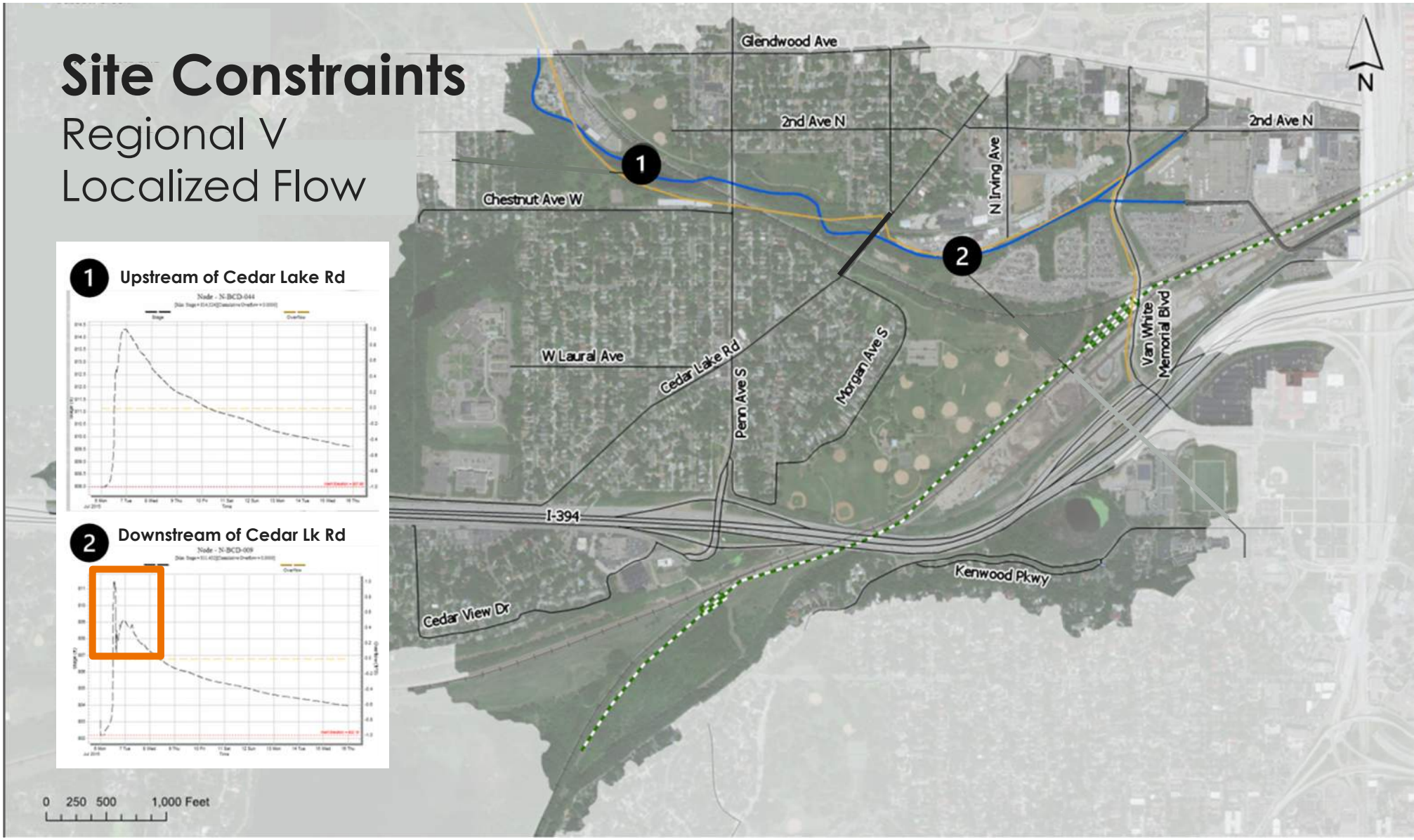
Total Floodplain within Study Area
178 AF (including creek)

Total Area within Study Area
900 acres

Data Source: BCWMC 2019 Watershed Model

Site Constraints

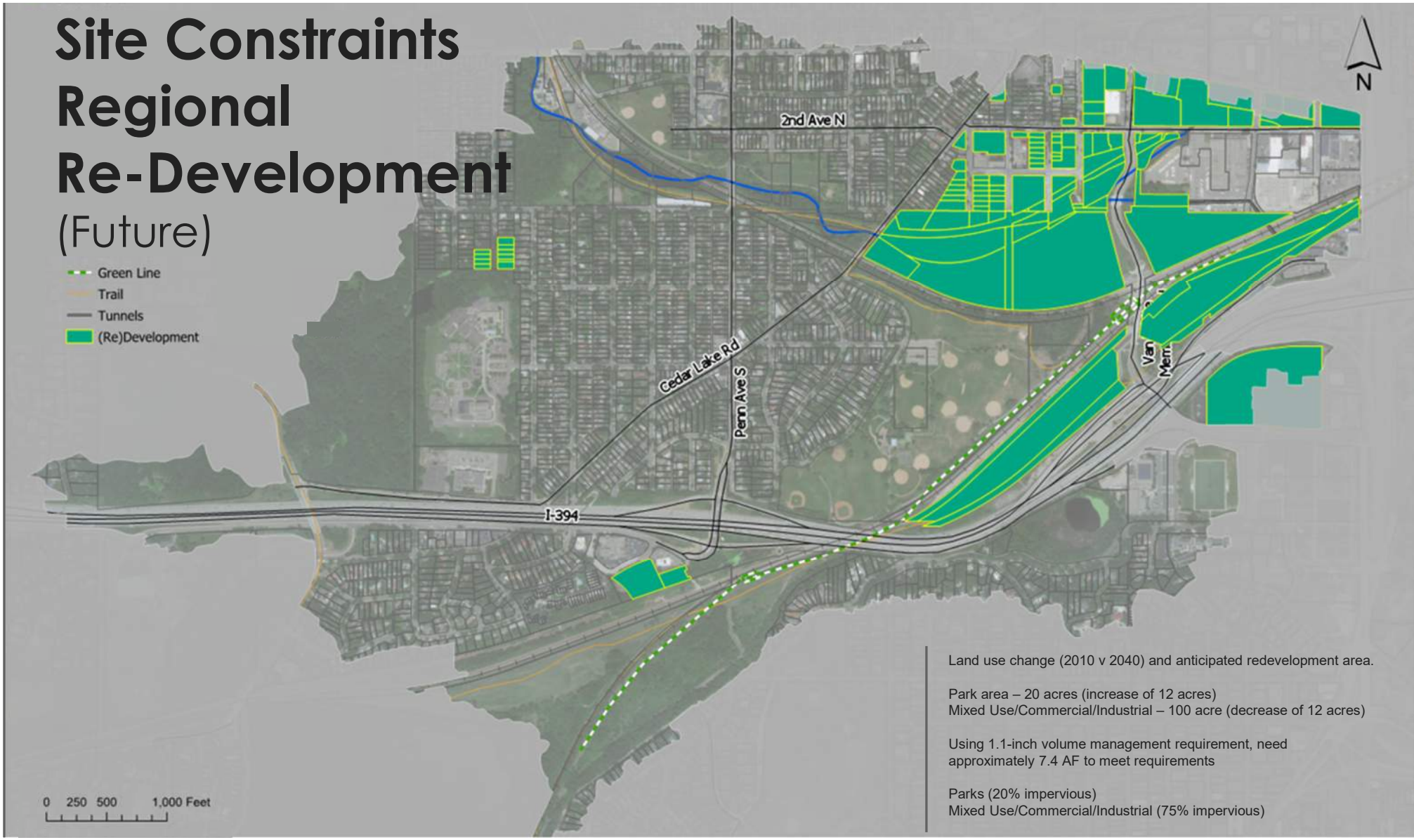
Regional V
Localized Flow



1 Upstream of Cedar Lake Rd

2 Downstream of Cedar Lk Rd

Site Constraints Regional Re-Development (Future)



Land use change (2010 v 2040) and anticipated redevelopment area.

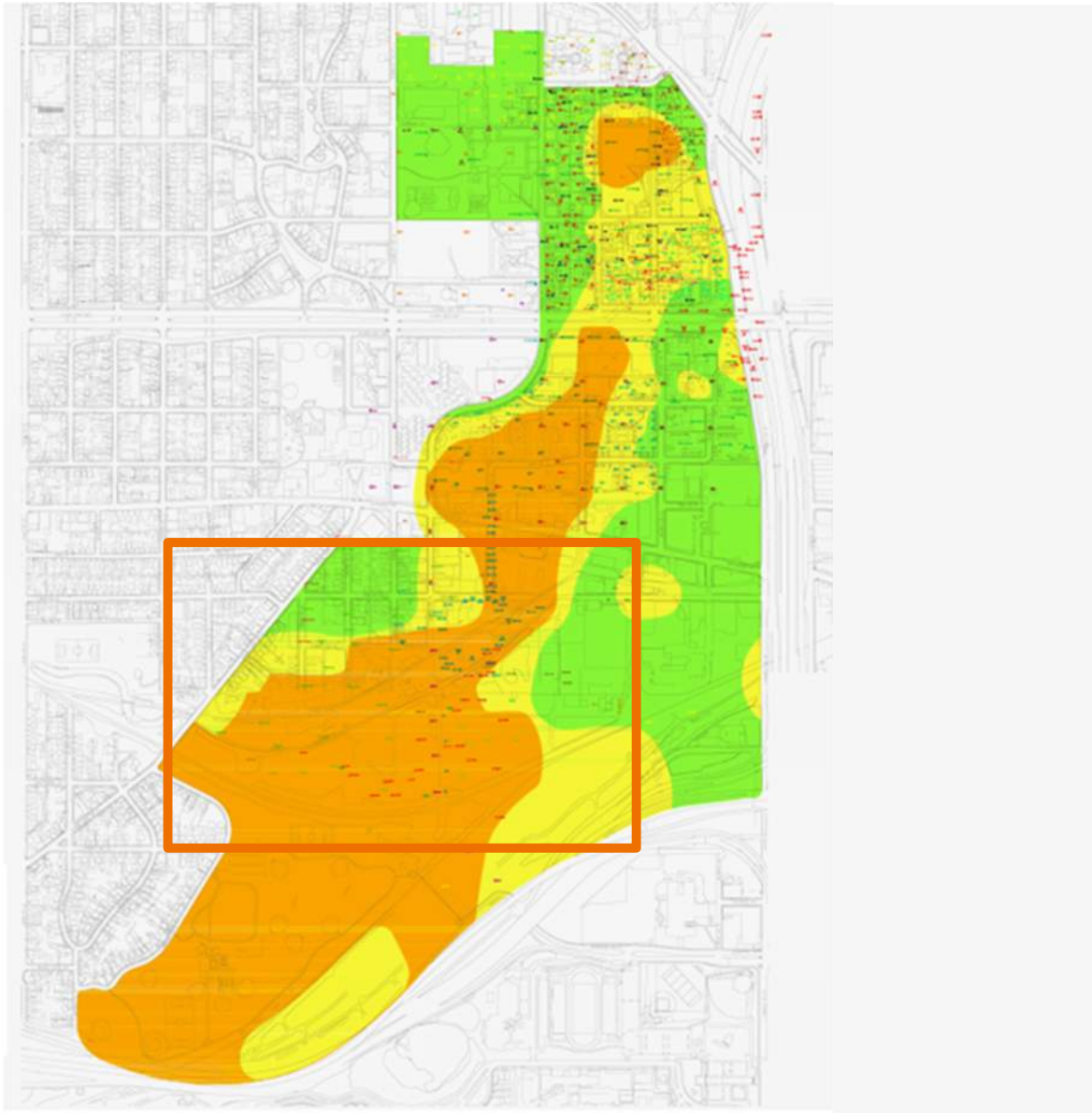
Park area – 20 acres (increase of 12 acres)
Mixed Use/Commercial/Industrial – 100 acre (decrease of 12 acres)

Using 1.1-inch volume management requirement, need approximately 7.4 AF to meet requirements

Parks (20% impervious)
Mixed Use/Commercial/Industrial (75% impervious)

Site Constraints

Soils



Site Constraints

Regional Contamination

Estimated Cleanup Cost for Phase I Development Area: $1.5 million +

- Phase I Development Area
- BTEX, TM, NAPH in Soil, Groundwater, and Soil Vapor (5,095 sqft)
- Old CVOCs Impacts in Groundwater (12,277 sqft)
- Former Tank Locations with Elevated DRO (6,654 sqft)

Former USTS with CVOCs over ISRVs

- CVOCs over ISRV (6,018 sqft)
- Former UST

Lead and Mercury Contamination

- Lead and Mercury (12,707 sqft)
- Lead Only (23,515 sqft)

Free Product

- Former AST
- Observed Free Product (30,067 sqft)
- Removed UST

Barr Estimates (2014): Areas 1, 2, 3:

- Sub-Areas for Remedial Evaluation
- City of Minneapolis Public Works Property
- Approximate Tunnel Spoils Location (Lead)
- Asbestos Containing Material Identified
- Estimated Extent of Dump Material (Metals, PAHs, Methane, ACM, Debris)

High/Complete Dump Removal: $98m

Mid/Residential Development: $40m

Low/Commercial Development: $10.9m

Notes:
1. Extent of dump material is based on previous reports, boring logs, and historical aerial photos
2. Asbestos containing material may be present throughout dump material. Area shown is where samples were tested
3. Hazardous level of metals (especially lead) may be present in the dump

Desired Outcome

- Build resilient regional floodplain
- Regional transit connections
- Maximize land use

How do we use Existing Plans and Projects?

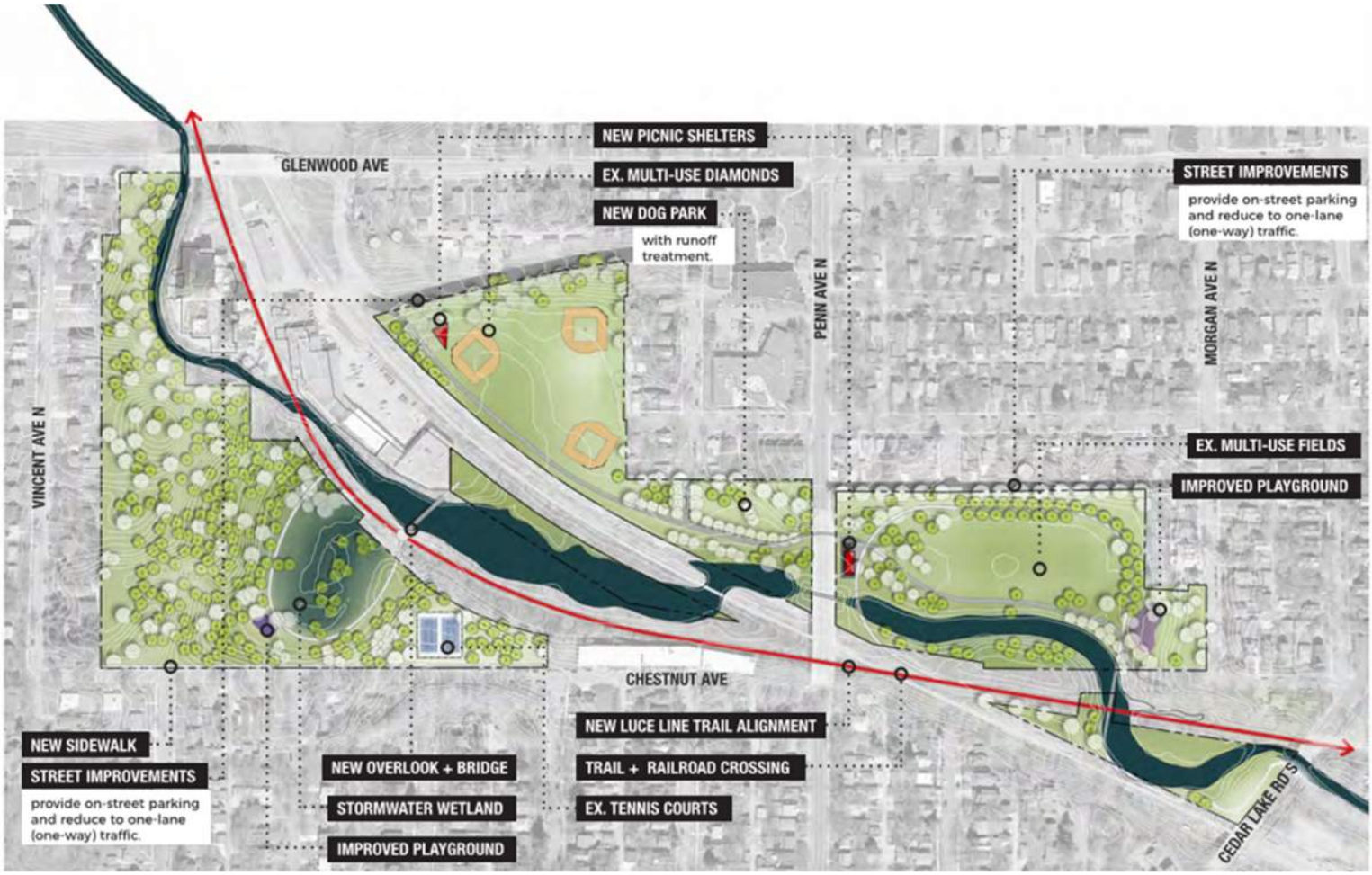
Bassett Creek Valley

Development

*Data Source: Collage Architects/2018 Met Council Predevelopment Study

Bassett Creek Valley

Park Plan



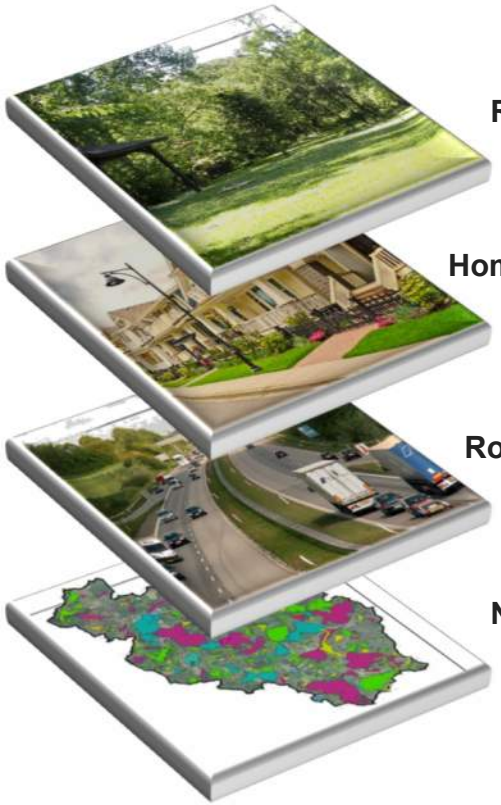
*Data Source: Minneapolis Park and Recreation Board Regional Plan

Precedents

- Stacked Features
- Innovative Development
- Integrated with Neighborhood

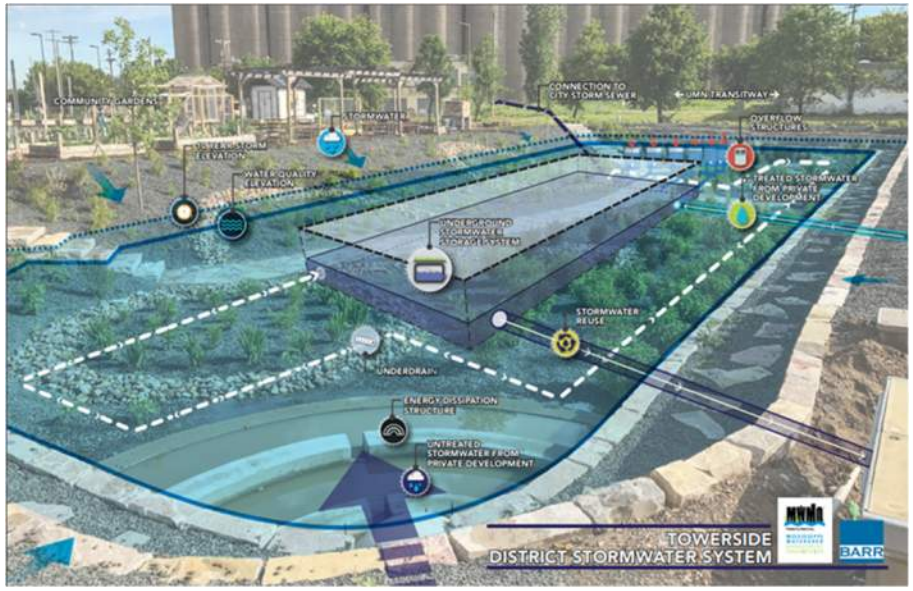
Regional Planning Approach

1. Develop a common understanding of natural resource issues and drivers
2. Understand local priorities by assessing partner and stakeholder existing plans and policies
3. Integrate natural resource goals with local plans and policies
4. Develop a strategic implementation and investment framework



Precedents

Stacked Features



Minneapolis

Crystal

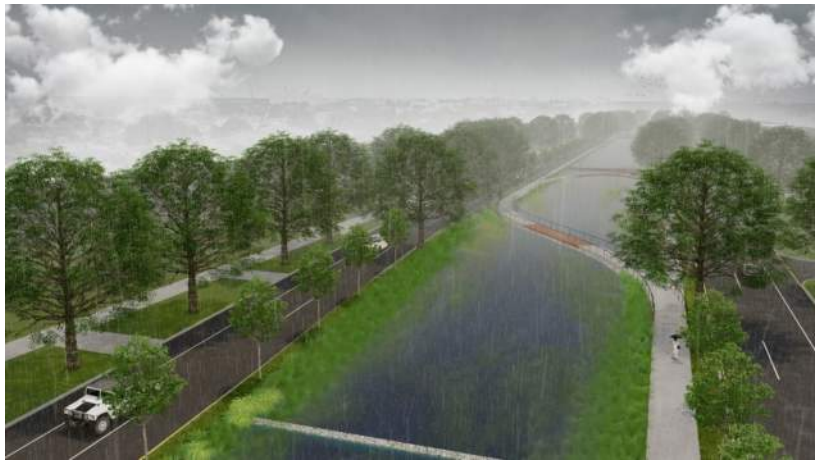
Precedents

Stacked Features

New Orleans – Blue Green Corridor

Precedents

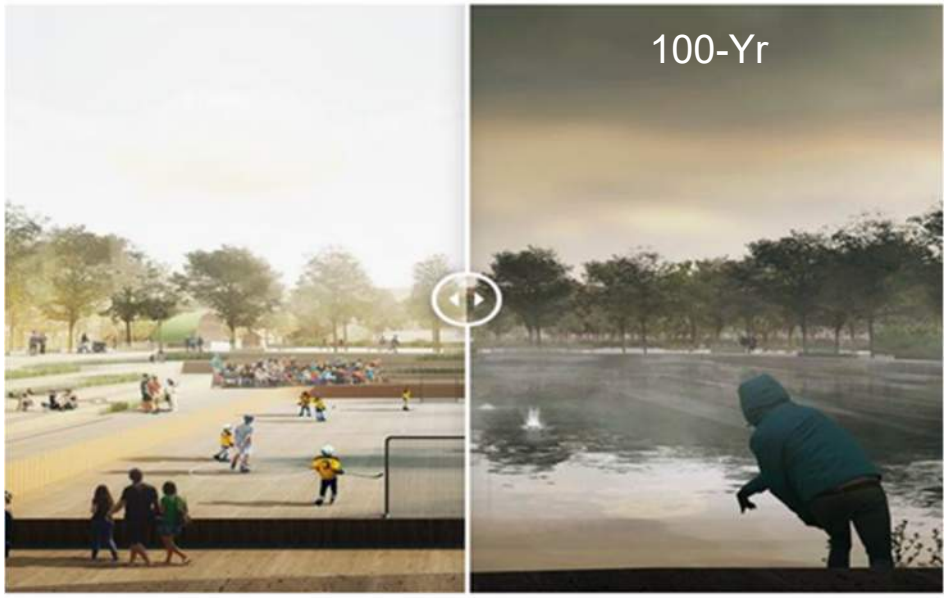
Stacked Features



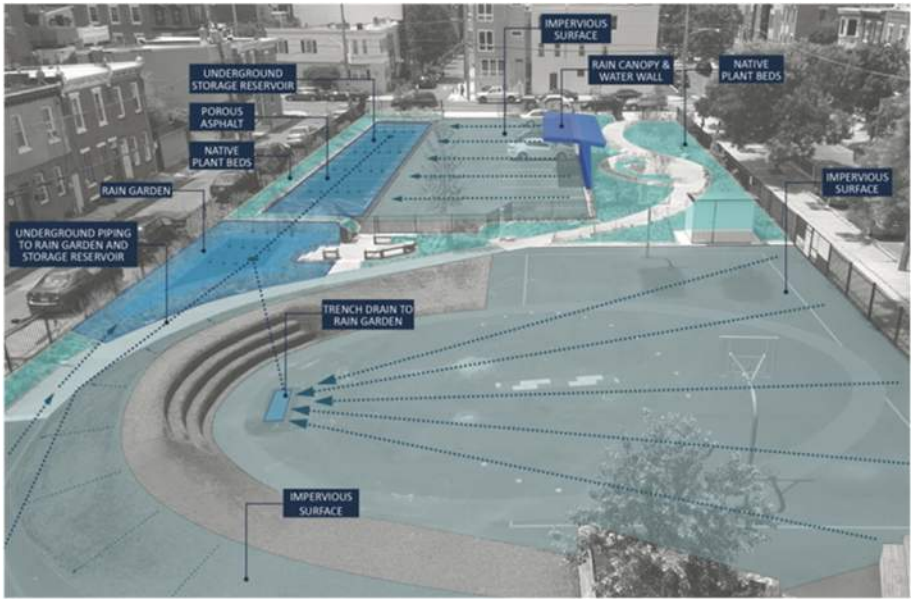
New Orleans – Blue Green Corridor

Precedents

Stacked Features



Copenhagen



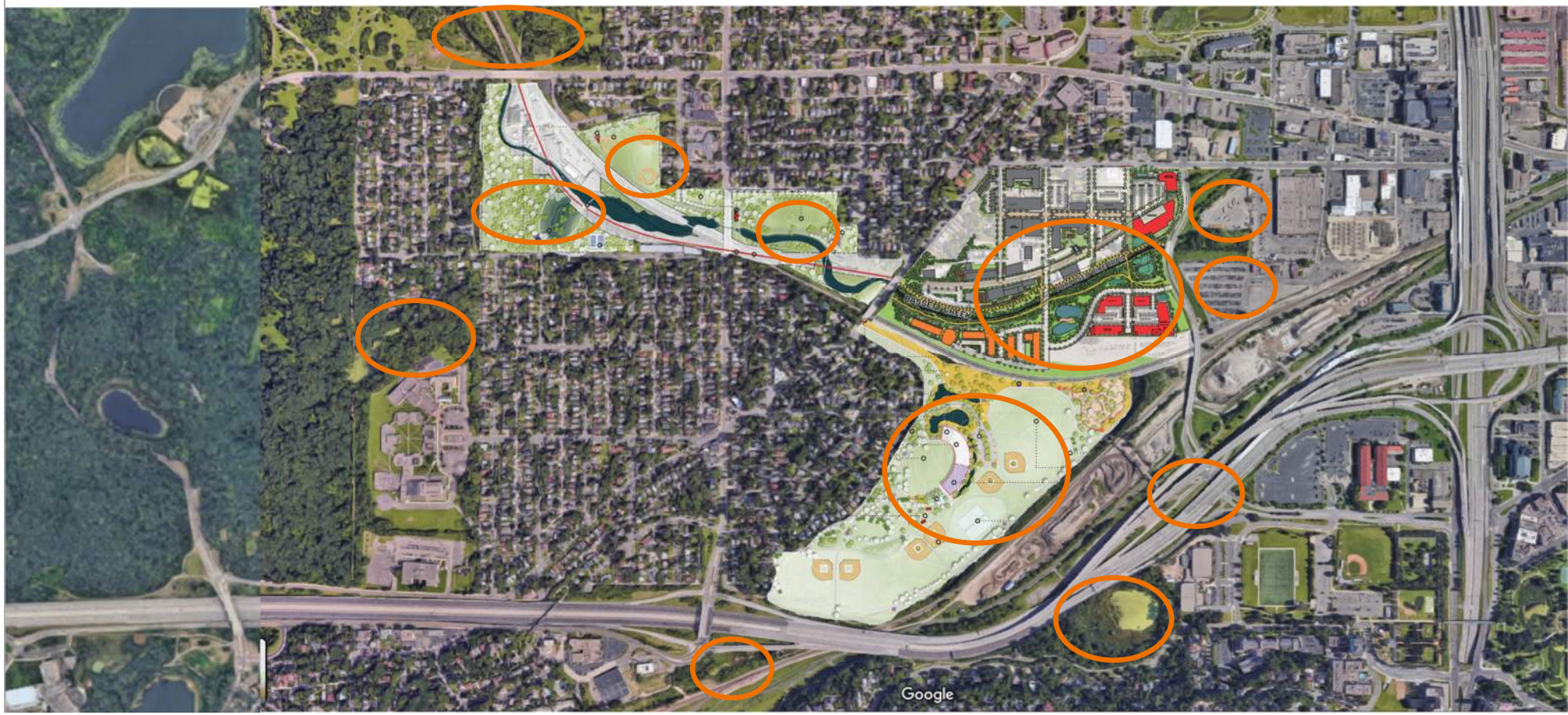
Philidephia

Precedents

Stacked Features

New Orleans – Allen Toussaint Blvd

Solution Focus – Potential Project Locations



Option 1 – Optimize Bassett Creek Corridor

- **Surface storage – creek cross section expansion**

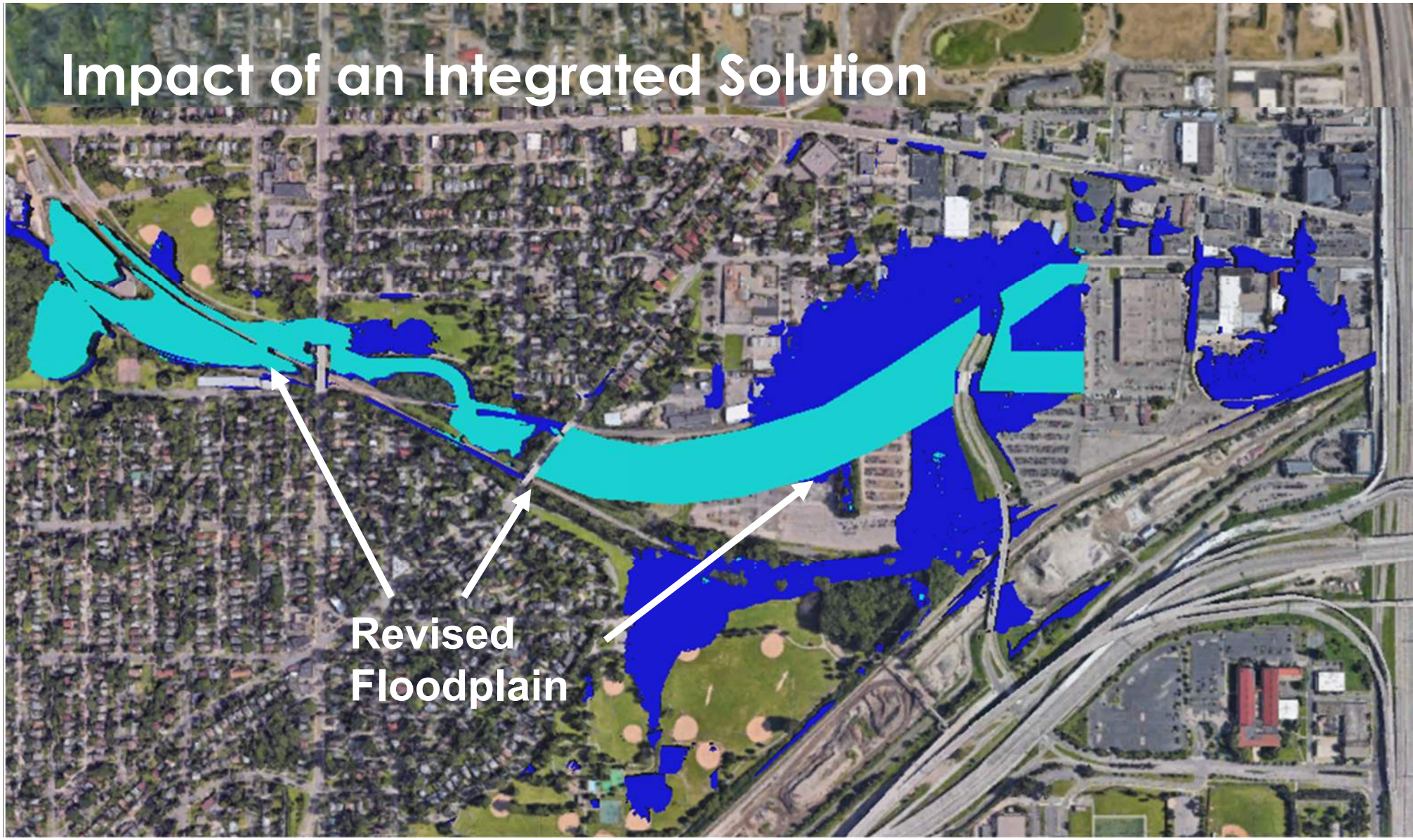
Channel Width

- **Existing**- 50 ft (57 AF) - *Not contained in channel*
- **Option 1A** – 150 ft (Contained in Channel) ($5 - $12M)
- **Option 1B** – 250 ft (-1ft Flood Elev. (Storage +30%), ($5.5 - $15M)
- **Option 1C** – 300 ft (-1.5ft Flood Elev. (Storage +60%) ($5.8 -$17M)

Option 2 – Creek Enhancement with Stormwater Features

- Pond Surface area is 13 ac
- Cross section 100-125 ft
- WQ under low flow conditions: Oxbow/basins/ braided channel
- Surface storage – creek cross section expansion, inline basins (+30% storage) ($3 - $7M)
- Under Ground Storage - piers under buildings could have dual purpose for storage (+30% storage) ($15 -$30M)

Impact of an Integrated Solution



Concept View

Integrated Regional Solutions to Unlock the Valley