

# Unearthing Ecological Potential:

*Daylighting and restoring a stream that has been buried for a century*

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## Project Overview

### Integrated Restoration Approach

- Stream Daylighting
- Additional Stormwater Management
- Planting Palettes
- *Osage Nation Elements*
- *Nature Exploration Area*

### Benefits of Daylighting

### Future Considerations

### Summary

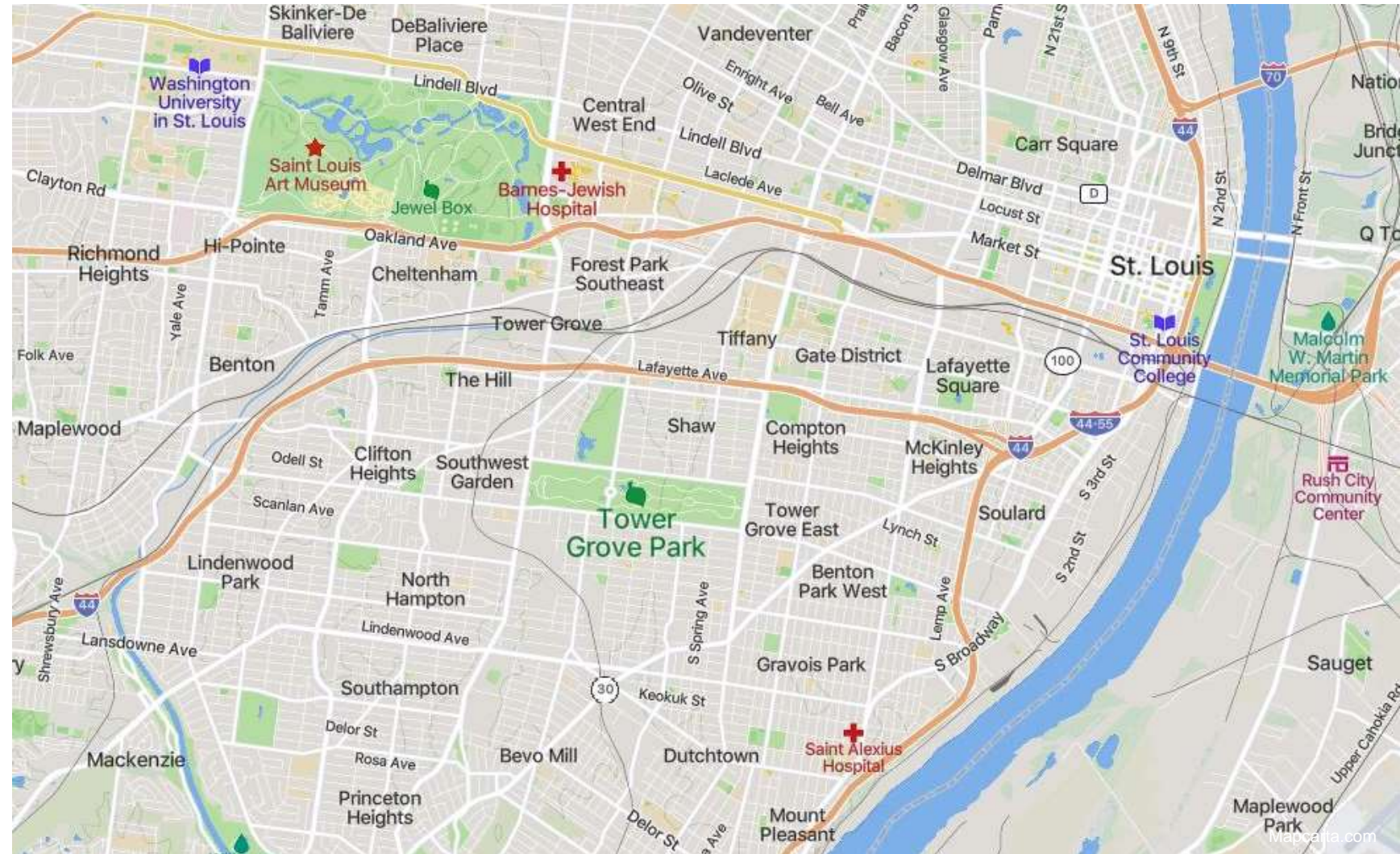


Tower Grove Park



## TOWER GROVE PARK

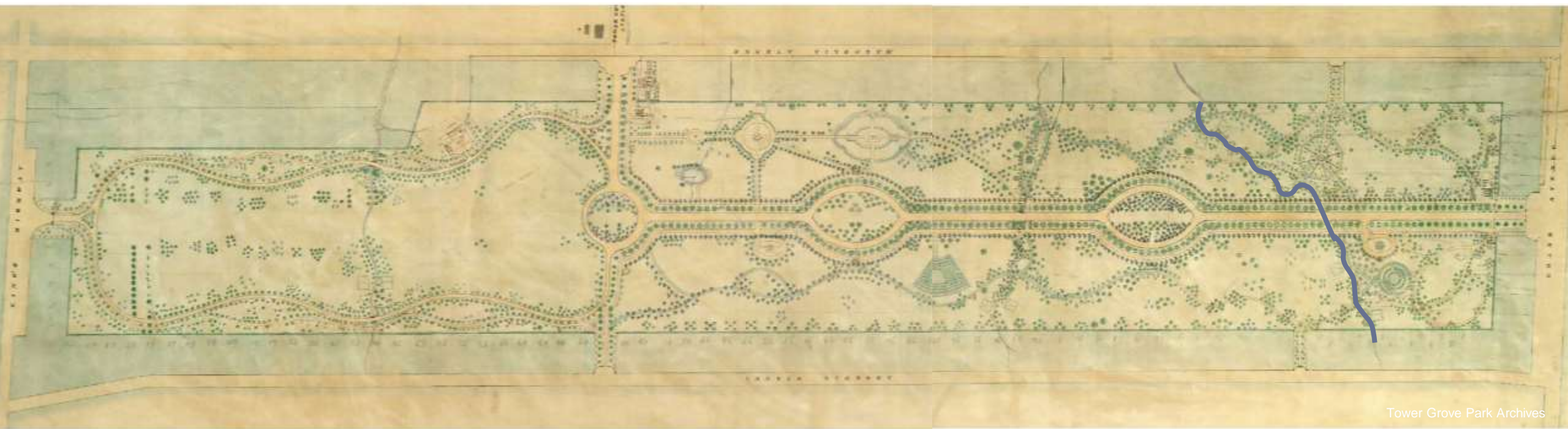
- National Historic Landmark in St. Louis, MO
- In 1913, the East stream was placed underground
- Identified in 2017 Master Plan





## PROJECT GOALS

- Daylight the East stream
- Interpret the land prior to the Park's establishment



## ADDITIONAL PROJECT GOALS

- Incorporate stormwater management
- Recognize indigenous inhabitants of this area
- Provide Nature Exploration Area





## PROJECT LOCATION

- Park bound by Arsenal Street and Magnolia Ave
- East of Stupp Center
- Flows south to north





# Integrated Restoration Approach





## SIZING A BURIED STREAM

- Utilized West Stream as reference reach
- 1,370 linear feet of stream
- Proposed slope = 1%
- ‘Baseflow’ channel with adjacent floodplain bench





## UTILIZING 1900s INFRASTRUCTURE

- Existing storm drain pipes, inlets, culverts, retaining walls, and bridges
- Completed structural condition

## PROPOSING MODERN DAY INFRASTRUCTURE

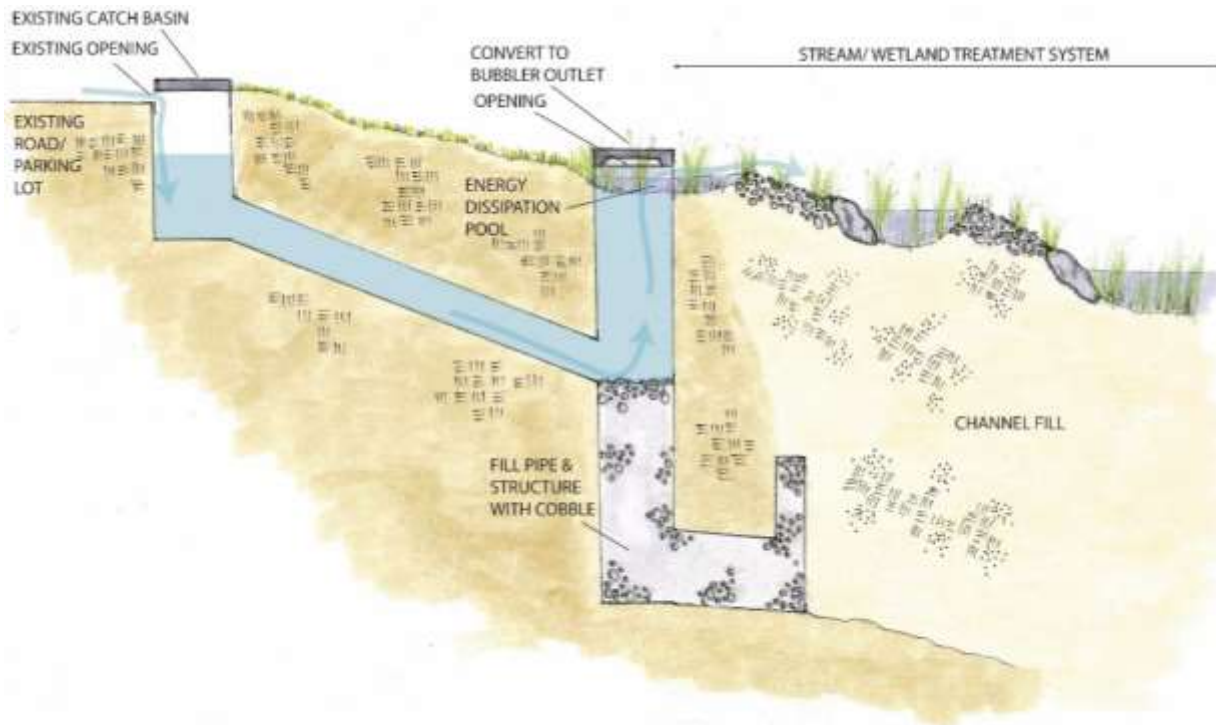
- Elliptical Culverts





## IF YOU BUILD IT, IT WILL FLOW?

- Things to consider:
  - How to bring the water to the surface?
  - What to do with the previous stormwater infrastructure?



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## ADDITIONAL STORMWATER MANAGEMENT

- 5 bioretention facilities for impervious area treatment
- Riffles strategically placed to divert flow into treatment cells





## PLANTING PALETTES

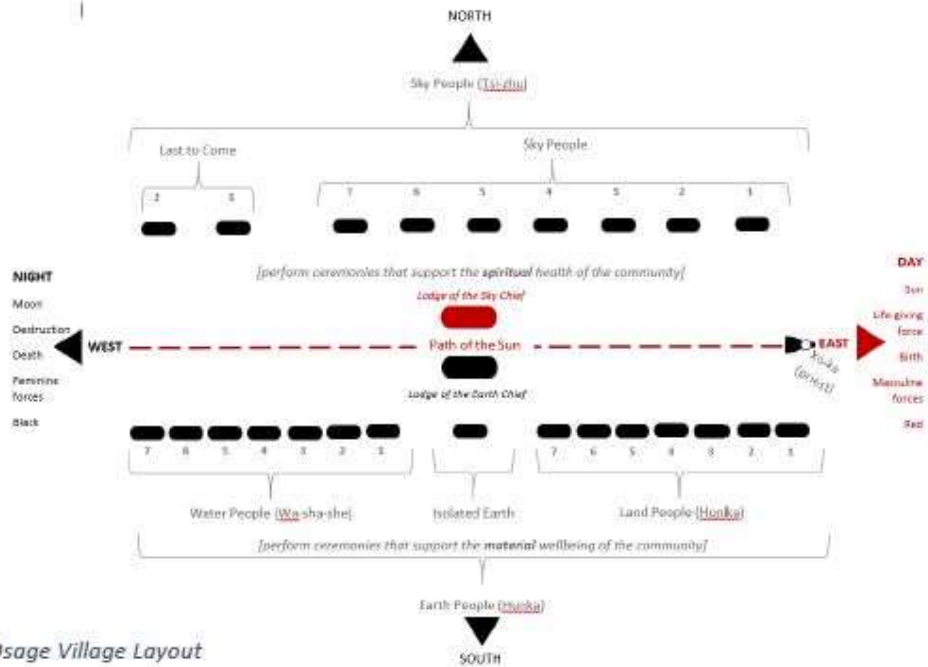
- Preservation of on-site trees
- Restore plant diversity based on regional and site ecology
- Meaningful plantings for Osage Nation





## OSAGE NATION ELEMENTS

- Language
  - **Neé Kee Néé**, or “revived water”
- Historic Village
- Sacred Plantings
- Educational Programming



Osage Village Layout  
From X-Sense Authentic Places





## NATURE EXPLORATION AREA

- Located in the Headwaters Area near Stupp Center
- Potable water feature
- Playscape



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## TOP BENEFITS

1. Reduces flows to downstream combined sewer infrastructure
2. Reduces erosive forces
3. Attenuates peak discharges
4. Promotes infiltration and groundwater recharge
5. Improves water quality and creates aquatic habitat
6. Replacement of turf grass
7. Educational and community awareness





## STAKEHOLDER ENGAGEMENT

### DOWNSIDE TO DAYLIGHTING

1. Location, location, location
2. Size matters
3. Regulatory concerns
4. Watch out for geysers
5. Cost





**Designed = 2020**

**Constructed = 2021 – 2022**

**Project Area = 3 acres**

**Stream Length = 1,370 LF**

**BMPs treat surrounding 42-acre watershed**

**7 acres of Impervious Treatment**

**Planted Materials:**

- 61 Trees
- 137 Shrubs
- 9,216 perennial plugs
- 1.9 acres of native seed





# QUESTIONS?

Acknowledgements:

Tower Grove Park, Lamar Johnson Collaborative, David Mason & Associates, Navigate Building Solutions, X-Sense Authentic Places, Keeley Construction Group, Shaw Nature Reserve, The Osage Nation, Missouri Department of Conservation