Stormwater Management and Infiltration along Central Corridor Light Rail Transit
Central Corridor LRT Project Overview
University Ave Constraints

- Tight 120’ wide ROW
- Buildings at ROW line
- Densely utilized underground zone
- Road and building access to be maintained at all times.
University Avenue Today
Current Land Use
University Ave Cross Section

- 9.9' Sidewalk
- 11' Thru Lane
- 11' Thru Lane
- 22' Roadway
- 13.8' Median (12.3' Platform)
- 26.3' Trackway
- 10' Left Turn
- 11' Thru Lane
- 11' Thru Lane
- 11' Sidewalk

120' Right of Way
Capitol Region Watershed District Requirements

- Rate control
- Volume reduction
- Water quality
City Policies and Goals

- Transit oriented development
- Enhanced streetscape & livability
- Serve multi-modal transportation needs
- Long-term maintainability
LRT and Roadway Requirements

- Required clearances
- Strict subgrade requirements
- Required utilities and structures
- Accommodate projected ped & vehicle traffic
- Long-term maintainability
Existing Contamination Issues

- Gas and Diesel
- Chlorinated Solvents
- Heavy Metals

Over 10% of the Corridor has limitations due to contamination
Successful Solutions will...

- Stakeholder buy-in including City, County, State and Watershed.
- Combine and overlap facilities to address more than one goal with the same real estate.
- Fit within tight CCLRT budget.
- Be maintainable in concert with street and LRT operations.
Screening Process

- Compatible with surface and subsurface use
- Address contaminated soils concerns
- Suitable soil conditions
- Cost effective
- Proven performance

Input and review by 8 different consultants and 5 agencies
Workshop with over 50 participants
Green Practices Screening Process
Screening Results

- Infiltration trench with integrated streetscape and storm water conveyance
- Sump inlets with surface skimming
- Convert paved surfaces to pervious
- Rain gardens
- Stormwater planters
- Infiltration under side streets
Infiltration

- Responds to all 3 watershed goals.
- Could be combined with streetscape and storm water conveyance needs.
- Compatible with certain surface and subsurface uses.
Integrated Tree/Infiltration Trench
Infiltration Trench Details
Infiltration Plan View
Typical Infiltration Trench Profile
Infiltration Trench Construction Staging
Trees Planted Outside Infiltration Areas
Infiltration Section without Trees

LOCATION: UNIVERSITY AVE.

SEE STORM SEWER PLANS FOR INFILTRATION LOCATION & DETAIL
Tree Trench with Structural Soil
Street & Median Landscaping
Typical Crossing Area
Typical Station Area
Measuring Success

- Volume reduction of approx 3 Acre-Feet
- Treats runoff from 100 acres of pavement
- Added over 2000 trees
- Added over 5 acres of new pervious area.
- Capturing and treating significant water from outside the project limits.
Additional Green Practices

- CRWD
  - Stormwater Planters
  - Rain Gardens
- City of St Paul
  - Side Street Infiltration Trenches
- Met Council
  - Roof collection/re-use from OMF
Thank You