

# Lowertown Yards: Urban Green Infrastructure

## A Vision for Reclaiming River Land from Industry and Parking

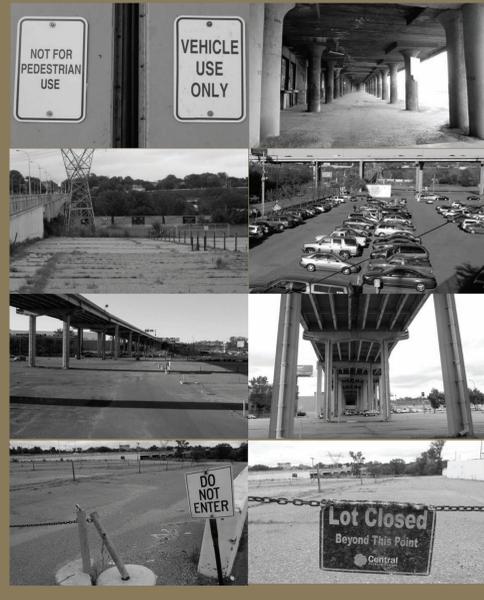
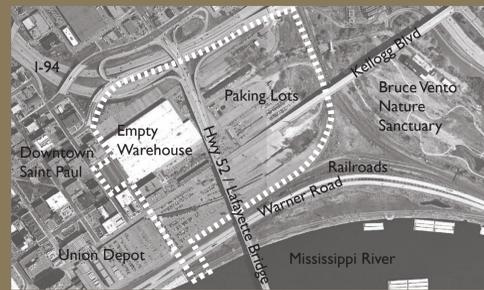
Colleen O'Dell  
University of Minnesota  
Landscape Architecture &  
Urban and Regional Planning

### Project Description

The Lowertown area of downtown Saint Paul is both historically and culturally rich- the birthplace of the Dakota people and the city of Saint Paul, and the historic head of continental Mississippi navigation for the Northwest. For the last 150 years however, we have given this socially and environmentally vital riparian area over to machines and infrastructure: to railroads, automobiles, sewer systems, electrical grids, and surface parking. Like many prior industrial areas throughout the U.S., we have erased the original history and ecological functionality of the land, first by replacing it with hardscape engineered infrastructure lacking in cultural identity, and second by allowing that infrastructure to decay, obsolesce, and contaminate surrounding soil and water.

This dual landscape architecture and urban planning project repurposes and reconnects the disconnected pieces of Lowertown by daylighting and reusing stormwater to create public space, sustain urban agriculture, and create new water-cleansing wetlands. Additional design and planning approaches include the phytoremediation of rail yard contamination, reduction of impervious surfaces, establishment of creative pedestrian, bicycle, and light rail connections, and an active celebration of the creative local arts and food culture. The resulting design transforms this concrete and asphalt brownfield into a green and thriving community that has reestablished its historic, cultural, and living bond with the Mississippi River.

### Existing Conditions



## Connect

- 1 **Central Corridor Light Rail** will travel down 4th Street with its last station at Union Depot. This plan instead proposes to extend the tracks eastward, allowing one additional station just south of the proposed new home of the **Saint Paul Saints** baseball team. Focusing on **transit-oriented development** in the station area, this plan refurbishes historic warehouse buildings as multi-story housing units with first-floor commercial. The resulting increased density supports growth of tax base as well as social and cultural activities in the area.
- 2 Five railroad tracks currently sever Lowertown from the **Mississippi River**. Lafayette Bridge also soars 50 ft above the area, framing an outdoor "room" underneath its concrete deck and pillars. A new **"marsupial" bridge** can be suspended underneath Lafayette to carry pedestrians and bicyclists from Lowertown neighborhoods over the railroad tracks to land safely at existing riverfront trails.



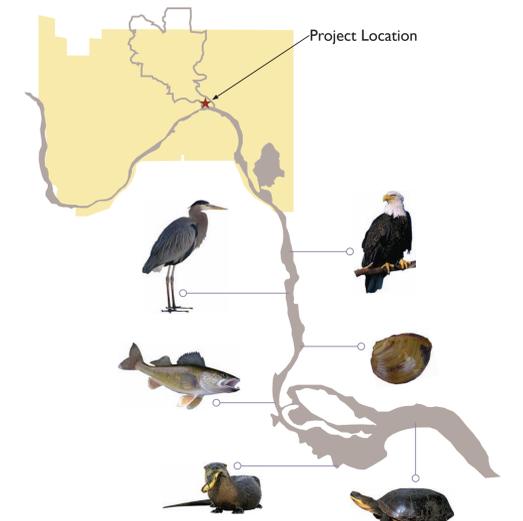
Prince Street with repurposed warehouses and LRT station



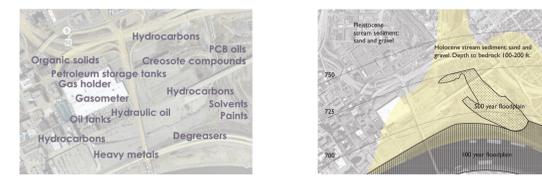
New public plaza at LRT station with hanging gallery and marsupial bridge



Proposed Master Plan - Aerial View

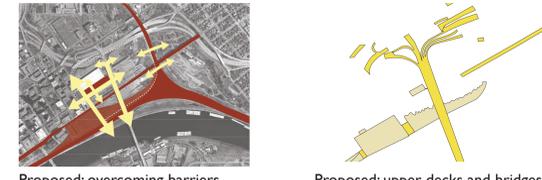


Saint Paul's Trout Brook subwatershed and connections downriver



Existing contamination

Existing hydrology



Proposed: overcoming barriers

Proposed: upper decks and bridges

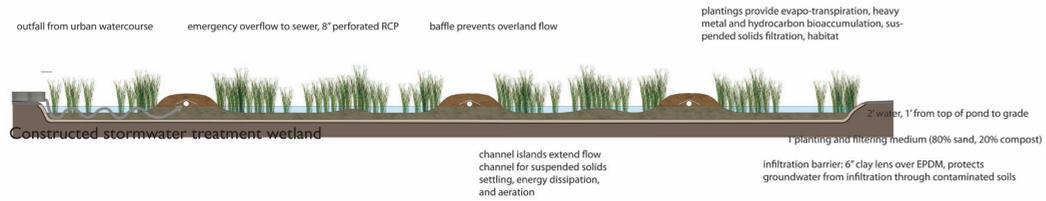


Proposed: green space connections

Proposed: water flows

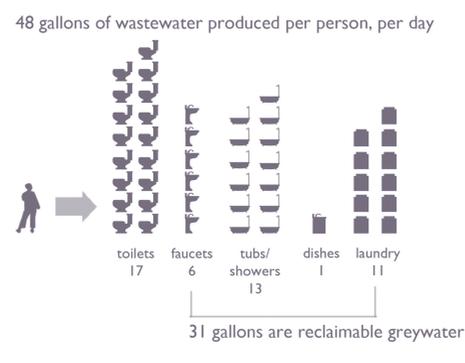
## Cleanse

- 3 Currently **stormwater** from the 5000-acre Trout Brook subwatershed is collected into one large, 10 foot diameter sewer pipe. This untreated water is carried underneath the site, then deposited directly into the Mississippi River. This plan proposes intercepting the pipe at the NE corner of the site, bringing water to the surface, and treating it to levels safe for public contact other than for drinking (aka "purple pipe system"). Water will be used in **public fountains** and to irrigate **agriculture crops** in hoop houses. Remaining stormwater will be directed through a series of **constructed treatment wetlands**, using natural vegetation and settling to filter out contaminants so water reaches the Mississippi cleaner than when it entered the storm pipe system.



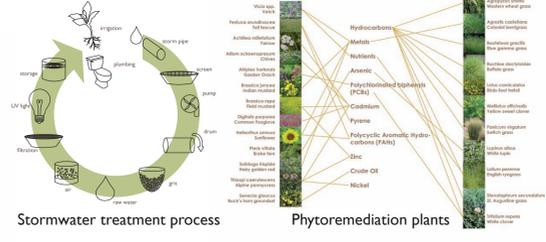
Constructed wetland and marsupial bridge suspended under Lafayette

- 4 The eastern edge of the site will be planted with **hybrid poplars** and switchgrass, shown in several studies to take up pollutants from the soil and store it in plant tissues ("**phytoremediation**"). Grasses and trees can then be harvested to remove the accumulated pollutants, and the land replanted. This poplar woods will also contain **hiking and biking trails** that connect to the river and **Bruce Vento Nature Sanctuary**.
- 5 A new **greywater system** will capture and recycle water from sinks, showers, dishwashers and clothes washers in Lowertown. Increased residential density will produce enough reclaimable greywater to fill several public fountains and constructed wetlands.



## Create

- 6 Lowertown is home to the **Saint Paul Farmer's Market**, as well as a number of restaurants, delicatessens and cafes. This plan proposes to expand the market along Prince Street, into a new public plaza just north of the LRT stop. Local food lovers will be able to purchase directly from the **urban agriculture** program growing produce in hoop houses east of the LRT station. Rather than disturb contaminated soil below existing asphalt parking lots, the **hoop houses** will be built on top of them. Based on a design used by the Growing Power urban farm in Milwaukee, layers of mulch and compost will capture stormwater and generate enough heat for a **year-round growing season**.



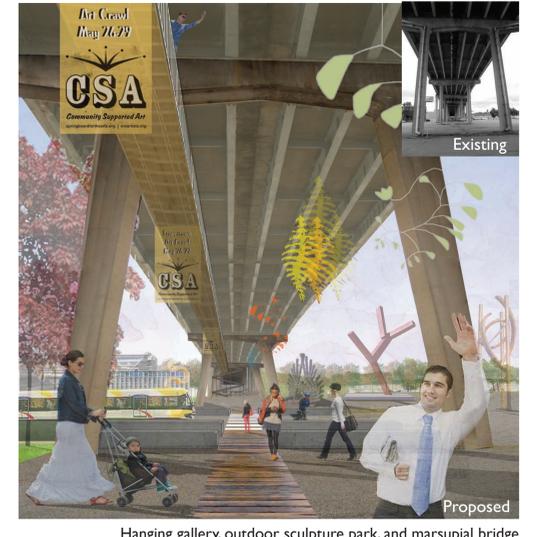
Stormwater treatment process

Phytoremediation plants



Urban agriculture hoop houses

- 7 The Lowertown area of Saint Paul has one of the highest concentrations of resident **artists** in the country, with 300 participating in biannual "art crawl" open houses on average. However, studios and artist spaces are primarily out-of-sight inside warehouse buildings. This plan proposes bringing art to the street by creating a **hanging gallery** suspended under the Lafayette Bridge, as well as an **outdoor sculpture park**. A new **art center** and materials store will open next to the LRT station.
- 6 A new viaduct connection to the river at Broadway will feature a **visual history** of Lowertown displayed on one wall, and will be anchored at each end by two **viewing towers** designed by MN artist Siah Armajani.



Hanging gallery, outdoor sculpture park, and marsupial bridge