DESIGNING AND IMPLEMENTING GREEN COMPLETE STREETS: INTEGRATING THE PUZZLE PIECES

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Case Study 1

Capital City Bikeway (Saint Paul, Minnesota)-Constructed Summer '17

PROJECT DESCRIPTION:

Toole Design Group (TDG) is leading one of the most important public realm improvements for the City of Saint Paul in recent history. As the first downtown project funded by the 8-80 Vitality Funds, the Capital City Bikeway and Jackson Street Reconstruction Project will set the standard for implementation of innovative green streets, placemaking, wayfinding, and bikeway design in downtown areas.

COMMUNITY OUTREACH:

- Charrette-based approach for developing design alternatives, including extensive public and stakeholder engagement.
- Ongoing coordination throughout the project has included collaboration with policy, technical, and community advisory committees consisting of key city staff and/or community stakeholders.

COMPLETE STREET FEATURES:

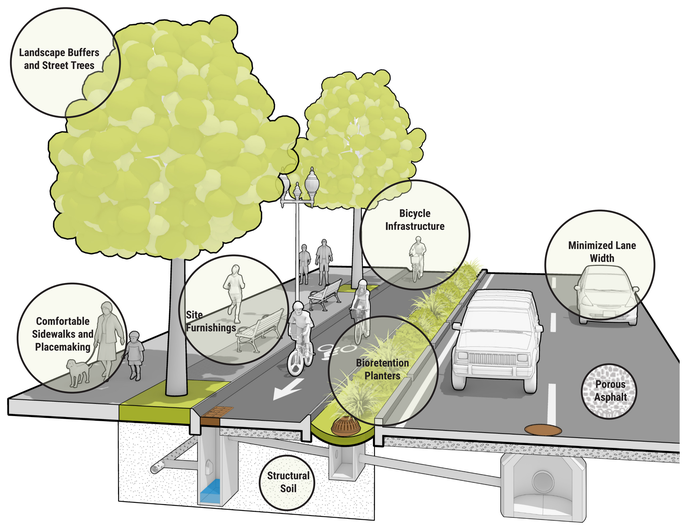
- Porous asphalt along the length of trail
- BMPs that fulfil the districts' cost cap
- Filtration volume of 40,724 cubic feet
- Removes 775 pounds of Total Suspended Solids
- Removes 2.34 pound of particulate phosphorus annually
- Approaches street design from building face inward
- Provides wider sidewalks and a two-way separated bike lane and fills critical gaps in the bikeway network
- Accommodates motor vehicle traffic, parking, and loading zone lanes
- Prioritizes green infrastructure and sense of place along corridors
- Focuses on users from ages 8 to 80

LESSONS LEARNED:

- Existing field conditions may differ from plans, so it is important to be flexible
- Rethinking the street from the building face inward allowed for wider sidewalk and green infrastructure for people walking and biking, helping all users feel more comfortable along the roadway
- Accessible cut-throughs of the landscaping is critical for getting people with mobility needs to the sidewalk
- Landscaping between all modes of travel creates aesthetically pleasing, vertical elements to orient people with vision impairments
- Reducing multimodal conflicts through the design of protected intersections will improve safety for all users

Key Topics

Green infrastructure should be considered in every project as we think about creating resilient cities and landscapes.



LEARNING OBJECTIVES:

How to design for all the competing interests in the public right-of-way

- Use technology and below grade infrastructure to accomplish more.
- Create dual purpose areas: Porous Asphalt and Permeable Pavers
- Create buffers with bioretention and planting street trees with SWM included Technology: Silva Cells, Structural Soils and Tags and Sensors

Streets need to become ecosystems to help:

- Protect and restore natural resources
- Provide shade and reduce heat reflection
- Improve community placemaking and beautification
- Promotes health, equity and human habitat
- Habitat that's not only pedestrians, but also wildlife
- Help failing and overloaded stormwater infrastructure

Education:

Where does the water go? Daylighting hidden systems

Case Study 2

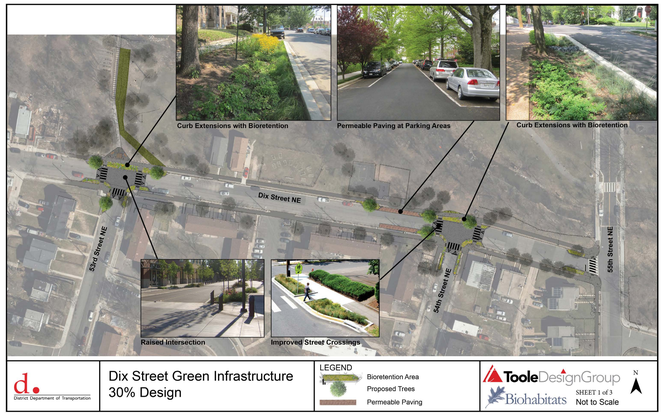
Dix Street Low Impact Development (Washington, DC)-Under Bidding

PROJECT DESCRIPTION:

As part of The District of Columbia Department of Transportation (DDOT) city wide effort to increase green infrastructure and low-impact development, Toole Design Group (TDG) is leading the design and installation of green infrastructure facilities on a section of Dix Street in Ward 7. TDG developed construction documents from the concepts and are undergoing permitting.

COMMUNITY OUTREACH:

Public meeting organized on the street itself to catch as many residents as possible to get feedback and support. This gave our team the chance to explain what the project involved by walking the street which was a very valuable tool that designers typically don't use. We were also able to give the residents the sense of ownership of the project. This goes a long way into the future success of the BMPs.



COMPLETE STREET FEATURES:

- 2,274 SF of Permeable Pavers at park entrance and parking
- 4,717 SF of Curb extensions with bioretention planting areas
- Additional Street Tree Plantings
- Raised intersections to help slow traffic
- ADA compliant ramps and crossings
- New sidewalks and Shorter Pedestrian Crossing Distance
- New entrance into neighborhood park and improved circulation
- Reduced runoff to Watts branch Creek

LESSONS LEARNED:

- Utility information is very critical. Working on acquiring an accurate set as early as possible in the process is a game changer.
- Organizing the public meetings in the neighborhood on the street itself received much better turnout than the typical community meetings at a center.