



GREEN

DISTRICT SYSTEMS & GREEN FOURTH CONCEPTS

SEPTEMBER, 2014



Protect it. Pass it on.

MISSISSIPPI
WATERSHED
MANAGEMENT
ORGANIZATION



THE CORNERSTONE
GROUP

PPERRIA

th

District Systems & Green Fourth Concepts

Green Fourth Study Team:

Cunningham Group
Evergreen Energy
SRF Consulting Group, Inc.
Barr Engineering
Kimley Horn and Associates, Inc.

Cunningham Group and the rest of the Green Fourth Study Team would like to thank the following participants:

FUNDING PARTNERS AND ACTIVE ROLE IN STUDY DIRECTION / CONTENT

The Mississippi Watershed Management Organization (MWMO)

PPERRIA Neighborhood and Prospect Park 2020

The Cornerstone Group

COOPERATION AND ASSISTANCE

City of Minneapolis – CPED
City of Minneapolis – Public Works
University of Minnesota
Design Center for Sustainable Building Research
Metropolitan Design Center
Trust for Public Land
Saint Paul Water Resources Group
LISC



MISSISSIPPI
WATERSHED
MANAGEMENT
ORGANIZATION

2522 Marshall Street NE Minneapolis,
Minnesota 55418
(612) 465-8780 (612) 465-
8785 fax
www.mwmo.org



PPERRIA



An aerial photograph of an urban area, likely a city street grid. A prominent diagonal street is highlighted with a semi-transparent green overlay, extending from the top left towards the bottom right. The surrounding area shows various buildings, parking lots, and green spaces. The text is overlaid on the left side of the image.

DISTRICT SYSTEMS & GREEN FOURTH CONCEPTS

A NEW DEFINITION FOR 'STREET' AND PUBLIC PLACEMAKING WITHIN THE PROSPECT NORTH DISTRICT

Prospect North will be a vibrant, walkable district characterized by an inviting framework of parks, plazas, trails, walkways and other public realm elements that support neighborhood activities and link with the world-renowned Grand Rounds National Scenic Byway and other regional systems.

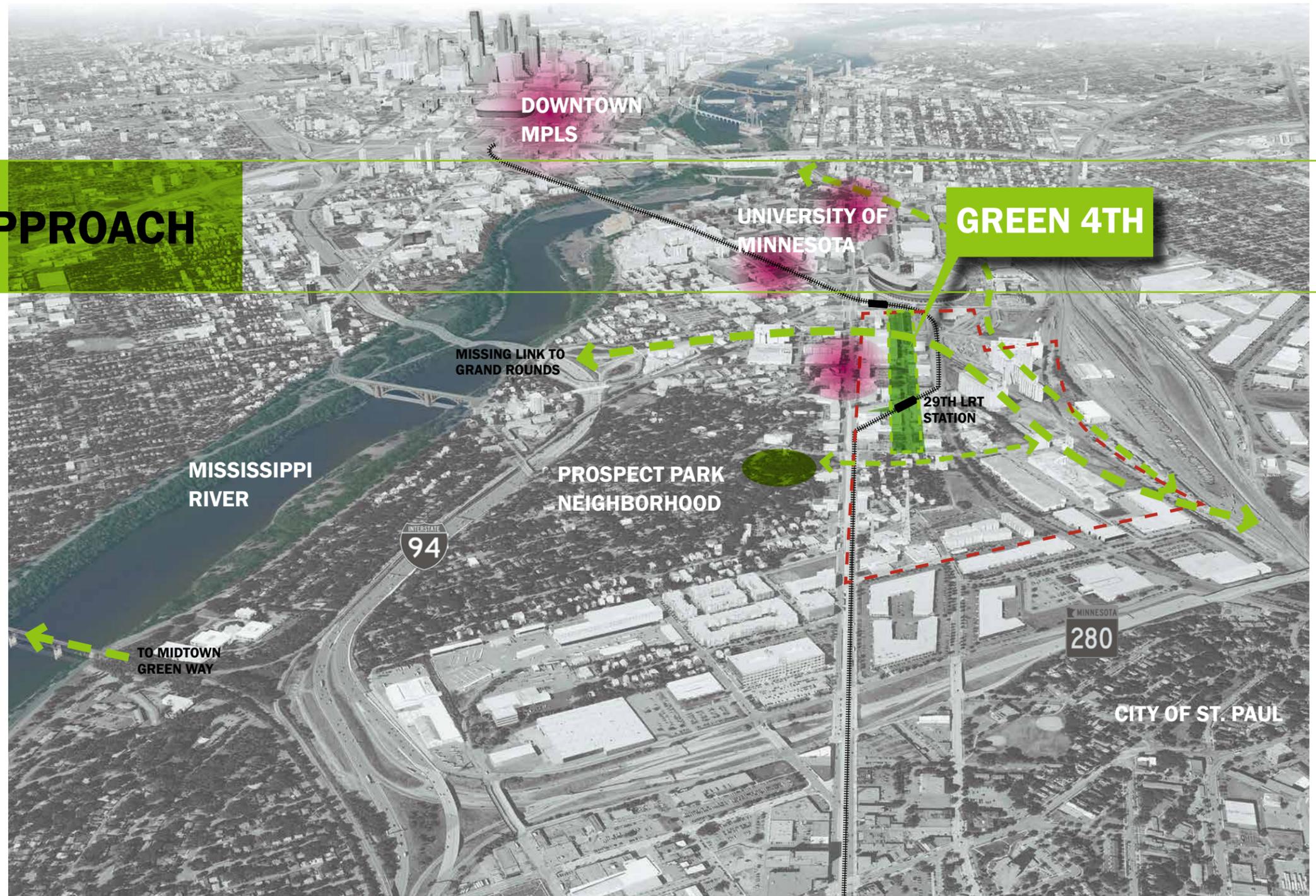
Fourth Street presents a unique opportunity to convert a neglected, car dominated corridor into a green oasis and pedestrian magnet in the heart of the district. While future parks and the potential to complete the last piece of the Grand Rounds (the 'missing link') are included in long range plans, there is heightened interest to promote Fourth Street as the first significant public green space, and new signature residential address, north of University Avenue - with growing urgency to get it built as soon as possible.

STUDY PURPOSE + APPROACH

Toward that end, the primary objectives for the District Systems + Green Fourth Concepts Study include:

- Support the City of Minneapolis application for the Metropolitan Council Livable Communities Grant application (TOD Award approved by Met Council 12/11/2013)
- Refine the overall vision for Green Fourth, but at the same time provide the quantified basis (math and science) for ongoing discussion and implementation of 'district systems' that will support future build-out of the overall Prospect Park 2020 Vision Plan. Evaluation and definition of district systems will include district stormwater management, district utilities, district traffic and parking, and district energy (heating, cooling and some thoughts about energy production).
- Help clarify and coordinate preliminary design work needed to support City of Minneapolis Public Works efforts to proceed with the reconstruction of Fourth Street as a priority project.

A series of stakeholder meetings took place in 2013, resulting in a Joint Agreement between the Mississippi Watershed Management Organization, the Prospect Park Neighborhood and the Cornerstone Group to provide necessary funding and leadership to facilitate the study process. These meetings also provided the forum for presentation of analysis data, review of design alternatives and set the direction for conclusions and recommendation contained in this document.



PROCESS

DISTRICT FRAMEWORK
CONTEXT & INFORMANTS



+

DISTRICT SYSTEMS
FINDINGS & DIAGRAMS



INFORMS

=

CONCEPTS & IMPLEMENTATION
BACKED UP WITH MATH
AND SCIENCE



There is a library of relevant information that provides both overall context and valuable detailed information in the form of reports, inventories, assessments, master plans, site designs, cost spreadsheets and many others to numerous to list here.



METROPOLITAN DESIGN CENTER

UNIVERSITY DISTRICT ALLIANCE
URBAN DESIGN FRAMEWORK (GREENWAYS AND GREEN INFRASTRUCTURE – AUGUST 2012)

“The Urban Design Framework encompassed an in depth environmental inventory of the University District and a detailed inventory of the critical ‘Contested Territories’ found within the district . . . using a series of public meetings and workshops, the Metropolitan Design Center developed a vision for the District outlining specific proposals for reflection and action. Using known design and research methods in the fields of landscape and urban ecology, the proposals should serve as a regenerative force to re-establish a new outlook . . . based on urban greenways, green infrastructure and low-impact design approaches.” (excerpt from the Urban Design Framework)



PROSPECT PARK 2020

CENTRAL CORRIDOR LIGHT RAIL LINE MINNEAPOLIS
2020 DEVELOPMENT FRAMEWORK (MARCH 2012)

“The purpose of the project is to craft a pre-development Framework through the hands-on involvement of businesses, landowners and the community . . . The Framework is intended to maximize the potential of the station area in alignment with the community vision for a diverse, vibrant, accessible, affordable, sustainable, walkable and connected mixed-use transit-oriented urban neighborhood.” (excerpt from the SRF Consulting Group 2020 Framework)

Streets and Sidewalks



ACCESS MINNEAPOLIS

CITY OF MINNEAPOLIS

Representatives from both CPED and Public Works have provided ongoing meeting participation and helpful context related to existing city policy, zoning code, subdivision regulation, street/utility design standards and other regulatory criteria. As the Lead Agency for the 2013 Metropolitan Council LCDA grant application and the project lead for future Fourth Street improvements, their input is critical to the success of these major components in support of Prospect North redevelopment.



THE CORNERSTONE GROUP

Cunningham Group Landscape Architects, Urban Designers and Architects worked with Cornerstone Group to explore conceptual design ideas for the Boeser Property, Harris Site and Green Fourth Street. These preliminary studies included both building and site program elements. Plan diagrams, 3-D drawings and photo-precedents illustrated various scenarios for building massing, unit count/phasing, site layout, public realm framework and bicycle/pedestrian connections.

Cornerstone Group has provided more recent design concepts and other studies provided by CLOSE Associates, Cermak Rhoades and Coen and Partners.

DISTRICT FRAMEWORK CONTEXT & INFORMANTS

Contextual background, design concepts, research data and other background information.

- In depth environmental inventory
- Public meetings and workshops
- Specific proposals for urban greenways, green infrastructure and low impact design approaches

- Development concept
- District zoning recommendation
- Market analysis and suggested land use mix
- Public realm diagram

- Existing city policy, code and regulations
- CPED and Public Works Staff participation
- Leadership for specific public projects within the district

- Property owner within the district
- Conceptual development studies test district principles
- Advocates for district systems approach

PUBLIC REALM FRAMEWORK

Great placemaking pays for itself in many ways – financial (rents/sales prices, property values/taxes, stable tenancies), environmental (recycle land/infrastructure, more efficient, lower carbon footprint), and social (more housing options, services, gathering places, community identity).



PUBLIC REALM

1. GREEN FOURTH

2. SIGNATURE PARK

3. GRAND ROUNDS

DISTRICT PUBLIC REALM FRAMEWORK



The Prospect Park 2020 Framework and other planning documents created a vision and guiding principles that promote authenticity and vitality resulting from a mix of land uses, variety of architecture, location of parks and squares, and orientation and scale of streets that, together, form a whole fabric and create valued, memorable places.

To become a highly successful local and regional amenity, the Prospect North District must evolve into a place that gives primacy to the pedestrian. Development of a high-quality public realm is paramount, and in the short term will focus on these three projects:

- 1. GREEN FOURTH
- 2. SIGNATURE PARK IN THE HEART OF THE DISTRICT
- 3. LINKS TO THE GRAND ROUNDS

Although we remain an auto-centric culture, there is a dramatic increase in the development of more balanced places that offer safe, vital and engaging pedestrian environments and vastly improved bicycle systems. In many instances, spaces that had once been given over to the car are now being reclaimed for redevelopment with the creation of "complete streets" and 'car as guest' approaches for a much more cohesive urban setting. The Prospect North District vision promotes these outcomes as foundational thinking for ongoing projects at both district and site development scale.



1. GREEN FOURTH MIGHT LOOK SOMETHING LIKE THIS



2. CENTRALLY LOCATED PUBLIC PARK/PLAZA BECOMES THE SIGNATURE FOR THE DISTRICT



3. CONNECT TO REGIONAL PARK, TRAIL AND OPEN SPACE SYSTEMS SUCH AS THE GRAND ROUNDS



GREEN 4TH CONCEPT



Thriving authentic communities invariably contain significant civic components that celebrate and enrich the “publicness” of place . . . and Green Fourth, as the first significant public green space north of University Avenue, has the potential to define what that means for Prospect North. The overall concept for Green Fourth is based on the following two ideas:

First – What’s in a name?

And second – District systems and corridor design components.

What’s in a Name?

It’s important to note that in the early stages of discussion (and planning study), the difference between calling this ‘4th Street’ or ‘Green Fourth’ had interesting connotations. Staying with the typical ‘street’ designation suggested more of a conventional approach, perhaps emphasizing the car in terms of dimensional elements (lane widths and rights-of-way) . . . with the pedestrian getting what’s left over.

On the other hand, the ‘Green Fourth’ designation suggests a more contemporary approach that includes the entire space (building face to building face), primacy of the pedestrian realm, integration

of public and semi-public spaces (extension of the ‘living room’) and interesting discussion about a variety of potential uses (“when is a street, not a street?”). Which led to the second idea:

District Systems and Corridor Design Components

One of the primary objectives for this study was to explore the relationship between design concepts for Green Fourth and their potential integration with district infrastructure systems. Traffic, parking, heating and cooling, typical utilities (sanitary sewer and water supply) and other components were discussed. But the collection, treatment and use of storm water, particularly within the Green Fourth right-of-way, became a central issue for debate and further resolution.

Initial concept diagrams and images in this study suggest the unique opportunity this location presents, but also recognizes the complexities of the issue and realization that multiple approaches/ solutions apply (not ‘one size fits all’). Yet the pervasive view is to take advantage where possible (and feasible) to improve water quality and reduce direct pipe-to-river conveyance within the Prospect North District and along Green Fourth.



SIT & MINGLE



ENERGY GENERATION



HISTORY, ART & CULTURE



EAT & DRINK



LIGHTS TO DEFINE SPACE



HYDRAULIC PERFORMANCE

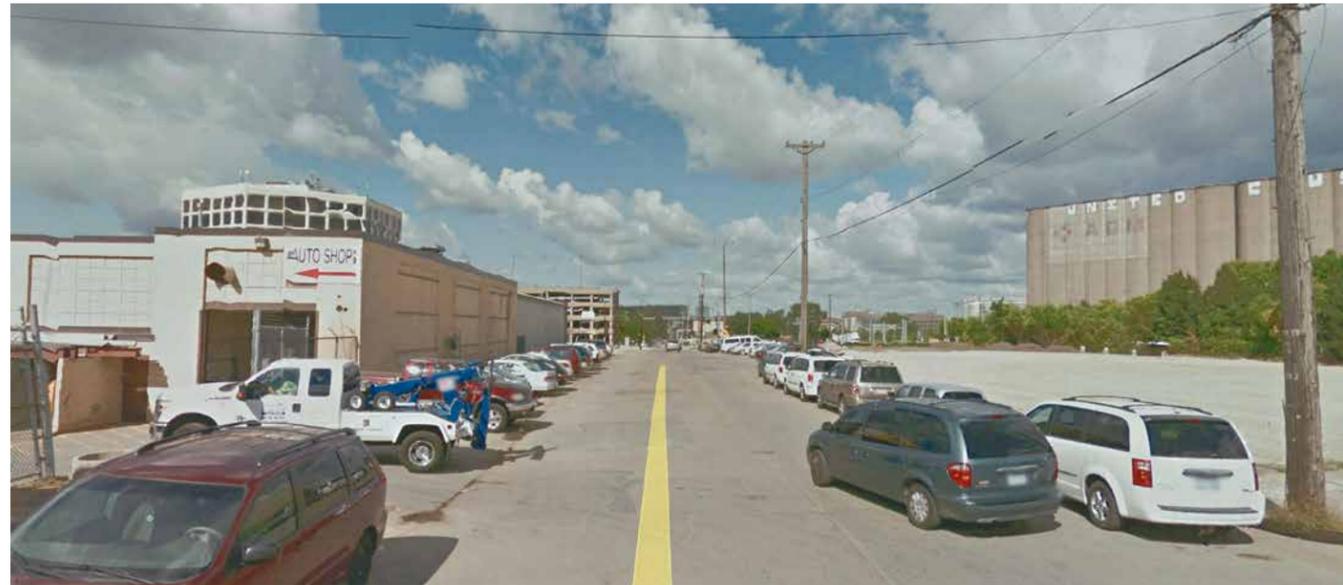


CELEBRATION OF SEASONS





EXISTING 4TH STREET



CHARACTER STUDY OF POTENTIAL GREEN FOURTH COMPONENTS

SIGNATURE PARK IN THE HEART



From the earliest settlements to our largest cities, we have recognized the importance of public places. The village green, town square and a rich variety of urban parks and plazas have all contributed to our understanding of city form and human scale. These unique places express history, define district identity and invite civic interaction as an important mediator between buildings (types/uses) and the spaces in between.

However, the opportunity to create a signature public park in the heart of the Prospect North District goes well beyond a conventional definition of placemaking. Contemporary thinking, and extensive research, confirms that a high quality public realm can be transformative and has the potential to become a major influence in terms of land value, district infrastructure design (stacked systems), local/regional destination uses and many others layers of modern city-building.

Currently there is little, or no, publicly held property (outside of street rights-of-way), that could potentially be reserved for public park designation. But, with support from property owners and through future development team design proposals, the concept for a signature park (perhaps near the LRT station) could become reality.

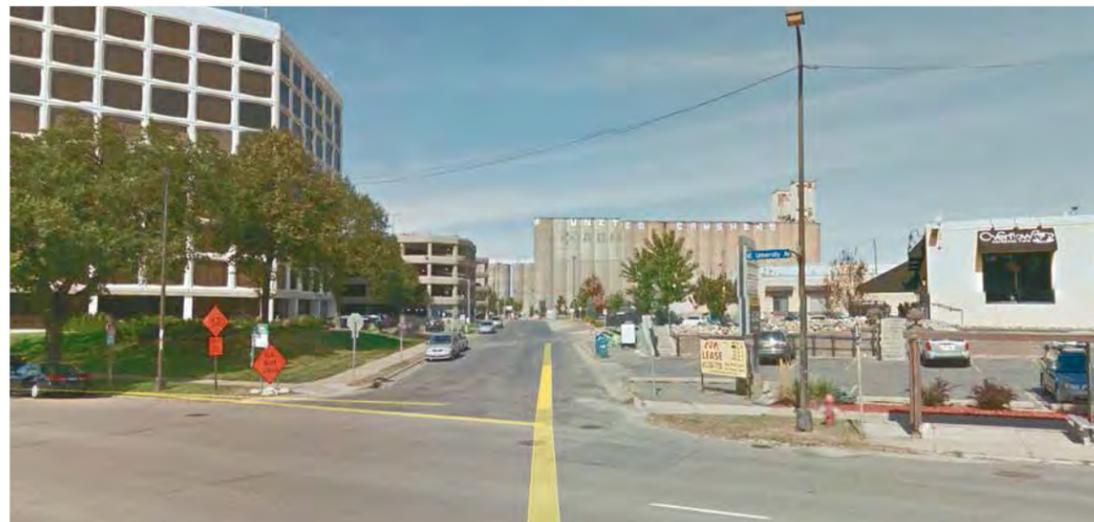


PUBLIC REALM CONCEPT DIAGRAM





EXISTING 29TH AND UNIVERSITY AVENUE



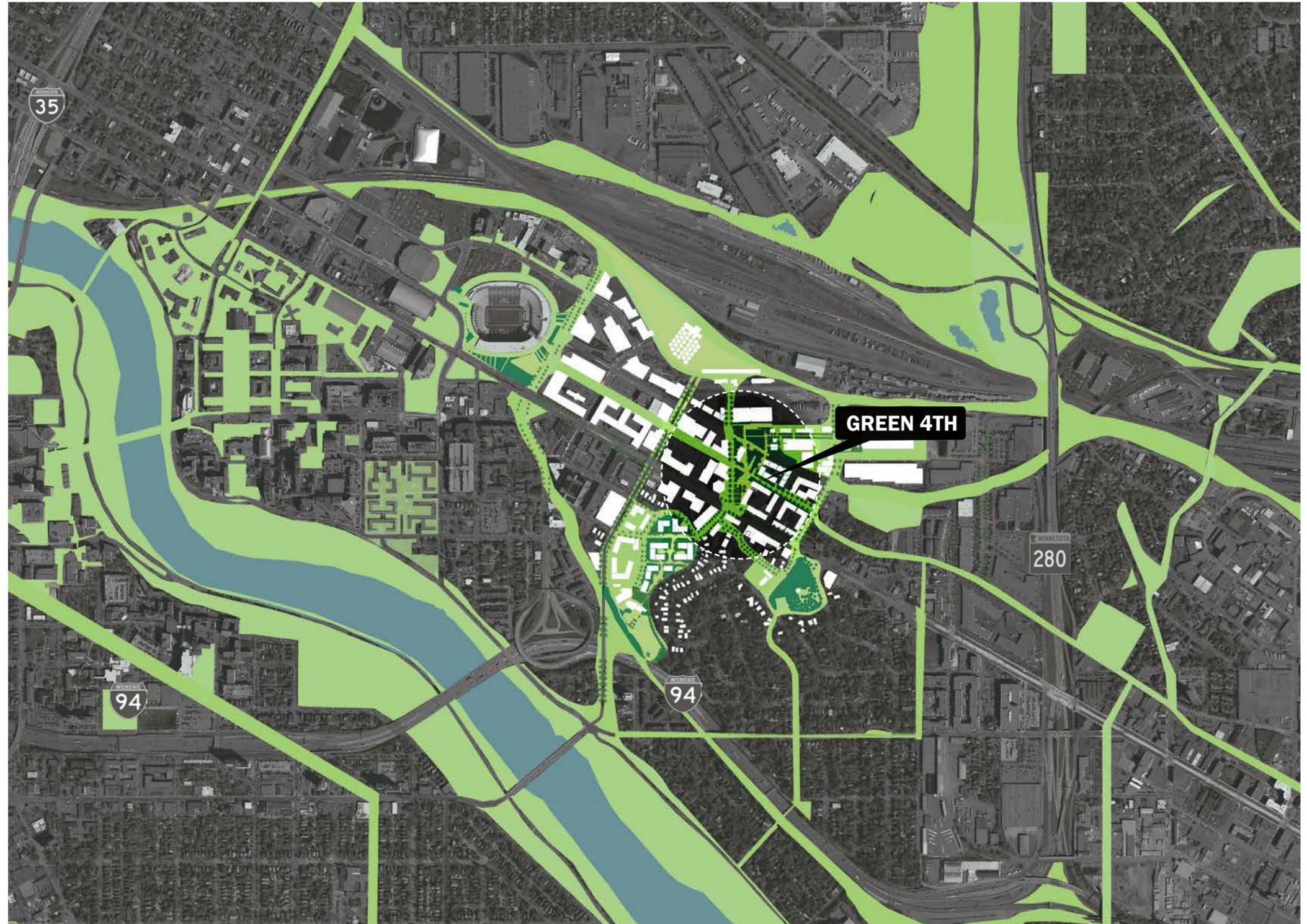
REGIONAL PUBLIC REALM

Public Realm Framework

The potential to connect Prospect North District public spaces and other amenities with City/Regional systems is not a new idea. Completing the 'Missing Link' of the Grand Rounds, while providing access to other facilities within the world-renowned Minneapolis park system, has been discussed for several decades.

More recent studies have explored both conceptual design and potential projects for implementation related to the Granary Road Corridor, Bridal Veil Creek and other initiatives within and adjacent to the District.

While we recognize that some of these concepts have a much longer time horizon (in terms of process, design, funding, permits and construction), there are a variety of implications and tangible impacts/influences that will help inform short-term design decisions for Green Fourth and the Signature Park.



There is a wealth of existing information and precedent research that promotes a thoughtful integration of local and regional systems including park/trail/open space networks, stormwater management/ surface drainage patterns, natural habitat corridors, energy production, waste handling, urban agriculture and many more.

GRANARY CORRIDOR

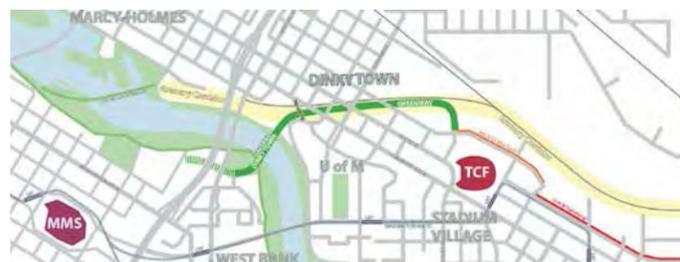


Image credit: Dinkytown Greenway

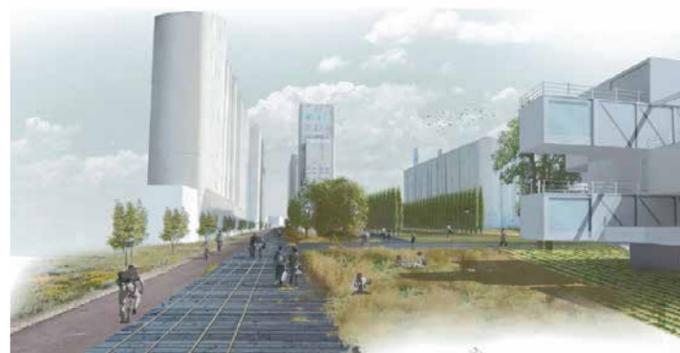


Image credit: Metropolitan Design Center



Image credit: Metropolitan Design Center



Photo credit: Parco Dora by Latz + Partner

BRIDAL VEIL CREEK



Photo credit: 1911 Civic Celebration postcard



Saw Mill River in downtown Yonkers Photo credit: Zach Youngerman

MISSING LINK



Grand Rounds "Missing Link"

Image credit: Metropolitan Design Center

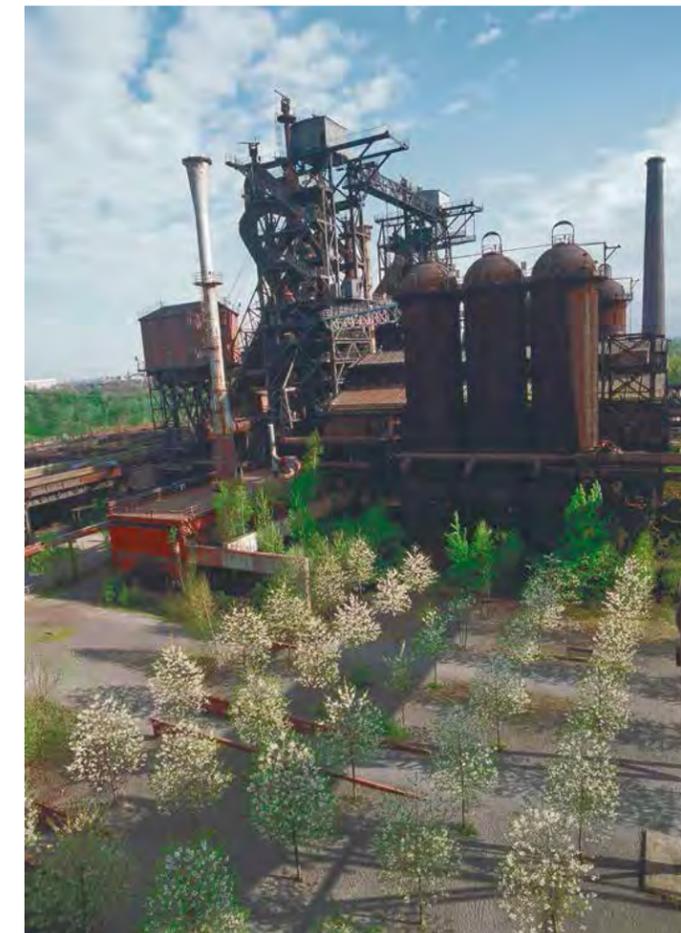
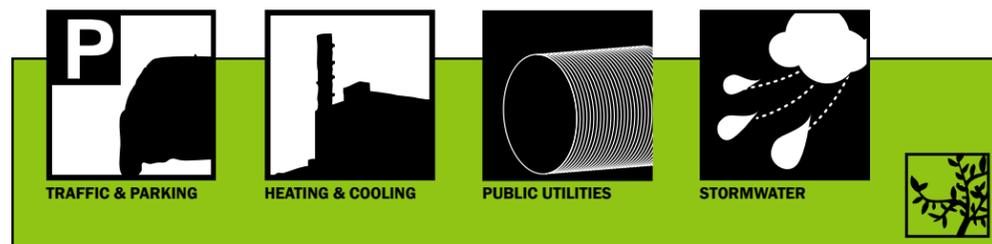


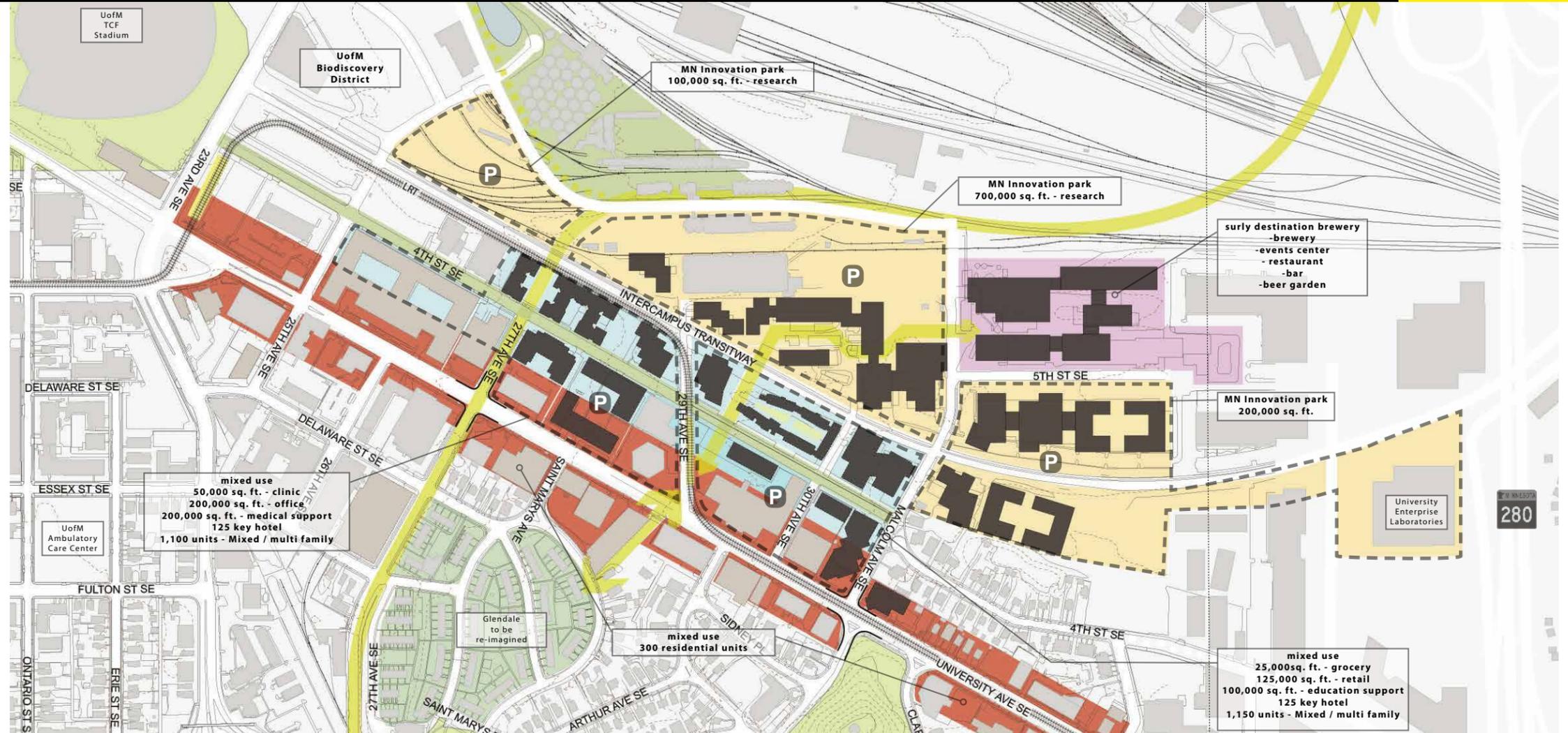
Photo credit: Landschaftspark Duisburg Nord by Latz + Partner

DISTRICT SYSTEMS



DISTRICT BUILD-OUT PLAN

The Prospect North District Build-Out Plan highlighted on these two pages provided a rough estimate of various land use types (square footage, unit count, general location), from which the Green Fourth Study Team could base their district systems analysis and conclusions. The Jim McComb Market Study, included in the 2020 Framework Plan prepared by the SRF Consulting Group Team, offers a much more detailed look at potential uses within the district, but for the purposes of this report, we have made the following assumptions:



Build-out Chart

residential	2,550 units
grocery	25,000 sq. ft
other retail	125,000 sq. ft
hotels	250 rooms
Clinic	50,000 sq. ft
Office	200,000 sq. ft
Mn innovation Park	1,000,000 sq.ft



Mixed use with emphasis on commercial, retail, and office



Mixed use with emphasis on housing



Mixed use with emphasis on enterprise innovation users



Source: 222 Hennepin, Minneapolis MN Excelsior Group



Source: Via Verde, Bronx NY Photo: David Sundberg



Source: Eco Boulevard Ecosystema urbano

TRAFFIC & PARKING



DISTRICT SYSTEMS

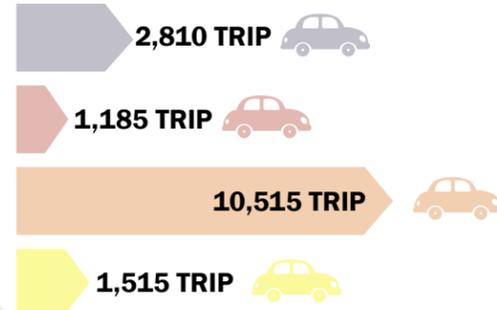
PROSPECT PARK NEIGHBORHOOD AND GREEN FOURTH

The project technical advisory committee developed a land use plan based on anticipated development in the project area over the next seven to 10 years. The land use assumptions shown in Map 1 are characterized as Phase 1 land use conditions. The land use assumptions for Phase 1 were compared against the land use types/sizes proposed as part of the Prospect Park Master Plan, by the Cunningham Group, which represents the Full Build-Out land use plan for the area. The land use assumptions under Phase 1 and Full Build-Out conditions are shown in Table 1.



INFORMS →

PHASE 1: 7-10 YEARS



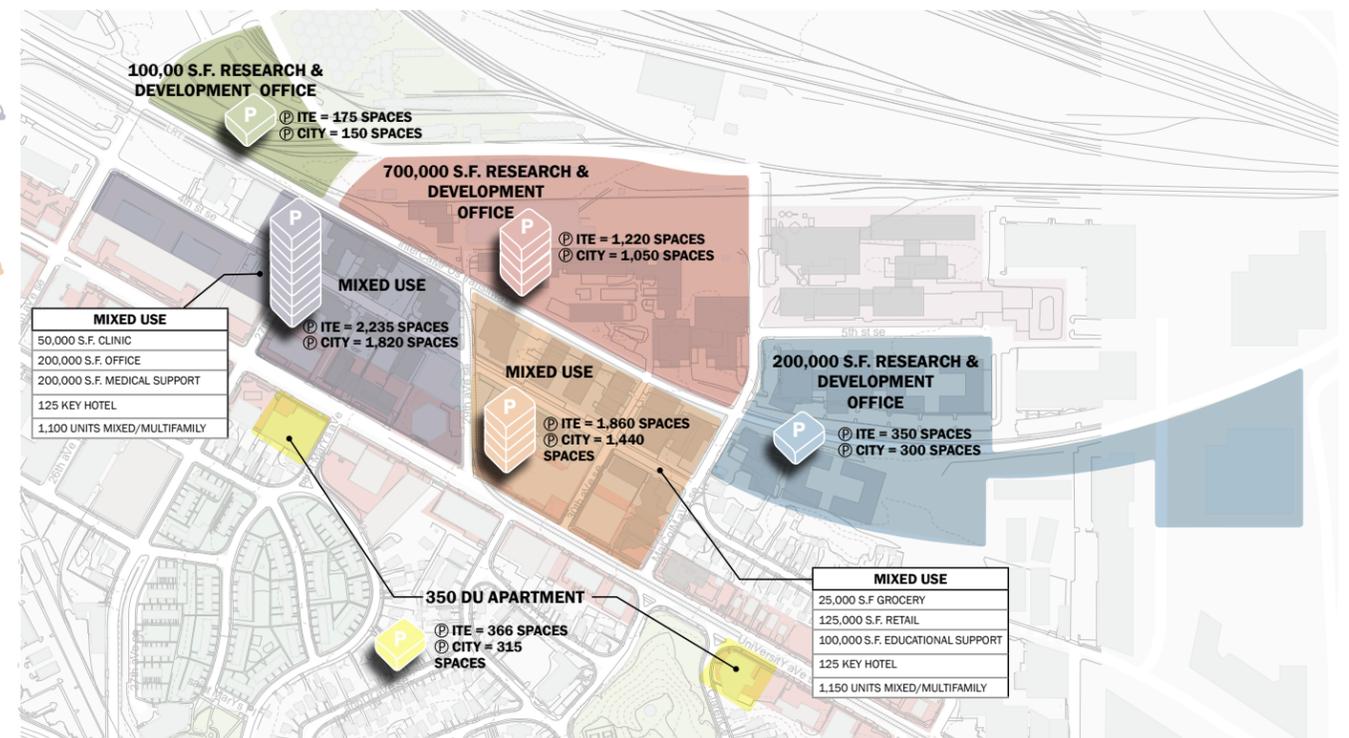
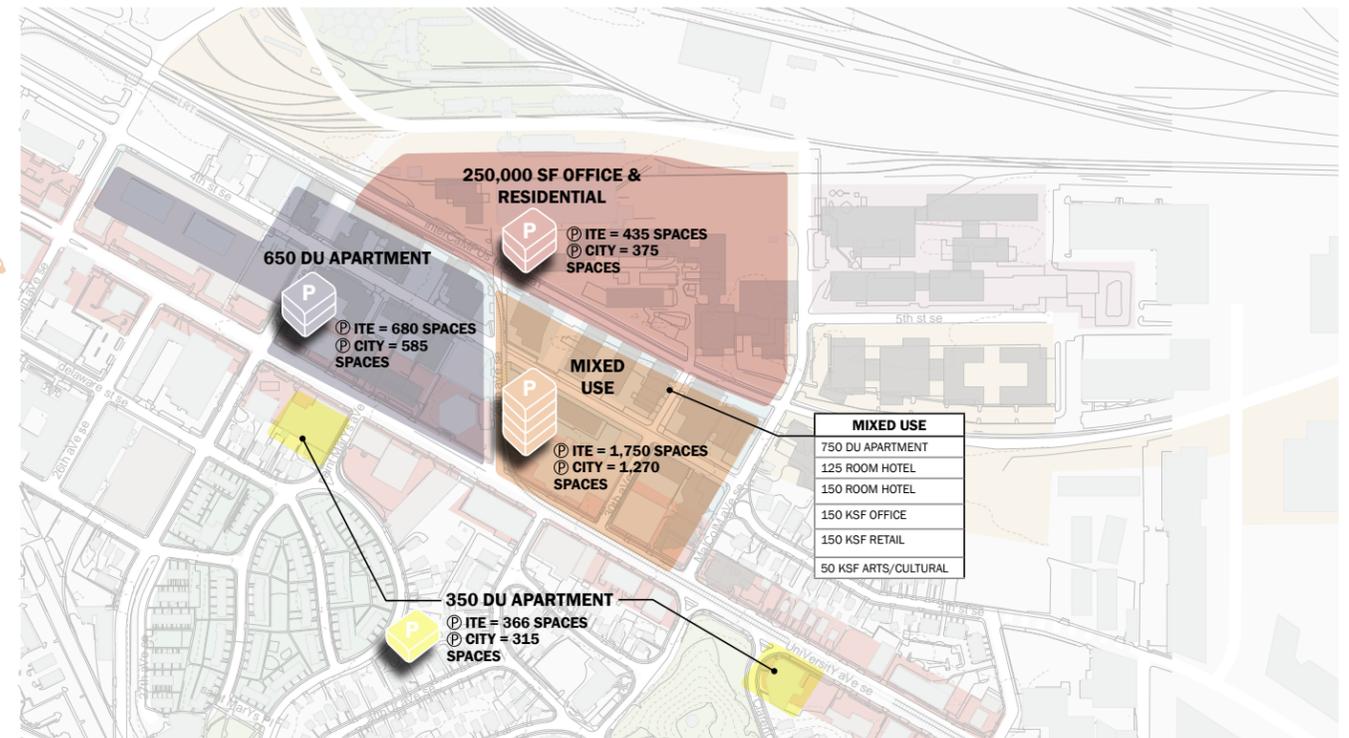
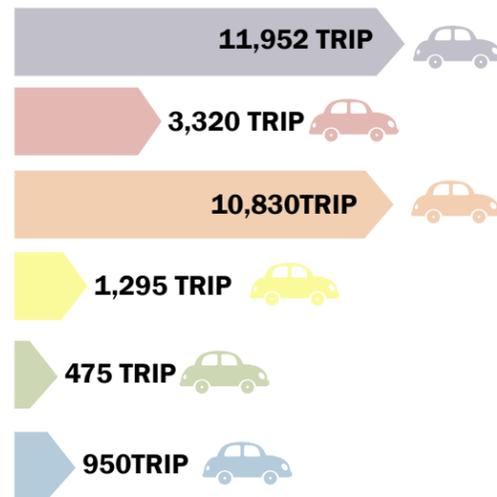
DEVELOPMENT TRIPS

- 55% MODAL REDUCTION (RESIDENTIAL)
- 35% MODAL REDUCTION (OFFICE/RETAIL)
- 10% MULTIUSE REDUCTION

ITE = Institute of Transportation Engineers

City = City of Minneapolis

FULLBUILD OUT: 15 YEARS



*All data related to traffic has not been approved by City of Minneapolis Public Works. Before moving forward this will need formalization, validation, and approval.

TRAFFIC FORECASTS

TRIP GENERATION ESTIMATES

- Trip generation estimates on a daily basis were developed using the ITE Trip Generation Manual, 9th Edition and are summarized in Table 2 for each block.
 - A 35 percent modal reduction was applied to the ITE parking requirements to account for customers arriving via transit services and for those that are walking, biking, or carpooling to the developments.
 - A 10 percent multi-use reduction was applied to the retail and office land uses to account for customers visiting more than one development with their initial trip.*

AVERAGE DAILY TRAFFIC VOLUMES

- Existing average daily traffic (ADT) volumes were reviewed, which are made available by the Minnesota Department of Transportation (MnDOT).
- A background growth rate of one-half percent was applied to the existing daily traffic volumes to obtain forecast traffic volumes for the future conditions, which is consistent with historical growth trends in the area.
- Trip generation estimates for Phase 1 and Full Build-Out conditions were distributed throughout the study area based on the directional distribution shown in Attachment 4.
- The existing and resultant Phase 1 (year 2023) and Full Build-Out (year 2028) condition traffic volumes are shown in Table 3.
 - Since future development access along 4th Street is unknown at this time, a daily traffic volume range along 4th Street was provided for future conditions. The lower traffic volume represents a condition with limited access along 4th Street.
- Based on planning level corridor capacity thresholds, no future capacity issues are expected within the study area.*

PARKING ANALYSIS

- The City of Minneapolis parking code was reviewed to estimate the parking requirements under Phase 1 and Full Build-Out conditions for each block.
 - Since the project site is located in a Pedestrian Oriented (PO) overlay district, a 10 percent reduction was applied to off-street parking requirements for residential land uses and 25 percent reduction was applied to off-street parking requirements for non-residential land uses.
- The parking demand for each block under Phase 1 and Full Build-Out conditions was calculated based on the ITE Parking Manual.
 - A 35 percent modal reduction was applied to the ITE parking requirements to account for customers arriving via transit services and for those that are walking, biking, or carpooling to the developments.
 - A 10 percent multi-use reduction was applied to the retail and office land uses to account for
 - customers visiting more than one development.
- Results of the parking analysis are summarized in Table 4 and shown in Attachment 5 and Attachment 6 under Phase 1 and Full Build-Out conditions, respectively.*

Table 2. Trip Generation Estimates

Block	Daily Trips	
	Phase 1	Full Build-Out
Green	-	475
Red	1,185	3,320
Blue	-	950
Purple	2,810	11,925
Orange	10,515	10,830
Yellow	1,515	1,295
Total	16,025	28,795

Table 4. Parking Supply/Demand

Block	Phase 1		Full Build-Out	
	City Parking Requirement	City Parking Requirement	ITE Parking Demand	ITE Parking Demand
Green	-	-	150 spaces	175 spaces
Red	375 spaces	435 spaces	1,050 spaces	1,220 spaces
Blue	-	-	300 spaces	350 spaces
Purple	585 spaces	680 spaces	1,820 spaces	2,235 spaces
Orange	1,270 spaces	1,750 spaces	1,440 spaces	1,860 spaces
Yellow	315 spaces	365 spaces	270 spaces	315 spaces
Total	2,545 spaces	3,230 spaces	5,030 spaces	6,155 spaces

Table 3. Daily Traffic Volumes

Daily Trips	Existing	Year 2023 - Phase 1	Year 2028 - Full Build
4th Street (West of Malcolm Avenue)	1,900	1,450 – 3,650	4,700 – 8,700
University Avenue (west of Huron Boulevard)	17,600	22,500	26,150
Huron Boulevard (south of University Avenue)	16,400	21,750	26,000
27th Avenue (south of University Avenue)	3,900	5,550	6,250
University Avenue (east of Malcolm Avenue)	18,200	25,250	30,850

*All data related to traffic has not been approved by City of Minneapolis Public Works. Before moving forward this will need formalization, validation, and approval.

GREEN 4TH STREET DESIGN OPTION

DISTRICT SYSTEMS



State Aid minimum requirements and Access Minneapolis design guidelines informed the possible scenarios for a typical local street with 80 ft R.O.W. Typical street sections, both with and without a parking bay, still allow adequate sidewalk space, but not enough to maximize occupiable pedestrian space for diverse civic uses and stormwater treatment.

Working with the current standard, the scenario seen in fig. 3 was developed to show how parking, as well as infiltration basins, is accommodated while providing 20 feet of sidewalk width on both sides. Furthermore, the current policy allows asymmetric configuration of the street section that can allow different width of the sidewalks.

The next chapter will introduce further exploration of the Green 4th street design scenarios that maximize pedestrian space for multiple programs that enliven the life of the street.

FIGURE 1:
STATE AID MINIMUM REQUIREMENTS WITHOUT PARKING BAYS

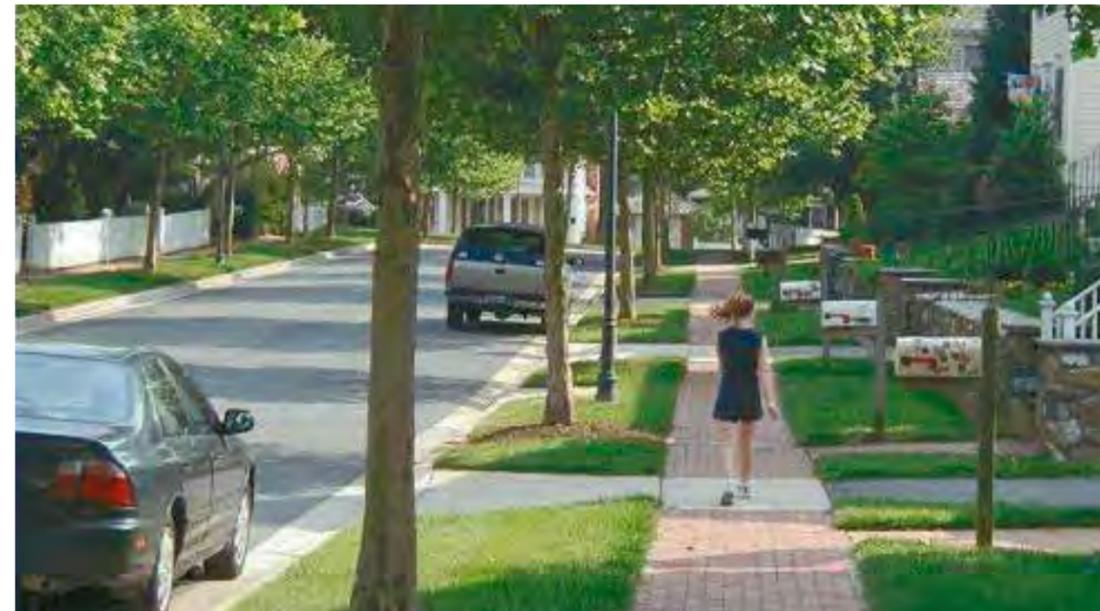
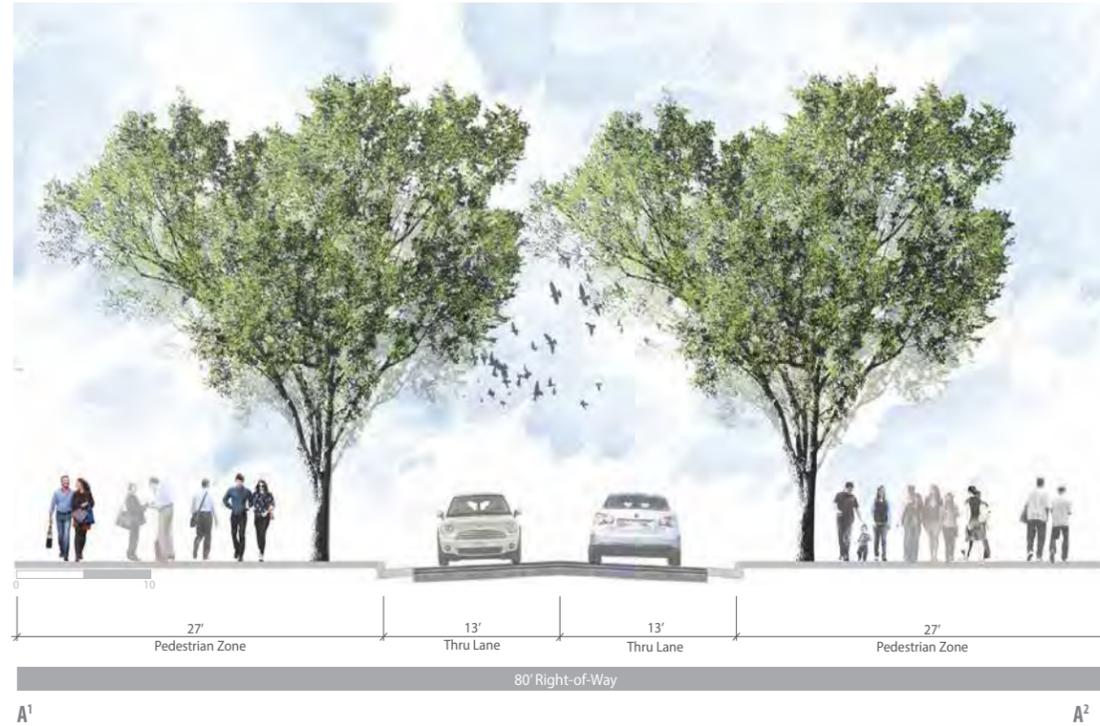
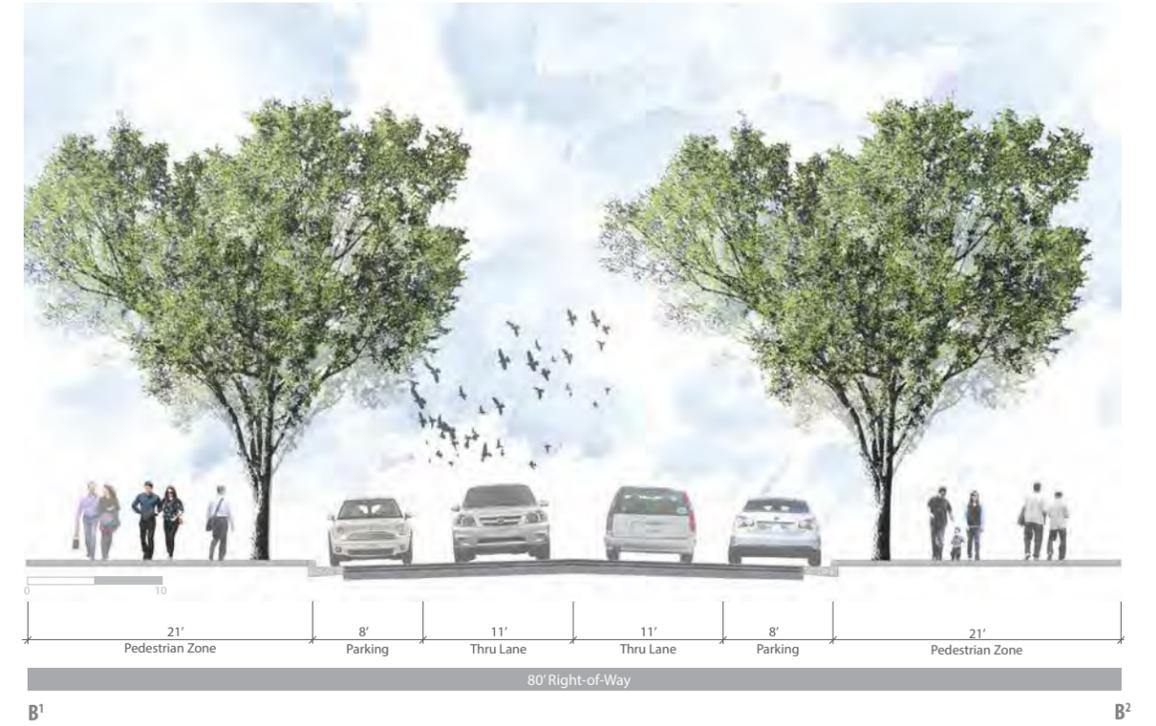


FIGURE 2:
STATE AID MINIMUM REQUIREMENTS WITH PARKING BAYS

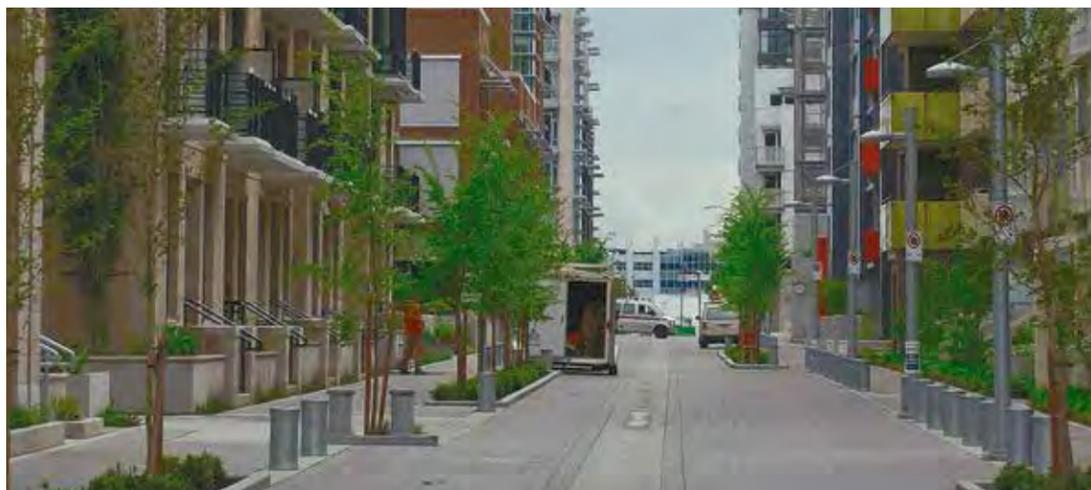
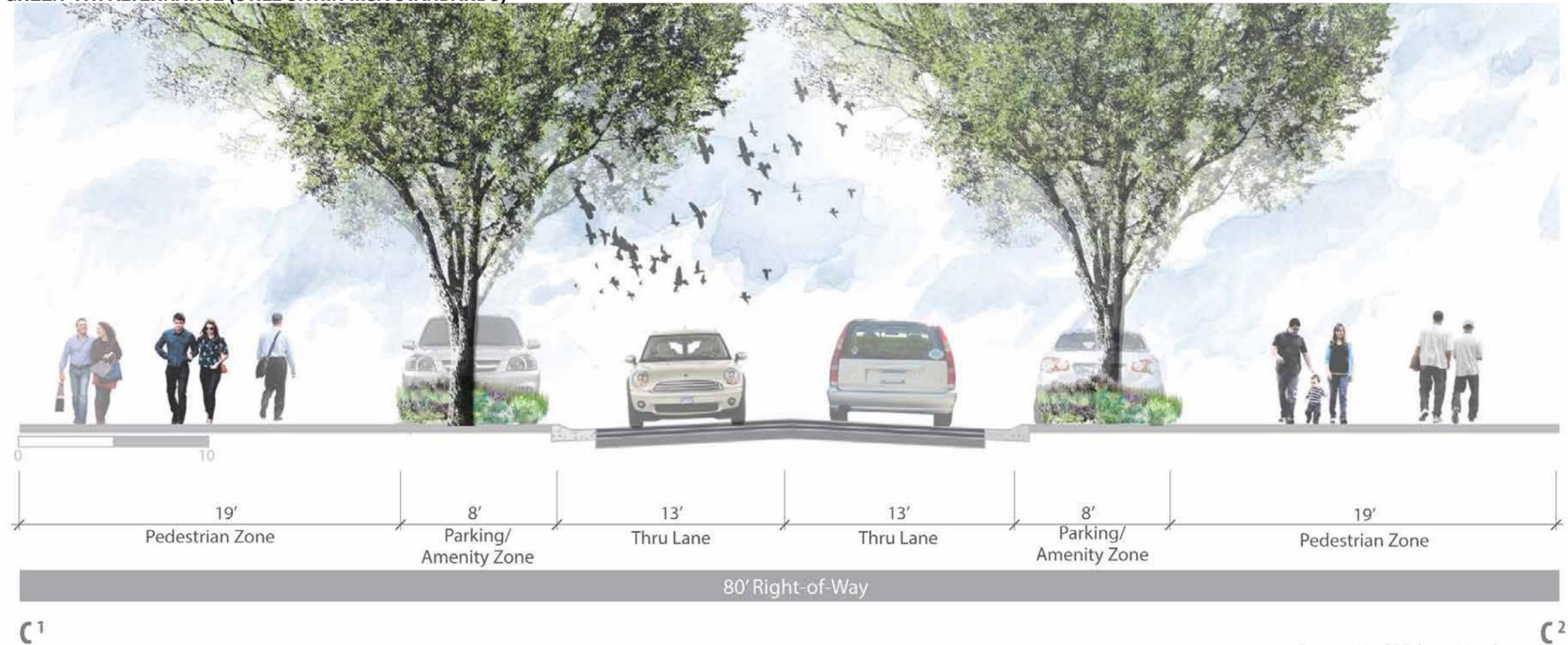


State Aid minimum requirements and Access Minneapolis design guidelines informed the possible scenarios for a typical local street with 80 ft R.O.W. Typical street sections, both with and without a parking bay, still allow adequate sidewalk space, but not enough to maximize occupiable pedestrian space for diverse civic uses and stormwater treatment.

Working with the current standard, the scenario seen in fig. 3 was developed to show how parking, as well as infiltration basins, is accommodated while providing 20 feet of sidewalk width on both sides. Furthermore, the current policy allows asymmetric configuration of the street section that can allow different width of the sidewalks.

The next chapter will introduce further exploration of the Green 4th street design scenarios that maximize pedestrian space for multiple programs that enliven the life of the street.

**FIGURE 3:
GREEN 4TH ALTERNATIVE (STILL WITHIN MSA STANDARDS)**



Prepared by SRF Consulting Group, Inc.