

A photograph of the Rochester skyline, including several tall buildings, reflected in a body of water. The image is overlaid with a semi-transparent purple filter. The text is arranged in a vertical stack on the left side of the page.

Rochester Destination Medical Center District Design Guidelines

**ADOPTED
JUNE 5, 2017**

00

Acknowledgments
Executive Summary

01

Introduction

Vision for the Future
Background and History
Purpose of the Guidelines
Organization of the Guidelines
Implementation

02

**Guidelines
and Standards**

A. Downtown District

- A.01 Create a Safe, Inviting and Connected Public Realm
- A.02 Enhance Connections to Nature and Natural Systems
- A.03 Establish District and Sub-district Identity
- A.04 Strengthen Gateways
- A.05 Establish Signature Open Spaces
- A.06 Reuse and Restore Buildings
- A.07 Infuse the City with Public Art
- A.08 Develop Mixed Use Neighborhoods
- A.09 Promote Urban Agriculture
- A.10 Create District Parking
- A.11 Create Sustainable Community Infrastructure
- A.12 Create a Healthy Community

03

**Appendices
and References**

B. Streets and Corridors

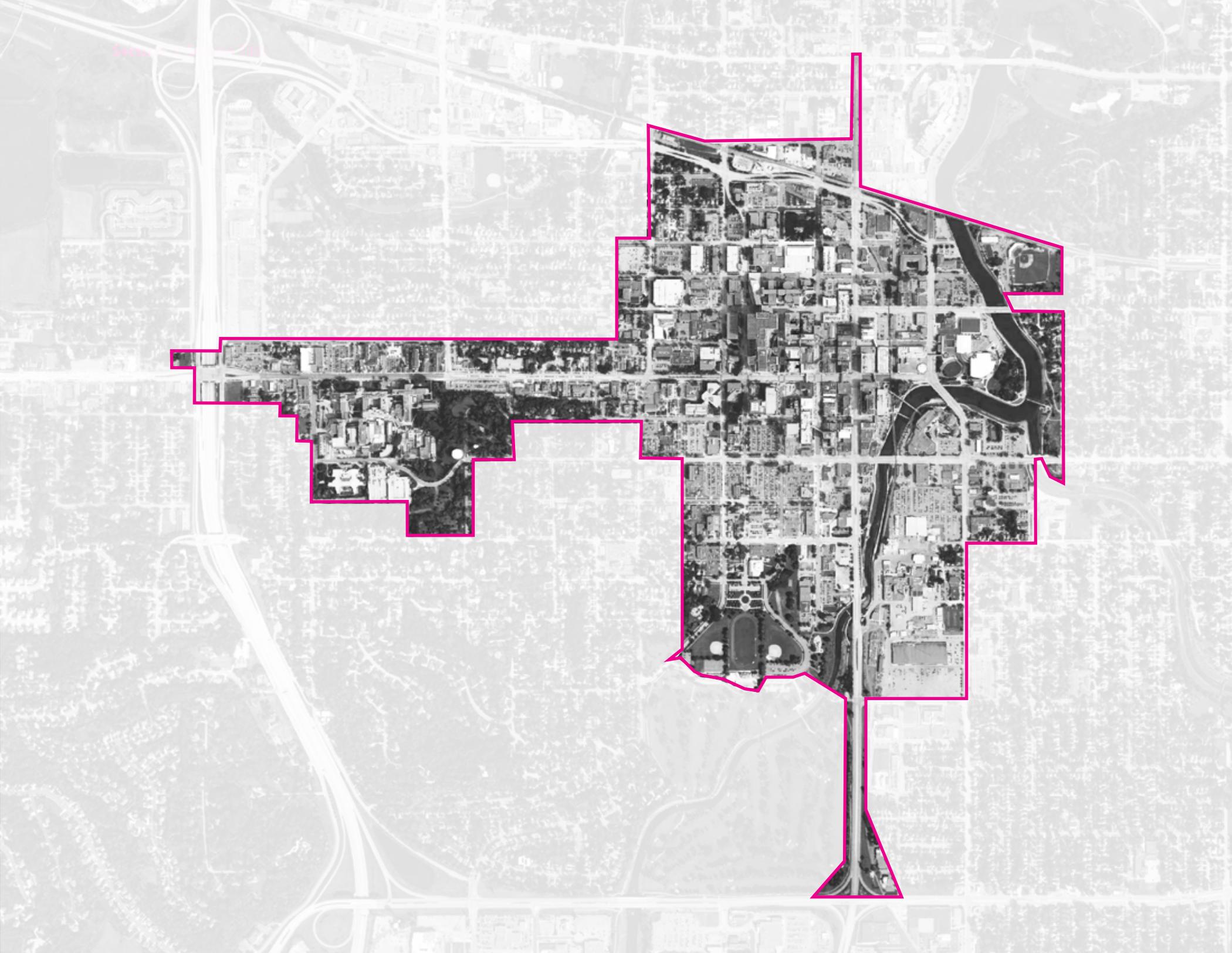
- B.01 Design Streets for Pedestrians
- B.02 Design Streets for Bicycles
- B.03 Design Streets for Mass Transit
- B.04 Design Safe Efficient Roadways
- B.05 Design Safe Multimodal Intersections
- B.06 Establish the Urban Forest
- B.07 Develop Sustainable Water Management Strategies
- B.08 Design Smart Streets
- B.09 Design Streets with Flexibility and Adaptability for Future Uses
- B.10 Connect Street, Skyway, Subway Levels
- B.11 Types of Streets and Corridors
- B.12 Application to Typical Right-Of-Way

C. Individual Sites and Buildings

- C.01 Design Buildings to Establish Sense of Urban Enclosure
- C.02 Design Tall Buildings to Preserve Sunlight, Comfort and Views
- C.03 Contribute to a Vibrant Streetscape
- C.04 Promote Quality and Permanence in Development
- C.05 Design for Coherency
- C.06 Design for Flexibility and Adaptability for Future Use
- C.07 Create Spaces for Collaboration
- C.08 Meet Sustainable and Healthy Building Design Standards
- C.09 Connect to District Systems
- C.10 Design Roofs for Visual Impact and Sustainability
- C.11 Design Parking Structures to Enhance Pedestrian Realm
- C.12 Make Parking Structures Adaptable to Future Uses

- App A. Previous Guidelines and Standards
- App B. Project Review Checklist

List of Figures
References



This report was developed with support from the City of Rochester. Many people provided input and review of portions of this document.

Project Steering Committee

Mitzi Baker, AICP
 Director
 Rochester-Olmsted Planning Department

Terry A. Spaeth, AICP
 Redevelopment Director
 City of Rochester

Jeff Ellerbusch
 Planning & Policy Division Supervisor
 Rochester-Olmsted Planning Department

Lisa M. Clarke
 Director
 Destination Medical Center-EDA

Patrick Seeb
 Economic Development and Placemaking
 Destination Medical Center-EDA

Mitchell Abeln
 Economic Development
 Destination Medical Center-EDA

Jenna Bowman
 Executive Director
 Rochester Downtown Alliance

We also appreciate the guidance and review provided by Richard Freese, Director of Public Works for the City of Rochester, and the Public Works staff.

We are also grateful for the review and input provided by the Committee for Urban Design (CUDE), the Rochester Area Builders, the Rochester chapter of the American Institute of Architects, The Rochester Conservancy, and other community groups.

It is important to acknowledge that this set of guidelines is built on the work of many preceding efforts to create effective design guidelines and standards for urban areas. In particular, this work draws on these models:

Boston Complete Streets Design Guidelines, City of Boston, Boston, Massachusetts, 2013.

Central City Fundamental Design Guidelines, City of Portland, Portland, OR, 2003.

River District Design Guidelines, City of Portland, Portland, OR, 2008.

Tall Building Design Guidelines, City of Toronto, Toronto, Canada, 2013.

Minnesota Design Center Project Team

John Carmody
 Senior Fellow-Project Manger

Bob Close
 Senior Research Fellow

Bruce Jacobson
 Senior Research Fellow

Joseph Hang
 Research Fellow

Elissa Brown
 Research Fellow

Tom Fisher
 Director

The Minnesota Design Center (MDC) at the University of Minnesota addresses urban issues in the Twin Cities region and beyond, helping communities realize opportunities in their built and natural environment that stimulate economic prosperity, encourage social vitality, and enhance human and environmental health.

The MDC is focused on providing communities with the tools and assistance to plan and create cities that respond to 21st century challenges by using new approaches and technologies.

Executive Summary

Rochester: America's City for Health

Health has always played a central role in the development of cities, and yet Americans seemed to forget that when designing our cities after World War II. The sedentary, auto-centric lifestyle that dominated urban and suburban living over the last 70 years has negatively affected both human health, evident in the obesity epidemic, and environmental health, apparent in our changing climate. No city in the United States has a better chance of demonstrating a healthier way forward than Rochester and its Destination Medical Center, aiming to be "America's City for Health."

As with so many other health-related innovations that have emerged from Rochester's Mayo Clinic, the idea of a city that makes health – human and community health, economic and environmental health – a centerpiece of its future development represents an internationally significant contribution to urban design and placemaking. An increasing number of cities have begun to talk about "health in all policies" and "health in all places," but none of them have the ability or the opportunity to make that a reality more than Rochester.

The Design Guidelines that the Design Center at the University of Minnesota has developed

with the staff of the City of Rochester and the Destination Medical Center show, in very specific and concrete terms, how to achieve that goal. These guidelines demonstrate how a set of health-oriented principles at the scale of a building, a site, a street, and a district can quickly transform a place and make it a magnet to people all over the world wanting to live a healthier life than they could find anywhere else.

These design guidelines reinforce the notion of health as a priority and a critical force in the design of cities: creating safe and inviting streets that reduce accidents; providing "third places" to gather that counter social isolation; instilling a sense of belonging by preserving and reusing the best buildings from the past; prompting new ways of thinking by integrating art into public places; increasing social and economic opportunities by developing mixed-use districts; enabling urban agriculture to play a much greater role in the production of locally-grown, healthy food; stimulating physical activity by designing for pedestrians; and developing the urban forest and water access to improve the environment and create a more beautiful city.

Some still view urban design as a drag on the economy, as somehow hampering free-market activity. But these guidelines have the opposite goal and intent; they open up

opportunities for private-sector activity by envisioning a public realm that will attract a growing segment of the population that cares about health. Cities now compete in the global economy for wealth and talent, and the only way to compete successfully is to have a strategy that no other city can match. In the case of Rochester, health provides that competitive edge and these guidelines will help to create America's first "City for Health."

The Role of Design Guidelines

Downtown Rochester, Minnesota, is anticipating a major transformation as the Destination Medical Center takes shape in the coming decades. During this process, four key aspirational goals have emerged:

- Thriving Economy
- Healthy City
- Sustainable City
- Vibrant Public Realm

To ensure meeting these goals while managing rapid large scale change, clear design guidelines are an important tool.

Long a city with deep connections to the land, strong urban neighborhoods and home to the world-renowned Mayo Clinic, the City of Rochester has many assets. Rochester has also laid a strong foundation for good urban planning with a number of excellent planning documents to guide the City's growth.

The previous planning documents all include some design guidelines for future development in Downtown Rochester. The problem is that they are not always consistent with each other, they do not cover all relevant topics, and they are not clearly designated as requirements in the City Zoning Ordinance.

For these reasons, the City of Rochester has enlisted the Minnesota Design Center at the University of Minnesota to create this comprehensive set of guidelines to help shape the growth of the DMC District. The guidelines that follow are an assimilation and distillation of guidelines from previous documents. The guidelines also include a number of issues and innovative approaches not directly addressed in the preceding documents.

The Rochester DMC District Design Guidelines are intended to be utilized in both the City's and DMC EDA's project review process for development projects located within the Destination Medical Center (DMC) District Boundary Area.

The Rochester DMC District Design Guidelines are divided into three major sections to be applied at different scales: Downtown District, Streets and Corridors, and Individual Sites and Buildings. Every guideline for the DMC district, streets and buildings includes a *performance*

guideline which is a qualitative statement with illustrations on how to achieve it. The DMC district guidelines also have *planning recommendations*. The guidelines for streets and buildings include *design details* which are more quantitative statements that may take the form of prescriptive requirements.

01

Introduction

Vision for the Future
Background and History
Purpose of the Guidelines
Organization of the Guidelines
Implementation

Vision for the Future

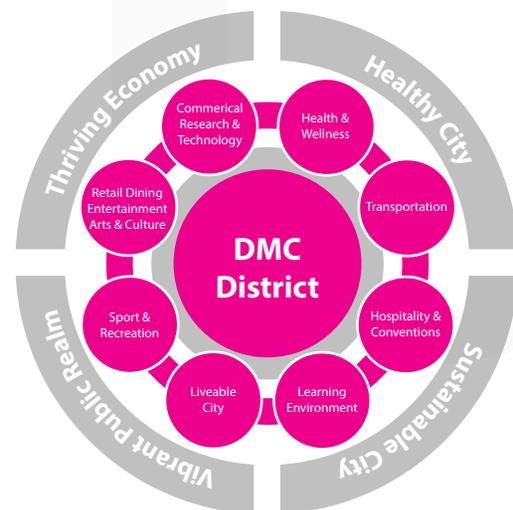


Figure 1:
Key aspirational goals for DMC Project

In 2013, the Destination Medical Center (DMC) was established in Rochester, Minnesota with the following mission:

With Mayo Clinic at its heart, the Destination Medical Center (DMC) initiative will be the catalyst to position Rochester, Minnesota as the world's premier destination center for health and wellness, attracting people, investment and jobs to America's City for Health and supporting the economic growth of Minnesota and its biosciences sector.

The DMC was created by the State of Minnesota in partnership with the City of Rochester, Olmsted County, the Mayo Clinic and other community stakeholders. The principles of the Destination Medical Center are:

- Establish a bold and compelling vision for Rochester and the DMC
- Sustain Rochester and Southeastern Minnesota as a DMC and economic engine for the State
- A comprehensive strategy to drive economic development and investment
- A market driven framework and strategies
- A dynamic and accessible urban core
- Develop mobility and transit solutions to support growth
- A model for sustainability

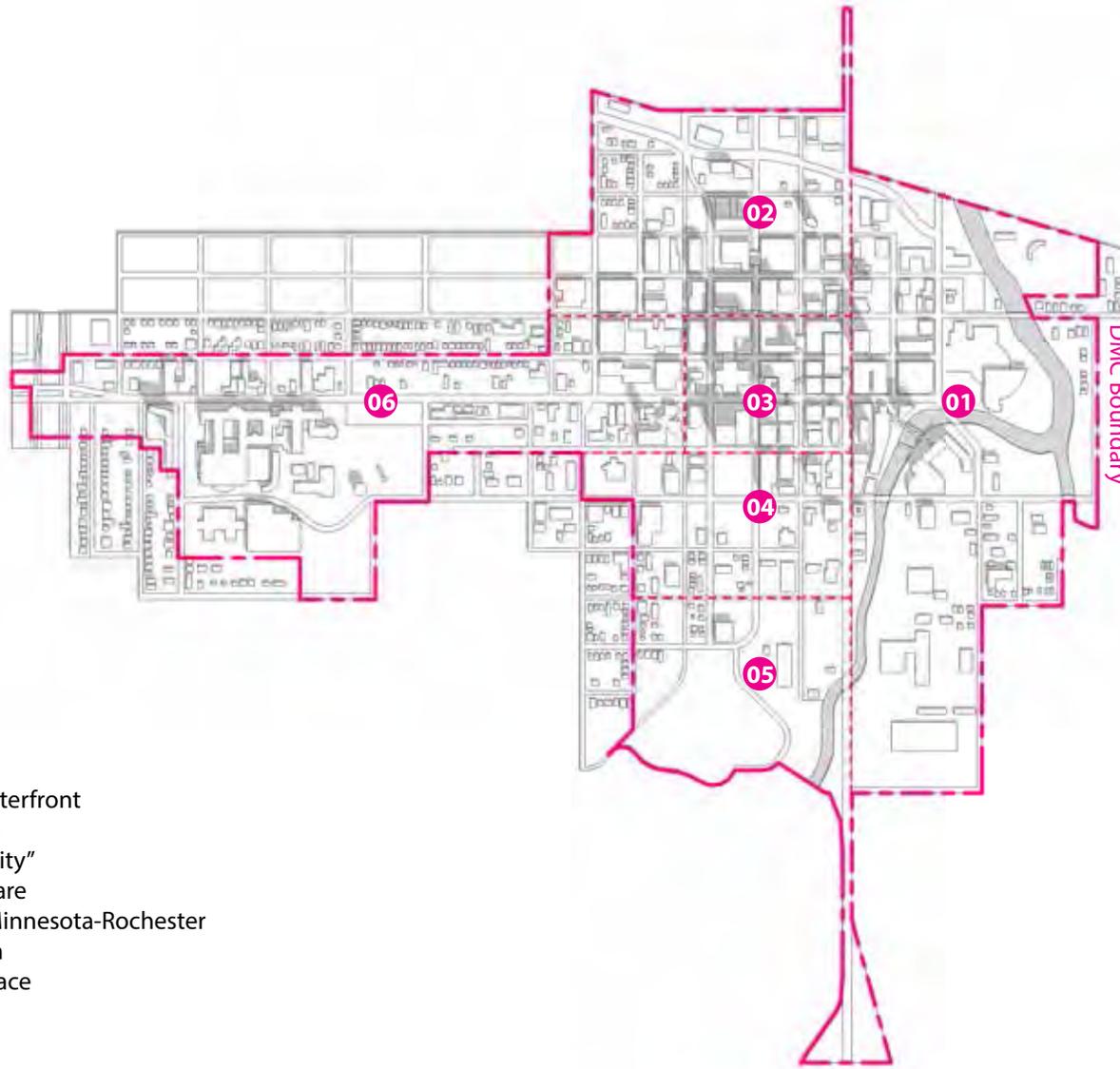
- Technology and innovation to support globally competitive destination

The DMC Master Plan, released in April 2015, addresses the following Core Focus Areas:

- Health and wellness
- Commercial research and technology
- Retail, dining, entertainment, arts and culture
- Sports and recreation
- Livable city (residential)
- Learning environment
- Hospitality and conventions
- Transportation

Based on a review of the DMC Master Plan and other planning documents for downtown Rochester, four key aspirational goals have emerged that are the basis for the Rochester DMC District Design Guidelines:

- Thriving Economy
- Healthy City
- Sustainable City
- Vibrant Public Realm



- 01 Downtown Waterfront
- 02 Central Station
- 03 "Heart of the City"
- 04 Discovery Square
- 05 University of Minnesota-Rochester and Recreation
- 06 Saint Mary's Place

Figure 2:
DMC District and sub-districts

Background and History

Long a city with deep connections to the land, strong urban neighborhoods and home to the world-renowned Mayo Clinic, the City of Rochester has many assets. Rochester has also laid a strong foundation for good urban planning.

Since 2009, Rochester has developed the a number of excellent planning documents to guide the City's growth. Major efforts include:

- Urban Village Overlay Zone Design Guidelines, 2009
- Rochester 2nd Street Corridor Framework Plan, 2009
- Complete Streets Policy, 2009
- Downtown Rochester Master Plan, 2010
- 3rd Street Conceptual Streetscape, July 2014
- DMC Master Plan, 2015

Development is also implemented through the Rochester Zoning Ordinance and Land Development Manual. Two documents are particularly important in terms of guiding the planning of the DMC District: the Downtown Rochester Master Plan (2010) and the DMC Master Plan (2015).

2010 Downtown Rochester Master Plan

This governing master plan includes these principles:

- Create a vibrant, economically healthy downtown that is walkable, livable and promotes human interaction
- Create strong connections between major activity centers including the CBD, UMR, and the Mayo Clinic
- Promote mobility options that reduce dependency on automobiles
- Create pedestrian friendly streets that balance use by people and automobiles
- Build upon historic buildings and landmarks that contribute to Rochester's history and culture
- Establish a connected open space system including the river
- Create strong connections between indoor and outdoor spaces at street level, subway, and skyway
- Develop buildings that engage the street, shape the civic realm and minimize energy use

2015 DMC Master Plan

The Destination Medical Center Master Plan provides a dramatic, overarching vision for the growth of Rochester over the next 20 years. The DMC Master Plan, released in April 2015, builds on previous plans and manuals.

Together, these planning documents share a vision for a much more livable and inviting downtown Rochester, with an active and inspiring core surrounded by new and revitalized urban neighborhoods with safer, calmer, greener streets, active uses along sidewalks, an ample and well connected series of spaces and places to enjoy, enhanced connections to nature, and a more resilient and sustainable city.

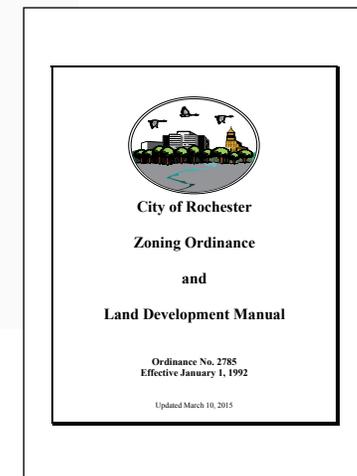
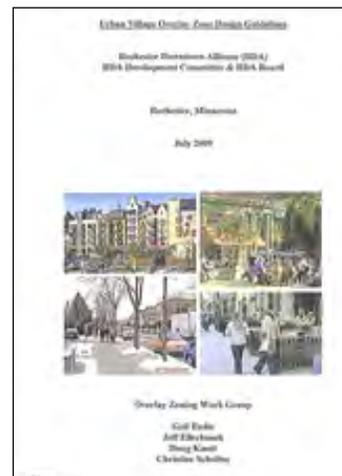
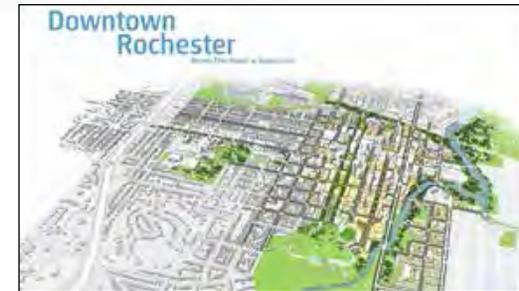


Figure 3: Previous planning documents for downtown Rochester

Purpose of the Guidelines

The previous planning documents all include some design guidelines for future development in Downtown Rochester. The problem is that they are not always consistent with each other, they do not cover all relevant topics and they are not clearly designated as requirements in the City Ordinances.

For these reasons, the City of Rochester has enlisted the Minnesota Design Center at the University of Minnesota to create this comprehensive set of guidelines to help shape the growth of the DMC District. The guidelines that follow are an assimilation and distillation of guidelines from each of the documents, to be approved and utilized by the City as evaluative tools as changes occur in the DMC Study Area. The guidelines also include a number of issues and innovative approaches not directly addressed in the preceding documents. Some of the provisions contained in Section C (Individual Sites and Buildings) are to be incorporated as requirements in the City Zoning Ordinance.

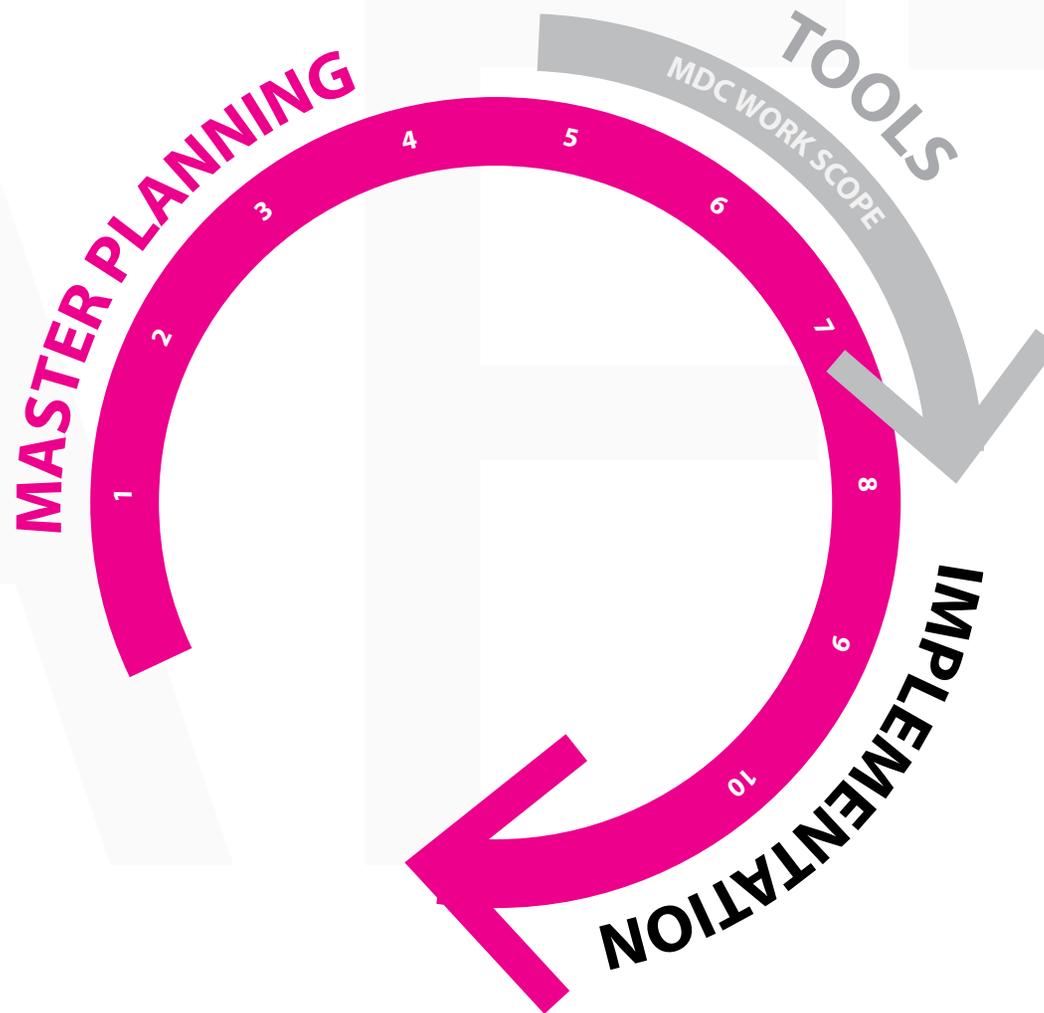
The MDC work is intended to support and refine previous work and to help implement projects that contribute to a dynamic and vibrant downtown. An important goal of this work is to communicate the guideline information in effective formats to support city process and policy.

The scope of work for the MDC to assist Rochester with developing design guidelines and/or standards for the downtown area includes the following tasks:

- Task 1: Review existing planning documents, interview City staff, and finalize the project scope and deliverables.
- Task 2: Through stakeholder engagement, define key community values and priorities that need to be considered in the built environment and urban design.
- Task 3: Develop district and project scale guidelines for development that support the City's Downtown Master Plan, the DMC Plan, and assist in the implementation of priorities.
- Task 4: Assist in implementing the vision by developing a project review process to ensure projects align with the guidelines.

Guidelines will include the following:

- Specific streetscape guidelines within the DMC Development Plan boundary area, based upon the various street classifications.
- Minimum building design standards for both the downtown core area and the other areas located within the DMC Boundary area.
- Additional design standards that would be applicable to Incentive and Restricted Development projects under the provisions of the Rochester Zoning Ordinance & Land Development Manual.



MASTER PLANNING

1. IDENTIFY ISSUES
2. EVALUATE CONDITIONS
3. UNDERSTAND NEEDS
4. EXPLORE POSSIBILITIES
5. DEVELOP MASTER PLAN

TOOLS

6. SYNTHESIZE PREVIOUS WORK
7. DEVELOP DESIGN GUIDELINES

IMPLEMENTATION

8. DEVELOP ORDINANCES BASED ON GUIDELINES
9. APPLY TO PLANNING AND INFRASTRUCTURE PROJECTS
10. APPLY TO INDIVIDUAL PROJECT REVIEWS

Figure 4:
Rochester DMC Planning and Implementation Process

Organization of the Guidelines

The Rochester Destination Medical Center District Design Guidelines provide information to different audiences in different formats. The guidelines are divided into three major sections to be applied at different scales:

- 02A** Downtown District
- 02B** Streets and Corridors
- 02C** Individual Sites and Buildings

The Downtown District is defined as the borders of the DMC District.

All guidelines begin with *Background, Relation to Goals, and Performance Guideline* sections. The goals are the four major goals of the DMC: Thriving Economy, Healthy City, Sustainable City and Vibrant Public Realm. The *performance guideline* is a clear statement describing the intended outcome of the guideline. Performance guidelines require judgment and evaluation by planning staff in the design review process.

The intended audience for the Downtown District Guidelines is the City of Rochester, the City Planning staff and other stakeholders. In addition to the Performance Guideline, each District-scale guideline includes *Planning Recommendations*.

The Streets and Corridors Guidelines are intended for planning and public works

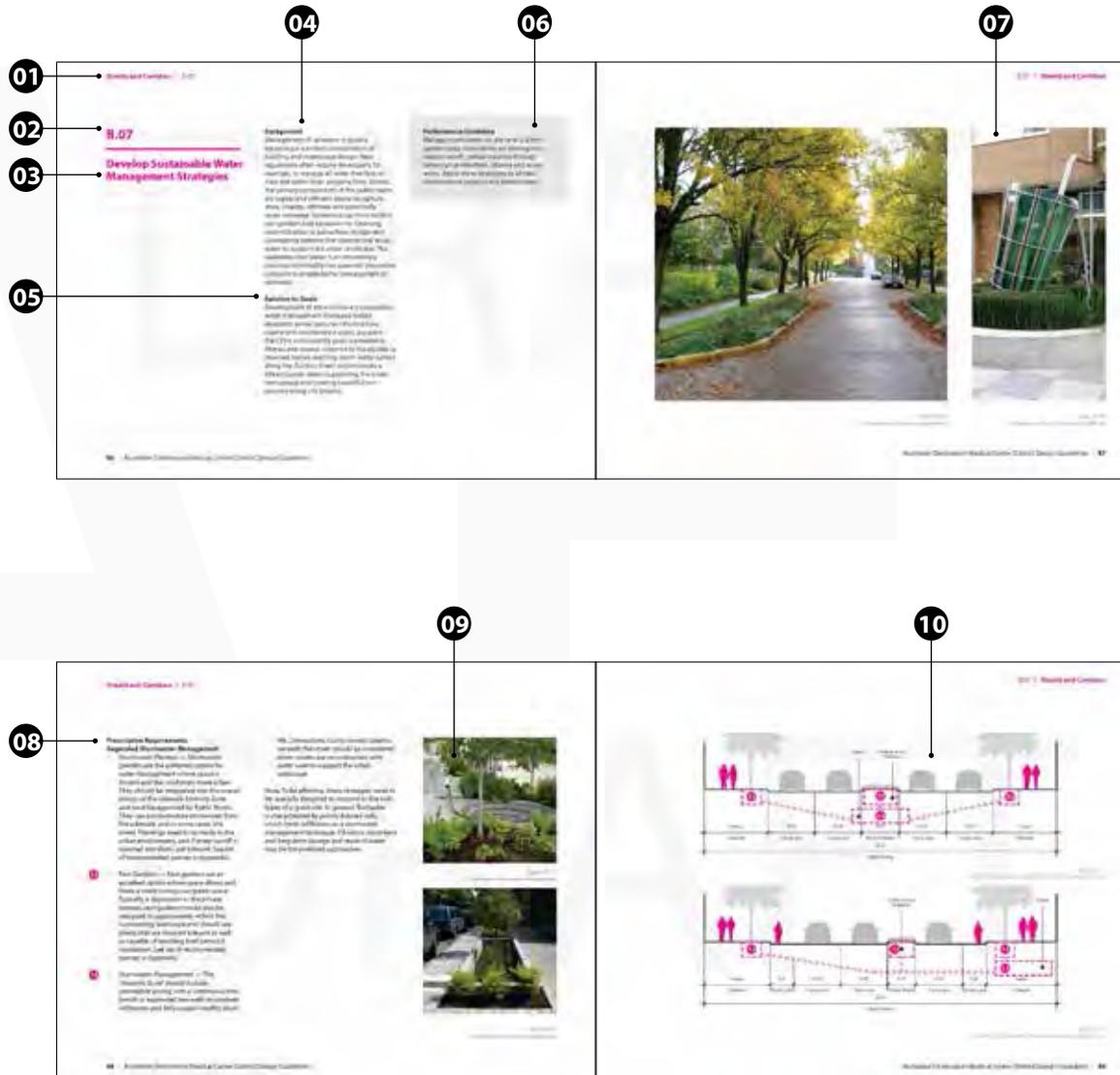
staff as well as individual property owners. The guidelines are applicable to the streets adjacent to their property. In this section, the *Performance Guideline* is followed by *Design Details*.

The Individual Sites and Buildings Guidelines are intended mainly for individual property owners where applicable to their property. In this case, the *Performance Guideline* is followed by *Design Details*.

Some of the guidelines represent minimum standards to be included in the Rochester Zoning Ordinance and Land Development Manual. Other may be linked to incentives (see following section).

Appendix A provides a comparative survey of the existing guidelines from various planning documents. These are the source material for some of the guidelines in this document.

Appendix B includes a checklist of Project Review Criteria.



- 01 Section
- 02 Guideline Number
- 03 Guideline Title
- 04 Background
- 05 Relation to Goals
- 06 Performance Guideline
- 07 Guideline Example
- 08 Design Details
- 09 Graphic example
- 10 Illustrative example

Figure 5:
Organization of the guidelines

Implementation

Uses of Design Guidelines

The Rochester Destination Medical Center District Design Guidelines will be utilized in a number of ways:

- To educate developers and design teams on the expectations of the City and DMC-EDA. This is done as early as possible in the planning and design of any proposed project.
- To review and evaluate any proposed private development projects submitted to the City and/or DMC-EDA for approval .
- To guide the design of public infrastructure and projects in the public realm that are done by the City.
- To guide planning decisions by the City and the DMC-EDA.
- To serve as a basis for conducting follow up research on whether the guidelines are effective in meeting City and DMC goals.

Project Review Process

The Rochester DMC District Design Guidelines are intended to be utilized in both the City's and DMC EDA's project review process for development projects located within the Destination Medical Center (DMC) Plan Boundary Area.

The Rochester DMC District Design Guidelines have two components: (1) planning and design *Performance Guidelines* for the DMC district, streets and buildings , and (2) *Design Details* for streets and buildings.

The *Performance Guidelines* are qualitative statements with illustrations on how to achieve them. The *Design Details* are more quantitative statements in the form of prescriptive requirements.

Both the *Performance Guidelines* and the *Design Details* will be considered in the project review process for providing a density bonus, additional floor area, or possibly financial assistance to a project.

The Table on the facing page shows which guidelines are recommended for adoption into the Zoning Ordinance. Once approved by the City, these will be mandatory and must be met by the project as part of its land use / zoning approval. The other guidelines will be considered for those projects seeking Restricted or Incentive Development zoning approvals or financial assistance from the City or DMC. All guidelines appropriate to a project should be considered in its design.

		Recommended for Ordinance	May Be Used to Evaluate Incentives	Should Be Considered Where Applicable
A. Downtown District				
A.01	Create a Safe, Inviting and Connected Public Realm		0	0
A.02	Enhance Connections to Nature and Natural Systems		0	0
A.03	Establish District and Sub-district Identity		0	0
A.04	Strengthen Gateways		0	0
A.05	Establish Signature Open Spaces		0	0
A.06	Reuse and Restore Buildings		0	0
A.07	Infuse the City with Public Art		0	0
A.08	Develop Mixed Use Neighborhoods		0	0
A.09	Promote Urban Agriculture		0	0
A.10	Create District Parking		0	0
A.11	Create Sustainable Community Infrastructure		0	0
A.12	Create a Healthy Community		0	0
B. Streets and Corridors				
B.01	Design Streets to Accommodate Pedestrians		0	0
B.02	Design Streets to Accommodate Bicycles		0	0
B.03	Design Streets to Accommodate Mass Transit		0	0
B.04	Design Safe Efficient Roadways			
B.05	Design Safe Multimodal Intersections			
B.06	Establish the Urban Forest		0	0
B.07	Develop Sustainable Water Management Strategies		0	0
B.08	Design Smart Streets		0	0
B.09	Design Streets with Flexibility and Adaptability for Future Uses		0	0
B.10	Connect Street, Skyway, Subway Levels		0	0
C. Individual Sites and Buildings				
C.01	Design Buildings to Establish Sense of Urban Enclosure	0		0
C.02	Design Tall Buildings to Preserve Sunlight, Comfort and Views	0	0	0
C.03	Contribute to a Vibrant Streetscape	0		0
C.04	Promote Quality and Permanence in Development	0		0
C.05	Design for Coherency	0		0
C.06	Design for Flexibility and Adaptability for Future Use		0	0
C.07	Create Spaces for Collaboration		0	0
C.08	Meet Sustainable and Healthy Building Design Standards		0	0
C.09	Connect to District Systems		0	0
C.10	Design Roofs for Visual Impact and Sustainability		0	0
C.11	Design Parking Structures to Enhance Pedestrian Realm		0	0
C.12	Make Parking Structures Adaptable to Future Uses		0	0

Guidelines and Standards

A. Downtown District

- A.01 Create a Safe, Inviting and Connected Public Realm
- A.02 Enhance Connections to Nature and Natural Systems
- A.03 Establish District and Sub-district Identity
- A.04 Strengthen Gateways
- A.05 Establish Signature Open Spaces
- A.06 Reuse and Restore Buildings
- A.07 Infuse the City with Public Art
- A.08 Develop Mixed Use Neighborhoods
- A.09 Promote Urban Agriculture
- A.10 Create District Parking
- A.11 Create Sustainable Community Infrastructure
- A.12 Create a Healthy Community

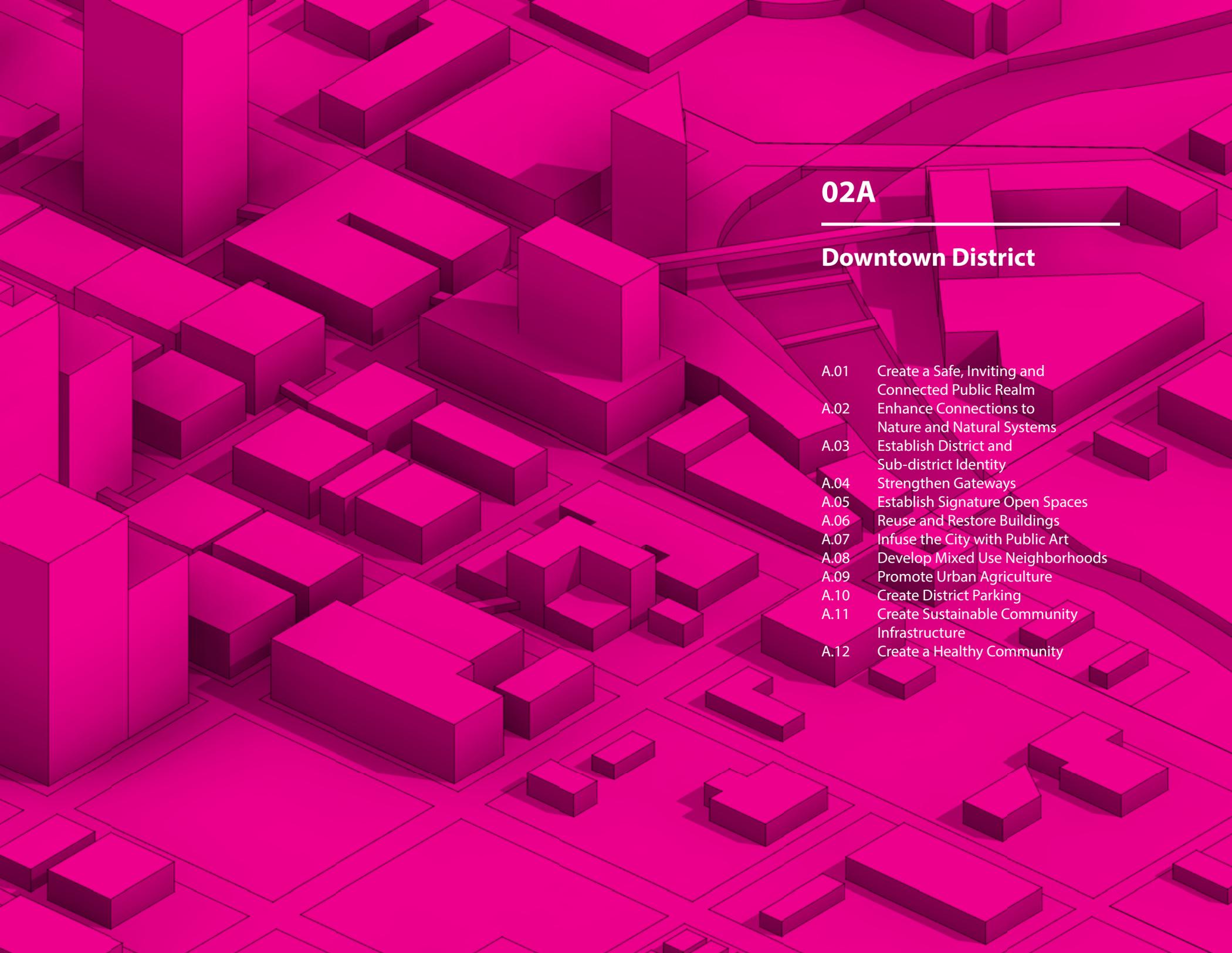
B. Streets and Corridors

- B.01 Design Streets for Pedestrians
- B.02 Design Streets for Bicycles
- B.03 Design Streets for Mass Transit
- B.04 Design Safe Efficient Roadways
- B.05 Design Safe Multimodal Intersections
- B.06 Establish the Urban Forest
- B.07 Develop Sustainable Water Management Strategies
- B.08 Design Smart Streets
- B.09 Design Streets with Flexibility and Adaptability for Future Uses
- B.10 Connect Street, Skyway, Subway Levels
- B.11 Types of Streets and Corridors
- B.12 Application to Typical Right-Of-Way

C. Individual Sites and Buildings

- C.01 Design Buildings to Establish Sense of Urban Enclosure
- C.02 Design Tall Buildings to Preserve Sunlight, Comfort and Views
- C.03 Contribute to a Vibrant Streetscape
- C.04 Promote Quality and Permanence in Development
- C.05 Design for Coherency
- C.06 Design for Flexibility and Adaptability for Future Use
- C.07 Create Spaces for Collaboration
- C.08 Meet Sustainable and Healthy Building Design Standards
- C.09 Connect to District Systems
- C.10 Design Roofs for Visual Impact and Sustainability
- C.11 Design Parking Structures to Enhance Pedestrian Realm
- C.12 Make Parking Structures Adaptable to Future Uses





02A

Downtown District

- A.01 Create a Safe, Inviting and Connected Public Realm
- A.02 Enhance Connections to Nature and Natural Systems
- A.03 Establish District and Sub-district Identity
- A.04 Strengthen Gateways
- A.05 Establish Signature Open Spaces
- A.06 Reuse and Restore Buildings
- A.07 Infuse the City with Public Art
- A.08 Develop Mixed Use Neighborhoods
- A.09 Promote Urban Agriculture
- A.10 Create District Parking
- A.11 Create Sustainable Community Infrastructure
- A.12 Create a Healthy Community

A.01

Create a Safe, Inviting and Connected Public Realm

Background

A successful urban environment is inevitably underpinned by a beautiful, safe, and linked public realm. A connected public realm also means maintaining views of corridors and landmarks that help people navigate through the city. Downtown Rochester is fortunate to have excellent “bones” with the Zumbro River winding through town, a well-defined pattern of streets and blocks, and green, leafy neighborhoods surrounding the core of the city.

Relation to Goals

A connected public realm encourages walking and enhances the public realm, two primary goals for the city.

Performance Guideline

Reinforce Rochester’s compact urban form and existing pattern of streets and blocks and strengthen safe and vibrant linkages between destinations.

Planning Recommendations

- Identify prime destinations (civic, medical, private, recreational) and establish optimum linkages between them. If a project lies along a prime linkage, development of the public realm should reinforce urban connectivity.
- Develop a “toolbox” of strategies to enhance pedestrian safety throughout the core and surrounding neighborhoods. Each appropriate project should use the toolbox to strengthen a safe, inviting and connected public realm.
- The urban landscape plays a key role in creating an inviting public realm. Both public and private sector development projects should include a full range of landscape treatments, from street trees to stormwater planters to containerized planters, vines on trellises and ground covers where appropriate. Use of native plants is strongly recommended to enhance the native ecosystem.
- Introduce a flexible palette of materials (sustainable furnishings, energy-efficient lighting, permeable paving) for use with new and renovated projects to create a 21st century urban community.

- Expand the identity of City parks to include linear parks, alleys, promenades, greenways, etc. and connect them to prime destinations.
- Look for opportunities to preserve existing views and view corridors, and open new views of landmark buildings and features where possible.
- To maintain visual connections, discourage buildings from locating over or across a public street or alley.
- Assess the impact of skyways which potentially block significant views. Where skyways are constructed, make them as transparent as possible.



Figure 6:
A successful public realm should include connected and beautiful places.
Boston Commons, Boston MA

A.02

Enhance Connections to Nature and Natural Systems

Background

Rochester has always been a community connected to and embedded in the surrounding natural landscape. Previous planning documents mention the importance of establishing a “greener” city, to strengthen the city’s historic connection to the Zumbro River and the natural landscape surrounding the urban core.

Relation to Goals

Physical and visual connections to Rochester’s natural landscape encourage walking and enhance the public realm, two primary goals for the city.

Performance Guideline

Strengthen viewsheds to the natural landscape surrounding the City through careful siting of new buildings, minimizing interruptions to distant views due to skyways or building locations. Preserve and enhance visual linkages to the Zumbro River and natural landscape surrounding downtown.

Planning Recommendations

- With all development — private and public sector, including new structures and improved streets — reinforce the urban forest through tree planting and urban landscaping that employs state-of-the-art strategies to establish and support a thriving tree canopy.
- With every private sector development, determine the project’s role in reinforcing connections to the Zumbro River and the surrounding landscape. If appropriate, establish new or reinforce existing links from the core to the river by enhancing the public realm.
- For waterfront and nearby sites, develop strategies to engage with the river, establishing “green fingers” extending back into the community from the river.
- Require each development (public sector or private sector) to identify its role in the larger recreational system of Rochester. If appropriate, the project should interconnect recreational and commuter bike and walking trails to allow urban dwellers to easily and safely get into the surrounding landscape (and vice versa).
- Every new and renovation project should develop and strengthen the

“green system” within downtown — urban forest; storm water management; generation of clean energy.

- Research shows that the use of native plants provides tremendous benefits to local ecosystems, aiding pollinating insects and reducing the likelihood of invasive plants to become established in the community. Use of native plants is recommended wherever feasible as a key component to enhance natural systems within the DMC District.



Figure 7:
Rochester’s public realm should connect to nature and natural systems.
Boston Commons, Boston MA

A.03

Establish District and Sub-district Identity

Background

Within the DMC District, there are six identified sub-districts. They are:

- Downtown Waterfront
- Central Station
- “Heart of the City”
- Discovery Square
- University of Minnesota-Rochester and Recreation
- Saint Mary’s Place

Each sub-district has unique assets; they should be reinforced and celebrated in a variety of ways that reflect their purpose and location within the city. For example, Discovery Square, on the edge of downtown but very different from the Heart of the City, is intended to be an “intellectual community commons,” a place where start-up, entrepreneurial businesses can establish themselves and interact with one another, formally and spontaneously. Historic buildings provide excellent and affordable building stock for start-up businesses. They also provide the type of environment within which young talented professionals like to work. New buildings also need to be affordable, flexible and “have a vibe” to encourage innovative businesses to put down roots in Rochester.

For each of the sub-districts, the story is much the same. Understanding what makes the sub-district special and capitalizing on those strengths will help each to reach its full potential. Previous planning documents all acknowledge the importance of defining and characterizing the various districts in the city and emphasizing their distinct qualities.

Relation to Goals

Establishing district and sub-district identity enhances the public realm, a primary goal for the city.

Performance Guideline

Establish sub-district identity to help people understand the diverse qualities of the City, while also reinforcing orientation and wayfinding.

Planning Recommendations

- Bring more cache to individual districts within the City through public-private partnerships.
 - Confirm sub-district boundaries based on previous planning and identify essential qualities that comprise each district.
 - Develop a matrix for each sub-district that evaluates and prioritizes the potential of existing building stock for adaptive reuse and identify key infill sites for new development.
 - Provide incentives within each sub-district and partner with owners and developers to restore/adapt old building stock and develop new, flexible building typologies that meet the needs of emerging companies in Rochester and their employees.
 - Define the desired qualities of streets, open spaces and parks and other components of the public realm for each district. Every new development project (public or private) should support the sub-district's qualities as defined.
- Create an informative but understated street sign system that states neighborhood identity beneath the street name, much as major cities like Toronto have successfully implemented.
 - Develop an identity, graphics and signage for each sub-district. Develop a consistent vocabulary of design elements for the public realm including street furniture, lighting, materials and a planting plan.
 - Incorporate graphics and signage into a city-wide orientation and wayfinding system.



Figure 8:
Establishing district and sub-district identity can help
celebrate the unique places in Rochester.
Little Italy, Montreal, Canada

A.04

Strengthen Gateways

Background

Transitions between sub-districts of the city are important for a number of reasons. In addition to helping define district character, gateways also provide an opportunity to strengthen intuitive wayfinding. Gateways should be evident but understated. It is not necessary to have large arches or monuments to distinguish one place from another. It is preferable to allow components of the public realm — landscaping, lighting, character of buildings and other visual cues — to subtly but clearly indicate the transition from, for example, a proposed new neighborhood like The Downtown Waterfront (“The Gardens”) to the area surrounding Central Park/Transit Plaza.

Relation to Goals

Strengthening gateways enhances the public realm, a primary goal for the city.

Performance Guideline

Develop a city “palette of materials” for use at specifically identified points of transition between districts. The city should determine how the palette is best applied within transitional zones before applying it to upcoming projects. Create understated transitions from district to district using visual cues like landscaping, lighting, building character and setbacks. In some cases, well-designed but understated vertical elements such as pylons or monuments may be appropriate; in others, tree groves or light clusters may be more appropriate.

Planning Recommendations

- With every project (e.g. street improvements or private development), determine whether the project lies within a “transitional zone” between districts.
- If a project does lie in a transitional zone, determine how the project can best work with adjacent properties or the surrounding public realm to reinforce the gateway concept (e.g. through enhanced landscaping, accent lighting, change in paving pattern, etc.)
- Use the city-developed palette as recommended for defined zones as part of project design and development.



Figure 9:
A successful gateway can celebrate the transition from one district to another.
Gateway near Pioneer Square, Seattle WA

A.05

Establish Signature Open Spaces

Background

Both the Downtown Rochester Master Plan and the Destination Medical Center Master Plan recommend the development of new signature open spaces throughout the city. While the recommendations for location, character, function and scale vary from plan to plan, the underlying concepts of reinforcing the city's livability, enhancing recreational opportunities, and coupling signature open spaces with movement and district personality are common to both plans.

Relation to Goals

Establishing signature open spaces enhances the public realm, a primary goal for the city. This guideline also supports a thriving economy by creating public gathering spaces that are essential to economic activity. Public spaces support healthy living by enhancing social connectedness and physical activity, and they support diversity and equity by providing equal access for everyone.

Performance Guideline

Create an attractive, lively public realm by including signature public spaces in the form of parks and plazas. A signature park or plaza in the heart of each sub-district is recommended as well as smaller multi-purpose and flexible outdoor spaces including pocket parks and playgrounds. Design outdoor spaces for use in all seasons by providing human comfort through microclimate design. Design to accommodate movement (pedestrians first; bikes second) and provide space for informal gathering and programmed events. A major park or plaza can also play a key role in management of storm water and harvesting energy (solar, wind).

Planning Recommendations

- Identify locations within the six DMC districts that provide unique opportunities to establish memorable, meaningful and accessible open spaces for public use.
- Encourage signature spaces on both public or private property. Establish criteria for developing publicly accessible spaces on private property.
- Create funding mechanisms dedicated to the purchase and development of key parcels for public use. Collaborative strategies should be explored.
- Promote the use of indigenous materials and landscapes when developing signature spaces throughout the DMC District to reflect the beauty and unique natural environments of southeast Minnesota. While physical designs may vary significantly (traditional to contemporary), locally sourced materials including natural stone and native wood can bring added meaning to important spaces.

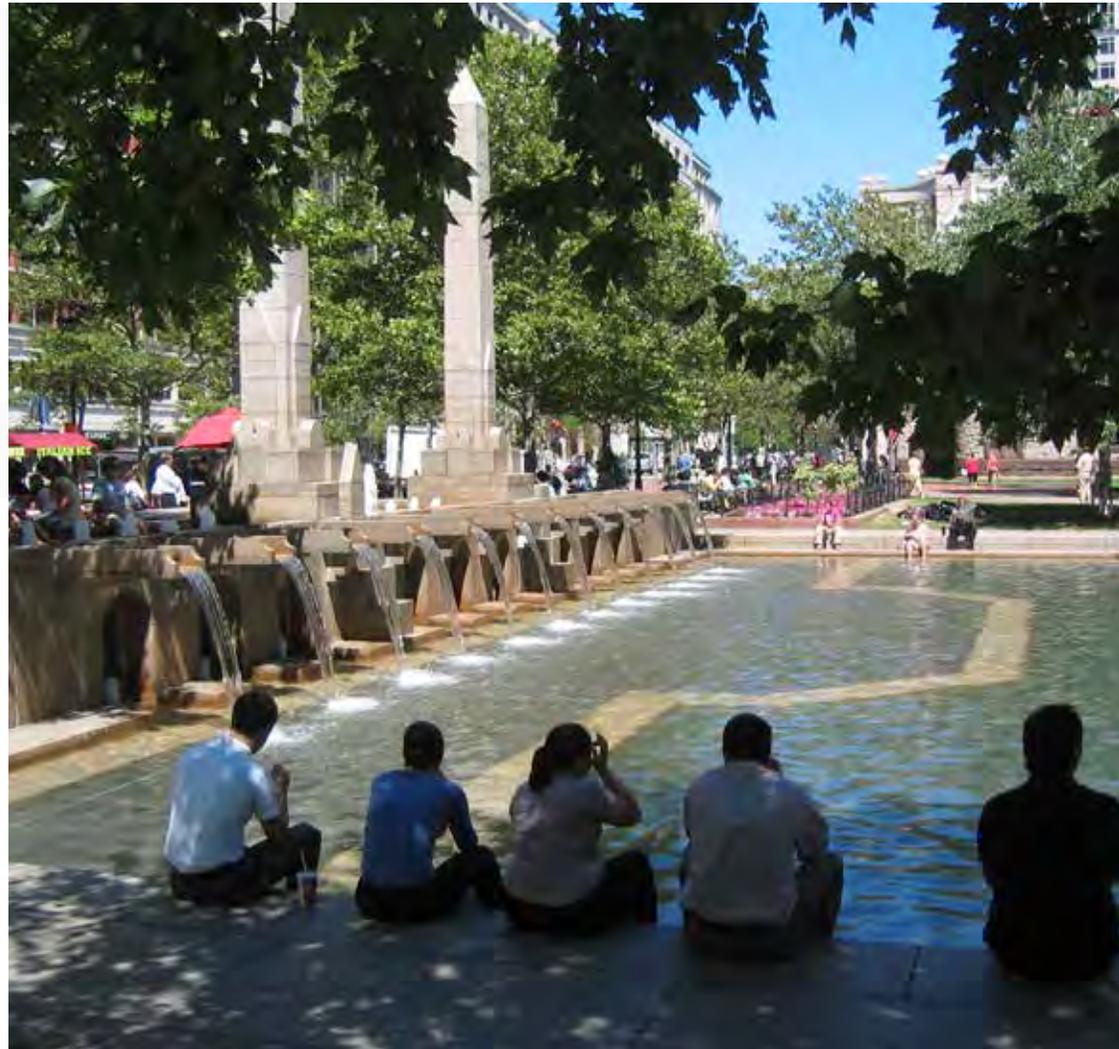


Figure 10:
Creation of a signature open space strengthens district identity and is recommended in the center of each sub-district in the DMC District.
Urban Plaza and Fountain, Boston MA

A.06

Reuse and Restore Buildings

Background

In early 2017 the City adopted a list of Landmark, Potential Landmark, and Challenged Landmark Properties with a number of these being in the DMC District. In addition, the City has begun the process to create a Downtown Landmark District to be completed by late 2017 which will encompass a number of buildings in the DMC District as well.

Even buildings that do not have historic significance can be assets to the downtown. Adaptive reuse of older building stock has numerous advantages: it retains the character and feel of the historic fabric of the community; it houses local businesses; it provides affordable space for entrepreneurial start-up businesses; it promotes sustainability, since an older buildings requires significantly less consumption of natural resources to update than does the construction of a new building.

Relation to Goals

Reusing and restoring buildings helps create a vibrant public realm by preserving the historic character of the neighborhood and contributing to the district identity. It can also contribute to a thriving economy by housing local, diverse businesses and by creating business incubator spaces. Sustainability and resilience are supported because building material use is reduced with the reuse of existing structures. Preserving historic structures can also support lifelong learning and design, art and culture by providing artists and designers with stimulating places to live, learn, create, present, and sell their work.

Performance Guideline

Promote a more “authentic” and interesting urban character by retaining and adaptively reusing historic building stock and using older building stock including warehouse and manufacturing structures for entrepreneurial “maker spaces” and local businesses where appropriate.

Planning Recommendations

- Incorporate the lists of Landmark, Potential Landmark, and Challenged Landmark Properties. These lists underpin the overall goals of preservation, restoration, and adaptive reuse, and should be incorporated into planning activities.
- Establish new programs to retrofit older structures. Continue to develop programs for facade improvements to stabilize older buildings and improve their value and desirability.
- Provide economic incentives for business and landowners to invest in adapting older building stock to new uses.
- To assist in the reuse and restoration of buildings, plan to manage older, smaller buildings as assets which add to economic vitality, equity, density, and diversity of the downtown.



Figure 11:
Reuse and restoration of existing buildings provides affordable and distinctive space for entrepreneurial start up businesses.
Park Shops Adaptive Reuse, Raleigh NC

A.07

Infuse the City with Public Art

Background

Perhaps more than any single strategy, high quality public art can imbue a community with spirit and meaning that reflect the city's heritage, natural environment, revered institutions and the people who live, work and visit there. There are innumerable examples of cities that have embraced public art as part of their collective persona and have enriched the quality of their urban landscape, often attracting visitors from distant places. Rochester is a destination city, frequented by visitors from afar; this underscores the added value that high-quality public art could bring to the community.

Relation to Goals

Infusing Rochester with public art enhances the public realm, a primary goal for the city. Supporting design, art and culture recognizes the importance of the arts and design as a magnet for a creative, vibrant community. By emphasizing public arts in the city, a thriving economy based on research and innovation integrates the work of artists and designers with the work of scientists and researchers.

Performance Guideline

Promote local, regional, national and international artists to infuse Rochester with world-class public art that celebrates the city's history, culture and natural assets, making the city an arts destination.

Planning Recommendations

- Support and expand public art advocacy in Rochester.
- Seek funding for an ongoing public art program that invites world-class artists to establish temporary residencies in Rochester while creating iconic pieces for the city.
- Promote the advancement of local artists.
- Place rotating public art exhibits in skyways and subways, in addition to installations on the street.
- Consider establishing a world-class sculpture garden celebrating local and international artists.
- Require public art in both public and private development projects.



Figure 13:
Successful public art can be highly interactive and attract people to signature spaces.
Fountain Plaza by Diedre Saunder, Silver Spring MD



Figure 12:
Cloud Gate by Anish Kapoor, Millennium Park, Chicago IL



Figure 14:
Weatherdance Fountain by Andrea Myklebust and Stanton Sears, Iowa City IA

A.08

Develop Mixed Use Neighborhoods

Background

With the development of the Destination Medical Center, the City of Rochester is anticipating a surge in new residents — between 25,000 and 30,000 more people by 2030. Coupled with the national trend toward more urban lifestyles by Baby Boomers, Millennial and non-traditional households, downtown Rochester is likely to see a dramatic change in character as it becomes home to a significant portion of new and relocating residents.

This influx of people offers a tremendous opportunity to redefine the city: instead of being a heavily commuter-based workplace, many more residents will be able to walk, bike or take local transit to work. This important transition suggests that as neighborhoods redevelop, it will be important to provide goods and services to new residents. Mixed-use neighborhoods will define the future of downtown Rochester.

Relation to Goals

Mixed-use development contributes to creating vibrant public realm by creating the activity and excitement of a 24-hour city (which also increases safety). It also supports sustainability and resilience by contributing to reductions in energy use and greenhouse gas emissions for transportation. Mixed-use development also supports equity and

diversity by including and involving a broad range of user groups in the district. Diversity of housing types supports the goal of healthy living because community strength is created through interaction and community members are not isolated for lack of resources.

Performance Guideline

Promote a broader mix of uses in downtown Rochester. Create a mixed-use district through zoning changes and other tools to promote a broader mix of uses in downtown Rochester. Create a mixed-use district including housing, retail, education, recreation, entertainment, civic functions, business and research. The result is that people can live, work and play in the same neighborhood. All projects should contribute to the mixture of uses in the district as a whole even if the individual development has a single function. Ensure that there is a mix of income levels, ages, unit types and sizes in housing including opportunities for live/work units.

Planning Recommendations

- When appropriate and feasible, include vertical mixed-use in new development (e.g. office or residential above retail).
- Encourage mixed retail activity at-grade (indoor and outdoor restaurants and cafes, stores and shops, etc.)
- Augment with district parking structures and below-grade parking. Surface lots should not be permitted along street frontages. When present, surface lots should be located behind buildings with access from alleys or service corridors.
- Promote and include on-street parking when developing mixed use projects.



Figure 15:
Mixed use neighborhoods are vibrant places that will bring added vitality to Rochester.
Streetscape, Arlington VA

A.09

Promote Urban Agriculture

Background

The emerging trend toward establishing productive landscapes in the city has exploded in the past decade. In some cities, parks now dedicate a portion to urban farming and gardening. In others, vacant lots have been converted to community gardens, tended by neighbors. In still others, where land is scarce, rooftop gardens have become popular. The emergence of urban agriculture has resulted in more access to locally grown produce and edible perennials (like fruit and nut-bearing trees) while promoting social interaction and instilling a sense of community pride.

Relation to Goals

Urban agriculture enhances the public realm and contributes to health and sustainability, primary goals for the city.

Performance Guideline

Provide opportunities, through relaxed zoning constraints and the use of overlay district strategies, for urban agricultural uses, even if on a temporary basis. With collaboration between the City, University and volunteer advocacy groups, develop strategies for long-range urban farming and gardening.

Planning Recommendations

- Revise zoning ordinances to allow and promote urban agriculture in under-utilized or vacant land until such time as they are redeveloped.
- Consider opening a portion of City park space to long-range urban agriculture.
- Encourage rooftop produce production as a viable means of food production.
- Incorporate locally grown urban food sources into local markets.



Figure 16:
Urban agriculture can enliven the city and promote a healthier, locally sourced diet.
Lafayette Greens, Detroit MI

A.10

Create District Parking

Background

One important strategy to create a more walkable pedestrian environment is district parking that will allow individual properties to reduce parking requirements and increase usable density. District parking removes the onus of meeting parking demands from individual developers or municipalities and spreads the financial burden between multiple owners or agencies. This type of district strategy need not inconvenience the user: if well-designed, district parking can be located to provide outstanding access to nearby uses, often in a climate-controlled atmosphere.

Relation to Goals

District parking supports creating a vibrant public realm. Healthy living is supported by increased physical activity through transit use, walking, biking and exercising. Public safety is enhanced by creating 24-hour activity on the streets and avoiding large blank walls from parking structures.

Performance Guideline

Develop a comprehensive strategy for district parking in the downtown core, identifying optimum locations for structures and connections to destinations, while considering adaptive reuse of the structures as the demand for parking lessens and use of transit increases. Strategically position parking reservoirs to create walkable sectors in the district.

Planning Recommendations

- Develop a comprehensive parking master plan that locates optimum locations—including on-street parking—and identifies the best connections to nearby destinations.
- Design and develop parking magazines to accommodate cars from the surrounding blocks or district.
- Design parking structures to anticipate an eventual diminished demand for parking with the advent of shared vehicles, new service providers (Uber, Lyft), and a comprehensive transit system.



Figure 17:
District parking is seamlessly integrated into the design and placed in the center of the block.
St. Louis Park MN

A.11

Create Sustainable Community Infrastructure

Background

Just like individual buildings, whole districts have impacts on energy use, greenhouse gas emissions, water use, waste, and other environmental concerns. Addressing these concerns involves developing a district systems approach. Progressive communities nationally and internationally are embracing the concept of district systems (energy production, water management, waste management) to create more efficient, livable and economically successful urban environments.

The Rochester 2nd Street Corridor Framework Plan specifically addresses the importance of reimagining streetscape infrastructure in an urban environment. The plan recognizes that it is imperative that stormwater management, in particular, should be addressed where rain falls, not collected and sent to the river in a pipe. Importantly, the strategies recommended do not negatively impact the streetscape; in fact, they introduce a new paradigm of what it means to be urban and environmentally progressive.

Relation to Goals

Creating district energy systems supports sustainability and resilience by reducing energy use and carbon emissions in buildings and infrastructure. Creating district stormwater systems ensures surface and

ground water pollution is minimized, negative impacts of development on the hydrological cycle are minimized, and natural erosion and sedimentation levels in streams and lakes are not exceeded. It also supports the public realm by making landscapes that are beautiful and productive. Innovative water and waste treatment systems support sustainability and resilience goals by reducing energy use and carbon emissions, reducing water and wastewater leaving the site, reducing and recycling solid waste, and restoring and enhancing natural ecological systems. District systems support research and innovation by developing and demonstrating new technologies. Designing a sustainable community also contributes to creating a healthy community by improving air, water, soil and vegetation, and it contributes to resiliency by making communities less vulnerable to disruptions from disasters.

Performance Guideline

Design the district as a whole to minimize environmental impacts. Introduce sustainable infrastructure principles into development and redevelopment projects, both public and private sector. This includes utilizing district energy, district stormwater, and integrated utility systems involving water, wastewater treatment and solid waste management. Where feasible, all systems should have an emphasis on clean, renewable energy sources and the use of sustainable materials.

Planning Recommendations

- Evaluate the feasibility of a district heating and cooling system considering flexibility in fuel source as an asset.
- Assess the opportunities, costs and benefits of district stormwater systems and develop an implementation plan. Utilize the public realm for shared storage and incorporate the system into the landscape design.
- Assess the opportunities, costs and benefits of advanced integrated infrastructure systems and develop an implementation plan.
- Public and private sectors should work collaboratively to promote sustainable infrastructure; for example, water collection, cleansing, infiltration and possible reuse should be a shared responsibility.
- Many of the guidelines in this document support creating a sustainable community. It may also be worth evaluating the following district-scale sustainability guidelines and systems for application to Rochester:
 - LEED-ND (Neighborhood Development)
 - Living Community Challenge
 - One Planet Living
 - Ecodistrict



Figure 19:
Making stormwater collection visible educates the public about its management.



Figure 18:
District energy systems can incorporate multiple sources.



Figure 20:
Centralized underground waste collection/separation system eliminates garbage collection on streets. Stockholm, Sweden

A.12

Create a Healthy Community

Background

Rochester can become a model for transforming an existing city into a healthy community. The intention is to measure outcomes and educate residents and the general public on healthy community strategies.

A healthy community is built on policies and access to everything from healthcare facilities to parks and supermarkets. The healthy city provides infrastructure that encourages community building and encouraging physical activity.

Many of the physical planning and design strategies in these guidelines promote active living where physical activity is increased through transit use, walking, biking and exercising. Active transportation is designed to be at least as easy and convenient as driving.

In a healthy community, access to healthy food options is optimized; food vendors carry healthy options and awareness of healthy food options is increased. In addition, a tobacco-free community is created, both indoors and in public spaces.

A healthy community must be safe; car-related injuries and deaths are reduced through design and physical injury and

mental stress caused by crime is decreased. This results in increased biking and walking. Safety is increased by 24-hour activity with more eyes on the street.

Connectedness is another important aspect of health. Community cohesiveness is strengthened through interaction and community involvement. Every person has equal opportunity to reach full health potential and access to quality health care is maximized.

Mental and physical health is improved with access and connection to nature. Air and water pollution are reduced as well.

At the building scale, healthy materials and furnishings are used. Indoor environments are well-ventilated and clean, and healthy cleaning products and maintenance practices are used (See Guideline C.07).

Relation to Goals

Creating a healthy community is one of the major components of the vision for the Rochester DMC district. Complying with healthy district design guidelines can contribute to creating a distinct identity for the district.

Performance Guideline

Design the district as a whole to create a model healthy community. This includes designing for active living through exercise and increased transportation choices, access to healthy food and quality health care, social connectedness, and safety. This also includes designing the district to produce healthy indoor and outdoor conditions with access to nature.

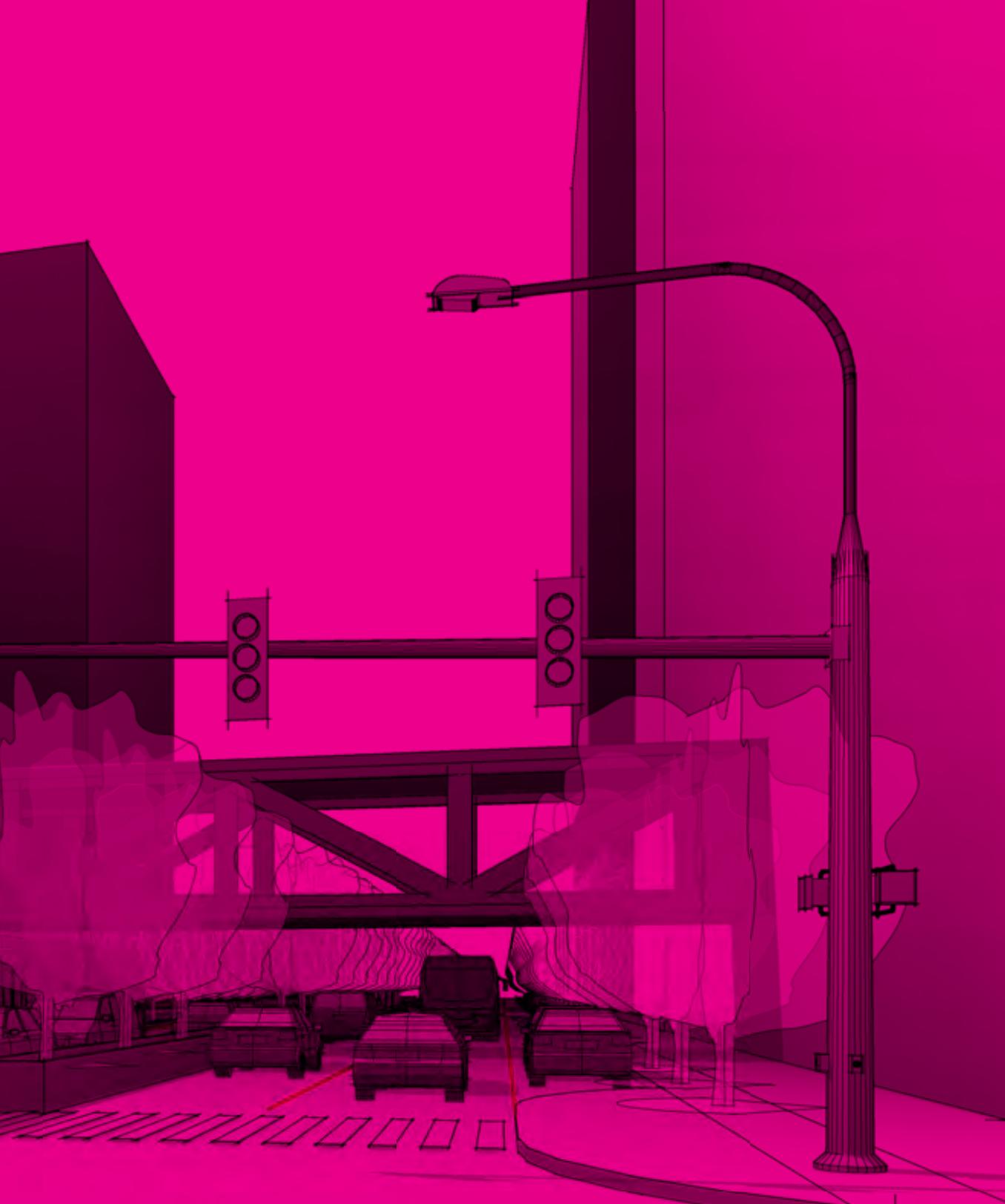
Planning Recommendations

- Plan the DMC District to provide healthy food choices for all residents with access to food markets and vendors.
- Provide access to quality health care for all residents. Design to create a sense of community and social connectedness.
- Design roads and corridors to reduce traffic speeds and increase safety for pedestrians and bicycles.
- Many of the guidelines in this document support creating a healthy community. It may also be worth evaluating the following health-related standards for application to Rochester:
 - Well Community Standard
 - Active Design Standard



Figure 21:
Recreational opportunities contribute to a healthy community.
Saint Paul MN





02B

Streets and Corridors

- B.01 Design Streets for Pedestrians
- B.02 Design Streets for Bicycles
- B.03 Design Streets for Mass Transit
- B.04 Design Safe Efficient Roadways
- B.05 Design Safe Multimodal Intersections
- B.06 Establish the Urban Forest
- B.07 Develop Sustainable Water Management Strategies
- B.08 Design Smart Streets
- B.09 Design Streets with Flexibility and Adaptability for Future Uses
- B.10 Connect Street, Skyway, Subway Levels
- B.11 Types of Streets and Corridors
- B.12 Application to Typical Right-Of-Way

B.01

Design Streets for Pedestrians

Background

After more than six decades of designing a public realm that cedes primacy to the car, there is renewed awareness and interest in creating a balanced street system that accommodates all modes of movement in a beautiful, safe and engaging environment. In the Rochester Downtown Master Plan and other planning documents, there is reference to “pedestrian-friendly streets” and “walkable urbanism” that reduce dependence on the car and promote walking and the use of bicycles and transit. The plans also promoted the goal of creating places for people to gather on sidewalks, in the form of outdoor cafes or places to informally meet.

In 2009, the City adopted a “Complete Streets” transportation system strategy to support these goals.

Key to the success of a vital, walkable network of streets is the quality of the streetscape — the physical elements that make the street an interesting place to be. The streetscape and the buildings that line it need to work together to create a safe and inviting place to be.

Relation to Goals

A walkable, pedestrian-friendly environment meets the overall goals of creating a healthy city (more walking), a sustainable city (less driving) and a vibrant public realm.

Performance Guideline

Design downtown and urban neighborhood streets with a balanced system that accommodates all modes of movement. Maximize sidewalk widths where possible, and provide street trees with the appropriate infrastructure (boulevards, urban vaults, etc.) to support them. Employ traffic calming strategies, such as curb extensions at intersections and mid-block where appropriate. On-street parking is recommended for convenience and to calm traffic. Where transit is present, provide high quality facilities and amenities to increase the user’s comfort and security. Make all sidewalks and pedestrian pathways accessible.



Figure 23:
Multimodal street prioritizes pedestrians and reduces the impact of automobiles.
Buenos Aires, Argentina



Figure 22:
European multimodal streets accommodate all users.
Amsterdam, The Netherlands



Figure 24:
Curbless multimodal streets can delineate uses with changes of color or texture.

Design Details
Sidewalk Zones and Dimensions

- 01** • The Primary Pedestrian Zone — This zone, where all users circulate, must accommodate users of all ages and abilities. It must be free of any intrusions such as steps, kiosks, furnishings, landscaping, etc. The minimum width is 6 feet for streets with low pedestrian use, but wider zones are recommended where space allows. An 8-foot-wide pedestrian zone is preferred where the right-of-way allows, and is essential on pedestrian destination streets.
- 02** • Amenity Zone (between back of curb and Primary Pedestrian Zone) — The Amenity Zone (also known as the Furnishing/Planting Zone) should employ the use of permeable paving where feasible and be no less than 4 feet wide. Lighting, furnishings and landscaping, including street trees, shall all be located in the Amenity Zone. In cases where outdoor uses (such as cafes) are proposed, the Amenity Zone may be considered by the city for such uses when space does not allow for such uses in the Building Frontage Zone; in such cases, the Amenity Zone must be 8 feet wide or more.

- 03** • Building Frontage Zone — This zone, located between the Primary Pedestrian Zone and the building facade, will vary in width depending on location, and site conditions (e.g if the building has a front “yard,” etc.). At a minimum, it is desirable to have a 2-foot-wide Building Frontage Zone, which may be composed of a different paving material than the Primary Pedestrian Zone. If an outdoor cafe or small plaza is located in this zone, the minimum width is 8 feet (from building facade to Primary Pedestrian Zone). Pots and other landscape treatments are acceptable in this zone as well.

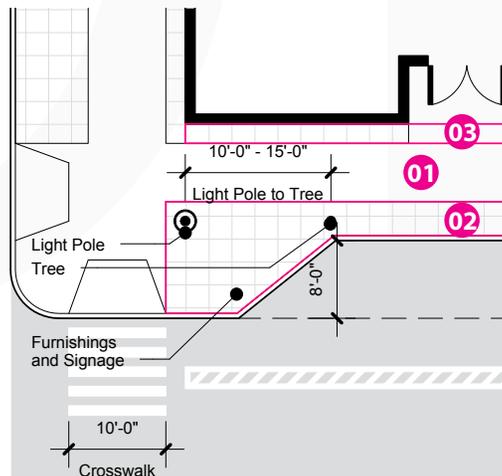


Figure 26:
Plan of sidewalk zones at corner

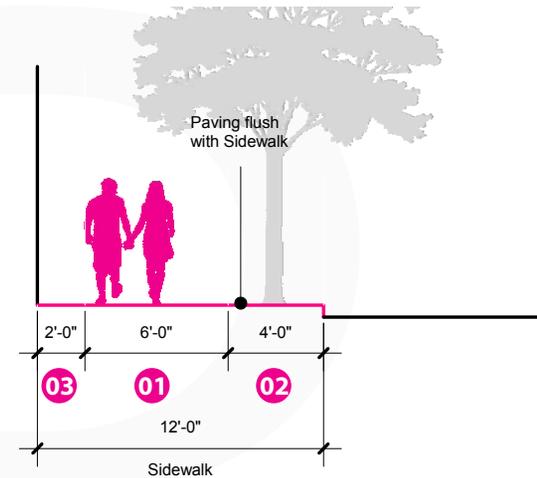


Figure 25:
Sidewalk zones - minimum widths

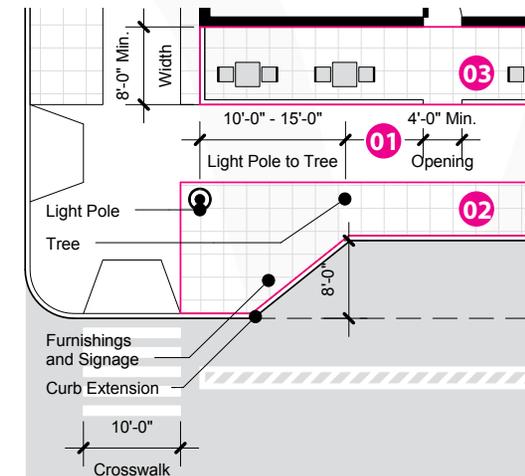


Figure 27:
Plan of sidewalk zones at corner with cafe

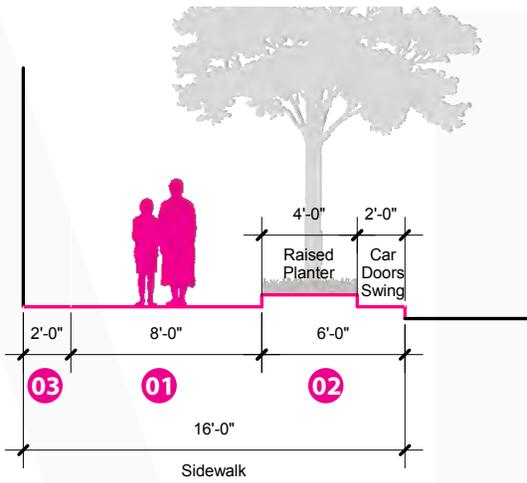


Figure 28:
Sidewalk zones - preferred widths

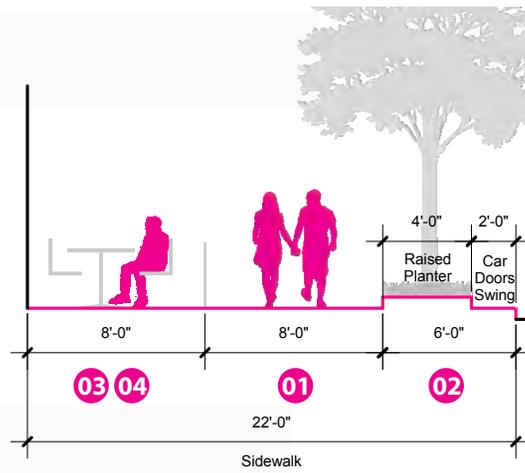


Figure 29:
Sidewalk with expanded frontage zone for sidewalk cafe

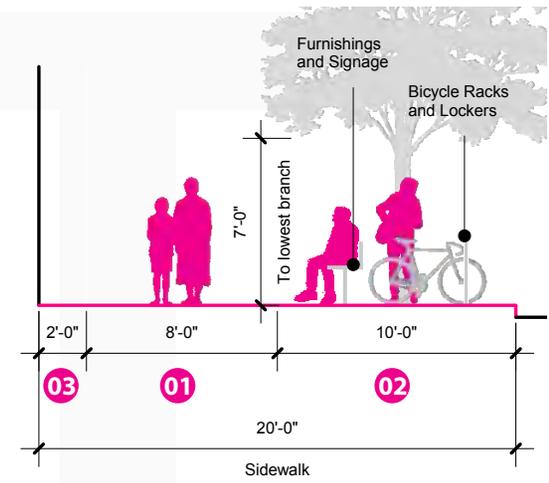


Figure 30:
Sidewalk with expanded amenity zone

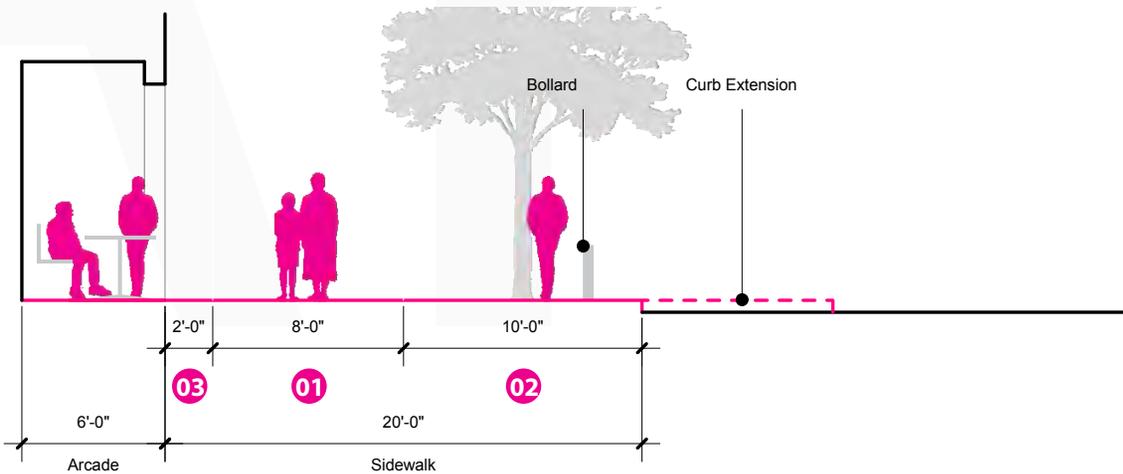


Figure 31:
Sidewalk with arcade space

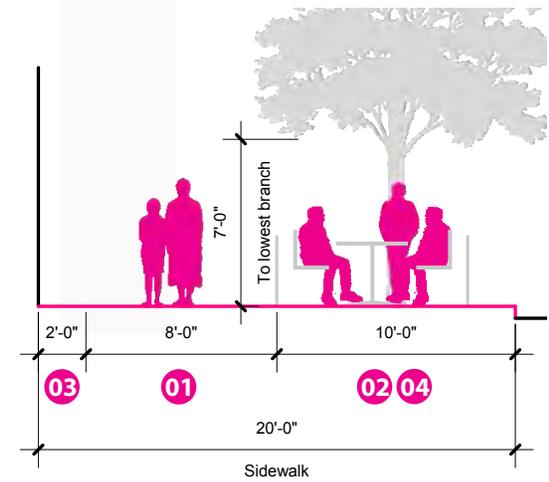


Figure 32:
Sidewalk with expanded amenity zone for sidewalk cafe

Accessibility and Maintenance

- Universal Accessibility — Sidewalks throughout Rochester must accommodate users of all ages and abilities, including wheelchairs, walkers, strollers, etc.
- Winter Conditions — Snow removal and storage are of paramount importance in Rochester. New development should prepare a snow removal strategy plan to be approved by the city. Snow storage must be accommodated off of the Primary Pedestrian Zone and removal from the entire pedestrian zone should follow as soon as feasible but no more than 24 hours.
- Ease of Maintenance — Design of the pedestrian environment should consider ease of snow removal, cleaning, and a cross-slope away from buildings to insure proper drainage (1.5% preferred; 2% maximum).

Accommodating Sidewalk Uses

- Building Frontages and Entrances — Frontages and Entrances should be free of clutter and should not project into the Primary Pedestrian Zone. If a grade change requires ramping, it is preferable to incorporate the ramp within the building footprint if feasible.

If not feasible, ramping should be located parallel to the sidewalk, avoiding projecting into the Pedestrian Zone.

- Adjacent Plazas and Courtyards — Connections between the Primary Pedestrian Zone and adjacent plazas or courtyards should be broad and seamless. Grade changes should be accommodated in a gentle and unobtrusive way and allow for universal accessibility. Stormwater may be introduced into plazas or courtyard where appropriate, as space allows for more opportunities to use softscape for collection and infiltration.
- Sidewalk Cafes — The minimum depth (from building out) is 8 feet. The cafe should not extend beyond the building's frontage in either direction. A minimum 4-foot-wide clear path must be maintained to the front door of the dining establishment. The clear space for the Primary Pedestrian Zone must not be less than 6 feet. In cases where it is impossible to accommodate the cafe adjacent to the building facade, the City may approve locating the outdoor use in the Amenity Zone.
- Driveways and vehicle drop offs— Consolidate and/or eliminate driveways

04

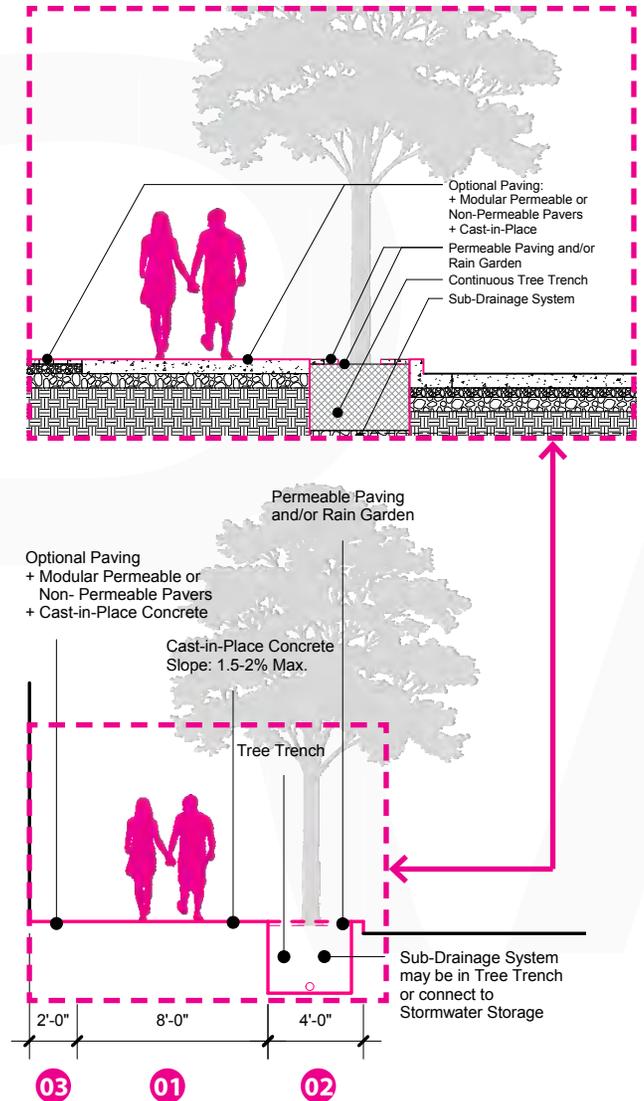


Figure 33: Sidewalk materials and details

in the downtown core in favor of alley service access to optimize pedestrian safety on sidewalks. Auto access to parking structures and other uses should always strive for providing access on streets with light pedestrian use. Where driveways occur, the pedestrian zone should cross at sidewalk level with no disruption to pedestrian movement.

Sidewalk Materials

- 01 • Primary Pedestrian Zone — The Primary Pedestrian Zone should use cast-in-place concrete, with a light gray tint preferred to minimize the impact of glare and stains. The finish should be smooth, stable and slip-resistant. Gaps and rough surfaces are not acceptable.

Additives that do not compromise the surface integrity and smoothness of the concrete, such as lithocrete and stains, are acceptable. Stamped concrete, inlaid pavers, etc., are acceptable if it can be shown that their use will not result in a safety hazard. Scoring should be simple and the scoring module shall be 4 feet or greater, to minimize the bumps for wheelchairs, strollers, etc.

- 02 • Amenity Zone — Permeable paving is recommended in the Amenity Zone, to reduce runoff and promote infiltration in

support of street trees and landscaping. Clay pavers are preferred to concrete pavers due to their superior durability and resistance to color fading. Color selection and installation patterns may vary depending on location and adjacent treatments. The permeable paving system may be located over expanded tree wells, a continuous tree trench or other state-of-the-art technology for street tree installation (such as Silva Cells). (See Guidelines B.6 and B.7)

In numerous Amenity Zone locations, sod or landscaped “boulevards” (also known as “verges”) currently exist and are appropriate into the future. Landscaped boulevards can be depressed to collect storm water from the adjacent sidewalk and promote infiltration while reducing runoff. Plant selection must accommodate periodic inundation if depressed verges are installed.

- 03 • Building Frontage Zone — The Building Frontage Zone can have different paving treatment than the Primary Pedestrian Zone. Similar to the Amenity Zone, it may be landscaped or use permeable pavers. It may also use an alternative hard surface material when used as a sidewalk café.

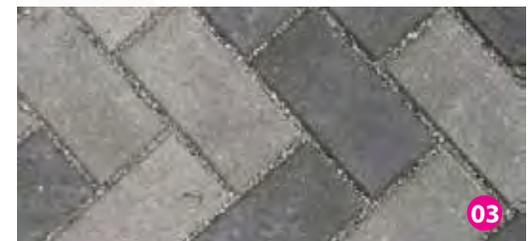


Figure 34: Sidewalk materials

Street Furnishings and Bicycle Accommodations

- Seating — Seating invites pedestrians to relax and linger in the urban environment. Comfortable, durable benches are essential components of the public realm. Select a mix of bench types (some with backs, some with no backs; some with adjacent wheelchair space to accommodate hospital and clinic patients and families). Select materials and designs that do not get too hot in the summer sun or too cold in the winter. Sizes can vary. Orient as allowable space and interesting views suggest.
- Bollards — Bollards are semi-permanent or permanent features and are useful for controlling and separating vehicles from pedestrians and as a way to define discrete areas or zones in a larger space. Bollards should be aesthetically appealing but may need to be removed for the snow removal reason. Bollards may also include lighting to highlight a space at night.
- Trash Receptacles and Recycling Bins — These are important to maintaining a clean and attractive urban area. They should be located in the Amenity Zone and placed where they are accessible for all users but not obtrusive or in the way.

- Bicycle Accommodations — Rochester is committed to increasing bicycle use. Convenient and safe parking for bicycles is an important part of the urban streetscape. Bike parking, bicycle racks and bicycle lockers may all be located in the Amenity Zone. (See Guideline B.2).

Overhead Electrical Wires

- Electrical wires should be placed underground for all major developments and street reconstruction projects.



Figure 35:
Street furnishings

Street Lighting

- **Light Fixtures** — Street lights can enhance the character of the urban environment and facilitate safe movement of pedestrians, bicyclists and motor vehicles. They contribute to a public realm that feels safe and secure. Provide high efficiency pedestrian-scale lighting in keeping with city standards. Apply “dark sky” guidelines (International Dark Sky Association, www.darksky.org). Lighting standards must balance efficiency with quality of light. For example, high-efficiency “blue spectrum” LED fixtures have proven to disrupt sleep cycles in people and other animals. Lower efficiency fixtures are “warmer” in tone and more appropriate for use throughout the city.
- **Siting and Clearances** — Light poles should be located in the Amenity Zone and should not impede the Pedestrian Zone. Coordinate light pole location with landscape, civil engineering, utilities and traffic control plans to ensure that appropriate clearances are maintained and that lighting is not obscured by tree canopies.
- All outdoor street lighting fixture selections must be coordinated with the Department of Public Works.

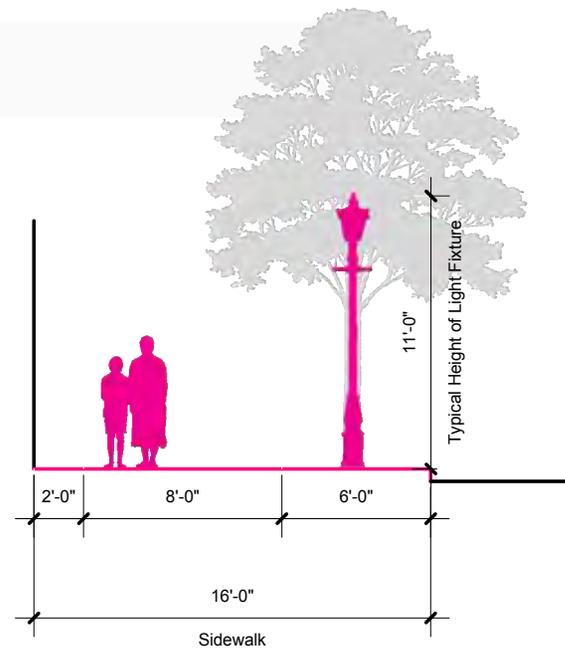


Figure 36:
Pedestrian scale sidewalk lighting

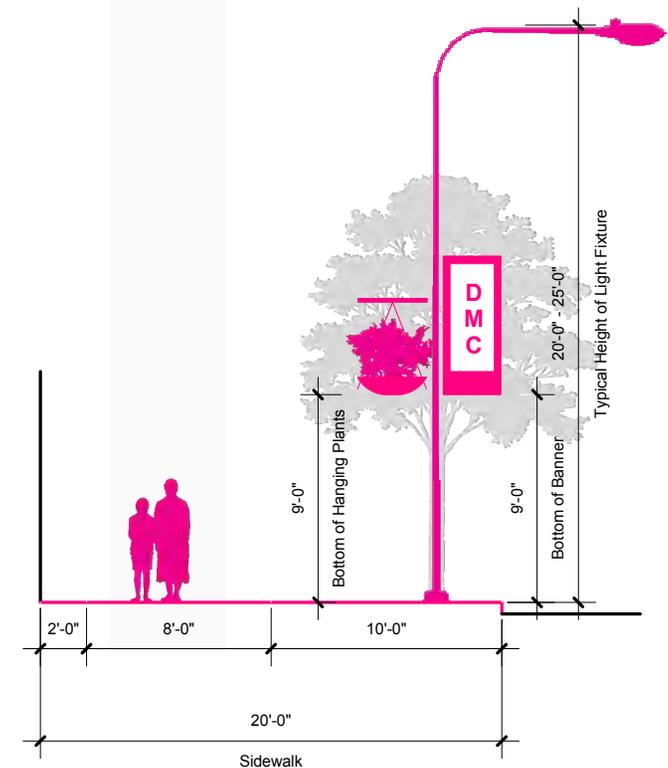


Figure 37:
Street lighting with attachments

Typical Lighting Fixture Dimension and Spacing

Light Fixture	Typical Shaft Height	Typical Spacing	Typical Use
Pendant			
Single	25'	90' to 120'	Boulevards, Parkways, and Neighborhood Connectors
Double	25'	90' to 120'	
Acorn			
Single	11', 13', 16'	50' to 60'	Boulevards, Downtown Commercial, Downtown Mixed-Use, Neighborhood Main, and Shared Streets
Double	11', 13', 16'	75' to 80'	
Contemporary LED			
Road Scale	20' to 25'	200' (minimum)	Boulevards, Neighborhood Connectors, Neighborhood Residential, and Industrial
Pedestrian Scale	11' to 16'	50' to 80'	Downtown Commercial, Downtown Mixed-Use, Neighborhood Main, and Shared Streets

Note: Acorns shaft heights vary: 11' on Residential Street Types in historic districts, 13' in retail districts, and 16' in Boulevards.

Source: *Boston Complete Streets Design Guidelines 2013*.
(Modified version)

Figure 38:
Lighting fixture dimensions and spacing

Guidelines for Lighting Elements

Lamp Type	Color/Tone	Color Rendition	Efficacy (Lumens per Watts)	Application Efficiency	Lamp Life (Years)	Typical Use
LED	White	Good	80	High	10 to 25	All locations with LED compatible fixtures
High Pressure Sodium	Warm Yellow	Fair	108	Medium	4 to 5	General lighting in areas with medium to low nighttime activity
Metal Halide	Cool White	Good	78	Medium	4 to 5	Areas with heavy nighttime activity

Source: Boston Complete Streets Design Guidelines 2013.

Minimum Street Light Siting and Clearances

Minimum Street Light Centerline Clearances

	Spacing
Traffic Light or Tree	15'
Curb Ramp	5'
Fire Hydrant	6'

Minimum Pole Centerline Setbacks from Curb

Sidewalks < 7' Wide	2'
Sidewalks > 7' Wide	2' to 3'

Source: Boston Complete Streets Design Guidelines 2013.

Minimum Street Light Siting and Clearances

Minimum Vertical Clearances for Banners and Hanging Plants

	Spacing
Banner Brackets	15'
Bottom of Banner	9'
Hanging Plant Brackets	13'
Bottom of Hanging Plants	9'

Note: Banners and Hanging Plants must be installed parallel to the roadway. Use only on structurally acceptable poles.

Figure 39: Lighting elements and clearances

B.02

Design Streets for Bicycles

Background

In 2009, the City adopted a “Complete Streets” transportation system strategy. This guideline addresses one of the priorities of the Complete Streets strategy—bicycles. Rochester is committed to increasing bicycle use.

Relation to Goals

A bicycle-friendly environment contributes to meeting the overall goals of creating a healthy city (more biking), and a sustainable city (less driving).

Performance Guideline

Design downtown and urban neighborhood streets with bicycles in mind. Provide cycle tracks and dedicated bicycle lanes wherever possible and shared lanes where space does not allow separate bike lanes. Provide bicycle parking areas, racks and storage lockers. Design the bicycle network to maintain safety for pedestrians and bicycle riders.

Note: The primary bicycle network will not include all streets. Depending on the plan, every street may not need to accommodate bicycles.



Figure 40:
A bicycle lane next to a travel lane demonstrates how multiple modes can share the street.
Toronto, Canada

Design Details

Bicycle Tracks and Lanes

- 05 • Cycle Tracks — Cycle tracks are physically separated from adjacent travel lanes. They are sometimes located at sidewalk level and in other cases they are at roadway level but separated from traffic by a raised median or on-street parking. They are designed for exclusive use by bikes, and are often used on streets with higher traffic volumes. Cycle tracks must be used in combination with adequate separate pedestrian sidewalks and have very limited effectiveness except on streets with few driveways. The minimum width of a one-way cycle track is 5' to 7', and a two-way is 8'. When adjacent to on-street parking, a minimum 2'-3' buffer should be provided between parked cars and the cycle track.
- 06 • Bicycle Lanes — Bicycle lanes provide an exclusive bicycle space using striped lines painted on the street. Sometimes a color (typically green) is added within the stripes to further clarify the exclusive bike zone. The minimal typical width of striped bike lane is 5'. On heavily traveled corridors, bike lanes can be wider, 6' - 7', to enable cyclists to pass one another. Bike lanes can also be buffered with an additional 2'-3' striped separation from moving traffic.

- 07 • Shared Lanes and Priority Shared Lanes (sharrow) — Shared lanes are just that: lanes that allow bikes and cars to mingle. They are used where space does not allow a marked bicycle lane. They are used on roads with speed limits of 35 mph or lower. Sharrow markings are typically located outside of a parked car's door swing. The markings may be supplemented by "Share the Road" signs or "Bicycles May Use Full Lane" signs.

Bicycle Facilities

- Bicycle Parking — Convenient and safe parking for bicycles is an important part of the urban streetscape. Bike parking should be required with all new private development. Consult with the City about numbers and location of parking. Long-term bike parking can be within buildings.
- Bicycle Racks — Bike racks should support the bike in at least two places above the bicycle's center of gravity, provide access for different types of frame sizes and styles, allow easy locking of the frame and at least one wheel, and be easily accessible while meeting all minimum setbacks. Where possible, racks should be located in groups and at a 45-degree angle to the flow of traffic. Locate in proximity of street trees to discourage use of trees for locking bikes. In select areas, a curb extension taking a parking space from the street may

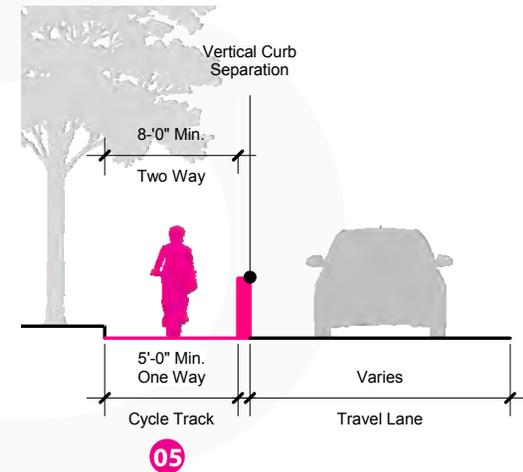


Figure 41: Cycle track next to travel lane

be appropriate. One parking space will accommodate 8-10 bike racks.

Note: In locations where conflicts with snow removal are minimal, racks should be permanently mounded. In locations where conflicts will occur, removable racks should be considered.

- Bicycle Lockers — In key locations along preferred bike routes and at destinations (including multimodal transfer points), bike lockers should be considered to allow bikes additional protection in bad weather and increased safety from vandalism or theft.

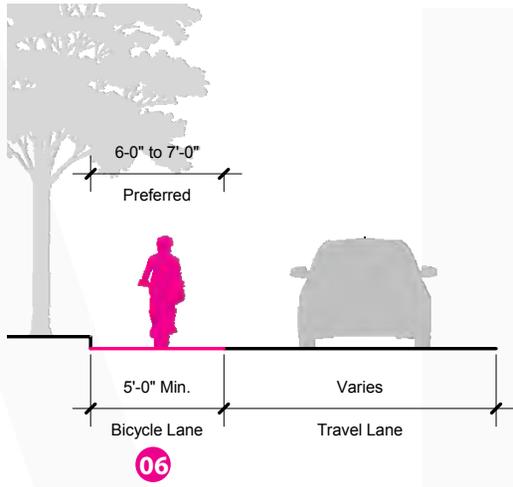


Figure 42:
One-way bicycle lane next to travel lane

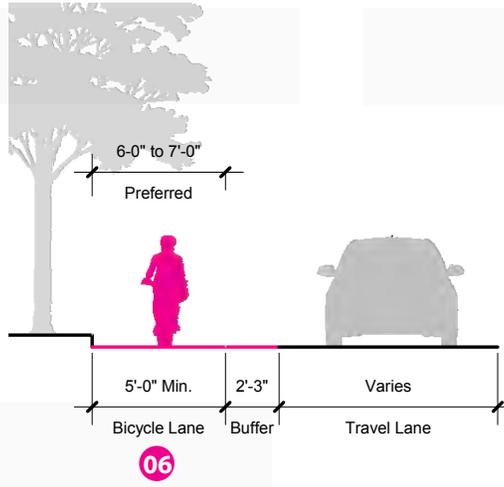


Figure 43:
One-way bicycle lane with buffer next to travel lane

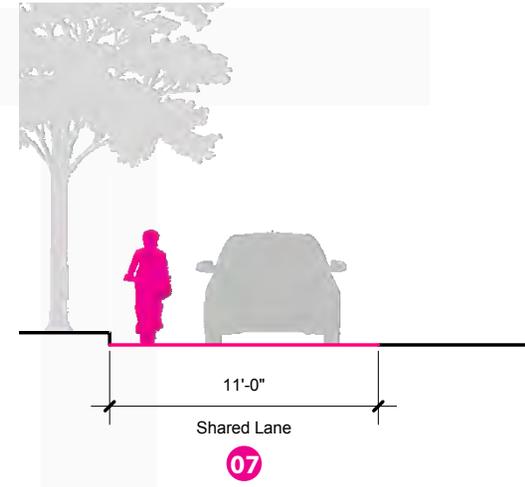
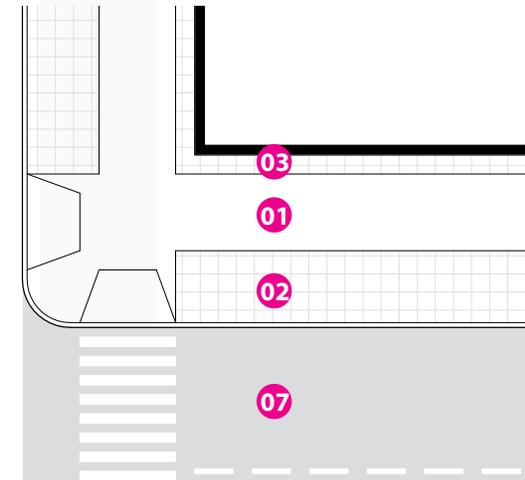
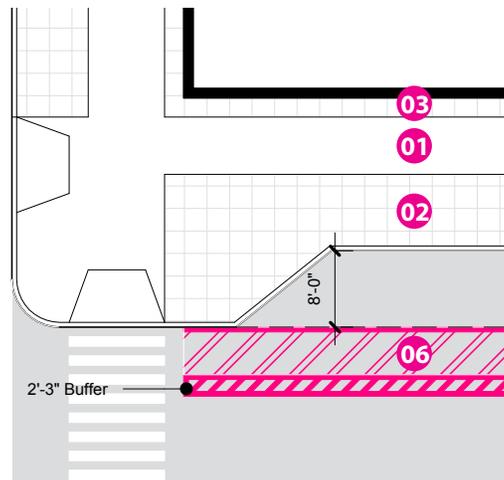
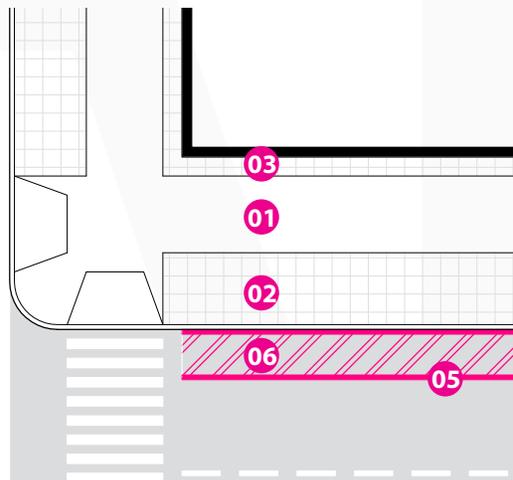


Figure 44:
One-way shared bicycle and travel lanes



B.03

Design Streets for Mass Transit

Background

In 2009, the City adopted a “Complete Streets” transportation system strategy. This guideline addresses one of the priorities of the Complete Streets strategy—mass transit.

Relation to Goals

Providing a convenient and safe mass transit system contributes to meeting the overall goals of creating a healthy city (more walking), and a sustainable city (less driving).

Performance Guideline

Design downtown streets to accommodate mass transit in appropriate locations. Design transit lanes and stops to maximize safety and convenience.

Note: The transit system will not include all streets.



Figure 45:
Modern streetcars in dedicated guideways share the street with cars and parallel parking.
Washington DC

Design Details

Transit Lanes

08

- Improving the frequency, speed, comfort and reliability of transit is critical to supporting growth and encouraging mode shift away from private automobiles.
- Transit lanes are well-suited for arterial roads along corridors with high population densities (residential, business, retail).
- Curbside bus lanes (recommended for Rochester) are typically 11’ wide. They are less expensive, more convenient and easier to install than median bus lanes or dedicated busways. Curbside lanes are sometimes compromised by double-parked and turning vehicles, so enforcement is important.
- Curbside bus lanes should always consider shared use with bicyclists when sufficient width is available; typically 13-15 feet enable buses and bikes to pass one another. The minimum width of a shared bus/bicycle lane is 12 feet.

Transit Stops

- Bus / Streetcar Stops — Transit stops are important building blocks of a successful transit system. If transit users do not feel comfortable and safe, the system will not be used. There must be appropriate space for a bench or leaning rail as

well as ample room for embarking and disembarking. The “landing zone” should be at least 5’ long by 8’ deep. Landing zones that are 8’ x 8’ or 8’ x 10’ should be installed where room allows. They should be free of obstructions (including trees, sign posts and transit stop amenities), and — if the sidewalk is not wide enough — they should be located on a curb extension to provide a gracious space for users. All bus stops must be ADA compliant, and should be safe, convenient, well-lit and clearly visible.

- Bus stops may be located on the far-side of an intersection (bus passes through intersection before stopping), near-side (common location before entering intersection) or mid-block (less often used). They vary in length, design should be coordinated with the City and transit provider. Bus stops are best located at the near-side or far-side of intersections rather than at mid-block locations. At signalized intersections, far-side placement is generally recommended.
- Bus / Streetcar Stop Location — Bus stop locations should be determined on a site-by-site basis and must be approved by Public Works, emergency services and the transit service provider. The minimum space between bus stops is 750’.
- Bus / Streetcar Shelters — Shelters should be located at heavily used transit stops,

and include benches and/or leaning rails. Shelters should be located 4’ from the back of curb, 15’ from crosswalks, 10’ from fire hydrants and apart from the landing zone. Shelters should not obstruct views into and out of windows of retail establishments along the sidewalk. Coordinate location and installation with the bus provider and Public Works.

Transit Prioritization

- Transit prioritization strategies must be approved by Public Works in conjunction with the transit service provider.
- Consider multiple approaches to encouraging use of transit, including: bus only lanes at intersections (to allow a bus to bypass traffic), providing a “queue jump lane,” which gives buses or streetcars a green signal while keeping other vehicles on red for a short period of time (similar to Lead Pedestrian signals), and general signal coordination.

Transit Curb Extensions

- Transit curb extensions should be installed on a case by case basis and must be approved by Public Works and the transit service provider.
- Transit curb extensions are only appropriate on streets where on-street parking is present.

- Curb extensions along the length of a bus stop eliminates the need for buses to pull in and out of traffic. They are also ideal for use with streetcars on fixed tracks.

Off-Bus Fare Collection

- Promote use of “smart cards” or pre-payment systems to speed boarding on buses or streetcars.
- Pre-payment systems are most useful at locations where ridership is high and queuing reduces transit efficiency.

Bus Stop Lengths

Placement	Preferred		Minimum	
	40' Bus	60' Bus	40' Bus	60' Bus
Far - Side	80'	100'	60'	80'
Near - Side	100'	120'	80'	100'
Far - Side, after Left Turn	130'	150'	100'	120'
Mid - Block	130'	150'	100'	120'

Source: Boston Complete Streets Design Guidelines 2013.

Bus Stop Spacing

	Pop. Density/ Square Mile	Distance between Stops
Minimum	--	750'
High	5000' >	750'
Medium	3500' to 5000'	750' to 000'
Low	< 3500'	> 1000' to 1320'
BRT* Route	5000 >	1500'

*Bus Rapid Transit

Source: Boston Complete Streets Design Guidelines 2013.

Figure 46:
Bus stop lengths and spacing

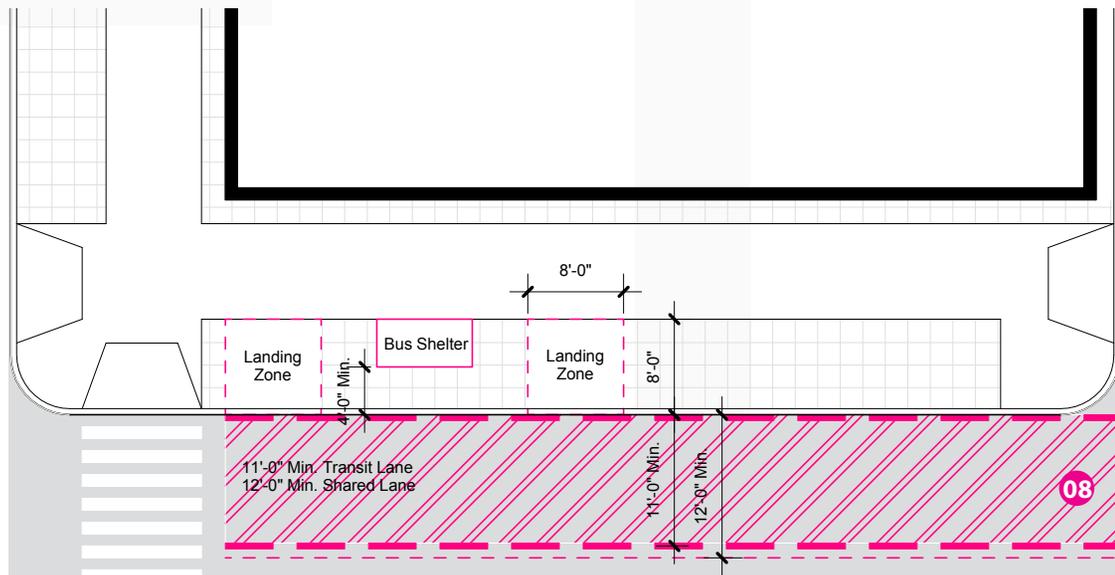


Figure 48:
Plan of mass transit stop area

Figure 47:
Bus stop lengths and spacing

B.04

Design Safe Efficient Roadways

Background

Rochester's roadways must be optimized to balance the needs of pedestrians, bicyclists, transit riders, and motorists. No street should be dominated by cars. Travel and parking lanes should be reduced to the minimum widths necessary to accommodate pedestrians, vehicular traffic (including bicycles) and transit vehicles, as well as on-street parking.

Opportunities will be taken to reallocate excess roadway space once reserved for motor vehicle use to widen sidewalks, install bike facilities, and/or create plazas/public space where possible.

Roadway design should offer people viable transportation choices and should provide safe and convenient accommodations for all modes. Infrastructure for non-motorized transportation should be considered to help reduce single occupancy vehicles, congestion and greenhouse gas emissions.

Relation to Goals

Providing efficient and safe roadways that accommodate pedestrians, bicycles and mass transit contributes to meeting the overall goals of creating a thriving economy, a healthy city, a sustainable city, and a vibrant public realm.

Performance Guideline

Design downtown streets to be safe, convenient and efficient while accommodating pedestrians, bicycles and mass transit.



Figure 49:
Clearly marked roadways help promote safe multimodal roadway design.
Brooklyn NY

Design Details

Roadway Materials

- Roadway materials should be long-lasting, low maintenance and sustainable. Materials should be locally sourced, reused, or recycled whenever possible.
- Roadway design should aim to maximize sustainability to protect Rochester’s environment. Designs should reduce the amount of impervious surfaces to recharge groundwater levels, treat storm water runoff and reduce erosion and water pollution.

Roadway Speeds

Research has borne out the importance of reducing vehicular speeds in pedestrian-friendly urban environments. Streets should operate at speeds that create comfortable environments for pedestrians and bicyclists as well as motor vehicles. Street designs should “calm” traffic and limit the tendency to speed. Design speeds must be appropriate for the Rochester Street Type. Pedestrians and bicyclists are vulnerable in the event of a crash with a motor vehicle. A pedestrian hit by a car going 20 mph has a 95% chance of survival, whereas a pedestrian is hit by a vehicle traveling at 40 mph has a 15% chance of survival.

- Most of Rochester’s streets within the DMC District should be designed to produce an operating speed that does not exceed 25 mph. Shared streets

(such as Main Street/1st St.) should be designed to produce operating speeds that generally do not exceed 15 mph. The same is true for school zones. Neighborhood residential streets should be designed for speeds that do not exceed 20 mph. Larger gateway streets (Civic Center Drive west of Broadway and Broadway south of 6th SW) should be designed for 30 mph design speeds.

Note: State-aid roads are currently posted at 30mph within the city; traffic-calming strategies may be used to slow traffic.

- New streets should be designed to encourage these speeds. Older, retro-fitted streets should include traffic-calming strategies.

Street Widths

See adjacent Table for minimum street widths.

Optimizing use of Street Space

- When a street is reconstructed or resurfaced, the City of Rochester should assess reallocating street space to accommodate pedestrians, bicyclists and transit vehicles. Street reconstruction should also incorporate green elements such as street trees and landscaped areas (See Guideline B.6).
- Where the curbs can be relocated, consider widening of sidewalks and boulevards, installing bicycle facilities,

providing transit lanes (on appropriate streets) and incorporating green street elements.

- Where the curb location cannot be relocated, consider reallocating of uses within the cross-section of the street, including re-stripping the street to accommodate other uses.
- Determine whether roads to be reconstructed or re-surfaced are candidates for “Road Diets,” narrowing the overall cross-section of the street and adding space for wider sidewalks and bicyclists or “Lane Diets,” where lanes that are wider than necessary can be narrowed to capture space for pedestrians and/or bikes.

Traffic Calming Features

- Mid-Block Curb Extensions — Mid-block curb extensions slow traffic by “pinching” traffic on both sides of the street. They are useful on long blocks where motorists tend to pick up speed. They can be combined with mid-block pedestrian crossings. If planted, mid-block curb extensions should use low-growing plants that do not interfere with clear sight lines. In some instances, street trees may also be acceptable in mid-block extensions. They can be used on two-way streets with one lane in each direction and a parking lane on each side, or one-way streets with parking on both sides.

09A

09B

Recommended Widths for Roadway Lanes

Street Types	Bus Lane	Turn Lane	Travel Lane	Bicycle Lane	Parking Lane
Arterial	11'	10'	10'	5'	8'
Collector	N/A	10'	10'	5'	8'
Local*	N/A	N/A	9'	N/A	7'

Note: Local roadways are typically one to two travel lanes, with or without parking, and do not have pavement markings

Source: Boston Complete Streets Design Guidelines 2013.

Figure 50: Minimum widths for roadway lanes

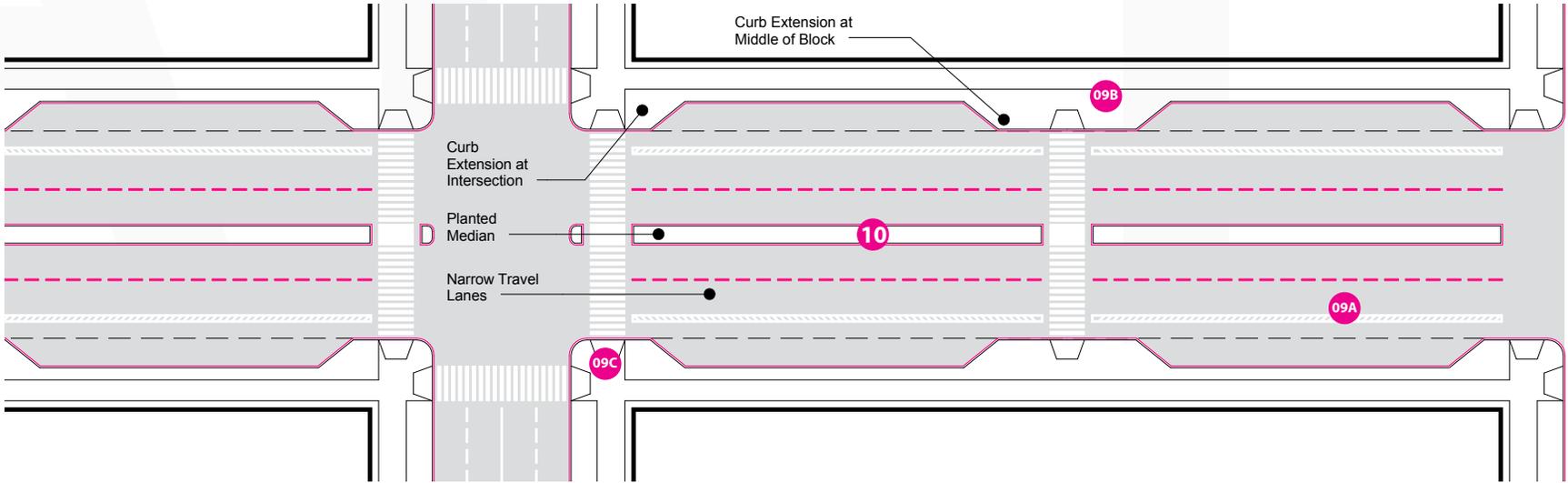


Figure 51: Plan of roadway with traffic calming features

- 09C** • Curb Extensions at Intersections — Corner curb extensions can perform multiple duties: they provide more space for permeable paving, bus stops or shelters, “smart” information kiosks, storm water planters, etc. They can also tighten turning radii and calm traffic, in addition to shortening the distance for pedestrians crossing the street. They should be considered on all streets where feasible in the DMC District.
- 10** • Planted Medians — Planted medians also perform multiple tasks: they narrow the roadway, slowing traffic, and provide pedestrian refuges when crossing the street. In addition they can be planted, adding to the beautification of the street, and designed properly, they can accept water from the street to maximize storm water retention and infiltration. Plantings in center islands should not exceed 3 feet in height, although hardy deciduous trees are usually acceptable. Center planters need to be at least 6 feet wide to provide adequate pedestrian refuge and accommodate low plantings; 10 feet wide for columnar trees and 18 feet wide for large canopy trees.

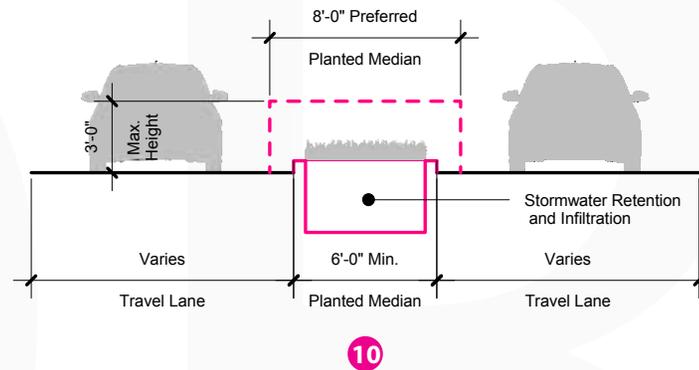


Figure 52: Stormwater management in planted median

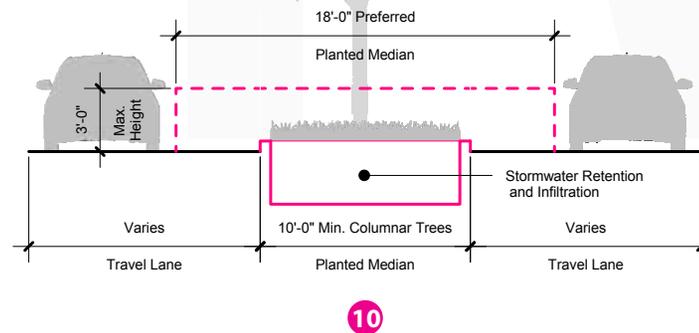


Figure 53: Stormwater management in wider planted median

Rush Hour Restricted Parking

Rush hour restrictions are parking lanes that convert to other uses during peak or rush hour times. Most often, parking lanes are converted to travel lanes. However, a converted parking lane could also be used for high-occupancy vehicle lanes, bus lanes, or bicycle lanes. This type of conversion can dramatically increase roadway capacity when most needed, reducing congestion.

- Peak hour restricted parking lanes should be a minimum of 12 feet wide to accommodate parked cars and bicycles during off-peak times. Also, rush hour restricted parking lanes are not compatible on streets with curb extensions or mid-block neckdowns.

Emergency Access

Emergency access for first responders is a critical consideration of any road network. The City of Rochester Department of Public Works and the police and fire departments must work together to develop a plan for emergency access to and through the DMC District.

- The Rochester Fire Chief shall determine where public and/or private fire lanes shall be located.
- Fire lanes shall be hard-surfaced, all-weather routes with a minimum width of 20 feet and a minimum overhead clearance of 13.5 feet. Designated fire lanes shall have no obstructions or vehicles blocking emergency access.
- Curb extensions should be evaluated to discern if their presence compromises emergency access, turning radii, etc.

B.05

Design Safe Multimodal Intersections

Background

Multimodal intersections are by nature complex places where conflicts often occur. Pedestrians, in particular, need to feel safe at intersections,, especially in and around the Mayo Clinic, where patients and families often move around with wheelchairs. In addition, intersections should be convenient and designed to cause minimum delay when walking through the district.

Creating safe multimodal intersections is essential in order to implement an effective Complete Streets policy that accommodates pedestrians, bicycles, mass transit and cars.

Relation to Goals

Providing efficient and safe intersections that accommodate pedestrians, bicycles and mass transit contributes to meeting the overall goals of creating a thriving economy, a healthy city, a sustainable city, and a vibrant public realm.

Performance Guideline

Design downtown intersections to be safe, convenient and efficient for all modes including pedestrians, bicycles, mass transit and automobiles.



Figure 54:
A well-designed intersection accommodates all users in a complex urban space.
9th Avenue, New York City NY

Design Details

General Intersection Design Principles

- **Universal Accessibility** — Universal accessibility design principles should inform all aspects of intersection design, ranging from geometry to signal timing with a commitment to achieving the best outcome for all users. They should function well during all weather conditions including rain and snow.
- **Ease of Maintenance** — Intersection materials should be long-lasting and sustainable, requiring minimal maintenance. Pavers are not allowed in crosswalks and a clear, accessible path should be provided across intersections.
- **Signalization** — Signal cycle lengths should be coordinated to reduce delay for all users to the extent possible. As technology advances, traffic signalization should evolve toward a smarter, more equitable system that passively detects pedestrians, bicyclists, transit and motor vehicles.
- **Reducing Clutter** — Intersection elements, such as sign and light poles, utility covers, hydrants, traffic control devices, and so on, must be thoughtfully laid out to maximize accessibility and functionality.

- **Reclaiming Space** — Intersections that contain wide, undefined areas of pavement not necessary for the efficient movement of motor vehicles provide opportunities to reclaim street space for pedestrians, transit users, bicyclists and green infrastructure.
- **Balancing User Needs** — Intersections should be rebalanced with pedestrian safety as the prime concern, including access to transit stops or shelters.
- **Stormwater Management** — Green elements should be incorporated to reduce runoff and the amount of impervious surface at intersections.

Intersection Geometry

- **Corners and Curb Radii** — There are two key design considerations when designing corner radii: the effective curb radius and the actual curb radius. The actual curb radius refers to the curve that the curb line makes at the corner, while the effective curb radius refers to the curve that vehicles follow when turning, which may be affected by on-street parking, bicycle lanes, medians and other roadway features.
 - To the extent possible, curb radii should be the smallest viable design. An actual curb radius of 5 to 10 feet should be used where there

are higher pedestrian volumes and lower volumes of large vehicles. The maximum desired effective curb radius is 25' except on major arterial roads and transit corridors.

11B

- **Curb Ramps** — Intersection geometry should be influenced by the following curb ramp design principles: they should reflect a pedestrian's desired path from the sidewalk through the intersection (no diagonal ramps into the intersection should be permitted); curb ramps should be designed to avoid the accumulation of water or debris and should be well-maintained; a level "landing pad" no greater than 2% slope should be provided on the sidewalk; they should include ADA compliant warning strips for the visually impaired; they should contrast in color with the surrounding pavement.

11C

- **Curb Extensions** — A typical curb extension extends the approximate width of a parked car, or 8 feet from the existing curb.
 - The minimum length of a curb extension is the width of the crosswalk, plus the returns at either end.
 - Curb extensions should not reduce a travel lane or bicycle lane to an unsafe width.

Goals of Multimodal Intersection Design

Pedestrian Experience Goals

- Design to lower motor vehicle speeds, including, reducing lane widths, reducing turning radii and using additional traffic-calming measures.
- Reduce potential conflicts by providing more dedicated pedestrian space, shortening crossing distances, improving sight lines and visibility, and providing refuge zones on larger streets.
- Provide universal access by using ADA compliant curb ramps, ADA compliant crosswalks, and signals with countdown systems.

Bicyclist Experience Goals

- Design to lower motor vehicle speeds and calm traffic.
- Reduce conflicts by providing shorter crossing distance and signals that accommodate bike speeds.
- Provide state-of-the-art bicycle safety standards such as buffered lanes, cycle tracks, etc. where appropriate. Also use elements such as bike boxes to promote safety and give bikes priority over motor vehicles.

Transit User Experience Goals

- Design to interface with pedestrian and bicycle modes.
- Reduce conflicts by providing curb extensions at bus stops, and far-side or mid-block transit stops where appropriate.
- Provide smart way-finding signage, transit shelters where appropriate, recycling and trash receptacles, route information with “real-time” information, etc.

Motorist Experience Goals

- Improve safety with better sight lines and visibility, well-lit crossings, clear signage, phase-separated turning movements, etc.
- Keep intersections uncluttered and well-maintained with pedestrian and bicycle zones clearly marked.
- Use responsive signal design to promote a 25 mph maximum speed that allows improved flow.

Source: Based on material from *Boston Complete Streets Design Guidelines 2013*.

- 11D • Crossing Islands — Crossing islands should include at-grade pedestrian refuge zones and be designed to avoid ponding and ensure proper drainage.
 - Pedestrian refuges in crossing islands should be a minimum of 6 feet wide, with 8 feet or more preferred to accommodate pedestrians with wheelchairs, strollers or bicycles.
 - Crossing islands should extend beyond the pedestrian refuge zone.
 - Crossing islands may be planted but planting needs to be 3' tall or less.

11E **Crosswalk Design**

- Standard Crosswalks — Crosswalk design must adhere to City of Rochester Traffic Engineering design criteria.
- Crosswalks should be at least 10 feet wide or the width of the approaching sidewalk, if it is greater. In areas of heavy pedestrian use, crosswalks can be up to 25 feet wide.

Note: Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) lists 6 feet as the minimum width for a crosswalk (see Markings - Part 3 - 3B.18); wider crosswalks are

recommended wherever feasible to give priority to pedestrians throughout the DMC District.

- Crosswalk materials should consist of non-skid, thermoplastic, reflective material. Recess the crosswalk material where feasible.
- Signalized Intersections — Signalized intersections should be timed to promote pedestrian safety and convenience, while promoting a maximum design speed of 25 mph on city streets. This should include employing a Leading Pedestrian Interval, which allows pedestrians to begin crossing an intersection before the light for traffic turns green.
- Pedestrian crossing request signals should be easily accessible and visible, and set safely back from the intersection.

Bicycle Accommodation

- Bicycle Lanes — Standard details for bicycle lane markings are provided in the AASHTO "Bike Guide." Additional guidance can be found in the NACTO Urban Bikeway Design Guide.
 - Dedicated bicycle lanes should be provided on all major intersection approaches where space allows.
 - At intersections with a dedicated right turn lane, bicycle lanes should be provided to the left of the right turn only lane unless bicycle signals and dedicated signal phasing is provided.
 - Shared lane markings may be used where space is not available for bike lanes at intersections.
 - The minimum recommended bicycle lane is 5 feet, although 4-foot lanes may be considered where space is limited.

- 11F
 • **Bicycle Boxes** — Bicycle boxes are placed ahead of stopped traffic at the intersection which improves their visibility and reduces conflict among users. Multiple cyclists can occupy the box at a time.
 - Bike boxes are typically painted green and are a minimum of 13 feet in depth.
- **Cycle Tracks** — Increasing visibility and awareness are two key design goals for cycle tracks at intersections. Parking restrictions between 20' to 40' should be provided at the near and far-side of the intersection.
 - Bicycle signal heads should be considered to give bicycles a dedicated cycle.
 - Cycle track designs may require the transit stop to be relocated to the far-side of the intersection to reduce conflicts.

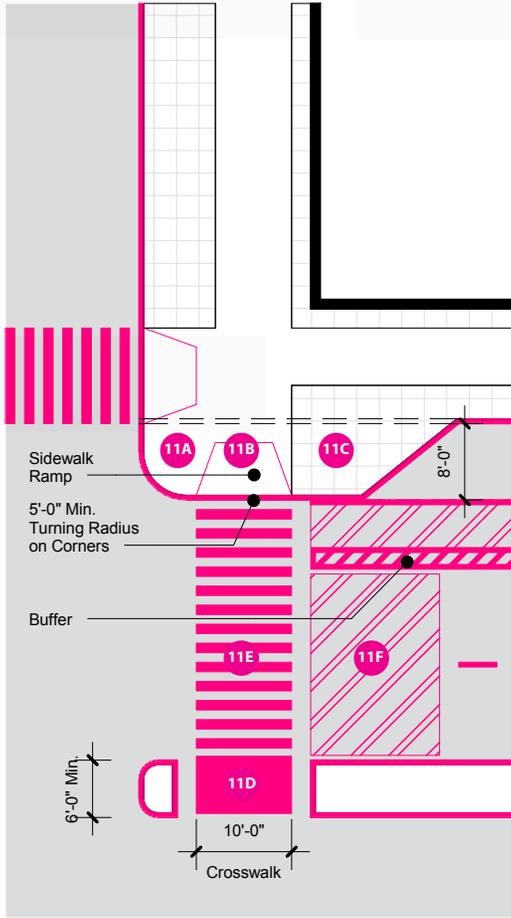


Figure 55: Plan of intersection corner with preferred crosswalk width

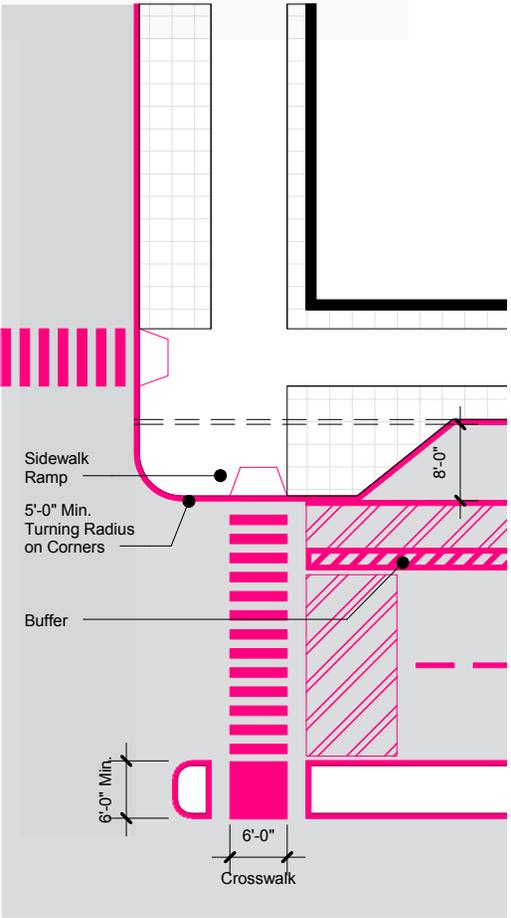


Figure 56: Plan of intersection corner with minimum crosswalk width

B.06

Establish the Urban Forest

Background

The urban tree canopy contributes to the quality of life in the city in multiple ways: it reduces the heat island effect, cleanses air and provides shade in summer, enhances the pedestrian zone and sense of safety from the street, and — if installed with state-of-the-art approaches — provides an excellent cleansing mechanism and reservoir for storm water, which in turn can be used to support the trees themselves.

In addition to the urban tree canopy, there are numerous open spaces, parks and small green spaces that comprise the landscape palette in Rochester. It is recommended a “Natural Spaces Plan” should be created to complement the parks master plan that is currently being developed. The Natural Spaces Plan will guide strategies for improving the ecological integrity of important natural spaces within the DMC District while providing specific information about their care and maintenance.

Relation to Goals

Providing an urban tree canopy addresses the goal of supporting a thriving economy (a more comfortable and inviting downtown), creating a sustainable city (stormwater management, cleaner air, reduction of the urban heat island), promoting a healthy city (a more walkable urban environment) and establishing a more vibrant public realm (more beautiful and safe pedestrian zone).

Performance Guideline

Establish a program to transform downtown with a full and healthy tree canopy. Plant trees along sidewalks and roadway medians as well as public and private open spaces wherever feasible. This should be accomplished incrementally through every private sector development and through City, County and State initiatives when capital improvements for roadway and infrastructure upgrades are implemented.



Figure 58:
Street trees, an essential part of the urban forest, help separate pedestrian movement from traffic and provide a sense of enclosure for the sidewalk. Portland OR



Figure 57:
The urban forest transforms a street in Portland OR



Figure 59:
Advanced planting methods ensure tree survival

Design Details

Streets Trees and Landscaping

- Where feasible, street trees should be included in street reconstruction projects for all street types and for individual development projects. For individual development projects, species selection and locations need to be coordinated with the City Forester.
- Choosing the Appropriate Tree — The space available for a tree canopy varies with conditions throughout the DMC District. Broader canopies are desirable where space allows, while more columnar canopies will be more appropriate in constrained conditions. The City Forester will provide guidance for all development and must be consulted for species selection and location.
- Tree Siting and Spacing — Street trees should strive for continuity along a street while respecting adjacent uses. Typically trees are placed in the Amenity Zone in a pedestrian streetscape. Trees should be held back from the street curb a minimum of 2'-6". They should generally be planted at 20 feet on center for smaller trees, 25 feet on center for medium sized trees and 30 feet on center for large trees. They should be held 10-15' from street lights to avoid interfering with their effectiveness. They should also be held

back at least 8 feet from driveway aprons and 15 feet from intersections. Section should comply with boulevard tree regulations. Where feasible, locate utilities to avoid conflict with tree root systems.

- Root Environment for Trees — For trees to thrive — and not just survive — the root environment must be optimized. This includes avoiding compaction, providing soil interstices to allow air, water and nutrients to reach the root system. Use of structural soils, Silva Cells, or other state-of-the-art technologies is necessary to promote a healthy urban forest canopy. A simple trickle irrigation system and a sub-drainage system (to prevent excess water from filling the trench) should become standard requirements for the City. Coordinate with Parks Department.
- Open Tree Trenches — These include lawn, mulch, landscaping such as ground cover or perennials, with trees planted at the appropriate distances on center. The open tree trench should be flush with the adjacent sidewalk to avoid a tripping hazard or damage from plows. A typical open trench should be 4 feet wide by 3 feet deep, and soils should be protected from compaction to the extent possible (using landscape to discourage pedestrian traffic across the trenches). A minimum of 800 cubic feet of planting

growth area shall be provided per tree. Connected areas may allow a reduction in volume required. Open tree trenches are very beneficial to urban street trees.

- Covered Tree Trenches — These are primarily located in the Amenity Zone, and are covered with permeable clay pavers. They are typically constructed with structural soils, Silva Cells, or other approved state-of-the-art technologies.

They should include trickle irrigation capable of transmitting food to the trees, and a sub-drainage system that will remove excess water from the trench to prevent the tree roots from over-saturation. Where feasible (for example in a major road reconstruction project) water may be directed to city-owned under-street cisterns, where it can be stored for irrigation purposes. Openings in the permeable paving system can be simple framed squares with the tree centered within it. The squares can be expanded as the tree grows and pavers simply removed and stored. Where appropriate, openings can be landscaped rectangular planters with perennial plantings surrounding the tree trunk. If irrigation is not provided, then a minimum of 48 square feet of open surface shall be provided for water infiltration.

- Raised Tree Beds** — In cases where areaways or utilities do not permit in-ground tree or planter installation, large above-grade planters may be used. These planters will typically not allow more than small trees to be installed. Planters need to be durable, insulated to prevent freeze-thaw cycles in winter, preferably sitting height, and generously sized to allow the required soil volume for the specified tree. A vertical tube with a perforated circular ring below the rootball will allow access of water, air and nutrient to the root system. Watering is typically done by hand.
- Expanded Tree Wells** — in lieu of a continuous tree trench (where space, utilities or other circumstances do not allow them), expanded (oversized) tree wells may be used. In these cases, a vertical tube with circular perforated pipe at the base of the rootball will provide a source of water, air and nutrients. Again, watering is typically done by hand.
- Landscaping** — Landscape designs in the public right-of-way must be reviewed by Public Works and Parks and Recreation, and approved by Council. Landscaping in the public right-of-way and on private property shall comply with its visibility standards for safety purposes.

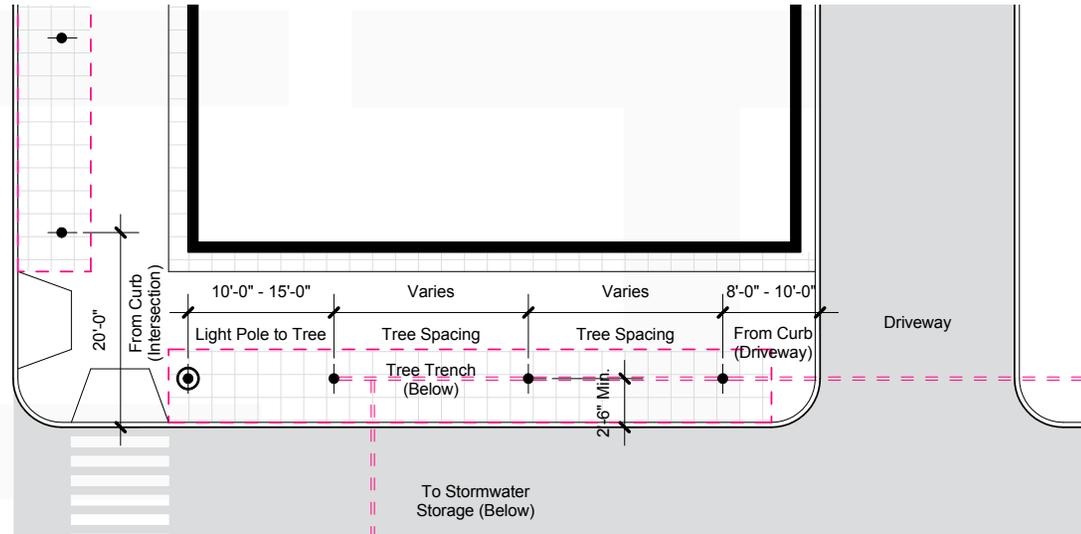


Figure 60: Tree spacing and offsets

Preferred Tree Spacing and Offsets

	Understory/ Ornamental Trees	Medium Sized Canopy Trees	Large Canopy Tree
On-Center Spacing	20'	25'	30'
Offset from Curbs / walk edges	2'-6"	2'-6"	2'-6"
Offset from Street Lights	10-15'	10-15'	10-15'
Offset from Driveways, Hydrants and Loading Zones	8'-10'	8'-10'	8'-10'
Offset from Intersections	20'	20'-40'	20'-40'

Source: *Boston Complete Streets Design Guidelines 2013*.

Notes: These guidelines have been developed for tree spacing and offsets. Where site specific conditions prohibit meeting these guidelines, trees should be considered at the direction of the City of Rochester.

Figure 61: Tree spacing and offsets

Street Tree Species and Heights (recommended by Rochester Forestry Department)

Scientific Name	Common Name	Height	Width
Understory/Ornamental Trees			
Malus snowdrift	Snowdrift Crabapple	15' to 20'	15' to 20'
Syringa areticulate	Japanese Tree Lilac	15' to 20'	12' to 15'
Maackii amurensis	Amur Maackii	12' to 20'	10' to 20'
Amelanchier	Serviceberry	20' to 25'	15'
Acer tataricum	Tatarian Maple	18' to 20'	18' to 20'
Prunus maackii	Amur Cherry	20' to 30'	18' to 25'
Cercis canadensis	Eastern Redbud	20' to 30'	25' to 35'
Medium Sized Canopy Trees			
Aesculus glabra	Ohio Buckeye	20' to 40'	20' to 30'
Cladrastis lutea	Yellowwood	25' to 40'	20' to 35'
Large Canopy Trees			
Gymnocladus dioicus	Kentucky Coffeetree	50' to 70'	30' to 50'
Ulmus Spp.	Accolade Elm, Discovery Elm New Horizon Elm	40' to 60'	20' to 40'
Ginkgo biloba	Autumn Gold Ginkgo, Magyar Ginkgo Princeton Sentry Ginkgo	40' to 60'	20' to 40'
Celtis occidentalis	Hackberry	40' to 60'	30' to 50'
Tilia americana	American Linden spp.	50' to 75'	25' to 40'
Acer x freemani 'Jeffersred'	Autumn Blaze Maple	40' to 70'	30' to 50'
Acer platanoides 'Columnare'	Columnar Norway Maple	40' to 60'	30' to 50'
Quercus macrocarpa	Bur Oak	50' to 80'	40' to 80'
Quercus ellipsoidalis	Northern Pin Oak	50' to 60'	45' to 50'
Quercus bicolor	Swamp White Oak	40' to 60'	30' to 60'
Quercus alba	White Oak	50' to 70'	40' to 80'
Gleditsia triacanthos inermis	Thornless Honeylocust	30' to 70'	30' to 70'

Figure 62:
Recommended tree species



Figure 63:
Japanese Tree Lilac



Figure 64:
Ohio Buckeye



Figure 65:
Magyar Ginkgo



Figure 66:
Serviceberry



Figure 67:
Yellowwood



Figure 68:
White Oak

B.07

Develop Sustainable Water Management Strategies

Background

Management of rainwater is quickly becoming a standard consideration of building and streetscape design. New regulations often require developers, for example, to manage all water that falls on their site within their property lines. Streets, the primary components of the public realm, are logical and efficient places to capture, store, cleanse, infiltrate and potentially reuse rainwater. Systems range from surface rain gardens and bioswales for cleansing and infiltration to subsurface storage and conveyance systems that cleanse and reuse water to support the urban landscape. The realization that water is an increasingly precious commodity has spawned innovative products to enable better management of rainwater.

Relation to Goals

Development of state-of-the-art sustainable water management strategies makes economic sense (reduces infrastructure capital and maintenance costs), supports the City's sustainability goals (rainwater is filtered and reused, returned to the aquifer, or cleansed before reaching storm water outlets along the Zumbro River) and enhances a vibrant public realm (supporting the urban tree canopy and creating beautiful rain gardens along city streets).

Performance Guideline

Manage storm water on site or in a district system using state-of-the-art strategies to reduce runoff, control volumes through detention or retention, cleanse and reuse water. Apply these strategies to all new development projects and public streetscapes.



Figure 69:
Sustainable stormwater management can be educational and engaging.
State College PA



Figure 70:
Stormwater collection becomes whimsical public art.

Design Details

Vegetated Stormwater Management

- Stormwater Planters — Stormwater planters are the preferred option for water management where space is limited and the conditions more urban. They should be integrated into the overall design of the sidewalk Amenity Zone and must be approved by Public Works. They can accommodate stormwater from the sidewalk, and in some cases, the street. Plantings need to be hardy in the urban environment, and if street runoff is directed into them, salt tolerant.

- 12 • Rain Gardens — Rain gardens are an excellent option where space allows and there is more contiguous green space. Typically a depression in the private domain, rain gardens should also be designed to appropriately reflect the surrounding landscape and should use plants that are drought tolerant as well as capable of handling brief periods of inundation.

- 13 • Stormwater Management — The “Amenity Zone” should include permeable paving over a continuous tree trench or expanded tree wells to promote infiltration and help sustain healthy plant life. Connections to city-owned cisterns

beneath the street should be considered when streets are reconstructed, with water used to support the urban landscape.

Note: To be effective, these strategies need to be specially designed to respond to the soils types of a given site. In general, Rochester is characterized by poorly drained soils, which limits infiltration as a stormwater management technique. Filtration, short-term and long-term storage and reuse of water may be the preferred approaches.



Figure 71: Sustainable stormwater management as public art



Figure 72: Stormwater planter in an urban condition

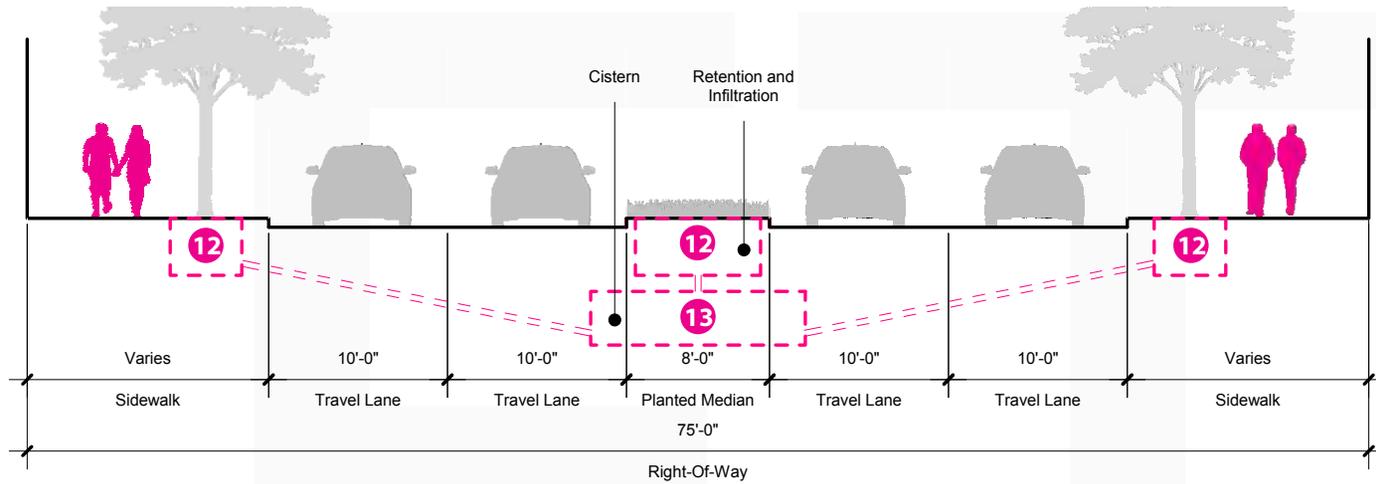


Figure 73:
Cistern for stormwater management under roadway median

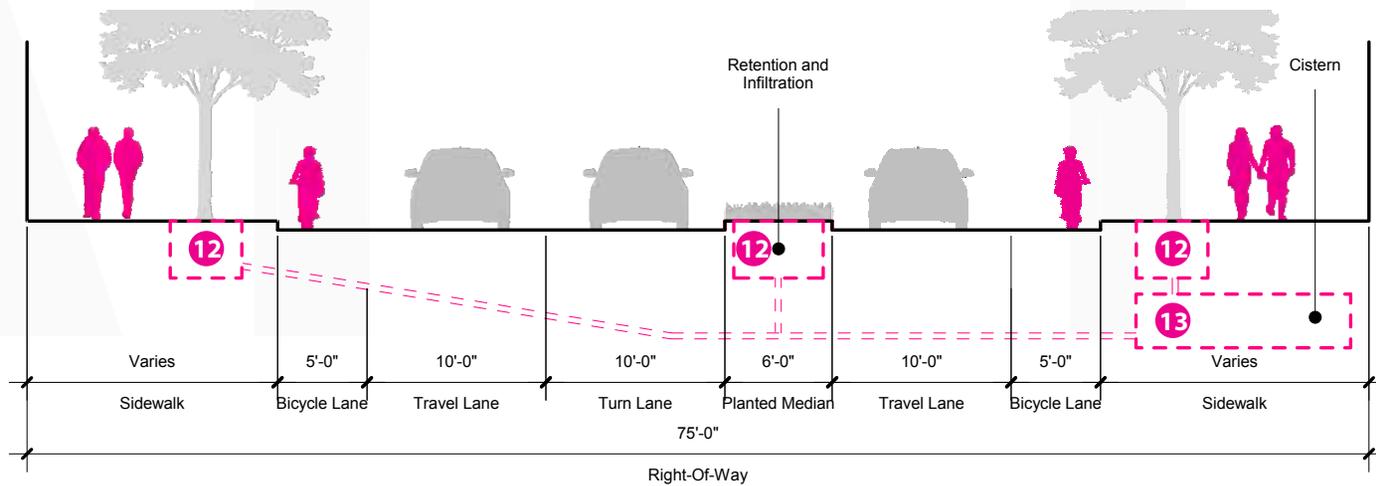


Figure 74:
Cistern for stormwater management under sidewalk zone

B.08

Design Smart Streets

Background

Rapidly changing technology is transforming the way we live in countless ways. Among them is the emerging application of web-based technologies to street design; “smart” parking meters, real-time information regarding available parking or transit, user-friendly strategies to facilitate access to car and bike-share systems, clean energy production to power the systems — these new concepts create a much cleaner and more efficient city, and result in a more user-friendly downtown with less congestion and reduced greenhouse gases. They also support an effective system of orientation and wayfinding for visitors. A modern, forward-thinking city like Rochester should be a leader in the application of state-of-the-art technologies.

Relation to Goals

Smart streets will make Rochester more visitor-friendly, encouraging more active use of the downtown (supporting a thriving economy), will improve air quality and efficiency (creating a sustainable city), and promote more walking and use of transit and non-motorized vehicles (promoting a healthy city).

Performance Guideline

For both private development and public improvements, provide the infrastructure to allow for easy installation of state-of-the-art curbside technologies as they become available.



Figure 75:
Solar-powered smart meter in Ann Arbor MI



Figure 76:
Electric car-sharing vehicles charging in Berlin, Germany



Figure 77:
Nice Ride has become an integral part of the transportation network using state-of-the-art technologies.
Twin Cities MN

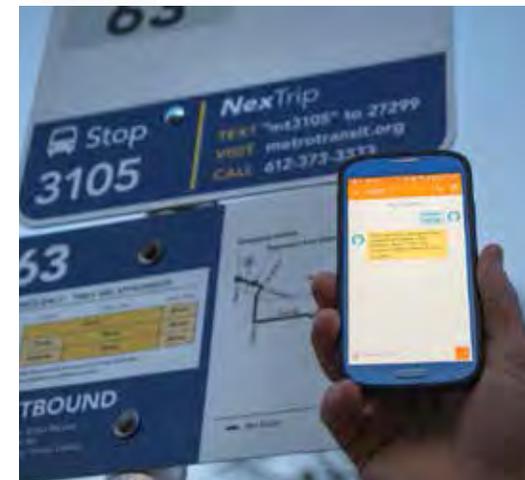


Figure 78:
Smartphone apps give users access to real time information about routes and schedules.

Design Details

Smart Curbside Principles

- **Universal Access** — Access to curbside facilities should be available to people of all ages and abilities during all weather conditions.
- **Shared Space** — The use of curbside space should be distributed equitably to support the needs of all users, and should encourage alternative modes of transportation such as bicycling, scooters and electric vehicles.
- **Green Space** — Temporary or permanent green space can share curbside spaces, such as seasonal plantings, parklets, and storm water planters.
- **Clean Energy Production** — Electric grids that power curbside facilities should be linked with clean, renewable energy sources, particularly solar and wind.
- **Green Parking** — Parking for environmentally-friendly vehicles such as bicycles and electric vehicles should be provided at or in close proximity to Smart Curbside locations.
- **Connectivity** — Proximity to transit and connectivity between modes should be considered in these locations.

- **Virtual Information** — The experience of walking, wayfinding, shopping, and exploring the City of Rochester should be enriched with local information available through apps, interactive displays, and links to social networks.

Mobility Hubs

- **Mobility Hubs** are centers of activity that bring together alternative transportation choices, virtual trip-planning, and placemaking at select curbside locations. As Rochester experiences dramatic growth over the next decades, these hubs will become an important part of the overall network of movement.
- Alternative transportation choices such as bus, streetcar, electric vehicle charging stations, and bicycle and car-sharing parking sites should be located at mobility hubs.
- Locating real-time global positioning systems (GPS) at hubs will facilitate trip-planning as well as access and connectivity to alternative travel modes.
- Placemaking should also be enhanced at hubs, to create safe, comfortable and convenient streetscapes where people are encouraged to linger and use the new technologies.

Information Infrastructure

- New technologies are revolutionizing the way we live. State-of-the-art systems should be integrated into street construction projects to put Rochester at the forefront of innovative approaches to managing traffic flow, parking, wayfinding, etc. At the very least, infrastructure supporting these technologies should be installed to allow them to be added later.

Smart Meters and Multi-Space Meters

- These meters use kiosks that accept credit and debit cards, and in some cases bills and coins. The kiosks may be solar powered. Smart meters can be configured to allow payment with credit cards or smartphones, and are extremely convenient for parking monitors and users alike, allowing users to add meter time from remote locations and monitors to see where users have over-extended their paid time.

Digital Tags and Information Panels

- Digital tags and information panels add value to city streets by providing links to day-to-day practical information, walking and bicycling routes with times to nearby destinations, and bike-share and car-share availability. They can also inform visitors about the City's history and cultural heritage.

These facilities are best located in public places, but should never obstruct the Pedestrian Zone.

These facilities should be ADA accessible and located in easy to find places such as transit stops or mobility hubs.

Intelligent Systems

- New technologies should be incorporated into every street reconstruction project to accommodate state-of-the-art parking and information dispersal. Individual development projects should provide the necessary infrastructure (conduits, sleeves, power, etc) to allow retro-fitting of the public realm as new technologies are incorporated into the Rochester City standards.
- Roadway elements (signs, lighting, utility covers, etc) — should be integrated into the overall street design to maximize accessibility and improve functionality. Signs should be positioned to reduce clutter and maintenance. Pedestrian movement must not be compromised.
- Employ state-of-the-art smart systems to improve roadway safety and efficiency as roads are reconstructed, including sensors to monitor operations, traffic conditions, modal counts, signal timing, etc.
- Wayfinding should be incorporated into all roadways as feasible, for all users. Walking, bicycling and motor vehicle routes should be clearly signed and incorporate smart technologies wherever feasible.
- Wayfinding information and signage systems should be in multiple languages and address needs of blind, deaf and disabled users.

B.09

Design Streets with Flexibility and Adaptability for Future Uses

Background

There are a number of factors that support the concept of creating flexible and adaptable streets. In addition to the desire to create Complete Streets, communities like Rochester have regularly closed streets for festivals, celebrations and parades. “Thursdays on First” is an excellent example of how a street can play multiple roles. The design of the street itself can help accommodate this sort of adaptability. The Downtown Rochester Master Plan proposes a convertible street along the waterfront, for example, that becomes an urban promenade, partially or completely closed to traffic. This flexibility can be enhanced by street design features including the elimination of conventional curbs and gutters.

Future technologies also promise to change the way we think about and design streets. Autonomous (driverless) cars, increased use of services like Uber and Lyft — these technologies have the potential to dramatically reduce the number of cars on the road and the need for both on-street parking and parking structures to store them. Streets might narrow, for example, with reduced lanes and lane widths. Parking structures might convert to other uses.

Relation to Goals

Flexible and adaptable streets support the goal of having a thriving economy (they can change to accommodate special events, new uses and technologies), sustainability (improved water management, thriving tree canopy), promoting a healthy city (improved walkability and universal accessibility), and a vibrant public realm (additional landscaping, more interesting pavement design, calmer traffic flow).

Performance Guideline

In designated locations, when streets are upgraded, design them to be flexible to accommodate a variety of programmed uses (short-term closures — partial or full) and adaptable to accommodate changes in use over time (reduced car use, allowing narrowing or elimination of lanes).



Figure 79:

Innovative street design can promote flexibility and adaptability, better accommodating many possible uses, Eugene OR



Figure 82:

Pocket parks can be developed in former parking spaces, enlarging and enlivening the sidewalk. San Francisco CA



Figure 80:

Food trucks can add vitality to the city street. Bell Street Woonerf, Seattle WA



Figure 81:

Programmed events, like Thursdays on First, demonstrate how a street can become an active urban plaza. Rochester MN

Design Details

General

- For designated streets, encourage innovative design strategies, including elimination of standard curb and gutter, to better facilitate temporary closures for programmed events.
- When reconstructing streets, consider the potential for asymmetrical cross-sections if lanes are eliminated, to better accommodate pedestrians and bicycles in the right of way.

Alternate Curbside Uses

Design with the following alternate curbside uses in mind.

- Accessible Parking — Accessible parking must be smooth, stable and slip-resistant, and not exceed a 2% slope in any direction.
 - Accessible parking spaces should be located as close to accessible entrances as possible.
 - Signs for these spaces should be located as close to the head of the parking space as possible.
- Scooter and Motorcycle Parking — An average 20-foot parking space can be

subdivide into four 5-foot spaces to accommodate scooters and motorcycles.

- Preferred locations are at the ends of the block rather than between two regular parking stalls.
- Bike-Share Stations (Nice Ride) — Bike-sharing is a convenient new addition to a city’s network for movement.
 - Stations should maintain a 6-foot clear pedestrian path.
 - Locate stations at logical spots, such as mobility hubs.
 - Avoid obstructing utilities, fire hydrants, or other street furniture.
- On-Street Bicycle Parking — If a sidewalk amenity zone is not large enough to handle bike racks, consider converting a single parking space into temporary or permanent bicycle parking; one parking space can accommodate between 10 and 14 bicycles (5-7 bike racks).
 - Bike racks should be permanently anchored to the street or sidewalk.
 - Bike racks should be designed and installed as part of every street reconstruction project.

- Parklets (temporary or permanent) — A parklet is the conversion of one or more on-street parking spaces into a temporary or permanent extension of the sidewalk. They are typically installed where sidewalks are too narrow to accommodate sidewalk activity. They can include benches, tables and chairs, greenscape, bicycle parking and art.
 - Parklets should be safe, practical, and flush with adjoining sidewalks. They must be fully accessible.
 - Parklets cannot exceed the dimension of the parking space. They must provide a minimum 4’ wide buffer at either end to facilitate cars moving into and out of spaces.
 - Proposed parklets must be approved and coordinated with the City of Rochester’s Public Works Department.
- Food Trucks — Food trucks are becoming a common fixture in many cities. They add to the vibrancy of the street and provide inexpensive alternatives to eating in restaurants.
 - Food trucks need to be approved by the City.

- Food trucks should be located with enough sidewalk space to allow access without obstructing the Primary Pedestrian Zone.
- Food trucks need to be located to not impede pedestrian and vehicular access, emergency vehicles.

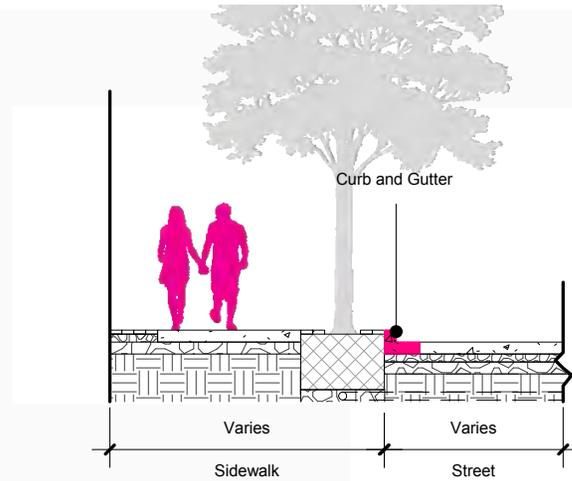


Figure 83:
Typical curb and gutter at roadway edge

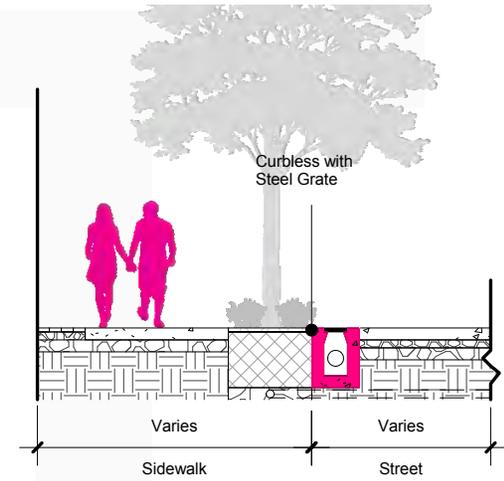


Figure 84:
Curbless design at roadway edge

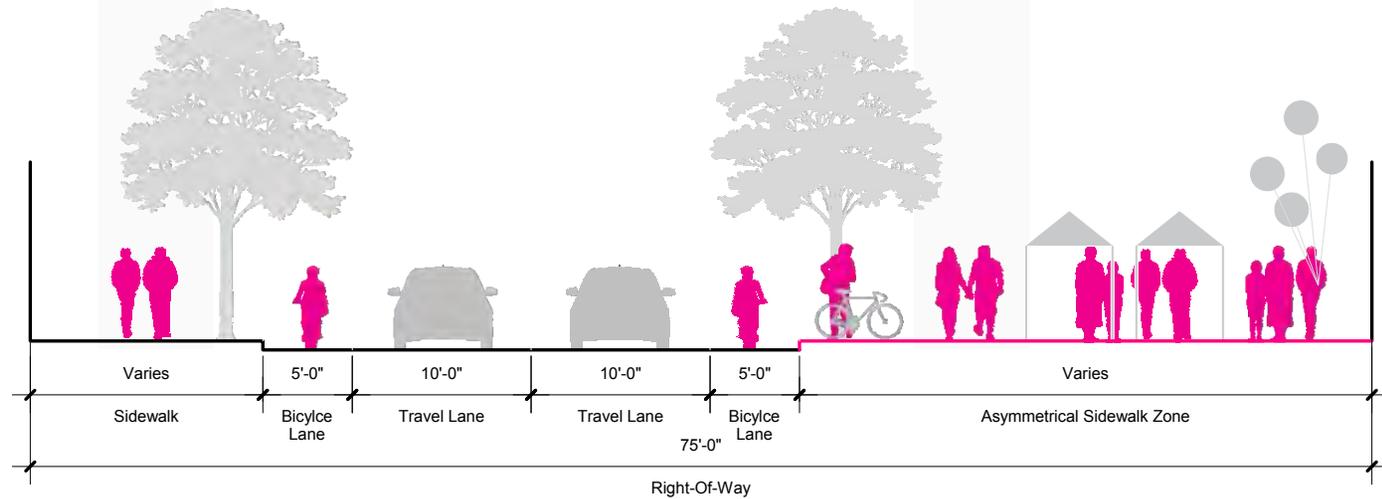


Figure 85:
Asymmetrical sidewalks provide space for pedestrian-oriented activities.

B.10

Connect Street, Skyway, Subway Levels

Background

Rochester has three discrete pedestrian movement systems downtown — street level, skyway level and subway (tunnel) level. The subway level was developed for the convenience of patients, staff and families of the Mayo Clinic, although it is available for others to use. The skyway system reaches farther into the downtown, linking business, civic uses, and parking decks, allowing users to enjoy the benefits of weather protection year round.

Street level activity is diminished by having redundant movement systems; to maintain a vibrant street life, the city must promote active uses along the street throughout downtown and encourage people to be there. The Downtown Rochester Master Plan and other planning documents have addressed the importance of linking the three systems in a highly visible and accessible way to facilitate pedestrian movement from one system to another. This is an important goal that will improve visual and physical connections to the street. A skyway master plan and design review committee are recommended. As stated in Guideline A.01, “To maintain visual connections, discourage buildings from locating over or across a public street or alley.”

Relation to Goals

Connecting the three pedestrian movement systems will contribute to improving the city economically (supporting businesses at all levels), creating a healthier city (improving overall walkability), and a vibrant public realm (bringing people to the street to activate the truly public spaces downtown).

Performance Guideline

Strengthen connections between skyways, subways and the street level to improve the functionality and accessibility of all three pedestrian movement systems. Provide daylight and visual connections as well as wayfinding information.



Figure 86:
Externalizing vertical connections and making them highly visible will improve connectivity between the skyway, subway and street.
Deutsches Historisches Museum, Berlin, Germany

Design Details

- Locate vertical connections in visible, logical and intuitive places such as street corners or major building entrances.
- Develop multiple strategies to connect movement systems, including opening larger, active spaces (such as the proposed ice rink in the DMC plan) to link the subway level with street-level, by externalizing vertical connections in glass-enclosed towers or by locating them in public lobbies.
- Further identify locations of vertical connections with a shared wayfinding system.
- Infill gaps in the existing system and minimize expanding the system beyond the core of downtown.
- Design all three pedestrian movement systems and their connections to be accessible.
- Place skyways on the building perimeter where appropriate to enhance visual connection to the street.
- Require private property owners to incorporate and strengthen pedestrian movement systems in their projects.
- Design skyways to be perpendicular to adjoining buildings. Skyway angles over 10 degrees from the perpendicular are discouraged.

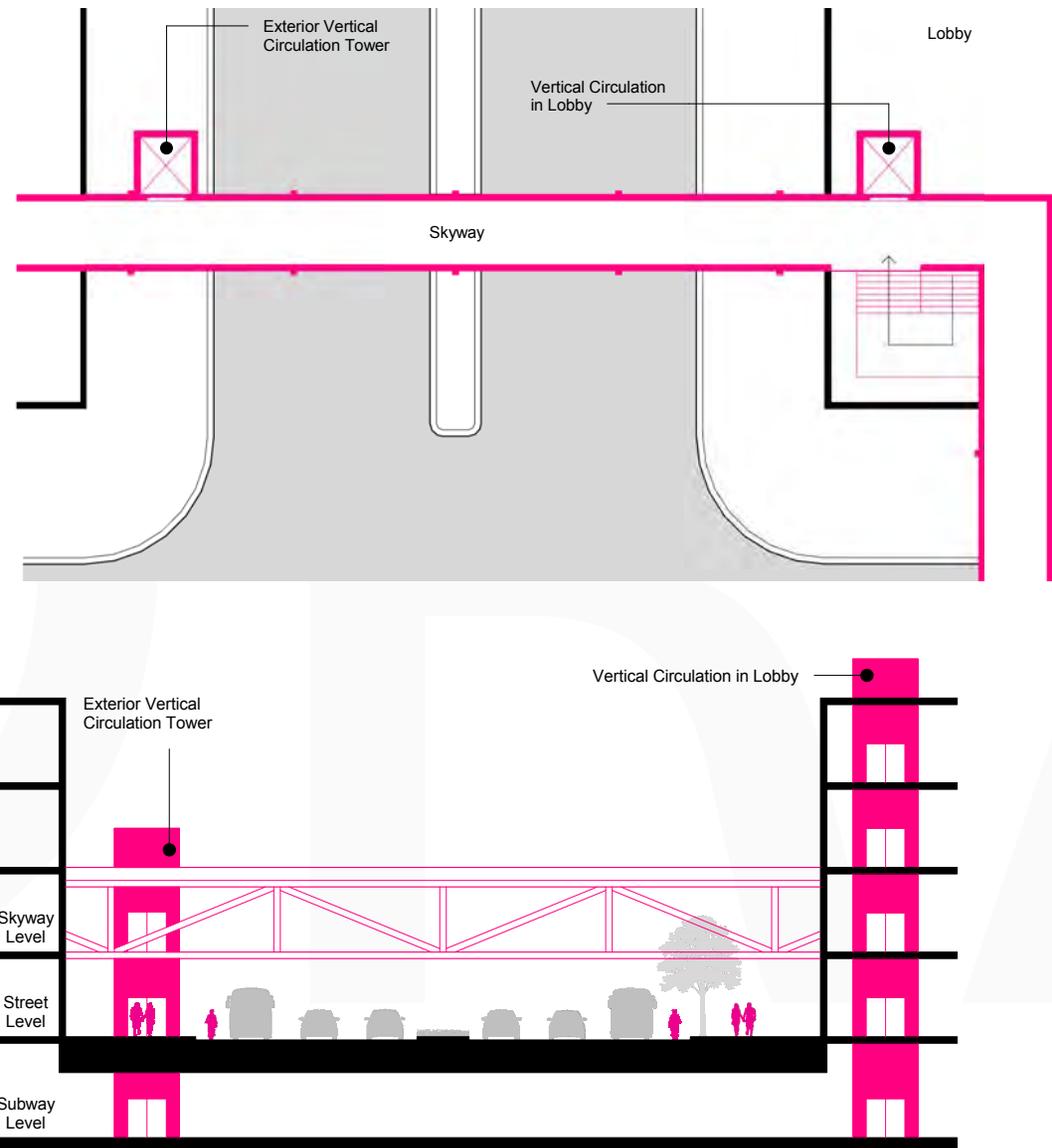


Figure 87: Plan and section of visible connection between levels in exterior tower and building lobby

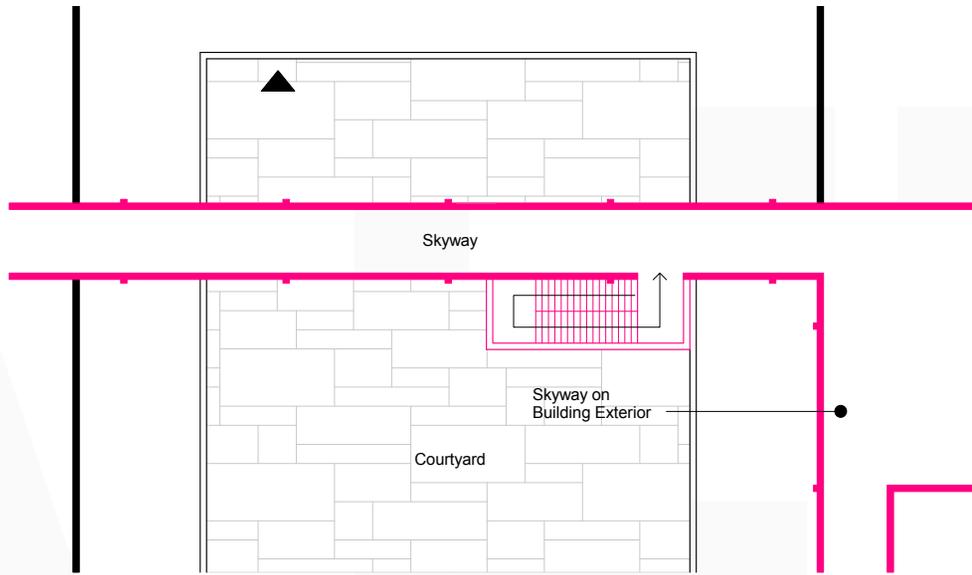


Figure 89:
Vertical connection at High Line, New York City NY

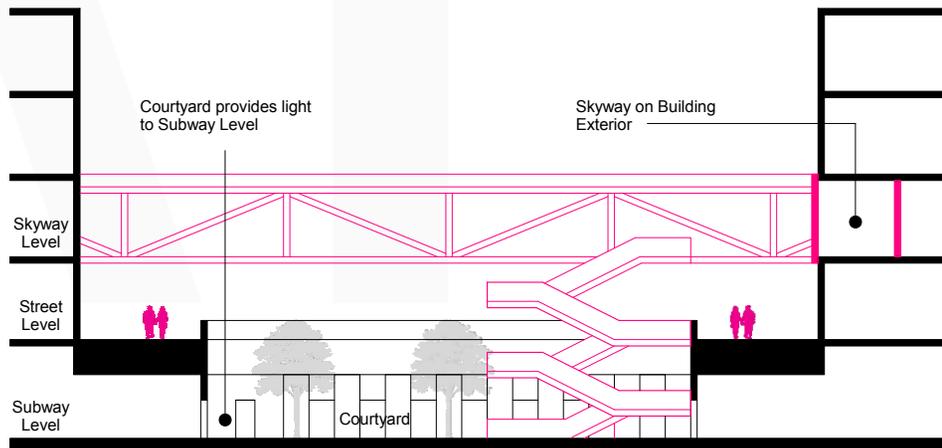


Figure 88:
Plan and section of sunken courtyard provides visual connection and daylight to subway level



Figure 90:
Vertical connection within building lobby
Minneapolis MN

B.11

Types of Streets and Corridors

For the purposes of these guidelines, four street types defined in the 2010 Downtown Rochester Master Plan (DRMP) are being used. In addition, three additional types are included.

- 01 Primary Traffic Street
- 02 Secondary Traffic Street
- 03 Main Street / Destination Street
- 04 Transit Mobility Street
- 05 Alleys and Lanes
- 06 Dedicated Pedestrian and Bicycle Corridors
- 07 Special Streets

The DRMP Report says the following about downtown streets purpose and character:

To promote planned growth in travel, Rochester will need to make more efficient use of current street space. In short, this means carrying more people in high-occupancy vehicles, such as transit and shuttles, and encouraging travel by foot and bicycle where possible. Like most cities, Rochester has largely designed and managed streets for private vehicle circulation and access to parking. Proposed Master Plan street types (which are not intended to replace the City's functional classifications) set priorities for movement of people, not just vehicles, and ensures that transit, cyclists and pedestrians are all provided safe and convenient access to and circulation through downtown.

While the nomenclature and definitions of Rochester's existing and proposed street types — and recommendations for which streets should include transit — vary from the DMC Plan to the Urban Village Overlay Zone to the DRMP Report, the basic thesis is the same: create a balanced system that accommodates all modes of movement. Provide a more vibrant, spacious, attractive place for people to move, gather, shop and interact. Make more Complete Streets. The following pages illustrate the application of the Complete Streets guidelines to different street types.

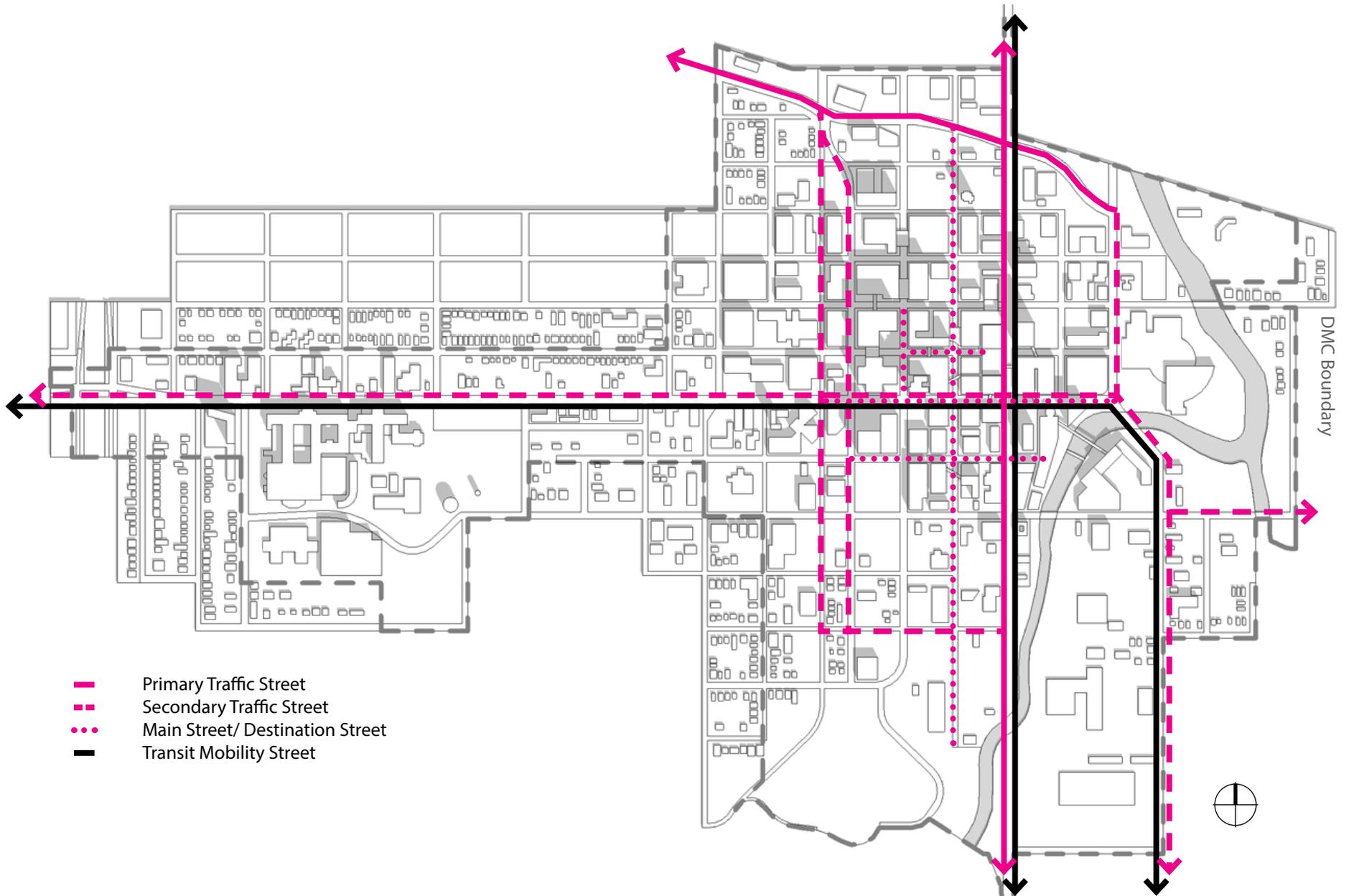


Figure 91:
Map of street types in downtown Rochester (from RDMP)

Type 01

Primary Traffic Street

Background

The main function of a Primary Traffic Street is to efficiently move motor vehicles into and out of downtown, but they must also accommodate safe pedestrian use on sidewalks. Primary Traffic Streets typically have larger rights-of-way (100 feet or more), allowing them to include more modes of movement.

Examples include:

- Civic Center Drive (from Highway 52 to Broadway)
- Broadway Avenue

Recommendations

Recognizing the important role that Primary Traffic Streets play in providing efficient and safe access into and out of Rochester for motorized vehicles, they should also incorporate ample space for pedestrians and bicycles. As the city continues to grow and the use of alternative modes of movement increases, these non-motorized corridors will become more important. (See B.1 and B.2)

As transit expands its role in Rochester, Primary Traffic Streets may become important routes for buses and circulators. Safe and efficient curbside facilities should be integrated into streetscape design. (See B.3)

Lane widths should be narrowed if feasible, acknowledging that these streets move high volumes of traffic at certain times of day. “Flexible lanes” — where parallel on-street parking is allowed during off-peak hours — should be explored for both convenience and traffic-calming reasons. Curb extensions and medians should also be considered to improve the pedestrian experience. (See B.4 and B.5)

Street trees should be incorporated into street improvements (including private development along them) and rain gardens should also be considered where space and conditions allow.



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

Figure 92:
Primary traffic street

Type 02

Secondary Traffic Street

Background

A Secondary Traffic Street serves an important function for motor vehicles accessing downtown destinations and parking facilities, but auto movement must be balanced with other priorities. These streets typically have a 75-foot right-of-way.

Examples include:

- 2nd Street SW and SE
- 3rd and 4th Avenues
- Civic Center Drive SE
- 3rd Avenue SE

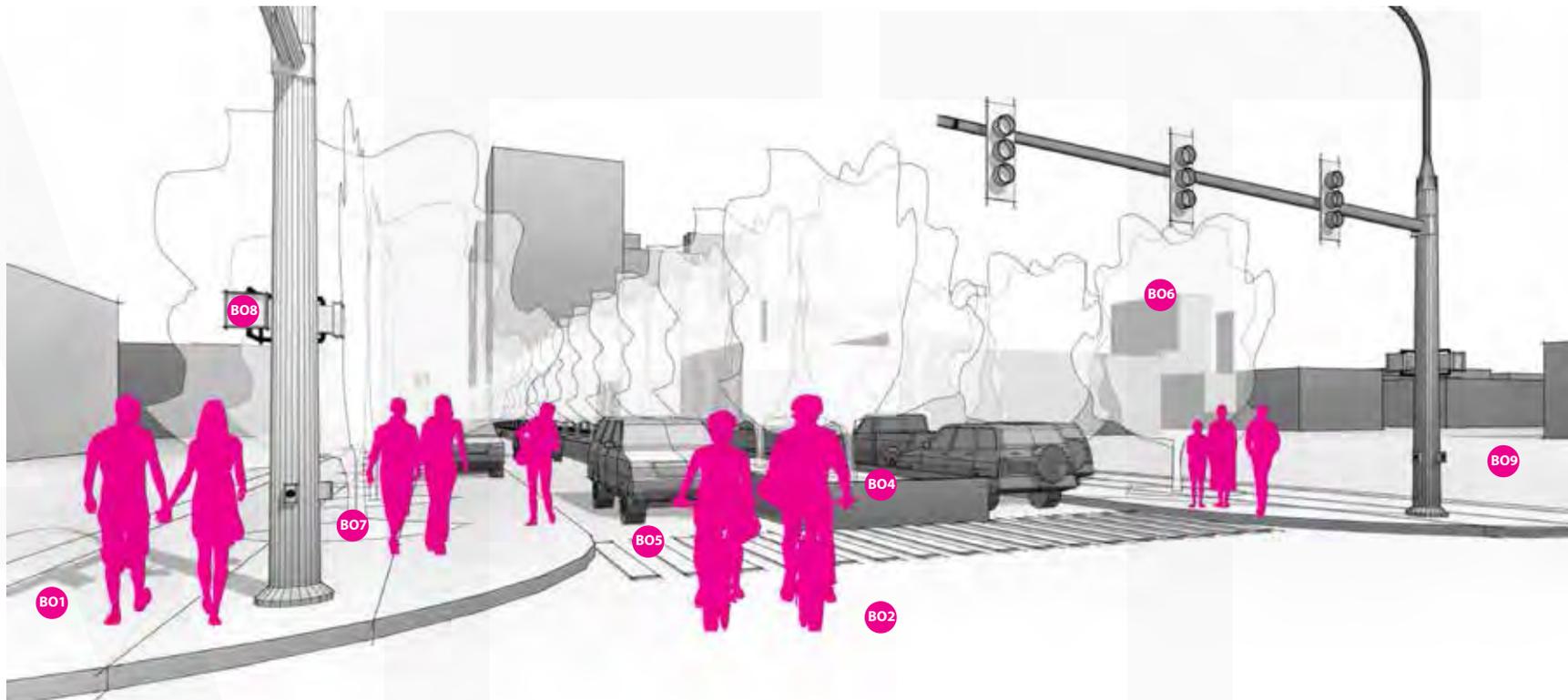
Recommendations

Secondary Traffic Streets should strive for a balance between motorized vehicular movement and pedestrian and bicycle movement. To that end, all secondary streets should have a minimum sidewalk width of 6 feet on both sides and accommodation for bicycles, ranging from buffered striped lanes to share-the-road strategies. (See B.1, B.2)

On streets where transit is included, safe and comfortable curbside stops should be incorporated into the streetscape — not as an afterthought but as an integral part of the streetscape design. (See B.3)

The number of lanes and lane widths should be reduced where feasible. Curb extensions and medians should also be considered to optimize the pedestrian experience. Parallel on-street parking should be considered to provide more convenience and as a traffic-calming measure. (See B.4, B.5)

Secondary Traffic Streets mostly have grass boulevards, or “verges,” between the street and sidewalk. Street trees should be incorporated in both the boulevards and center medians. Depressed rain gardens should be considered where feasible to handle water from the street as well as sidewalks and private property. (See B.6, B.7)



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

Figure 93:
Secondary traffic street

Type 03

Main Street / Destination Street

Background

The primary function of a Main Street / Destination Street is to provide access to retail business, short-term (on-street) parking and the highest quality pedestrian environment. Traffic speeds should be held to 15 mph. Curbless designs should be considered.

Destination Streets should be among the most memorable urban places in Rochester. The scale, mix of uses and distinctive ambiance combine to bring a unique vibe to the street. These streets, along with some of the alleys and lanes, need to be the places where pedestrians are most comfortable and where the automobile is a “guest.”

Examples include:

- Historic 3rd Street
- 1st Avenue

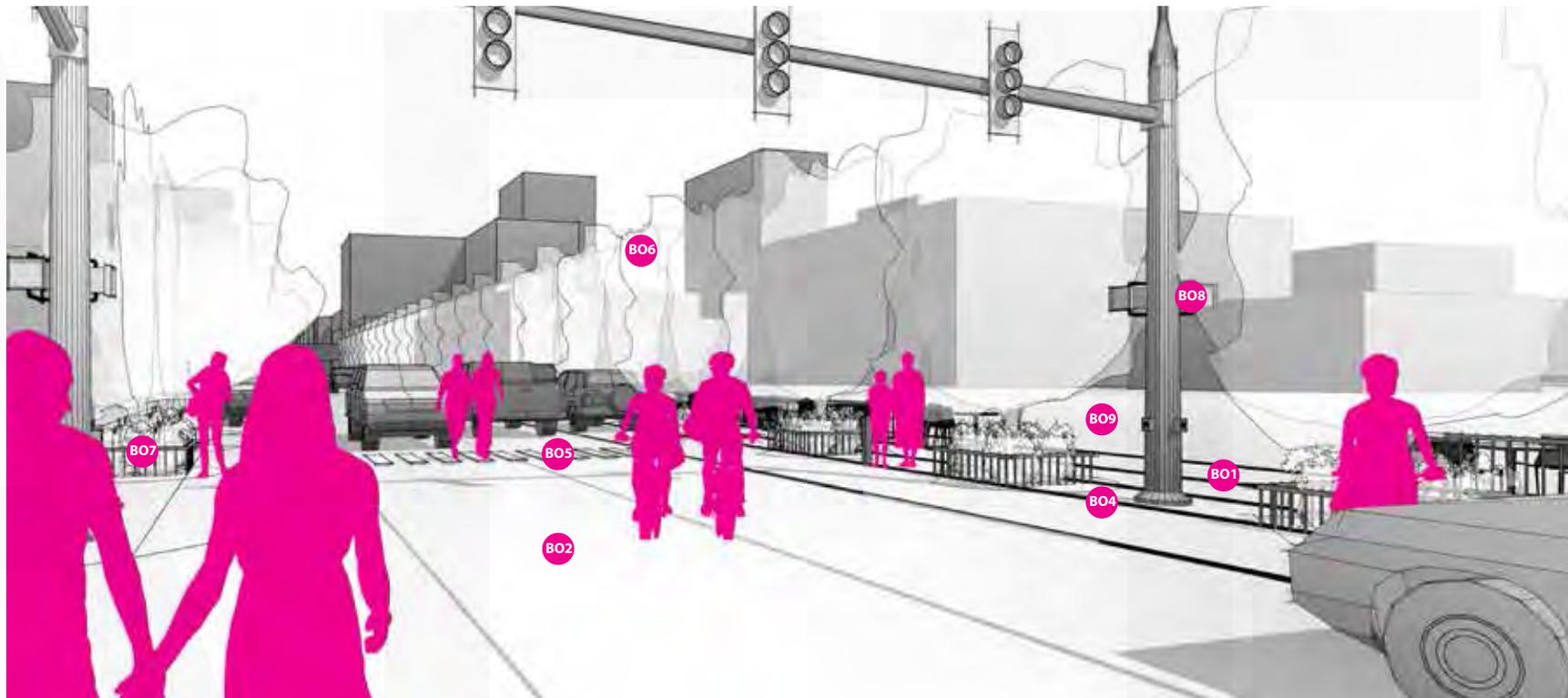
Recommendations

In addition to curbless design, the use of modular paving (dry laid; never mortared in place), bollards and specialty lighting will all help define how the space should function. Primary pedestrian paths need to be smooth, easily navigated by wheelchairs, and free of obstacles (see B.1). Vehicle speeds should not exceed 15 mph.

Bicycles will be allowed to share the space, but must also maintain slow speeds and travel in a shared narrow lane with vehicles (see B.2). Local circulator buses may also be appropriate for these streets.

Lanes should be narrow — not exceeding 10 feet. Street paving may also be modular, or a combination of cast-in-place concrete and modular (again, modular systems should be dry-laid over compacted base and a sand setting bed). Where curb and gutter are used, curb extensions should be integrated into the design to provide very easy crossing points for pedestrians (see B.5). Parallel on-street parking should be considered to provide more convenience and as a traffic-calming measure.

Street trees in expanded tree wells or tree trenches should be used to support the urban forest. And, finally, stormwater management should be visible, urban in design (stormwater planters) and contribute to the character of the street (see B.7).



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

Figure 94:
Main street/ Destination street

Type 04

Transit Mobility Street

Background

Transit is acknowledged as one of the best strategies to reduce traffic in the DMC District. Both the DMC Plan and the RDMC Plan recommend an efficient, comfortable, safe and reliable transit system as an essential part of the multimodal system that will contribute to a more livable Rochester.

In addition to a complete transit system, the number of single-occupancy vehicles is likely to decline as driverless cars and services such as Uber and Lyft continue to transform the way people move about Rochester.

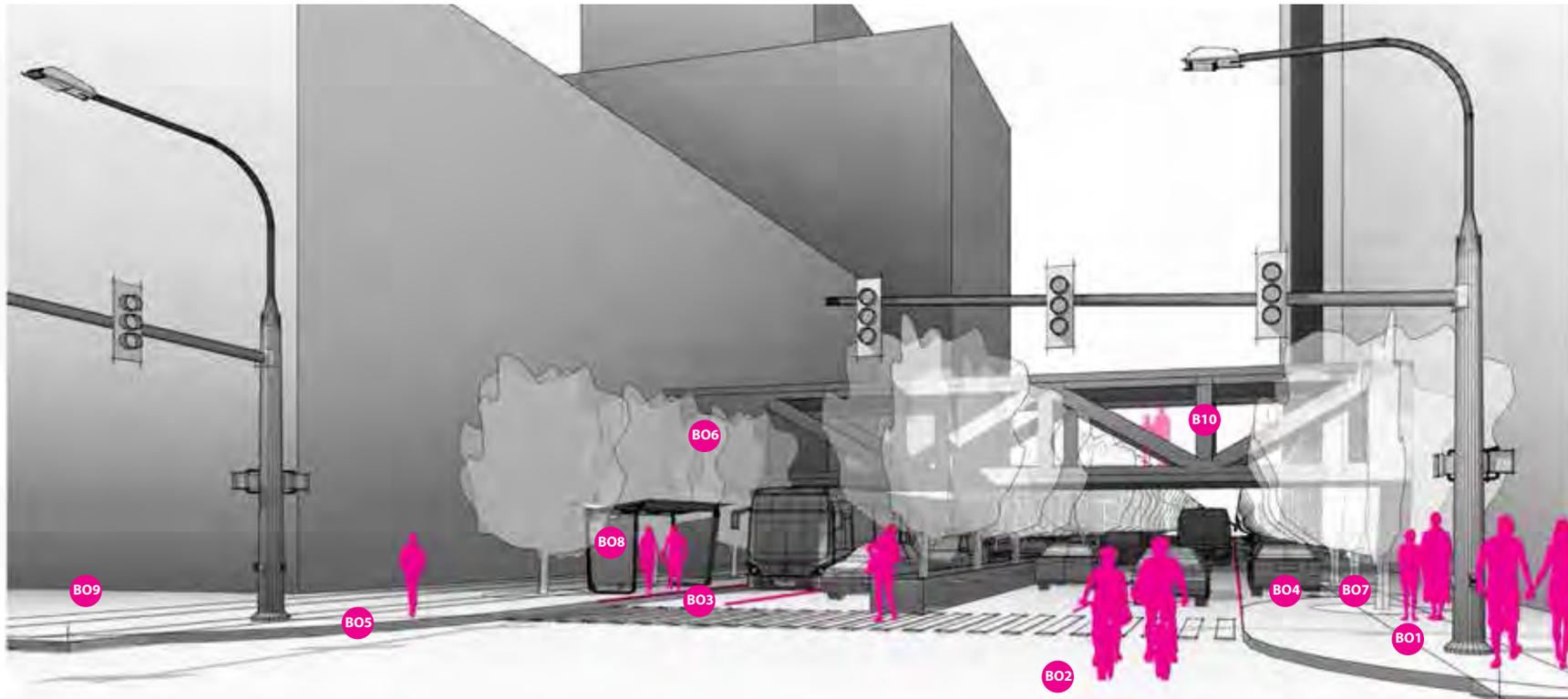
Examples include:

- Broadway
- 2nd Street SW and SE
- 3rd Avenue SE

Recommendations

Transit Streets should provide gracious pedestrian zones (see B.1), accommodating a variety of transit facilities without compromising pedestrian movement. As feasible, bicycles and bicycle facilities should also be accommodated (see B.2) to promote multimodality.

Road lanes can often be reduced (to 10 feet), and in some instances, lanes may be removed or a road may be able to change from a 4-lane to a 3-lane section (with center turn lane/landscaped island). Curb extensions are often practical on transit streets, as are medians in some locations (see B.5). Parallel on-street parking should be considered to provide more convenience and as a traffic-calming measure.



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

Figure 95:
Transit mobility street

Type 05

Alleys and Lanes

Background

Alleys and Lanes are found throughout the DMC District and generally allow multiple modes of movement, including pedestrians, bikes, service and emergency vehicles and slow moving autos accessing parking.

In some areas, alleys and lanes have the potential to be much more appealing as urban places and better integrated into Rochester's overall network of movement. In many respects, they are cousins of the European woonerf, which is defined as "a living street," promoting "shared space, traffic calming and low speed limits."

Recommendations

Alleys and lanes should provide a safe, fine-grained, dynamic pedestrian movement system that provides links to downtown destinations and opportunities for small retail land uses. To be most effective, they should allow pedestrian movement anywhere in the corridor. Bike speeds should be slowed, either through the use of pavement textures or changes in pavement materials that indicate where bikes belong.

Alley width should be 18 feet and in no case should they be restricted to one-way even when narrower than 18 feet. Alleys should have reverse crown drainage and be curbsless.

Trees and shrub selection should be native plant materials, planted "opportunistically" where space allows. Informal groves are appropriate; formal plantings are not.

Where appropriate, use of permeable paving and stormwater planters is acceptable. Understanding that infiltration is limited by poor soils, capturing rainwater for reuse is recommended. (B.7)

Work with private owners to engage ancillary spaces with the alley or lane where appropriate. (B.9)

Loading docks, mechanical equipment and other functions should be incorporated into the building architecture and screened.

Alley vacations compromise the potential pedestrian network in the city and should not be allowed.



Figure 96:
Alley transformed into pedestrian-friendly space



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

Figure 97:
Alleys and lanes

Type 06

Dedicated Pedestrian and Bicycle Corridors

Background

Dedicated Pedestrian and Bicycle Corridors are exclusive routes designed specifically for those modes of travel. In some instances, a corridor might allow mixed pedestrian and bicycle traffic, such as along the Zumbro Riverwalk. In other cases, such as the Heart of the City pedestrian zone, only pedestrians are allowed (bikes may be walked through the area).

Dedicated corridors in Rochester pass through a wide range of environments and offer the opportunity to experience the city from different perspectives. In the case of skyways, for example, the aerial perspective allows users to have an elevated view of streets, parks and plazas. An image from the DMC Plan shows a convergence of skyways above a public space at Discovery Square, suggesting that the skyway experience can be about placemaking as well as circulation.

Examples include:

- Heart of the City-Pedestrian Mall (existing)
- Skyway and Subway (existing)
- Zumbro Riverwalk (existing)

Recommendations

Dedicated pedestrian and bicycle corridors should employ many of the same strategies that have been recommended for streets and alleys throughout the DMC District. This suggests introducing more trees and landscaping into spaces such as the Zumbro Riverwalk (see B.6) and integrating state-of-the-art concepts for sustainable water management (see B.7) to broaden the appeal and functionality of the corridor.

Like streets themselves, dedicated corridors and spaces will inevitably evolve over time and should be designed to adapt to a changing world (see B.9). Consideration should be given during the design process to the increasing use of bicycles and a shift to significantly improve the pedestrian experience in Rochester. Promoting non-motorized vehicles and walking are emblematic of the goals of a healthy city.



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

Figure 98:
Skyways are one example of a dedicated pedestrian corridor.

Type 07

Special Street

Background

The DMC Master Plan proposes two very unique street types as part of the transformation of Rochester's DMC District - the City Loop and the Crescent. Both corridors emphasize pedestrian and non-motorized use.

The City Loop is a key mobility feature in the DMC Plan. In addition to the downtown core, it will pass through a mix of residential environments (new and existing), ranging from high-density residential to single family homes. It will also connect to the Zumbro River and downtown riverfront, St. Mary's Place, the proposed Central Station, and near the Heart of The City. A precedent, the Indianapolis Cultural Trail, has generated tremendous capital investment that extends blocks beyond its circuit.

The Crescent segregates typical street functions, providing an exclusive place for pedestrians, bicycles and stormwater management (cars are not included). The design illustrates how stormwater can be a stunning feature in the center of the urban core. A successful precedent, the Hammarby Sjostad development in Stockholm Sweden, demonstrates how such a system can be a transformative and functional addition to the urban landscape.



Figure 99:
Culture Trail, Indianapolis IN



Figure 100:
Hammarby Sjostad development
Stockholm, Sweden

Recommendations for the City Loop

Where space allows, bikes and pedestrians in the City Loop should be separated. Where space is limited, the two can share the corridor, but each must have its own “identity” to make clear the bike space and pedestrian space.

Modular, interlocking permeable paving is the ideal material for the City Loop if the budget allows. If not, cast-in-place concrete with a smooth, slip-resistant finish and sawcut joints or bituminous with a redrock sealcoat (granite or limestone) will provide an acceptable surface for the loop. It is key that the paving of the City Loop be unique and distinct from other surfaces in the city.

Landscaping should help define the corridor and separate bikes from parked or moving cars. Planting design should emphasize the use of native materials (cultivars are discouraged). Intersections need to be clearly visible for all users.

Recommendations for the Crescent

In the Crescent, land uses fronting on the pedestrian way are proposed to be primarily residential with supporting retail for residents. Access by foot will be a normal part of daily life. Multiple doorways, whether to private residences, lobbies or small retail establishments, should open directly onto the pedestrian way. Extensive landscaping should

be integrated into the streetscape design and stormwater should be handled visibly (on the surface) where feasible and directed into the central water feature.

Bicycles will be accommodated in a separate landscaped corridor, with one path in each direction separated by a planted median. Pedestrian crossings should be clearly visible (limited landscaping near crossings). Intersections with roads should give priority to pedestrians and cyclists, including the use of “raised tables” (cars have to come up to walk/cycleway grade while crossing the intersection).

Landscaping should emphasize native plants (cultivars are discouraged) and avoid formal planting design in favor of more “natural” looking groves of trees and stands of shrubs and grasses. The stormwater feature should also use native plants with an emphasis on year-round interest.

Use of modular permeable paving will facilitate the collection and filtration of water before it empties into the central feature. Overflow should be allowed to enter the citywide stormwater system.



Figure 101:
City Loop, Rochester DMC Plan



Figure 102:
The Crescent, Rochester DMC Plan

B.12

Application to Typical Right-Of-Way

Successfully creating a network of complete streets in Rochester depends on several issues. To illustrate this point, several options are shown in this section applied to two common street widths found in Rochester—100- and 75-foot rights-of-way.

Figure 103 shows a 100-foot right-of-way that accommodates pedestrians, bicycles and a four-lane roadway with a center median. There is a 20-foot-wide sidewalk zone creating an attractive pedestrian environment as well as a 5-foot-wide dedicated bicycle lane on each side of the road. There is no provision for on-street parking in this option.

Figure 104 shows a 100-foot right-of-way that also accommodates pedestrians, bicycles and a four-lane roadway with a center median. In this case however, there is on-street parking that reduces the pedestrian sidewalk zone to a minimal 12 feet. Wider sidewalk areas can be provided at corners and mid-block if curb extensions are used.

Figure 105 shows a 100-foot right-of-way that accommodates pedestrians, on-street parking, and a four-lane roadway with a center median. There are no bicycle lanes resulting in 18-foot-wide pedestrian sidewalk zones.

Figure 106 shows a 100-foot right-of-way that introduces mass transit with shared bicycle

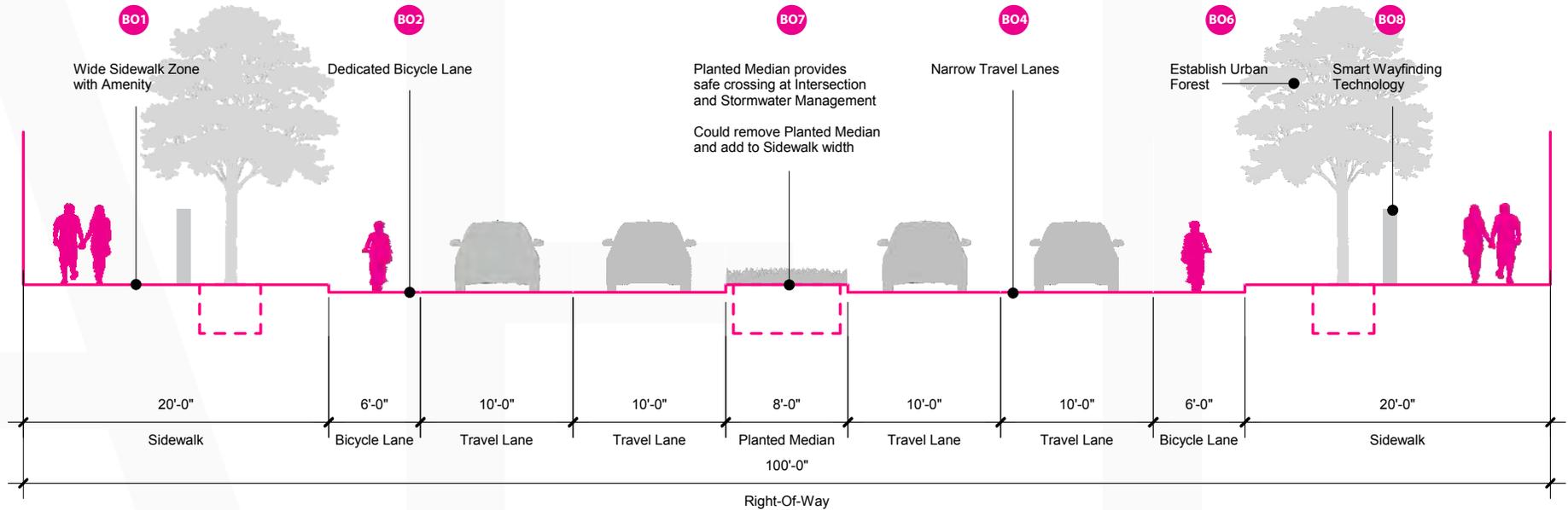
lanes on each side of the road. Keeping the four-lane roadway and center median, the pedestrian sidewalk zone stays at the minimum 12 feet width.

Figure 107 shows a 75-foot right-of-way that accommodates pedestrians, bicycles and a two-lane roadway with a left turn lane and a center median. There is no provision for on-street parking in this option. The resulting sidewalk zones are 14.5 feet wide.

Figure 108 shows a 75-foot right-of-way that accommodates pedestrians, bicycles and a two-lane roadway. There is on-street parking in this option. The resulting sidewalk zones are 13.5 feet wide. The bicycle lanes are 6 feet wide in this case to provide additional space for parked car doors opening.

Figure 109 shows a 75-foot right-of-way that accommodates pedestrians, a two-lane roadway, and a dedicated mass transit lane in one direction. There are no bicycle lanes or on-street parking in this option. The resulting sidewalk zones are 16.5 feet wide.

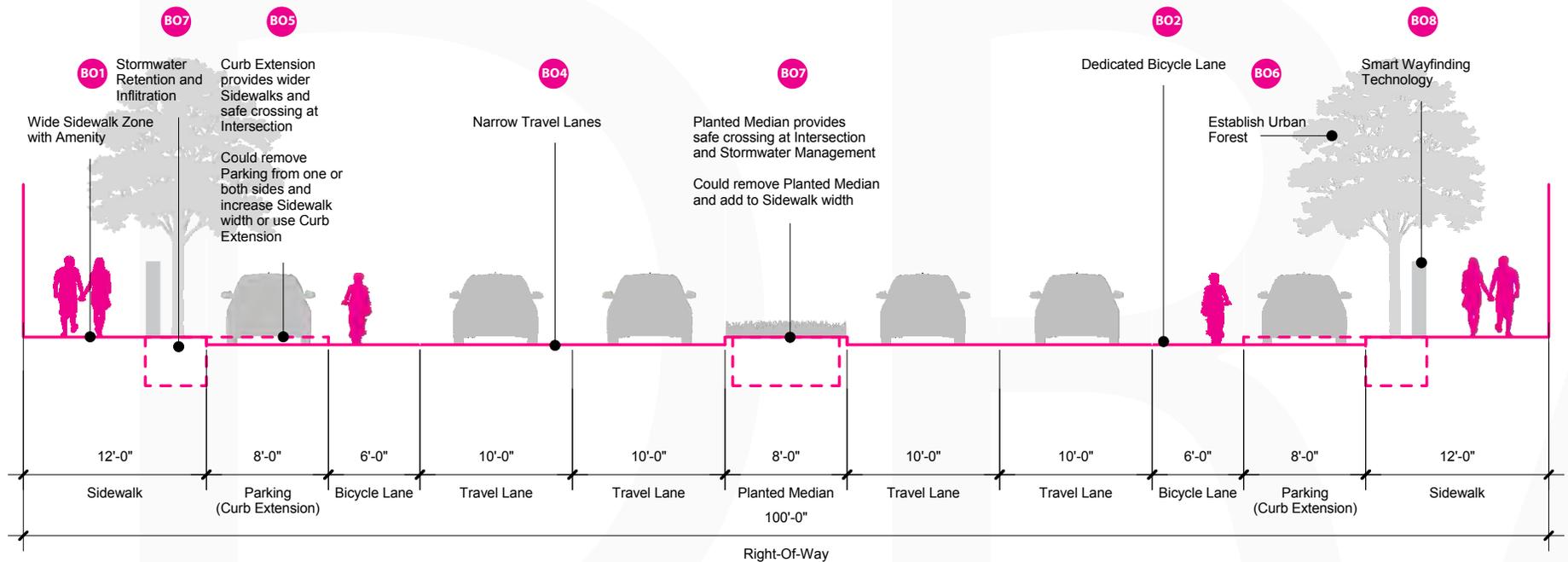
Applying complete street principles requires setting priorities and following a decision making process. In general, sufficient pedestrian zones (preferably 16 feet wide) come first, followed by bicycle lanes. Trade-offs must be made to accommodate mass transit, roadway lanes and parking.



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

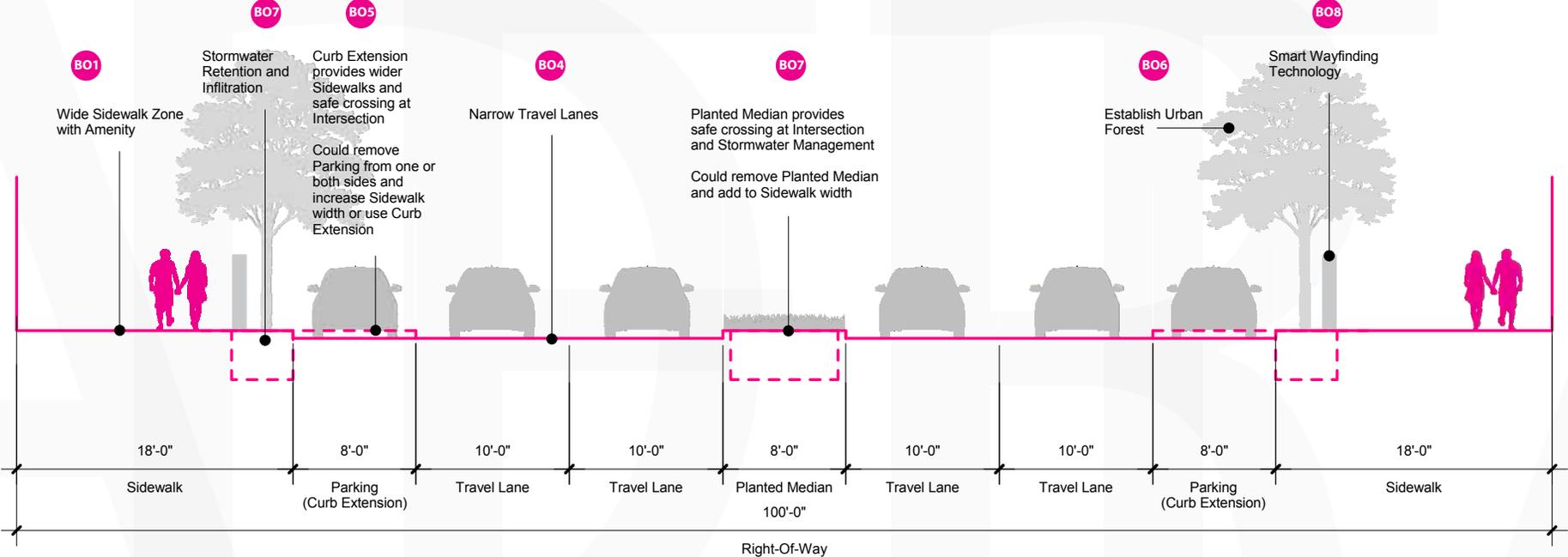
Figure 103:
Four-lane roadway with bicycle lanes and generous sidewalk zones
(100-foot Right-Of-Way)



- B.01** Design Multimodal Streets Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate Bicycles
- B.03** Design Streets to Accommodate Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

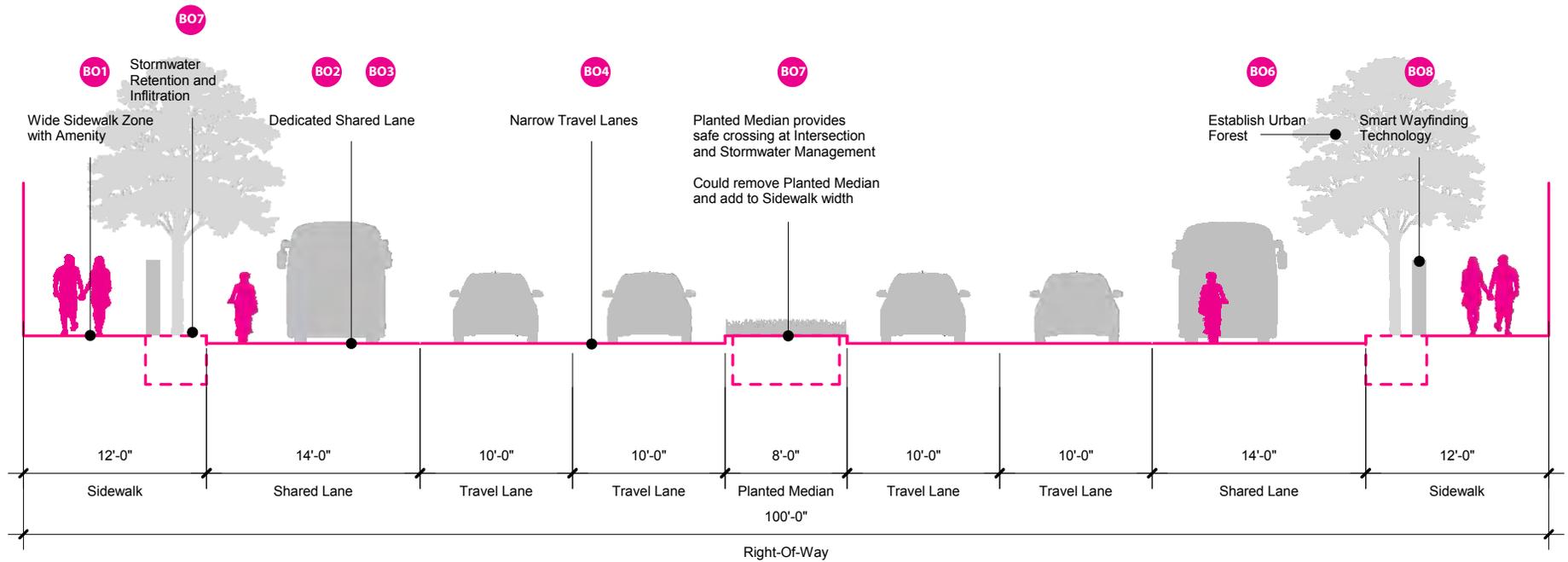
- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway Levels

Figure 104:
Four-lane roadway with bicycle lanes and on-street parking
(100-foot Right-Of-Way)



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections
- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

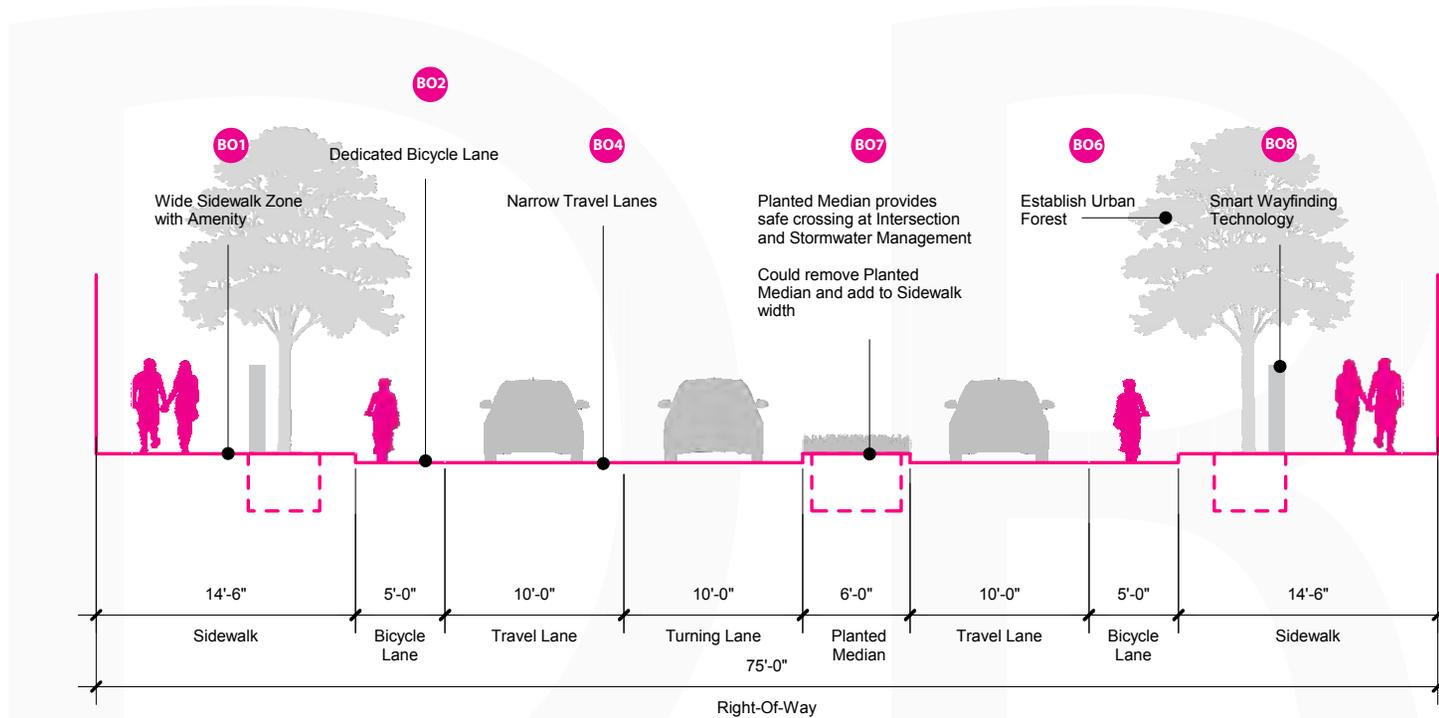
Figure 105:
Four-lane roadway with extended sidewalk and on-street parking
(100-foot Right-of-Way)



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

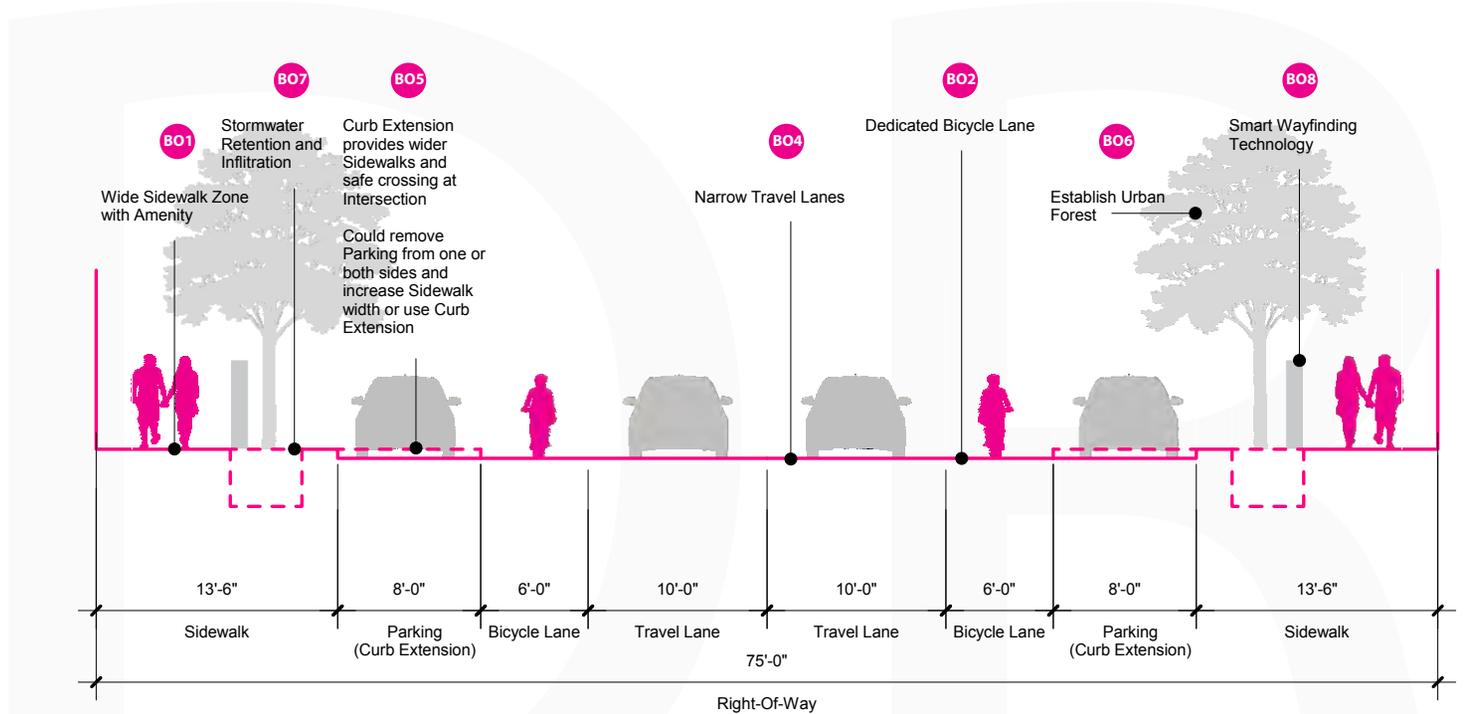
Figure 106:
Four-lane roadway with shared mass transit and bicycle lanes
(100-foot Right-Of-Way)



- B.01** Design Multimodal Streets Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate Bicycles
- B.03** Design Streets to Accommodate Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway Levels

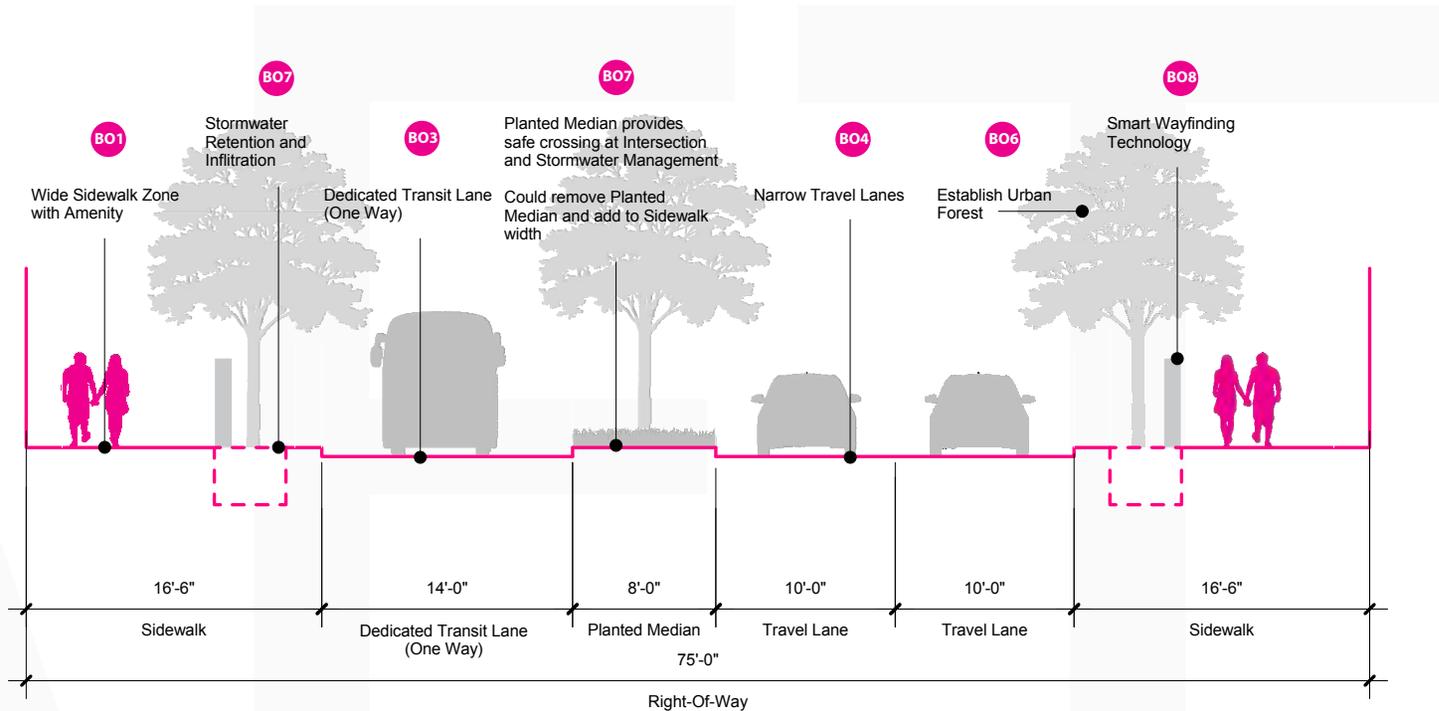
Figure 107:
Three-lane roadway with bicycle lanes and sidewalk zones
(75-foot Right-Of-Way)



- B.01** Design Multimodal Streets
Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate
Bicycles
- B.03** Design Streets to Accommodate
Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water
Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and
Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway
Levels

Figure 108:
Two-lane roadway with bicycle lanes and on-street parking
(75-foot Right-Of-Way)



- B.01** Design Multimodal Streets Prioritizing Pedestrians First
- B.02** Design Streets to Accommodate Bicycles
- B.03** Design Streets to Accommodate Mass Transit
- B.04** Design Safe Efficient Roadways
- B.05** Design Safe Multimodal Intersections

- B.06** Establish the Urban Forest
- B.07** Develop Sustainable Water Management Strategies
- B.08** Design Smart Streets
- B.09** Design Streets with Flexibility and Adaptability for Future Uses
- B.10** Connect Street, Skyway, Subway Levels

Figure 109:
Two-lane roadway with dedicated transit lanes and planted median
(75-foot Right-Of-Way)





02C

Individual Sites and Buildings

- C.01 Design Buildings to Establish Sense of Urban Enclosure
- C.02 Design Tall Buildings to Preserve Sunlight, Comfort and Views
- C.03 Contribute to a Vibrant Streetscape
- C.04 Promote Quality and Permanence in Development
- C.05 Design for Coherency
- C.06 Design for Flexibility and Adaptability for Future Use
- C.07 Create Spaces for Collaboration
- C.08 Meet Sustainable and Healthy Building Design Standards
- C.09 Connect to District Systems
- C.10 Design Roofs for Visual Impact and Sustainability
- C.11 Design Parking Structures to Enhance Pedestrian Realm
- C.12 Make Parking Structures Adaptable to Future Uses

C.01

Design Buildings to Establish Sense of Urban Enclosure

Background

A city with a vibrant public realm is composed of streets, parks and plazas that have a sense of enclosure. The buildings form walls around these spaces that become public rooms and corridors connecting them. Restaurants and other sidewalk-level retail activities benefit from the enclosure created by buildings built to the sidewalk. Without establishing these “build-to” requirements, urban spaces are less pedestrian-friendly, active and memorable, often with parking lots and lawns along the sidewalk. Important aspects of this sense of enclosure are the building heights and whether they are set back from the street on upper levels. This affects the amount of daylight reaching the streets and the feeling of a canyon-like enclosure if buildings are too tall. To achieve this sense of urban enclosure, buildings must be placed on the lot lines along streets and sidewalks and standards must be established for building heights and setbacks on upper floors. As stated in Guideline A.01, “To maintain visual connections, discourage buildings from locating over or across a public street or alley.”

Relation to Goals

An enclosed, well-defined public realm meets the overall goals of creating a healthy city (more walking), a sustainable city (less driving), and a vibrant public realm. This guideline supports creating public spaces that attract people and create an identity for the district.

Performance Guideline

Design all structures to contribute to a sense of urban enclosure. This means placing buildings on the lot lines along major streets, parks and plazas to create that enclosure. It also means using setbacks above a certain height to allow daylight into streets and open spaces. Building heights should be limited within each sub-district appropriate to its character.



Figure 110:
Buildings placed on lot lines form urban enclosure.



Figure 111:
Having a choice between sun and shade enhances outdoor space.



Figure 112:
Buildings define enclosed urban space.
Peace Plaza, Rochester MN

Design Details

Building Setbacks

Within the DMC District, there are streets designated as “Zero Setback Streets.” The following setbacks apply to these streets (see Figure 113).

- At the front lot line, except as provided below, no setback is permitted for the ground through second floor facades of a principal building.
- If a principal building is located on a corner lot, the ground floor through second floor facades shall be located on the lot lines.
- The following exceptions to the no setback provision along front and side street lot lines shall apply:
 - A portion of the building facade may be set back from the lot line in order to provide an articulated facade or to accommodate a building entrance, provided that the total area of the space created does not exceed one square foot for every linear foot of building frontage.
 - In order to accommodate an outdoor dining or seating area or an enhanced landscape area, up to 50% of the ground floor building facade may be set back no more than 20 feet from the lot line.
- The facade of any floor above 75 feet (six stories) shall be set back from the right of way line of any public or private street a distance of at least 10 feet.
- In the Tall Building Zone, zero setback requirements apply to the building base.
- Where historic properties and residential neighborhoods are adjacent to or within the Tall Building Zone, the tower portion of the tall building must be set back at least 65 feet from the edge of the lower scale building (see Figure 119 on page 137).

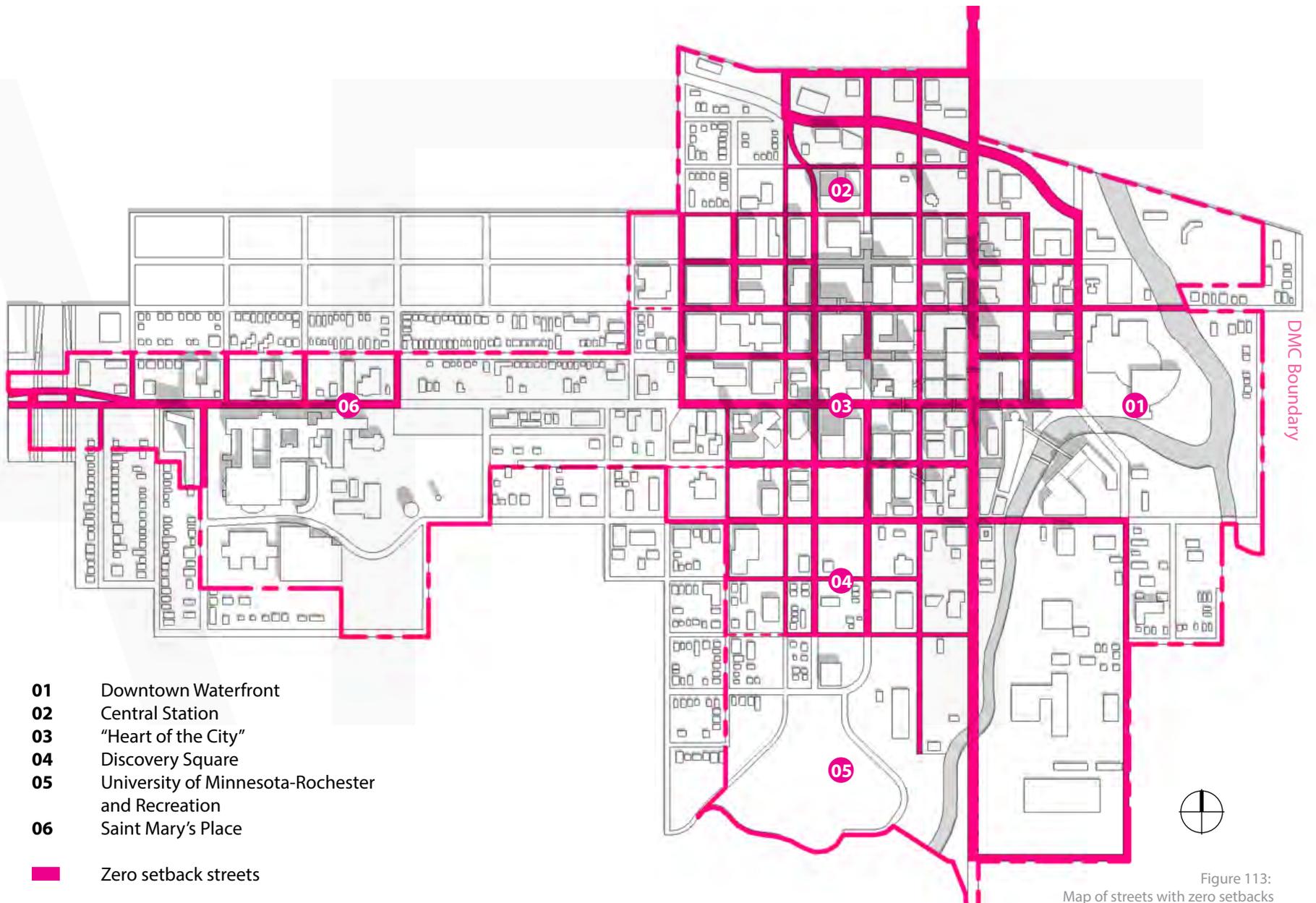


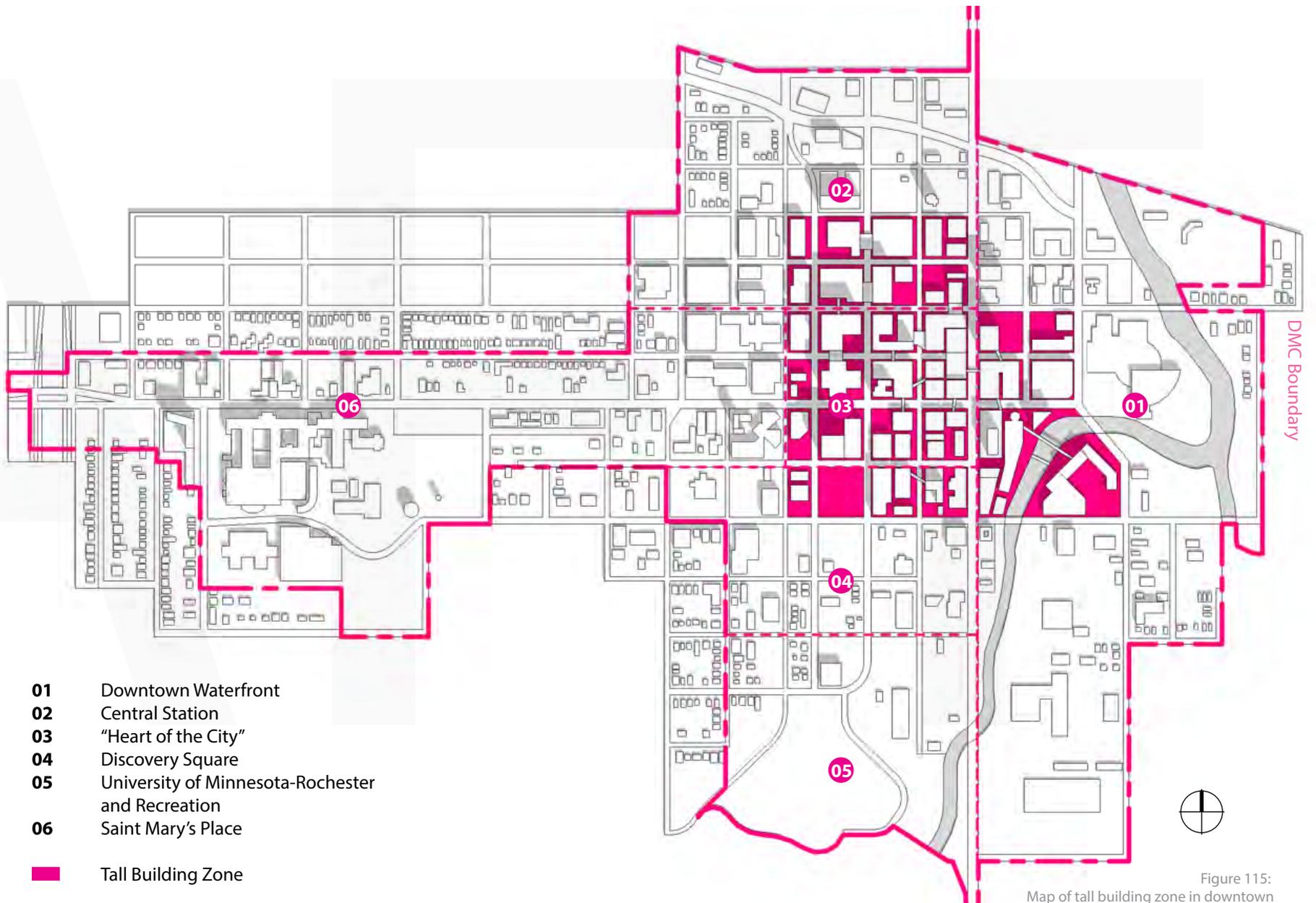
Figure 113:
Map of streets with zero setbacks
Rochester

Building Heights

- Building height requirements vary within the DMC Development District with the highest buildings allowed within the Tall Building Zone and height limits placed on all other areas. Height limits may be placed on buildings in certain locations that impact historic properties and residential neighborhoods.
- The minimum height of a principal building in the entire DMC District shall be two occupied building floors or stories (24 feet).
- The maximum height of a principal building shall be 75 feet (or six stories, whichever is greater) outside the Tall Building Zone unless approved as part of an Incentive or Restricted Development adjacent to transit corridors. Buildings within the Tall Building Zone and Mayo Special District have no height limit. See Guideline C.02 for further standards on tall building placement and design.
- Where historic properties and residential neighborhoods are adjacent to or within the Tall Building Zone, the height of the tall building base is limited to the height of the adjacent lower scale building (see Figure 119 on page 137).



Figure 114:
Building height and setback requirements



- 01** Downtown Waterfront
- 02** Central Station
- 03** "Heart of the City"
- 04** Discovery Square
- 05** University of Minnesota-Rochester
and Recreation
- 06** Saint Mary's Place

- Tall Building Zone

Figure 115:
Map of tall building zone in downtown
Rochester

C.02

Design Tall Buildings to Preserve Sunlight, Comfort and Views

Background

The Rochester DMC District has a designated Tall Building Zone where building heights may exceed six stories (75 feet). Tall buildings have the advantage of providing density in an urban area but they also present some potential problems. If not carefully designed, they can block sunlight and views of the sky from streets and open spaces, and cause strong downdrafts and wind tunnels at street level. Large, dominant slab-like buildings that are not set back from the street can destroy the human scale and degrade the public realm. Tall buildings can provide occupants with commanding views of the city but they may also block sunlight and views within the building and reduce privacy if located too close together. Proper orientation and spacing of tall buildings can provide daylight along with natural ventilation and beneficial solar gain for energy efficiency.

Tall buildings have a base, a middle (the tower), and a top. Each of these elements have desired characteristics to avoid mistakes of the past. Early tall buildings were often massive making streets into dark canyons. This was replaced by “towers in the park” with free-standing towers surrounded by large open spaces and parking lots. This approach resulted in lack of urban enclosure and little street life at the perimeter of projects. The preferred solution is a more slender tower (or towers) on a low base (2-6 stories) that extends to the property lines on all sides.

Relation to Goals

A well-defined public realm with daylight and wind protection meets the overall goals of creating a healthy city (more walking), a sustainable city (less driving), and a vibrant public realm. This guideline also supports creating more sustainable and healthy buildings through energy efficiency, daylight and natural ventilation.

Performance Guideline

Design tall buildings to preserve sunlight, thermal comfort and sky views for people in the public realm and all building occupants. Place tall buildings on a base of 2-6 stories that establishes a sense of urban enclosure on all sides at the street level. Limit the floor area of the tower portion of the building, and use setbacks and adequate separation of towers to preserve daylight, views and privacy. Design tall buildings to mitigate wind conditions at street level. Design building tops to contribute to the character of the skyline.

Design Details

The design details for the base of the tall building are intended as requirements on all projects. The design details for the middle and top of the building are recommended.

Base of Tall Building

- At the front lot line or both street sides of a corner lot, no setback is permitted for the ground through second floor facades of a principal building (See C.01 for exceptions).
- Design the base building to allow access to at least 5 hours of sunlight at the right-of-way line for buildings on the opposite side of the street at the equinoxes.
- The base should not exceed 75 feet or 6 stories in height, whichever is greater. Building base should be designed with respect to the surrounding context.
- Where historic properties and residential neighborhoods are adjacent to or within the Tall Building Zone, the height of the tall building base is limited to the height of the adjacent lower scale building (see Figure 119).
- Utilize overhangs and canopies to provide weather and wind protection at sidewalk level. The preferred overhang depth is 10 feet. Utilize wind studies to ensure pedestrian comfort. Design must limit wind speed at pedestrian level to maximum of 25 mph.

Middle of Tall Building (Tower)

- Evaluate alternative placement and massing concepts for individual tall building sites at the scale of the block to secure the greatest amount of sunlight and sky view in the surrounding context.
- Through a Sun/Shadow Study, demonstrate how the proposed tall building protects access to sunlight and seeks to adequately limit shadowing of neighboring streets, properties, and open space.
- Limit the tower floor plate to 7500 square feet excluding balconies.
- Set towers back at least 10 feet from the base building on the street side of the property. Setbacks greater than 10 feet are encouraged. On corner properties, set towers back at least 10 feet on both streets.
- Set tall building towers back at least 40 feet from the side and rear property lines. Measure the 40-foot setback from the center line of a lane or alley adjacent to the site.
- Provide separation distance of at least 80 feet between towers on the same property measured from exterior walls of the building without balconies.



Figure 116:
Tall building tower designed to provide increased sunlight, natural ventilation and views.
Seattle WA

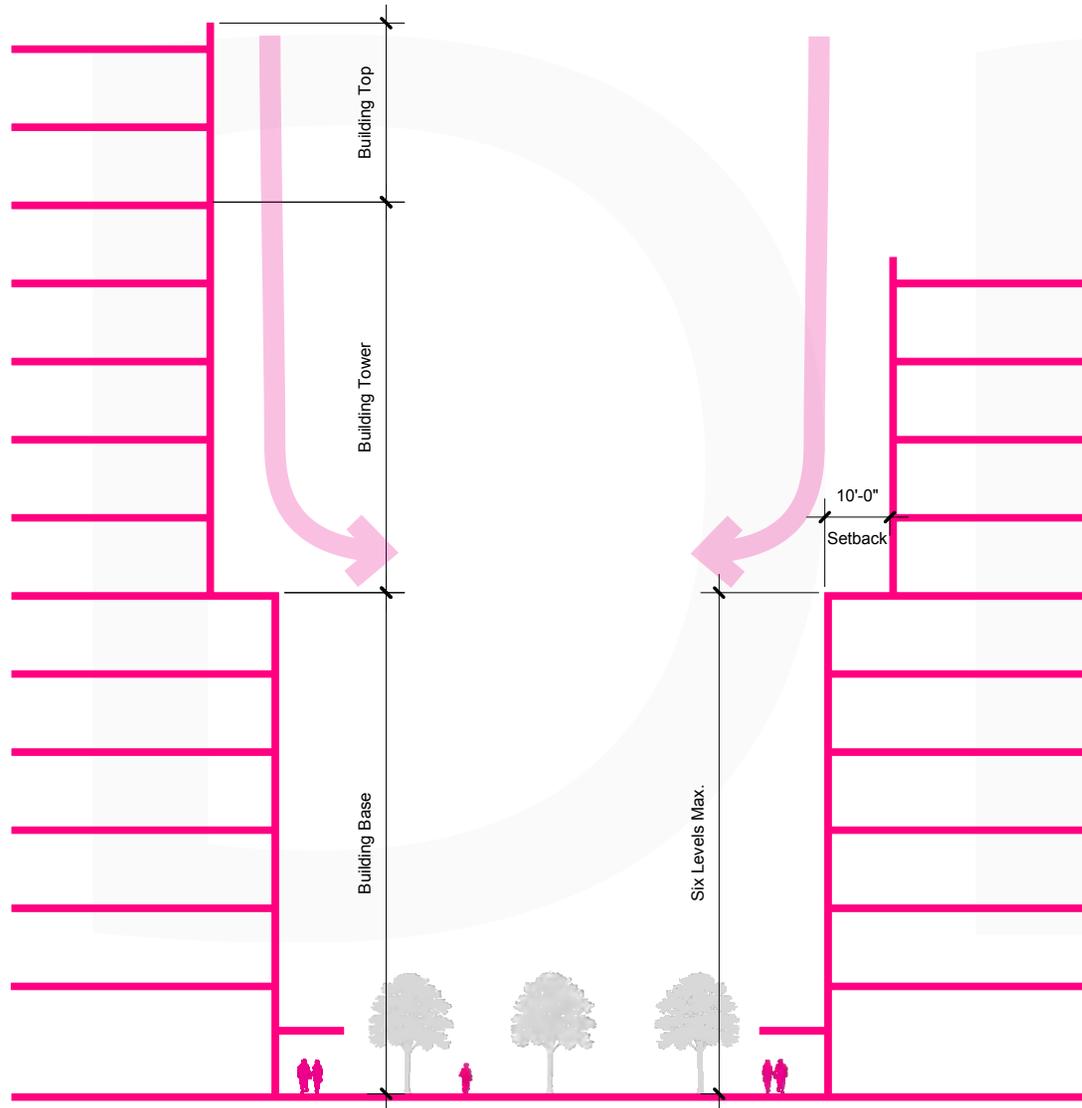


Figure 117:
Tall building components and setbacks

- Where historic properties and residential neighborhoods are adjacent to or within the Tall Building Zone, the tower portion of the tall building must be set back at least 65 feet from the edge of the lower scale building (see Figure 119).

Top of Tall Building

- Design tall buildings to contribute to the character of the skyline. Integrate rooftop mechanical equipment and other elements into the design of the upper floors of the building. (see also Guideline C.10— Design Roofs for Visual Impact and Sustainability)

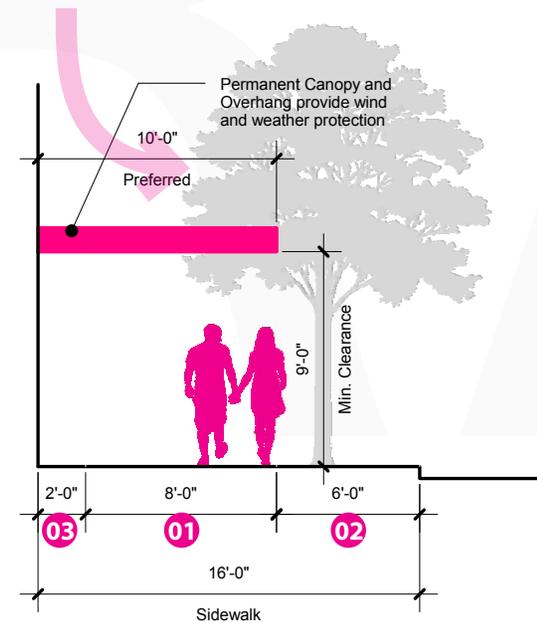


Figure 118:
Canopy at tall building base protects from wind and weather.

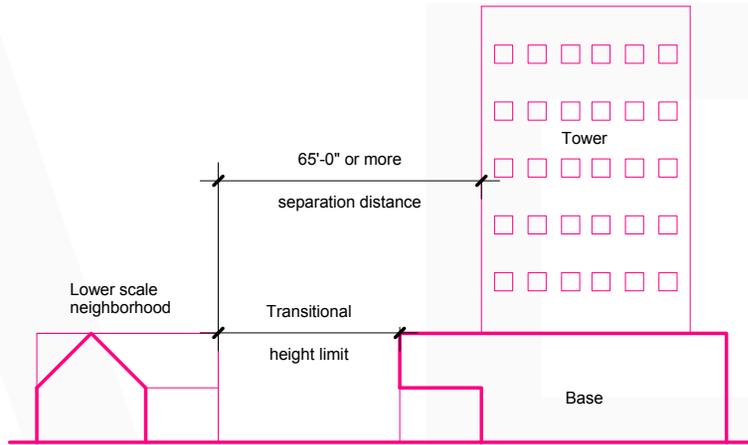


Figure 119:
Tall building setback and base height limit adjacent to lower scale buildings

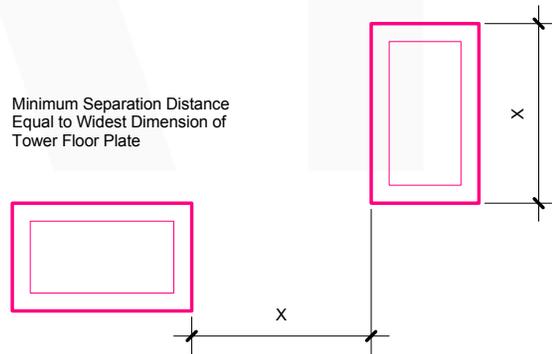


Figure 121:
Tall building separation

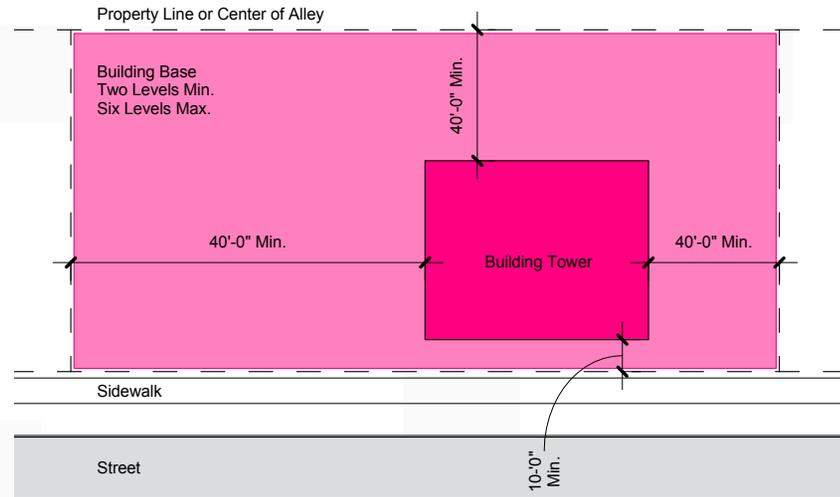


Figure 120:
Plan of tall building tower setbacks and base for middle of block property

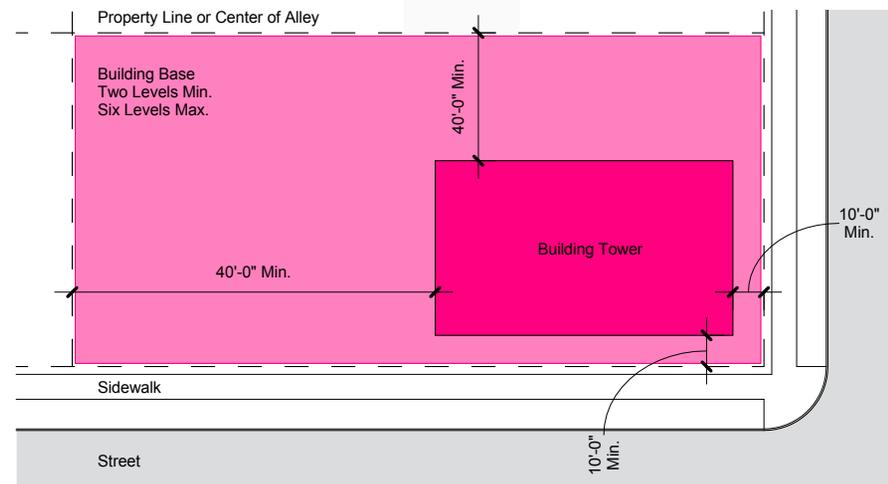


Figure 122:
Plan of tall building tower setbacks and base for corner property

C.03

Contribute to a Vibrant Streetscape

Background

New development in the Rochester downtown area is intended to create a safe, inviting and connected public realm. Each development project has the ability to contribute to this vibrant streetscape based on the use and design of the ground floor spaces in the building. Placing markets, restaurants, cafes, and galleries at ground level enlivens the street. With housing above or in the vicinity, ground floor commercial uses contribute to a 24-hour city with human activity throughout the day and night. Atriums, grand entries, large ground-level windows, outdoor seating areas and artwork all contribute to this vibrant streetscape. Frequent entrances, especially at building corners, are important design elements that also enhance the pedestrian experience at street level. Awnings, balconies, signage and other architectural elements provide visual interest and weather protection.

Relation to Goals

Contributing to a vibrant streetscape in each building design meets the overall goals of creating a healthy city (more walking), a sustainable city (less driving), and a vibrant public realm.

Performance Guideline

Design street level spaces with large glazing areas to make visual connections into the buildings' active spaces. Place shops, restaurants and other active uses on the sidewalk level to further enhance the pedestrian environment. Provide multiple frequent entrances and place entrances at corners whenever possible. Provide space at the sidewalk level for outdoor seating and other active uses. Use architectural elements to create a visually stimulating pedestrian environment.



Figure 123:
A vibrant streetscape is created at ground floor level with outdoor cafes and gathering spaces.



Figure 124:
A vibrant streetscape promotes walking in the city.



Figure 125:
Active uses and windows to the street enhance the pedestrian experience. 3rd Street, Rochester MN

Design Details

See Figure 113 on page 131 (Map of streets with zero setbacks) to indicate streets where C.03 ground floor requirements apply.

- At least 50% of the first floor of the primary facade should be articulated with building entrances, display windows, and windows affording views into retail, office and hotel lobby spaces, entertainment or educational facilities and museums.
- Highly reflective or darkly tinted glass should not be used. The visible transmittance (VT) of the glazing must be no less than 0.50.
- Provide individual entrances to each shop or residential unit on the ground floor. An entrance every 30 feet is desirable. Provide entrances at corners whenever possible on corner lots.
- Any storefront with a ground level restaurant use may have a hardscape front yard that extends to the sidewalk area as exterior cafe space or terrace area. (see C.01 for setbacks and exceptions)
- The use of temporary railings may be permitted to separate cafe dining from sidewalk areas, provided railings utilized are complementary building materials and reference the architectural character of the area. In a public right-of-way, rails shall be removable and consistent with sidewalk use policy.
- Use architectural elements to create a visually stimulating pedestrian environment. These include awnings, signage, lighting and landscaping.

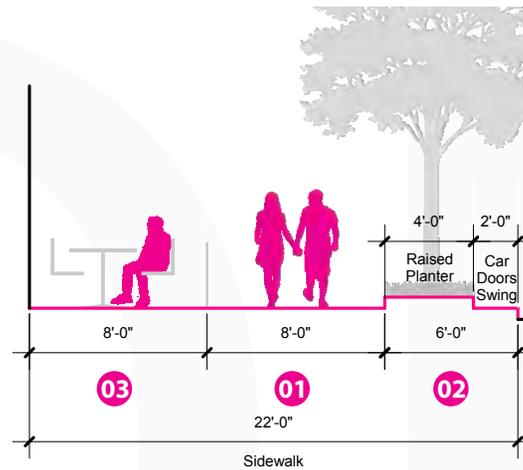


Figure 126: Sidewalk with expanded frontage zone for sidewalk cafe

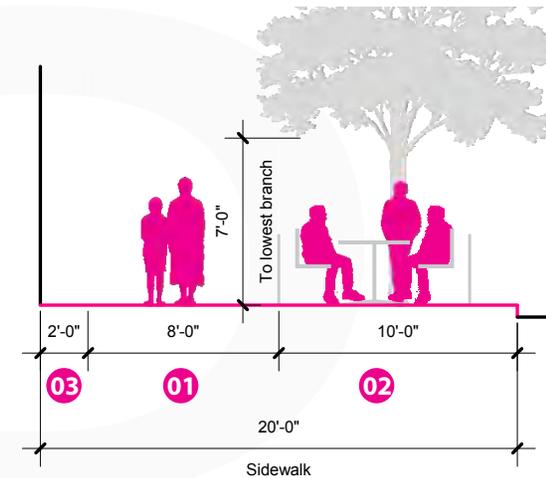


Figure 127: Sidewalk with expanded amenity zone for sidewalk cafe

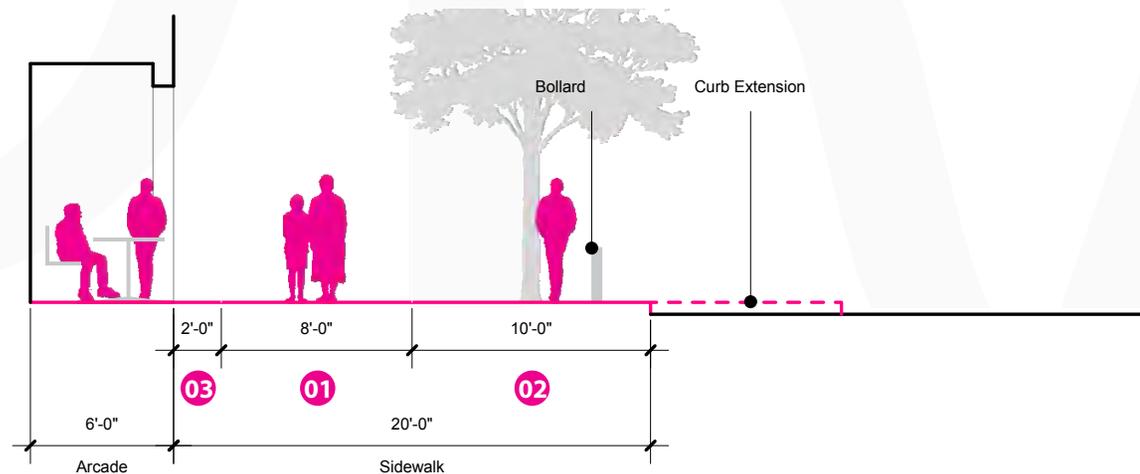


Figure 128: Sidewalk with arcade space



Figure 129:
Active first level and street

C.04

Promote Quality and Permanence in Development

Background

The built environment of a city is defined by the quality of its building design and the permanence of its materials. Rochester has many high quality historic and newer structures. It is important that as Rochester expands, this quality and permanence is maintained in new projects.

Relation to Goals

A development with high design quality and permanent materials meets the overall goals of creating a vibrant public realm that fosters a thriving economy. Durable materials also contribute to the goal of creating a sustainable city with less need for replacement and maintenance.

Performance Guideline

Use design principles and building materials that promote quality and permanence.

Design Details

- Buildings should be constructed of high quality, durable materials. Ensure that facade material has proven durability in the Minnesota climate. Employ materials at ground level to withstand ongoing contact with the public without compromising appearance.
- The use of asphalt shingles, imitation stone, imitation brick, stucco, exterior insulation finish systems (EIFS) or vinyl siding is prohibited on any building facade visible from pedestrian streetscape areas, including pedestrian/service easements and visible upper stories.
- Highly reflective or darkly tinted glass should not be used on the bottom two floors of a building. The visible transmittance (VT) of the glazing in these locations must be no less than 0.50.



Figure 130:
Materials and design give a sense of quality and permanence.



Figure 131:
High quality materials applied to a tall building



Figure 132:
High quality materials applied to lower scale housing

C.05

Design for Coherency

Background

The buildings that make up a city with a strong identity and a vibrant public realm often follow a consistent set of design principles, proportions and elements. They also integrate lighting, signs and other elements into their overall design rather than treat them as disconnected appendages. In addition, undesirable elements such as service, loading and storage areas are either located away from or screened from public view. This means each project must contribute to the coherent design of the neighborhood or the city as a whole as well as maintain a coherent design within the project itself.

Relation to Goals

Buildings with a coherent design contribute to a vibrant public realm with a walkable, pedestrian-friendly environment. This in turn meets the overall goals of creating a healthy city (more walking), a sustainable city (less driving).

Performance Guideline

Design buildings with architectural features and proportions that fit with the best examples found in the Rochester urban environment. Integrate the different building and design elements to achieve a coherent composition. These include facades, roofs, entrances, windows, sign, and lighting systems. Screen undesirable elements such as service, loading and storage areas.



Figure 133:
Coherent design principles, proportions and elements contribute to an improved public realm.
Orenco Station, Portland OR

Design Details

Signage (applies to private development signage, not wayfinding signage)

- Signage should not project above the cornice line or be mounted on the roof of any building.
- Signs should not cover windows, architectural elements or architectural details and should fit the building facade as an architectural element.
- Window signage and window clings are not permitted.
- Signs should contribute to a vibrant pedestrian environment. Signs should be scaled and oriented to the pedestrian, not as billboards. On corner lots, signs should take into account the visibility from multiple directions.

Projecting Signs

- Projecting signs should be attached perpendicular to the building. Projecting signs must not project more than 5' from the building's face. Projecting signs must have a sign area no greater than 8 square feet per side.

- Projecting signs must have no less than nine feet of clearance between the sidewalk and the lowest part of the sign, unless this is an existing improvement being included as part of a request for additional encroachments/development OR if the architecture of an existing building does not allow for a 9-foot clearance.
- The maximum distance between the sign and the face of the building is one foot. New projecting signs should not disrupt the sight line of an existing sign. Business signs should avoid spilling light into areas of surrounding buildings.

Awnings

- Awnings should have a minimum vertical clearance of 9'-0" above the sidewalk and should project at least 36 inches and no more than 60 inches from the building. Valances should not exceed 10 inches in height. Glowing awnings (backlit, light showing through the material) are not permitted.

Building Lighting

- Incorporate pedestrian scale fixtures that complement the building, shine downward and emit a warm light along walkways. In general, these lights should be mounted at a height not greater than 13 feet.

- Lighting sources should be concealed from view to prevent glare and promote lighting uniformity.

Service Entrances, Utility, Trash, Equipment Screening

- Locate service, loading, utility meters and storage areas within the buildings as much as possible, and away from public streets and public spaces. Where feasible, locate service access along an alleyway.
- Avoid placing service functions so that they face onto residential streets in neighborhoods adjacent to the DMC District.
- Locate rooftop equipment so that it is not visible from the adjacent street, or screen it with building-compatible materials.
- Use methods of rooftop screening that are durable and integral to the building's form. Screening should be designed to relate in color and material to the building and its surrounds.
- Avoid placing air conditioners and other equipment on building facades or screen appropriately.

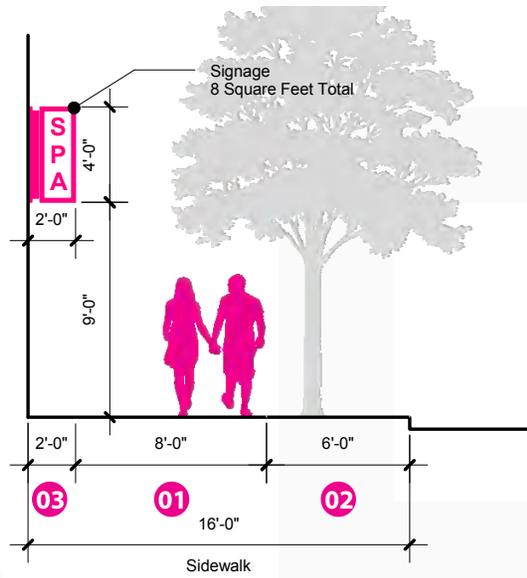


Figure 134:
Vertical signage dimensions over sidewalk

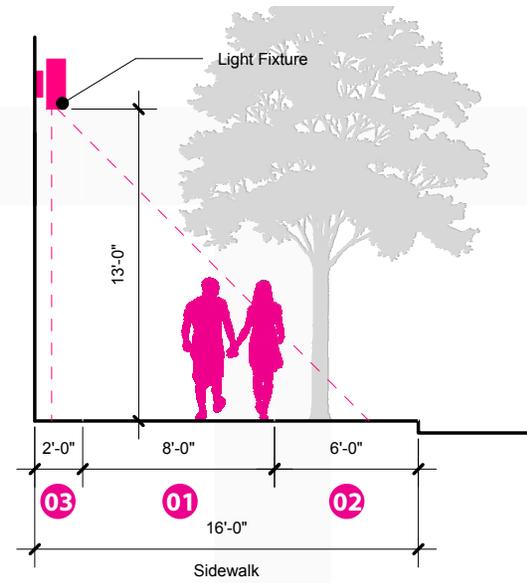


Figure 135:
Light fixture dimensions over sidewalk

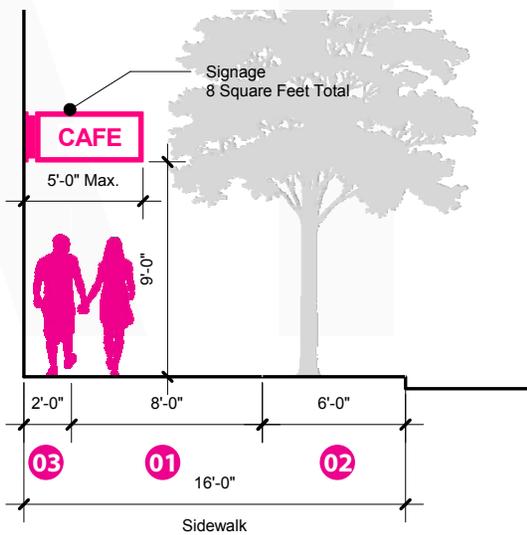


Figure 136:
Horizontal signage dimensions over sidewalk

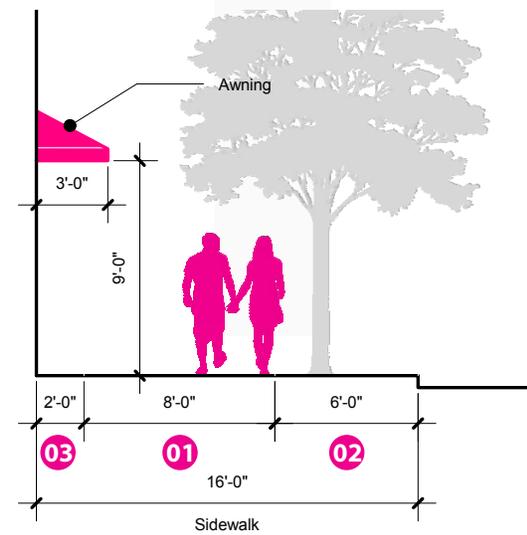


Figure 137:
Awning dimensions over sidewalk

C.06

Design for Flexibility and Adaptability for Future Use

Background

Traditional warehouse and other preindustrial buildings with high ceilings, large windows and open floor areas, can often be adapted to multiple uses including offices, commercial spaces, workshops, and even housing and artists studios. The flexibility of spaces with these characteristics is particularly attractive in urban areas where innovative new businesses and collaborative activities are evolving. Rather than designing structures for a single limiting use, a building can be thought of as a skeleton or shell that can be adapted to many uses over time. These attributes can be incorporated into new buildings that emulate the most flexible characteristics of older structures. It is particularly important to create flexible spaces at the sidewalk level of buildings where active uses are expected to change over time.

Relation to Goals

Design for flexibility and adaptability supports the goal of a thriving economy by creating potential business incubator spaces. Flexible first floor spaces designed to accommodate multiple activities contribute to the vibrant public realm. It also contributes to sustainability by reusing buildings rather than tearing them down.

Performance Guideline

Create flexible, adaptable spaces with high ceilings and long span structures for evolving uses. Design parking for adaptability to future use with flat floors (see C.11).

Design Details

The recommended minimum floor-to-floor height is 12 feet. On the ground level, even higher floor heights are recommended (16 feet floor-to-floor). Design structural system with structural bays (column spacing) of at least 22 feet.

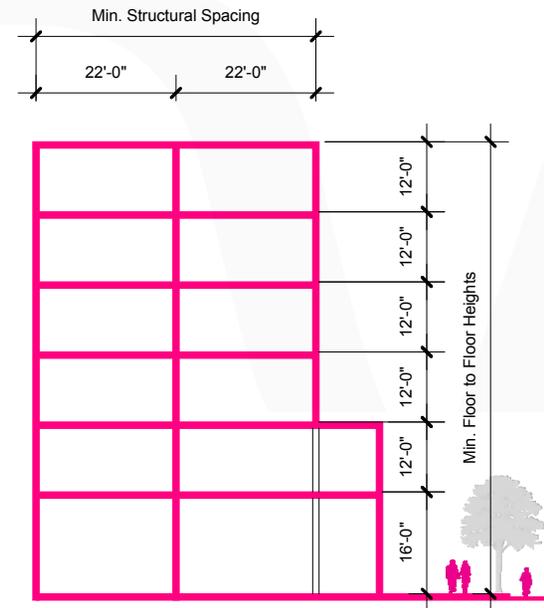


Figure 138: Minimum dimensions for flexible and adaptable space



Figure 139:
Warehouses often provide the optimum space for adaptive reuse
in addition to being affordable and attractive to young entrepreneurs.



Figure 140:
High ceilings and long spans provide flexibility.



Figure 141:
Building spaces with longer spans and movable
partitions can be adapted to multiple uses.

C.07

Create Spaces for Collaboration

Background

The emerging innovation economy places great emphasis on the need for spaces that allow for collaboration. Such places are sometimes referred to as the “collaborative commons” or a “third place” such as a coffee shop where work and meetings occur outside the normal office environment. These spaces can include streets, plazas, cafes, or intentionally designed shared spaces that are an extension of the public realm. This guideline encourages the development of private buildings that accommodate this type of activity.

Relation to Goals

Creating spaces for collaboration supports the goal of a thriving economy by creating the “collaborative commons.” Flexible first floor spaces designed to accommodate multiple activities also contribute to the vibrant public realm.

Performance Guideline

Create spaces in the building, especially at the ground level, that can be part of the “collaborative commons.” Separate spaces for collaboration may also be established that connect buildings.

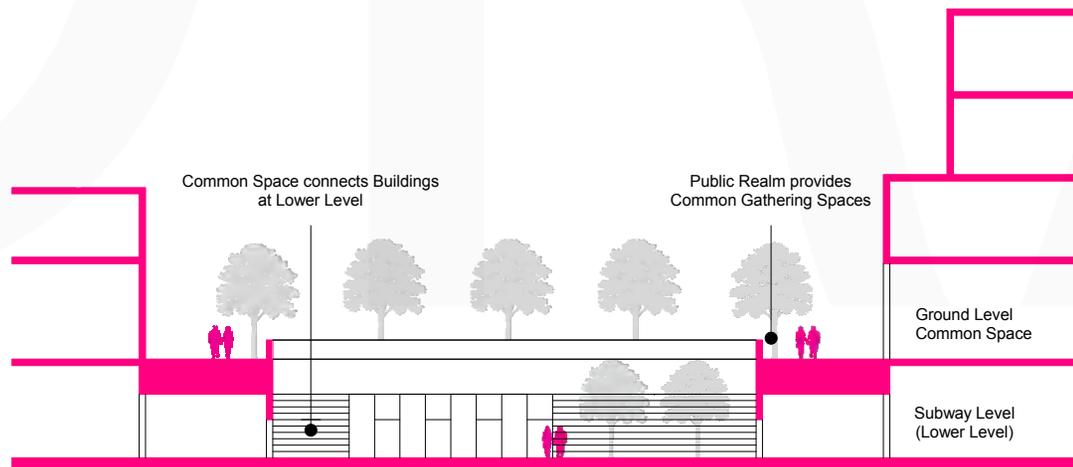


Figure 142: Spaces for collaboration can be created within buildings, in connections between buildings, and in outdoor spaces.



Figure 143:
Collaborative work space can take many forms such as this shared space in a former Grain Exchange Building.
Minneapolis, MN



Figure 144:
Attractive outdoor gathering spaces foster collaboration.



Figure 145:
Coffee shops are typical gathering spaces and provide what has become known as a “third place” to work.

C.08

Meet Sustainable and Healthy Building Design Standards

Background

All buildings have impacts on energy use, greenhouse gas emissions, water use, waste, and the embodied effects from materials. All buildings also affect the health of occupants. To meet sustainability goals and establish a progressive identity for the city, buildings should meet state-of-the-art standards for sustainable and healthy design and operation. Meeting these standards contributes to resiliency because buildings and cities can withstand disruption from extreme climate events and other related disturbances. Sustainable and healthy design guidelines for buildings may also contribute to creating a distinct identity for the district.

Relation to Goals

Meeting sustainable and healthy design standards in all structures addresses the goal of creating a sustainable city (less greenhouse gas emissions, energy use, water, waste and material use) and a healthy city (improved indoor environment).

Performance Guideline

Design all structures to minimize environmental impacts. These include energy use, greenhouse gas emissions, and embodied effects from materials. Design all structures to produce a healthy indoor environment for occupants.

Design Details

There are two basic approaches to ensuring desired outcomes in sustainable and healthy development: (1) use an existing rating system or set of sustainable design guidelines, (2) develop a customized approach that combines existing guidelines with certain required performance outcomes. The second approach is recommended for Rochester. This is similar to the St. Paul Green Building Policy currently in effect and utilizes the performance requirements embedded in the B3 Guidelines required on all projects with funding from the State of Minnesota. (sustainablebuildingpolicy.umn.edu/saintpaul/)

In the recommended approach, projects should strive to meet one of the following guidelines or rating systems:

- LEED-NC (Silver)
- Minnesota B3 Guidelines (SB2030)
- Living Building Challenge
- Green Globes
- Green Communities (Affordable Housing)

In addition, projects should strive to meet a specific set of performance targets for energy use, greenhouse gas emissions, water use, stormwater management, construction waste, and indoor environmental quality. To further emphasize healthy building standards, each project may also meet one of the following:

- Well Building Standard
- Active Design Standard



Figure 146:
Bullitt Center is an example of a near zero energy building that meets Living Building Challenge criteria.
Seattle, WA

C.09

Connect to District Systems

Background

Previous guidelines for the downtown district as a whole recommend the development of district energy, district storm water and integrated utility systems. This guideline recommends that all individual development projects should connect to these systems. Connecting to district systems has advantages in terms of meeting environmental goals but also can benefit individual project developers with cost savings for heating and cooling plants, on-site stormwater management and other services.

Relation to Goals

This guideline to the sustainable city goal by reducing energy use and carbon emissions in buildings and infrastructure. Connection to district stormwater helps ensure that surface and ground water pollution is minimized, negative impacts of development on the hydrological cycle are minimized, and natural erosion and sedimentation levels in streams and lakes are not exceeded. Integrated utility systems can reduce water and wastewater leaving the site, reduce and recycle solid waste, and restore and enhancing natural ecological systems.

Performance Guideline

If district systems are found to be feasible, design buildings for connection to district heating and cooling systems, district stormwater system, and other advanced infrastructure systems. If and when they become available, buildings should connect to the district systems.



Figure 147:
Individual buildings can be designed to easily connect to district energy systems.



Figure 148:
District stormwater systems enhance the public realm.



Figure 149:
Centralized waste management systems eliminate trash collection vehicles and can separate waste for energy generation. Stockholm, Sweden

C.10

Design Roofs for Visual Impact and Sustainability

Background

Building roofs create visual interest and work together to form the city's skyline. Many building roofs are also seen from above by occupants of taller buildings. It is common practice to locate necessary building mechanical functions on the rooftops of buildings. This equipment should be screened or integrated into the building design to reduce visual impact from street level and from above. Also, in a relatively dense urban setting, rooftops have great value for multiple purposes such as capturing solar energy as well as providing space for green roofs, gardens and even innovative wastewater treatment systems. Individual projects should be designed with flat roofs to accommodate these potential uses. All buildings should be designed anticipating this future possibility.

Relation to Goals

Reducing the visual impact of mechanical equipment on rooftops contributes to an attractive, vibrant public realm. Creating solar and green roofs also support the vibrant public realm by making landscapes that are beautiful and productive. The sustainable city goal is supported by solar energy that reduces carbon emissions, green roofs that help manage storm water on site and enhance natural ecological systems, and the growth of local, organic food that reduces transportation. Green roofs and urban agriculture also support the healthy city goal by reducing temperatures and air pollution and providing access to healthy foods.

Performance Guideline

Mechanical and other equipment should be screened in a method that is integral to the architectural design of the building and that adds visual interest to the skyline. Design rooftops to be attractive when seen from above by occupants of taller buildings. Green roofs and solar collectors should be installed on buildings wherever feasible. Make rooftop areas effective stormwater management tools. When not feasible initially, design buildings to support future solar collectors, green roofs, urban agriculture and other uses. Avoid uplighting, excessive lighting and use efficient fixtures for decorative lighting.

Design Details

- Integrate rooftop mechanical and telecommunications equipment, signage, and amenity space, where appropriate, into the design and massing of the upper floors of the building.
- Where decorative lighting is included in the building tower, use energy efficient fixtures, avoid uplighting and overlighting, and include programmable fixtures that which can dim as evening progresses or be turned off during migratory seasons.
- Design building structure to support solar collectors on the upper level and install if feasible.
- Design building structure to support a green roof on the upper level and install if feasible.



Figure 150:
Green roofs are attractive but also help reduce the urban heat island and allow for gardening. Chicago, IL



Figure 151:
Green roof improves view when seen from above.



Figure 152:
A green roof with a solar collector installation can provide clean energy to the building below.

C.11

Design Parking Structures to Enhance Pedestrian Realm

Background

Conventional parking lots and structures have a negative effect on the pedestrian environment. Often they interrupt sidewalks with driveways and provide blank walls with no interesting activity along the street. Surface parking lots fail to enclose the streetscape space making an undesirable and unattractive pedestrian experience.

Several solutions exist for minimizing these effects. At a minimum, driveway cuts can be reduced and placed to avoid pedestrian conflicts. Parking structures and lots can be landscaped and screened to reduce impacts as well. Better solutions include placing parking structures underground or in the center of blocks. The first floor of the parking structure (the outside parking bay) can be designed for use as commercial or other active space.

Relation to Goals

A walkable, pedestrian-friendly environment meets the overall goals of creating a healthy city (more walking), a sustainable city (less driving), and a vibrant public realm.

Performance Guideline

Design parking structures to minimize impacts on the pedestrian environment by minimizing and locating driveways, screening blank walls, placing parking underground or in the center of blocks and creating active uses on the street level.



Figure 153:
Parking structure with shops on first level and green wall covering parking levels above positively impacts the pedestrian environment. Miami Beach, FL



Figure 154:
Parking ramp echoes architecture of nearby buildings.



Figure 155:
Active first floor uses enliven the street scene while softening the impact of the parking deck. Belmar, CO

Design Details

The “City of Rochester Land Development Manual and Ordinances” contain significant design standards for parking facilities in Section 63.427. These standards address topics such as:

- Restricted Site Locations for Parking
- Vehicular and Non-vehicular Access to a Parking Facility
- Placement of Accessory Parking Facilities on a Lot with a Principal Building
- Surface Parking Lot Landscape Buffering
- Parking Structure/New Building Appearance Guidelines
- Parking Facility Lighting

The boundaries of the DMC district and the Downtown Parking Overlay Zone do not coincide exactly. Some additional prescriptive guidelines are recommended based on the DMC Master Plan and the Urban Village Overlay Zone Design Guidelines (and other resources).

General Parking

- Enclosed parking is encouraged. Underground parking or parking in the middle of a block surrounded by active uses is encouraged.
- Parking lots are discouraged, but permitted when they adhere to design guidelines.

Parking Lots (surface parking)

- Parking lots are not permitted to front on designated pedestrian oriented streets (see map).
- Parking shall be located at the rear of the principal building with access from the alley, if possible
- Parking otherwise visible from the street should be screened with a wall or screening compatible with the building design.

Parking Structures (ramps)

- All parking structures should contain street level active uses (retail, for example). Figure 157 shows where parking ramps should be avoided.
- Structured parking facades should contain architectural elements with appropriate proportions and materials to harmonize with the streetscape and nearby buildings.

Access and Entrances

- Within access and entrance zones, curb cuts should not be located within 50 feet of the end of any block or intersection.
- Set ticket gates inside the facility to avoid cars waiting on sidewalk.

Details

- Ceiling-mounted lighting within parking structures should be screened from grade-level view. Where parking exists on top floors, elements such as trellises, solar canopies or plantings shall screen views from above.
- Garage exhaust for below grade parking garages will be vented through the roof of the highest building. The garage exhaust at the roof shall be active -with exhaust fans and emergency generators having the option of being located in the garage levels below the first floor or on the roof of the building above.

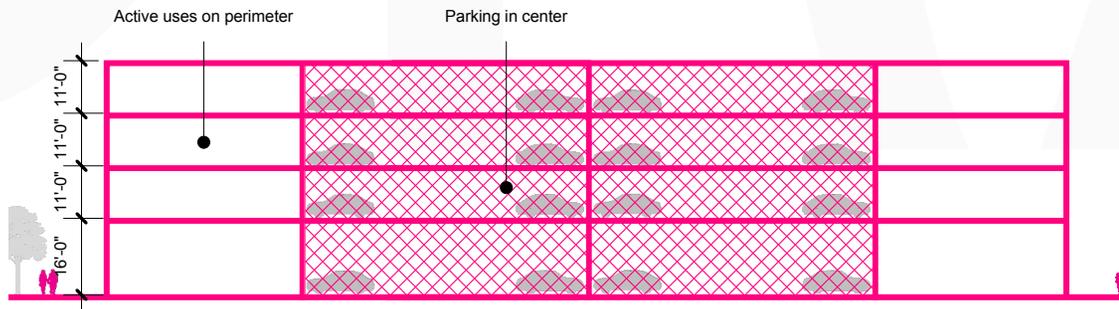


Figure 156: Parking ramp placed in center of block with active uses on the outside

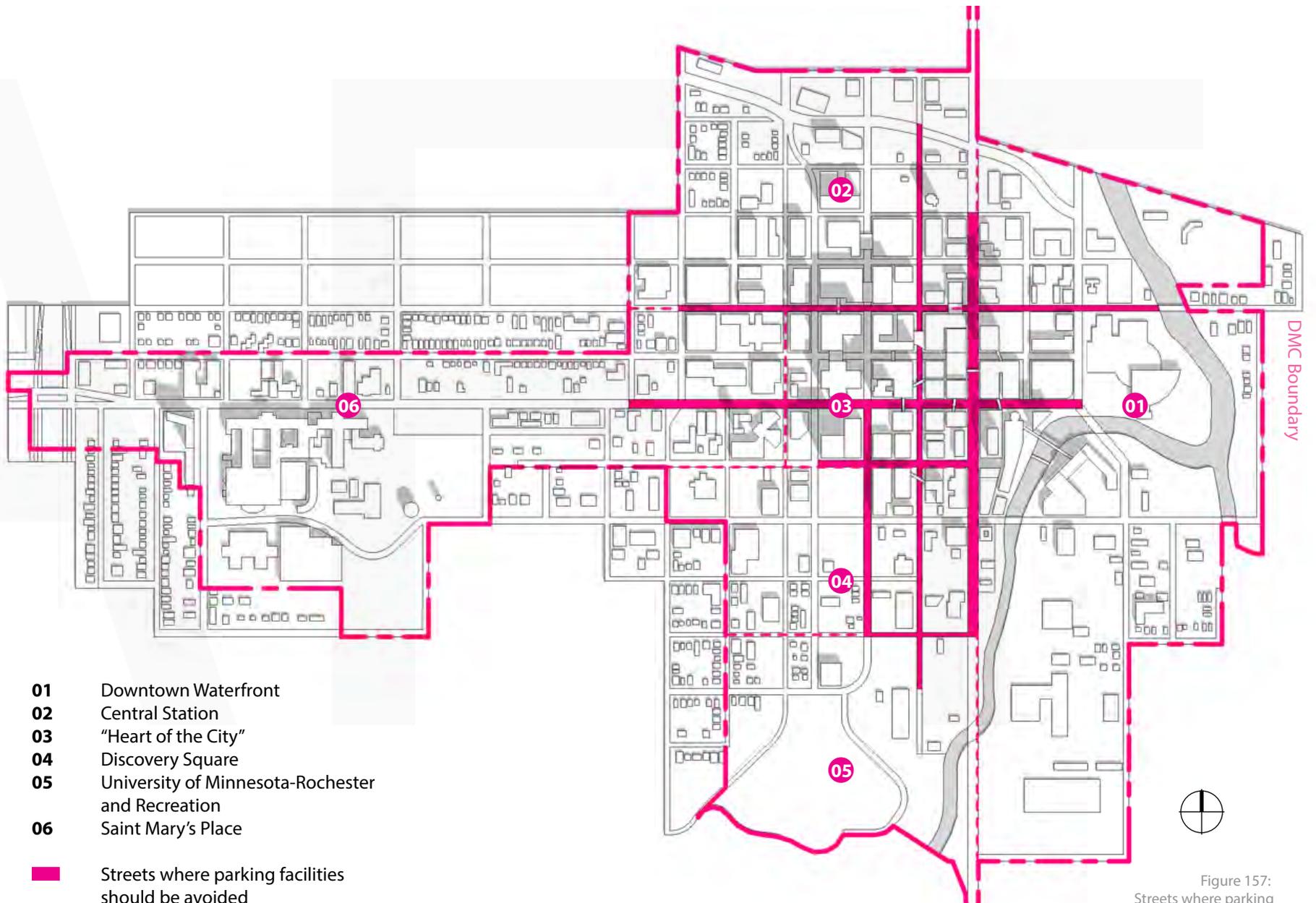


Figure 157:
Streets where parking facilities should be avoided
(Source: Rochester Land Development Manual)

C.12

Make Parking Structures Adaptable to Future Uses

Background

Conventional parking lots and structures are large, require significant investment and can have a negative effect on the pedestrian environment. The future demand for parking is in question because of emerging trends such as increased use of public transit, a more walkable city with residents living closer to work and other activities, and the potential revolution toward greater use of car services and even driverless cars. These transformational changes may lead to a major reduction of the automobile fleet. The challenge is that some of these trends will take time to emerge so parking structures need to be built in the short term.

Solutions to this dilemma are to make parking structures adaptable to future changes without having to demolish them entirely and start over. Specific strategies include designing parking structures with flat floors and sufficiently high ceilings for adaptability to new uses. Designing the street level for more active future uses will contribute to a more pedestrian friendly public realm. Other strategies may include designing structures that can be disassembled so materials can be reused elsewhere.

Relation to Goals

Designing parking structures to be adaptable contributes the overall goals of creating a healthy city (more walking in the future), a

sustainable city (less driving and material use in the long run), and economic development (wise use of infrastructure investments).

Performance Guideline

Design parking structures to be adaptable to other uses in the future as living patterns and automobile use change.

Design Details

- Design parking structures with flat floors and floor-to-floor heights of at least 12 feet (16 feet on the first level).
- Permit mixed use zoning in parking structures.

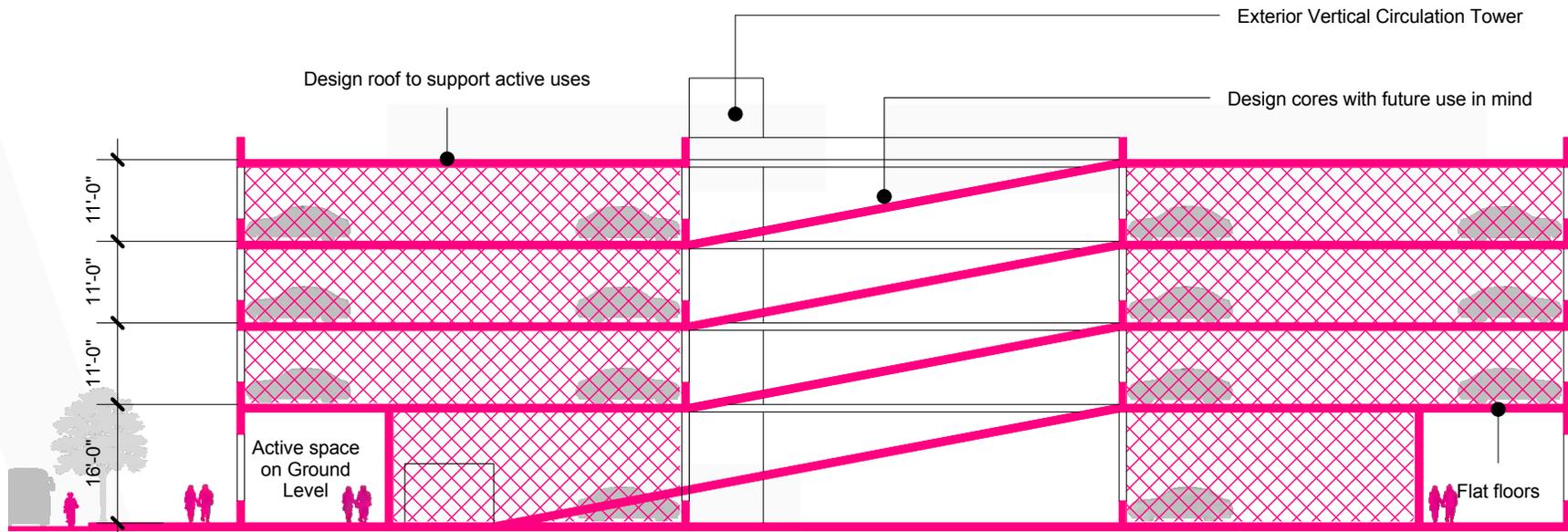


Figure 158:
Before: Parking ramp adapted to include active uses on the street level

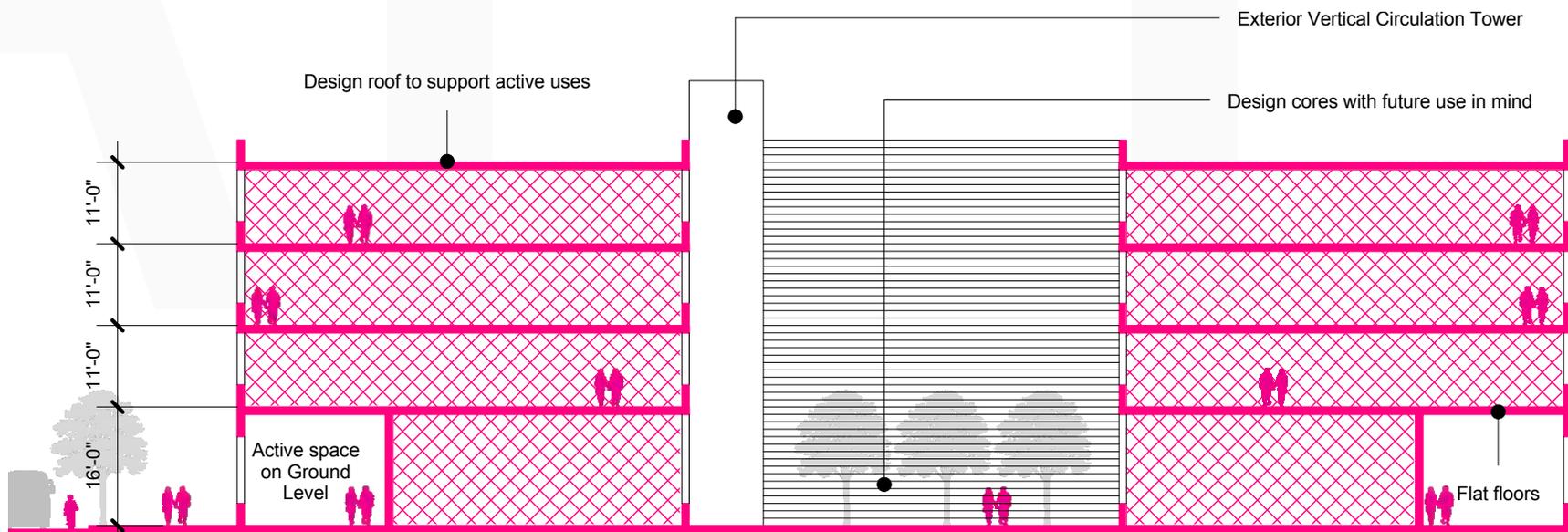


Figure 159:
After: Parking ramp built for adaptability to future uses

Appendices and References

- A. Previous Guidelines and Standards
- B. Project Review Checklist

List of Figures
References

Previous Guidelines and Standards

This Appendix includes a review of reference guidelines and standards organized by the guideline categories used in this document.

A.1. Create a Safe, Inviting and Connected Public Realm

The Urban Village Overlay Zone Design Guidelines (2009) identify key landmarks and view corridors in the city. In addition the Guidelines state:

Visual Connections

Recommendations:

- Prohibit buildings from locating over or across a public street
- Assess the impact of skyways which potentially block significant views.
- Where skyways are constructed, make them as transparent as possible.
- Look for opportunities to preserve existing views and view corridors, and open new views of landmark buildings and features where possible.

A.2. Enhance Connections to Nature and Natural Systems

The DMC Master Plan (2015) states:

- 6.4 Parks and Open Space
- 6.4.1 Open Space Network
- The City of Rochester has a great inventory of recreational and natural

parklands that connect the city to the countryside and beyond. There are few formal urban parks within the downtown area. The Open Space Network within the DMC Development District is to feel connected, while providing a unique experience for users in the individual spaces. (Figure 6.4-3) These spaces will provide options for users whether it's an employee on a fifteen minute break or a visitor from out of town with four hours to spare while waiting for a loved one to get out of surgery. Experiences in the spaces will vary with the seasons. Accessibility will be essential for patients and visitors as well as everyday users. (Open spaces are listed and described)

A.6. Reuse and Restore Buildings

A. The DMC Master Plan (2015) states:

6.5 Historic District and Preservation

6.5.1 Planning Criteria

Within the DMC Development District are a number of historically significant properties that capture the history of the Rochester and continue to contribute to the vibrancy of the downtown. (Figure 6.5-1) The Rochester Historic Inventory prepared in May and June of 2014 by the 106 Group analyzed 200 properties and 31 were categorized as Rochester Heritage Sites. The DMC Development

plan supports the findings of this report and captures within the vision several of the key identified properties. This can be seen clearly at The Portal where the plaza fronts on the Plummer Building with a gateway down to Discovery Square and the integration of the Château Theatre with a key role as a cultural anchor within Peace Plaza. Beyond specific properties, the plan further recognizes the role of the historic fabric in enriching the character of the downtown, best noted at Third Street.

B. City of Rochester Land Development Manual and Ordinances states:
Not specifically addressed

C. Downtown Rochester Master Plan Report (2010) states:
Not specifically addressed

D. Urban Village Overlay Zone Design Guidelines (2009) states:
Recommendations:

- Recognize existing contributing (character/cultural heritage) buildings as an economic development asset in the Urban Village.
- Develop means to revitalize and retain existing contributing (character/cultural heritage)

buildings in the Urban Village.

- Use adaptive reuse of existing buildings to further RDA goals: create vibrant gathering places, attractive housing options, and celebrate the downtown experience.
- Recognize local small businesses that occupy and contribute to the fabric of a livable community. Help these businesses thrive and maintain our older buildings.

A.7. Infuse the City with Public Art

A. The DMC Master Plan (2015) states:

6.4.3 Public Art

Public Art is a part of Rochester’s history, evolving culture and collective memory. It reflects and reveals the values of society and adds meaning to the city. As artists respond to the city, they reflect their inner vision to the outside world, and in doing so create a chronicle of the Rochester public experience. The city already has significant installations mostly surrounding Mayo Clinic and the Mayo Civic Center. The DMC master plan allows the incorporation of a full program of Public Art that includes a variety of media displayed in a range of cultural and performance venues. The plan envisions traditional forms of artwork but emphasizes new programming and

unique Public Art venues so that the culture of the city can be expressed and enhanced.

The intent is to use public space as an outdoor museum, letting works of art impact the city, to set them under the light of day where they intrude upon our daily life. In the intervening years the goal is to increase the amount of arts and cultural programming within the public realm. Previously untapped public spaces will become coveted outdoor galleries in which contemporary art is displayed, and a new forum is provided for emerging artists to display their work and reach wider audiences. Many artists will exhibit their works in Rochester parks and public spaces, demonstrating an astonishing array of styles, forms, materials and conceptions that reflect the past and future city.

There are several key locations where public art and art programs are featured in the plan. The Downtown Waterfront will build off of the Rochester Art Center (Figure 6.4-10) with an outdoor installation fronting on the Civic Center, “The Light Loop” within the Zumbro River (Figure 6.4-9), and other installations along The Crescent. These programs are associated with and designed for key public places as a way to further enhance

their impact. This will build upon the city's demonstrated commitment to public art in and around Mayo Clinic and Rochester Arts Center where they exhibit sculpture in environment.

B. City of Rochester Land Development Manual and Ordinances states:
Not specifically addressed

C. Downtown Rochester Master Plan Report (2010) states:
Not specifically addressed

D. Urban Village Overlay Zone Design Guidelines (2009) states:
Recommendations:

- Dedicate space for public art. (For example, consider sidewalks wide enough to place public art.)
- Work with RDA Avenue of the Arts Subcommittee, Arts Council, and other groups, in order to identify partnering opportunities for including public art in development projects.
- Artists should be commissioned for the public art.
- To achieve high quality art in public places the following should be considered:
 - Quality and artistic merit of the artwork

- Responsiveness and relevance to the site (its architecture, use, function, history, development, and landscaping)
- Feasibility and quality of the public art project or artwork including but not limited to public safety, durability, quality of materials, technical, operational, maintenance, and long-term care.
- Artist's relevant experience
- Suitability of the artwork to the site
- Partner with local arts groups or advocates to achieve funding or support

B.1. Design Streets for Pedestrians

A. The DMC Master Plan (2015) states:

- Streetscapes within the Development District are meant to be pedestrian-friendly environments, featuring a consistent pallet of signage, lighting, paving and street furniture. Streets should be well lit and active so as to feel safe both by day and by night.
- All streets will handle both vehicular and pedestrian traffic, while some streets will prioritize pedestrian movement more than others. Second Street will be the central spine of the project area, combining multiple modes of transportation including vehicles and

streetcars while also allowing for ease of pedestrian access. Continuous dedicated off-street bikeways are included throughout the district. Broadway, Civic Center Drive and Second Street are important vehicular connections and entry points to the site as they provide direct connections to the district from major arterials and population centers. Transit facilities and bus stops will be provided at key locations on major streets in the district as shown. (Figure Appendix 5.6)

- Street paving materials shall be installed with City- approved materials. Where possible, at significant locations within the district, materials will be used that elevate the character of the streetscape. The palette of materials and furnishings chosen for use within the district should help to build a unique character for the district, but should be consistent with City approved materials.

B. City of Rochester Land Development Manual and Ordinances states:
(Note: this references the Complete Streets Policy)

The City of Rochester will seek to enhance the safety, access, convenience and comfort of all users of all ages and abilities, including pedestrians (including people requiring mobility aids), bicyclists,

transit user, motorists and freight drivers through the design, operation and maintenance of the transportation network so as to create a connected network of facilities accommodating each mode of travel that is consistent with and supportive of the local community, recognizing that all streets are different and the needs of various users will need to be balanced in a flexible manner. Transportation improvements will include facilities and amenities that are recognized as contributing to Complete Streets, which may include street and sidewalk lighting; sidewalks and pedestrian safety improvements that provide ADA compliant accessibility; transit accommodations including pedestrian access to transit stops and bus shelters; bicycle accommodations including bicycle storage, bicycle parking, bicycle routes, shared-use lanes, wide travel lanes or bike lanes as appropriate; and street trees, boulevard landscaping, street furniture and adequate drainage facilities.

C. Downtown Rochester Master Plan Report (2010) states:

The design of streets is a critical aspect of the open space framework. Within a dense urban area, the spaces that make up the pedestrian aspect of the streets

— the sidewalks, street furniture, and building edges — significantly shape the public realm experience. Street investments also provide linkages in the open space loop. Third and Fourth Avenue are re-imagined as abundantly green streets that connect from Soldier's Memorial Field at the south to the dense core of Mayo's research district, providing a direct link for patients, employees and others to move from Mayo's center to the natural park environment. The paired avenues are redesigned with enhanced plantings and intermittent pocket parks, as development openings permit, which provides visual relief along the corridor and reinforce the atmosphere of a linear park.

The framework acknowledges that Civic Center Drive, Broadway, 2nd Street SW and 4th Street are the major connective streets into and within downtown Rochester, while 1st Avenue becomes one of the most important, character-defining destination streets in downtown. Street improvements on 1st Avenue, including wider sidewalks, generous trees and plantings along the street edge, and bump-outs at the ends and mid-block, create a sense of place that is distinct from other corridors within downtown. The bump-outs and landscape

improvements encourage street level activity by creating outdoor gathering spaces and areas for outdoor cafe spaces along 1st Avenue from 2nd Street south to the future UMR campus.

D. Urban Village Overlay Zone Design Guidelines (2009) states:

Recommendations for Complete Streets:

- Sidewalks- The most profound way to change our streets is to change the balance between people and cars by seeking the widest possible sidewalks and calming traffic.
- Crosswalks- Crosswalks should favor pedestrian movement at all downtown intersections.
- Bike Lanes- Where bike lanes are desired, it should be at the expense of a car lane or a parking strip rather than at the expense of sidewalk width. Ideally, most streets in the urban village should be "calm" enough to allow bike traffic in car lanes rather than in a separate bike lane.
- Generous Street Level Windows- Windows engage pedestrians and create a feeling of trust and openness in a city. They enhance feelings of security, implying that users could be assisted if in danger (see Facades section).

- Street Furniture- Street furniture should be located at special places created at intersections, and represent opportunities to use the work of local artists and crafts people. Water features and art can also be incorporated into these special places.
- Lighting- Lighting exists at two levels -street lighting and sidewalk lighting. Street lighting provides a base level of illumination. Sidewalk lighting provides lighting for pedestrians. Both should meet dark sky guidelines and define the street space. Sidewalk lighting should define the pedestrian space and be of pedestrian scale.
- Street Trees- Trees should be consistently used to define the street space, provide shade in the summer, and create great environments for sidewalk cafes.
- Public Art- Great streets should accommodate and celebrate public art in a ll of its forms (see Public Art section).
- Transit Stops- Transit stops should be provided with amenities, public services and proper signage to increase the use of public transportation.

B.6. Establish the Urban Forest

- A. The DMC Master Plan (2015) states:
Street trees in tree wells in combination with other greening strategies are recommended for rainwater management as well as aesthetic and environmental reasons
- B. City of Rochester Land Development Manual and Ordinances states:
The City of Rochester finds that trees and especially shade trees along street provide numerous community benefits including:
- Economic stability through enhanced property values, improved property marketability, and as a component of city infrastructure
 - Energy savings by reducing the urban heat island impacts, and reduced building heating and cooling costs
 - Health benefits through and increased sense of community, mental comfort, traffic safety, traffic calming, and support of a walkable community.
 - Aesthetic values for residential and commercial areas
 - The amelioration of noise and glare
 - Air pollution reduction through removal of atmospheric chemicals

- including greenhouse gases and particulate matter
- Protection of water quality and enhancing storm water control

- C. Downtown Rochester Master Plan Report (2010) states:
General promotion of establishing “green streets” throughout downtown, with some streets receiving more treatment than others (e.g. 3rd and 4th Avenues)
- D. Urban Village Overlay Zone Design Guidelines (2009) states:
Street trees should be consistently used to define the street space, provide shade in the summer, and create great environments for sidewalk cafes.

B.7. Develop Sustainable Water Management Strategies

- A. The DMC Master Plan (2015) states:
The principles of sustainability are interwoven throughout the Development Plan through an integrated mix of medium-to-high density uses, integrated live-work environments and green/ park space features throughout the downtown. Additionally, the plan will strive to implement sustainable urban design and building practices to improve and enhance the environment and

quality of life, including storm water, transportation/transit, and parking systems. The Development Plan will recognize interrelationship of uses and build from these strategies to position Rochester and the DMC as a leader in sustainable urban environment.

B. City of Rochester Land Development Manual and Ordinances states:

64.310 STORMWATER RUNOFF:

Increases in runoff from the 10 year and 100 year frequency storms due to development shall be detained within the development and released at a rate no greater than existed prior to the development unless otherwise permitted by the City Engineer. Storm sewers normally shall be designed for a 10 year frequency storm, however; sewers designed to a greater frequency storm may be required where safer overland flow routes to requiring waters or major drainage facilities or collector systems are provided in a manner consistent with the Stormwater Management Plan. Greater runoffs may be permitted by the City Engineer if downstream stormwater management facilities are adequate for the conveyance or if the development is adjacent to a receiving body of water such as a lake or river and proposed runoff is consistent with the Stormwater Management Plan.

64.311 Overland Drainage Encouraged: The use of overland drainage and retention as an integral part of the control of stormwater runoff is encouraged where it is consistent with the Stormwater Management Plan, benefits groundwater recharge and reduces long-term maintenance costs.

C. Downtown Rochester Master Plan Report (2010) states:

Downtown Rochester is typical of many urban environments in that a high percent of surfaces are impervious. While Soldier’s Memorial Field is an exception to this, even the Zumbro River has been channelized and is conceived of as a hardscape. With these conditions, watershed and stormwater management are important considerations for environmentally sustainable master planning. In Rochester, there is an effort in place to integrate rain gardens into existing residential landscapes, and rain gardens will be supplemented by additional strategies to address on-site stormwater management, helping to reduce runoff. Green roofs are encouraged to increase the amount of pervious surfaces, and to avoid the urban heat island effect.

D. Urban Village Overlay Zone Design Guidelines (2009) states:

Not specifically addressed

B.9. Design Streets with Flexibility and Adaptability for Future Uses

A. The DMC Master Plan (2015) states:

The DMC Plan proposes a wide range of significant upgrades to the City street network, including narrowing of lanes, widening of sidewalks, better pedestrian crossing, etc. It does not specifically address flexibility and long range adaptability.

B. City of Rochester Land Development Manual and Ordinances states:

The Land development Manual and Ordinances does not specifically address flexibility and long range adaptability of the street network.

C. Downtown Rochester Master Plan Report (2010) states:

The DRMP Report proposes significant changes to street design in the downtown area but does not specifically address flexibility and long range adaptability of the street network.

D. Urban Village Overlay Zone Design Guidelines (2009) states:

Downtown streets must balance the needs of pedestrians, bicycles, transit and the automobile in creating an attractive and viable urban core. Downtown streets are for people first, commercial activity second, parking third and through-traffic fourth. They should be “Complete Streets” which respect the pedestrian, bicycle transit, automobile hierarchy.

B.10. Connect Street, Skyway, Subway Levels

A. The DMC Master Plan (2015) states:

Skyways and subways are a critical component of the pedestrian system, particularly during the winter months. Their expansion should be limited to improvements that close gaps in the system of the downtown core only.

B. City of Rochester Land Development Manual and Ordinances states:

The design of the development incorporates features which provide protection to pedestrian traffic from adverse climatic conditions. Such features include:

- Skyway or subway connections to adjacent buildings across the right-of-way

- Canopies or other exterior coverings across sidewalks
- Heated sidewalks
- Enclosed connections to public parking ramps
- Provision of off-street or protected passenger loading zones
-

C. Downtown Rochester Master Plan Report (2010) states:

Creating a comfortable, safe and enticing pedestrian environment throughout downtown Rochester is a primary mobility goal of the Master Plan. This plan respects the value of the skyway and subway pedestrian network, and includes recommendation for completing key segments of the skyway system. However, recommendations stress the development of the street level pedestrian environment as a priority. This is necessary to attain several important Plan objectives:

- Enhance business vitality at street level
- Create a sense of safety and security for all people at all times of day
- Calm traffic and create streets that are inviting for pedestrians and bicyclists

D. Urban Village Overlay Zone Design Guidelines (2009) states:

Downtown offers a number of high quality views and vistas. Unique views distinguish Rochester from other cities, and orient residents and visitors. A strong downtown identity depends upon the preservation and enhancement of these special views and view corridors.

- Assess the impact of skyways which potentially block significant views.
- Where skyways are constructed, make them as transparent as possible.

Typical Street Types Alleys and Lanes

A. The DMC Master Plan (2015) states:
Not specifically addressed

B. City of Rochester Land Development Manual and Ordinances states:
Not specifically addressed

C. Downtown Rochester Master Plan Report (2010) states:
Not specifically addressed

D. Urban Village Overlay Zone Design Guidelines (2009) states:

Recommendations:

- Identify connections through alleys, arcades, intra-block areas, courtyards, river walks and traditional sidewalks that help to create a pedestrian network linking all downtown zones and assets.
- Provide creative design solutions for vibrant alleys/walkways that are active, safe, engaging and help stimulate business activity.
- Integrate the operational needs of downtown alleys, including service, trash and vehicular access, with pedestrian activities.

All Street Types

Recommendations:

- The Urban Village is well served by existing alleys, enhancing the opportunity to minimize curb cuts which damage walkability and potential building density.
- Access to private property should be via an alley as opposed to a private curb cut. As areas are being redeveloped, curb cuts should be eliminated.
- Alleys should be re-established in the Urban Village, where not present.

C.1. Design Buildings to Establish Sense of Urban Enclosure

A. The DMC Master Plan (2015) states:

Massing

The Design Guidelines define building mass, street wall heights, and facade articulation necessary to create a lively urban waterfront environment. The building bulk controls are intended to create scale relationships between new buildings and surrounding areas that will help define urban spaces for anticipated activities in the area. The Design Guidelines seek to integrate new development within the urban scale of Downtown Rochester and to step down as they approach adjacent residential neighborhoods.

Build-To-Lines

Street walls on public rights-of way are encouraged to vary in height and be expressed in distinguishable facade types to evoke multiple buildings and uses. The majority of lineal length of the building frontage shall be set at the parcel boundary line or within 10 feet from it. The first two stories of a building are required to be set at the front property line. Variation in street wall facades is encouraged along upper levels and rooflines. In areas where

active ground floor uses are encouraged, building entrances should be located approximately every 30-35 feet - but at a maximum of 75 feet. Recesses are welcome so as to allow for more outdoor dining space as well as to highlight key entrances to stores and uses above grade.

Height Limits

The Development District, particularly with a focus on the downtown core, is intended to create a varied skyline, with buildings of different heights. Street wall height is measured at build-to-lines, which define the mandatory primary facade position on all blocks.

The calculation of building heights does not include architectural embellishments such as cornices or corner towers or functional elements such as elevator overruns, HVAC equipment or roof bulkheads. Building height and setback requirements vary within the DMC Development District (see Figure Appendix 5.4) with the highest buildings encouraged within the downtown core adjacent to key places and discouraged adjacent to established residential neighborhoods. Buildings should be a minimum of two stories or approximately 30 feet high where possible, unless otherwise prohibited by existing

regulations. Buildings setbacks and horizontal treatments shall be employed on buildings greater than three stories or 40 feet to ensure that buildings maintain a pedestrian scale and that broad vistas are not compromised. Buildings within the Tall Building Core shall have a setback of a minimum of 10 feet, but may rise as a uniform tower without additional setbacks to the building crown. Buildings that fall outside of the Tall Building Core shall adhere to the Rochester Downtown Alliance Urban Village Overlay Zone Design Guidelines' requirements for setbacks.

B. Downtown Rochester Master Plan Report (2010) states:

Building Heights

Mayo Medical and Clinical District
Multi-story with buildings that are usually vertically expandable. Complies with form and standards in medical institutional special district

3rd and 4th Ave and Research Corridor
4 Story street edges stepping back to towers, heights of new development compatible with context

Main street/ Mixed Use District
3-4 Story street edges stepping back to 8-10 story towers along mid-block alleys

2nd Ave and Broadway
New development must respect the height and massing of existing buildings with historic significance

Riverfront Arts District
4 Story street edges stepping back to towers, heights of new development compatible with context
Downtown neighborhoods
3-6 Story residential townhouses and apartment buildings lining streets and park edges along river

C. Urban Village Overlay Zone Design Guidelines (2009) states:

Recommendations:

- At the front lot line, except as provided below, no setback is permitted for the ground through fourth floor facades of a principal building.
- If a principal building is located on a corner lot, the ground floor through fourth floor facades shall be located on the lot lines.
- The following exceptions to the no setback provision along front and side street lot lines shall apply:
 - A portion of the building facade may be set back from the lot line in order to provide an articulated facade or to accommodate a

building entrance, provided that the total area of the space created does not exceed one square foot for every linear foot of building frontage.

- In order to accommodate an outdoor dining or seating area, up to 50% of the building facade may be set back no more than 20 feet from the lot line.
- The minimum height of a principal building shall be two (2) occupied building floors or stories.
- The maximum height of a principal building shall be six (6) occupied building floors or stories.
- The facade of any floor above the fourth floor shall be set back from the right of way line of any public or private street a distance of at least one foot for every one foot of building floor height.
- Any floor or story above the fourth floor shall be used for residences or accessory uses for the sole use of residents of the building.
- No minimum rear setback is required.
- Ground and second floor facades of a principal building shall be located on the interior side lot lines. An exception is an arcade. Arcades connecting the primary street with the alley (where occurs)

are permitted for pedestrian access to the alley. Maximum width of an arcade is 18 feet.

D. City of Rochester Land Development Manual and Ordinances states:
Not specifically addressed

C.2. Design Tall Buildings to Preserve Sunlight, Comfort and Views

Not specifically addressed

C.3. Contribute to a Vibrant Streetscape

A. The DMC Master Plan (2015) states:

Active Ground Floor Uses

Active uses that engage pedestrians shall be encouraged fronting public places and along street frontages. Ground level land uses shall be established and designed to animate public sidewalks, pedestrian streets, plazas and waterfront promenades to provide visual appeal. Active ground floor areas include the following uses: (Figure Appendix 53)

- Commercial uses, such as retail stores, retail service establishments, food and beverage establishments; and/or entertainment facilities
- Lobbies for above grade uses such as healthcare, bio-tech , office residential and hotel with an

emphasis on high quality design, visual transparency and where possible, uses that engage the street.

- Institutional uses, such as museums and similar facilities of an educational or heritage nature.

Storefront and Retail Facades

The design of storefronts, entranceways and awnings should promote a sense of openness; making sites visually accessible creating a vibrant atmosphere with displays that encourage active street life and window shopping.

- Storefronts should be integrated into the design and materials of the entire building. The storefront’s bulkhead/ kneewall should be constructed of a durable material.
- The design of the doors should contribute to the character of and be compatible with the storefront design and materials within the DMC Development District.
- Interior display lighting should be installed to include adjustable incandescent light fixtures. No fluorescent lighting shall be utilized for signage purposes.
- Any storefront with a ground level restaurant uses may have a hardscape front yard that extends to the sidewalk area as exterior cafe

space or terrace area. The use of temporary railings may be permitted to separate cafe dining from sidewalk areas, provided railings utilized are complimentary building materials and reference the architectural character of the area. Railing parts and fittings shall be removable and designed so as not to damage any street maintenance equipment.

Glass and Fenestration

Glazing and openings shall promote flexibility of ground floor uses and the potential for change over time. Storefronts should be integrated into the design and materials of the entire building and reflect the unique character and design of each retailer.

Window proportions, groupings and rhythms shall be integral elements of the design of each building facade and urban street-wall. Glazing systems shall be designed to promote area-wide visibility, accessibility and safety during evening hours and during the winter season.

Appurtenances

Canopies, awnings and marquees are permitted and encouraged as they provide weather protection and visual interest to the streetscape. Canopies can

be constructed of a variety of materials including both fabric and metal. Fabric awnings can be retractable.

Lettering and logos are permitted on the awning. It is desirable for these projecting elements to incorporate outdoor heating systems to lengthen the comfortable use of outdoor spaces. Awnings and canopies may be lit from the exterior.

B. Downtown Rochester Master Plan Report (2010) states:

Not specifically addressed

C. Urban Village Overlay Zone Design Guidelines (2009) states:

The Urban Village Overlay Guidelines identify a series of permitted and deleted uses. Permitted uses include a variety of commercial, office, residential, institutional and entertainment functions. All of these can be designed to enhance and not detract from the pedestrian nature of the streetscape. Deleted uses include auto repair and maintenance, car washes, filling station, warehouses and other non-pedestrian-oriented uses that detract from the pedestrian nature of the streetscape.

Entrances, Openings and Passages

- At least 50% of the first floor of the

primary facade should be articulated with building entrances, display windows, and windows affording views into retail, office, or lobby spaces. This requirement shall apply to all public street frontages.

- For upper floors, floor-to-floor heights and window openings should appear to be similar to those seen traditionally.
- All street facades should have architecturally articulated entrances. A building located on a corner lot may provide a single primary entrance at the corner.
- Building entrances shall be recessed into the face of the building to a depth that permits the entry door to open and close without projecting into the public right-of-way.
- Occasional pedestrian passages are encouraged to break down the scale of a block, and to connect streets, alleys and interior courtyards. This is especially important in conjunction with larger developments.
- Buildings should be designed or modified to be handicap accessible.

Quality & Details

- Buildings should engage the public. The presence of window displays and

human-scale design elements will add interest to street-level facades.

- Highly reflective or darkly tinted glass should not be used.
- Projections over the sidewalk are allowed (subject to municipal approval) including balconies and bay windows. Projections shall not extend more than 36 inches beyond the boundary of a right-of-way. Buildings should explore opportunities to create “second storefronts” along arcades, alleys and walkways. The architectural features, materials, and the articulation of a facade of a building shall be continued on all sides visible from a public street.

Awnings

- Awnings should fit within the frame of the storefront; broken into segments that reflect the doors and windows beneath them. Awnings should not hide the building's facade, distort its proportions, or cover architectural features. Awning colors should relate to and compliment the building facade.
- Awnings should have a minimum vertical clearance of 8'6" above the sidewalk and should project at least 36 inches from the building.

- Awnings should be attached directly to the building and require no poles or sidewalk support.
- Awnings should be retractable, when possible, for seasonal use and longevity.
- Awnings should be shed awnings, when possible, with simple horizontal valences and no end panels, as they are more transparent, allow better views into storefronts and maintain good visual connections.
- Awnings of canvas or fabric-like vinyl, stretched over a frame and extended over a doorway or window, are preferred. Metal, wood, glass or other materials will be reviewed on a case-by-case basis.
- Glowing awnings (backlit, light showing through the material) are discouraged.

D. City of Rochester Land Development Manual and Ordinances states:
Not specifically addressed

C.4. Promote Quality and Permanence in Development

A. The DMC Master Plan (2015) states:
Architectural Features
New buildings shall be constructed

with finish materials that give modern expression to the materials commonly used throughout the project area. The design of new buildings and structures should be timeless and enduring, seeking inspiration from the rich heritage of Rochester and Southeast Minnesota.

Materials
New buildings shall be constructed with finish materials that give modern expression to the materials commonly used throughout Rochester's rich architectural history. Final materials may vary from the specific details enumerated in these Design Guidelines, but the general objectives, approach and intent shall remain consistent with the approved DMC Development Plan.

Building Materials and Color
The use of innovative building technologies is encouraged throughout the Development District and should be contrasted with traditional building materials to reference the architectural character of Rochester and Southeast Minnesota.

New buildings shall be constructed with materials common throughout Rochester and Southeast Minnesota. Use of materials such as brick, stone, steel and wood is recommended for the first 60 vertical feet of a building's base,

especially on pedestrian-oriented street wall facades. The use of these high-quality materials is intended to convey a solid and permanent look.

The use of asbestos shingles, imitation stone, imitation brick, stucco, exterior insulation finish systems or vinyl aluminum siding is discouraged on any building facade visible from pedestrian streetscape areas, including pedestrian/service easements and visible upper stories.

Masonry facades shall include the use of stone as architectural accents for lintels, sills, copings and keystones. Foundation bases, sills and lintels shall to the greatest extent possible use local sandstone or limestone. Masonry finishes are encouraged to be natural rather than highly finished or polished and should be made from regionally produced or quarried stone.

B. Downtown Rochester Master Plan Report (2010) states:
Not specifically addressed

C. Urban Village Overlay Zone Design Guidelines (2009) states:
Recommendations:

Quality & Details

- Buildings should be constructed of high quality materials such as brick, stone, or cast stone.
- Highly reflective or darkly tinted glass should not be used (at street level).

D. City of Rochester Land Development Manual and Ordinances states:
Not specifically addressed

C.5. Design for Coherency

A. The DMC Master Plan (2015) states:

Architectural Features

Architectural features (shapes, colors, clocks, towers, corners, etc.) should be used to create variety and offer visual relief and interest. The intent of these features is to emphasize major view corridors and significant places throughout the Development District and also to attract views from major thoroughfares, key places and the waterfront .

Building Edges

Special care and design attention along with more decorative treatment and materials are desired for all edges of buildings. These are the most visible part of the urban scene. Edges include

rooflines, canopies, cornices and more prominent window openings and entrances.

Building Corners

Building corners should be made more noticeable. Changes in orientation, shapes, additional materials, colors and projections are all favored means of adding special visual appeal to interesting streets, public spaces and waterfront. These are the building parts that foster longer and more dramatic views.

Building Bases

Bases should be a minimum of two stories and articulated by material changes to emphasize the ground floor activity and provide the highest quality for the pedestrian environment. The diversity of storefront articulation on one parcel will break down the scale of the overall parcel and the street wall.

Cornices

A crowning projection, or cornice, shall be encouraged at the top of a building along the street wall at the top of the building for those under 60 feet, and at the setback of those over 60 feet. These elements can generally be modest in detail but cornices within the core of the

downtown and adjacent to key places, should be more pronounced.

Glass And Fenestration

(NOTE: These also apply to other Guidelines—C.5)

Glazing and openings shall promote flexibility of ground floor uses and the potential for change over time. Storefronts should be integrated into the design and materials of the entire building and reflect the unique character and design of each retailer.

Window proportions, groupings and rhythms shall be integral elements of the design of each building facade and urban street-wall. Glazing systems shall be designed to promote area-wide visibility, accessibility and safety during evening hours and during the winter season.

Signage

The DMC Development Plan imagines a wide variety of signage types and locations including canopies and vertical marquees. Signage should be designed to be integral with building design. They should be pedestrian-oriented in size, placement, material and color as well as auto-oriented to be seen from afar.

Lighting should come from direct shielded light sources and be carefully integrated into the overall design of the building so as to provide visibility and safety but avoid creating glare or light distribution that adversely affect motorists or pedestrians.

Neon signs may be allowed so long as they are carefully designed in size, shape and color that complement the architecture of the building and the district.

Lighting

The vision for the DMC Development District seeks a maximum amount of light, to create a variety of environments and experiences. Lighting should be used for artistic purposes and carefully integrated with the architecture, such as to accentuate edges.

Commercial buildings are intended to be inviting to the public to encourage visitors to enter the site from the city streets, to shop at the retail stores and eat at the restaurants, and to generally stay longer and take full advantage of the waterfront area. Balanced against an appropriate level of street illumination is the need to limit light that is cast up

and into upper floor of buildings or the atmosphere. Lighting fixtures should be scaled to the pedestrian. Architectural accent lighting should highlight comers and roof edges.

Storefront lighting is one of the best sources of sidewalk lighting in urban areas. It is warm and welcoming and contributes to a sense of activity and watchfulness. It also generally provides a greater amount of light directly onto the sidewalk than to street-level luminaries. Retail storefronts are an effective way to provide lighting from the buildings.

Refuse Collection

Refuse collection areas and dumpster locations shall be fully enclosed within portions of principal buildings for which they serve and shall be screened from view so as not to affect other views from around the site.

B. Downtown Rochester Master Plan Report (2010) states:

Not specifically addressed

C. Urban Village Overlay Zone Design Guidelines (2009) states:

Recommendations:

Massing & Materials

- Buildings should be “vertically

proportioned” with a distinct base, a middle, and a top, created by variations of detailing, color and/or materials. Verticality is emphasized using structural bays, variations in materials, window proportions, and variations in building plane. Verticality reflecting the twenty-two feet historic bay width in Rochester is recommended.

- Buildings should meet the ground with a solid base treatment that creates a visual transition from sidewalk to building wall.
- Buildings should express the traditional distinction in floor heights between street levels and upper levels through detailing, materials and fenestration. The presence of a horizontal material transition is an important feature in this relationship.
- New buildings must provide a horizontal sign frieze in order to define a strong boundary between the ground level and upper facade.

Signage Recommendations:

- Signs should be oriented to the pedestrian. Projecting signs, banners, awnings, and wall and window graphics are effective. Lettering styles should be proportioned, simple, and easy to read.

- Signage should not project above the cornice line or be mounted on the roof of any building.
- Signs should not cover windows, architectural elements or architectural details and should fit the building facade as an architectural element.
- Signs should take into consideration adjacent storefronts and signage and make a positive contribution to the general appearance of the street and commercial area.
- Businesses located in alleys, courtyards, arcades, river walks & intra-block areas should be identified from the street.
- Existing historic building signs should be returned to their original design when appropriate.
- Signs should be durable, well-designed and act as unique expressions of the business.
- Street numbers should be prominently displayed at the main entrance to every business, and be clearly visible from the street or alley.
- Window signage should be limited to one-third of the window surface area.
- Wall signs should be positioned within architectural features such as the panels above storefronts, on the transom, or flanking doorways.

- Projecting signs should be positioned along the first floor level of the facade. Projecting signs may take on their own special shape, or create their own symbol within the overall facade design.
- The light level should not overpower the facade or other signs on the street. The light source should be shielded from pedestrian view.

Building Lighting

- Incorporate pedestrian scale fixtures that compliment the building, shine downward and emit a warm light along walkways. In general, these lights should be mounted at a height not greater than 12 feet.
- All building entrances, including arcade, alley and others, should be well lit.
- Fixture style and finishes should relate to and compliment the building facade.
- Lighting sources should be concealed from view to prevent glare and promote lighting uniformity.
- Select spotlighting and colored lights used to illuminate signs or prominent building details will be reviewed on a case-by-case basis.

Service Entrances, Utility, Trash, Equipment Screening

- Consider service facilities as an integral part of the site plan and avoid siting service areas and mechanical equipment as an afterthought.
- Locate service, loading, and storage areas within the buildings as much as possible, and away from public streets and public spaces when feasible. Where possible, locate service access along an alleyway or within the building. The frequency of trash pickup may need to be increased to avoid unsightly volumes of trash buildup.
- Locate rooftop equipment so that it is not visible from the adjacent street, or screen it with building-compatible materials.
- Use methods of rooftop screening that are durable and integral to the building's form. Screening should be designed to recede against open sky, others should be designed to relate in color and material to the building and its surrounds.
- Give consideration to potential views of the rooftop from adjacent buildings.

D. City of Rochester Land Development Manual and Ordinances states:
Not specifically addressed

C.6. Design for Flexibility and Adaptability for Future Use

A. The DMC Master Plan (2015) states:
Not addressed.

B. Downtown Rochester Master Plan Report (2010) states:
Not addressed.

C. Urban Village Overlay Zone Design Guidelines (2009) states:
Not addressed.

D. City of Rochester Land Development Manual and Ordinances states:
Not addressed.

C.7. Create Spaces for Collaboration

A. The DMC Master Plan (2015) states:
Not addressed.

B. Downtown Rochester Master Plan Report (2010) states:
Not addressed.

C. Urban Village Overlay Zone Design Guidelines (2009) states:
Not addressed.

D. City of Rochester Land Development Manual and Ordinances states:
Not addressed.

C.8. Meet Sustainable and Healthy Building Design Standards

A. The DMC Master Plan (2015) states:
Section 6.6 addresses sustainability including recommended targets for energy and carbon.

B. Downtown Rochester Master Plan Report (2010) states:
Includes Sustainability Framework (p 66-69) with no specific recommendations

C. Urban Village Overlay Zone Design Guidelines (2009) states:
Not addressed.

D. City of Rochester Land Development Manual and Ordinances states:
Not addressed.

C.9. Connect to District Systems

A. The DMC Master Plan (2015) states:
Not addressed.

B. Downtown Rochester Master Plan Report (2010) states:
Not addressed.

C. Urban Village Overlay Zone Design Guidelines (2009) states:
Not addressed.

D. City of Rochester Land Development Manual and Ordinances states:
Not addressed.

C.10. Design Roofs for Visual Impact and Sustainability

A. The DMC Master Plan (2015) states:

Skyline

The goal for the project is to create a varied and highly decorative skyline as seen from afar. The varied rooflines are achieved by changing heights, varying roof types and roof angles and the addition of vertical elements to contrast with the roofs.

Mechanical and HVAC equipment should be integrated into the roof design and screened in a method that is integral to the architectural design of the building and that adds visual interest to the skyline.

B. Downtown Rochester Master Plan Report (2010) states:
Not addressed.

C. Urban Village Overlay Zone Design Guidelines (2009) states:

Roofs & Projections

- Rooflines should be expressed in a visually interesting manner that complements the composition of the building and the surrounding area. Use a strong, attractively detailed cornice or parapet. Sculpted roof forms are permissible if they employ high quality roofing materials.

D. City of Rochester Land Development Manual and Ordinances states:
Not addressed.

C.11. Design Parking Structures to Enhance Pedestrian Realm

A. The DMC Master Plan (2015) states (Appendix 5.0 Design Guidelines):

Parking

Throughout the DMC Development District, parking is intended to be convenient, but not dominate the view. Parking will be located within blocks, but will be setback or otherwise screened to not be visible from key locations.

Non-enclosed surface parking areas shall be fully screened from rights-of-way by means of landscaping, solid walls or decorative fencing consistent with

the architectural guidelines. Structured parking areas are intended to be shared and to be hidden from major rights-of-way, key places and the waterfront. Above-ground structured parking within a development parcel should be either completely encapsulated (i.e. clad in such a manner that it is indistinguishable from the building elements around it) or visually screened by means of other uses like substantial perimeter planters or other architectural elements that effectively shield vehicles within the structure from view at grade level.

Where parking is visible, the exteriors fronting on public thoroughfares are to be designed as street oriented architecture with the same principles found in these guidelines for traditional occupied buildings, except for mandatory ground level uses.

Ceiling-mounted lighting within parking structures should be screened from grade-level view. Where parking exists on top floors, elements such as trellises or plantings shall screen views from above. At street level, other uses, preferably active uses, shall screen above-grade parking from predominant public views where possible.

Off-street parking shall be provided for Residential uses within the DMC Development District at a recommended factor of 1.0 spaces/unit. It is encouraged to locate off-street parking within the same block as the residential use for which it is being constructed .

Garage exhaust for below grade parking garages will be vented through the roof of the highest building of the roof of the podium .The garage exhaust at the roof shall be active -with exhaust fans and emergency generators having the option of being located in the garage levels below the first floor or on the roof of the building above.

Access and Entrances

Within access and entrance zones, curb cuts should not be located within 50 feet of the end of any block or intersection. Vehicular curb cuts should be coordinated with Rochester Public Works Department, MnDOT and local zoning requirements and be designed to work in coordination with pedestrian and bicycle circulation. All parking service entries are to be designed with attractive doors. Parking signage and lighting should be coordinated with building and public space design.

B. Downtown Rochester Master Plan Report (2010) states:

Parking recommendations (p 135 table) Structured parking integrated in block development, street level entries minimized and ground level lined with active uses

C. Urban Village Overlay Zone Design Guidelines (2009) states:

Recommendations:

General

- Enclosed parking is encouraged. Parking lots are discouraged, but permitted when they adhere to design guidelines.
- Lots (surface parking)
- Parking lots are not permitted to front on pedestrian oriented streets (such as 1st Ave. SW).
- Parking shall be located at the rear of the principal building with access from the alley, if possible.
- Parking otherwise visible from the street should be screened with a wall or screening compatible with the building design.
- Structures (ramps)
- Structured parking preserves land, minimizes environmental impacts, and maintains and contributes to the integrity and safety of the pedestrian streetscape. It can be particularly

effective in allowing increased densities.

- All parking structures shall contain street level active uses (retail, for example) on the major right of way (such as 1st Ave. SW).
- Structured parking facades should contain architectural elements with appropriate proportions and materials to harmonize with the streetscape and nearby buildings. (Note: There are several other recommendations about calculating parking requirements and other policies to reduce impacts. These do not seem to fit here where we are focusing on physical design.)

D. City of Rochester Land Development Manual and Ordinances states:

Parking facilities are addressed in Section 63.427. Relevant parts include: Subd. 8. Modifications to Selected Zoning Regulations Applicable to the Approval Process, General Zoning District Standards, or Site Appearance Standards for the Use of Land for Vehicular Parking under the Land Development Manual or Required New Design Provisions within Portions of the DPOZ:

1. Application.
2. Definition of Use.
3. Approval Process and Scope.

4. Alternative Compliance.
5. Special Ordinance Exemptions.
6. Restricted Site Locations.
7. Vehicular and Non-vehicular Access to a Parking Facility.
8. Placement of Accessory Parking Facilities on a Lot with a Principal Building.
9. Surface Parking Lot Landscape Buffering.
10. Parking Structure/New Building.

Appearance Guidelines:

- Every facade of a new or expanded parking structure or building that faces a public street (not an alley) should be of a design that ensures that sloped floors and ramps in the parking facility do not dominate the exterior appearance of the structure or building and that vehicles within the structure or building are screened from view from the public street except where visible through entrance/exit openings on the ground floor.
- The appearance of at-grade parking areas located beneath an elevated building that face a public street (not an alley) should be shielded from street view with architectural screen, building facades, or other suitable elements.

- The facade of a new or expanded parking structure or building that is within two stories in height above the adjacent grade and fronts on a public street should be constructed with the same level of architectural detail and type of exterior materials as the principal building on the lot.
- The facade of a new or expanded parking structure or building should blend in with the overall appearance of the existing buildings lying adjacent to or directly across the street by maintaining the patterns of horizontal (story dimensions) and vertical alignment (building facade widths) of the architectural features established by the neighboring buildings.
- The design of the ground floor and second floor of a parking structure or building fronting on a public street should make every attempt to relate to the human scale through the use of high quality finishes, awnings, lighting, building projections, art, landscaping or other pedestrian-oriented features.
- To provide for user security and public awareness, the building enclosure or facade around any stair or elevator tower for use by the general public in a new or expanded

parking structure or building that is visible from a public street (not an alley), should be fifty (50)% transparent to viewers from the street.

Parking Facility Lighting

Any exterior lighting provided for a parking facility shall utilize full-cutoff luminaries. If pole mounted, the maximum height of the luminaire shall be 18 feet with a maximum permitted illumination of one footcandle at the property line. The light source of the luminaries used for interior lighting in a parking structure or building shall be completely shielded from view by persons standing anywhere within the adjacent street right-of-way (see Figure 5).

Required Bicycle Parking

Not specifically addressed

C.12. Make Parking Structures Adaptable to Future Uses

A. The DMC Master Plan (2015) states: Section 6.6 addresses sustainability including recommended targets for energy and carbon.

B. Downtown Rochester Master Plan Report (2010) states:
Includes Sustainability Framework (p 66-69) with no specific recommendations

C. Urban Village Overlay Zone Design Guidelines (2009) states:
Not addressed.

D. City of Rochester Land Development Manual and Ordinances states:
Not addressed.

Project Review Checklist

02A | Downtown District Guidelines

A.01

Create a Safe, Inviting and Connected Public Realm

- Does the plan or project contribute to creating a safe, inviting and connected public realm?
- Are existing views and view corridors enhanced?

A.2.

Enhance Connections to Nature and Natural Systems

- Does the plan or project contribute to enhancing connections to nature and natural systems?

A.3.

Establish District and Sub-district Identity

- Does the plan or project contribute to establishing district and sub-district identity?

A.4.

Strengthen Gateways

- Does the plan or project contribute to strengthening gateways between sub-districts?

A.5.

Establish Signature Open Spaces

- Does the plan or project contribute to establishing signature open spaces?

A.6.

Reuse and Restore Buildings

- Does the plan or project reuse and restore existing buildings?

A.7.

Infuse the City with Public Art

- Does the plan or project contribute to public art in the city?

A.8.

Develop Mixed Use Neighborhoods

- Does the plan or project contribute to establishing mixed use neighborhoods?

A.9.

Promote Urban Agriculture

- Does the plan or project contribute to establishing urban agriculture?

A.10.

Create District Parking

- Does the plan or project contribute to establishing district parking?

A.11.

Create Sustainable Community Infrastructure (district energy, district stormwater, waste collection)

- Does the plan or project contribute to creating sustainable infrastructure?

A.12.

Create a Healthy Community

- Does the plan or project contribute to creating a healthy community?

02B | Streets and Corridors

B.1.

Design Streets for Pedestrians

- Does the streetscape enhance the beauty and functionality of the pedestrian realm?
- Does the project use state-of-the-art technologies for lighting, landscaping, furnishings, etc?

B.2.

Design Streets for Bicycles

- Does the street support safe and convenient access for bicycles?

B.3.

Design Streets for Mass Transit

- Does the street support safe and convenient access for mass transit?

B.4.

Design Safe Efficient Roadways

- Is the roadway safe, convenient and efficient while also accommodating pedestrians, bicycles and mass transit?

B.5.

Design Safe Multimodal Intersections

- Is the intersection safe and efficient in accommodating pedestrians, bicycles, mass transit and cars?

B.6.

Establish the Urban Forest

- Does the project contribute to the quality of the urban tree canopy?
- Does the project employ best-practices technologies for street tree installation?

B.7.

Develop Sustainable Water Management Strategies

- Does the project effectively harvest, manage, and clean/store/reuse rainwater?

B.8.

Design Smart Streets

- Does the project incorporate smart technologies?

B.9.

Design Streets with Flexibility and Adaptability for Future Uses

- Does the project design promote short-term flexibility?
- Does the project design anticipate change over time and include innovative strategies for adaptation (e.g. rainwater management, reduced ADT demands, etc.)?

B.10.

Connect Street, Skyway, Subway levels

- Is the project located in a key site where opportunities for connecting two or three pedestrian systems are feasible?
- If so, does the project establish connections in a clear, safe and easily accessible way?

02C | Individual Sites and Buildings

C.1.

Design Buildings to Establish Sense of Urban Enclosure

- Does this project contribute to a sense of urban enclosure?
- Does this project meet the specific requirements for build-to lines, height and setbacks in upper floors?

C.2.

Design Tall Buildings to Preserve Sunlight, Comfort and Views

- Does this project contribute to a sense of urban enclosure at the base?
- Is the tower designed to preserve sunlight and sky view in the public realm?
- Is the project designed to mitigate wind conditions at street level?
- Is the project designed to preserve sunlight, views and privacy for occupants within the building?

C.3.**Contribute to a Vibrant Streetscape**

- Does this project contribute to a vibrant streetscape?
- Does this project meet the specific prescriptive requirements specified in this guideline?

C.4.**Promote Quality and Permanence in Development**

- Does this project use design principles and building materials that promote quality and permanence?

C.5.**Design for Coherency**

- Does this project have a coherent composition that integrates lighting and signage while screening out undesirable visual elements?
- Does this project meet the specific prescriptive requirements for building design elements specified in this guideline?

C.6.**Design for Flexibility and Adaptability for Future Use**

- Is this project designed to be flexible and adaptable to future uses?

C.7.**Create Spaces for Collaboration**

- Is this project designed to create spaces for collaboration?

C.8.**Meet Sustainable and Healthy Building Design Standards**

- Does this project meet sustainable design requirements specified by the City of Rochester for the DMC District?

C.9.**Connect to District Systems**

- Is this project designed to connect to district energy, district stormwater and other advanced infrastructure systems?

C.10.**Design Roofs for Visual Impact and Sustainability**

- Does the top of the building contribute to the character of the skyline?
- Are mechanical equipment, penthouses and other functions on the rooftop adequately screened?
- Is the rooftop attractive when seen from above?
- Is this project designed to support the use of the upper level for solar collectors?
- Is this project designed to support the use of the upper level for a green roof?

C.11.**Design Parking Structures to Enhance Pedestrian Realm**

- Does this project locate and screen parking to minimize its impact on the pedestrian environment?
- Does this project enhance the pedestrian environment through creation of ground floor activities and uses?

C.12.**Make Parking Structures Adaptable to Future Uses**

- Is this project design to be adapted to other uses in the future if parking demand changes?
- Is this project designed so that it can be easily disassembled?

List of Figures

Figures	Page
1. Key aspirational goals for DMC Project	10
2. DMC District and sub-districts	11
3. Previous planning documents for downtown Rochester	13
4. Rochester DMC Planning and Implementation Process	15
5. Organization of the guidelines	17
6. A successful public realm should include connected and beautiful places. Boston Commons, Boston MA	25
7. Rochester's public realm should connect to nature and natural systems. Boston Commons, Boston MA	27
8. Establishing district and sub-district identity can help celebrate the unique places in Rochester. Little Italy, Montreal, Canada	29
9. A successful gateway can celebrate the transition from one district to another. Gateway near Pioneer Square, Seattle WA	31
10. Creation of a signature open space strengthens district identity and is recommended in the center of each sub-district in the DMC District. Urban Plaza and Fountain, Boston MA	33
11. Reuse and restoration of existing buildings provides affordable and distinctive space for entrepreneurial start up businesses. Park Shops Adaptive Reuse, Raleigh NC	35
12. Cloud Gate by Anish Kapoor, Millennium Park, Chicago IL	37
13. Successful public art can be highly interactive and attract people to signature spaces. Fountain Plaza by Diedre Saunder, Silver Spring MD	37
14. Weatherdance Fountain by Andrea Myklebust and Stanton Sears, Iowa City IA	37
15. Mixed use neighborhoods are vibrant places that will bring added vitality to Rochester. Streetscape, Arlington VA	39
16. Urban agriculture can enliven the city and promote a healthier, locally sourced diet. Lafayette Greens, Detroit MI	41
17. District parking is seamlessly integrated into the design and placed in the center of the block. St. Louis Park MN	43
18. District energy systems can incorporate multiple sources.	45
19. Making stormwater collection visible educates the public about its management.	45
20. Centralized underground waste collection/separation system eliminates garbage collection on streets. Stockholm, Sweden	45
21. Recreational opportunities contribute to a healthy community. Saint Paul MN	47
22. European multimodal streets accommodate all users. Amsterdam, The Netherlands	51
23. Multimodal street prioritizes pedestrians and reduces the impact of automobiles. Buenos Aires, Argentina	51
24. Curbless multimodal streets can delineate uses with changes of color or texture.	51
25. Sidewalk zones - minimum widths	52
26. Plan of sidewalk zones at corner	52
27. Plan of sidewalk zones at corner with cafe	52
28. Sidewalk zones - preferred widths	53
29. Sidewalk with expanded frontage zone for sidewalk cafe	53

30. Sidewalk with expanded amenity zone	53
31. Sidewalk with arcade space	53
32. Sidewalk with expanded amenity zone for sidewalk cafe	53
33. Sidewalk materials and details	54
34. Sidewalk materials	55
35. Street furnishings	56
36. Pedestrian scale sidewalk lighting	57
37. Street lighting with attachments	57
38. Lighting fixture dimensions and spacing	58
39. Lighting elements and clearances	59
40. A bicycle lane next to a travel lane demonstrates how multiple modes can share the street. Toronto, Canada	61
41. Cycle track next to travel lane	62
42. One-way bicycle lane next to travel lane	63
43. One-way bicycle lane with buffer next to travel lane	63
44. One-way shared bicycle and travel lanes	63
45. Modern streetcars in dedicated guideways share the street with cars and parallel parking. Washington DC	65
46. Bus stop lengths and spacing	67
47. Bus stop lengths and spacing	67
48. Plan of mass transit stop area	67
49. Clearly marked roadways help promote safe multimodal roadway design. Brooklyn NY	69
50. Minimum widths for roadway lanes	71
51. Plan of roadway with traffic calming features	71
52. Stormwater management in planted median	72
53. Stormwater management in wider planted median	72
54. A well-designed intersection accommodates all users in a complex urban space. 9th Avenue, New York City NY	75
55. Plan of intersection corner with preferred crosswalk width	79
56. Plan of intersection corner with minimum crosswalk width	79
57. The urban forest transforms a street in Portland OR	81
58. Street trees, an essential part of the urban forest, help separate pedestrian movement from traffic and provide a sense of enclosure for the sidewalk. Portland OR	81
59. Advanced planting methods ensure tree survival	81
60. Tree spacing and offsets	83
61. Tree spacing and offsets	83
62. Recommended tree species	84
63. Japanese Tree Lilac	85
64. Serviceberry	85
65. Ohio Buckeye	85
66. Yellowwood	85
67. Magyar Ginkgo	85
68. White Oak	85

69. Sustainable stormwater management can be educational and engaging. State College PA	87
70. Stormwater collection becomes whimsical public art.	87
71. Sustainable stormwater management as public art.	88
72. Stormwater planter in an urban condition	88
73. Cistern for stormwater management under roadway median	89
74. Cistern for stormwater management under sidewalk zone	89
75. Solar-powered smart meter in Ann Arbor MI	91
76. Electric car-sharing vehicles charging in Berlin, Germany	91
77. Nice Ride has become an integral part of the transportation network using state-of-the-art technologies. Twin Cities MN	91
78. Smartphone apps give users access to real time information about routes and schedules.	91
79. Innovative street design can promote flexibility and adaptability, better accommodating many possible uses. Eugene OR	95
80. Food trucks can add vitality to the city street. Bell Street Woonerf, Seattle WA	95
81. Programmed events, like Thursdays on First, demonstrate how a street can become an active urban plaza. Rochester MN	95
82. Pocket parks can be developed in former parking spaces, enlarging and enlivening the sidewalk. San Francisco CA	95
83. Typical curb and gutter at roadway edge	97
84. Curbless design at roadway edge	97
85. Asymmetrical sidewalks provide space for pedestrian-oriented activities.	97
86. Externalizing vertical connections and making them highly visible will improve connectivity between the skyway, subway and street. Deutsches Historisches Museum, Berlin, Germany	99
87. Plan and section of visible connection between levels in exterior tower and building lobby	100
88. Plan and section of sunken courtyard provides visual connection and daylight to subway level	101
89. Vertical connection at High Line, New York City NY	101
90. Vertical connection within building lobby, Minneapolis MN	101
91. Map of street types in downtown Rochester (from RDMP)	103
92. Primary traffic street	105
93. Secondary traffic street	107
94. Main street/ Destination street	109
95. Transit mobility street	111
96. Alley transformed into pedestrian-friendly space	112
97. Alleys and lanes	113
98. Skyways are one example of a dedicated pedestrian corridor.	115
99. Culture Trail, Indianapolis IN	116
100. Hammarby Sjostad development, Stockholm, Sweden	116
101. City Loop, Rochester DMC Plan	117
102. The Crescent, Rochester DMC Plan	117
103. Four-lane roadway with bicycle lanes and generous sidewalk zones (100-foot Right-Of-Way)	119
104. Four-lane roadway with bicycle lanes and on-street parking (100-foot Right-Of-Way)	120
105. Four-lane roadway with extended sidewalk and on-street parking (100-foot Right-Of-Way)	121
106. Four-lane roadway with shared mass transit and bicycle lanes (100-foot Right-Of-Way)	122

107. Three-lane roadway with bicycle lanes and sidewalk zones (75-foot Right-Of-Way)	123
108. Two-lane roadway with bicycle lanes and on-street parking (75-foot Right-Of-Way)	124
109. Two-lane roadway with dedicated transit lanes and planted median (75-foot Right-Of-Way)	125
110. Buildings placed on lot lines form urban enclosure.	129
111. Having a choice between sun and shade enhances outdoor space.	129
112. Buildings define enclosed urban space. Peace Plaza, Rochester MN	129
113. Map of streets with zero setbacks	131
114. Building height and setback requirements	132
115. Map of tall building zone in downtown Rochester	133
116. Tall building tower designed to provide increased sunlight, natural ventilation and views, Seattle, WA	135
117. Tall building components and setbacks	136
118. Canopy at tall building base protects from wind and weather.	136
119. Tall building setback and base height limit adjacent to lower scale buildings	137
120. Plan of tall building tower setbacks and base for middle of block property	137
121. Tall building separation	137
122. Plan of tall building tower setbacks and base for corner property	137
123. A vibrant streetscape is created at ground floor level with outdoor cafes and gathering spaces.	139
124. A vibrant streetscape promotes walking in the city.	139
125. Active uses and windows to the street enhance the pedestrian experience. 3rd Street, Rochester MN	139
126. Sidewalk with expanded frontage zone for sidewalk cafe	140
127. Sidewalk with expanded amenity zone for sidewalk cafe	140
128. Sidewalk with arcade space	140
129. Active first level and street	141
130. Materials and design give a sense of quality and permanence.	143
131. High quality materials applied to a tall building	143
132. High quality materials applied to lower scale housing	143
133. Coherent design principles, proportions and elements contribute to an improved public realm. Orenco Station, Portland, OR	145
134. Vertical signage dimensions over sidewalk	147
135. Light fixture dimensions over sidewalk	147
136. Horizontal signage dimensions over sidewalk	147
137. Awning dimensions over sidewalk	147
138. Minimum dimensions for flexible and adaptable space	148
139. Warehouses often provide the optimum space for adaptive reuse in addition to being affordable and attractive to young entrepreneurs.	149
140. High ceilings and long spans provide flexibility.	149
141. Building spaces with longer spans and movable partitions can be adapted to multiple uses.	149
142. Spaces for collaboration can be created within buildings, in connections between buildings, and in outdoor spaces	150
143. Collaborative work space can take many forms such as this shared space in a former Grain Exchange Building. Minneapolis, MN	151
144. Attractive outdoor gathering spaces foster collaboration.	151
145. Coffee shops are typical gathering spaces and provide what has become known as a “third place” to work.	151
146. Bullitt Center is an example of a near zero energy building that meets Living Building Challenge criteria. Seattle, WA	153

147. Individual buildings can be designed to easily connect to district energy systems.	155
148. District stormwater systems enhance the public realm.	155
149. Centralized waste management systems eliminate trash collection vehicles and can separate waste for energy generation. Stockholm, Sweden	155
150. Green roofs are attractive but also help reduce the urban heat island and allow for gardening. Chicago, IL	157
151. Green roof improves view when seen from above.	157
152. A green roof with a solar collector installation can provide clean energy to the building below.	157
153. Parking structure with shops on first level and green wall covering parking levels above positively impacts the pedestrian environment. Miami, Beach FL	159
154. Parking ramp echoes architecture of nearby buildings.	159
155. Active first floor uses enliven the street scene while softening the impact of the parking deck. Belmar ,CO	159
156. Parking ramp placed in center of block with active uses on the outside	160
157. Map of active streets where parking facilities should be avoided (Source: Rochester Land Development Manual)	161
158. Before: Parking ramp adapted to include active uses on the street level	163
159. After: Parking ramp built for adaptability to future uses	163

References

Rochester Documents

City of Rochester Zoning Ordinance and Land Development Manual, 2015.

Destination Medical Center Master Plan, 2015.

Downtown Rochester Master Plan Report, 2010.

Envision UMR: A Campus Master Plan for the Next Chapter of Growth, University of Minnesota, 2014.

Rochester 2nd Street Corridor Framework Plan, City of Rochester, 2009.

Rochester Area Bicycle Master Plan, 2011.

Rochester Downtown Bicycle Study, 2009.

Urban Village Overlay Zone Design Guidelines, Rochester Downtown Alliance, 2009.

Other Resources

Boston Complete Streets Design Guidelines, City of Boston, Boston, Massachusetts, 2013.

Central City Fundamental Design Guidelines, City of Portland, Portland, OR, 2003.

River District Design Guidelines, City of Portland, Portland, OR, 2008.

Saint Paul Street Design Manual, City of Saint Paul, Saint Paul, MN, 2016.

Tall Building Design Guidelines, City of Toronto, Toronto, Canada, 2013.