



Date November 19, 2018

**RESOLUTION APPROVING THE MOVEDSM TRANSPORTATION MASTER PLAN
AND ADOPTING THE PLAN AS AN ELEMENT OF AND AMENDMENT TO THE
PLANDSM: CREATING OUR TOMORROW COMPREHENSIVE PLAN**

WHEREAS, on April 25, 2016, by Roll Call No. 16-0717, the City Council adopted PlanDSM: Creating Our Tomorrow Comprehensive Plan, which includes as a goal that in the year 2040, Des Moines will have a complete transportation system providing safe and efficient infrastructure for walking, bicycling, mass transit, and automobiles; and

WHEREAS, the Implementation Chapter of PlanDSM recommended preparation of the first Transportation Master Plan in the City's history (MoveDSM) as identified in the Goals and Policies of the Transportation Chapter of PlanDSM; and

WHEREAS, on December 19, 2016, by Roll Call No. 16-2133, the City Council authorized a professional services agreement for the City's Transportation Master Plan, now known as MoveDSM, as a result of the GuideDSM Strategic Plan process; and

WHEREAS, the MoveDSM: Transportation Master Plan is the result of an 18-month process incorporating public and City staff comment, Steering Committee involvement, Transportation Safety Committee, and Plan and Zoning Commission input; and

WHEREAS, MoveDSM is Des Moines' first citywide transportation master plan and establishes a multi-modal vision for transportation in Des Moines over the next 25 years, identifies how transportation supports the City's goals outlined in PlanDSM for safety, quality of life, and economic development, and ensures that Des Moines is best positioned to provide transportation options for all citizens in every stage of life; and

WHEREAS, on September 24, 2018, by Roll Call No. 18-1612, the City Council received a recommendation from the City Plan and Zoning Commission advising that at a public hearing held September 6, 2018, the members voted 12-0 to approve the MoveDSM: Transportation Master Plan as an element of the PlanDSM: Creating Our Tomorrow Comprehensive Plan, as shown in the Plan and Zoning Commission recommendation; and

WHEREAS, letters have been received from various community stakeholders in support of the approval and adoption of MoveDSM as an element of PlanDSM; and

WHEREAS, following Plan and Zoning Commission approval, City staff made the following minor revisions to MoveDSM:

- Removed the priority project list was removed from the appendix
- Added the new NE Montessori School to the appropriate maps



Roll Call Number

Agenda Item Number

41C

Date November 19, 2018

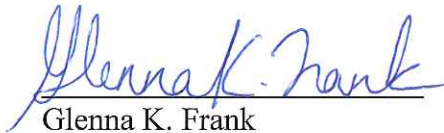
- Added two flow charts to which illustrate how MoveDSM is used in the Capital Project planning and development phase
- Added two pages specific to road maintenance and pavement condition.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Des Moines, Iowa that the attached letters from community stakeholders are hereby received and filed; and that MoveDSM: Transportation Master Plan, as on file in the office of the City Clerk, is hereby approved and adopted as an element of the PlanDSM: Creating Our Tomorrow Comprehensive Plan, and that the proposed amendment to PlanDSM to adopt MoveDSM as an element thereto is hereby approved.

MOVED BY _____ TO ADOPT.

APPROVED AS TO FORM:

(Council Communication No. 18-621)



Glenna K. Frank
Assistant City Attorney

(21-2018-4.14)

COUNCIL ACTION	YEAS	NAYS	PASS
COWNIE			
BOESEN			
COLEMAN			
GATTO			
GRAY			
MANDELBAUM			
WESTERGAARD			
TOTAL			

MOTION CARRIED

APPROVED

Mayor

CERTIFICATE

I, DIANE RAUH, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

City Clerk

(Council Communication No. 10)

41c



September 19, 2018

Honorable Mayor and City Council
City of Des Moines, Iowa

Members:

Communication from the City Plan and Zoning Commission advising that at their September 6, 2018 meeting, the following action was taken regarding a request from the City Engineer for review and recommendation to the City Council regarding the following: A) Incorporation of the Connect Downtown Plan as an element of the MoveDSM Plan, B) Amendment to the PlanDSM Creating Our Tomorrow Comprehensive Plan, to adopt the MoveDSM Plan as an element and C) Amendment to update the current Complete Streets Policy for the City of Des Moines to reflect the MoveDSM Plan.

COMMISSION RECOMMENDATION:

After public hearing, the members voted 12-0 as follows:

Commission Action:	Yes	Nays	Pass	Absent
Francis Boggus	X			
Dory Briles	X			
Chris Cutler	X			
David Courard-Hauri	X			
Jacqueline Easley	X			
Jann Freed				X
John "Jack" Hilmes	X			
Lisa Howard	X			
Carolyn Jenison				X
Greg Jones				X
William Page	X			
Mike Simonson	X			
Rocky Sposato	X			
Steve Wallace	X			
Greg Wattier	X			

APPROVAL of Part A) To incorporate the Connect Downtown study as an element of MoveDSM Master Transportation Plan, **approval** of Part B) Amendment to the PlanDSM -

Creating Our Tomorrow Comprehensive Plan to adopt the *MoveDSM* Master Transportation Plan as an element and **approval** of Part C) Amendments to update the current Complete Streets Policy for the City of Des Moines to reflect the *MoveDSM* Master Transportation Plan.

(21-2018-4.14)

STAFF RECOMMENDATION TO THE COMMISSION

Staff recommends the following:

Part A) Approval to incorporate the Connect Downtown study as an element of *MoveDSM* Master Transportation Plan.

Part B) Approval of an amendment to the *PlanDSM - Creating Our Tomorrow* Comprehensive Plan to adopt the *MoveDSM* Master Transportation Plan as an element.

Part C) Approval of amendments to update the current Complete Streets Policy for the City of Des Moines to reflect the *MoveDSM* Master Transportation Plan.

STAFF REPORT TO THE PLANNING COMMISSION

I. GENERAL INFORMATION

- 1. Background:** The *PlanDSM – Creating Our Tomorrow* Comprehensive Plan was adopted on April 26, 2016. *PlanDSM* specifically recognized the paramount linkage between land use and transportation planning to develop a sustainable community. Preparation of the first Master Transportation Plan in the City's history (*MoveDSM*) was identified in the Goals and Policies of the Transportation Chapter of *PlanDSM* and was identified as near-term action step in the Implementation Chapter. Implementing recommendations of the Walkability Study for Downtown (*Connect Downtown*) was also identified in the Goals and Policies of Transportation Chapter of *PlanDSM* and was identified as near-term action step in the Implementation Chapter. Establishing the position of Complete Streets Coordinator and a directive to evaluate, refine and implement the adopted Complete Streets Policy were identified in the goals and policies of the *PlanDSM* Transportation Chapter. The Des Moines' City Council provided funding for all three of these action items as a result of the *GuideDSM* Strategic Plan process.
- 2. State and Regional Planning Influences:** The City has participated in several State and regional planning efforts that serve as background to and provide general land use and transportation planning guidance for the future.

Iowa Smart Planning Legislation

The Iowa Smart Planning Act (Iowa Code Chapter 18B) was approved in 2010. The legislation articulated 10 Iowa Smart Planning Principles to be considered when any development decision is made and recommended core elements for inclusion in Comprehensive Plans. Land Use and Transportation are two of the core elements on that list.

DART Forward 2035

DART Forward 2035 was initially adopted in 2011 and provided a long-range vision for what the Transit Authority and the transit system could become. Residents of Des Moines were active participants in the planning process which resulted in a new transit system that added service in growth areas; provided for faster travel with less wait time; offered an increased number of transfer points; and, provided additional crosstown service. Transit is a key element in planning for the future of Des Moines. The DART Forward 2035 document serves as the background for transit growth in the City. During 2016, DART provided a 5-year update to the Plan. This plan for investment in transit has resulted in:

- A 9 percent increase in ridership from 2013 to 2015;
- Opening of a new transfer station in downtown Des Moines with launch of a redesigned route network;
- Shorter wait times between trips;
- Service later on weekdays and earlier and later on weekends to better align with retail hours; and
- Additional or expanded routes to serve more places in the region.

The Tomorrow Plan

Coordinated by the Des Moines Area Metropolitan Planning Organization, The Tomorrow Plan was a three-year planning process that included 17 cities and four counties within the greater Des Moines area. This collaborative effort aligned economic, social and environmental issues to provide for the long-term health of the region. The Tomorrow Plan focuses around four overarching goals and includes initiatives for their implementation:

- Create a resilient regional economy;
- Improve the region's environmental health and access to the outdoors;
- Further the health and well-being of all residents in the region; and,
- Increase regional cooperation and efficiency at all levels.

Mobilizing Tomorrow

Also coordinated by the Des Moines Area Metropolitan Planning Organization, The Mobilizing Tomorrow Plan is the Long-Range Transportation Plan vision and implementation follow-up to The Tomorrow Plan regional comprehensive plan. This Plan focuses around four overarching transportation goals for the region and includes an implementation:

- Enhance multimodal transportation options.
- Manage and optimize transportation infrastructure and services.
- Improve the region's environmental health.
- Further the health, safety and well-being of all residents in the region.

PlanDSM - Creating Our Tomorrow

PlanDSM is the City of Des Moines' Comprehensive Plan for how it will grow through the year 2040. *PlanDSM* consists of a vision statement and values that will guide Des Moines into the future; goals and policies for eight different Plan elements (including Land Use and Transportation); an implementation chapter describing how the Plan can be realized; and a Future Land Use Map.

Transportation Goals from *PlanDSM* include:

- Develop a complete multi-modal transportation network for pedestrians, bikes, transit and automobiles.
- Develop updated street design standards that allow for and balance the needs of all forms of transportation.
- Provide opportunities for healthy lifestyles through walking as primary mode of transportation.
- Make transit a more attractive option for all City residents.
- Enhance the bicycle network by expanding bicycle facilities that are safe comfortable and easily accessible.
- Ensure freight facilities continue to meet the needs of the local economy while being sensitive to impacts on surrounding land uses.
- Ensure the Des Moines International Airport continues to meet the needs of the local economy.
- Plan for future changes in transportation demand, technology and innovation.

Connect Downtown

The Connect Downtown study was received and filed by the City Council in December of 2017 (see attachment). Connect Downtown includes recommendations for modifications to the downtown street network to make it more welcoming for walking and biking. The City Council referred the Connect Downtown study to the Plan to the Plan and Zoning Commission for consideration as an element of *PlanDSM*. Because of the ongoing *MoveDSM* process and the fact that the Connect Downtown Study provides the detail of the Downtown street network for *MoveDSM*, staff believes that the Connect Downtown Study should be incorporated as a chapter or element of the *MoveDSM* Master Transportation Plan. Then staff believes the entirety of *MoveDSM* should be considered as an element of *PlanDSM*.

- 3. Project Funding:** In December of 2016, the City Council appropriated \$350,000 funding for completion of a Transportation Master Plan (*MoveDSM*). The City Council also authorized the hiring of a Transportation Planner to focus on implementation of complete streets initiatives City-wide.
- 4. Plan Process:** *MoveDSM* (see attachment) was broken into phases emphasizing extensive public outreach to allow City residents to provide continuous community input into Plan development:
 - Evaluate the Streets We Have phase involved open houses, pop-up meetings and on-line surveys along with mapping activities to learn about the existing system.

- Design the Ones We Want phase gives explanation of a new approach to thinking about the streets to ensure that they are comfortable and safe for all. Input from the community and stakeholders along with the future land use plan provided the basis for the typologies in the Plan.
- Analyze Our Desired Network phase was the process that involved travel demand modeling provided by the Des Moines Metropolitan Planning Organization in order to test the performance of the network.
- Implement Our Future Network phase provides the map to carry out the Plan by providing cost estimates and priorities for the plan network along with other strategies for policy changes to keep the Plan moving forward. This includes the proposed modifications to the previous City Council adopted Complete Streets Policy.

5. Plan Organization: *MoveDSM* is organized into three sections: DSM Today, DSM Tomorrow, and Moving Forward. The latter is an implementation chapter.

This implementation element identifies short term (by 2025) and long term (by 2040) high priority actions that translate the vision of *MoveDSM* into action. It provides methodology for prioritization of the City's investment and calls for an update to the Complete Streets Policy to align with *MoveDSM*.

The proposed to the Complete Streets Policy (see attachment):

- Explicitly states the need to prioritize projects in environmental justice areas.
- Instructs the City to approach every city, state, and federally-funded transportation project, as well as private development projects that impact the public right-of-way, as an opportunity to create safer, more accessible streets for all users.
- Designates the Transportation Safety Committee as the body responsible for reviewing projects to ensure they comply with *MoveDSM*.
- Details performance measures to be evaluated each year and published in a publicly available annual report.

6. Plan Preparation: *MoveDSM* has been prepared by Traffic Engineering staff and project management consultant Sam Schwartz, under the guidance of the *MoveDSM* Steering Committee.

Members of the *MoveDSM* Steering Committee who were appointed by the Mayor, in consultation with the City Council and City Manager are as follows:

T. M. Franklin Cownie, Mayor
 Joe Gatto, City Council
 Scott Sanders, City Manager
 Tom Ahart, Superintendent, DMPS
 Todd Ashby, Executive Director, DMAMPO
 Pam Carmichael, Executive Director, HOME, Inc.

George Davis, Park & Recreation Board
 Meg Fitz, Senior VP, Greater Des Moines Partnership
 Larry James, Jr., Faegre, Baker Daniels, ULI, Connect Downtown
 Greg Jones, Plan & Zoning Commission
 Jeremy Lewis, Des Moines Bicycle Collective
 Colleen MacRae, Urban Design Review Board
 Frank Owens, Neighborhood Revitalization Board
 Mel Pins, Chair, Zoning Board of Adjustment
 Elizabeth Presutti, General Manager, DART
 Rick Tollakson, President & CEO, Hubbell Realty
 Carl Voss, Transportation Safety Committee

- 7. Plan Adoption:** Pursuant to City Code Chapter 82, Article III of the City Code, adoption of the Comprehensive Plan or any substantial amendment thereof (i.e. *MoveDSM*), requires at least one public hearing with published notice. The adoption of the amendment requires affirmative vote by not less than two-thirds of the members of the Commission present at the time of the vote. After adoption of the plan or amendment by the Commission, a copy of the amendment, together with the report and recommendation of the Commission, shall be forwarded to the City Council, and the Council may approve the amendment. When the plan or any modification or amendment receives the approval of the Council, the plan shall constitute the official City plan. This consideration would adopt the *MoveDSM* Master Transportation Plan as an element of *PlanDSM*.

SUMMARY OF DISCUSSION

Jacqueline Easley asked if anyone was present to speak on this item. None were present or requested to speak.

COMMISSION ACTION:

David Courard-Hauri made a motion for **approval** of Part A) To incorporate the Connect Downtown study as an element of *MoveDSM* Master Transportation Plan, **approval** of Part B) Amendment to the *PlanDSM - Creating Our Tomorrow* Comprehensive Plan to adopt the *MoveDSM* Master Transportation Plan as an element and **approval** of Part C) Amendments to update the current Complete Streets Policy for the City of Des Moines to reflect the *MoveDSM* Master Transportation Plan.

Motion carried 12-0.

Respectfully submitted,



Michael Ludwig, AICP
 Planning Administrator

MGL:tjh
 Attachments



600 E. Court Avenue, #100 | Des Moines, IA 50309
1-866-554-5378 | Fax: 515-244-7767 | TTY: 1-877-434-7598
aarp.org/ia | ia@aarp.org | twitter: @aarpia
facebook.com/aarpiowa

Mayor Frank Cownie
Des Moines City Hall
400 Robert D. Ray Drive
Des Moines, IA 50309

Dear Mayor Cownie and Honorable Council:

PlanDSM is Des Moines' Comprehensive Plan for how it will grow into the future. Developing a transportation master plan to further the creation of a complete multimodal transportation network was listed as one of the near-term action items out of PlanDSM.

As a result, MoveDSM, Des Moines' first citywide transportation master plan has been created. It identifies how transportation supports the City's goals outlined in PlanDSM for safety, quality of life, and economic development and ensures that Des Moines is best positioned to provide transportation options for all citizens in every stage of life.

At AARP, one of our priority nationwide initiatives is Livable Communities, which supports the efforts of neighborhoods, towns, cities and rural areas to be great places for people of all ages. We believe that communities should provide safe, walkable streets; age-friendly housing and transportation options; access to needed services; and opportunities for residents of all ages to participate in community life. The MoveDSM plan hits at the heart of what a Livable Community should embody.

We support adoption of MoveDSM as an element of PlanDSM to chart the course for a safer and more equitable transportation system for everyone in Des Moines.

Sincerely,

A handwritten signature in black ink, appearing to read "Brad Anderson".

Brad Anderson
AARP Iowa State Director

Real Possibilities

life is why™

es por la vida™ 全為生命™

September 14, 2018

Mayor Frank Cownie
Des Moines City Hall
400 Robert D. Ray Drive
Des Moines, IA 50309

Mayor Cownie and Honorable Council,

PlanDSM is Des Moines' Comprehensive Plan for how it will grow into the future. Developing a transportation master plan to further the creation of a complete multimodal transportation network was listed as one of the near-term action items out of PlanDSM.

As a result, MoveDSM, Des Moines' first citywide transportation master plan has been created. It identifies how transportation supports the City's goals outlined in PlanDSM for safety, quality of life, and economic development and ensures that Des Moines is best positioned to provide transportation options for all citizens in every stage of life.

Iowa has the fourth highest adult obesity rate in the nation, and the 30th highest obesity rate for youth ages 10 to 17. Iowa's adult obesity rate is currently 36.4%, up from 20.9% in 2000 and from 12.2% in 1990. Obesity leads to many chronic diseases including heart disease and stroke. Many of the health organizations and businesses in the Des Moines area have been alarmed as well and is why United Way of Central Iowa, the AHA and many others formed the Well Kids Coalition. We have prioritized prevention policies that focus on active living and feel that people deserve to live in safe and healthy communities.

This is the reason why we have advocated for the MoveDSM plan moving forward and a strong complete streets policy within this plan. Complete streets policies make communities and neighborhoods more livable by ensuring all people can get safely to where they need to go – work, school, the library, grocery stores, or parks. They also help people feel more connected to their neighbors, which improves quality of life.

Sidewalks that connect to parks, public transportation, and schools; roads that include designated and protected bike lanes; and streets that accommodate all people, can help us safely be active and improve our quality of life. We know there are fewer crashes involving walkers when streets have sidewalks. People – including moms with strollers, people with disabilities, children, and older adults – need sidewalks and crosswalks to feel safe. Some low-income communities and communities of color have lacked well-maintained routes to parks and schools, roads, bike lanes, and sidewalks for decades. In many cases they simply do not have transportation options at all. The same


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neighborhoods often experience higher rates of chronic diseases like diabetes and heart disease. We must make up for years of lost opportunities and make these neighborhoods a priority moving forward.

The American Heart Association – Midwest Affiliate (AHA) provides this letter of support for the adoption of MoveDSM as an element of PlanDSM to chart the course for a safer and more equitable transportation system for everyone in Des Moines while also improving the health of our citizens. We look forward to our continued collaboration over the coming years as this plan and the Complete Streets policy are implemented.

Sincerely,



Stacy Frelund
Iowa Government Relations Director
American Heart Association/American Stroke Association

September 13, 2018

Mayor Frank Cownie
Des Moines City Hall
400 Robert D. Ray Drive
Des Moines, IA 50309

Mayor Cownie and Honorable Council:

We are writing on behalf of Capital Crossroads, our regional vision plan, in support of the adoption of MoveDSM as an element of PlanDSM.

PlanDSM is a comprehensive plan for Des Moines' future. Developing a transportation master plan to further the creation of a complete multimodal transportation network was listed as one of the near-term action items out of PlanDSM. As a result, MoveDSM, Des Moines' first citywide transportation master plan identifies how transportation supports the City's goals outlined in PlanDSM for safety, quality of life, and economic development and ensures that Des Moines is best positioned to provide transportation options for all citizens in every stage of life.

The goals of the plan coincide perfectly with the regional goals of Capital Crossroads. Safe, complete and connected transportation networks were identified as priorities by the many participants in the Capital Crossroads 2.0 study. Additionally, transportation not only impacts goals within the Physical Capital, but priorities related to housing, workforce and poverty.

As tri-chairs of Capital Crossroads we support adoption of the MoveDSM plan to chart the course for a safer and more equitable transportation system for everyone in Des Moines.

Sincerely,

Capital Crossroads Tri-Chairs



Jay Byers
Greater Des Moines
Partnership

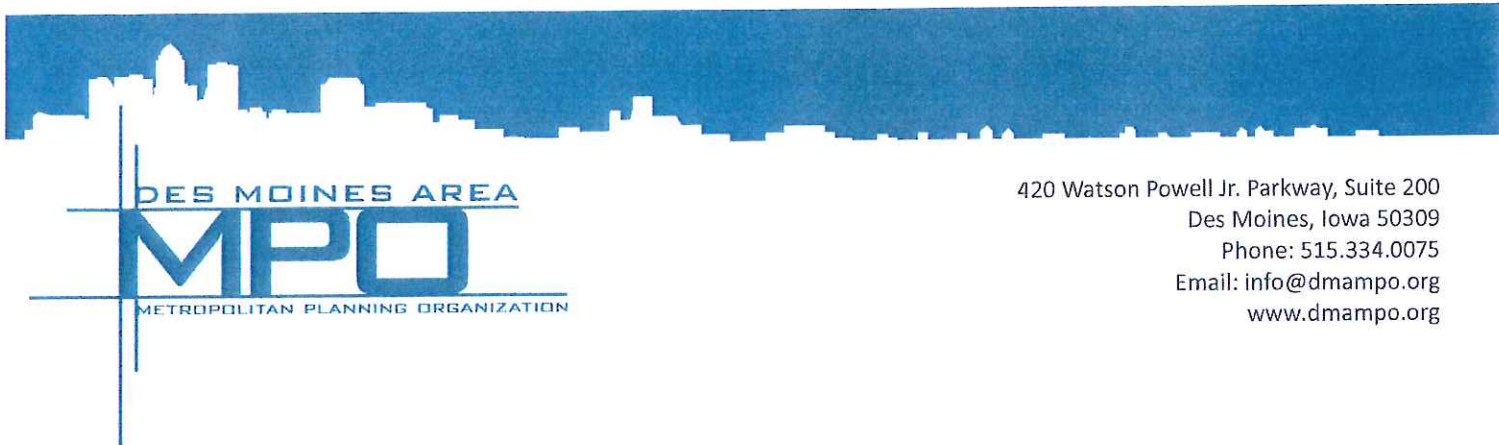


Angela Connolly
Polk County Board
of Supervisors



Kristi Knous
Community Foundation of
Greater Des Moines





420 Watson Powell Jr. Parkway, Suite 200
Des Moines, Iowa 50309
Phone: 515.334.0075
Email: info@dmampo.org
www.dmampo.org

September 10, 2018

Mayor Frank Cownie
Des Moines City Hall
400 Robert D. Ray Drive
Des Moines, IA 50309

Mayor Cownie and Honorable Council:

PlanDSM is Des Moines' Comprehensive Plan for how it will grow into the future. Developing a transportation master plan to further the creation of a complete multimodal transportation network was listed as one of the near-term action items out of PlanDSM.

As a result, MoveDSM, Des Moines' first citywide transportation master plan has been created. It identifies how transportation supports the City's goals outlined in PlanDSM for safety, quality of life, and economic development and ensures that Des Moines is best positioned to provide transportation options for all citizens in every stage of life.

The principles outlined in MoveDSM align with the goals of The Tomorrow Plan and Mobilizing Tomorrow, the MPO's Long-Range Transportation Plan. Therefore, we support adoption of MoveDSM as an element of PlanDSM to chart the course for a safer and more equitable transportation system for everyone in Des Moines.

Sincerely,



Todd Ashby
Executive Director

Altoona • Ankeny • Bondurant • Carlisle • Clive • Dallas County • Des Moines • DART
Grimes • Johnston • Mitchellville • Norwalk • Pleasant Hill • Polk City • Polk County
Urbandale • Warren County • Waukee • West Des Moines • Windsor Heights



September 14, 2018

Mayor Frank Cownie
Des Moines City Hall
400 Robert D. Ray Drive
Des Moines, IA 50309

Dear Mayor Cownie and Honorable Council:

On behalf of DART, I am writing to express our support for MoveDSM, Des Moines' first citywide transportation master plan. MoveDSM identifies how transportation supports the City's goals for safety, quality of life, and economic development, and it ensures that Des Moines is best positioned to support a multimodal system of transportation options.

In particular, MoveDSM recognizes the value that transit provides, and includes policies that support transit, such as safe streets, connected sidewalks and comfortable and convenient transit boarding areas.

We support adoption of MoveDSM, as an element of PlanDSM, to chart the course for a safer and more equitable transportation system for everyone in Des Moines.

Sincerely,

A handwritten signature in blue ink, reading "Elizabeth Presutti".

Elizabeth Presutti
Chief Executive Officer

**Des Moines
Area Regional
Transit Authority**

620 Cherry Street
Des Moines, Iowa
50309-4530

515-283-8100
Fax 515-283-8135
ridedart.com



September 14, 2018

Mayor Frank Cownie
Des Moines City Hall
400 Robert D. Ray Drive
Des Moines, IA 50309

Honorable Mayor Cownie and Des Moines City Council

PlanDSM is Des Moines' Comprehensive Plan for how it will grow into the future. Developing a transportation master plan to further the creation of a complete multimodal transportation network was listed as one of the near-term action items out of PlanDSM.

As a result, MoveDSM, Des Moines' first citywide transportation master plan has been created. It identifies how transportation supports the City's goals outlined in PlanDSM for safety, quality of life, and economic development and ensures that Des Moines is best positioned to provide transportation options for all citizens in every stage of life.

MoveDSM represents collaborative planning between the Traffic Engineering Department and the Fire Department. Elements in this plan will pave the way for strategic improvements in our street network and design to facilitate efficient emergency response for the future. Furthermore, the plan incorporates items such as primary and secondary emergency response routes which is a significant commitment to ensuring the Fire Department's ability to provide timely response to emergencies throughout the city.

The Fire Department recognizes the need for safe travel and understands the impact that improving our transportation networks can have on reducing the frequency and severity of motor vehicle crashes. We support adoption of MoveDSM as an element of PlanDSM to chart the course for a safer and more equitable transportation system for everyone in Des Moines.

Sincerely,

A handwritten signature in black ink that reads "John F. TeKippe". The signature is written in a cursive, flowing style.

John F. TeKippe
Fire Chief
City of Des Moines Fire Department



Think. Learn. **Grow.**

September 13, 2018

Mayor Frank Cownie
Des Moines City Hall
400 Robert D. Ray Drive
Des Moines, IA 50309

Mayor Cownie and Honorable Council,

PlanDSM is Des Moines' Comprehensive Plan for how it will grow into the future. Developing a transportation master plan to further the creation of a complete multimodal transportation network was listed as one of the near-term action items from PlanDSM.

As a result, MoveDSM, Des Moines' first citywide transportation master plan has been created. It identifies how transportation supports the City's goals outlined in PlanDSM for safety, quality of life, and economic development and ensures that Des Moines is best positioned to provide transportation options for all citizens in every stage of life.

Des Moines Public Schools serves 33,000 students, representing over 23,000 families, most of whom reside within the City of Des Moines. Transportation is a critical component in the lives of our families, enabling all of our families to access opportunities in our community, from work to school to play.

We support adoption of MoveDSM as an element of PlanDSM to chart the course for a safer and more equitable transportation system for everyone in Des Moines.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas M. Adams".

Office of the Superintendent

2100 Fleur Drive | Des Moines, Iowa 50321 | P: 515-242-7766 | F: 515-242-7679
www.dmschools.org | facebook.com/dmschools

Sept. 14, 2018

Mayor Frank Cownie
Des Moines City Hall
400 Robert D. Ray Drive
Des Moines, IA 50309

Mayor Cownie and Honorable Council:

The Greater Des Moines Partnership is pleased to support the MoveDSM transportation plan. A robust and connected transportation system is crucial for the continued growth and prosperity of Greater Des Moines (DSM), and move DSM aligns closely with The Partnership's Downtown development work.

A complete multimodal transportation network provides the backbone to move goods and connect residents, workers and visitors to the places they want to go throughout the city. It is also essential framework to support safety, health, quality of life and economic development and ensures that DSM is best positioned to provide opportunities for all citizens in every stage of life.

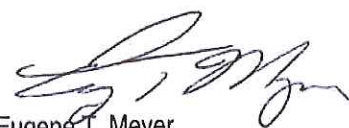
DSM continues to outgrow Midwest peers in population growth and has recently been named the #4 Best Place to Live by U.S. News & World Report. The Partnership applauds the MoveDSM plan for building on that momentum, continuing the effort to create a place that draws talent and visitors and embraces people of all interests and backgrounds. MoveDSM will also help enhance the vibrancy of Downtown DSM, which is crucial to the entire region's success.

We support adoption of MoveDSM as an element of PlanDSM to chart the course for a safer and more equitable transportation system for everyone.

Sincerely,



Jay Byers
CEO



Eugene T. Meyer
President



September 13, 2018

Mayor T.M. Franklin Cownie
City Council Members
400 Robert D Ray Drive
Second Floor
Des Moines, IA 50309

Re: Support for MoveDSM

Mayor Cownie and Members of the Des Moines City Council:

PlanDSM is Des Moines' Comprehensive Plan for how it will grow into the future. Developing a transportation master plan to further the creation of a complete multimodal transportation network was listed as one of the near-term action items out of PlanDSM.

As a result, MoveDSM, Des Moines' first citywide transportation master plan has been created. It identifies how transportation supports the City's goals outlined in PlanDSM for safety, quality of life, and economic development and ensures that Des Moines is best positioned to provide transportation options for all citizens in every stage of life.

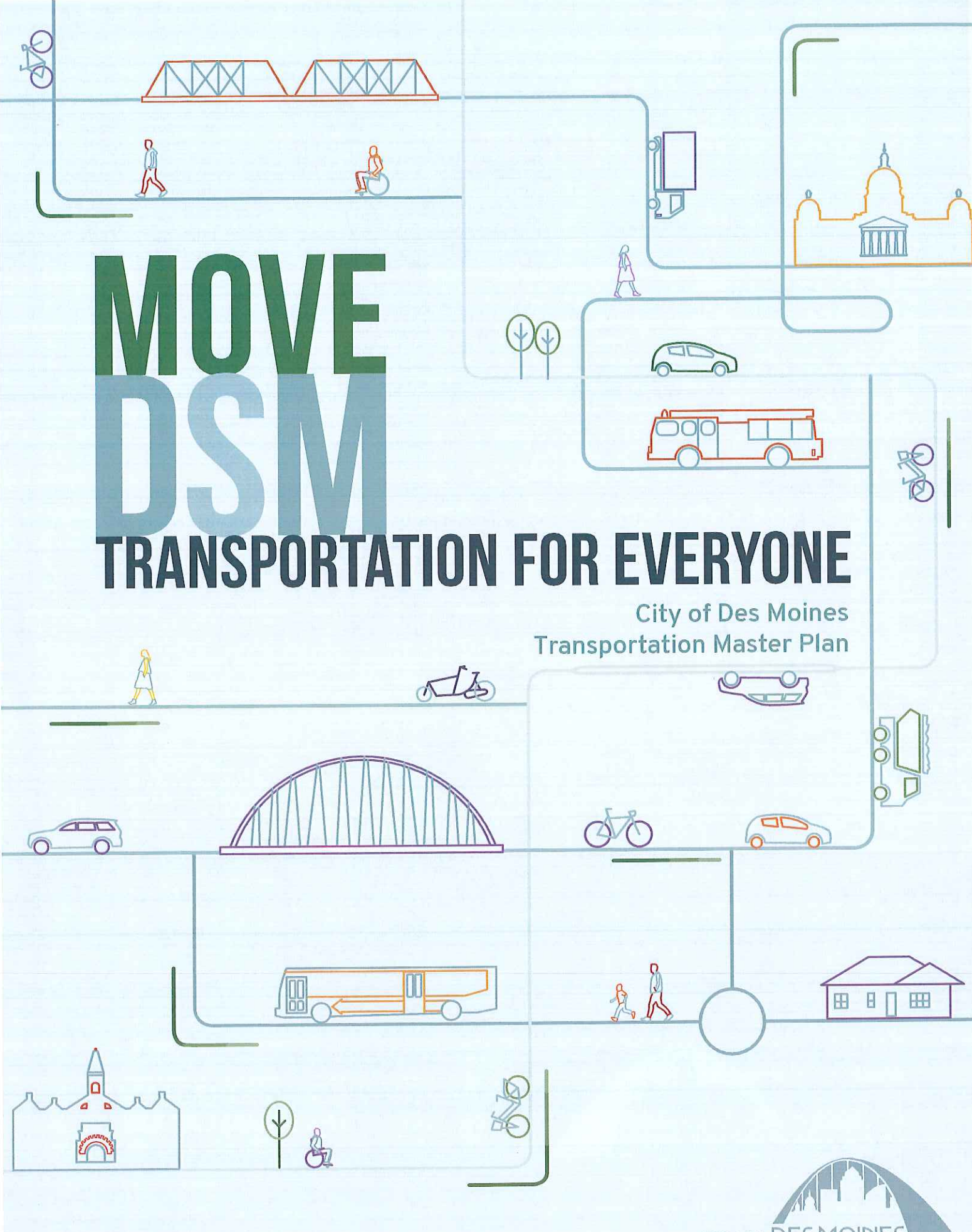
MoveDSM aligns with ULI's core philosophies of responsible planning to create and sustain thriving communities. The MoveDSM plan will improve the quality of life in Des Moines. We support adoption of MoveDSM as an element of PlanDSM to chart the course for a safer and more equitable transportation system for everyone in Des Moines.

Sincerely,

A handwritten signature in blue ink that reads 'Aimee Staudt'.

Aimee Staudt

Chair, ULI Iowa District Council



MOVE DSM TRANSPORTATION FOR EVERYONE

City of Des Moines
Transportation Master Plan



ACKNOWLEDGMENTS

City Council

T. M. Franklin Cownie, Mayor

Bill Gray (Ward I)
Linda Westergaard (Ward II)
Josh Mandelbaum (Ward III)
Joe Gatto (Ward IV)
Christopher Coleman (At Large)
Connie Boesen (At Large)

City Manager

Scott Sanders

MoveDSM Steering Committee

Members of the MoveDSM Steering Committee who were appointed by the Mayor in consultation with the City Council and City Manager are as follows:

T. M. Franklin Cownie, Mayor
Joe Gatto, City Council
Scott Sanders, City Manager
Tom Ahart, Superintendent, DMPS
Todd Ashby, Executive Director, DMAMPO
Pam Carmichael, Executive Director, HOME, Inc.
George Davis, Park & Recreation Board
Meg Fitz, Senior VP, Greater Des Moines Partnership
Larry James, Jr., Faegre, Baker Daniels, ULI, Connect Downtown
Greg Jones, Plan & Zoning Commission
Jeremy Lewis, Des Moines Bicycle Collective
Colleen MacRae, Urban Design Review Board
Frank Owens, Neighborhood Revitalization Board
Mel Pins, Chair, Zoning Board of Adjustment
Elizabeth Presutti, General Manager, DART
Rick Tollakson, President & CEO, Hubbell Realty
Carl Voss, Transportation Safety Committee

Internal Technical Committee

Matt Anderson (Deputy City Manager)
Richard Brown (Park & Recreation Assistant Director)
Patrick Daley (DART)
Jonathan Gano (Public Works Director)
Chris Johansen (Community Development Deputy Director)
Dave Kamp (Chief Design Engineer)
Kyle Larson (Senior City Planner, Community Development)
Jonathan Lund (Fire Marshal)
Steve Naber (City Engineer)
Laura Peters (Community Development, Assistant Planner)
Tim Sanderson (DART)
Amanda Wanke (DART)

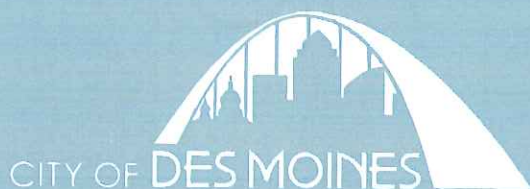
Transportation Safety Committee

Scott Bents
Dave Ferree
Blake Hanson
Luis Montoya, DART
Anne Pham
Meg Schneider
Carl Voss, Chair
James H. Windsor III
Robin Witt, DMPS
Chad Zimmerman

Traffic & Transportation Division

Jennifer McCoy (City Traffic Engineer)
Jeff Wiggins (Transportation Planner)
Jen Dakovich (Principal Traffic Engineer)

Plan developed by City of Des Moines Traffic & Transportation Division, with the assistance of Sam Schwartz Consulting and Kirkham Michael.



**Sam
Schwartz**
Transportation
Consultants





A Letter from the City Manager

MoveDSM is Des Moines' first transportation master plan, which provides a basis for how our streets and transportation system could evolve and develop over the next 25 years and provide transportation options for all citizens in every stage of life. Transportation touches all aspects of city life such as public health, social equity, quality of life, economic development and ecological sustainability. Improving our transportation systems and increasing access reduces congestion, drives real estate prices, and attracts jobs and people.

MoveDSM is part of a planning effort that started with the Greater Des Moines Tomorrow Plan and continued with the adoption of Plan DSM, the City's comprehensive plan. MoveDSM is a compilation and description of the values articulated by the citizens during this planning effort. MoveDSM focuses on current residents of Des Moines while carefully considering the changing demands of future residents as well.

During the planning process, Des Moines community members continued to prioritize the desire for transportation that is usable and safe for everyone. MoveDSM illustrates the vision of how our community is interconnected and how the transportation system is serving the citizens of Des Moines.

MoveDSM provides the predictability, framework and parameters that will inform the design decisions that will assist us in implementing the vision of the community. MoveDSM is not a rigid plan and does not dictate specific design solutions, but is crafted to ensure Council has flexibility to make an informed and meaningful impact at the right times in the process. MoveDSM identifies the building blocks for achieving a safe, efficient, connected multi-modal transportation network for the next 25 years and beyond.

Sincerely,

A handwritten signature in blue ink, appearing to read "Scott Sanders", is written over a light blue horizontal line.

Scott E. Sanders
City Manager



Des Moines' first citywide transportation plan will detail how our streets and transportation system could evolve and develop over the next 25 years.



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WHAT IS **MOVEDSM** ?

AND HOW DID WE GET HERE?

PLANDSM | CREATING OUR TOMORROW

is the City of Des Moines' Comprehensive Plan for how it will grow into the future. PlanDSM consists of a vision statement and values that will guide Des Moines into the future; goals and policies for eight different Plan elements; an implementation chapter describing how the Plan can be realized; and a Future Land Use Map.

Developing a transportation master plan to further the creation of a complete multimodal transportation network was listed as one of the near-term action items in PlanDSM. MoveDSM is the realization of that action item and builds off of the vision and goals established in PlanDSM and provides a strategy for achieving the majority of the transportation goals.



TRANSPORTATION GOALS FROM PLANDSM:

DEVELOP A COMPLETE MULTI-MODAL TRANSPORTATION NETWORK FOR PEDESTRIANS, BIKES, TRANSIT, AND AUTOMOBILES

DEVELOP UPDATED STREET DESIGN STANDARDS

ENHANCE THE BICYCLE NETWORK

PROVIDE OPPORTUNITIES FOR HEALTHY LIFESTYLES

MAKE TRANSIT MORE ATTRACTIVE

ENSURE FREIGHT FACILITIES MEET NEEDS OF LOCAL ECONOMY



MOVEDSM | TRANSPORTATION FOR EVERYONE

The MoveDSM plan will clearly identify how transportation supports the City's goals outlined in PlanDSM for safety, quality of life, and economic development and ensure that Des Moines is best positioned to provide transportation options for all citizens in every stage of life.



MOVEDSM PROCESS

Community
Input



EVALUATE
THE STREETS
WE HAVE

MoveDSM analyzes how people get around Des Moines today, evaluates the performance of the City's streets, and assesses the safety and comfort of the existing transportation network for people using all modes of transportation.

The process included public open houses, pop-up meetings, and online surveys and mapping activities to learn about which streets are popular in Des Moines and why, the challenges you face getting around, and how transportation can work better for everyone.

Community
Input



DESIGN THE
ONES WE
WANT

MoveDSM explains a new way for Des Moines to think about its streets that will ensure they are comfortable and safe for everyone. Des Moines' street typologies were developed based on input from the community and stakeholders, current and future land use, and careful consideration of how people use each street and its role in an overall transportation network.




ANALYZE
OUR DESIRED
NETWORK

Des Moines' streets must work well individually and as a holistic system that efficiently moves people into, out of, and around the City.

MoveDSM used the Des Moines Area Metropolitan Planning Organization's regional travel demand model to test how well the new street designs will perform as a complete network. In order to account for the many changes that may alter transportation over the next 25 years, MoveDSM modeled multiple scenarios based on local and national trends.

Community
Input



IMPLEMENT
OUR FUTURE
NETWORK

To help implement the street typologies and future networks, MoveDSM provides cost estimates for prioritized investments and identifies other policies and actions that will keep Des Moines moving forward. Additionally, the updated Complete Streets policy will establish a review process for capital and maintenance projects.

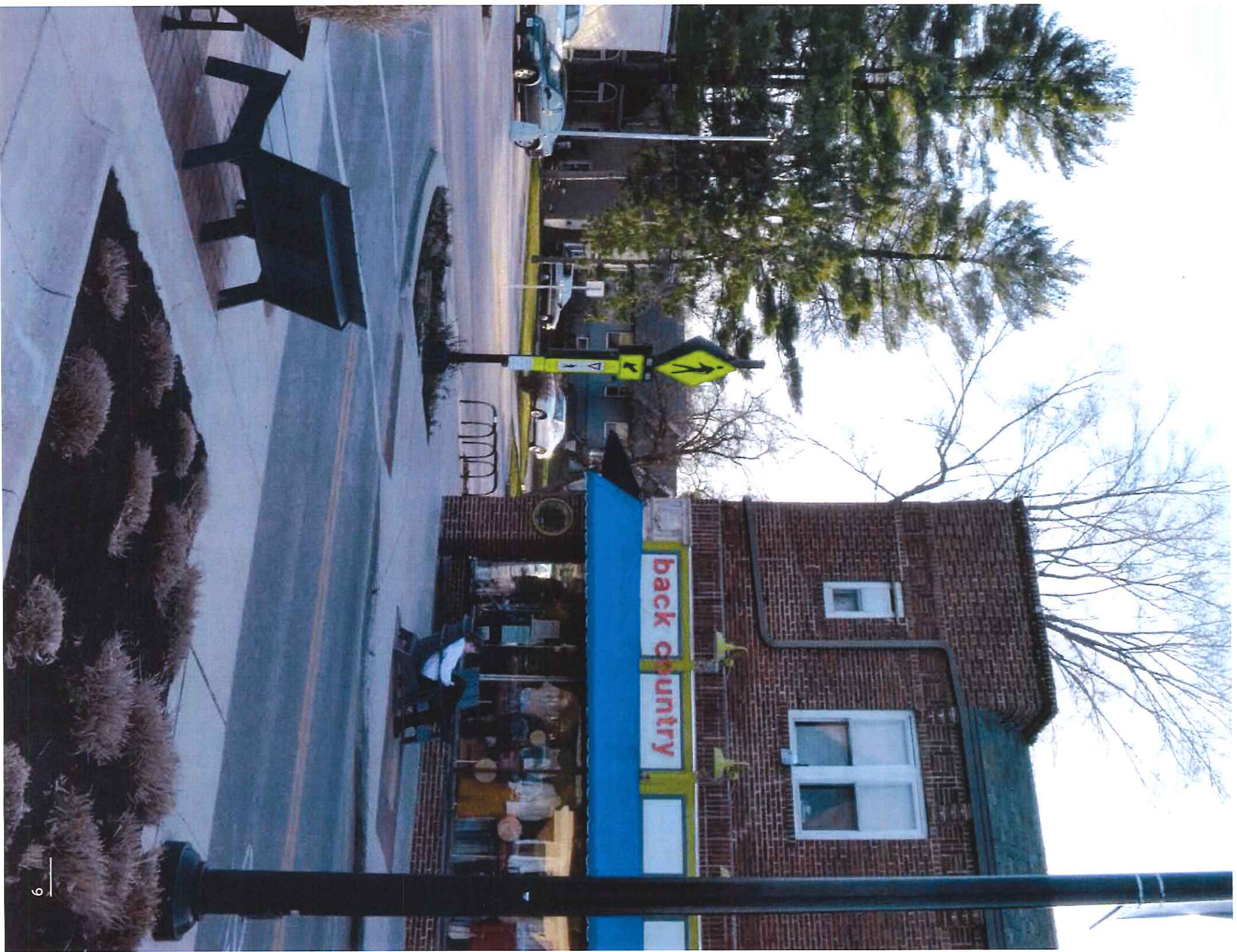
DSM TODAY

Des Moines' residents, regardless of how they get around, want transportation that is usable and safe for everyone.

In Des Moines today, though, the streets and other elements of the transportation network do not always enable this vision. In analyzing the existing transportation networks, three key challenges stood out: the size and design of streets, safety for all users, and gaps in the multimodal system that created a disconnected network. The condition of the City's streets is an additional challenge that is interconnected with the three key challenges.

Conversations with community members continually touched on these challenges. At open houses, pop-up meetings, and through online surveys and activities, residents voiced their desire for improved street crossings, better sidewalks, on-street bike facilities with connections to trails and paths, increased frequency of bus service and bus shelters at stops, and clearer separation between different modes of travel.





HOW DO OUR STREETS PERFORM?

DES MOINES TODAY

Many streets in Des Moines are larger than they need to be, considering the amount of traffic they carry. Why does it matter if our streets are too big?

1. It costs more money.

Widening roads costs \$750,000 per mile (for a 10-foot lane) and an extra \$200,000 per mile for maintenance and resurfacing.¹

2. Wider streets are more dangerous.

People often take behavioral cues from the built street environment when traveling. Wider lanes can encourage people to drive faster, as can streets with little traffic on them. Larger streets also force people walking to cross longer distances and increase their exposure to potential crashes. Longer crossing distances can be especially difficult for elderly or disabled persons.

3. We can use excess space in productive ways.

Excess space on roadways can be used to better balance the allocation between all people, no matter how you are traveling. Space can be used for wider sidewalks, cafe seating or parklets, bus shelters and seating, center medians, bicycling infrastructure, or trees and street lights.

4. We can maintain street capacity without widening roads.

In locations where congestion is a concern, Des Moines can use new technologies and smart designs to maintain, or even increase, street capacity. The City's Intelligent Transportation Systems Master Plan details how advanced signal technology can be used to better time and coordinate traffic signals. Other strategies, like strategic placement of turning lanes, can also help alleviate congestion.

Each additional travel lane on a road costs...

\$750,000 more per mile to build

\$10,000 more per mile in annual maintenance

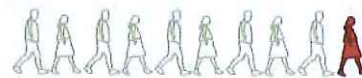
As the width of a lane increases, the speed of vehicles increases. When lane widths are 3 ft. greater, speeds are predicted to be 9 m.p.h. faster.²

As vehicle speed increases, the likelihood that a crash will result in a serious injury or fatality increases.³

A pedestrian hit by a car traveling 40 m.p.h. is more than 10 times as likely to be killed as one hit by a car traveling 20 m.p.h.⁴

Hit by a vehicle traveling at

20 MPH



9.5 out of 10 pedestrians survive.

Hit by a vehicle traveling at

30 MPH



5 out of 10 pedestrians survive.

Hit by a vehicle traveling at

40 MPH



1 out of 10 pedestrians survives.

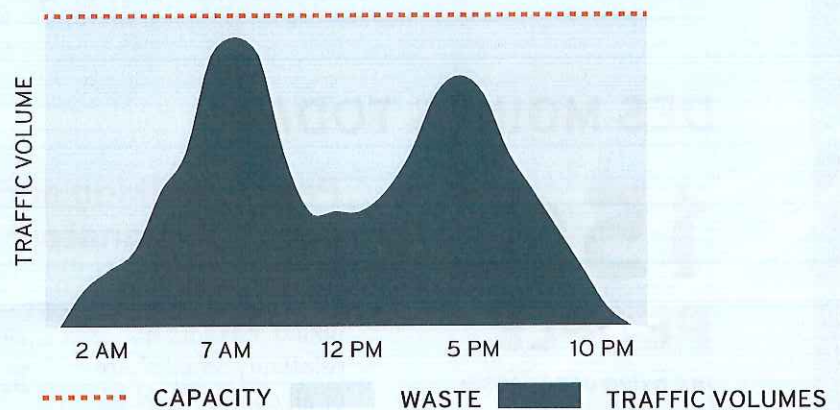
HOW MUCH TRAFFIC CAN A STREET CARRY?

The ratio of traffic volume to roadway capacity compares the number of cars using a street during the peak hour to the maximum number of cars the street can carry.

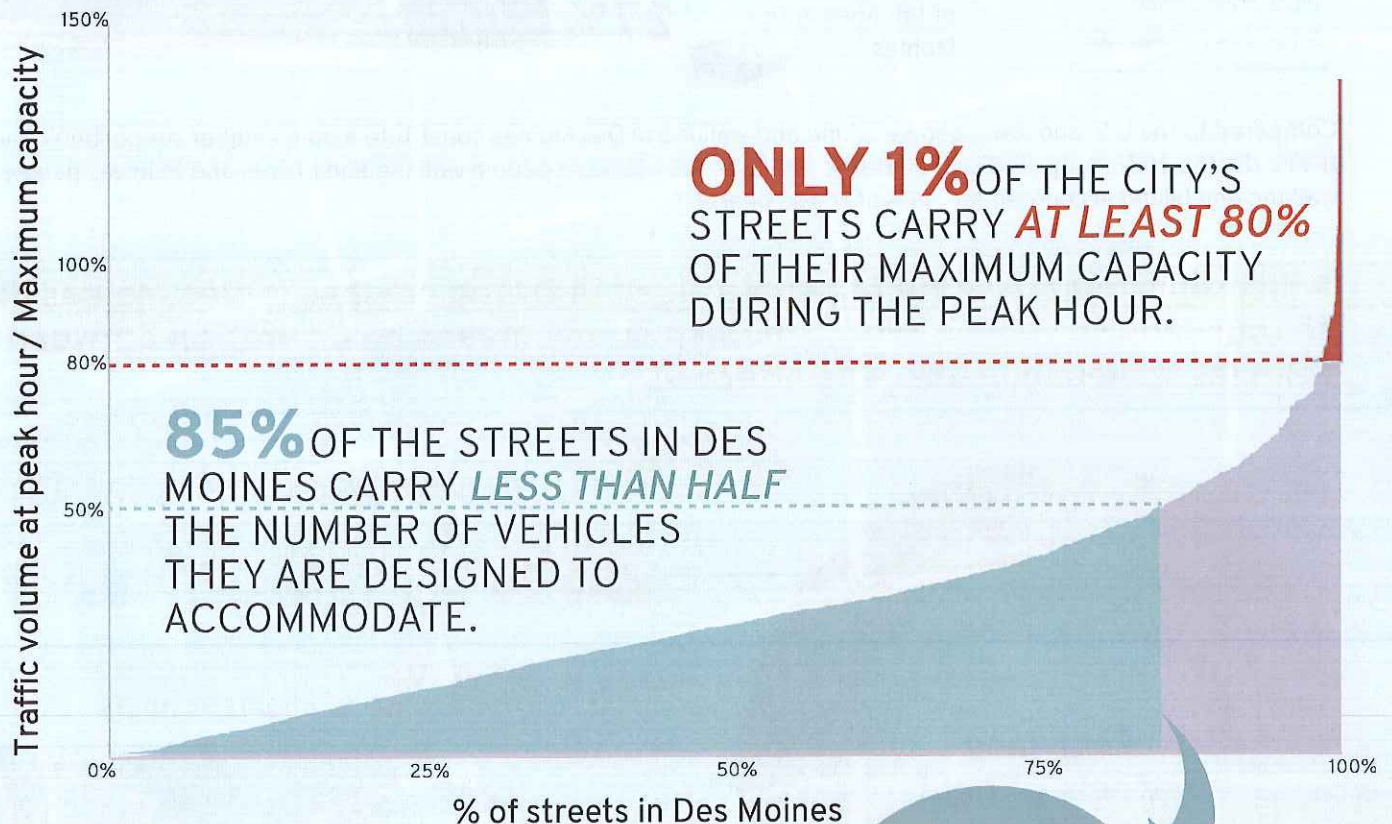
A **volume to capacity ratio** of 50%, for example, indicates that the street carries half the number of cars during the peak hour that it is designed for. A ratio of 80% is when we, generally, start to see some congestion.

Streets are typically designed to have excess capacity even during the busiest times of day, which leads to streets that are too big and vastly underutilized for most of the day.

TYPICAL 24-HOUR TRAFFIC VOLUMES



STREET CAPACITY IN DES MOINES



Des Moines is the 88th largest metropolitan area in the U.S. but ranks 215th in traffic congestion.⁵

HOW SAFE ARE OUR STREETS?

DES MOINES TODAY

156
PEOPLE

are killed or seriously injured in traffic crashes each year in Des Moines.

(Average 2012-2016)⁶

See pg. 89 for detailed map

People walking and biking are disproportionately affected.

People walking and biking make up a relatively small share of all commute trips...

3.2%

Commute Trips (2016)

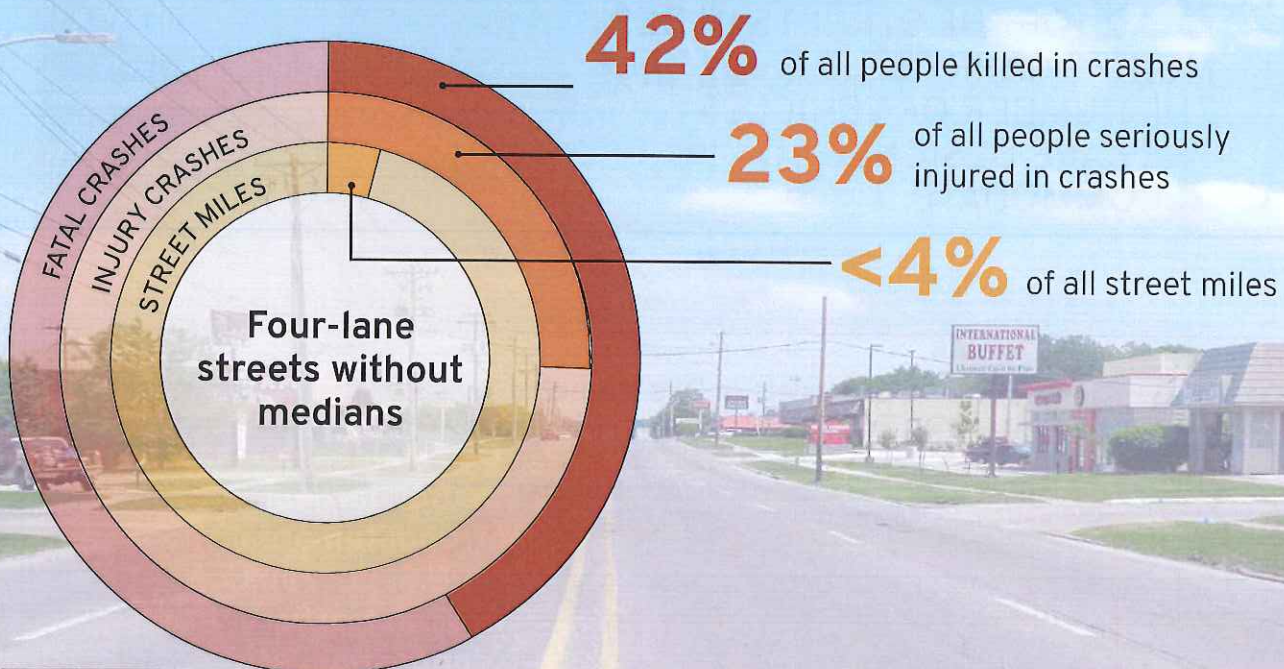
...but account for a much larger share of fatalities in Des Moines.⁷

27%

Traffic Fatalities (Average 2012-2016)

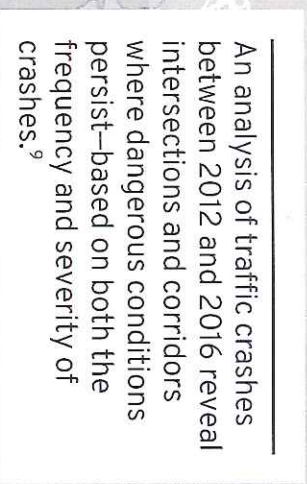
Compared to the U.S. and Iowa, people biking and walking in Des Moines constitute a much higher proportion of all traffic deaths. Nationally, 18.8% of all traffic fatalities in 2016 were people walking and biking, and in Iowa, people walking and biking accounted for 7.4% of traffic deaths.⁸

A disproportionate share of people killed in traffic crashes in Des Moines die on four-lane streets without a median or any means of separation between vehicles traveling in opposite directions.



CRASH FREQUENCY

LOW HIGH



HOW ARE OUR STREETS MAINTAINED?

THE STATE OF DES MOINES' STREETS

More than 2.5 million miles are driven on Des Moines' streets on an average weekday. The Street Maintenance Division of the Public Works Department is responsible for maintaining the City's streets and alleys in good repair and serviceable condition. The Street Maintenance Division uses a variety of techniques to preserve, maintain, and rehab Des Moines' streets, such as brooming, snow plowing, pothole repair, patching, curb and median replacement, and street surfacing, with the goal of extending their useful lives.

>2.5 MILLION

miles driven on Des Moines streets on an average weekday.

PAVEMENT CONDITION

In order to monitor pavement condition in Des Moines the Iowa DOT sponsors a survey of every paved street in the City. The survey is conducted every other year and results in each segment of roadway being assigned a numeric value based on data collected during the survey, like the amount of patching that has been done, and other factors.

Des Moines has the largest inventory of roads and the oldest roads, due to historical development patterns, of all the communities in the Des Moines Area Metropolitan Planning Organization (DMAMPO). Compared to other communities within DMAMPO, the City of Des Moines has a large share of streets that rated as either poor or very poor in terms of pavement condition (16% within Des Moines compared to 8% for all the streets within DMAMPO). The City of Des Moines also has one of the lowest average pavement condition scores (55) for the entire region.

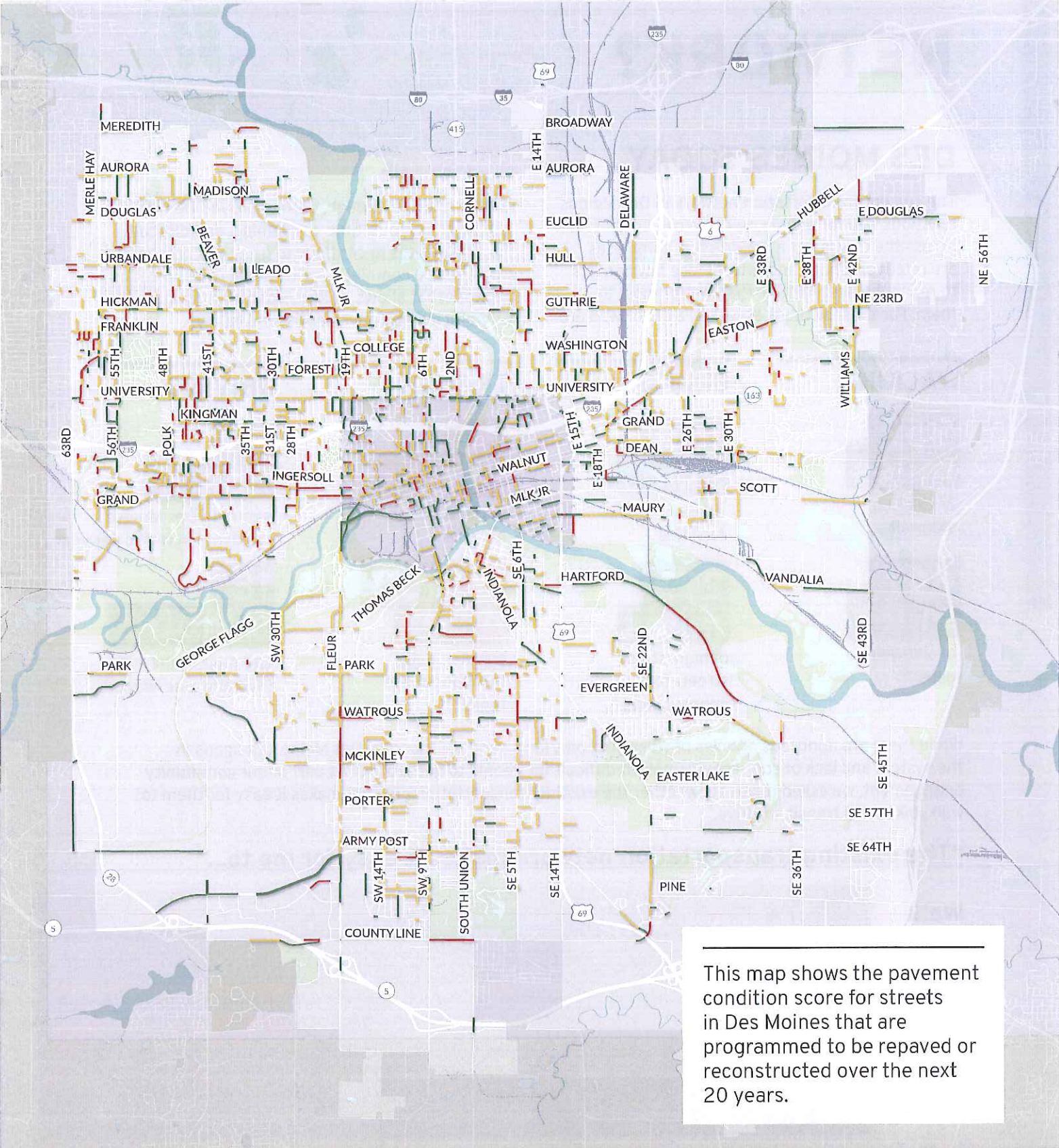
PAVEMENT CONDITION FOR DES MOINES



The Department of Public Works' goal is to have all roads in fair or better condition (currently 84%).

PAVEMENT CONDITION – 20 YEAR PLAN

- POOR/VERY POOR
- FAIR
- GOOD/VERY GOOD



HOW COMPLETE IS OUR NETWORK?

DES MOINES TODAY

The current transportation network in Des Moines functions well for people driving a car. Congestion across the City is not a major issue, commutes are relatively short, and drivers face few barriers to reach the destinations that matter most to them. For those without access to a car or who are

unable to drive, though, getting around Des Moines can be dangerous, time-consuming, and difficult. For Des Moines to continue to grow and prosper, the City needs a complete, multi-modal transportation network that allows all its residents to navigate the City efficiently, conveniently, and safely.

WALKING

952 miles

of existing sidewalks

667 miles

of sidewalk gaps ¹⁰

BIKING

108 miles

of existing bike facilities

273 miles

of high-stress streets for people biking ¹¹

TRANSIT

29 routes

in the DART network

15,000 miles

traveled daily throughout the region ¹²

DRIVING

8 hours

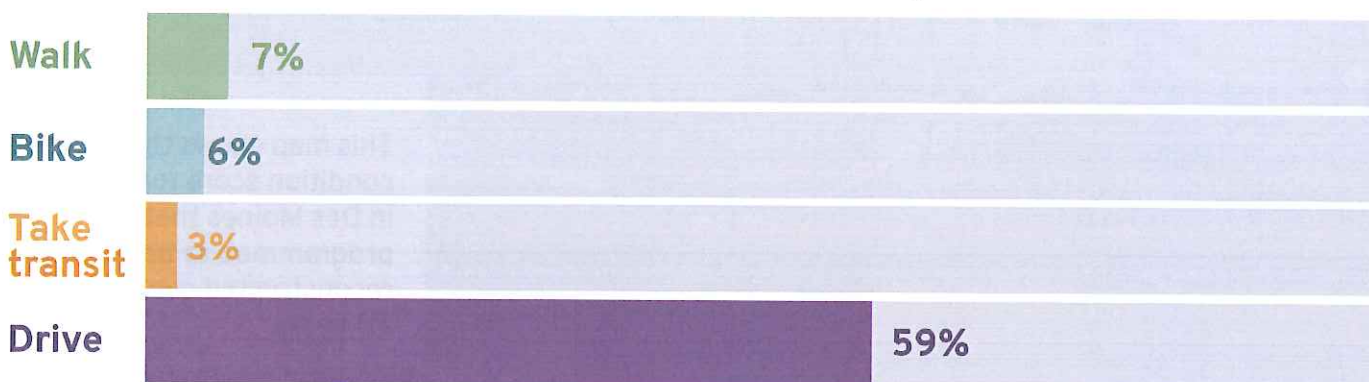
spent by Des Moines residents in traffic per year

18 minutes

spent on commuting (average, one-way) ¹³

While there are hundreds of miles of sidewalks, bike lanes, and trails across Des Moines, the gaps in the system and lack of connectivity make it difficult for people to get around. As part of our community engagement, we asked residents whether the existing transportation network makes it easy for them to walk, bike, take transit, or drive.*

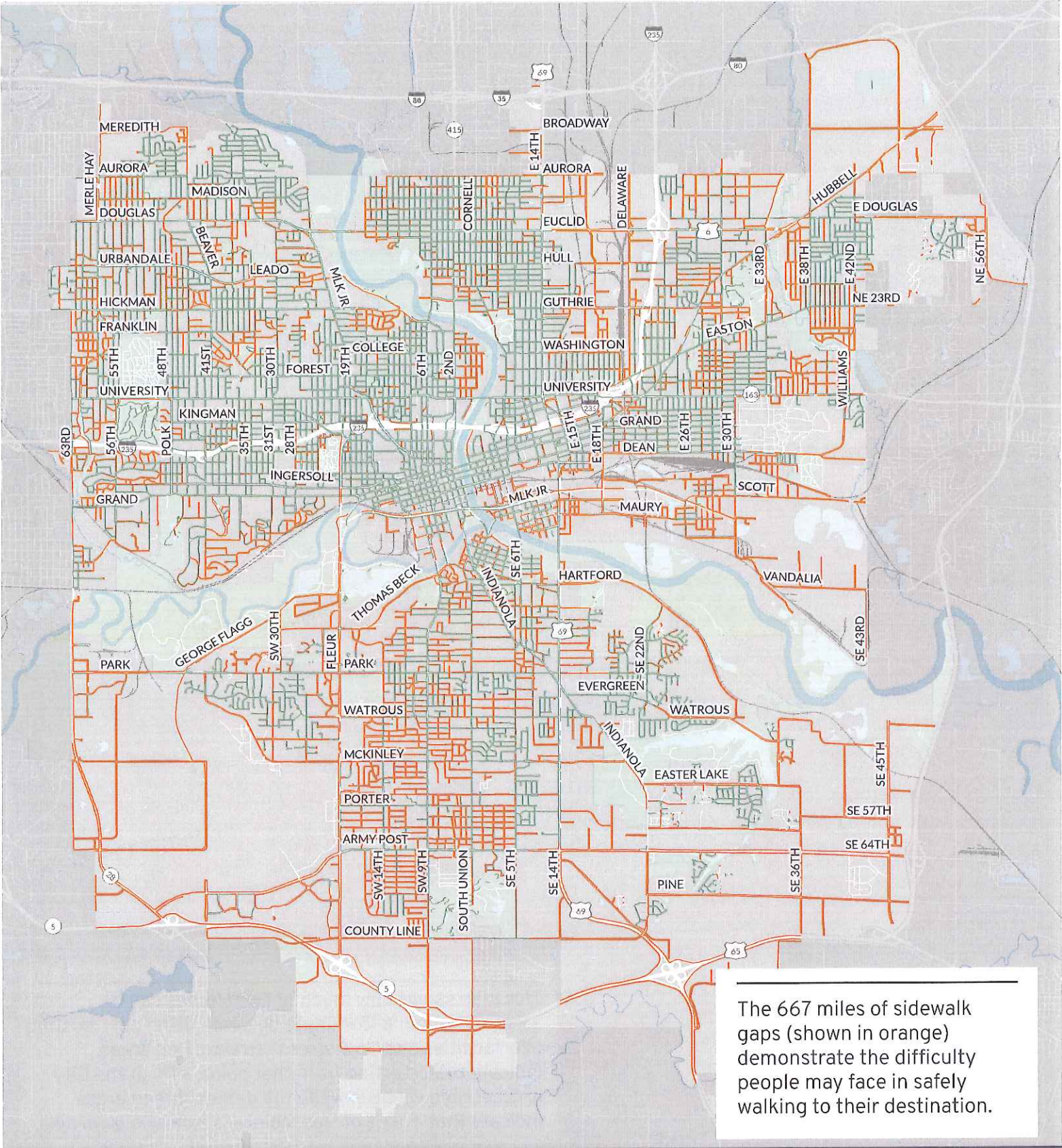
“The existing transportation network makes it easy for me to...”



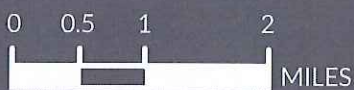
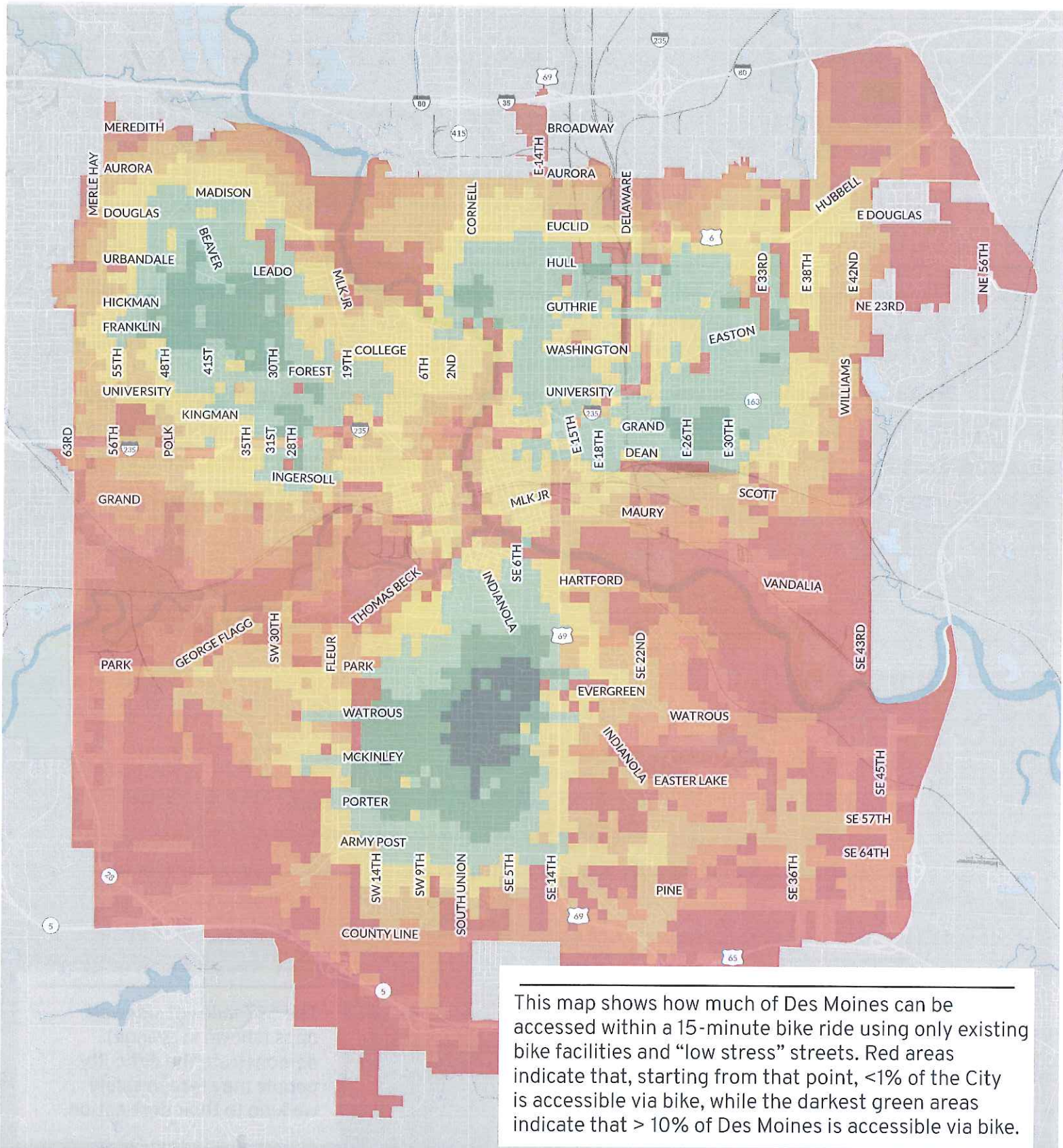
*Sample size=256

EXISTING SIDEWALK NETWORK AND GAPS

- EXISTING SIDEWALKS (952 MILES)
- EXISTING SIDEWALK GAPS (667 MILES)

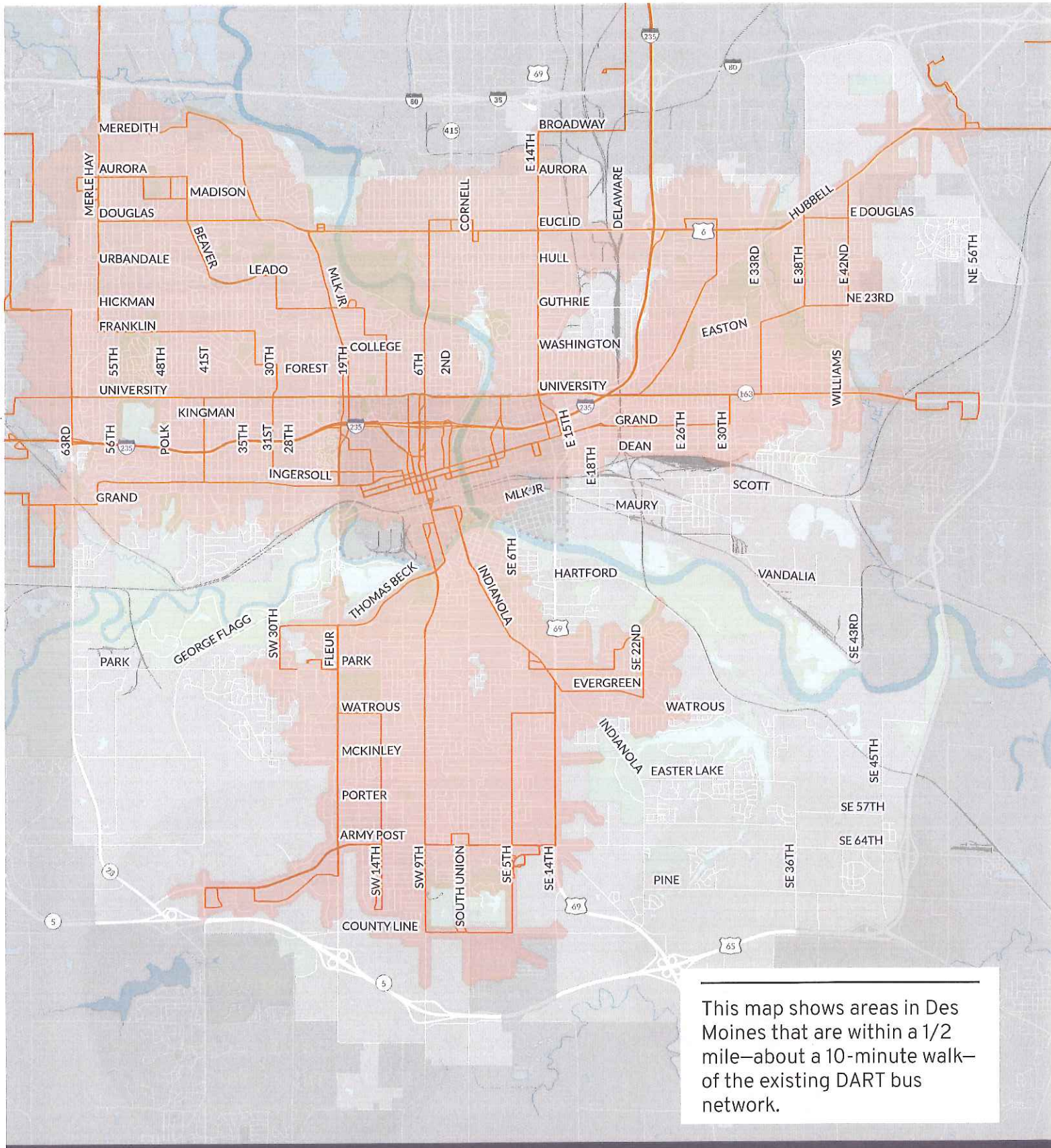


BICYCLE ACCESSIBILITY



BUS NETWORK SERVICE AREA

- EXISTING DART ROUTES
- 10 MINUTE WALK FROM BUS STOP



ISSUES AND OPPORTUNITIES

Through our conversations with Des Moines residents, analysis of transportation data and the existing infrastructure, and collaboration with City leaders and key stakeholders, the following issues and opportunities stood out as the major challenges facing Des Moines:

Traveling on Des Moines' streets can be **dangerous**, and people walking and biking are much more likely to be **seriously injured or killed** getting around the City.

Prioritizing safety for people **walking** and **biking** will create **safer streets** for everyone in Des Moines and help to strengthen neighborhoods.

The City's **transportation networks** for people **walking, biking,** and **accessing transit** are **disconnected**, which inhibits everyone's ability to reach the destinations that matter to them.

Investing in **connected, safe networks** for people walking, biking, and using transit (with special focus given to filling in existing sidewalk gaps) will **expand access to opportunities for all** the City's residents.

The way Des Moines **classifies and manages its streets** today only considers people driving and leads the City to spend **more money** than necessary on **roadway construction and maintenance.**

The **supply of roadway space** for cars in Des Moines **vastly exceeds demand.**

Creating a more **logical system** for classifying Des Moines' streets will **better align the form, function, and feel** of the City's streets with the way people use them and respond to the **nodes and activity centers** introduced in PlanDSM.

Excess roadspace can be **reallocated** to other uses to improve safety, catalyze economic development, and create space for **physical activity and healthy transportation.**

DSM TOMORROW

Des Moines is growing and changing, and the City's transportation network needs to keep up with the increasing number of people, jobs, and activity in the City.

The core of Des Moines' future transportation network will be the City's streets. Des Moines has 974 miles of streets that constitute the largest public space in the City. Des Moines' streets will be safe, comfortable, and easy for everyone to use. Our streets will move people using all types of transportation and connect residents, workers, and visitors to the places they want to go. Our streets will enable economic activity and provide opportunities for healthy lifestyles. First and foremost, our streets will be designed for the people of Des Moines. The Street Typologies explained on the following pages will guide how we manage, design, and maintain our streets for years to come and help realize the vision articulated in PlanDSM.

In addition to its streets, Des Moines has 952 miles of sidewalks and 108 miles of bike facilities. MoveDSM details how we can create connected networks of high quality facilities that make it safe, comfortable, and convenient to walk and bike everywhere in Des Moines.





STREET TYPOLOGIES

OUR STREETS TODAY

Streets across the United States are typically classified according to the Federal Highway Administration's (FHWA) functional classification system of arterial, collector, and local streets. The intended purpose of the functional classification system is to define a street's role in moving cars within a larger highway network.

Why does a street's classification matter? Functional classifications dictate the way a street is designed, from the width of the lanes to the distance between traffic signals. The design standards associated with the functional classification system are primarily focused on

moving cars without delay. Prioritizing moving cars quickly though, can create streets that are unsafe and inhospitable for people walking, biking, or waiting for the bus. It can also lead us to design roads that are bigger than they need be, which means spending extra money on materials, construction, and maintenance.

Streets in Des Moines do more than just move cars.

We gather and recreate along our streets.

Our streets enable our thriving economy.

Our streets connect us to our family and friends, to our jobs, and to our neighborhood centers.

MINOR ARTERIAL



Park Ave

These two streets currently have the same classification

MINOR ARTERIAL



Hickman Rd

So how can we classify our streets to better reflect the many important roles they play and ensure our streets work for everyone?

A number of cities across the U.S., such as San Francisco, Charlotte, and Grand Rapids, have implemented street typology systems. Creating a typology system for Des Moines will align the way streets are designed with the surrounding land uses and the way people use the street.

DES MOINES' STREET TYPOLOGIES CONSIDER:

A street's role in the network

- Moving people efficiently
- Connecting people to the places they want to go

A street's character and feel

- Enabling economic activity
- Supporting quality of life

How people use the street

- Moving people safely and comfortably

OUR STREETS TOMORROW

Des Moines' street typologies will guide the City in designing its streets and deciding what elements to include on certain streets, such as on-street parking, a landscaped median, or wide sidewalks.

The street typologies will also help the City make important policy decisions that impact our streets, such as setting speed limits that are comfortable and safe and laying out intuitive routes for getting around Des Moines whether you are driving, walking, biking, or taking the bus.

Together, the design and policy guidelines will lead to streets that move people efficiently, safely, and comfortably, while also enabling economic activity and supporting quality of life.

COMMUNITY RESIDENTIAL



Park Ave

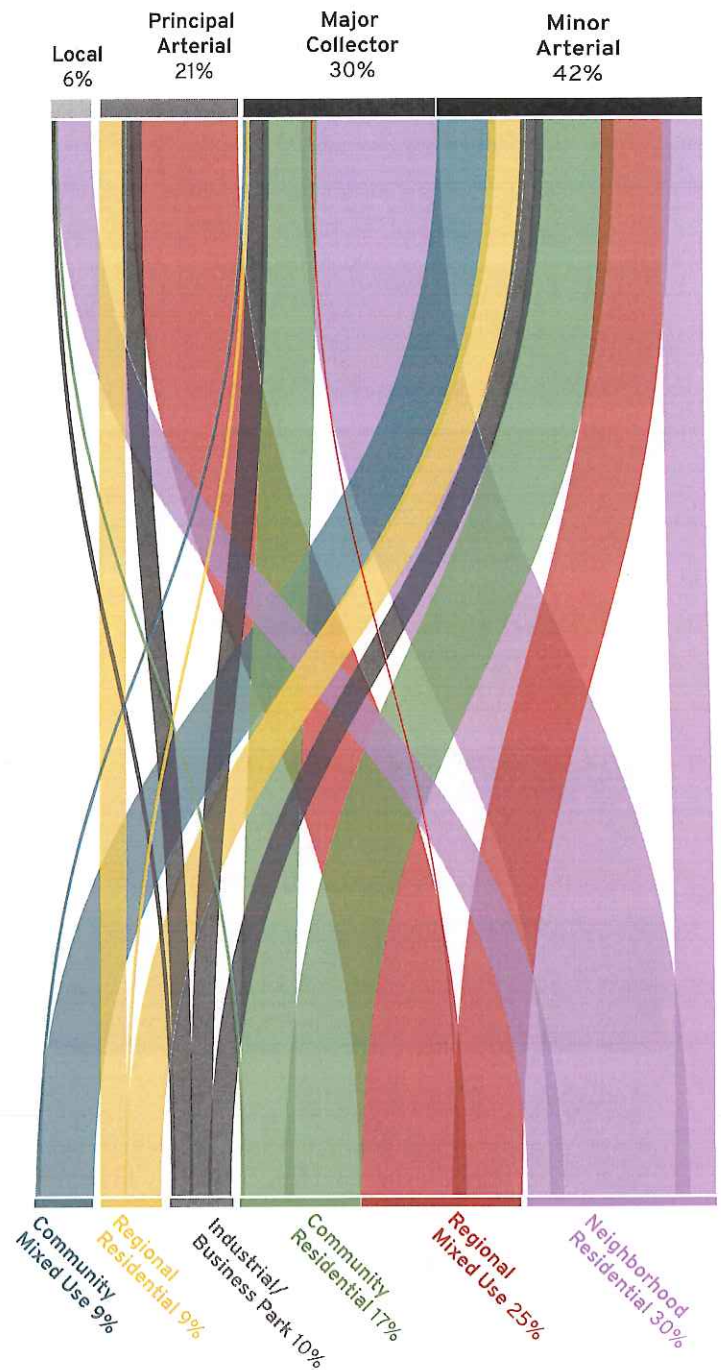
REGIONAL RESIDENTIAL



Hickman Rd

FUNCTIONAL CLASSES TO TYPOLOGIES

The chart below shows how existing streets were re-classified from the functional classification system to the new street typologies.



STREET TYPOLOGIES

WHAT DO TYPOLOGIES MEAN FOR OUR STREETS?

Across Des Moines, eight street typologies were identified that encapsulate the variety of street functions needed to create a complete transportation network. Des Moines’ street typologies build off the foundation articulated in other planning efforts undertaken in and around Des Moines over the last decade. The street typologies are designed to align with the neighborhood, community, and regional nodes as well as the existing and future land uses projected in PlanDSM. Des Moines’ street typologies follow a similar naming convention, combining the scale with the predominant land use (e.g., neighborhood + residential or regional + mixed use).

NEIGHBORHOOD RESIDENTIAL	PAGE 34
Connect residents to nearby communities and destinations and serve as spaces for neighbors to recreate, socialize, and play.	
COMMUNITY RESIDENTIAL	PAGE 38
Strengthen community character by tying neighborhoods together and linking residents with important facilities like libraries, schools, and parks.	
COMMUNITY MIXED USE	PAGE 42
Enable economic activity by creating welcoming pedestrian environments, ensuring efficient deliveries and transit access, and supplying the right amount of parking.	
REGIONAL RESIDENTIAL	PAGE 46
Provide cross-town links from many neighborhoods to job clusters and commercial centers.	
REGIONAL MIXED USE	PAGE 50
Act as gateways, connecting people using all modes of travel from around Des Moines and the wider region to the City’s major destinations.	
INDUSTRIAL/ BUSINESS PARK	PAGE 54
Balance access for larger vehicles with the needs of people who drive, walk, bike, or ride DART to their jobs.	
LOCAL STREETS	PAGE 58
Calm, green, and kid-friendly. These streets are an extension of your front yard and act as shared community spaces. They carry very little traffic and cars move slowly.	
DOWNTOWN STREETS	PAGE 59
Serve Des Moines’ densest job center, thriving businesses, and a growing number of residents. See the Connect Downtown website for more information on downtown streets.	

TYOLOGY GUIDELINES

The design and configuration of a street has a major impact on how safe and easy it is to cross the street for people walking, how efficient it is for buses and cars, and how comfortable it is to recreate, visit with friends, or shop at local businesses. For each of the street typologies, guidelines detailed below will help the City decide which street elements (e.g., medians, on-street parking, or bike lanes) should be included on which streets, the size and configuration of those elements, and other important factors such as speed limit and curb radii.

STREET ELEMENT	DETAILS
SPEED LIMIT	Speed is a crucial factor in the number of traffic crashes that occur on our streets and a major determinant of the severity of those crashes. Lowering speed limits on certain streets will greatly increase safety while having little to no impact on the efficiency of those streets. Lowering speed limit can be implemented in combination with new street design or increased enforcement.
LANE WIDTH	Building lane widths appropriate for an urban area will improve safety without inhibiting the ability of trucks and buses to operate.
NUMBER OF LANES	Our streets should have enough lanes to move people driving but also consider the impact on people crossing the street, how widening a street can alter a community's character, and the added construction and maintenance costs of building larger streets.
PEDESTRIAN FACILITIES	The width of pedestrian facilities should be tailored to the type of land use and separation from the street will depend on vehicle speeds and volumes. The preferred minimum width for sidewalks and parkways is 5'.
TRAFFIC CALMING	On residential streets and areas with heavy pedestrian activity, calming traffic will improve safety and comfort for people walking.
BIKE FACILITIES	Depending on the speed and quantity of traffic, different types of bike facilities will be necessary to make biking comfortable and safe for everyone.
CURB RADII	Managing curb radii, the curve where two streets meet at the corner of an intersection, is important for maintaining appropriate speeds for turning vehicles and limiting the distance people walking must cross. Curb radii also need to accommodate the turning movements of large vehicles like trucks and buses.
ON-STREET PARKING	On-street parking is convenient for residents and visitors, leads to more efficient land use, and provides safety benefits for all street users; however, on streets with higher speeds and traffic volumes, on-street parking may not be appropriate.
MEDIAN/ TWO-WAY LEFT TURN LANE	On streets with multiple lanes of traffic moving in opposite directions, providing physical separation will improve safety and provide access to businesses.
CENTERLINE	The pavement marking in the center of the road is used on streets with higher traffic volumes to visually guide drivers. Centerline in accordance with MUTCD Chapter 3B Pavement & Curb Markings.

STREET TYPOLOGIES

DESIGNING STREETS WITH TYPOLOGIES

START HERE

WHICH TYPOLOGY IS YOUR STREET?

Use the map on page 29 to find a street's designated typology. Streets shown without a typology are either considered local streets or downtown streets (as part of Connect Downtown).



STEP 1

ANY MODES OR NODES?

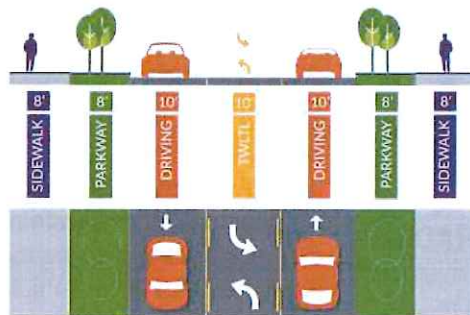
Use the "Modes and Nodes" maps on pages 30-32 to determine whether the street is part of the bike, transit, truck, or emergency vehicle networks or intersects a node, as defined by PlanDSM. The table on page 33 provides guidance for designing streets with modes and nodes in mind.



STEP 2

COMPARE THE CURRENT LAYOUT TO THE BASE DESIGN

A base street design is shown for each typology, which depicts one potential street alignment based on a common right-of-way for the respective typologies. During Step 3, gather information on the street's existing conditions (e.g., existing right-of-way and curb-to-curb width) and compare the current layout to the base design.






STEP 3

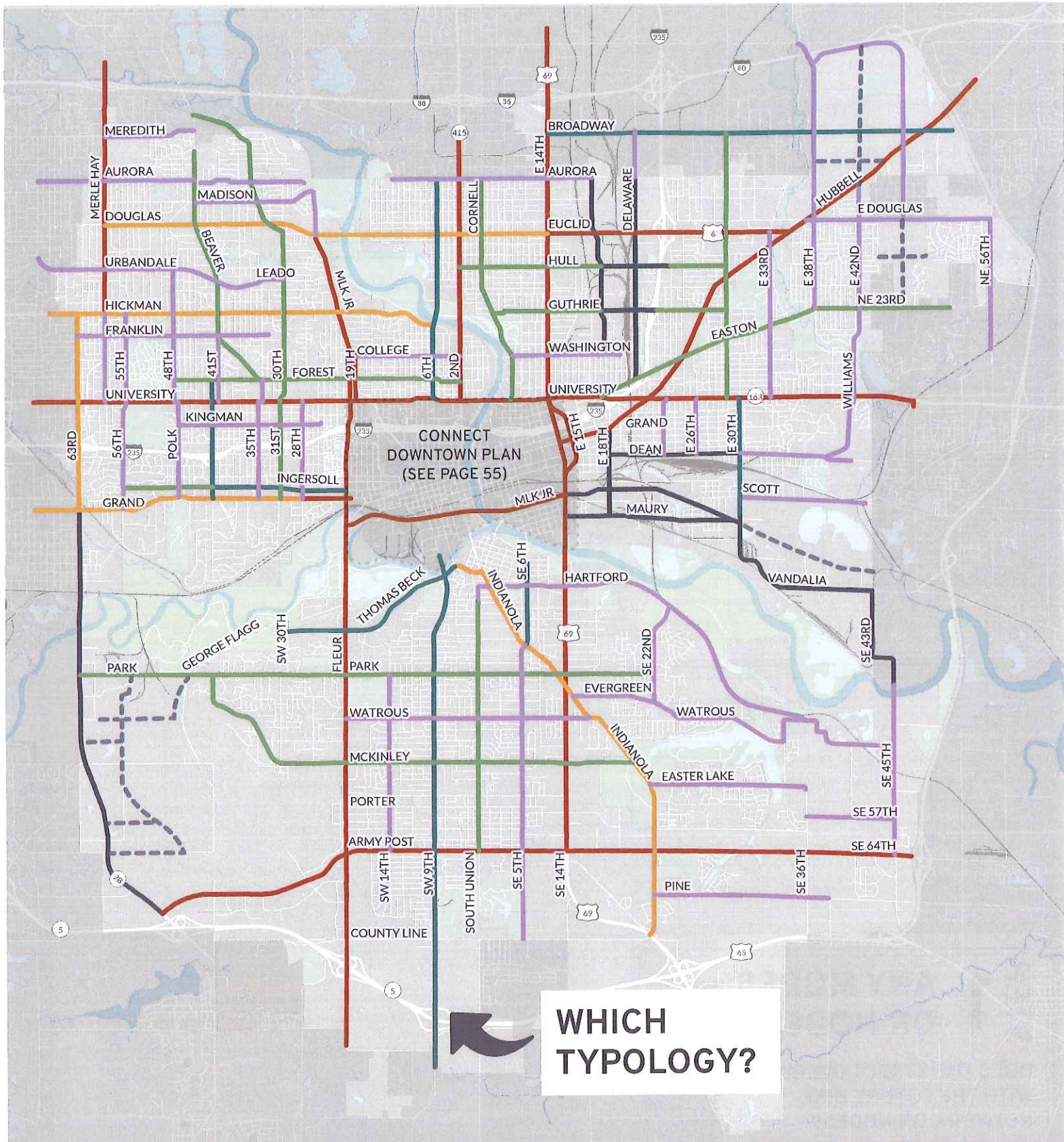
DESIGN YOUR STREET

Using the typology's base design as a guide, customize the street based on the available roadway width, guidelines for modes and nodes, and surrounding land uses. The street table and building blocks (under Step 3 for each typology) show the recommended widths of different elements that can be included on the street.



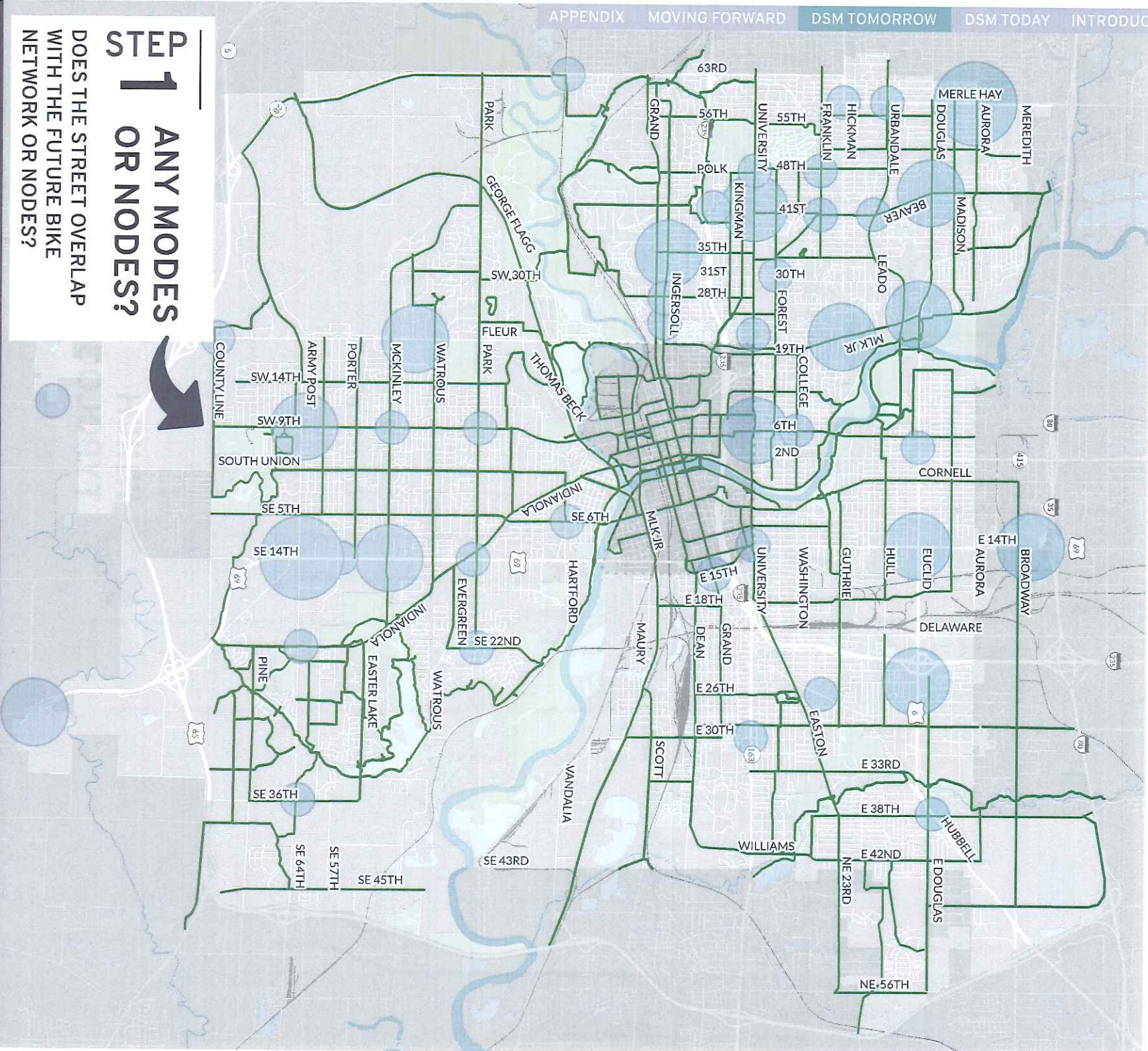
TYPOLOGIES

- | | | | |
|--|--|--|--|
|  NEIGHBORHOOD RESIDENTIAL |  COMMUNITY MIXED USE |  REGIONAL MIXED USE |  PROPOSED NEW STREETS |
|  COMMUNITY RESIDENTIAL |  REGIONAL RESIDENTIAL |  INDUSTRIAL/BUSINESS PARK |  LOCAL STREETS |



NODES AND BIKE NETWORK

— FUTURE BIKE NETWORK
● NODE



STEP 1 ANY NODES OR NODES?

DOES THE STREET OVERLAP WITH THE FUTURE BIKE NETWORK OR NODES?



See page 68 for bike network phasing and implementation

EXISTING DART ROUTES

PRIORITY DART CORRIDORS



TRUCK AND EMERGENCY RESPONSE ROUTE NETWORKS

- TRUCK ROUTES
- PRIMARY EMERGENCY RESPONSE ROUTE
- SECONDARY EMERGENCY RESPONSE ROUTE
- FIRE STATION



STEP 1 ANY MODES OR NODES?

DOES THE STREET OVERLAP WITH THE TRUCK OR EMERGENCY RESPONSE NETWORKS?



STEP 1

ANY MODES OR NODES?

If a street is part of a “Nodes and Modes” network, the design should incorporate the guidance shown below.

NODES

ON-STREET PARKING

On-street parking should be included within neighborhood and community nodes where space allows.

For regional nodes, on-street parking should only be included if there is not significant off-street parking.

Consider metering parking or imposing time limits within nodes.

PEDESTRIAN CROSSINGS

Install accessible pedestrian countdown signals with leading pedestrian intervals at signalized locations per City policy.

At intersections, convert on-street parking to curb extensions to decrease pedestrian crossing distance.

Install mid-block crossings at major pedestrian generators, especially where the nearest traffic signal or controlled intersection is >600' away.

TRAFFIC CALMING

Traffic calming elements should be considered in nodes and activity centers (see page 62).

PEDESTRIAN FACILITIES

Preferred sidewalk width 8'+

Preferred buffer (parkway*+furniture zone) 8'+

TRANSIT NETWORK

BUS STOPS

Improve transit waiting areas with transit shelters, benches, and signage.

Coordinate with DART to identify opportunities to construct bus bulbs to streamline boarding.

PEDESTRIAN ISSUES

Prioritize pedestrian improvements around stops on key transit corridors.

At busy stops, consider mid-block crossings for pedestrians where City requirements are met.

TRANSIT PRIORITY

On key transit corridors, consider transit signal prioritization and queue jumps where needed/feasible.

LANE WIDTH

On key transit corridors where space is available, the outside lane may be 11'.

BIKE NETWORK

WIDTH

SEPARATION

MARKINGS

PROTECTED BIKE LANE

Buffer should be at least 2' wide. The total width of the bike lane and buffer should be considered "bike lane width."

Two solid white lines designate a buffered or protected bike lane. If buffer is 3' or wider, consider diagonal hatching

Word and/or symbol and arrow markings within bike lane

BIKE LANE

Preferred width 6' when curbside. Minimum width 5' when next to parking lane.

Solid white line to separate motor vehicle traffic

Word and/or symbol and arrow markings within bike lane

MARKED SHARED LANE

Minimum placement when parking lane is present is 11' from curb face.

Bike and chevron shared lane marking

TRUCK/ EMERGENCY

LANE WIDTH

CURB RADII

SIGNALS

STREET ELEMENTS

11' (maximum preferred)

25' (maximum preferred)

To avoid an increase in response time, use ITS for signal preemption to optimize traffic flow

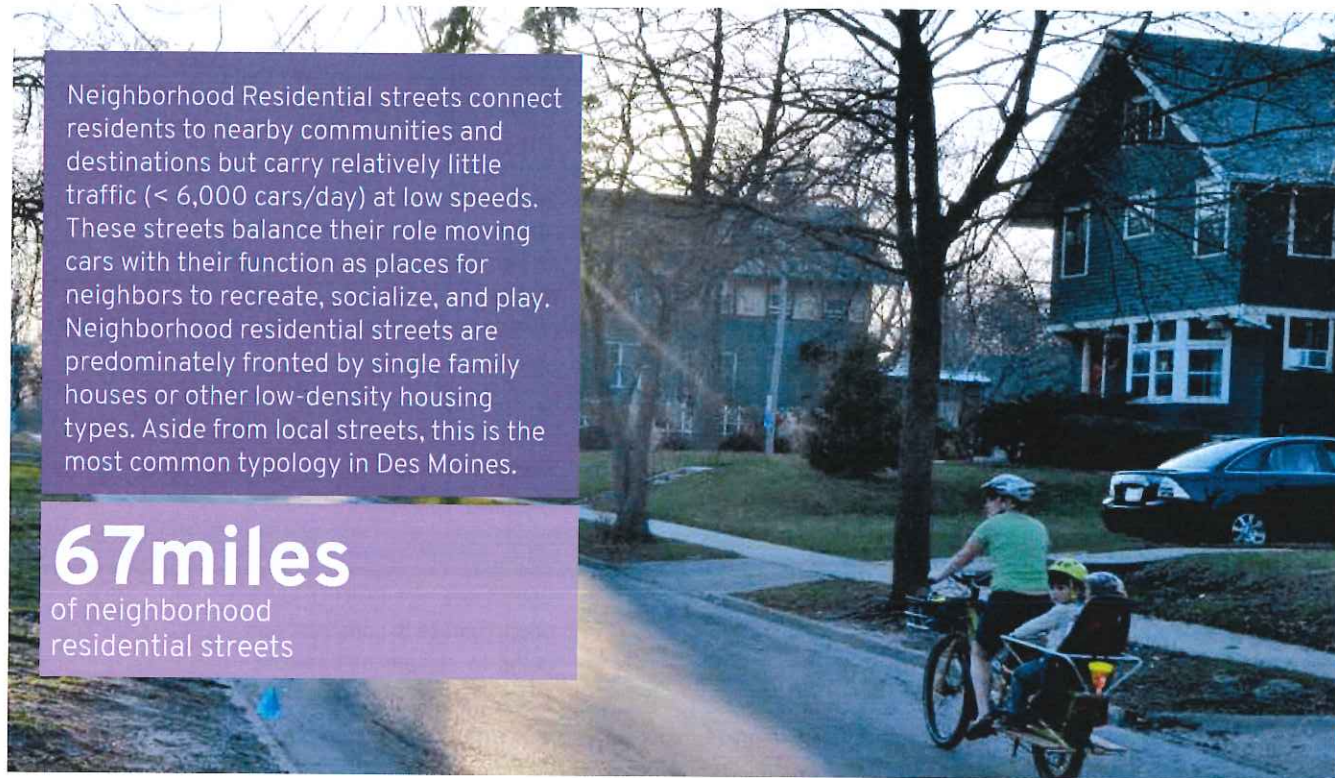
*In Des Moines, Parkways (the area between the sidewalk and street) are sometimes called the parking area.

STREET TYPOLOGIES

NEIGHBORHOOD RESIDENTIAL

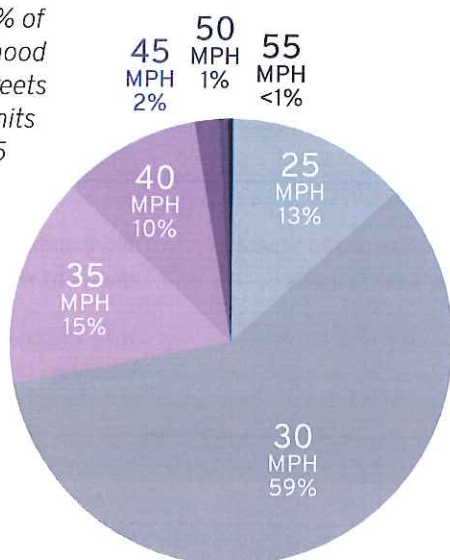
Neighborhood Residential streets connect residents to nearby communities and destinations but carry relatively little traffic (< 6,000 cars/day) at low speeds. These streets balance their role moving cars with their function as places for neighbors to recreate, socialize, and play. Neighborhood residential streets are predominately fronted by single family houses or other low-density housing types. Aside from local streets, this is the most common typology in Des Moines.

67miles
of neighborhood
residential streets

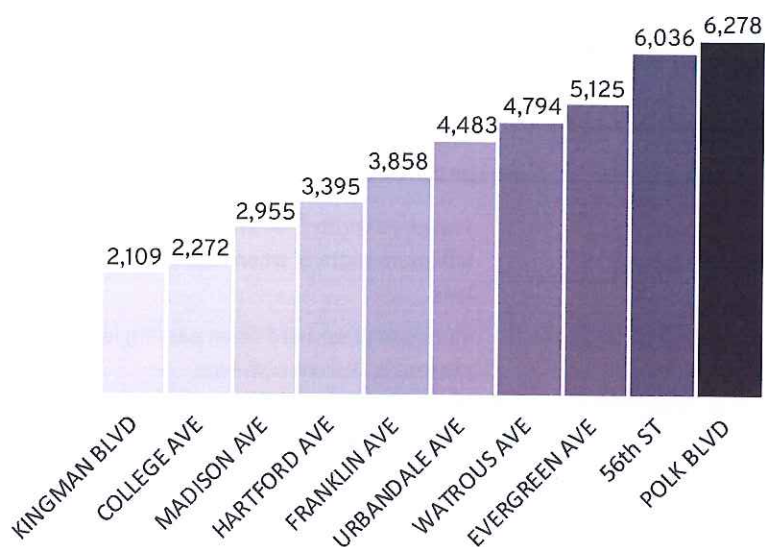


SPEED LIMITS (EXISTING)

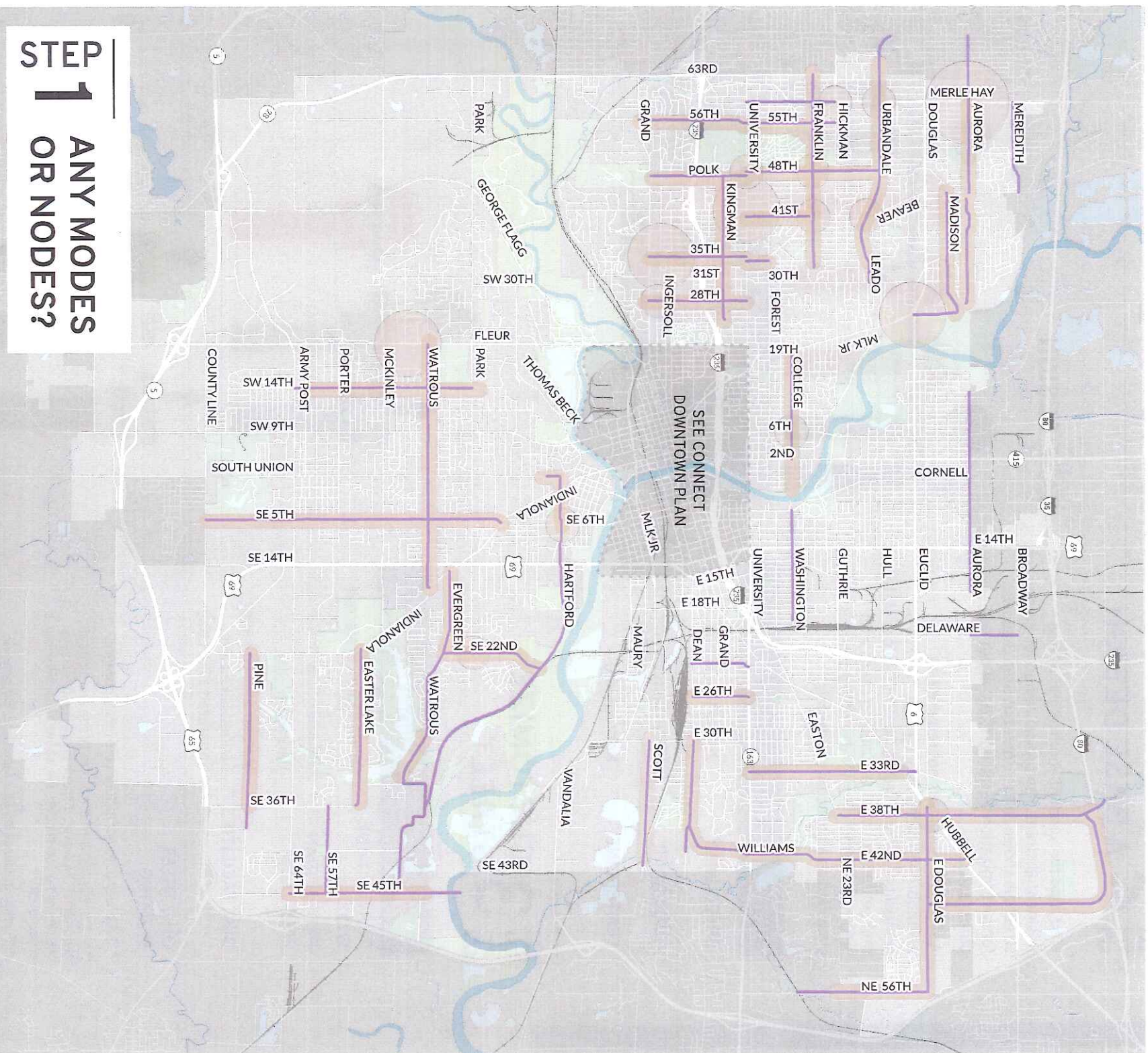
More than 85% of our Neighborhood Residential streets have speed limits higher than 25 mph.



DAILY TRAFFIC VOLUMES (EXISTING, SELECT STREETS)



NEIGHBORHOOD RESIDENTIAL



STEP 1 ANY MODES OR NODES?

STEP 2 COMPARE YOUR STREET TO A BASE DESIGN

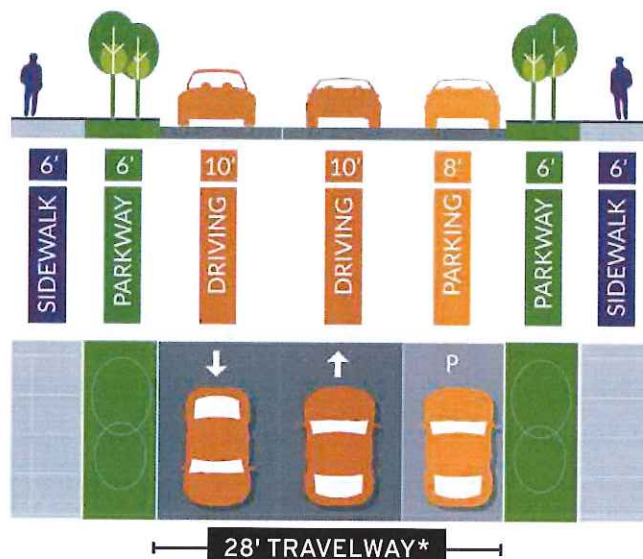
First, find the width of your Neighborhood Residential street. The typical design for these streets is shown to the right, but Step 3 allows for customization based on street width and other factors.

A striped centerline is not required on neighborhood residential streets. The FHWA Manual on Uniform Traffic Control Devices states that centerlines shall be used on roads with volumes >4,000 cars per day (if the street is classified as a collector or arterial).¹⁴

GUIDELINES

SPEED LIMIT	25 mph maximum
CURB RADII	10' maximum preferred
CENTERLINE	Not required

BASE DESIGN



STEP 3 CUSTOMIZE STREET

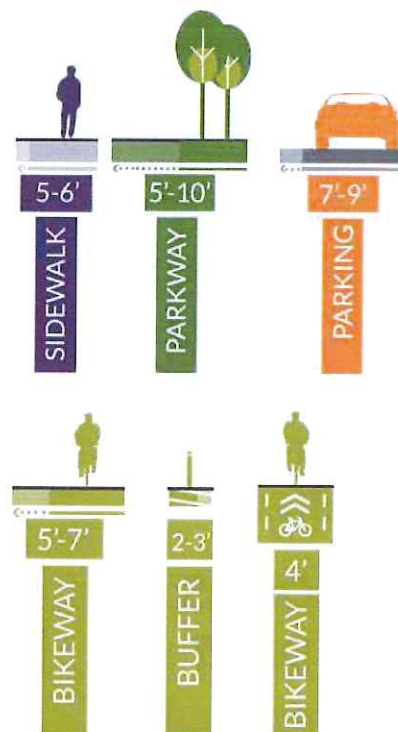
ELEMENT GUIDELINES

TRAVEL LANE WIDTH	10' maximum preferred
PEDESTRIAN FACILITIES**	Sidewalk 5'-6' Parkway 5'-10'
BIKE FACILITIES***	Marked Shared Lane, Striped Bike Lane, Separated Bike Lane
ON-STREET PARKING	7'-9'

* Travelway does not include curb offset distance.

**A 1' buffer between the property line and sidewalk is preferred. However, if space is needed to achieve the desired cross-section, the above sidewalk width is appropriate.

***Further guidance on bike facilities is on page 68.



NEIGHBORHOOD RESIDENTIAL EXAMPLE

The example below outlines the process of designing a Neighborhood Residential street and includes a discussion of trade-offs and guidelines.

WATROUS AVENUE

Watrous Avenue is an east-west street classified as Neighborhood Residential between Fleur Drive and Indianola Avenue.

STEP 1

Nodes	Bike	✓	Transit	Truck	Emergency Vehicle	✓
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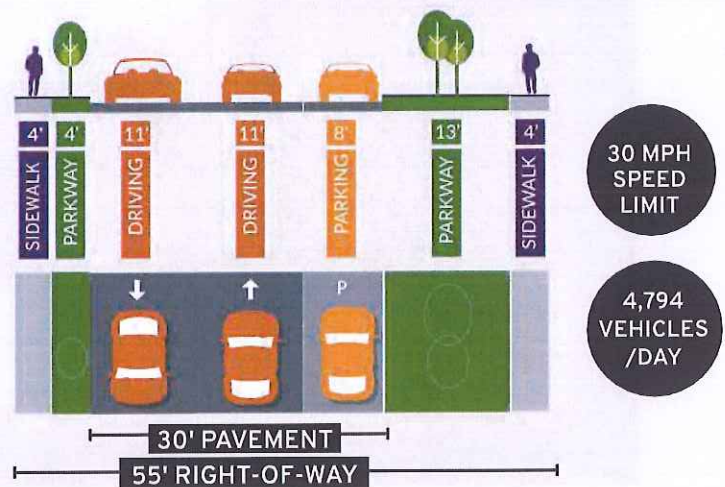
STEP 2

Watrous Avenue near 5th Street



Source: Nearmap

Existing conditions



Designing Watrous Avenue should begin by comparing the “base design” of a neighborhood residential street, which has 52' of right-of-way, to the existing conditions. Nearly 75% of Neighborhood Residential streets are wider than the base design, including Watrous, which has 55' of right-of-way.

STEP 3

On Neighborhood Residential streets, sidewalks should be 5'-6' and parkways should be 5'-10'. The existing sidewalks on Watrous Avenue do not meet the recommended minimums.

Watrous Avenue is part of the future bike network but there are currently no bike facilities. With the existing speed limit of 30 mph, Watrous would warrant separated bike lanes; however, if the speed limit were lowered to 25 mph, striped bike lanes would be acceptable. Additional guidance on bike facilities can be found on page 68.

Watrous Avenue is also part of the primary emergency vehicle network, so vehicle lanes should be 10'-11' wide. There is also currently on-street parking on Watrous.

In order to bring the sidewalks and parkways up to the recommended minimums and add bike facilities,

Watrous will likely need to be reconstructed. If the on-street parking were removed, a decision that would depend on the current utilization and community input, a 13' two-way separated bike lane (also known as a cycletrack) could be added on one side and 5' sidewalks with 5' parkways could be built.

An interim solution that would not require reconstruction could remove on-street parking and reduce lane widths to 10', which would leave room for two striped 5' bike lanes (necessitating the speed limit being reduced to 25 mph). Reducing the lane widths would require coordination with the Fire Department.

Where Watrous Avenue intersects with an “activity center” (such as Jefferson Elementary School), including traffic calming elements should be considered. Guidance on traffic calming can be found on page 62.

STREET TYPOLOGIES

COMMUNITY RESIDENTIAL

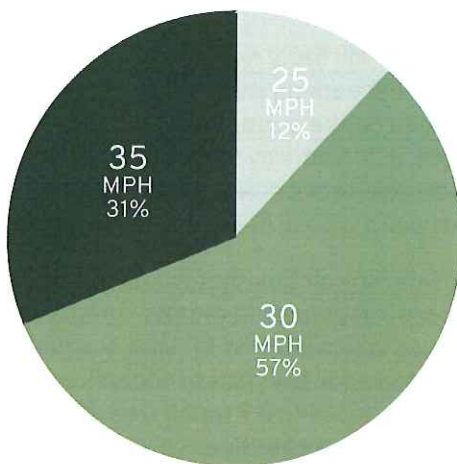


Community Residential streets act as important links in Des Moines' street network for people using all modes of travel. There are a variety of housing types along community residential streets, from single family homes, to town homes, to apartments, as well as community facilities and some commercial uses. While these streets carry moderate amounts of people (3,000 to 12,000 cars/day), they also support community uses and character.

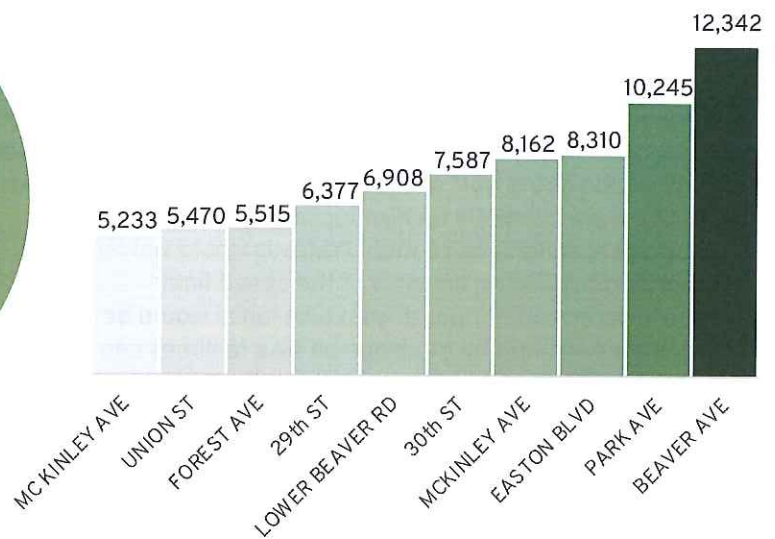
41 miles
of community residential streets

SPEED LIMITS (EXISTING)

More than 40% of our Community Residential streets have speed limits higher than 30 mph.



DAILY TRAFFIC VOLUMES (EXISTING, SELECT STREETS)



- COMMUNITY RESIDENTIAL TYPOLOGY
- BIKE NETWORK
- NODE



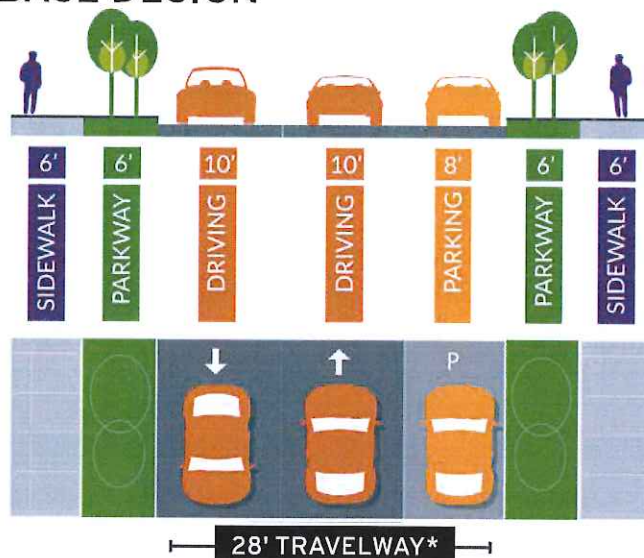
STEP 2 COMPARE YOUR STREET TO A BASE DESIGN

First, find the width of your Community residential street. The typical design for these streets is shown to the right, but Step 3 allows for customization based on street width and other factors.

Community Residential streets should have a speed limit no greater than 30 mph so people can safely access their homes and community amenities. Consider lowering speed limit to 25 mph at locations where there is significant pedestrian activity, if the street is part of bike network, or the street has a significant crash history.

When streets of differing typologies intersect, the maximum curb radii for the higher typology is acceptable.

BASE DESIGN

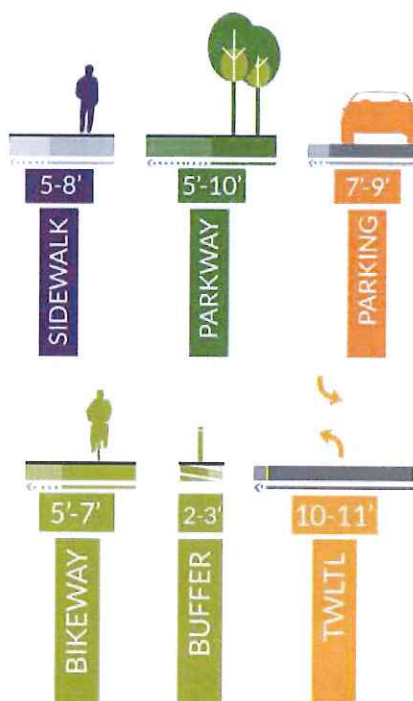


GUIDELINES

SPEED LIMIT	30 mph maximum
CURB RADII	20' maximum preferred

STEP 3 CUSTOMIZE STREET

ELEMENT	GUIDELINES
LANE WIDTH	10' maximum preferred
PEDESTRIAN FACILITIES**	Sidewalk 5'-8' Parkway 5'-10'
BIKE FACILITIES***	Striped Bike Lane, Separated Bike Lane, Shared-Use Path
TWO-WAY LEFT-TURN LANE	10'-11'
ON-STREET PARKING	7'-9'
OTHER	Landscaped median



* Travelway does not include curb offset distance.

** A 1' buffer between the property line and sidewalk is preferred. However, if space is needed to achieve the desired cross-section, the above sidewalk width is appropriate.

*** Further guidance on bike facilities is on page 68.

COMMUNITY RESIDENTIAL EXAMPLE

The example below outlines the process of designing a Community Residential street and includes a discussion of trade-offs and guidelines.

EASTON BOULEVARD

Easton Boulevard is an angled street, running northeast through the east side of the City. It connects to University Avenue on the south end and 23rd Avenue on the north end and has been identified as a Community Residential street.

STEP 1

Nodes		Bike	✓	Transit		Truck	✓	Emergency Vehicle	✓
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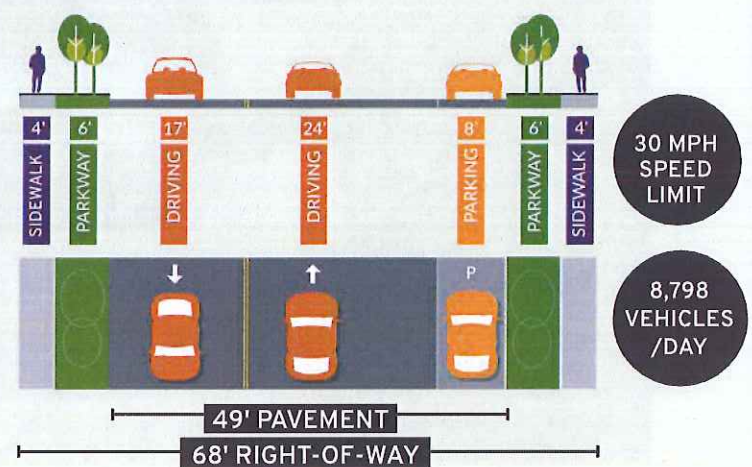
STEP 2

Easton Boulevard near 33rd Street



Source: Nearmap

Existing conditions



Designing Easton Boulevard should begin by comparing the “base design” of a community residential street, which has 56' of right-of-way, to the existing conditions. Nearly 80% of Community Residential streets are wider than the base design, including Easton, which has 68' of right-of-way near 33rd Street.

STEP 3

On Community Residential streets, sidewalks should be 5'-8' and parkways should be 5'-10'. The existing sidewalks on Easton do not meet the recommended minimums.

Easton Boulevard is part of the future bike network but currently does not have bike facilities. With a speed limit of 30 mph, the appropriate bike facility would be a separated bike lane, which requires at least 7'. Additional guidance on bike facilities can be found on page 68.

Easton is also part of the emergency vehicle and truck networks, so 11' lanes may be necessary to accommodate larger vehicles. Depending on the section of Easton, there is also an intermittent two-way left-turn lane and intermittent on-street parking.

Around Easton and 33rd, there is significant excess pavement that can be redistributed. With two 11' travel lanes and 8' on-street parking, there would be 19' of pavement remaining, which could easily accommodate high-quality separated bike lanes. If necessary, on-street parking could be swapped for a two-way left-turn lane and there would still be enough room for separated bike lanes.

These solutions would not involve any curb work, which significantly reduces cost, but would also leave the sidewalks in their existing condition, which is less than the recommended minimum.

Where Easton Boulevard intersects with an “activity center” (such as Four Mile Creek Park), traffic calming elements should also be considered. Guidance on traffic calming can be found on page 62.

STREET TYPOLOGIES

COMMUNITY MIXED USE

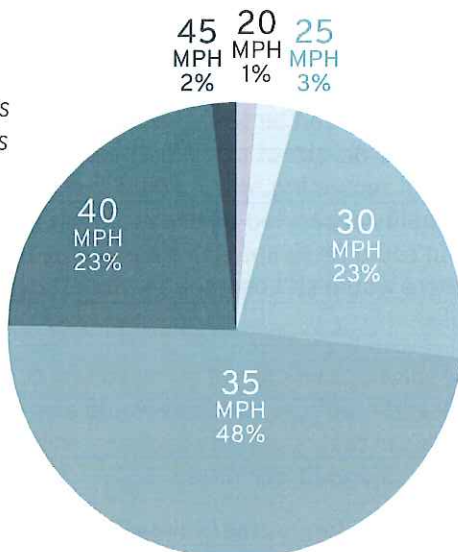


Community Mixed Use streets are important business corridors where people shop, dine, and work. They connect residents from their neighborhoods to commercial nodes and are critical to Des Moines' economic well-being. Community Mixed Use streets accommodate vehicles, buses, delivery trucks, and people walking and biking, with a particular focus on creating a welcoming pedestrian environment that fosters economic activity.

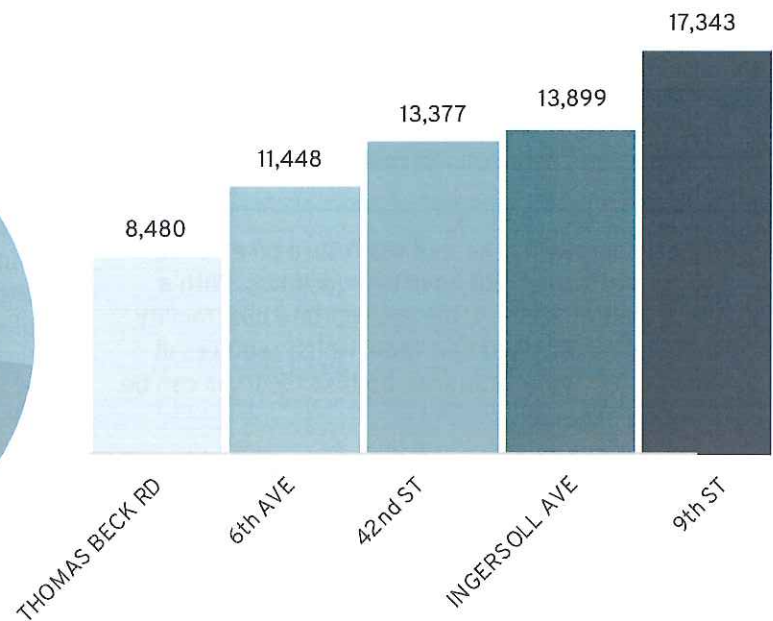
20 miles
of Community
Mixed Use streets

SPEED LIMITS (EXISTING)

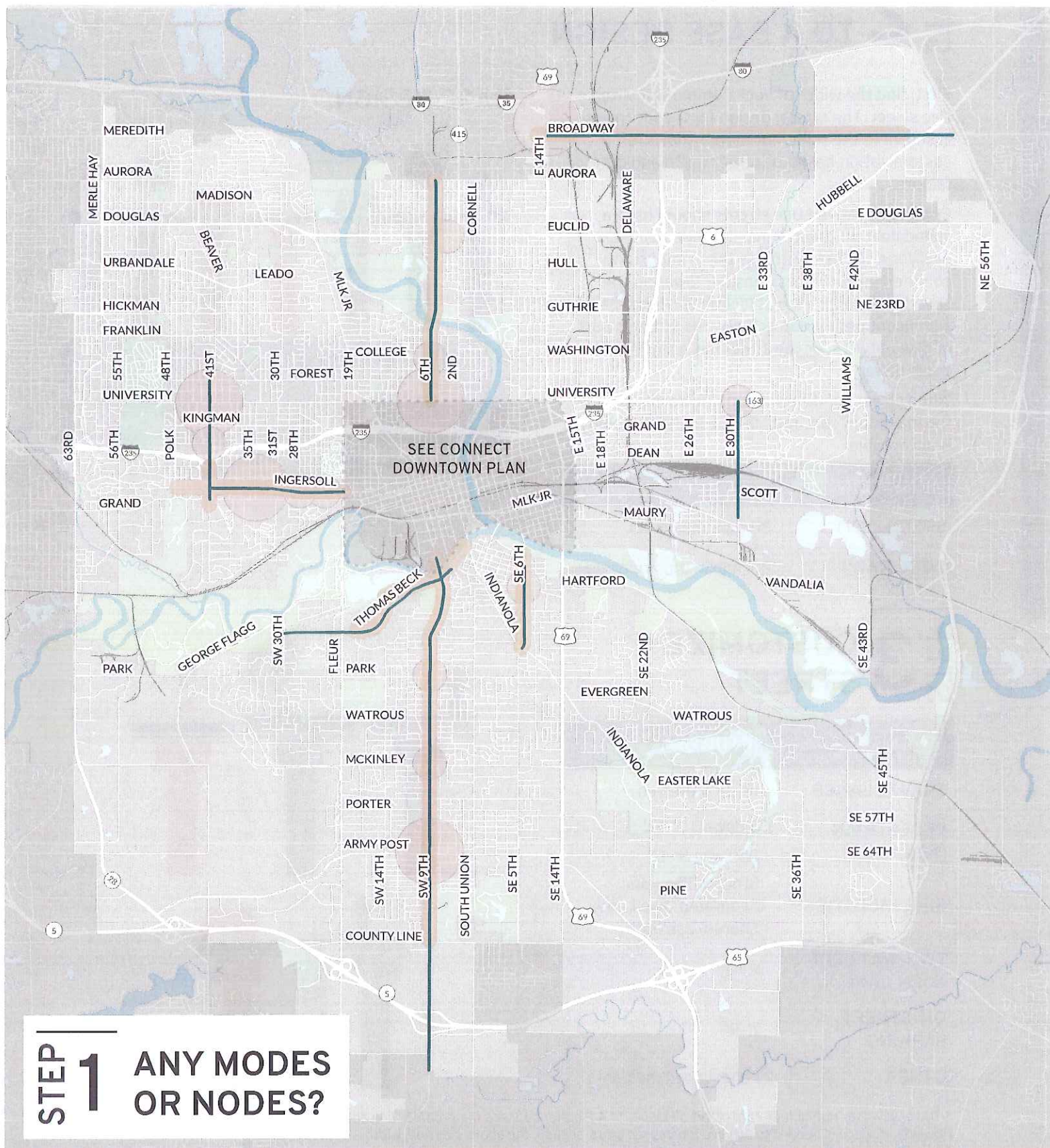
Nearly 75% of our Community Mixed Use streets have speed limits higher than 30 mph.



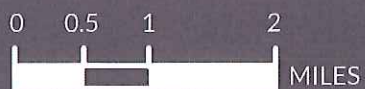
DAILY TRAFFIC VOLUMES (EXISTING, SELECT STREETS)



COMMUNITY MIXED USE



STEP 1 ANY MODES OR NODES?



STEP 2 COMPARE YOUR STREET TO A BASE DESIGN

First, find the width of your Community Mixed Use street. The typical design for these streets is shown to the right, but Step 3 allows for customization based on street width and other factors.

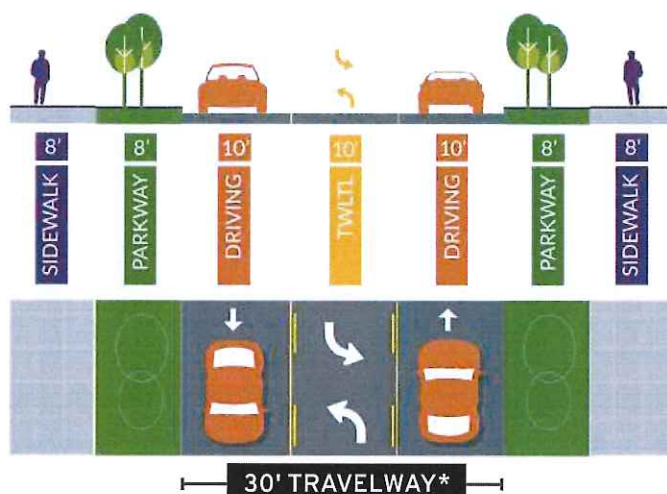
Community Mixed Use streets should have a speed limit no greater than 30 mph to ensure everyone can safely access these important commercial corridors. Consider lowering the speed limit to 25 mph at locations where there is significant pedestrian activity, the street is part of bike network, or the street has a significant crash history.

When streets of differing typologies intersect, the maximum curb radii for the higher typology is acceptable.

GUIDELINES

SPEED LIMIT	30 mph maximum
CURB RADII	20' maximum preferred

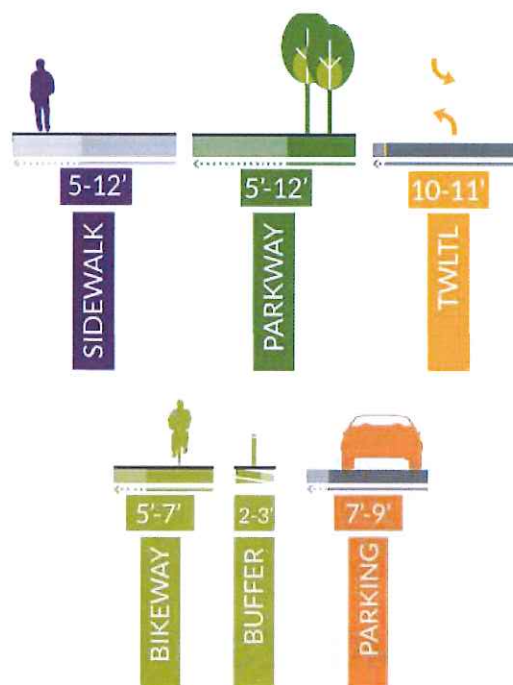
BASE DESIGN



STEP 3 CUSTOMIZE STREET

ELEMENT GUIDELINES

TRAVEL LANES	10'-11' preferred
PEDESTRIAN FACILITIES**	Sidewalk 5'-12' Parkway 5'-12'
BIKE FACILITIES***	Striped Bike Lane, Separated Bike Lane, Shared-Use Path
TWO-WAY LEFT-TURN LANE	10'-11'
ON-STREET PARKING	7'-9'
OTHER	Landscaped median



* Travelway does not include curb offset distance. ** A 1' buffer between the property line and sidewalk is preferred. However, if space is needed to achieve the desired cross-section, the above sidewalk width is appropriate.

*** Further guidance on bike facilities is on page 68.

COMMUNITY MIXED USE EXAMPLE

The example below outlines the process of designing a Community Mixed Use street and includes a discussion of trade-offs and guidelines.

42ND STREET

42nd Street is a north-south street classified as Community Mixed Use between Forest Avenue and Grand Avenue.

STEP 1

Nodes	✓	Bike		Transit	✓	Truck	✓	Emergency Vehicle	✓
-------	---	------	--	---------	---	-------	---	-------------------	---

STEP 2

42nd Street near University Avenue



Source: Nearmap

Existing conditions



Designing 42nd Street should begin by comparing the “base design” of a Community Mixed Use street, which has 62' of right-of-way, to the existing conditions. The existing right-of-way on 42nd Street is 60' near University Avenue, which is narrower than the base design.

STEP 3

On Community Mixed Use streets, sidewalks should be 5'-12' and parkways should be 5'-12'. The existing sidewalks on 42nd Street do not meet the recommended minimums.

42nd Street is also part of the primary emergency vehicle network, a truck route, and has been identified by DART as an enhanced transit route. In order to accommodate these larger vehicles, 11' lanes may be necessary.

As an enhanced transit route that passes through two nodes, pedestrian facilities and amenities will be a priority along 42nd Street. It will be important to include wide enough sidewalks and parkways to accommodate bus shelters and ample space for people walking to access the two commercial nodes.

One option would be to reduce the lanes on 42nd St. to 10', which would allow for the sidewalks on each side of the street to be expanded to 6'. This would create a more spacious pedestrian environment and bus shelters, street furniture, and other streetscape elements could be added. Reducing the width of the travel lanes, though, would require consultation with DART and the Fire Department, to ensure their vehicles could still easily use the corridor.

Where 42nd Street intersects with an “activity center” (such as the node at 42nd Street and University Avenue or Hubbell Elementary School), traffic calming elements should also be considered. Guidance on additional traffic calming can be found on page 62.

STREET TYPOLOGIES

REGIONAL RESIDENTIAL

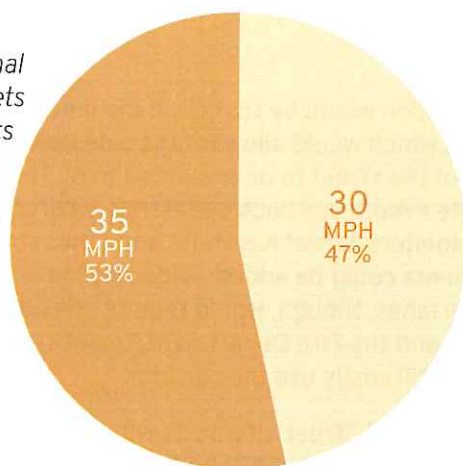


Regional Residential streets have a variety of housing types, with more high-density apartments, and also serve important commercial nodes. They carry larger numbers of people (10-20,000 cars/day) longer distances. Facilities that are physically-separated or buffered help people walking and biking feel safe and comfortable on these streets.

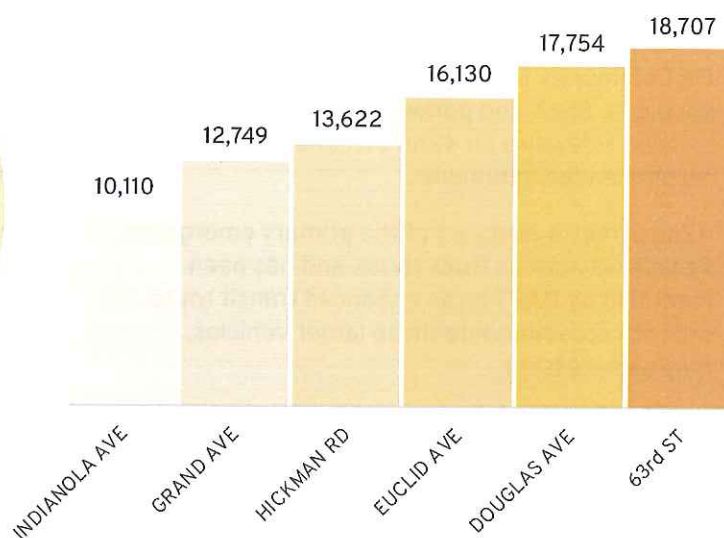
20 miles
of Regional
Residential streets

SPEED LIMITS (EXISTING)

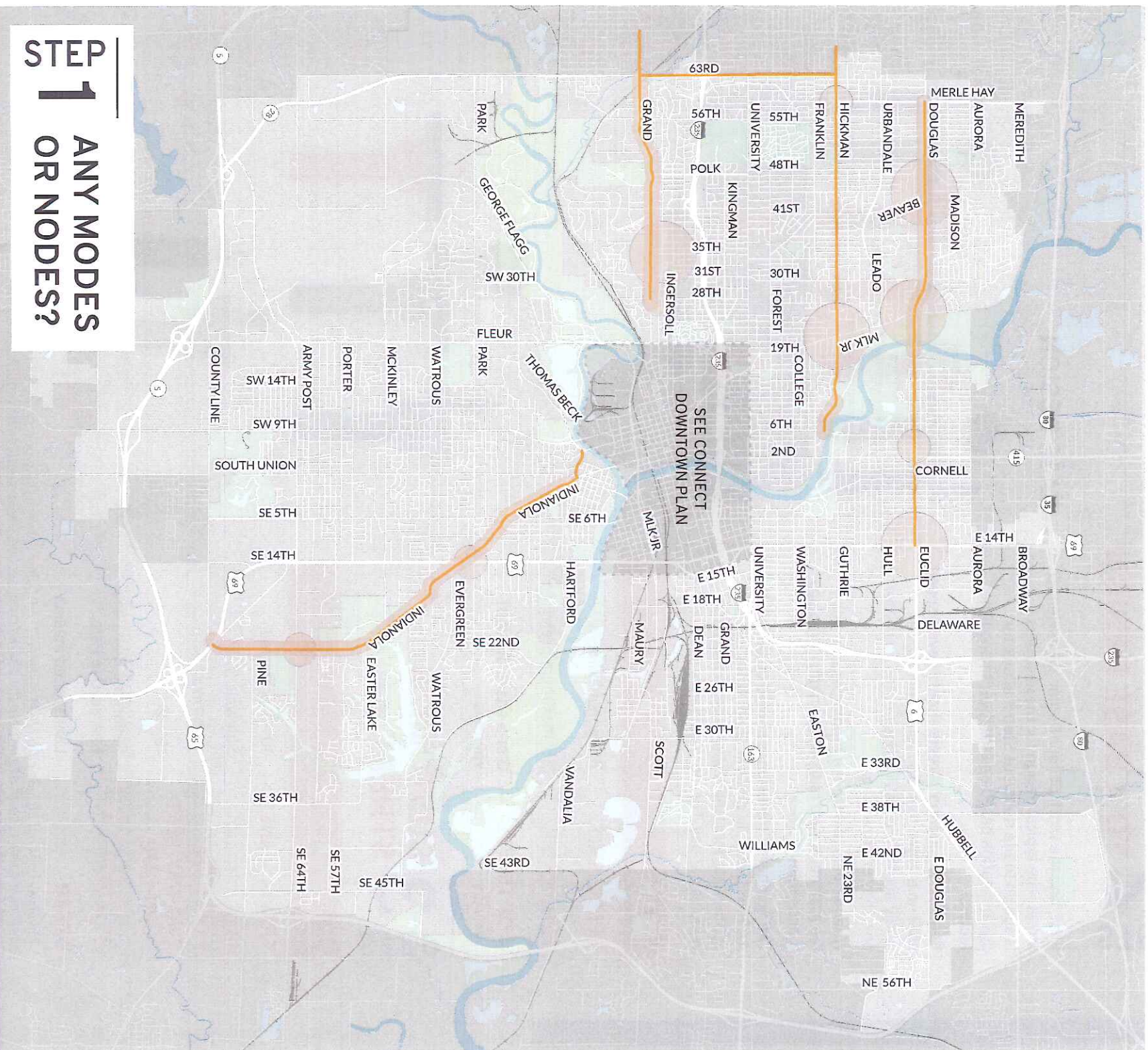
All of the Regional Residential streets have speed limits at or below the recommended maximum of 35 mph.



DAILY TRAFFIC VOLUMES (EXISTING, SELECT STREETS)



REGIONAL RESIDENTIAL



STEP 2 COMPARE YOUR STREET TO A BASE DESIGN

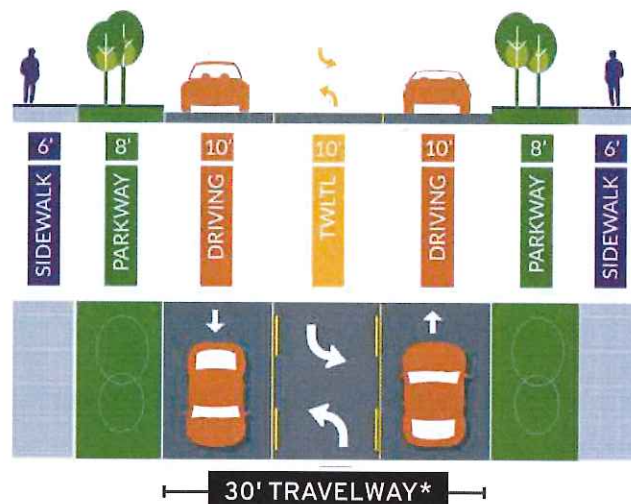
First, find the width of your Regional Residential street. The typical design for these streets is shown to the right, but Step 3 allows for customization based on street width and other factors.

Regional Residential streets should have a speed limit no greater than 35 mph so people can safely access homes and businesses no matter how they are traveling.

When streets of differing typologies intersect, the maximum curb radii for the higher typology is acceptable.

The number of travel lanes should be based on AADT volumes. In general, three lanes can be appropriate for streets with less than 20,000 vehicles per day. For more guidance see page 70.

BASE DESIGN

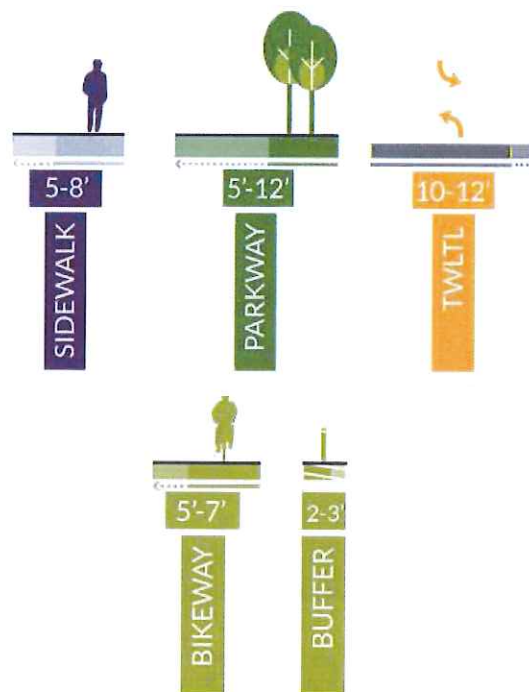


GUIDELINES

SPEED LIMIT	35 mph maximum
CURB RADII	25' maximum preferred
# OF TRAVEL LANES	3 or 5 based on AADT volumes

STEP 3 CUSTOMIZE STREET

ELEMENTS	GUIDELINES
TRAVEL LANES	10'-11' preferred
PEDESTRIAN FACILITIES*	Sidewalk 5'-8'
	Parkway 5'-12'
TWO-WAY-LEFT-TURN-LANE	10'-12'
BIKE FACILITIES**	Separated Bike Lane, Shared-Use Path
OTHER	Landscaped median



* Travelway does not include curb offset distance. ** A 1' buffer between the property line and sidewalk is preferred. However, if space is needed to achieve the desired cross-section, the above sidewalk width is appropriate.

***Further guidance on bike facilities is on page 68.

REGIONAL RESIDENTIAL EXAMPLE

The example below outlines the process of designing a Regional Residential street and includes a discussion of trade-offs and guidelines.

DOUGLAS AVENUE

Douglas Avenue is a east-west street classified as Regional Residential between Merle Hay Road and E 14th Street.

STEP 1

Nodes	✓	Bike	✓	Transit	✓	Truck	✓	Emergency Vehicle	✓
-------	---	------	---	---------	---	-------	---	-------------------	---

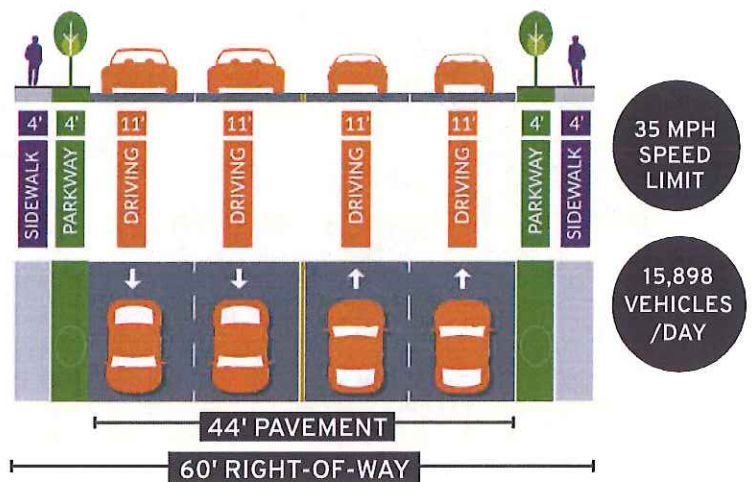
STEP 2

Douglas Avenue near Beaver Avenue



Source: Nearmap

Existing conditions



Designing Douglas Avenue should begin with comparing the “base design” of a Regional Residential street, which has 58' of right-of-way, to the existing conditions. Nearly 95% of Regional Residential streets are wider than the base design, including Douglas Avenue, which has 60' of right-of-way near 36th Street.

STEP 3

On Regional Residential streets, sidewalks should be 5'-8' and parkways should be 5'-12'. Neither the existing sidewalks nor parkways meet the recommended minimums.

Douglas Avenue is part of the future bike network but currently does not have bike facilities. With a speed limit of 35 mph and significant vehicle traffic, the appropriate bike facility would be a separated bike lane, which requires at least 7', or a shared-use path, which requires 10'. Additional guidance on bike facilities can be found on page 68.

Douglas Avenue is also part of the primary emergency vehicle network, a truck route, and has been identified by DART as an enhanced transit route. In order to accommodate these larger vehicles, 11' lanes may be necessary.

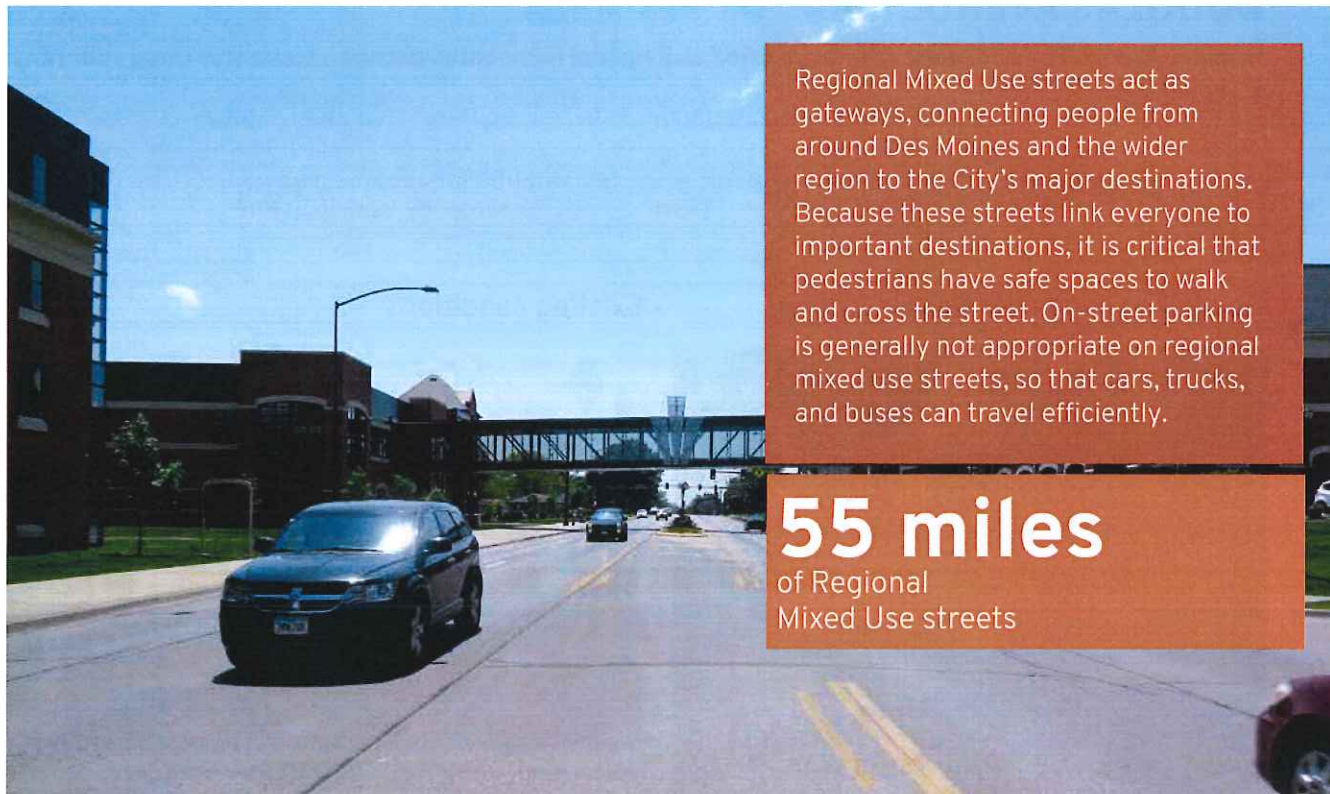
The Des Moines Area MPO suggests that road diets (converting from 4 lanes to 3) can be considered on all streets with less than 20,000 vehicles per day. See page 66 for further guidance on road diets.

Douglas Avenue could be reconfigured to have two 11' travel lanes and an 11' two-way left-turn lane. This would create enough space to build a 10' shared-use path with a 7' parkway on one side of the street, while still leaving enough space for the minimum pedestrian facilities (5' sidewalk and 5' parkway) on the other side.

Where Douglas Avenue intersects with an “activity center” (such as the node at Douglas Avenue and Beaver Avenue), traffic calming elements should also be considered. Guidance on traffic calming can be found on page 62.

STREET TYPOLOGIES

REGIONAL MIXED USE

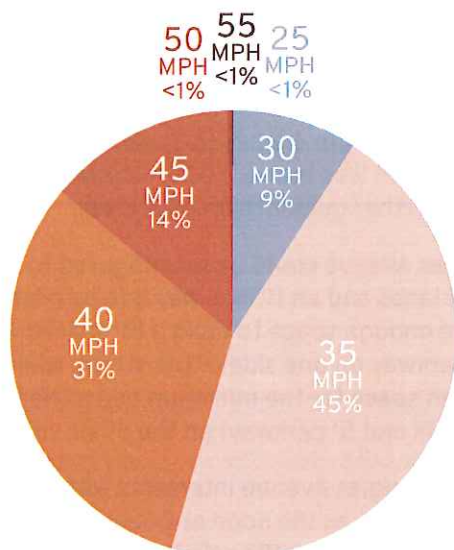


Regional Mixed Use streets act as gateways, connecting people from around Des Moines and the wider region to the City's major destinations. Because these streets link everyone to important destinations, it is critical that pedestrians have safe spaces to walk and cross the street. On-street parking is generally not appropriate on regional mixed use streets, so that cars, trucks, and buses can travel efficiently.

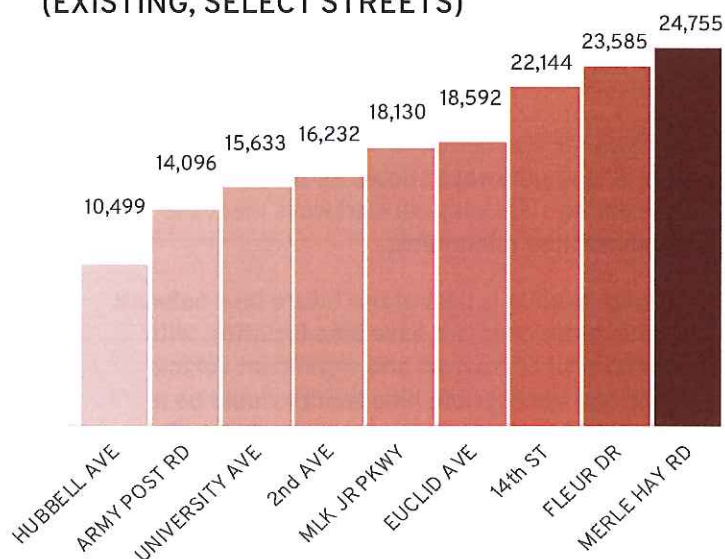
55 miles
of Regional
Mixed Use streets

SPEED LIMITS (EXISTING)

Nearly one-half of our Regional Mixed Use streets have speed limits higher than 35 mph.



DAILY TRAFFIC VOLUMES (EXISTING, SELECT STREETS)

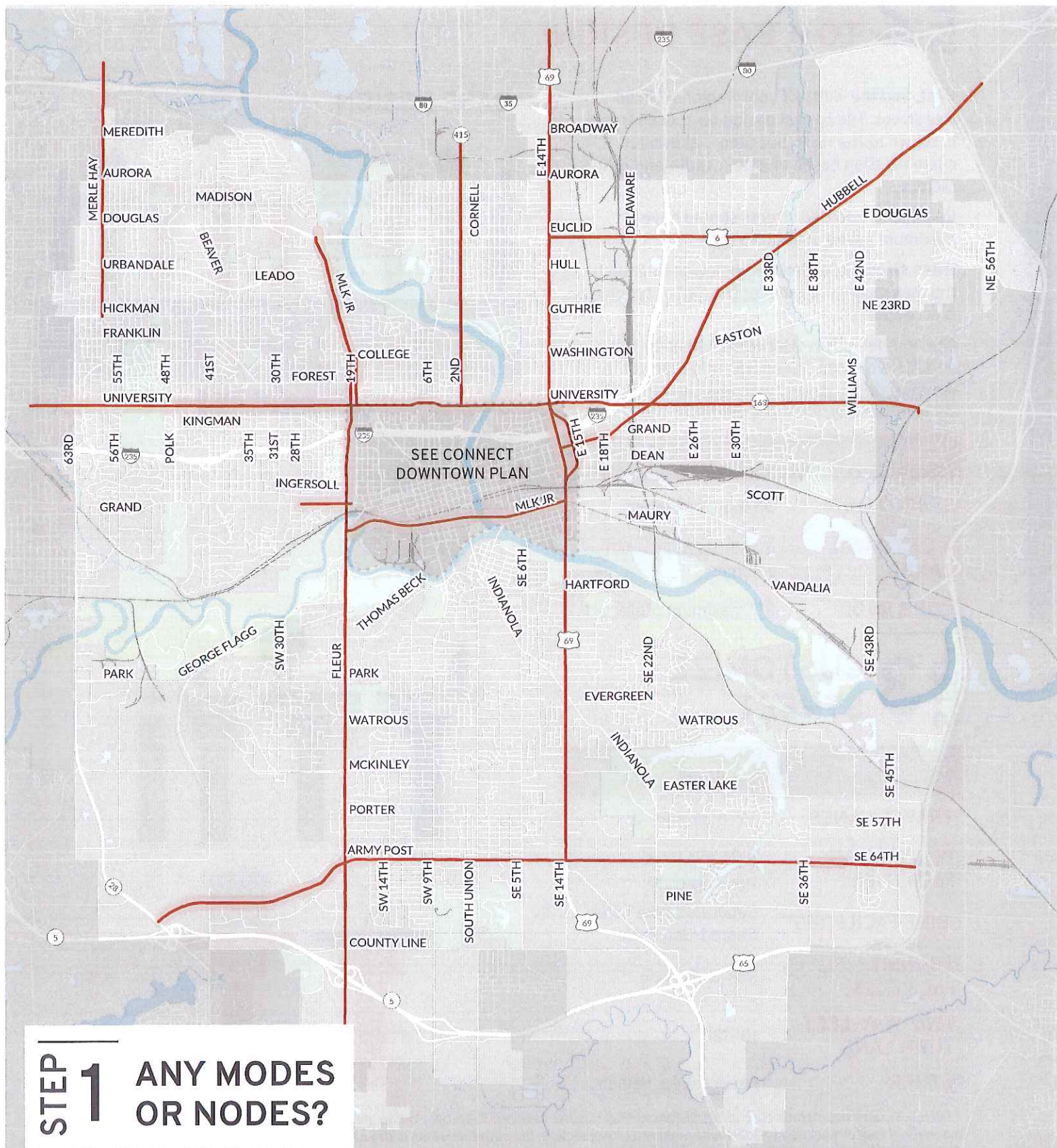


REGIONAL MIXED USE

REGIONAL MIXED USE TYPOLOGY

BIKE NETWORK

 NODE



STEP 1 ANY MODES OR NODES?



STEP 2 COMPARE YOUR STREET TO A BASE DESIGN

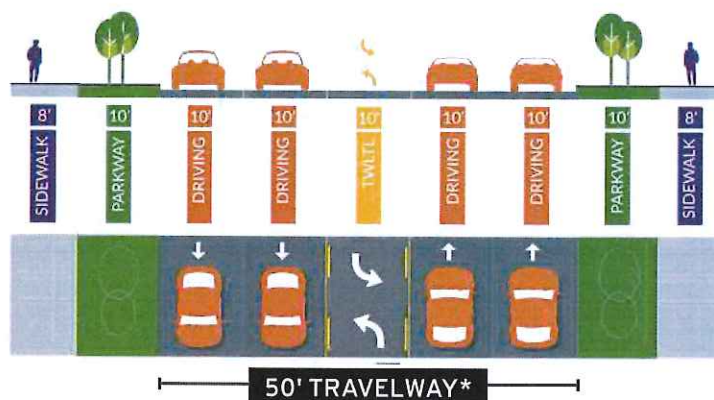
First, find the width of your Regional Mixed Use street. The typical design for these streets is shown to the right, but Step 3 allows for customization based on street width and other factors.

Regional Mixed Use streets should have a maximum speed limit of 35 mph.

When streets of differing typologies intersect, the maximum curb radii for the higher typology is acceptable.

The number of travel lanes should be based on AADT volumes. In general, three lanes are appropriate for streets with less than 15,000 vehicles per day. For more guidance see page 66.

BASE DESIGN

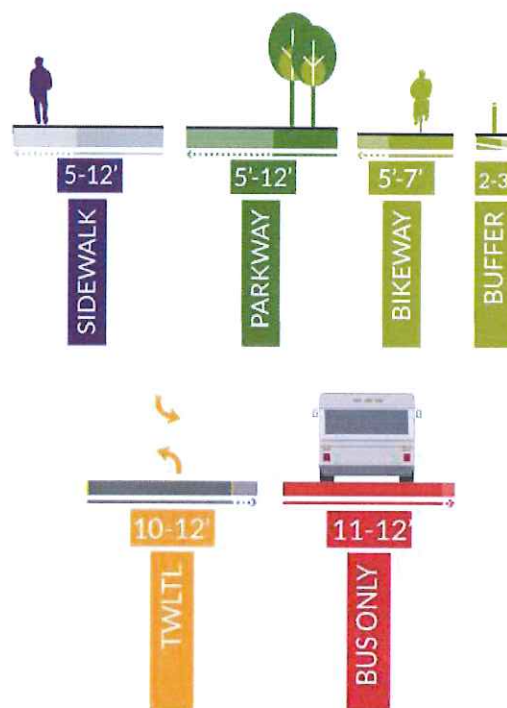


GUIDELINES

SPEED LIMIT	35 mph maximum
# OF TRAVEL LANES	3 or 5 based on AADT volumes
CURB RADII	25' maximum preferred

STEP 3 CUSTOMIZE STREET

ELEMENTS	GUIDELINES
TRAVEL LANES	10'-11' preferred
PEDESTRIAN FACILITIES**	Sidewalk 5'-12'
	Parkway 5'-12'
BIKE FACILITIES***	Separated Bike Lane, Shared-Use Path
TRANSIT FACILITIES	Bus-Only Lane
TWO-WAY-LEFT-TURN LANE	10'-12'
OTHER	Landscaped median



*Travelway does not include curb offset distance. ** A 1' buffer between the property line and sidewalk is preferred. However, if space is needed to achieve the desired cross-section, the above sidewalk width is appropriate. *** Further guidance on bike facilities is on page 68.

REGIONAL MIXED USE EXAMPLE

The example below outlines the process of designing a Regional Mixed Use street and includes a discussion of trade-offs and guidelines.

2ND AVENUE

2nd Avenue is a north-south street classified as Regional Mixed Use between University Avenue and NE Broadway Avenue.

STEP 1

Nodes	Bike	Transit	Truck	✓	Emergency Vehicle
-------	------	---------	-------	---	-------------------

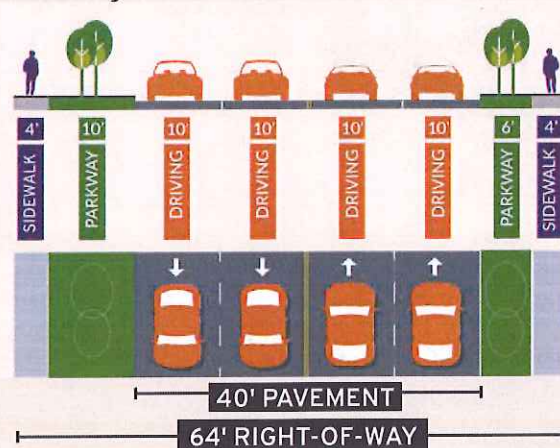
STEP 2

2nd Avenue near College Avenue



Source: Nearmap

Existing conditions



30 MPH
SPEED
LIMIT

16,998
VEHICLES
/DAY

Designing 2nd Avenue should begin by comparing the “base design” of a Regional Mixed Use street, which has 86' of right-of-way, to the existing conditions. Nearly 60% of Regional Mixed Use streets are narrower than this, including 2nd Avenue, which has 64' of right-of-way near College Avenue.

STEP 3

On Regional Mixed Use streets, sidewalks should be 5'-12' and parkways should be 5'-12'. The existing sidewalks on 2nd Avenue do not meet the recommended minimums.

2nd Avenue is also part of the truck network, so 11' lanes may be necessary to accommodate larger vehicles.

The base design of a Regional Mixed Use Street includes four travel lanes and a two-way left-turn lane (depending on the volume of traffic the street carries). The existing street has four travel lanes, but the current traffic volume on 2nd Avenue is around 17,000 vehicles per day. The Des Moines Area MPO suggests that road diets (converting from 4 lanes to three) can be considered on all streets with less than 20,000 vehicles per day. See

page 70 for further guidance on road diets.

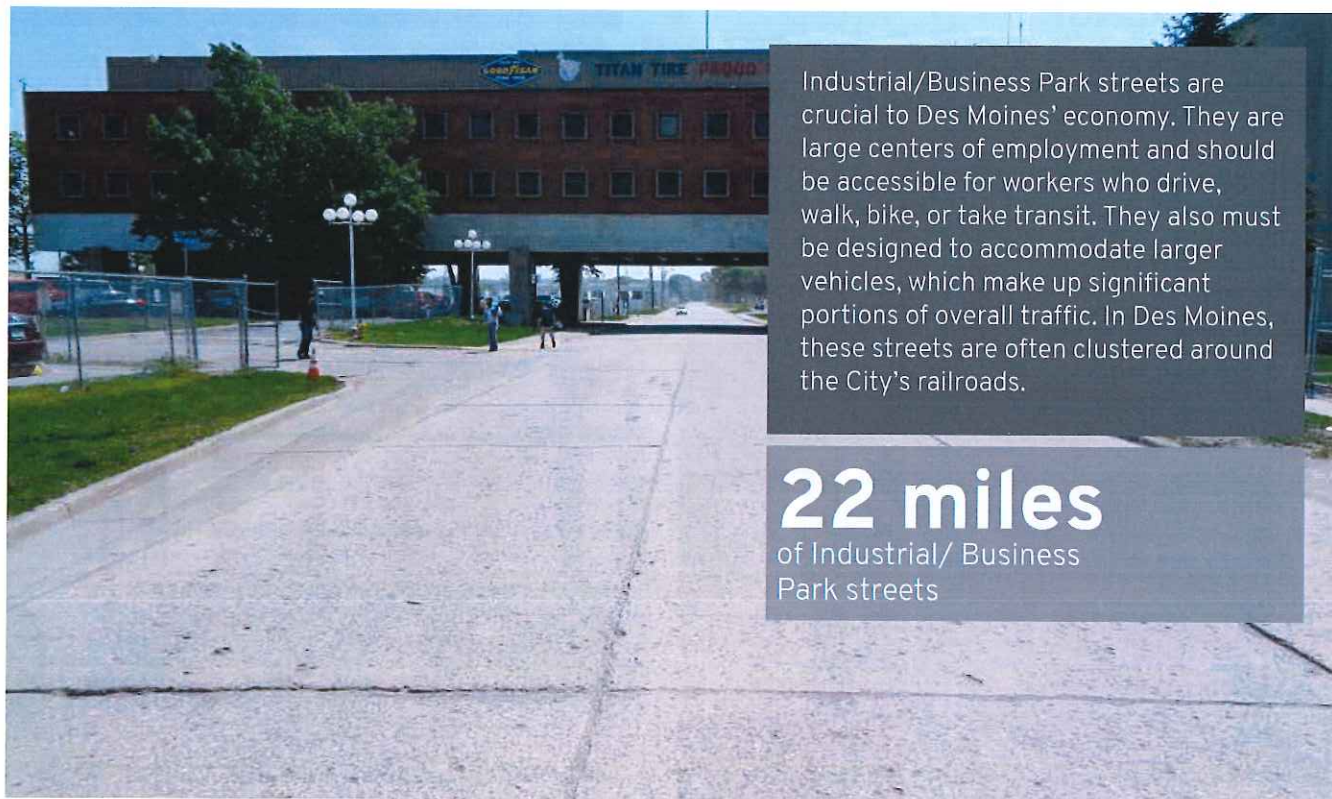
2nd Avenue could be reconfigured to have two 11' travel lanes and an 11' two-way left-turn lane. This design would create 7' of excess space.

Ideally, this excess space would be used to expand the sidewalks and parkways. The existing sidewalks are narrower than the recommended sidewalk width. The pedestrian area could be reconfigured to have 8' parkways on both sides of the street and an 8' sidewalk on one side and a 7' sidewalk on the other.

Where 2nd Avenue intersects with an “activity center” (such as the node at 2nd Avenue and Euclid Avenue), traffic calming elements can also be included. Guidance on traffic calming can be found on page 62.

STREET TYPOLOGIES

INDUSTRIAL/ BUSINESS PARK

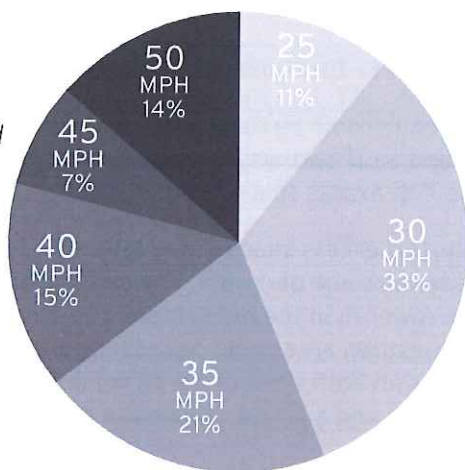


Industrial/Business Park streets are crucial to Des Moines' economy. They are large centers of employment and should be accessible for workers who drive, walk, bike, or take transit. They also must be designed to accommodate larger vehicles, which make up significant portions of overall traffic. In Des Moines, these streets are often clustered around the City's railroads.

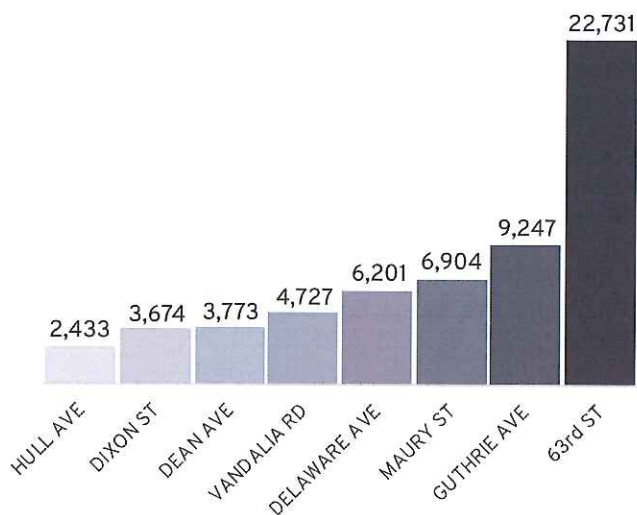
22 miles
of Industrial/ Business
Park streets

SPEED LIMITS (EXISTING)

More than one-half of our Industrial/ Business Park streets have speed limits higher than 30 mph.



DAILY TRAFFIC VOLUMES (EXISTING, SELECT STREETS)

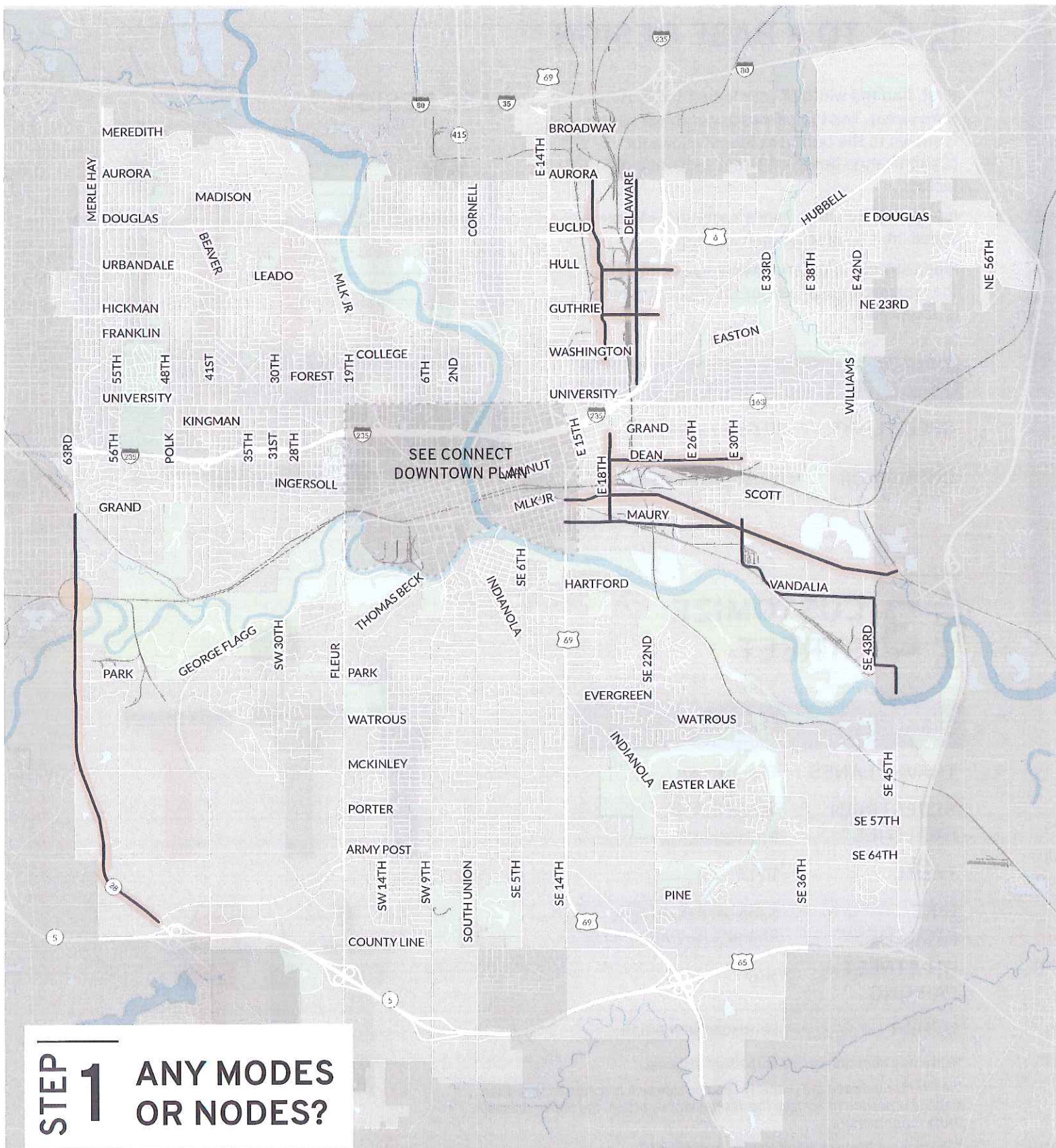


INDUSTRIAL/ BUSINESS PARK

INDUSTRIAL/ BUSINESS PARK TYPOLOGY

BIKE NETWORK

NODE



STEP 1 ANY MODES OR NODES?

A horizontal number line is shown with tick marks at 0, 0.5, 1, and 2. The word "MILES" is written at the right end. A dark gray rectangular region is shaded between the 0.5 and 1 tick marks.



55

STEP 2 COMPARE YOUR STREET TO A BASE DESIGN

First, find the width of your Industrial/ Business Park street. The typical design for these streets is shown to the right, but Step 3 allows for customization based on street width and other factors.

Industrial/ Business Park streets should have a speed limit no greater than 30 mph.

When streets of differing typologies intersect, the maximum curb radii for the higher typology is acceptable.

GUIDELINES

SPEED LIMIT	30 mph maximum
CURB RADII	25' maximum preferred

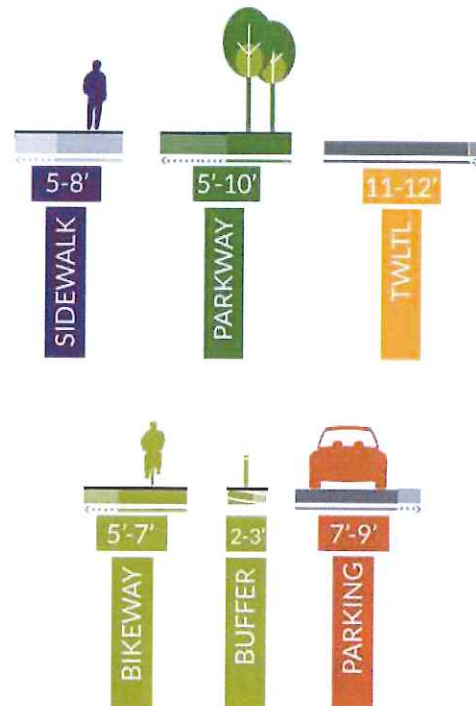
BASE DESIGN



STEP 3 CUSTOMIZE STREET

ELEMENTS GUIDELINES

TRAVEL LANES	11' preferred
PEDESTRIAN FACILITIES**	Sidewalk 5'-8' Parkways 5'-10'
TWLTL	11'-12'
BIKE FACILITIES***	Separated Bike Lane, Shared-Use Path
ON-STREET PARKING	7'-9'
OTHER	Landscaped median



*Travelway does not include curb offset distance.

** A 1' buffer between the property line and sidewalk is preferred. However, if space is needed to achieve the desired cross-section, the above sidewalk width is appropriate.

*** Further guidance on bike facilities is on page 68.

INDUSTRIAL/ BUSINESS PARK EXAMPLE

The example below outlines the process of designing an Industrial/Business Park street and includes a discussion of trade-offs and guidelines.

DIXON STREET

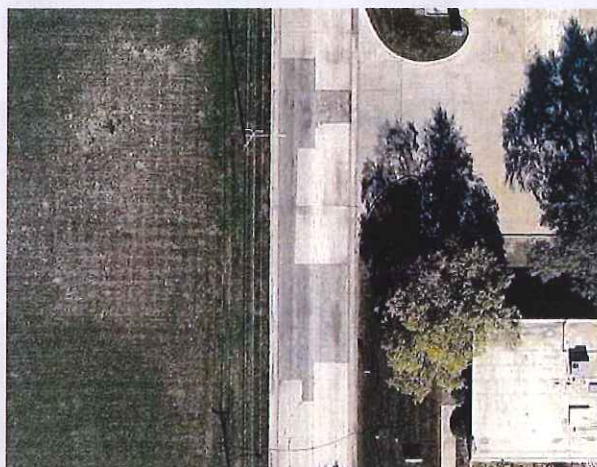
Dixon Street is a north-south street classified as industrial/business park between Hull Avenue and Guthrie Avenue.

STEP 1

Nodes		Bike	✓	Transit		Truck	✓	Emergency Vehicle	
-------	--	------	---	---------	--	-------	---	-------------------	--

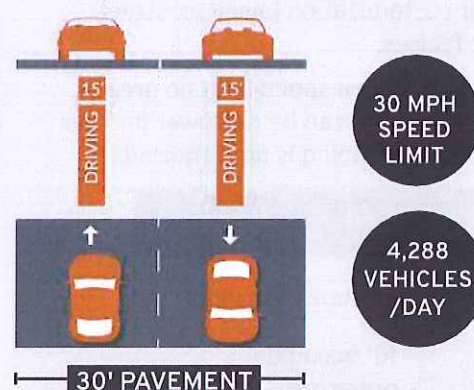
STEP 2

Dixon Street near Guthrie Avenue



Source: Nearmap

Existing conditions



Dixon Street varies from the “base design” of an Industrial/Business Park street because it does not have sidewalks or parkways. The current cross section includes 30' of pavement, but the City owns 60' of right-of-way near Guthrie Avenue. The “base design” for Industrial/Business Park streets has 59' of right-of-way.

STEP 3

On Industrial/Business Park streets, sidewalks should be 5'-8' and parkways should be 5'-10'. There are currently no sidewalks or parkways on Dixon Street.

Dixon Street is also part of the future bike network but currently does not have bike lanes. On Industrial/Business Park streets, bike facilities should either be separate bike lanes or shared-use paths.

Dixon Street is a truck route, and Industrial/Business Park streets should have 11' lanes to accommodate significant truck traffic.

If Dixon Street were reconstructed using the full 60' of city-owned right-of-way, it could accommodate everyone who needs to use the street.

The base design of an Industrial/Business Park street includes a two-way left-turn lane, but the traffic volume on Dixon Street (< 5,000 vehicles per day) likely does not warrant a two-way left-turn lane. If the street were designed with two 11' travel lanes, there would be room to add high-quality bike and pedestrian facilities.

An 8' separated bike lane could be added in each direction (5' bike lane and 3' buffer). On Industrial/Business Park streets, on-street bike lanes should be physically separated by a curb, planters, or other material. After adding the bike facilities, there would be room for a 5' sidewalk with a 6' parkway on each side of the street.

STREET TYPOLOGIES

LOCAL STREETS

Local streets are calm, green, and kid-friendly. These streets are an extension of your front yard and act as shared community spaces. They carry very little traffic and cars move slowly. They are lined with trees and landscaping. Young children, older adults, and everyone in between feels comfortable walking or biking.

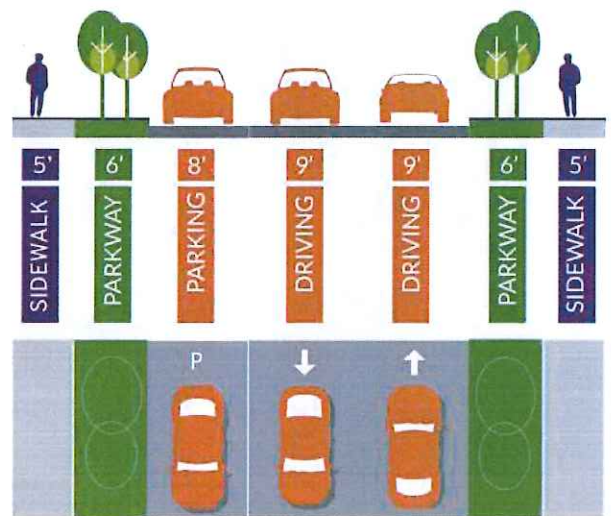
STEP 2 COMPARE YOUR STREET TO A BASE DESIGN

First, find the width of your local street. The typical design for these streets is shown to the right, but Step 3 allows for customization based on street width and other factors.

Local streets should have a speed limit no greater than 25 mph. Travel lanes can be narrower on local streets and centerline striping is not required.

GUIDELINES

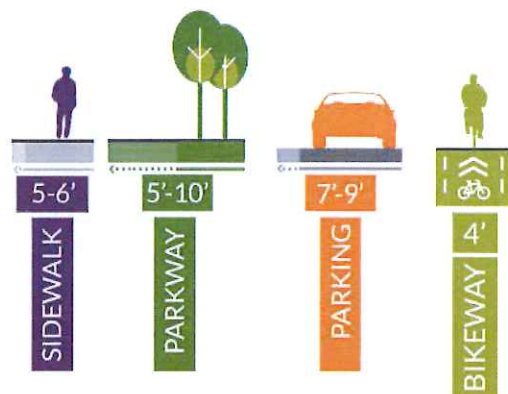
SPEED LIMIT	25 mph maximum
CURB RADII	10' maximum preferred
CENTERLINE	Not required



* If parking is located on both sides of the street, the minimum width for a local street (from one curb to the other) is 32'.

STEP 3 CUSTOMIZE STREET

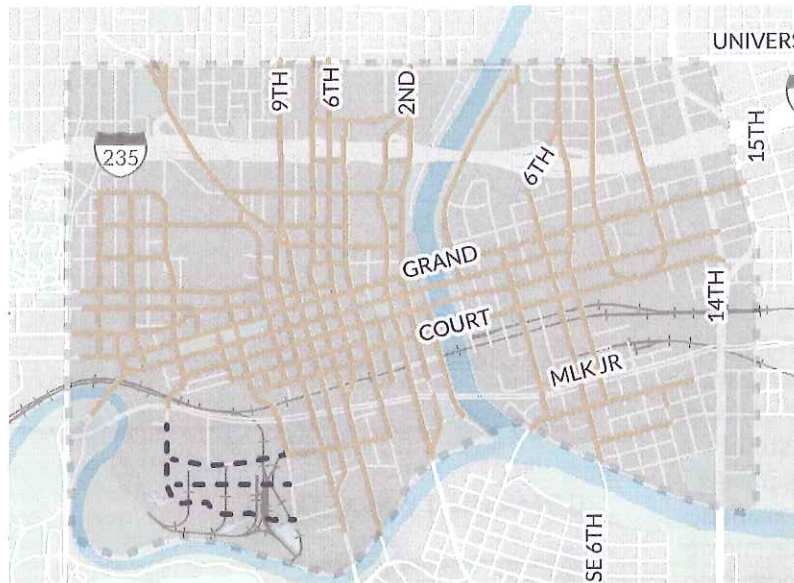
ELEMENT	GUIDELINES
TRAVEL LANE WIDTH*	10' maximum preferred
PEDESTRIAN FACILITIES**	Sidewalk 5'-6' Parkway 5'-10'
BIKE FACILITIES***	Marked Shared Lane, Striped Bike Lane
ON-STREET PARKING	7'-9'



* For local roads in industrial/business park areas, refer to p. 56 for lane widths and pedestrian facility widths. ** A 1' buffer between the property line and sidewalk is preferred. However, if space is needed to achieve the desired cross-section, the above sidewalk width is appropriate. ***Further guidance on bike facilities is on page 68.

STREET TYPOLOGIES

DOWNTOWN STREETS



The *Connect Downtown Mobility Plan* details street design considerations, guidance, and reconfigurations specific to issues identified surrounding downtown streets. Visit the [Connect Downtown website](#) to view the full plan.

The land use and building density in Downtown Des Moines varies from other areas in the city. Therefore, the Downtown typology has unique guidelines for its streets, as detailed below.

— DOWNTOWN STREETS
- - - PROPOSED NEW STREETS

ELEMENT	GUIDELINES		
SPEED LIMIT	25 mph	Speed limits up to 35 mph may be acceptable on streets on the edge of downtown, such as University Ave. and MLK Jr. Pkwy.	
TRAVEL LANE WIDTH	10' maximum preferred	11' lanes are acceptable if the street is a DART, truck, or emergency vehicle route.	
CURB RADII	20' maximum preferred	25' curb radii are acceptable if the street is a DART, truck, or emergency vehicle route.	
SIDEWALKS	Continue sidewalks at-grade across driveways.	Ensure people walking/biking have safe routes through work zones.	
LIGHTING	Lighting levels shall meet SUDAS standards.	Black LED Lighting fixtures are preferred.	Bus stops and crosswalks shall be well-lit.
PEDESTRIAN CROSSINGS	Mark and maintain crosswalks on all legs of signalized intersections.	Give people walking the right of way where crosswalks are provided.	
ON-STREET PARKING	Parallel parking is preferred. Otherwise, back-in angled parking should be used.	Bumpouts should be used to shadow parking and shorten crossing distances.	Consider removing peak hour parking restrictions.
ONE-WAY STREETS	Return one-way streets to two-way operations.		

STREET TYPOLOGIES

PROPOSED STREETS

DEFINING TYPOLOGIES FOR PROPOSED STREETS

As developments and changes to Des Moines' street network occur, the following guidance should be used to define a newly proposed street's typology.

Align with nodes

Des Moines' street typologies align with the node types defined by PlanDSM (regional, community, and neighborhood). The number and type of nodes a street intersects is one indicator of the street's typology. University Avenue, for example, travels through multiple regional nodes and is classified as a Regional Mixed Use street. When determining the typology for a proposed street, the nodes map on page 30 of this document or PlanDSM should be referenced.

In addition to the number and type of nodes, other considerations when determining a proposed street's typology include the length of the street, the proposed width of the right-of-way, potential traffic volumes, and key connections.

Align with future land use

Des Moines' street typologies are also designed to align with the current and future land use, so that the layout of the street compliments and facilitates the surrounding activity and character. When determining the typology for a proposed street, the current land use map and future land use map from PlanDSM should be consulted.

Once the proposed street's typology is determined, its design should be based upon the guidance in this chapter.

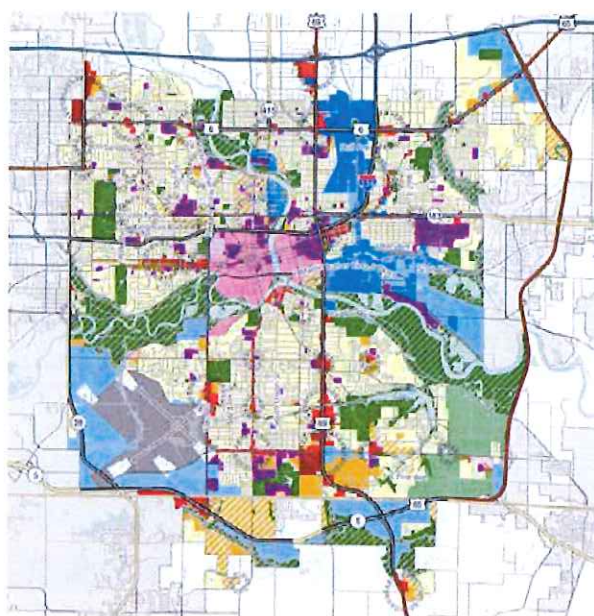
REGIONAL MIXED USE



COMMUNITY MIXED USE



NEIGHBORHOOD RESIDENTIAL



Land Use Map from Plan DSM

A GUIDE FOR ALL STREETS

ELEMENT

GUIDELINES

SPEED LIMIT

Wherever the speed limit is being lowered, consider speed control elements or traffic calming to reinforce the new limit.

TRAVEL LANE WIDTHS

The maximum preferred travel lane width on all streets controlled by the City of Des Moines is 11', and the City will work with partner organizations to strive for lane widths no wider than 11' on all streets within the City. Lane widths are typically measured from the gutter line, not the curb face.

Aside from streets that are part of the truck, transit, or emergency vehicle network or outside the City of Des Moines' control, all through travel lanes shall be 10' preferred.

For multi-lane streets that are part of the transit, truck, or emergency vehicle network that require a 11' travel lane, the wider lane should be the outside lane. Inside through lanes should continue to be designed at the minimum possible width.

CURB RADII

Use the minimum feasible corner curb radius to increase pedestrian space and visibility, shorten pedestrian crossing distances, and slow vehicle turns.

SIDEWALKS

Provide sidewalks on both sides of all streets.

Require newly constructed streets to meet the recommended sidewalk widths for their respective typology.

All sidewalks and curb ramps shall meet ADA requirements.

LIGHTING

All pedestrian crosswalks should have street lighting to ensure pedestrian visibility.

Coordinate with DART to ensure all bus stops are well-lit.

ACCESSIBILITY

Build curb ramps at all pedestrian crossings per federal, state, and local accessibility standards.

UTILITIES

Minimize the number of traffic signs, street light, catenary, traffic signal, and other utility poles within the right-of-way and share poles wherever feasible.

PEDESTRIAN CROSSINGS

The maximum distance between accessible pedestrian crossings shall be 660', if Crosswalk Policy criteria are met. For direction on crossing type and design, reference the City of Des Moines Crosswalk Policy.

Minimize the number of lanes and distance pedestrians must cross wherever possible. Provide safe pedestrian refuges within the median where pedestrians are unable to cross in one signal phase.

CURB CUTS

Design and locate driveway curb-cuts to minimize impact to streetscape amenities and minimize pedestrian/vehicle conflicts. Consolidate access points and share access wherever possible.

ON-STREET PARKING

On-street parking is an appropriate use of excess street space; however, parking should not be prioritized over sufficient pedestrian facilities (and bike/transit where applicable).

Restrict parking within 25' of corners to enhance pedestrian visibility at crosswalks.

Parking lane widths of 7-9' are preferred.

LIMITED RIGHT-OF-WAY

When available right-of-way is less than the typology's base design, providing minimum pedestrian facilities should be the first priority.

For new projects and redevelopments, request additional right-of-way to construct pedestrian facilities indicated in the typology's base design

TRAFFIC CALMING

FRAMEWORK

WHY DOES DES MOINES NEED TRAFFIC CALMING?

As vehicle speed increases, the likelihood that a crash will result in a serious injury or fatality dramatically increases. Traffic calming is designed to help prevent this loss of life and injury in our communities and create more enjoyable places to live, work, and play.

Speeding, long crossing distances, and vehicle turning are among the most common types of crashes that cause injuries and fatalities. While street design should encourage the behavior we want to see on our streets, some streets still encourage traffic to travel too fast, due to lower traffic volumes and wide lanes.

WHERE IS TRAFFIC CALMING APPROPRIATE IN OUR CITY?

Traffic calming can reduce speeds through changes to a street design and is a way to retrofit streets to encourage safer behavior. Traffic calming can be implemented at spot locations, particularly on:

Local streets

Low-volume streets where people often walk or bike (see page 58).

Activity centers

Areas near schools and parks, at commercial nodes where people are likely to walk or bike (see map in Appendix on page 85).

TRAFFIC CALMING ON LOCAL STREETS

The City of Des Moines Traffic Calming Program defines the process and requirements for traffic calming measures to be implemented on a local street. A request must be submitted by the neighborhood association, the Mayor or a City Council member, OR through a signed petition from at least 60% of the property owners along the street proposed for traffic calming. The request will initiate a traffic calming study which will consider potential traffic problems, roadway design, and the potential impact on adjacent streets.

TRAFFIC CALMING AT ACTIVITY CENTERS

The City does not currently have a formal process for implementing traffic calming measures at activity centers. As activity centers are areas where people are likely to walk to parks, schools, and businesses, the City should expand its existing program to apply to these areas and allow those institutions to request traffic calming measures on their street.

The toolbox on the following page provides a sample of traffic calming measures appropriate for local streets and activity centers.

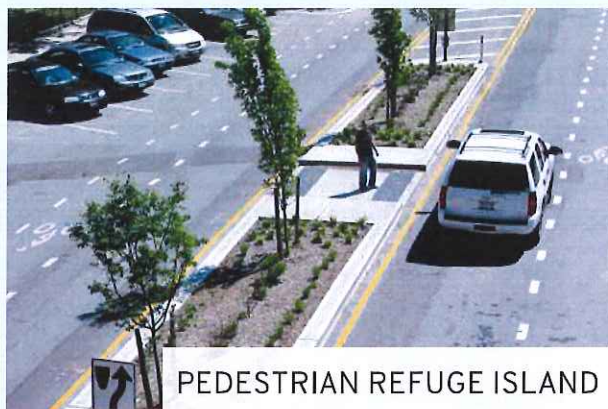
TRAFFIC CALMING TOOLBOX

To address the common crash types that cause injuries and fatalities, the most effective traffic calming tools are organized below by goal. Some tools are appropriate for local streets or activity centers, or both.

● Local Streets

● Activity Centers

DECREASE CROSSING DISTANCES



PEDESTRIAN REFUGE ISLAND

CURB BUMPOUT ●●

An area of sidewalk that is widened at intersections or mid-block crossings to reduce crossing distances, slow turning vehicles, and improve pedestrian visibility.

PEDESTRIAN REFUGE ISLAND ●

A portion of roadway median where pedestrians can safely stand to wait to cross the street.

GATEWAY ●

Used to calm traffic when drivers are transitioning from a higher-speed roadway into a more pedestrian-oriented neighborhood or center. Typically include curb bumpouts.

REDUCE SPEEDING



CHICANE

RAISED CROSSWALKS ●

A crosswalk at the same level as the sidewalk to provide better visibility of pedestrians and force drivers to slow down.

SPEED HUMPS ●

Bumps in the roadway used to reduce speeds to 15-20 mph on low traffic volume streets.

CHICANES ●

Introduces a deflection in the travel path to encourage a reduction in speed.

MAKE TURNING SAFER



NO RIGHT TURN ON RED

NO RIGHT TURN ON RED ●

Implementing a policy to restrict right turns on red is effective where a turning movement is considered to be "high-risk" to reduce vehicular conflicts with pedestrians.

LEADING PEDESTRIAN INTERVAL ●

A traffic signal that gives pedestrians a 3-7 second head start when crossing at an intersection to improve visibility of people crossing.

LAGGING LEFT TURN SIGNAL ●

A traffic signal that puts left turns at the end of the green light to reduce conflicts between turning cars and people crossing the street.

CONNECTIVITY FRAMEWORK

WHY DOES CONNECTIVITY MATTER IN DES MOINES?

The layout of the street network dictates the directness and convenience of every trip we make, whether driving, walking, or biking. A street grid with shorter block lengths and four-way intersections maximizes access to destinations, minimizes trip distances, and increases the possible number of routes from Point A to Point B.

Conversely, areas with long blocks and cul-de-sacs dictate longer, less direct trips and funnel traffic onto a few large roads. While these negative effects impact everyone, they especially discourage walking and biking and complicate emergency vehicle access.

HOW CAN WE MEASURE CONNECTIVITY?

A number of guidelines and performance measures have been developed to assess the connectivity of street networks. These guidelines and performance measures can be used by city staff when reviewing development plans to measure how well connected the street network is.

Connectivity Index- The connectivity index measures the number of street links (including bike and pedestrian paths that connect between streets) divided by the number of nodes (intersections) and link ends (cul-de-sacs and dead end streets). Networks with higher scores (2.5 is the maximum) provide more direct routes and more route choices for individuals. Several U.S. cities include minimum connectivity index scores for new developments in their subdivision ordinances.¹⁵

Block Length- Shorter blocks create more intersections, shorten travel distances, and increase route choices. Block lengths of around 300 feet are considered ideal for pedestrian and bicycle connectivity, and many cities have established maximum block lengths of 600 feet.¹⁶

CONNECTIVITY INDEX FOR TWO NEIGHBORHOODS IN DES MOINES



The Watrous South neighborhood has a relatively well connected street grid.



The River Woods neighborhood has many cul-de-sacs which contribute to its low connectivity score.

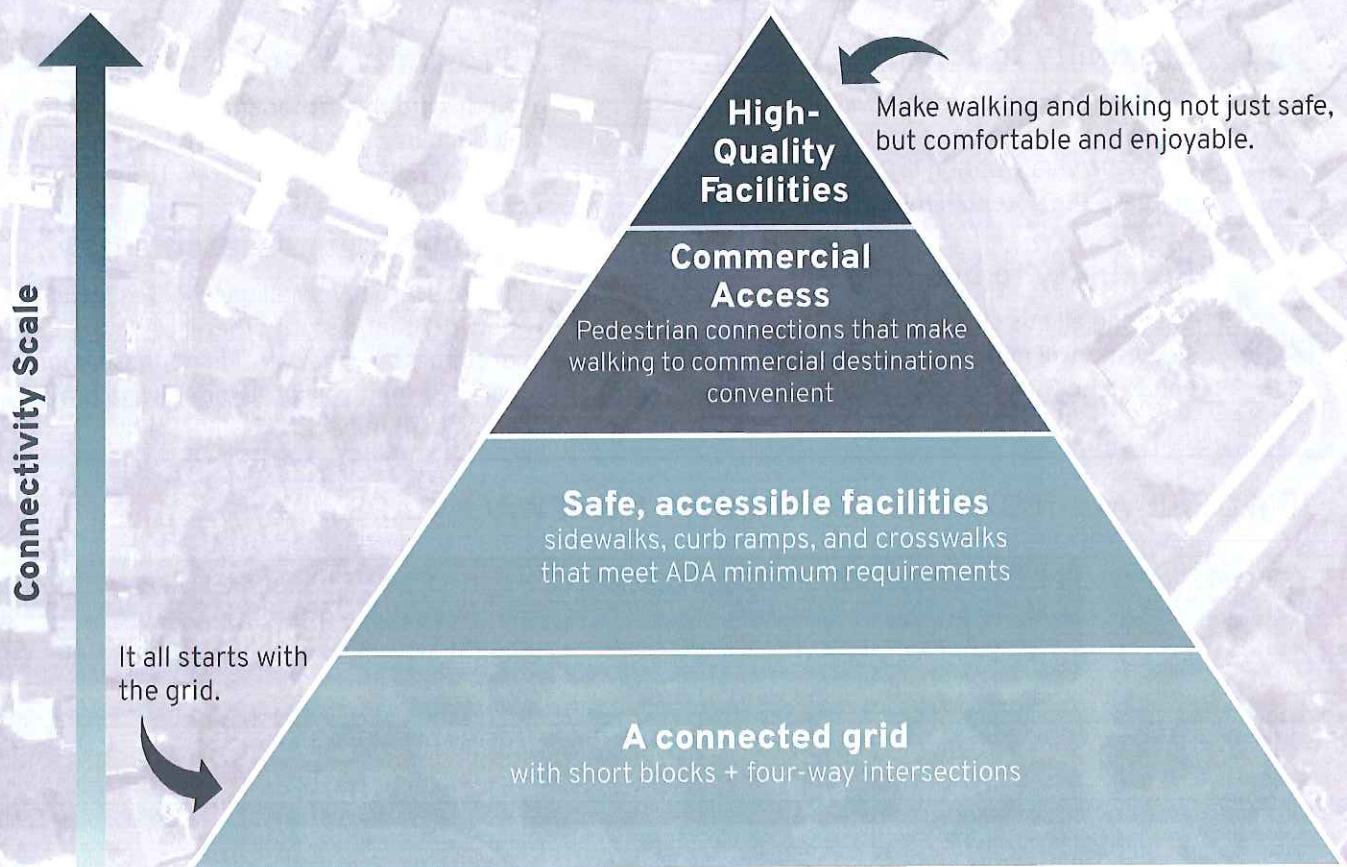
HOW CAN WE IMPROVE CONNECTIVITY?

Retrofitting existing streets to create a more connected grid can be difficult and costly, but moving forward Des Moines has an opportunity to improve connectivity by implementing the following measures:

Where the street network is already in place, Des Moines should focus on building high-quality facilities for people walking and biking. Addressing gaps in the sidewalk network and building a complete network of bike facilities will make walking and biking more convenient, attractive options for everyone in Des Moines.

Require future commercial developments to provide direct, continuous paths for people walking that connect the front entrance of the building to the abutting sidewalk in the public right-of-way. A direct, continuous path consists of sidewalks and marked crosswalks.

Expand the City's Subdivision Regulations to require future residential developments to build convenient street grids with short block lengths that connect to the existing street network. Consider adding connectivity index and block length guidance.



CONNECTIVITY FRAMEWORK

CONNECTING THE SIDEWALK NETWORK

WHY DO SIDEWALKS MATTER?

Sidewalks are extremely important in determining where people feel comfortable and safe walking. Streets that do not have sidewalks can present a major barrier to walking, especially for citizens with mobility restrictions, and may also create safety hazards if people

choose to walk in the street alongside motor vehicles traveling at higher speeds. Gaps within the sidewalk network are an impediment to realizing the City's goal of encouraging healthy lifestyles through walking as a primary mode of transportation.

DES MOINES HAS:

**952
miles**

of existing
sidewalks

**667
miles**

of sidewalk
gaps



23%

of the sidewalk
gaps are within

**1/4 MILE OF
A SCHOOL**

56%

of the sidewalk
gaps are within

**1/4 MILE OF
A BUS STOP**

SIDEWALK GAPS WERE PRIORITIZED BASED ON:



Proximity to schools

Creating safe, comfortable walking routes to every school in Des Moines will make walking a viable option for children and increase the potential for physical activity.



Proximity to commercial nodes

Nodes are the center of commercial activity in Des Moines and areas where large numbers of people walk.



Proximity to bus stops

Ensuring all bus stops are served by sidewalks will make transit more accessible and extend the reach of the DART system.



Connectivity assessment

There are many small gaps in Des Moines' network that disrupt otherwise long sections of connected sidewalk. Filling these gaps will cost relatively little money and provide significant impact.

IF WE FILL ALL 180 MILES OF PRIORITY 1 SIDEWALK GAPS...

100%

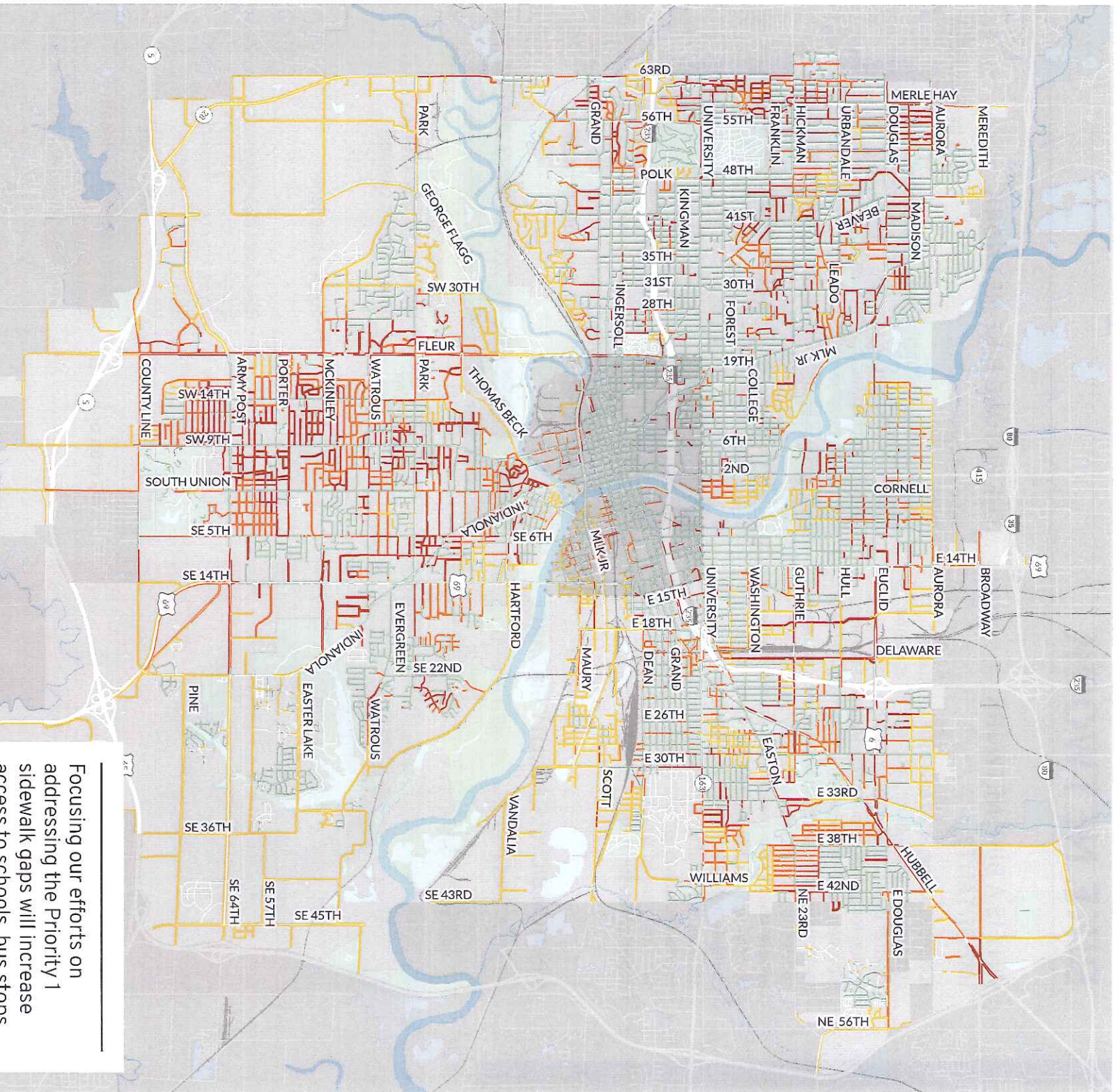
**OF SCHOOL WALKING ROUTES WOULD HAVE A
SIDEWALK ON AT LEAST ONE SIDE OF THE STREET**

75%

**OF DES MOINES' POPULATION WOULD LIVE WITHIN A
5-MINUTE WALK OF A BUS STOP VIA SIDEWALKS**

PRIORITIZED SIDEWALK GAPS

- PRIORITY LEVEL 1
- PRIORITY LEVEL 2
- PRIORITY LEVEL 3
- EXISTING SIDEWALK



Focusing our efforts on addressing the Priority 1 sidewalk gaps will increase access to schools, bus stops, and commercial nodes.



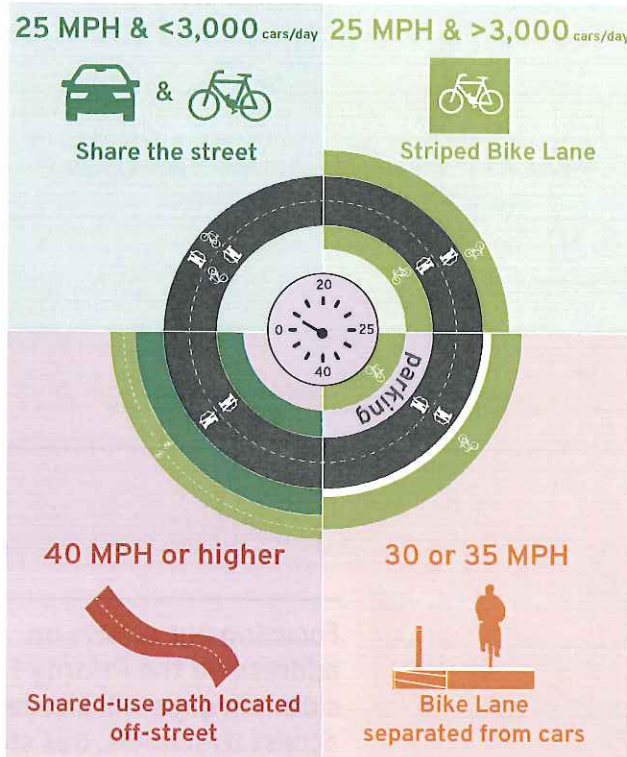
CONNECTIVITY FRAMEWORK

CONNECTING THE BIKE NETWORK

WHY IS A BIKE NETWORK IMPORTANT?

A complete, connected bike network that is comfortable and safe for people of all ages and abilities is critical to making biking a viable option for getting around Des Moines. Enabling bicycling as a transportation option will increase opportunities for physical activity and can reduce congestion and stress on the City's streets, as people who choose to ride a bicycle may otherwise be driving a car. Des Moines currently has an enviable network of trails, and the future bike network will build off this foundation to create a connected network that everyone in Des Moines can safely use to access jobs, schools, and other important destinations.

MINIMUM BICYCLE FACILITY GUIDANCE



Adapted from Copenhagenize
Icons by: Jule Steffen & Matthias Schmidt, DE, Studio Het Mes, NL

THE FUTURE BIKE NETWORK

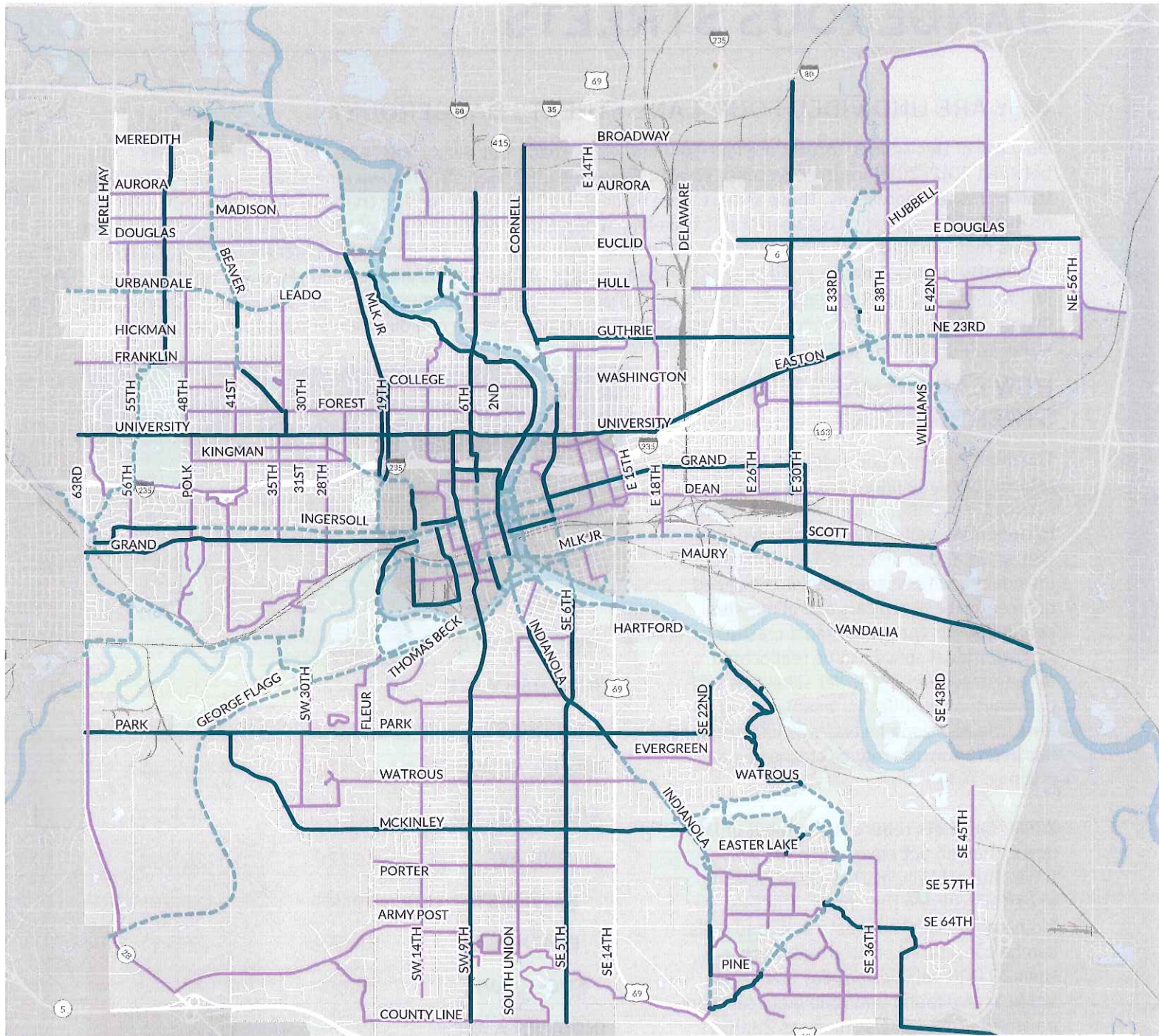
	Total network miles	% of the population within 1/4 mile
EXISTING NETWORK	114 MILES	53%
CORE NETWORK	151 MILES	86%
FULL NETWORK	310 MILES	100%

Constructing the remainder of the core network would put 86% of Des Moines' population within a 1/4 mile of a high-quality bike facility and the larger network.

SPEED + TRAFFIC	BIKE FACILITIES
25 mph & <3,000 AADT	May have marked shared lane, signed bike routes, and/or traffic calming
25 mph & >3,000 AADT	Striped bike lane
30 or 35 mph	Bike lane separated from traffic by: on-street parking, curbs, planters, delineators, or striped buffer (as a transitional treatment)
40 mph or higher	Shared-use path/sidepath located off-street

FUTURE BIKE NETWORK

- EXISTING NETWORK
- CORE NETWORK
- SECONDARY NETWORK



CORE NETWORK connects neighborhoods around Des Moines to Downtown and other important employment and commercial centers. The core network consists of trails, shared-use paths, and on-street facilities that are safe and comfortable for all users and is the highest priority to be constructed.

SECONDARY NETWORK is designed to get residents from their home or other origin to the core network.



REDESIGNING THE MOST DANGEROUS STREETS

WHY ARE UNDIVIDED FOUR-LANE STREETS DANGEROUS?

Only 4% of Des Moines' streets are four-lane undivided roads, but nearly half (42%) of all traffic fatalities between 2012-2016 occurred on these streets. Four-lane undivided streets have inherent design flaws that make traffic crashes more likely. These streets force through traffic and left turning traffic to share the lane and have no method of separation between traffic traveling in opposite directions, both of which create numerous conflict points that can lead to crashes. Additionally, vehicle speeds can vary significantly in different lanes and drivers frequently change lanes to avoid slow or stopped vehicles. These streets are also dangerous for people biking and walking because they lack safe, comfortable places for people to bike and force people walking to cross long distances without any refuge. The presence of multiple travel lanes in one direction of travel can also inhibit visibility of people walking.

HOW CAN WE MAKE THESE STREETS SAFER?

The most common and successful way to retrofit four-lane undivided streets is to reduce the number of travel lanes from four to two and install a two-way left turn lane (known as a road diet or 4:3 conversion). Introducing a turn lane reduces the speed differential between cars and eliminates conflict points that cause most crashes. Any additional space can be reallocated for on-street parking, wider sidewalks and parkways, or facilities for people biking. In Iowa, the addition of a two-way left turn lane has been shown to reduce crashes by as much as 70%.¹⁷

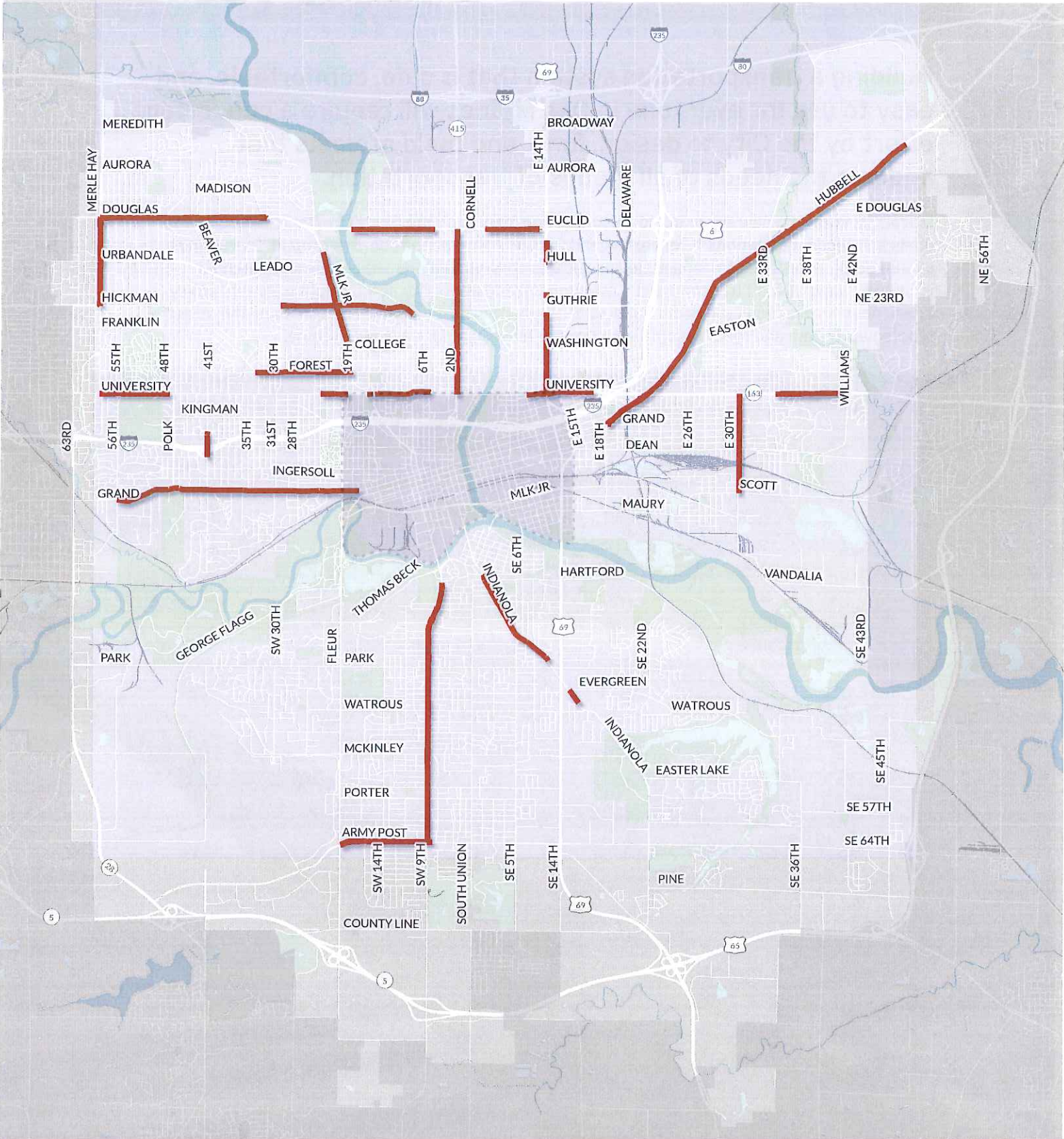
While road diets reduce the number of travel lanes, they do not adversely affect travel times and actually increase lane capacity at certain volume thresholds. The Des Moines Area MPO suggests that road diets can be considered on all streets with less than 20,000 vehicles per day and other studies have found that road diets can work on streets that carry as many as 23,000 vehicles¹⁸. While the decision to implement a road diet requires careful study, in general streets with less than 15,000 vehicles per day are good candidates for road diets, streets between 15-20,000 vehicles will likely work depending on certain factors (e.g., signal spacing and timing), and streets with more than 20,000 can work for a road diet but require detailed study and design.¹⁹

STREET	PROJECTED AADT	
	2020	2040
FOREST AVE.	9,050	9,274
E 30TH. ST.	10,814	12,312
HICKMAN RD.	13,002	14,623
GRAND AVE.	13,166	14,145
HUBBELL AVE.	14,053	16,587
UNIVERSITY AVE.	15,477	17,106
42ND ST.	16,013	16,869
DOUGLAS AVE.	18,508	19,909
ARMY POST RD.	19,161	19,839
2ND AVE.	16,729	20,053
SW 9TH ST.	19,861	20,261
E 14TH. ST.	18,972	20,634
EUCLID AVE.	18,087	20,464
INDIANOLA AVE.	19,966	20,677
MERLE HAY RD.	22,842	22,940
MLK JR. PKWY.	23,215	23,392

Green = < 15,000 vehicles per day
Yellow = 15-20,000 vehicles per day
Red = > 20,000 vehicles per day

UNDIVIDED FOUR-LANE STREETS

UNDIVIDED FOUR-LANE STREETS



MOVING FORWARD

Building a transportation system that is safe, comfortable, and easy to use for everyone in Des Moines will require a concerted effort by the City to design, fund, and build projects that address the needs of all modes of transportation.

MoveDSM creates a new approach to designing and managing the City's streets. To translate the goals and recommendations in MoveDSM and PlanDSM into actions on-the-ground, Des Moines should begin prioritizing transportation projects according to a new set of criteria, search for innovative ways to fund transportation investments, and adopt the new Complete Streets policy. These near-term actions will begin building an ecosystem that cultivates and sustains the street typologies system and other recommendations in MoveDSM for decades to come.



WHAT CAN WE ACCOMPLISH IN THE NEAR TERM?

SAFE WALKING ROUTES TO SCHOOLS

**\$3
MILLION**

If the City invests \$3 million/year into building sidewalks along school walking routes...

**17
MONTHS**

...All of the existing sidewalk gaps (13 miles total) could be filled in 17 months.

NEW FUNDING IDEAS

Transportation improvements have a significant impact on the value of surrounding land. By improving accessibility, investments in transportation infrastructure can lead directly to increase land values.

Value capture techniques direct a portion of the increased property values to help fund transportation investments.

COMPLETING THE CORE BIKE NETWORK

**\$1
MILLION**

If the City invests \$1 million/year into constructing bike facilities (in addition to bike improvements that are included in larger roadway improvements)...

**10
YEARS**

...The core bike network (totaling 153 miles, including existing and new facilities) could be built out by 2030 if priority roadway projects including bike facilities are completed in this timeframe.

NEW FUNDING IDEAS

Public-private partnerships can reduce the upfront costs the public bears for transportation and infrastructure investments. In addition to providing capital, the private sector partner typically takes on a larger role in building, operating, or managing the project and keeps a portion, or all, of the revenue the project generates.

CAPITAL ESTIMATES

IMPROVEMENT	CAPITAL COST ESTIMATE ²⁰
SIDEWALKS	\$60/linear foot of 5' sidewalk
STRIPED BIKE LANE	\$100,000/mile
PROTECTED BIKE LANE	\$250,000/mile
SHARED-USE PATH	\$500,000/mile
ROAD WIDENING	\$750,000/mile of 10' lane

WHAT CAN WE ACCOMPLISH IN THE LONG TERM?

COMPLETING THE SIDEWALK NETWORK

**\$3
MILLION**

If the City continues investing \$3 million/year in sidewalk construction after addressing school walking routes...

**17
YEARS**

... All of the Priority 1 sidewalk gaps (167 miles after addressing school walking routes) could be filled in 17 years.

NEW FUNDING IDEAS

Residents in myriad cities around the U.S. have voted to increase the **sales tax** rate in order to fund transportation and infrastructure improvements.

Places as diverse as Atlanta, GA; Spokane, WA; Lawrence, KS; and Cedar Rapids, IA all decided that the benefits of improved streets and public transportation were worth small additions to the sales tax.

COMPLETING THE BIKE NETWORK

**\$1
MILLION**

If the City continues investing \$1 million/year into constructing bike facilities after completing the core bike network...

**25
YEARS**

... The entire bike network (totaling 312 miles) could be completed in an additional 25 years.

STAFFING + RESOURCES

The construction of new facilities will also increase the resources Des Moines must devote to maintaining its transportation infrastructure.

In addition to more materials, Des Moines will also need to invest in vehicles, machinery, and staff to ensure that transportation investments remain in a state of good repair for years to come.

MAINTENANCE ESTIMATES

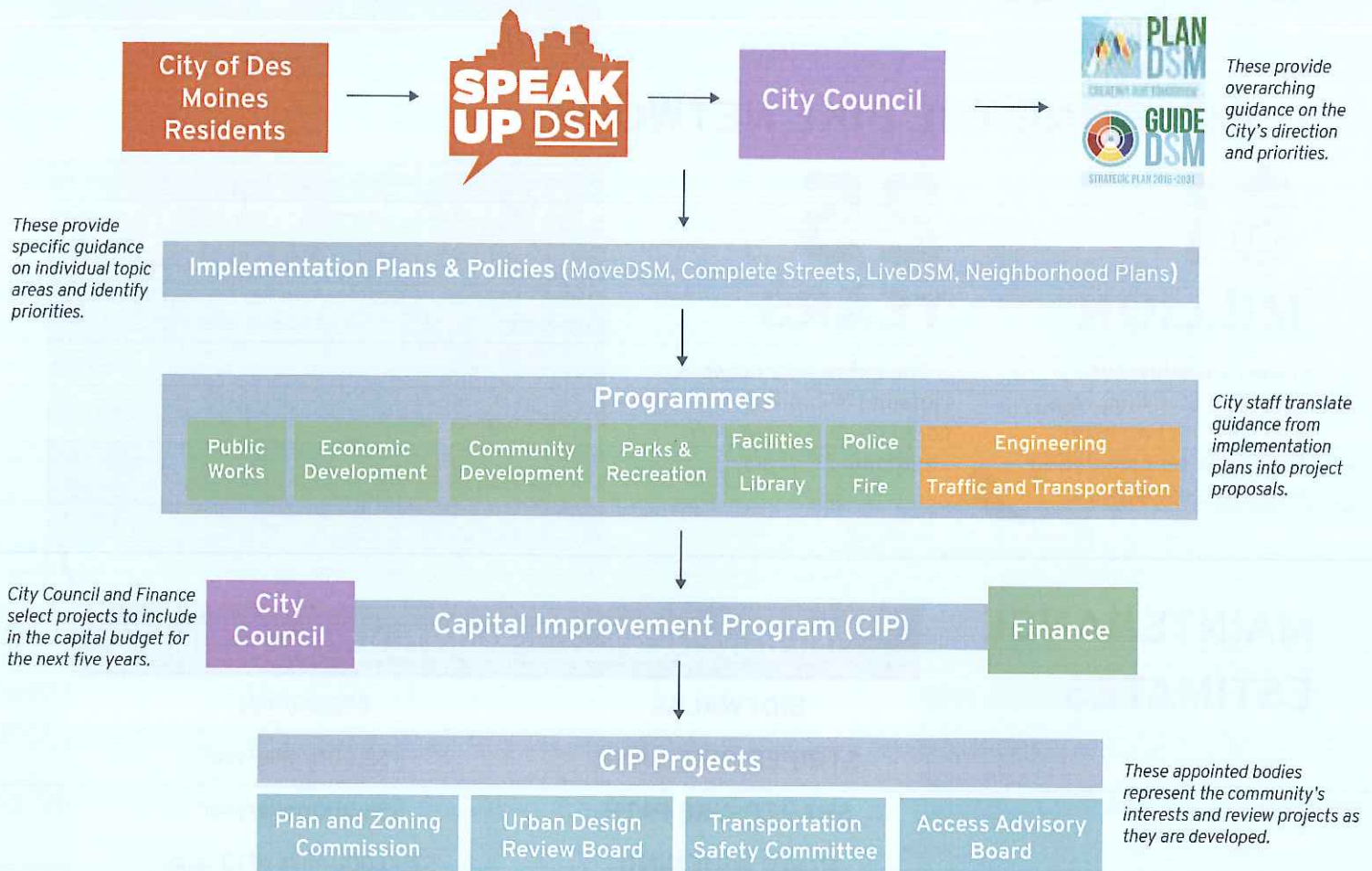
IMPROVEMENT	MAINTENANCE ESTIMATE ²¹
SIDEWALKS	\$5,000/mile
STRIPED BIKE LANE	~\$2,000/mile/year
SHARED-USE PATH	~\$8,000/mile/year
ROAD WIDENING	\$200,000/mile of 10' lane

CIP PROJECT DEVELOPMENT PROCESS

Each year, the City of Des Moines creates a Capital Improvement Program (CIP) that details all of the projects that will be included in the City's Capital Budget for the next five years. The CIP process helps the City coordinate its finances and better manage construction and installation. Capital projects typically exceed \$10,000 in costs and have a useful life of at least 10 years. Projects are typically funded in whole, or in part, through the issuance of bonds, Federal funds, State funds, or user fees.

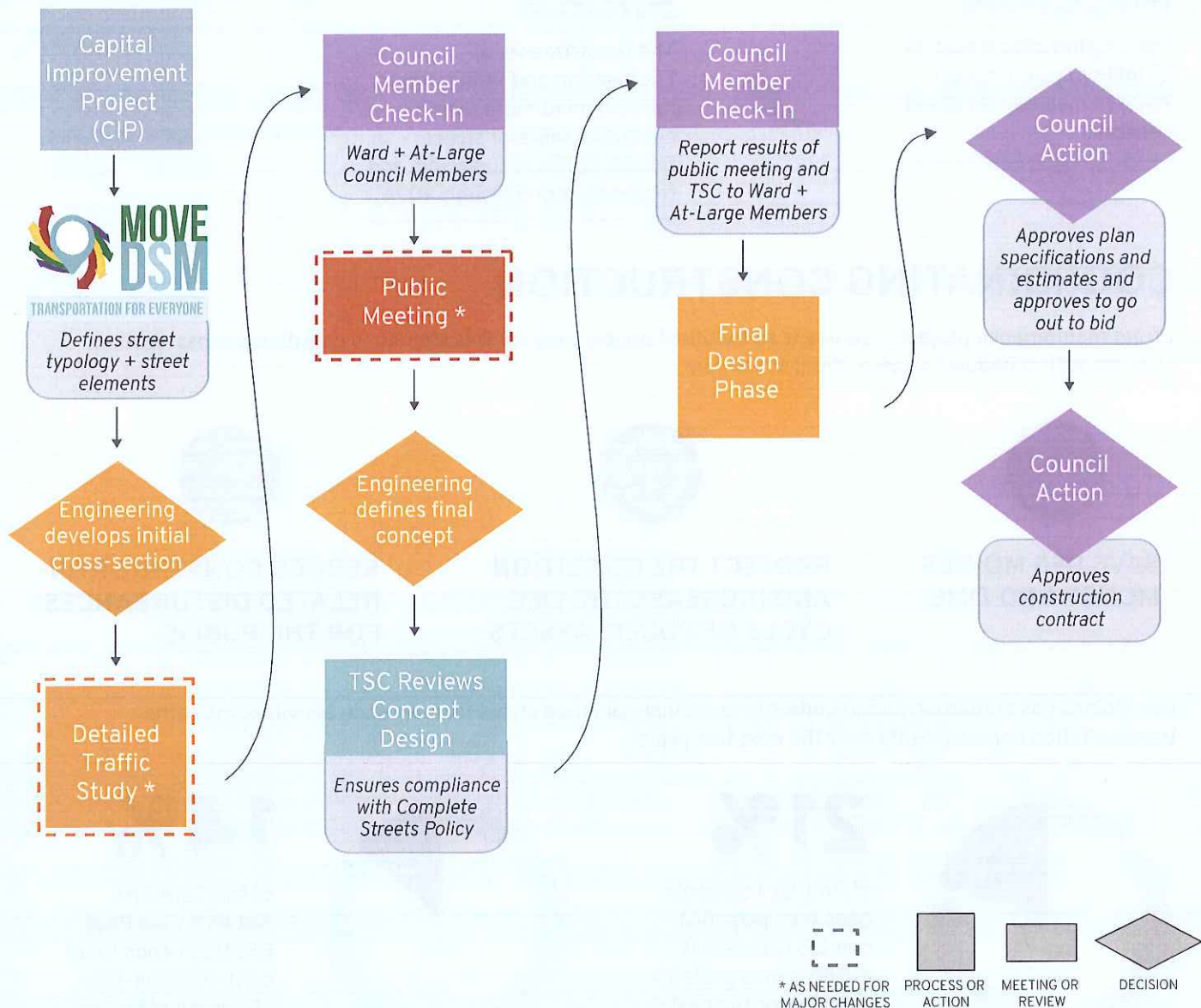
The flow chart below outlines how capital projects progress from an initial idea towards inclusion in the CIP. MoveDSM and the Complete Streets Policy will both help City staff prioritize transportation projects and make recommendations for inclusion in the CIP.

CIP PROJECT DEVELOPMENT PROCESS



PROJECT DESIGN AND IMPLEMENTATION

For transportation projects that are included in the CIP, the Engineering Department will use MoveDSM to develop an initial design. After creating an initial design, Council Members and community members will have opportunities to help shape and refine the design, and Engineering will gather more information for large projects through a detailed traffic study. The Transportation Safety Committee will play an important role in ensuring projects conform with MoveDSM's guidance.



MAINTAINING OUR STREETS

FUNDING STREET MAINTENANCE

**\$7.35
MILLION**

The City has allocated over \$7 million/year through 2024 to maintain its street network.



**67
MILES**

The Departments of Engineering and Public Works have planned more than 67 centerline miles of street rehabilitation, resurfacing, and reconstruction through 2024.

COORDINATING CONSTRUCTION

Street maintenance projects represent an excellent opportunity for Des Moines to coordinate cross-section changes with scheduled construction, which can:



**SAVE DES MOINES
MONEY AND TIME**

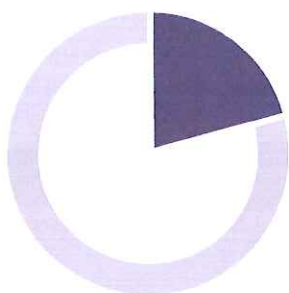


**PROTECT THE CONDITION
AND INCREASE THE LIFE
CYCLE OF PUBLIC ASSETS**



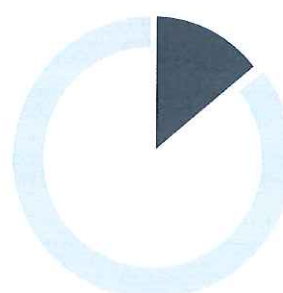
**REDUCE CONSTRUCTION-
RELATED DISTURBANCES
FOR THE PUBLIC**

Des Moines has numerous opportunities to coordinate planned street maintenance activities with other transportation improvements over the next five years.



21%

of Priority 1 sidewalk gaps (see page 66) overlap with street maintenance projects planned for the next 5 years.



14%

of the Core Bike Network (see Page 68) that needs to be built overlaps with street maintenance projects planned for the next 5 years.

PRIORITIZING

OUR INVESTMENTS

Transportation projects in Des Moines fall into a variety of categories, including: new construction projects (which are part of the City's Capital Improvement Program), repaving and resurfacing projects, re-striping and retrofit projects, and projects that are a part of new private development. Repaving and resurfacing projects are largely selected based on pavement conditions, though they should also be viewed as cost-effective opportunities to coordinate any necessary changes. Project implementation should be opportunistic based on factors like available funding and opportunities to coordinate with other construction and improvement projects.

In selecting new construction projects to be proposed for the Capital Improvement Program, Des Moines will prioritize projects based on road condition and the criteria listed below, which relate directly to the transportation goals stated in PlanDSM. Using the prioritization criteria will ensure that proposed projects help to build a safe transportation system that is easy to use and efficient for everyone in Des Moines. When scoring projects, each of the five criteria are equally weighted.

Project reconfigures an undivided four-lane street
(see page 70-71 for more information).



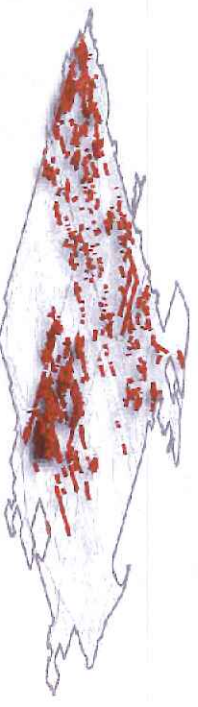
Project addresses a location with a history of fatal/serious injury traffic crashes
(see page 12-13 for more information).



Project is located in an environmental justice area
(see page 84 for more information).



Project overlaps with Priority 1 sidewalk gaps
(see page 66-67 for more information).



Project is part of the core bike network
(see page 68-69 for more information).



COMPLETE STREETS

Complete Streets enable people of all ages and abilities to safely travel along and across streets, regardless of which mode of transportation they use. The street typologies, policies, and future networks in MoveDSM work in concert to bring more complete streets to everyone in Des Moines.

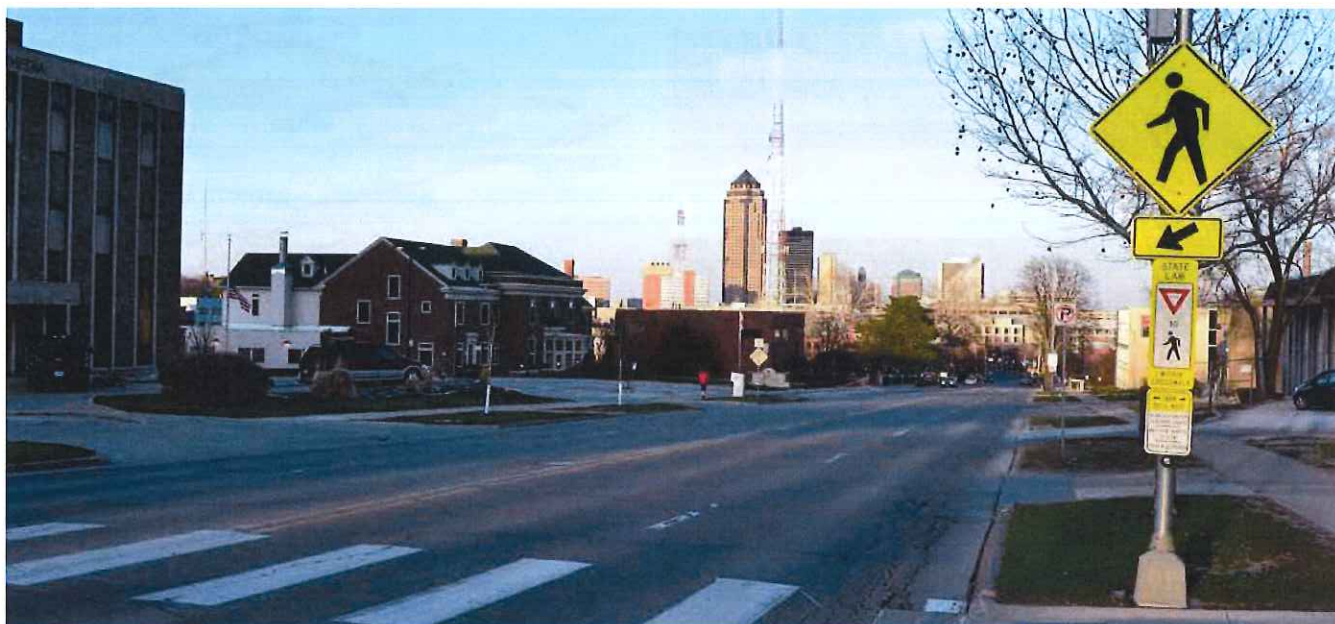
Des Moines first adopted a Complete Streets policy in 2008, stating that streets should be designed and built to accommodate travel by all modes. In the intervening decade more than 1,400 cities, states, and towns have adopted a Complete Streets policy and much has been learned.

As part of the process for MoveDSM, the City has worked with community members, representatives from all relevant City departments, and other key stakeholders to update Des Moines' Complete Streets policy to better align with the direction MoveDSM establishes for the City. The updated Complete Streets policy will be one of the instruments that helps bring the goals and vision of MoveDSM to fruition.

WHAT'S NEW IN THE UPDATED POLICY?

Des Moines' updated Complete Streets policy:

1. Explicitly states the need to prioritize projects in environmental justice areas.
2. Instructs the City to approach every city, state, and federally-funded transportation project, as well as private development projects that impact the public right-of-way, as an opportunity to create safer, more accessible streets for all users.
3. Designates the Transportation Safety Committee as the body responsible for reviewing projects to ensure they comply with MoveDSM.
4. Details performance measures to be evaluated each year and published in a publicly available annual report.



SUPPORTING STEPS

MoveDSM details a new way of doing business for Des Moines that focuses on safe transportation for everyone. In order to support the implementation of MoveDSM, the City will need to also take the following steps:

1. Align functional classifications to typologies

While the new street typologies in MoveDSM will guide the City's design, operations, and management of its streets, there is still a need to maintain the functional classifications for state and federal funding purposes. The table to the right shows which functional classifications best align with each typology, and the map in the Appendix (page 91) shows where the City should update existing classifications to better match the typologies.

TYPOLGY	FUNCTIONAL CLASSIFICATION
NEIGHBORHOOD RESIDENTIAL	Collector
COMMUNITY RESIDENTIAL	Minor Arterial/Collector
COMMUNITY MIXED USE	Minor Arterial/Collector
REGIONAL RESIDENTIAL	Minor Arterial/Principal Arterial
REGIONAL	Principal Arterial
INDUSTRIAL/BUSINESS PARK	Minor Arterial/Collector

2. Update Code of Ordinances

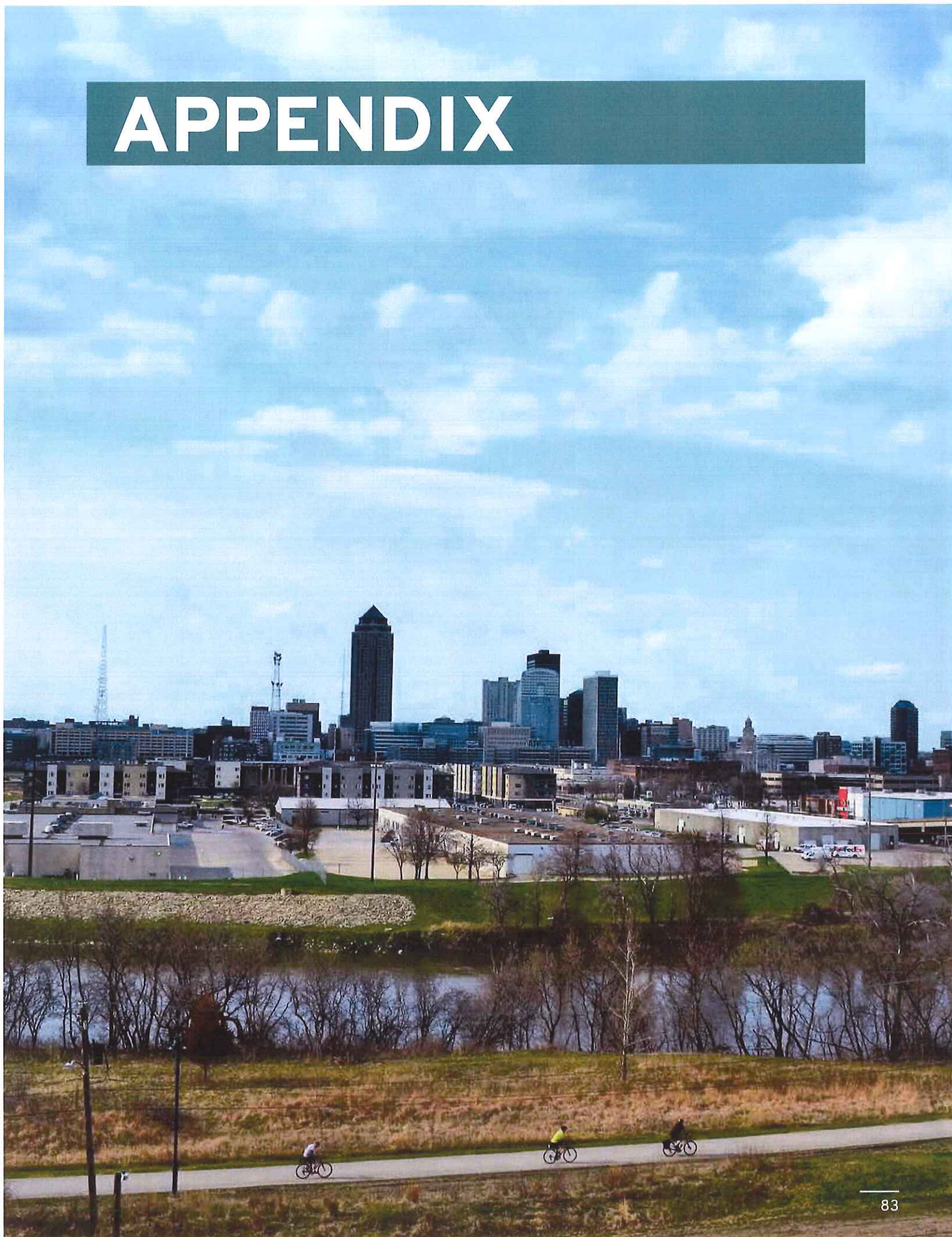
In order to align City ordinances with MoveDSM, it is recommended that the City review and consider updating the items listed below. The City should continue to review policies and ordinances for additional changes needed.

ORDINANCE	RECOMMENDATIONS
CH. 102, ARTICLE II SIDEWALKS	Incorporate MoveDSM street typologies as design standards (Sec. 102-73). Minimum sidewalk and parkway width should be 5'.
CH. 114, ARTICLE III TRAFFIC AND VEHICLES	Update the composition and duties of the Transportation Safety Committee to reflect new role under the updated Complete Streets policy (Sec. 114-241 and 242). Update yielding policy so that pedestrians have the right-of-way when approaching
CH. 82 AND 106 SUBDIVISION AND SITE PLAN ORDINANCE	Update references to design standards with MoveDSM (Sec. 106-133). Revise 106-132-2b and 2c to match block recommendations in the connectivity framework. Include recommended block lengths and connectivity index as guidance (Sec. 106-133). Clarify that sidewalks are required on both sides of new and existing streets (Sec. 106-137).

SUPPORTING STEPS (CONT.)

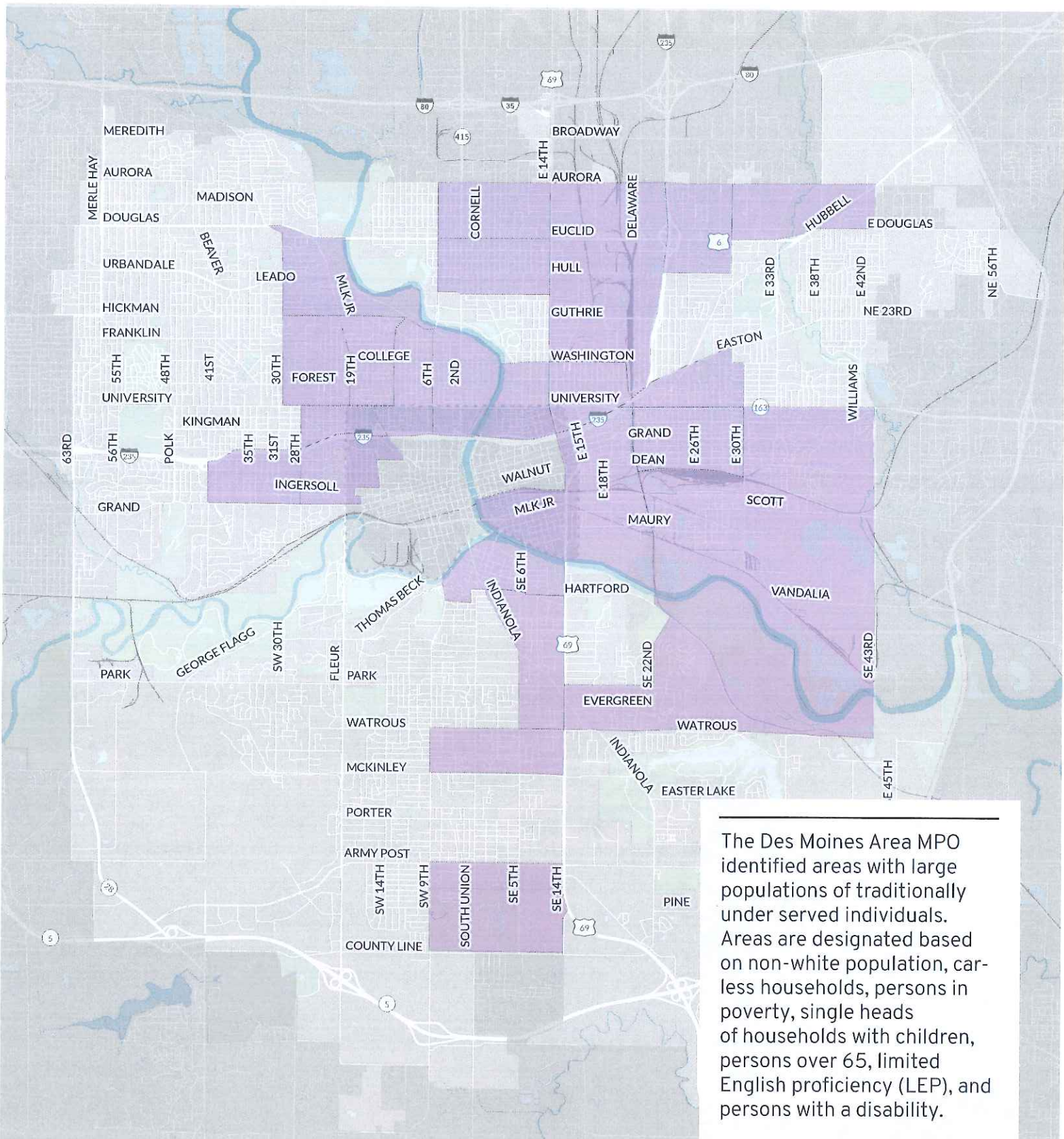
ORDINANCE	RECOMMENDATIONS
SIDEWALK REMOVAL POLICY	Amend Policy so that sidewalks can only be removed if they are deemed to be in hazardous condition by the City Engineer and then go through the stated process.
ON-STREET PARKING POLICY	Update Policy to match the guidelines in MoveDSM's street typologies and the International Fire Code.
ACCESS MANAGEMENT	Des Moines should develop an access management policy, addressing issues like curb cuts and pedestrian/bike access to retail, as a second phase to this plan.
TRAFFIC IMPACT ANALYSIS POLICY	Consider updating the policy to include recommended connectivity index as part of new residential developments.

APPENDIX



ENVIRONMENTAL JUSTICE AREAS

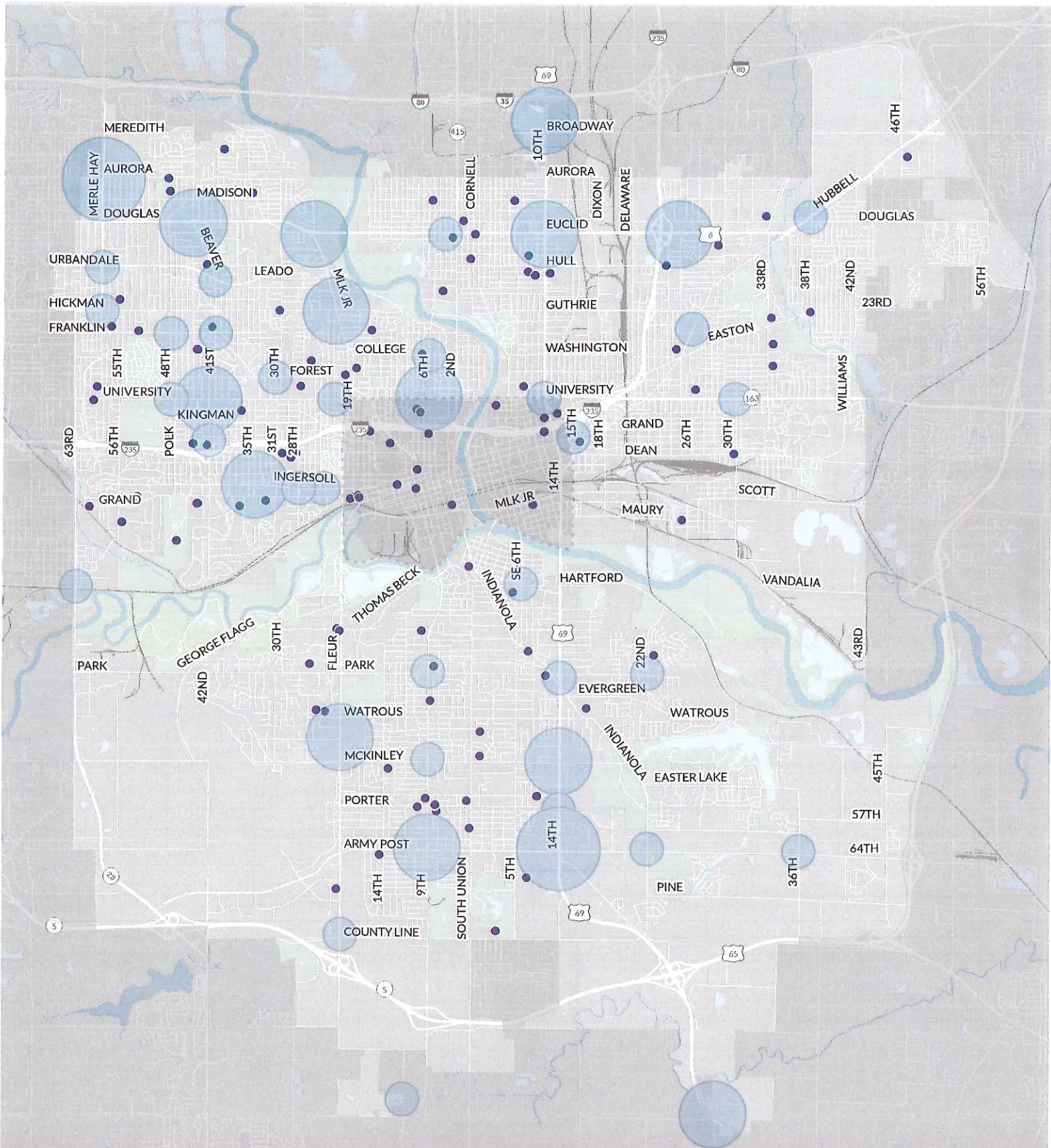
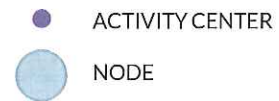
ENVIRONMENTAL JUSTICE AREAS
(AS OF 2015)



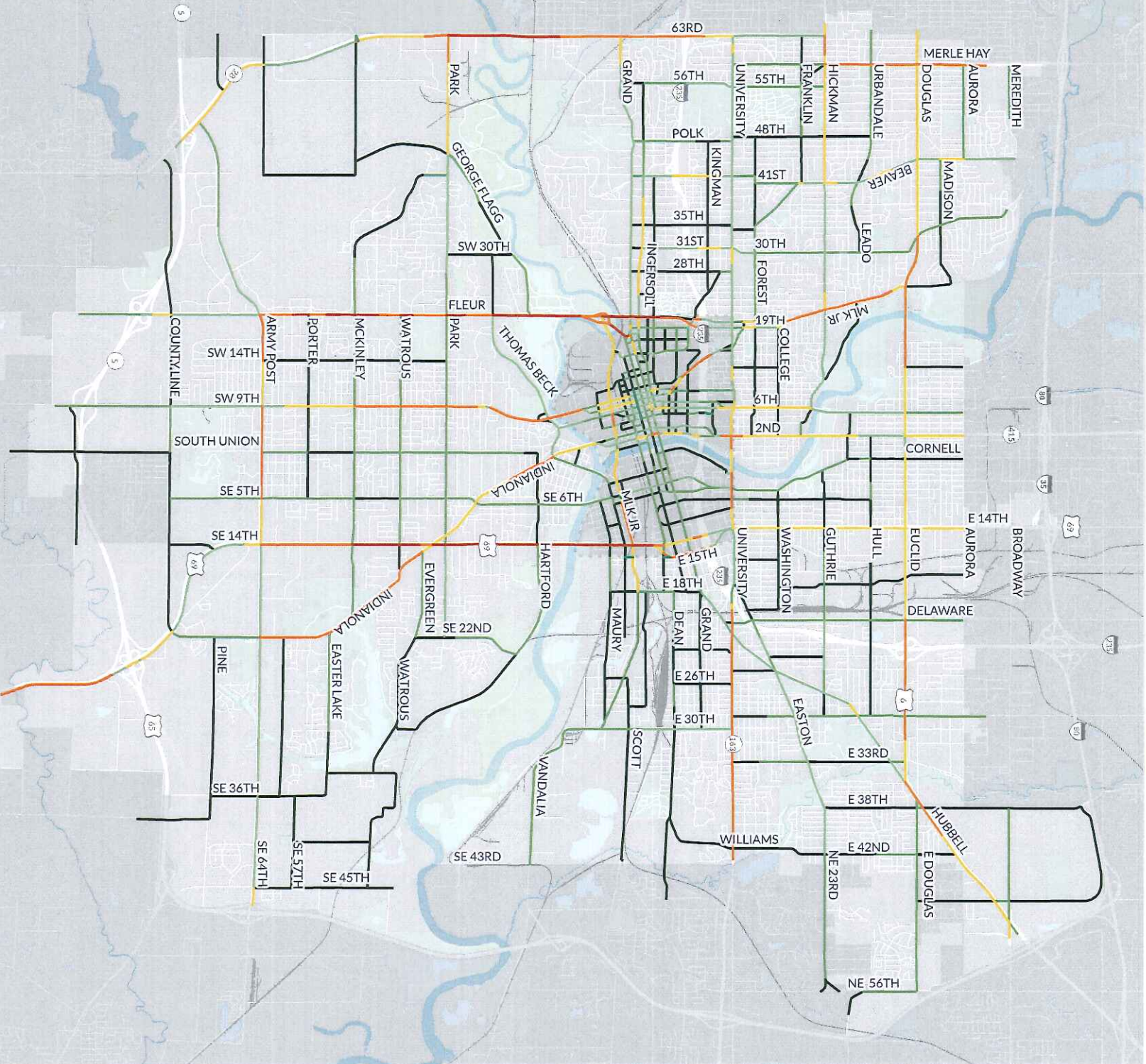
The Des Moines Area MPO identified areas with large populations of traditionally under served individuals. Areas are designated based on non-white population, car-less households, persons in poverty, single heads of households with children, persons over 65, limited English proficiency (LEP), and persons with a disability.



ACTIVITY CENTERS

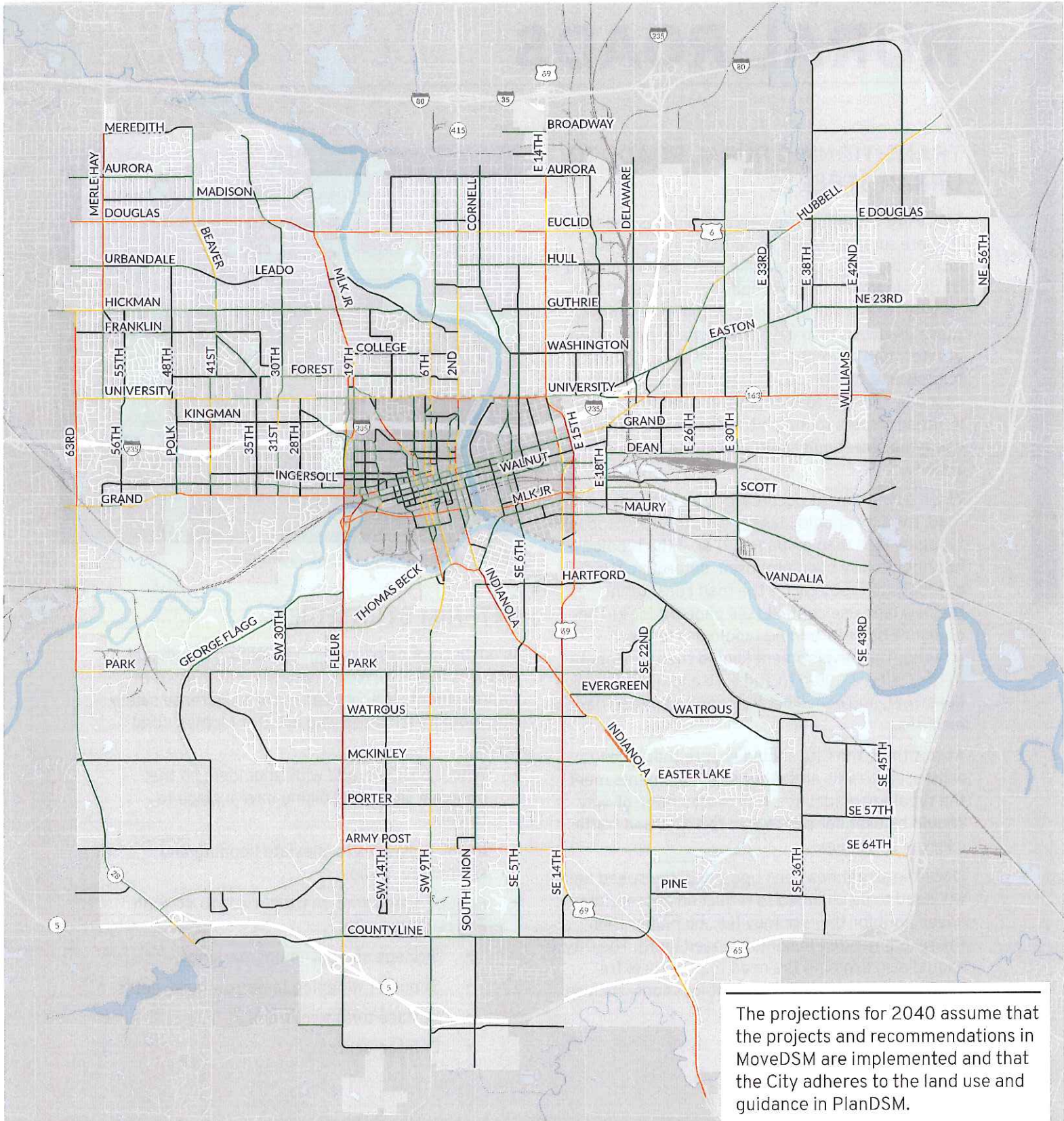


PROJECTED TRAFFIC VOLUMES IN 2020



PROJECTED TRAFFIC VOLUMES IN 2040

- < 5,000 VEHICLES PER DAY
- 5 - 10,000 VEHICLES PER DAY
- 10 - 15,000 VEHICLES PER DAY
- 15 - 20,000 VEHICLES PER DAY
- 20 - 30,000 VEHICLES PER DAY
- > 30,000 VEHICLES PER DAY



The projections for 2040 assume that the projects and recommendations in MoveDSM are implemented and that the City adheres to the land use and guidance in PlanDSM.



ADDRESSING DES MOINES' RURAL ROADS

TRANSITIONING RURAL ROADS TO URBAN STREETS

There are a number of streets within Des Moines that are rural in nature, meaning they generally lack curbs, gutters, sidewalks, and are surrounded by development reserve, open space, or very low-density residential land uses. Within Des Moines, these roadways also have high speed limits, often greater than 45 mph. As Des Moines continues to grow and the land use around these streets changes, though, rural roads will need to transition to urban streets to match the needs of the people using the street and complement the surrounding activity.

When development occurs along an existing rural road, the City should identify the street's proposed typology (see map on page 29) or, if the typology has not already been proposed, determine the appropriate typology for the road considering the new land use context (see page 60 for further guidance on determining typologies for new streets). The development should then contribute to the costs required to add curb and gutter, repave the street, and construct the required pedestrian facilities.

At this time, the City should ensure that lane widths, curb radii, and other street elements meet the typology guidelines. Any excess right-of-way should be used for pedestrian facilities and traffic calming strategies.

Once the street has been upgraded, the speed limit will need to be changed to reflect an appropriate speed limit for the typology (i.e., no higher than the recommended maximum speed limit). The City should also examine the need to provide extra traffic calming measures in spot locations, such as activity centers.



Hart Avenue in southeast Des Moines.

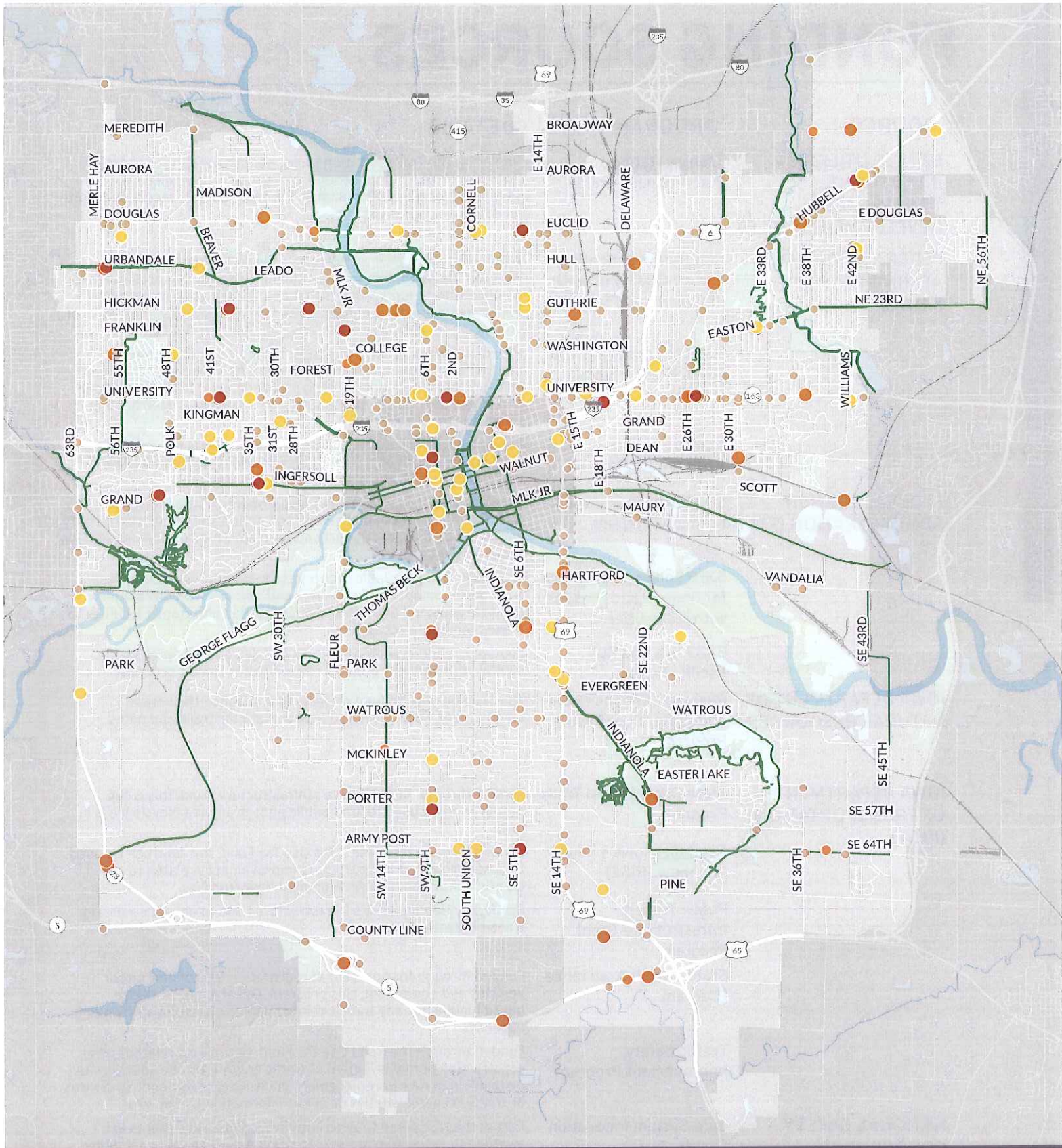
INTERIM STRATEGIES

In advance of development prompting significant changes to a rural road, there are still short-term improvements the City can make to increase safety and mobility for those who use Des Moines' rural roads.

- Where possible, add wide shoulders so that people walking and biking have a place to travel.
- Install bioswales to alleviate flooding and stormwater issues.
- Reduce speed limit on rural roads to 40 mph and reinforce with:
 - Signage and pavement markings,
 - Shoulder widening to narrow lane widths,
 - Surface treatments, and
 - Enforcement.

SERIOUS INJURIES AND FATALITIES (2012-2017)

- EXISTING BIKE NETWORK
- VEHICLIST FATALITY
- BICYCLIST OR PEDESTRIAN FATALITY
- VEHICLIST SERIOUS INJURY
- BICYCLIST OR PEDESTRIAN SERIOUS INJURY



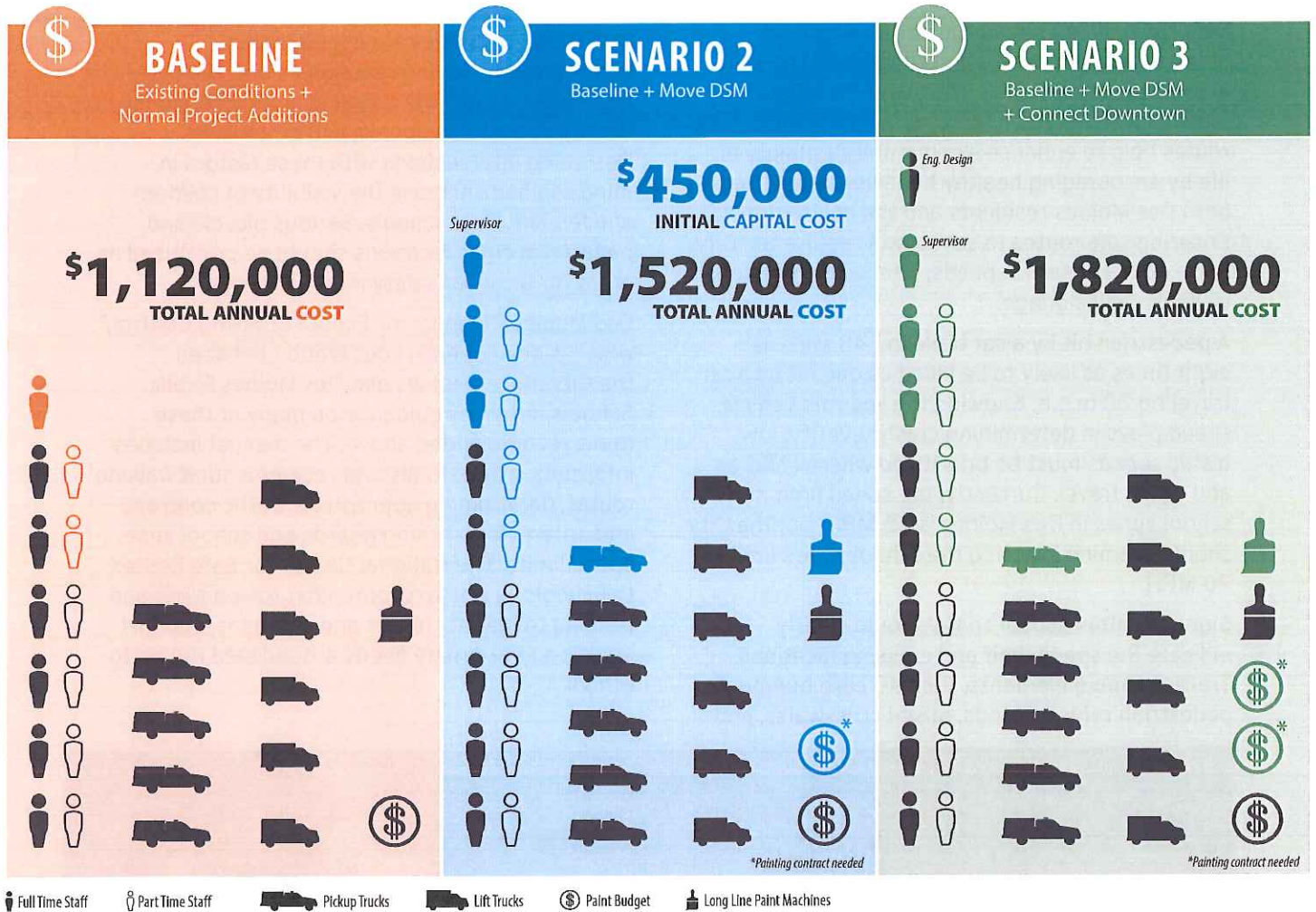
FEDERAL AND STATE FUNDING SOURCES

SOURCE	PROGRAM	DETAILS
BETTER UTILIZING INVESTMENT TO LEVERAGE DEVELOPMENT (BUILD)	Transportation Discretionary Grants	Replacing the Transportation Investment Generating Economic Recovery (TIGER) grant program, for projects that will have a significant local or regional impact, including multi-modal and multi-jurisdictional initiatives.
FEDERAL HIGHWAY ADMINISTRATION (FHWA)	Congestion Mitigation and Air Quality (CMAQ) Improvement Program	Administered by IDOT as the Iowa's Clean Air Attainment Program (ICAAP) , this source of funding provides opportunities for communities to fund projects that aim to alleviate congestion by improving traffic flow, enhancing bicycle and pedestrian facilities or enhancing transit service, thereby improving air quality.
	Surface Transportation Block Grant Program (STBG)	Provides flexible funding to states and local municipalities to improve the conditions and performance of their comprehensive transportation network. Funding can be used for almost any mode and is available through both IDOT and Des Moines' Metropolitan Planning Organization.
	Transportation Alternatives Program	Funding dispersed through states and local MPOs for small-scale transportation projects such as bicycle and pedestrian facilities, recreational trails, and safe routes for non-drivers.
FEDERAL TRANSIT ADMINISTRATION (FTA)	5307 Urbanized Area Formula Program	Administered through the Iowa Department of Transportation's (IDOT) and apportioned based on population and population density. Funds can be used to support capital, maintenance, planning and job access transit projects.
	5310 Enhanced Mobility for Seniors and Persons with Disabilities	Federal funding available for projects that improve mobility and transportation options for seniors and persons with disabilities. Projects could include enhancing pedestrian and transit facilities to make them more accessible.
	5339 Bus and Bus Facility Funds	Federal funding available to states and designated recipients for capital improvement projects related to bus transit services.
IOWA DEPARTMENT OF NATURAL RESOURCES	Resource Enhancement and Protection (REAP) Program	Fund can be used to fund projects that enhance the natural environment, such as shared use recreational trails and paths.
IOWA DEPARTMENT OF TRANSPORTATION (IDOT)	State Recreational Trails Program	Funded through Rebuild Iowa's Infrastructure Fund, this is the primary source used to fund public pedestrian and bicycle trails in Iowa.
	Revitalize Iowa's Sound Economy (RISE)	Funded through the state Road Use Tax Fund, this fund can be used for street and road infrastructure improvements related to job creation and economic development opportunities.
	Public Transit Infrastructure Grant Program	Funded by Rebuild Iowa's Infrastructure Fund to enhance existing transit infrastructure.
	State Transit Assistance Program	Funded through four percent of registration fees of new motor vehicles and equipment, this program allocates performance-based funding for any transit-related operating, capital or planning expenses.
	Traffic Safety Improvement Program	Funded through the Road Use Tax Fund for projects related to the construction or improvement of traffic operations at a specific site, installation of new or replacement of obsolete traffic control devices or safety research studies or public information campaigns.
NATIONAL SAFETY COUNCIL (NSC)	Safe System Innovation Grants	Part of the NSC Road to Zero initiative, competitive grants are awarded to innovative projects that will reduce roadway fatalities



BUDGET NEEDS FOR THE TRAFFIC & TRANSPORTATION DIVISION

Signs & Markings



SAFE ROUTES

TO DES MOINES SCHOOLS

WALKING AND BIKING ROUTES TO SCHOOL

Safe walking and biking routes to school not only encourage parents and children to travel in a new way, but also help to ensure the safety of families with limited or no access to a vehicle. Safe routes help to enhance a community's quality of life by encouraging healthy behavior benefitting both Des Moines residents and the environment. Ensuring safe routes to school will require the City to re-examine traffic speeds, intersection design, visibility, and signage.

A pedestrian hit by a car traveling 40 MPH. is eight times as likely to be killed as one hit by a car traveling 20 m.p.h. Knowing the key role vehicle speed plays in determining crash severity, low traffic speeds must be prioritized where children and youth travel. Currently, the speed limit in school zones in Des Moines is 25 MPH, but the City should examine lowering the school speed limit to 20 MPH.

Signage within school zones should clearly indicate the speed limit and crossing locations. Traffic calming elements, such as curb bumpouts, pedestrian refuge islands, raised crosswalks, and

no right turn on red signs should be considered along school walking routes. More information on traffic calming elements can be found on page 62.

In addition to traffic calming elements, considerations for intersections along walking routes should include crossing distances, signal timing, pedestrian signals, and crosswalks. Designing intersections with these factors in mind can help increase the visibility of children and families near schools. Serious bicycle and pedestrian crash locations should be prioritized as areas for targeted safety improvements.

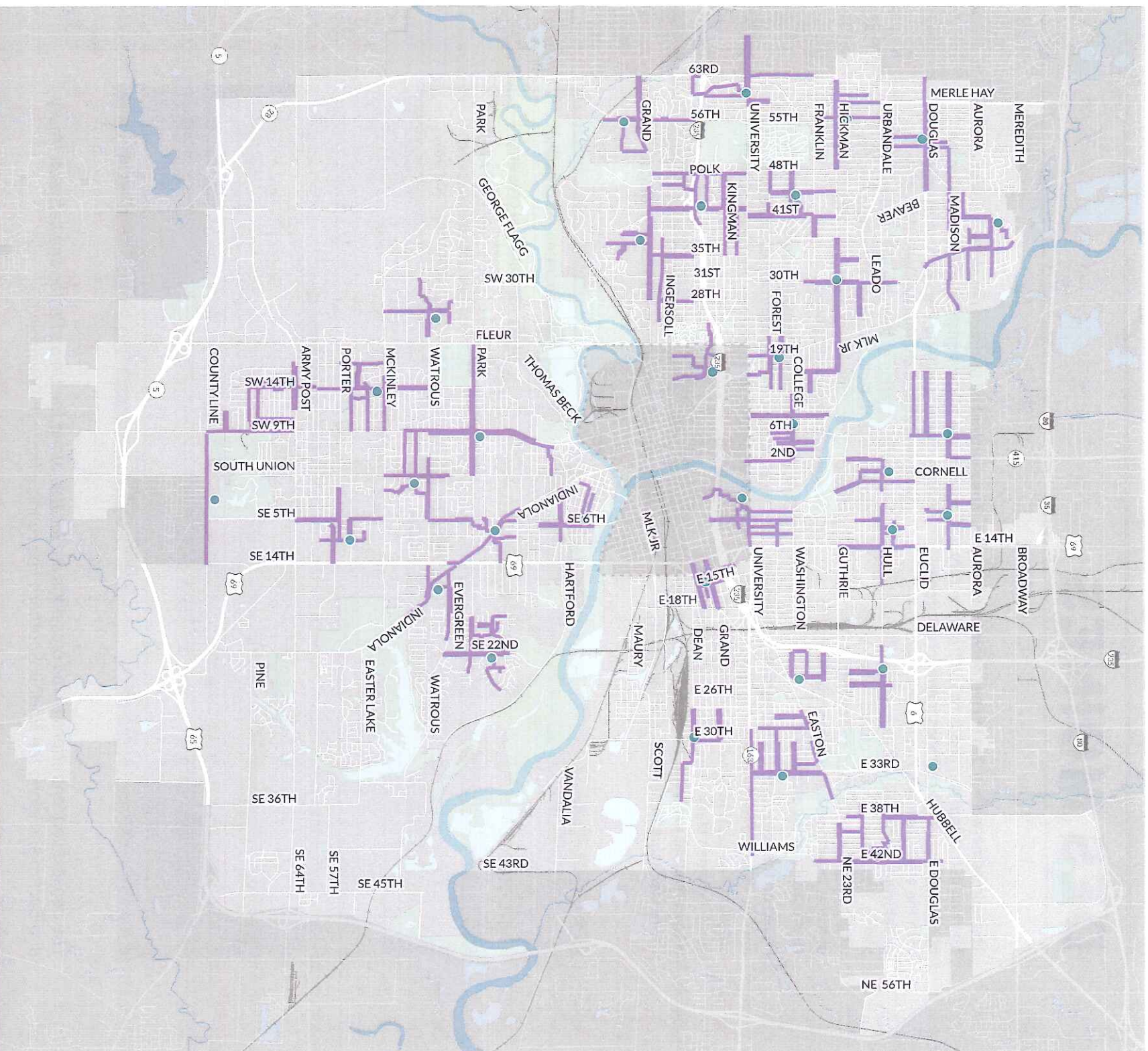
Des Moines' "Manual for School Crossing Control," which is developed in cooperation between the City of Des Moines and Des Moines Public Schools, provides guidance on many of these items recommended above. The manual includes information on establishing recommended walking routes, determining appropriate traffic controls, and criteria for crossing guards and school zone speed limits. The National Center for Safe Routes to Schools is also a resource to provide tools and training to identify issues and solutions, support equity, and prioritize needs around safe routes to school.



Students and school crossing guards in Des Moines (photo from Des Moines Public Schools).

ROUTES TO SCHOOLS

— SCHOOL WALKING ROUTES
 ● ELEMENTARY SCHOOL



RAILROADS IN DES MOINES

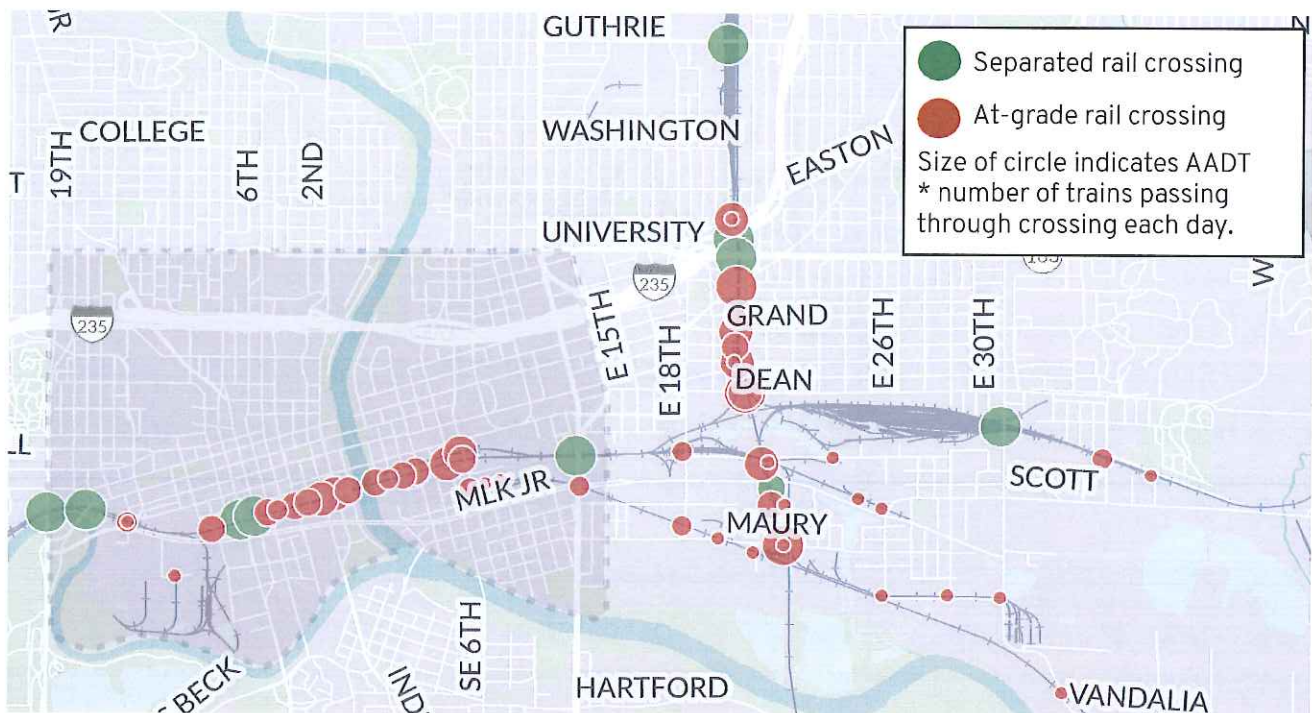
The railroad network in Des Moines serves a vital function in transporting goods to and from the City, but points where the railroads intersect at-grade with the street network can impact the mobility of vehicular traffic, as well as people walking and biking. Railroads also can create super-blocks where minor streets dead end on either side of a line, creating a barrier that interrupts the connectivity of the street grid.

Based on the volume of traffic, number of trains, and the distance to the nearest grade-separated crossing, the section of railroad running north-south between Maury Street and Easton Boulevard is the area that experiences the most disruption to the network due to railroads and rail traffic.

Ensuring that all at-grade rail crossings have the appropriate traffic signals, marking, and signage is essential for ensuring the safety of all road users. Des Moines coordinates with the Office of Rail Transportation at the Iowa DOT and railroad owners, like Norfolk Southern and Union Pacific, regarding crossing issues and works with these partners on safety initiatives.

The City should also evaluate railroad branch and industrial spur lines to ensure they are adequately marked so that all road users are aware of their presence.

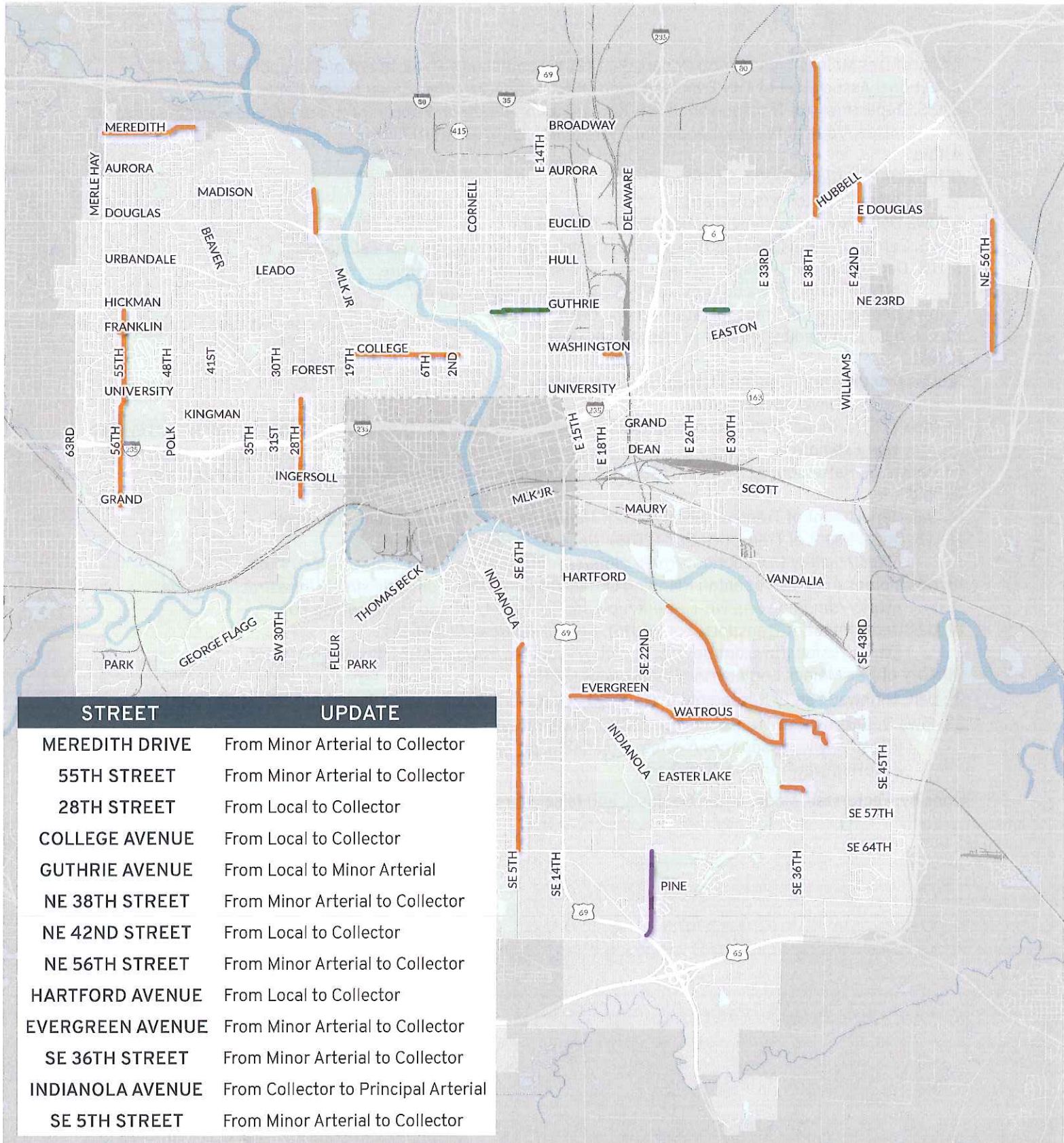
Grants and loans to fund safety improvements are available through the Federal Rail Administration within the U.S. Department of Transportation.



The densest concentrations of rail crossings are located along the Union Pacific line between Maury and Easton and along the Norfolk Southern line running through Downtown.

FUNCTIONAL CLASSIFICATION UPDATES

- COLLECTOR
- MINOR ARTERIAL
- PRINCIPAL ARTERIAL



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Icons by: Vectorstall, Made, Anton Gajdosik, and faisalovers from the Noun Project



TRANSPORTATION FOR EVERYONE

Corner Clearance Request

Proposed Code Change

Sec. 114-2837. East Twenty-sixth Street--East Court Avenue to East Madison Avenue.

East Twenty-sixth Street, on the west side, from Dean Avenue to Logan Avenue, no parking any time.

East Twenty-sixth Street, on the east side, from Dean Avenue to a point 200 feet north of East University Avenue, no parking any time.

East Twenty-sixth Street, on the west side, from East Grand Avenue to a point 75 feet north thereof, no parking any time.

East Twenty-sixth Street, on the west side, from a point 75 feet north of East Grand Avenue to a point 50 feet south of East Grand Avenue, no parking any time.

East Twenty-sixth Street, on the west side, from East University Avenue to a point 250 feet south thereof, no parking any time.

East Twenty-sixth Street, on the west side, from State Avenue to a point 420 feet north of Garfield Avenue, no parking any time.

East Twenty-sixth Street, on the east side, from Easton Boulevard to a point 580 feet south thereof, no parking any time.

East Twenty-sixth Street, on the west side, from Easton Boulevard to a point 75 feet south thereof, no parking any time.

East Twenty-sixth Street, on the west side, from Hull Avenue to East Euclid Avenue, no parking any time.

East Twenty-sixth Street, on the east side, from a point 75 feet south of Wedgewood Road to East Euclid Avenue, no parking any time.

East Twenty-sixth Street, on both sides, from East Euclid Avenue to East Douglas Avenue, no parking any time.

East Twenty-sixth Street, on the west side, from East Garden Avenue to East Madison Avenue, no parking any time.

East Twenty-sixth Street, on the east side, from East Madison Avenue to a point 45 feet south thereof, no parking any time.

(C62, § 30-899; O.8084, 8361, 8394, 8816, 8911; C75, § 27-913; O.9155, 9356; C79, § 27-913; O.9770, 10,123, 10,418; C85, § 27-913; O.10,885; C91, § 27-1807; O.11,650, 13,043, 13,146, 13,218, 13,434)