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FM REGIONAL TRANSPORTATION PLANNING ORGANIZATION

FURTHERING THE LINKAGE OF TRANSPORTATION AND LAND USE INTO IMPLEMENTATION

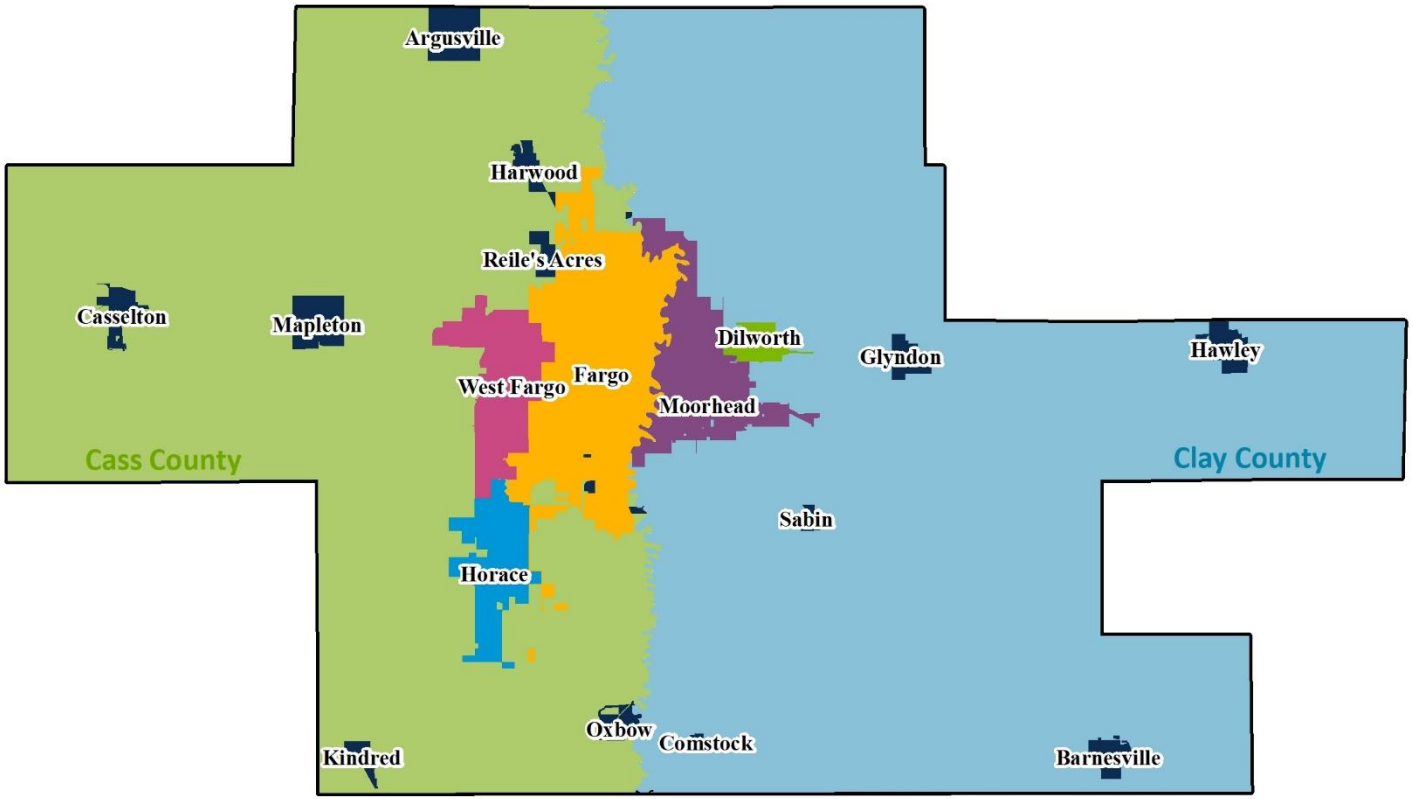
Michael Maddox, AICP
Senior Transportation Planner
Fargo Moorhead Metropolitan Council of Governments

Who am I?

- Education
  - B.S. Community and Regional Planning (CRP) – Iowa State University
- Experience
  - Rockford Metropolitan Agency for Planning (Now Region 1 Planning Council) – 3.5 years
  - SRF Consulting Group – 3 years
  - Metro COG – 9.5 years

When I'm Not Planning Transportation … Prost!

About Metro COG/Fargo Moorhead Region

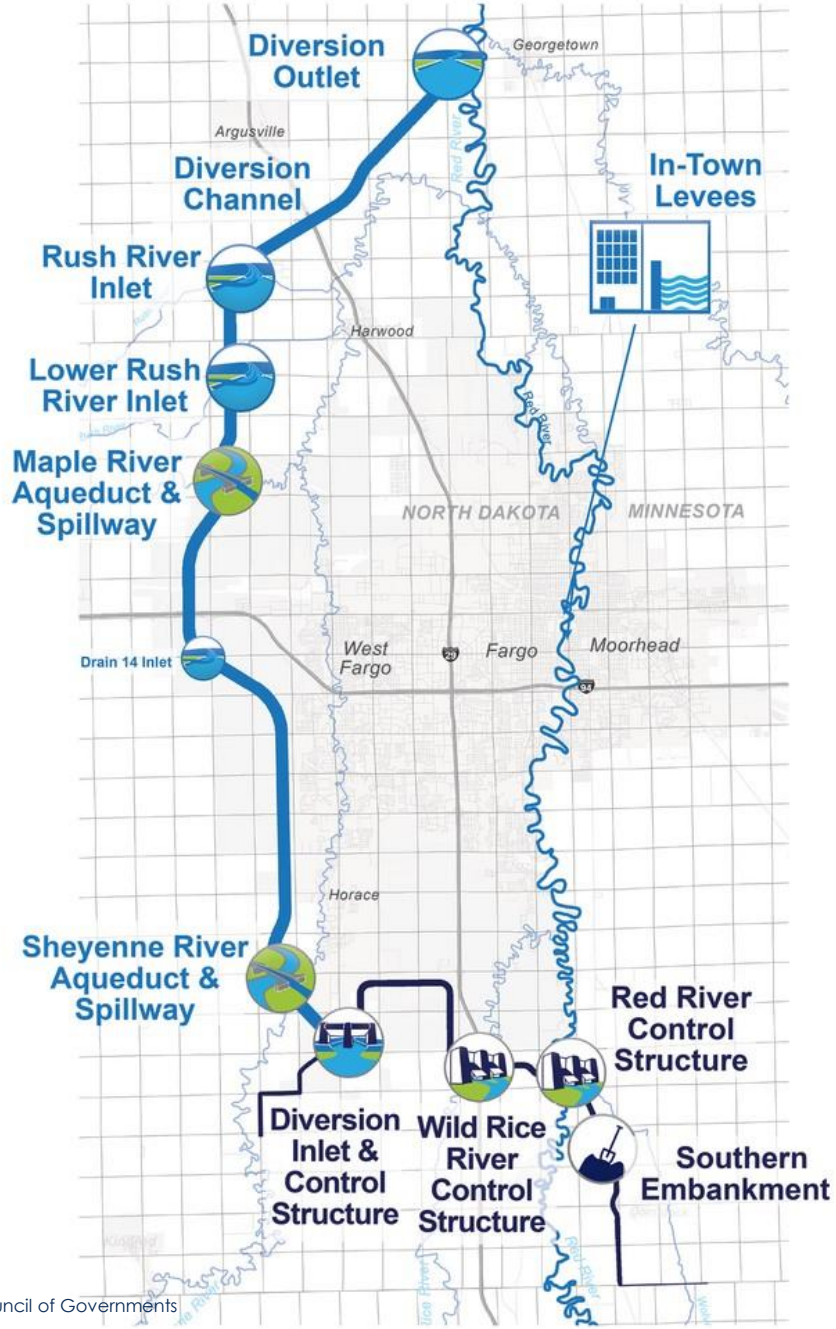


Fargo the Movie

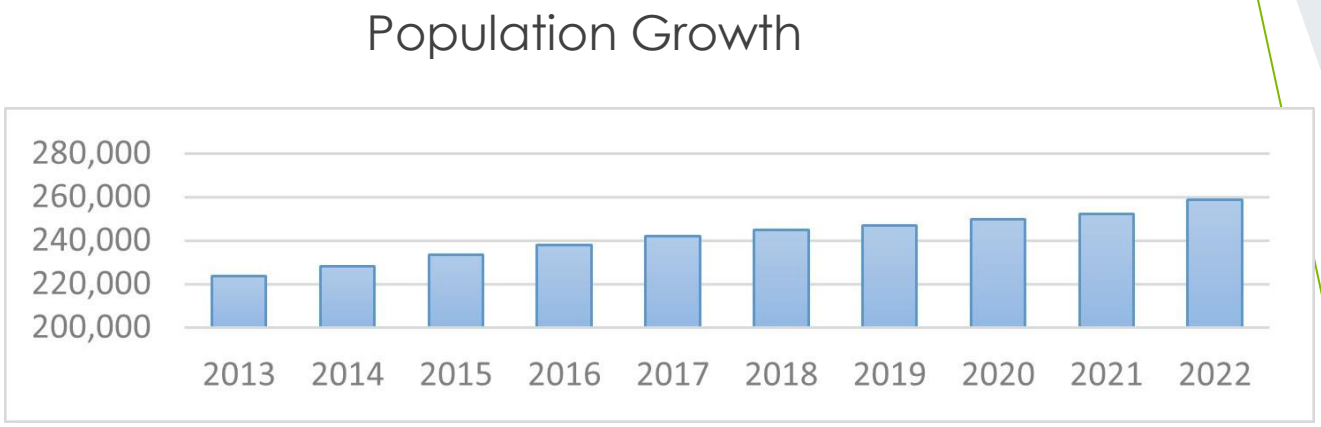
Red River Valley

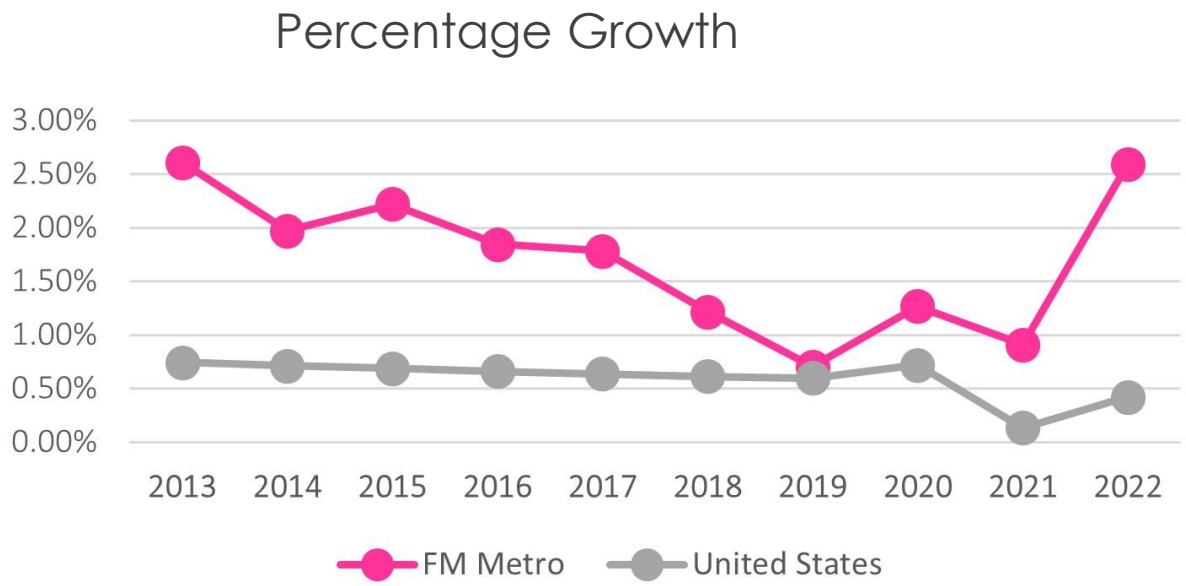
Flooding

Permanent Flood Protection



Growing Region





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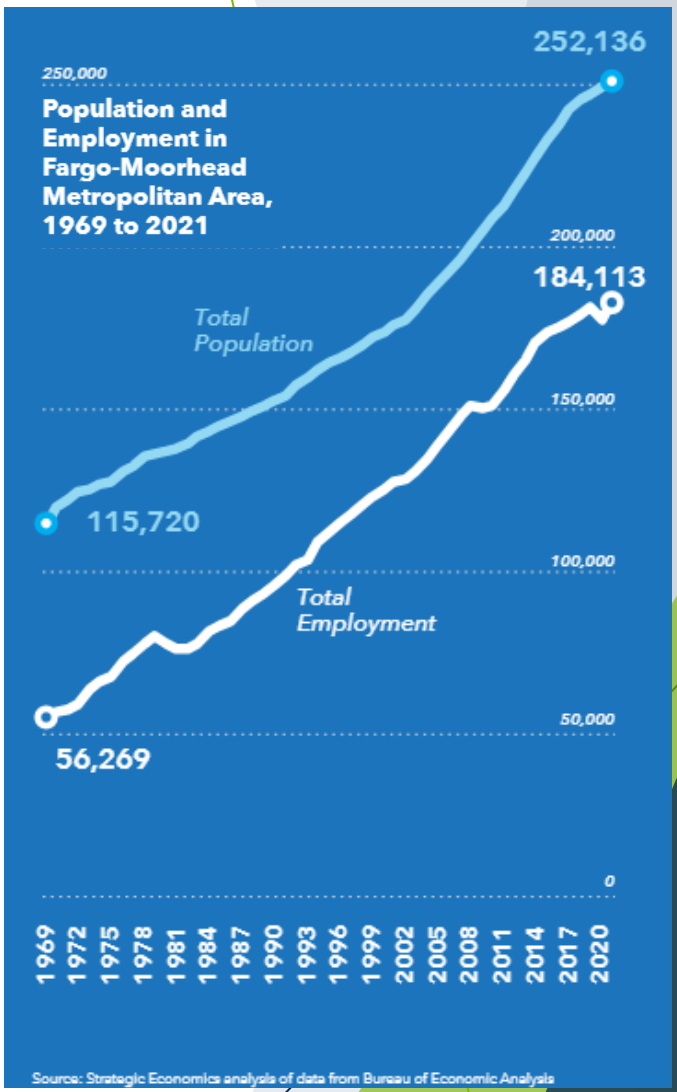
Drivers of Growth

- Healthy population growth and employment growth since 1969
- Job growth well above the state or nation
- Median family income has stayed above inflation



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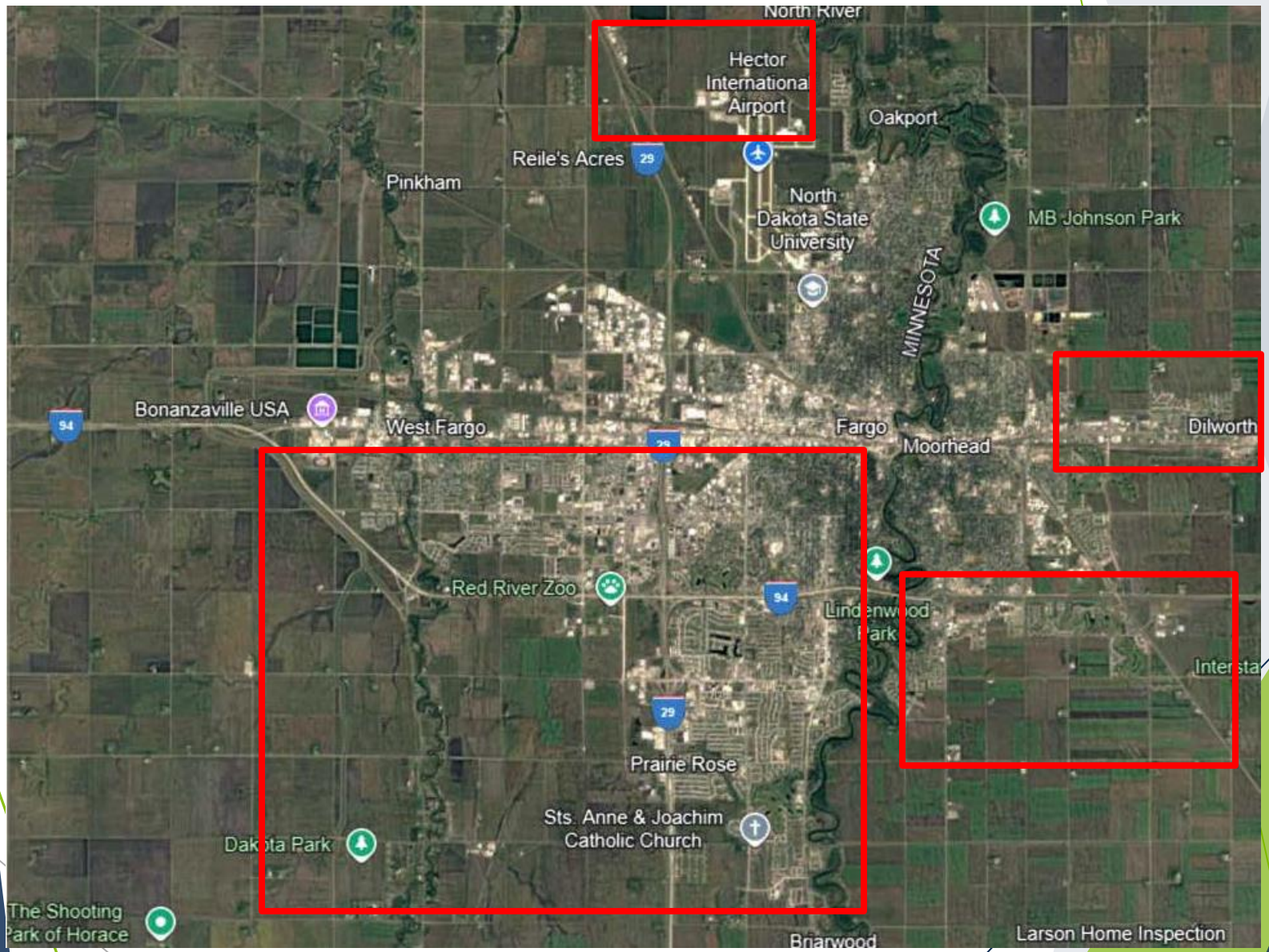
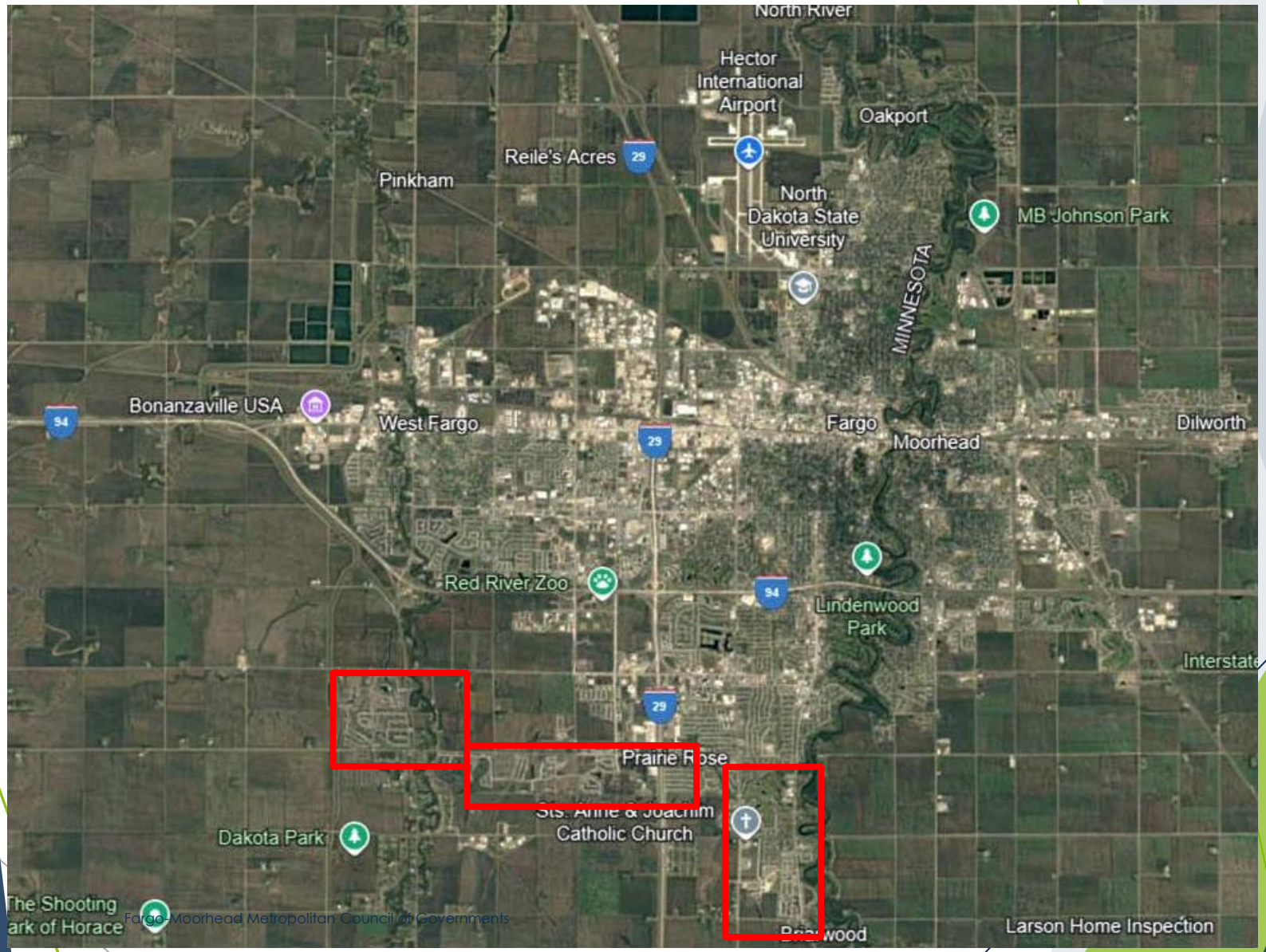
Growth Progression - 2000



Growth Progression - 2004



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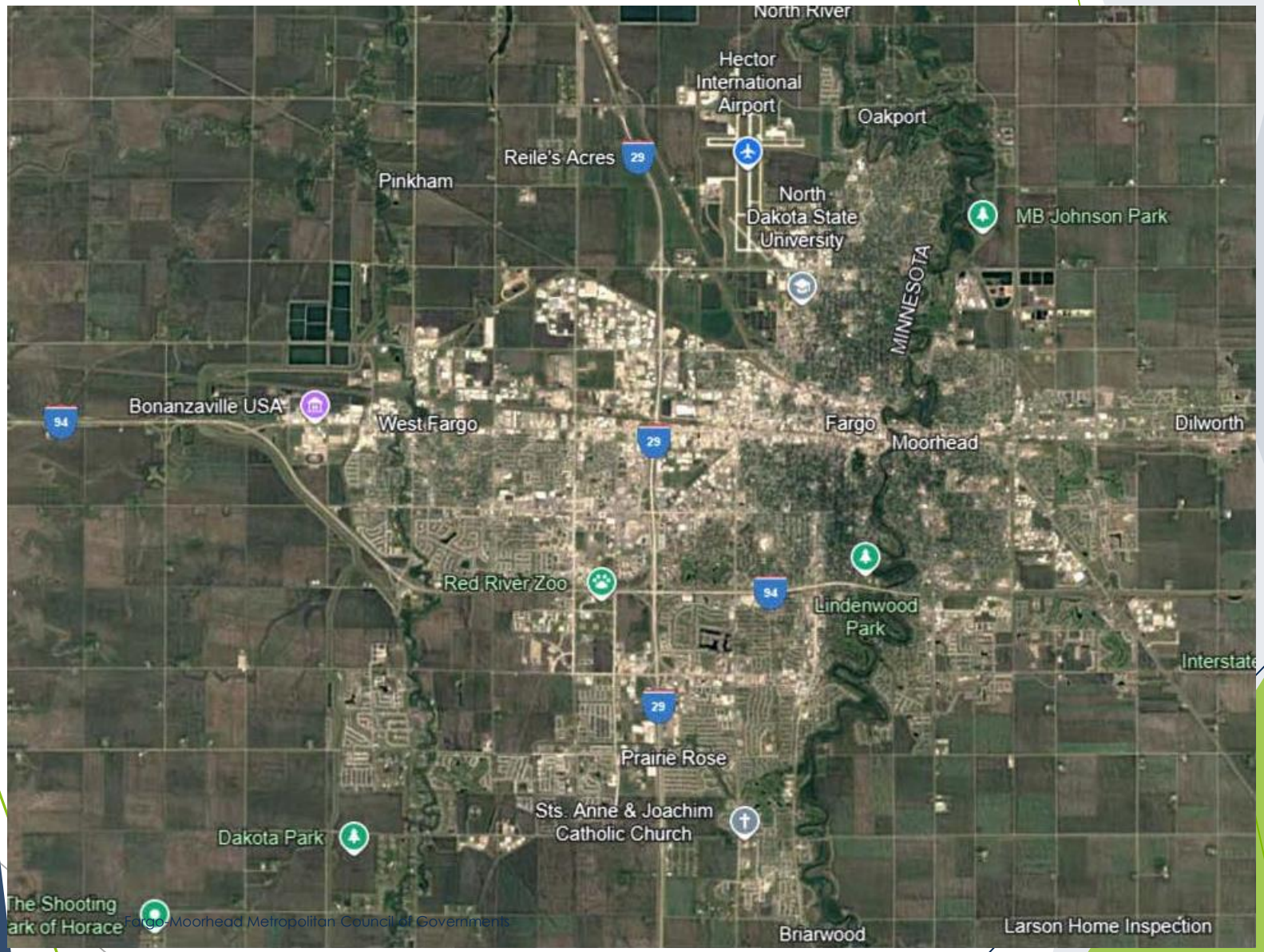
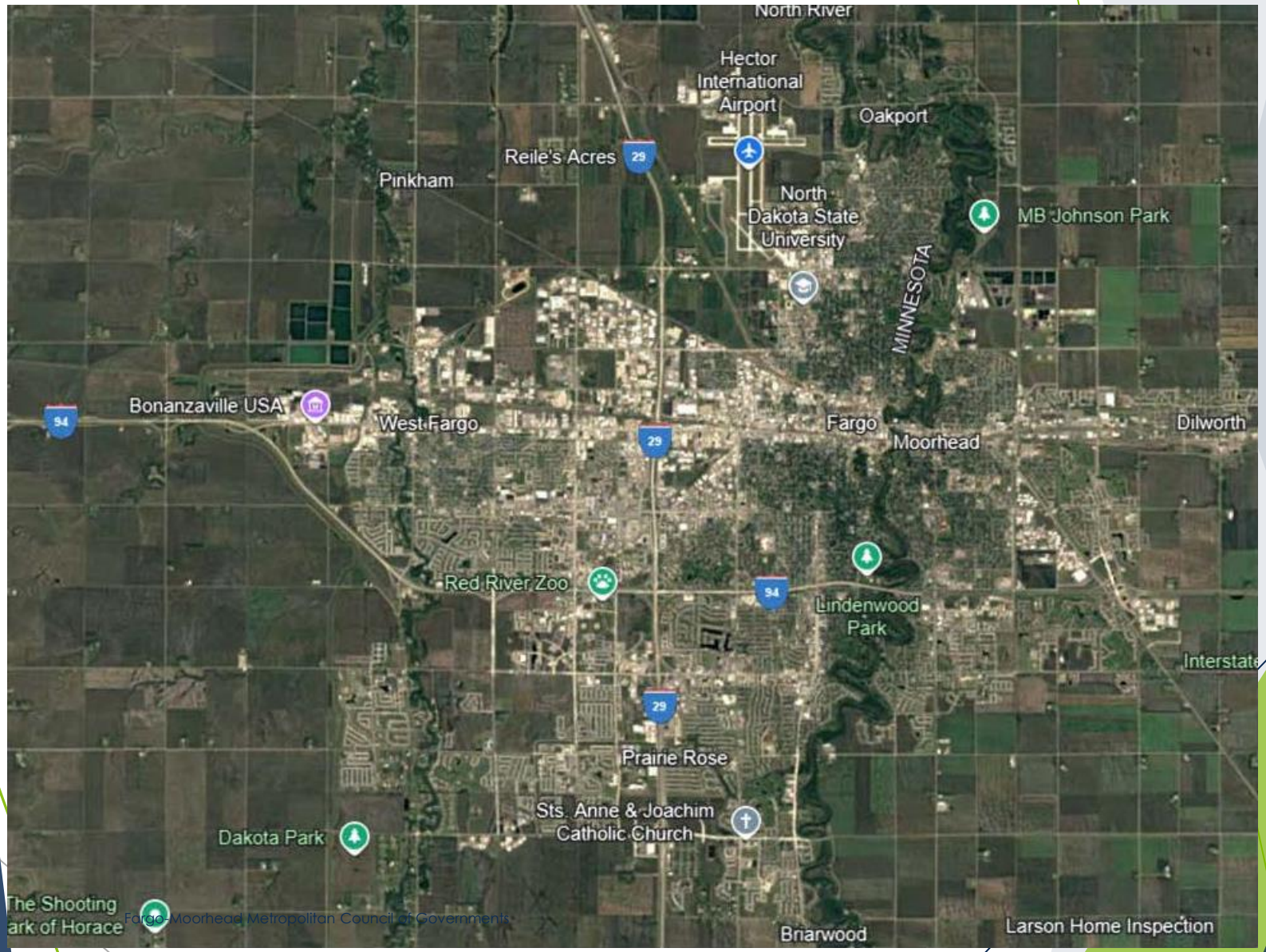
Growth Progression - 2007



Growth Progression - 2010



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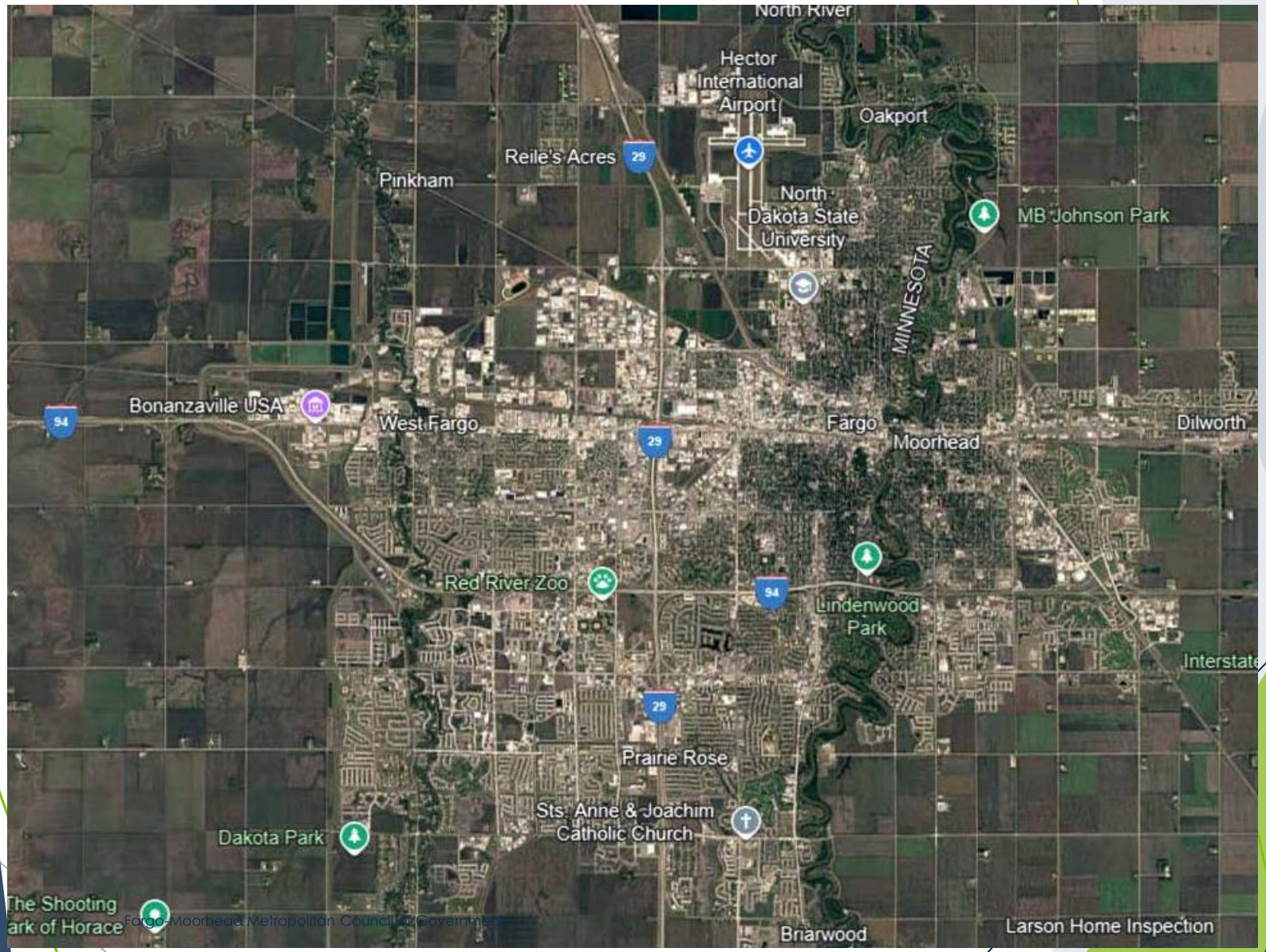
Growth Progression - 2015



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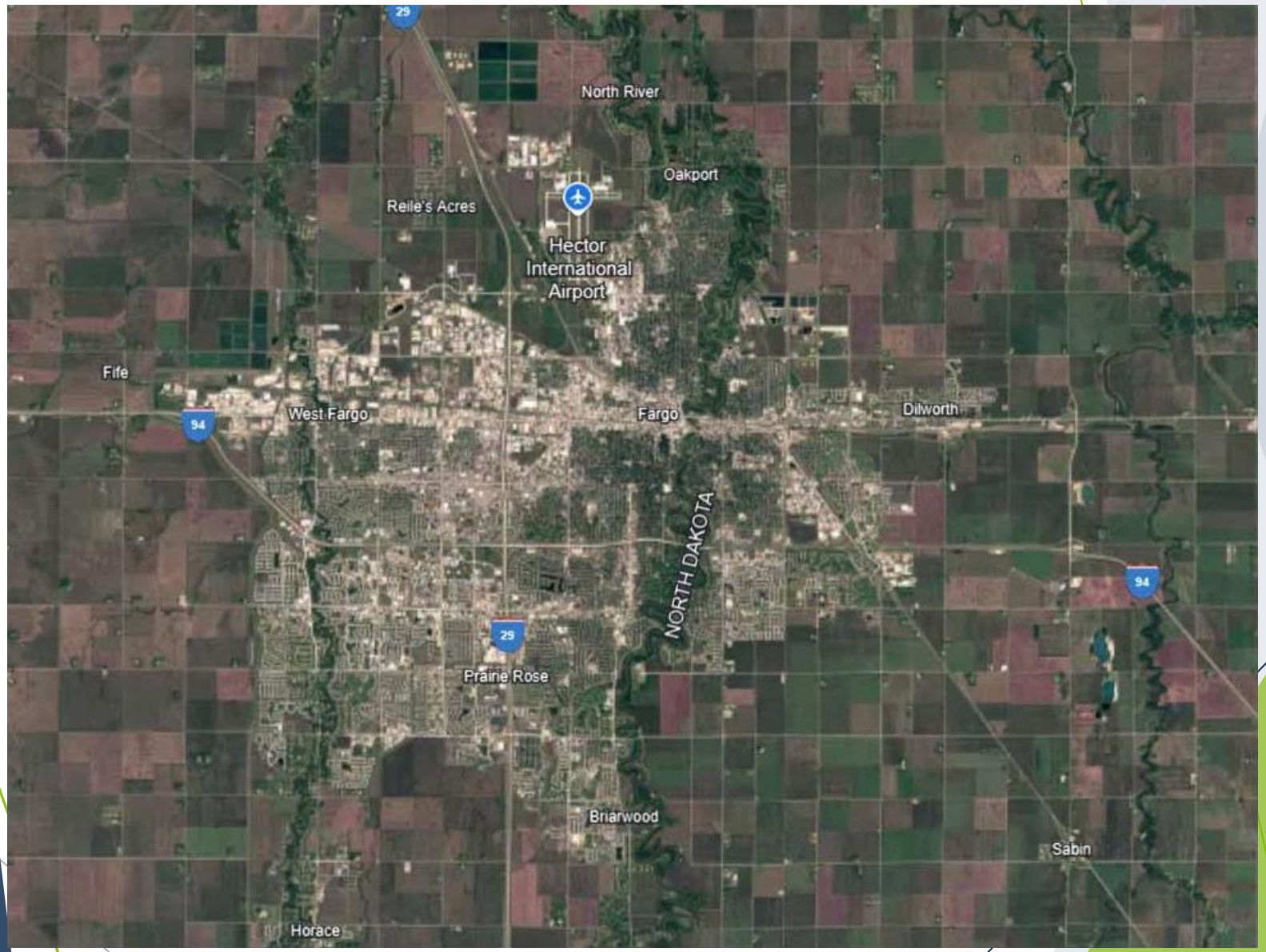
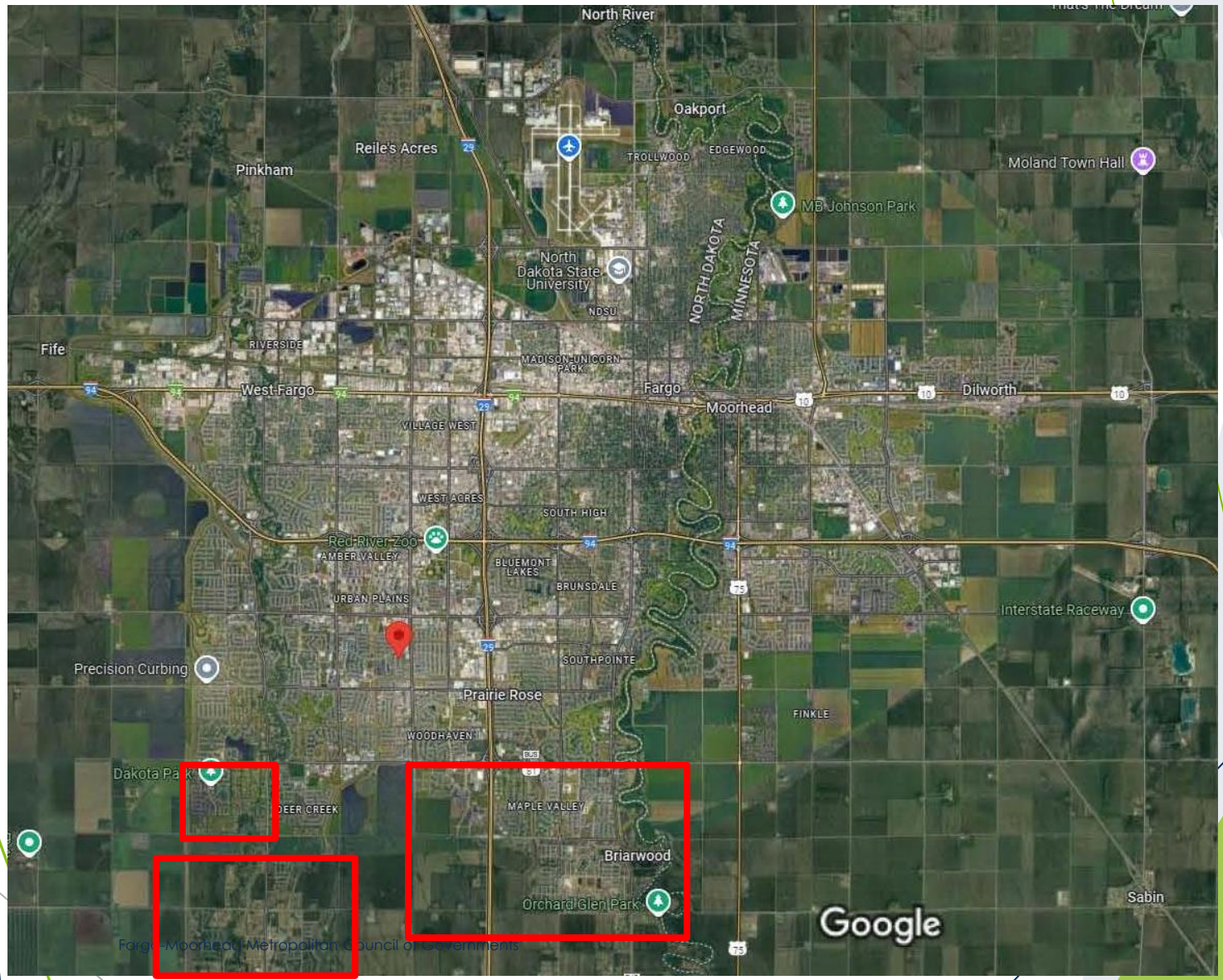
Growth Progression - 2020



Growth Progression - 2024



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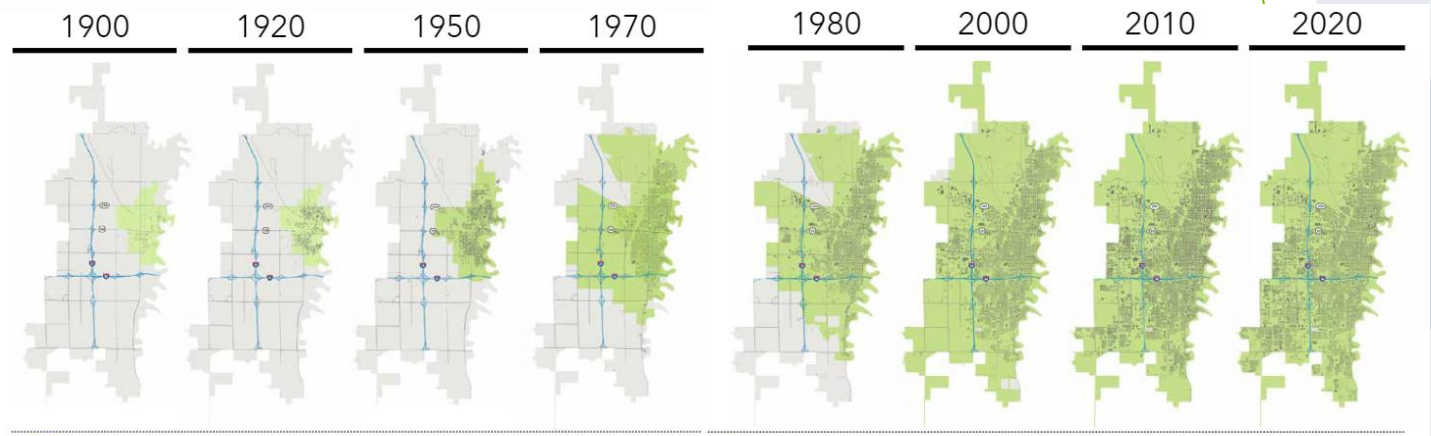
Fargo's Growth by the Decade



	1900	1920	1950	1970	1980	2000	2010	2020
Acres Inside City Boundaries	2,860	2,860	4,974	16,467	18,596	31,024	31,677	31,677
Population	9,589	21,961	38,256	53,365	61,383	90,599	105,549	125,990
Total Developed Acres	201	633	1,882	6,111	10,488	16,960	22,205	27,279
Persons Per Developed Acre	48	35	20	9	6	5	5	5

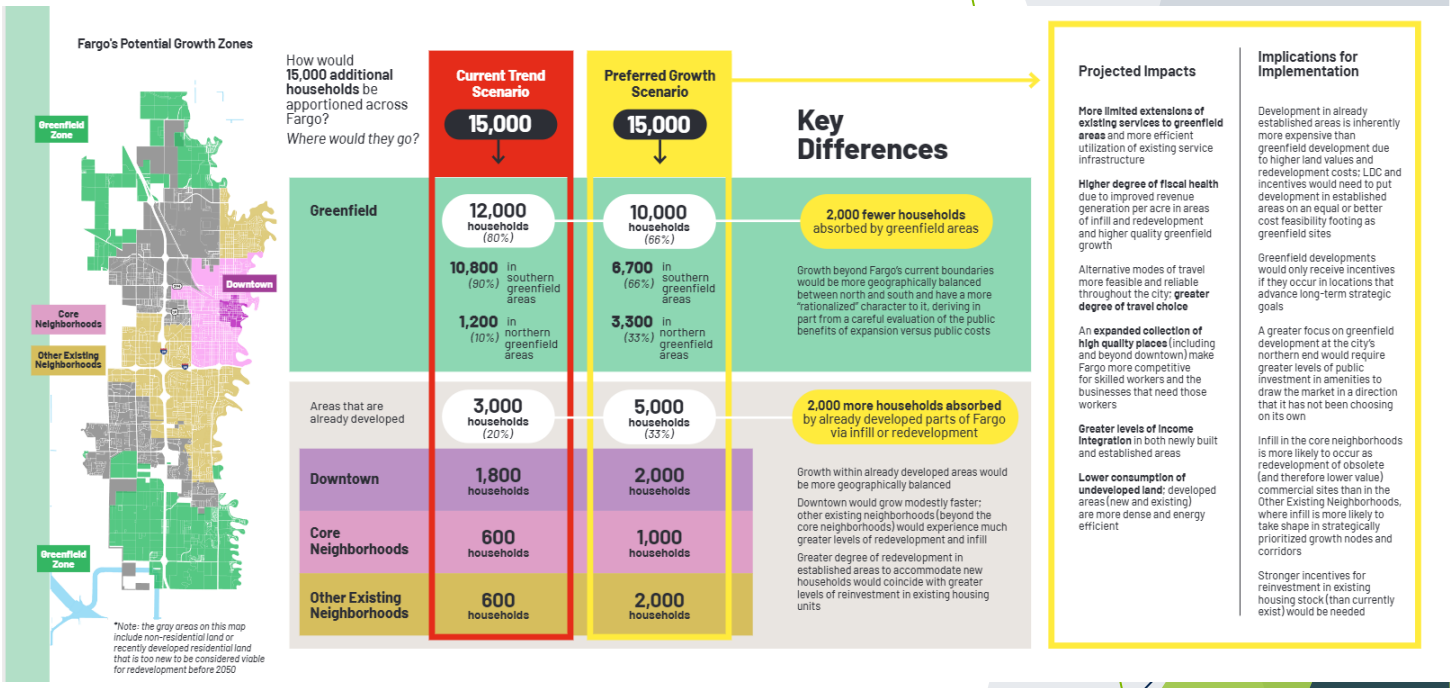
Persons Per Newly Developed Acre	1900-1920	1920-1950	1950-1970	1980-2000	2000-2010	2010-2020
	29	13	3.6	4.5	2.9	4.0

Source: U.S. Census Bureau; cob analysis of historical development footprint via UrbanFootprint

FARGO GROWTH PLAN 2024

Where to Grow

Population projections from FM Metro COG suggest that Fargo may grow by 15,000 households (or 30,000 residents) through 2045.



Preferred Growth Scenario

- **A commitment to *practical growth***
  - Far-sighted
  - Fiscally responsible
  - Good stewardship
  - Entrepreneurial
- **A more urban direction**
  - Greater mixing of uses, greater integration of housing types, better form and design
- **A greater focus on redevelopment and infill**
  - Shift from current trend of 80% growth in greenfield/ETJ to no more than 66%

Context-Sensitive Expectations

Four Models to Convey Fargo's Context-Sensitive Expectations

1. Fargo's Transect
2. Place Types
3. Growth Grid
4. Growth Center

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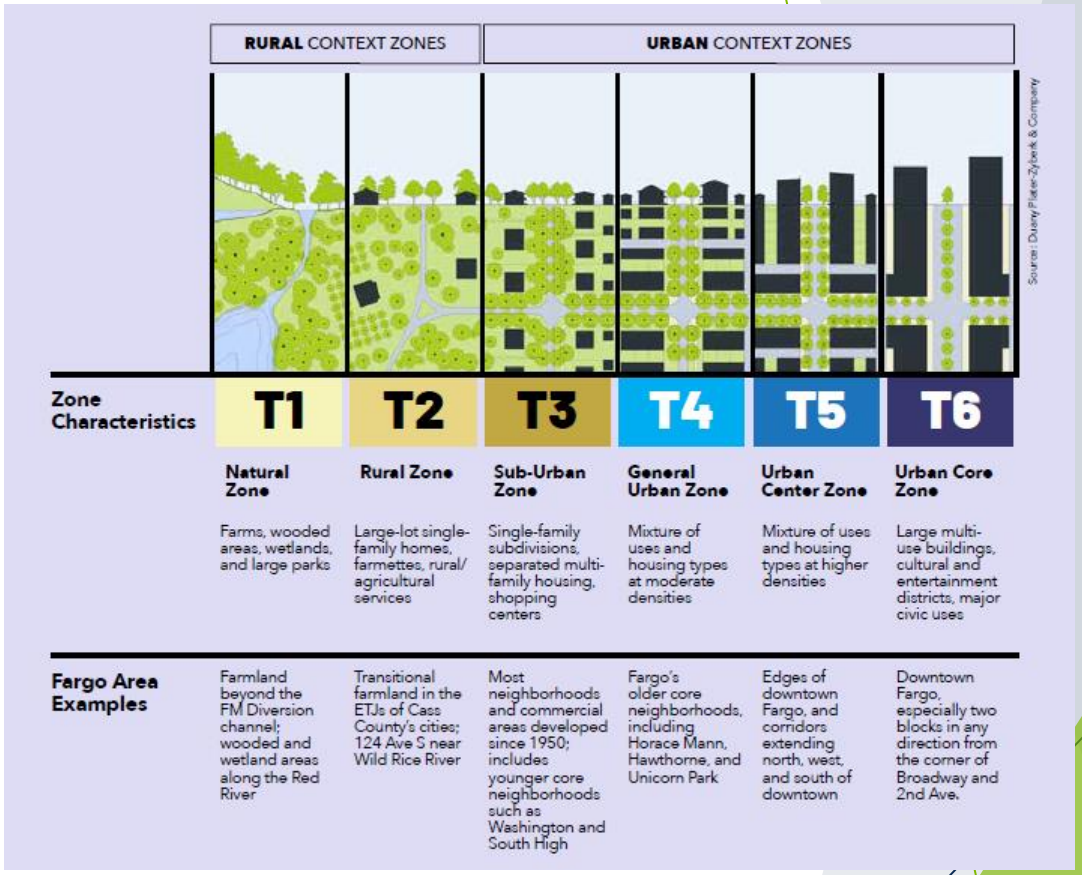
Context-Sensitive Expectations

Fargo's Transect



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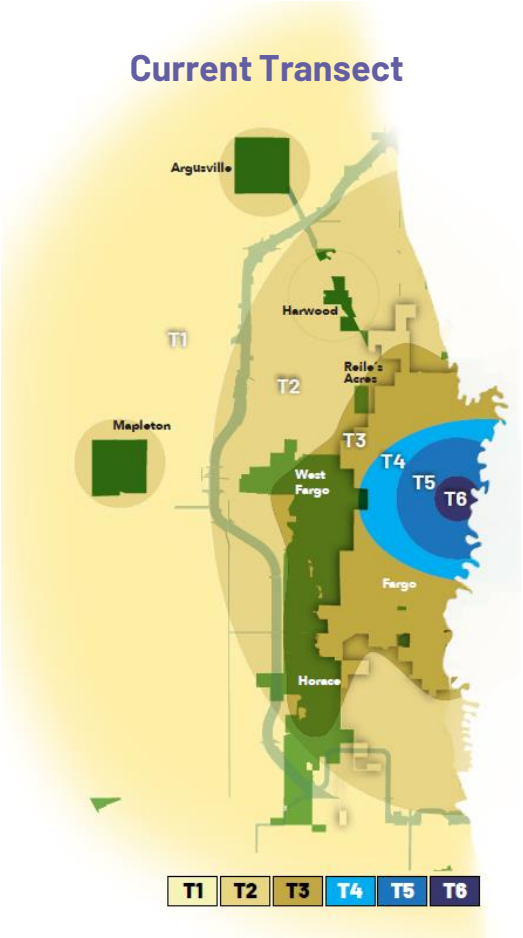
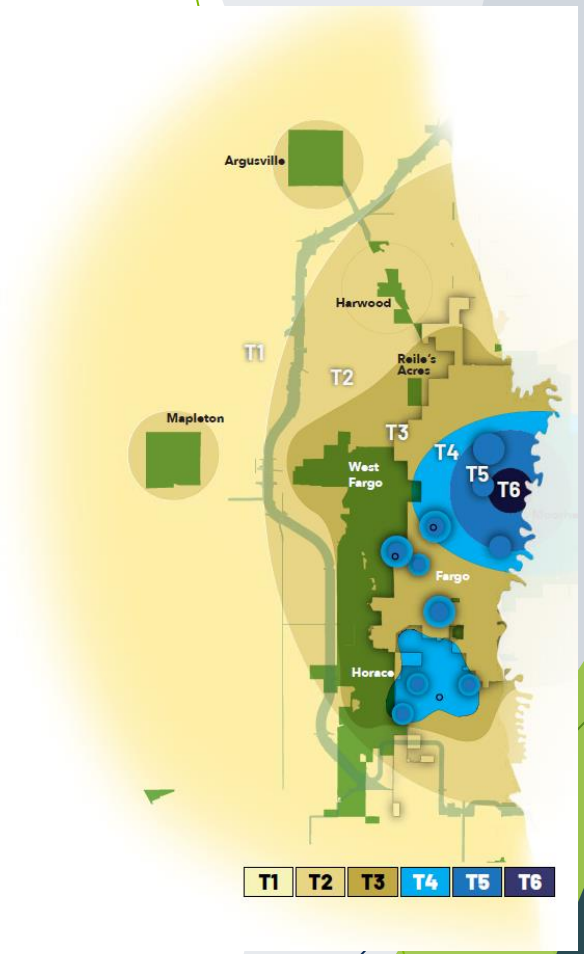
Context-Sensitive Expectations

Fargo's Transect

Current Transect





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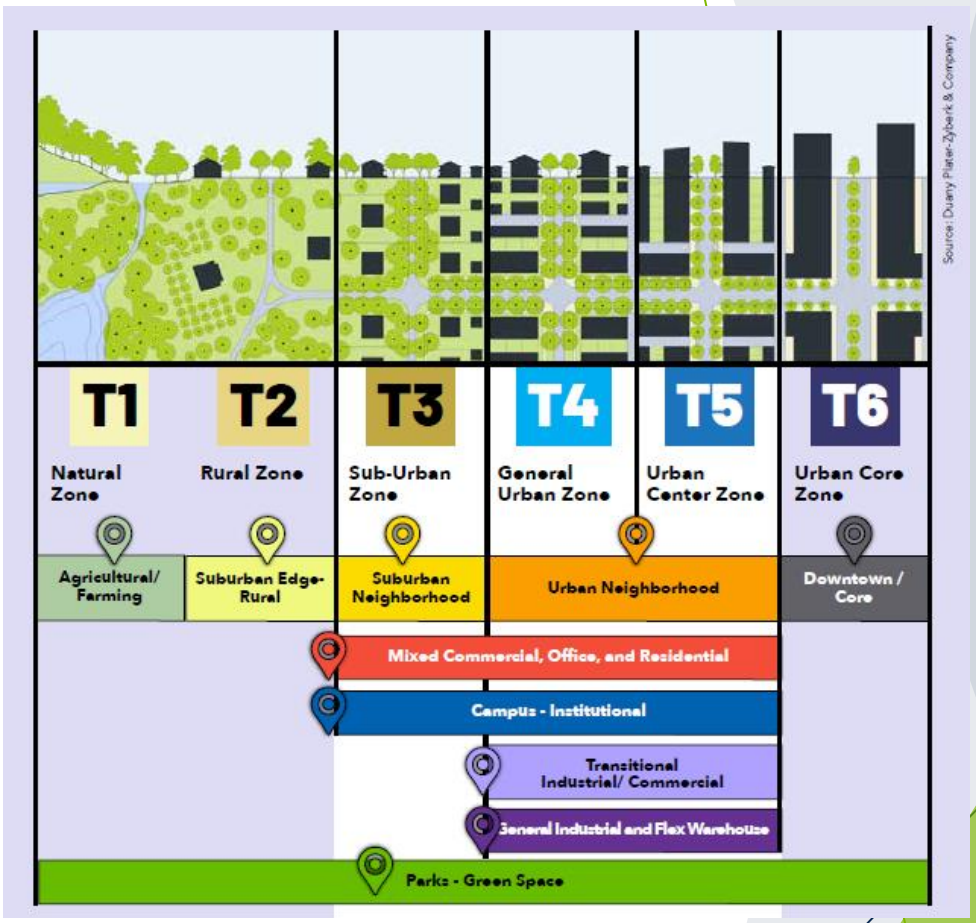
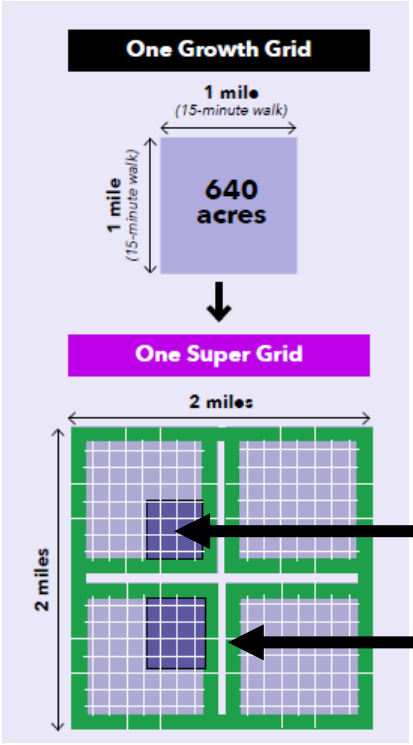
Context-Sensitive Expectations

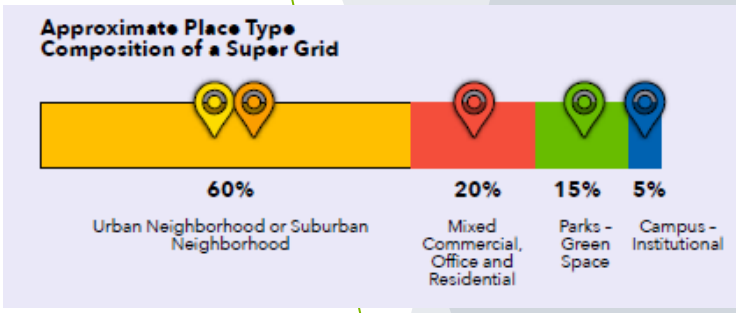
Place Types



Context-Sensitive Expectations

Growth Grid (ETJ)



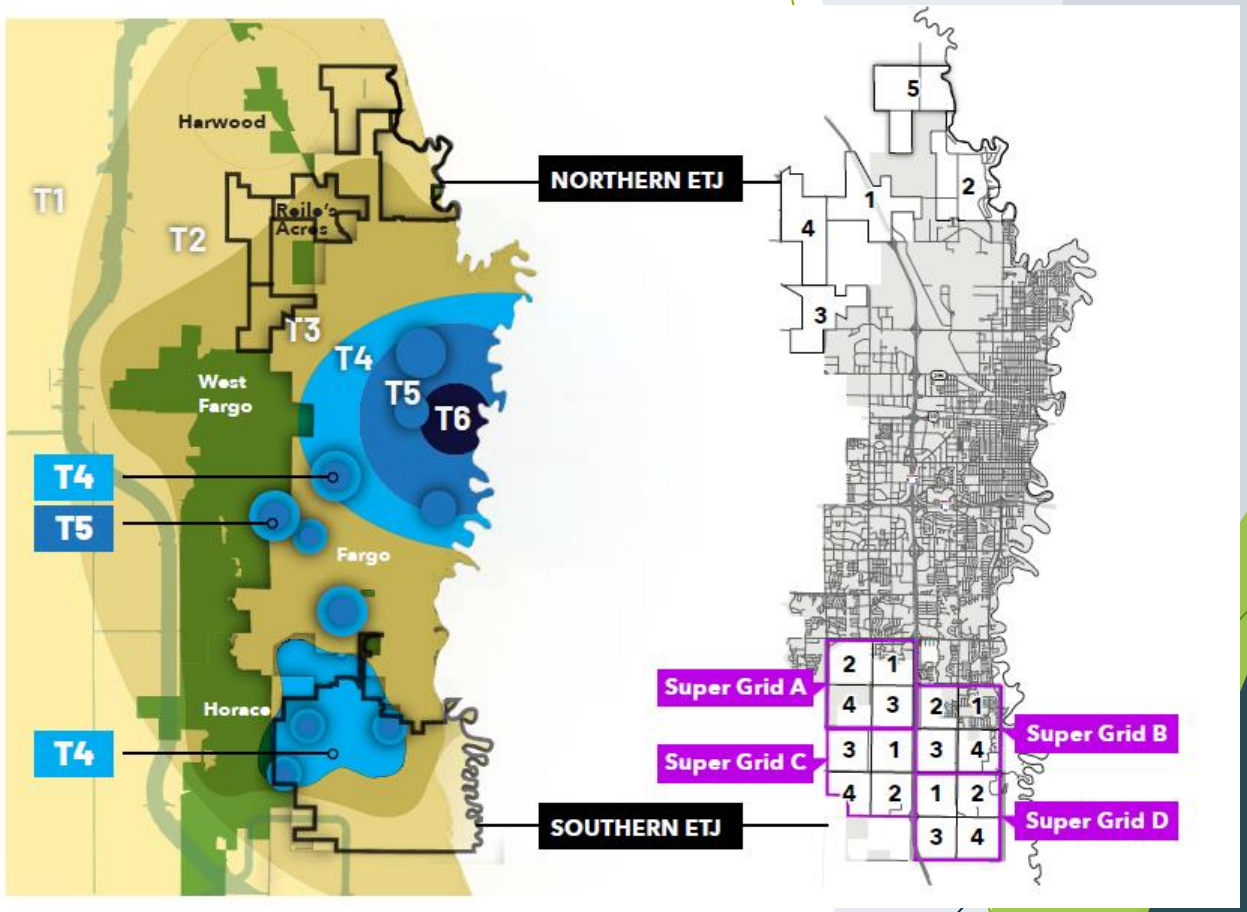


Mixed-use, pedestrian-scaled centers to serve residents of surrounding grids

Green corridors to limit commercial sprawl along arterials and concentrate commercial activity

Context-Sensitive Expectations

Growth Grid (ETJ)



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Context-Sensitive Expectations

Growth Centers

Regional Centers

Focus for major employment anchors and highest-density mixed use development

Community Centers

Focus for moderate-density mixed-use development with user radius of ½ to 1 mile

Neighborhood Centers

Focus for compact mixed-use development with user radius of under ½ mile

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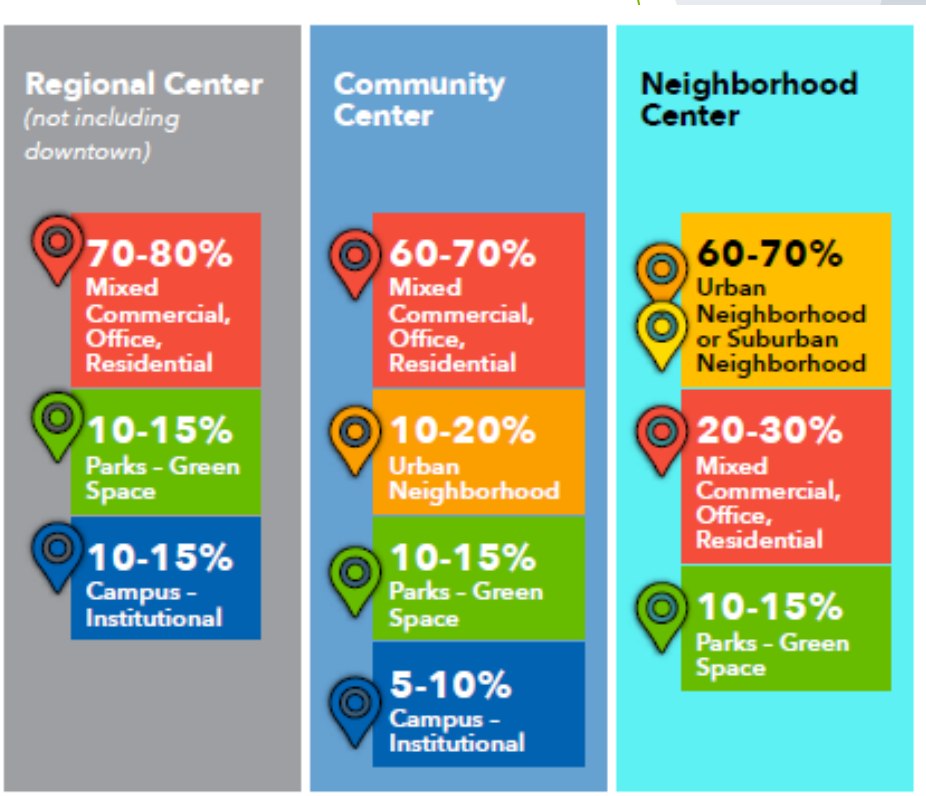
Context-Sensitive Expectations

Growth Centers



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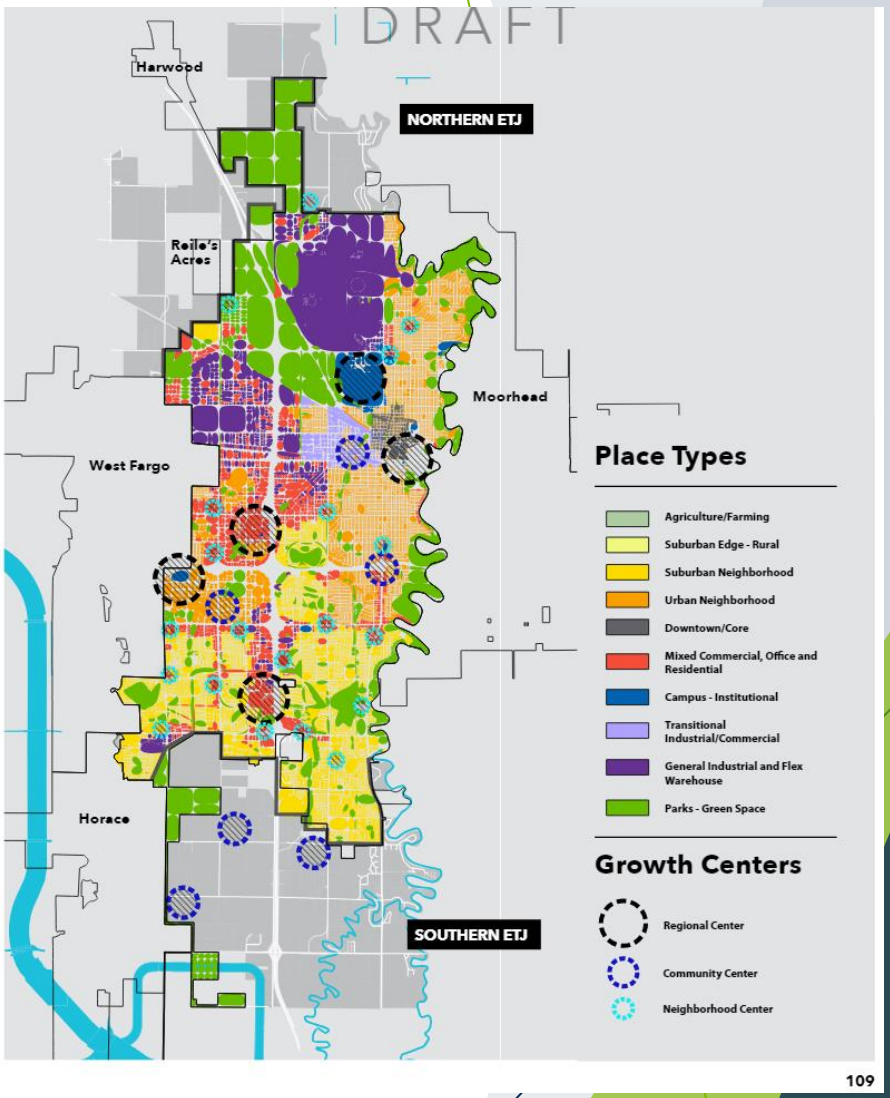
Context-Sensitive Expectations

Growth Centers



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Metro COG's Regional Role

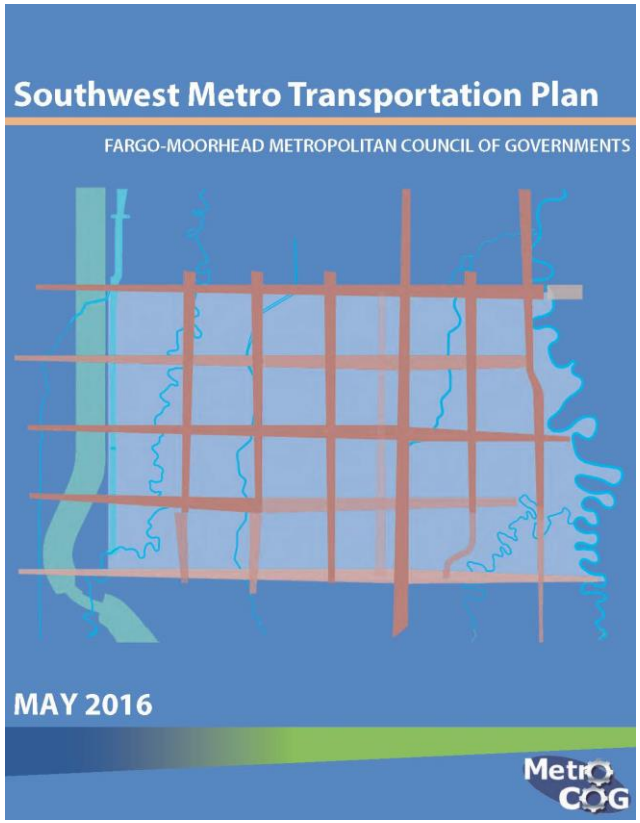
Long-Range Planning

Metro COG's Regional Role (cont.)

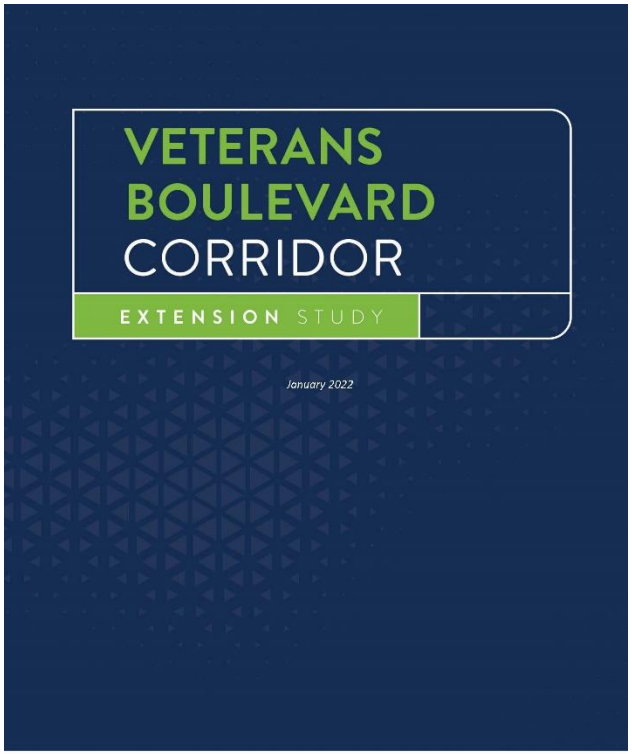
- Corridor Studies
  - Sheyenne Street – West Fargo
  - 52nd Ave S (PEL) - Fargo
  - 76th Ave S - Fargo
  - 17th Ave S - Fargo
  - 25th Street – Fargo
  - University and 10th Street – Fargo/NDDOT
- Multimodal Studies
  - Bicycle and Pedestrian Plan
  - MATBUS Transit Development Plan
  - Safe Routes to Schools Studies
  - Traffic Calming Studies
- Comprehensive Plans
  - Barnesville, MN
  - Dilworth, MN
  - Mapleton, ND
  - Clay County, MN
  - Kindred, ND
- Regional
  - Demographic Forecasts
  - Housing Needs Analysis
  - Traffic Counts

Metro COG's Regional Role

Sub-Area Plans

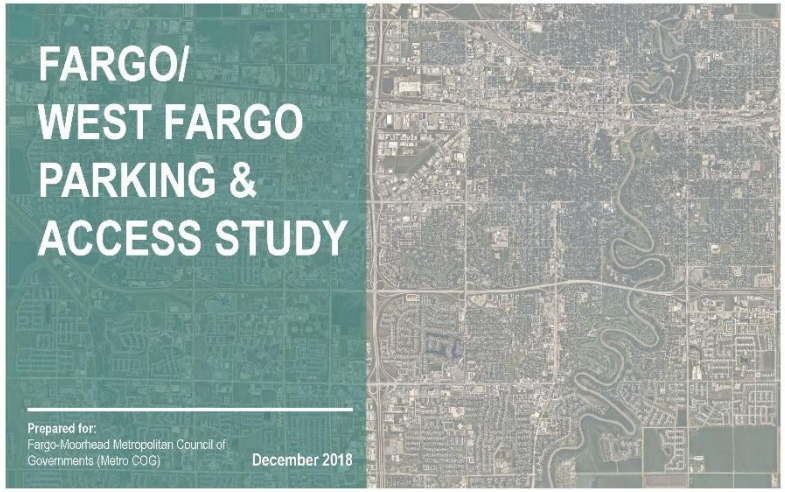


Corridor Studies

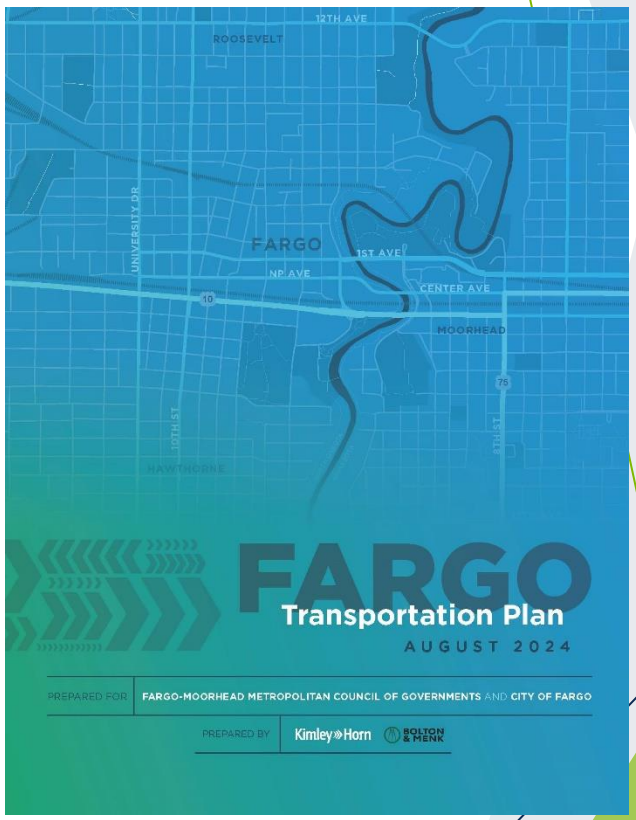


Metro COG's Regional Role (cont.)

Policy Plan



Policy Implementation



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Why Link Land Use and Transportation?

Federal Guidance

PARTNERSHIP FOR SUSTAINABLE COMMUNITIES

- Coordinating federal place-based programs and initiatives
- $236 million in Regional Planning and Community Challenge Grants

partnership for Sustainable Communities
an interagency partnership HUD • DOT • EPA

Guiding Principles

- **Provide more transportation choices.** Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.
- **Promote equitable, affordable housing.** Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- **Enhance economic competitiveness.** Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.
- **Support existing communities.** Target federal funding toward existing communities—through strategies like transit-oriented, mixed-use development and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- **Coordinate and leverage federal policies and investment.** Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy
- **Value communities and neighborhoods.** Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.

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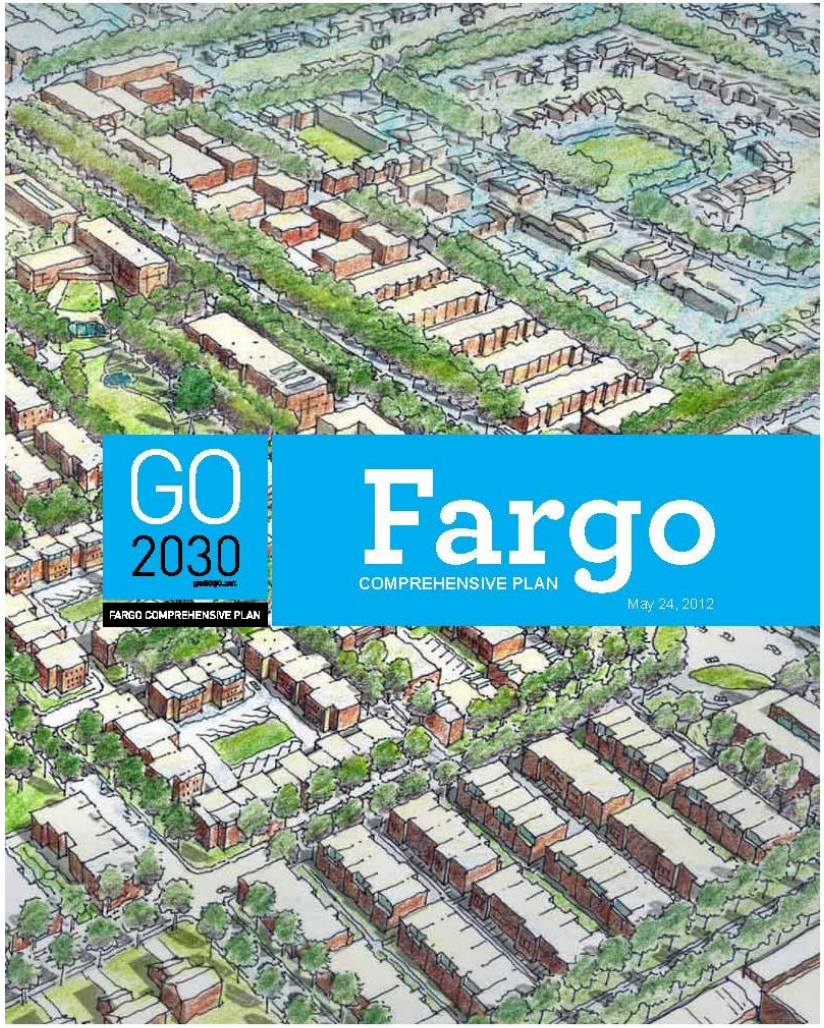
Why in Fargo?

Fargo's Comprehensive Plan



Issues – Fargo Comprehensive Plan

WATER AND ENVIRONMENT

Fargo will create permanent flood protection and ensure the quality and supply of this precious resource through water conservation. We will celebrate water by embracing the Red River of the North and the Sheyenne River and integrating sustainable rainwater management techniques into the fabric of the city. We will protect our natural resources and preserve the health and beauty of our environment.

ENERGY

Fargo will aggressively seek innovative strategies to support national energy independence. The community will find energy savings through efficiency measures and invest in renewable sources for the future.

ARTS AND CULTURE

Fargo will flourish with a stronger arts and culture movement. We will nurture and increase the presence of both the performing arts and the visual arts, and we will increase access to cultural events and arts-related educational opportunities.

HEALTH

Fargo will encourage healthy choices and improve the health of residents by enhancing awareness, increasing year-round recreational opportunities, increasing access to healthy food, and ensuring access to quality healthcare.

TRANSPORTATION

Fargo will transform its transportation system to encourage walking, biking, and transit. The City will coordinate infrastructure investments and land use policy in a supportive and synergistic way.

ECONOMY

Fargo will build on its agricultural and manufacturing heritage and will be known as a cutting-edge creative economy. We will educate and retain the best workforce in the nation and foster an innovative and entrepreneurial environment.

NEIGHBORHOODS, INFILL, AND NEW DEVELOPMENT

Fargo will promote attractive and welcoming neighborhoods by promoting a diverse and affordable housing stock. Fargo will support neighborhoods where residents can age in place, children can walk to school, and essential services are only a short walk away. Fargo will promote infill development, planned growth, and increasing density and vitality in its established neighborhoods.

EDUCATION

Fargo will uphold and improve its world class K-12 education system. Fargo will continue to embrace the universities and post secondary education institutions and acknowledge their positive influence on the economy, workforce, and culture of Fargo.

SAFETY

Fargo will ensure safety through excellent police and fire service. The design of neighborhoods, districts, and public spaces will work to promote safety by increasing visibility and eyes on the street.

Issues – Fargo Comprehensive Plan (cont.)

Catalysts

Catalysts are ideas that have the potential to accelerate development and enhance quality of life. The following list of catalysts was created in a public process with input from the steering committee and the technical committee. These ideas have the biggest potential to impact Fargo as it continues to grow and develop. Catalysts support and advance all of the guiding principles.

Walkable Mixed Use Centers
Walkable mixed use centers will be catalysts for well-designed, high density development that increases walkability, access to amenities, and provides other sustainable benefits of density.

Signature Streets
Signature streets will be destination public spaces in Fargo. They will include streetscape enhancements including wide sidewalks, landscaping, benches, pedestrian scaled streetlights, and other amenities.

Active Living Streets
Active living streets will have infrastructure to support pedestrians, experienced cyclists, recreational cyclists, transit, and automobiles. A network of active living streets will enable Fargo residents to walk or bike to their destinations safely and comfortably.

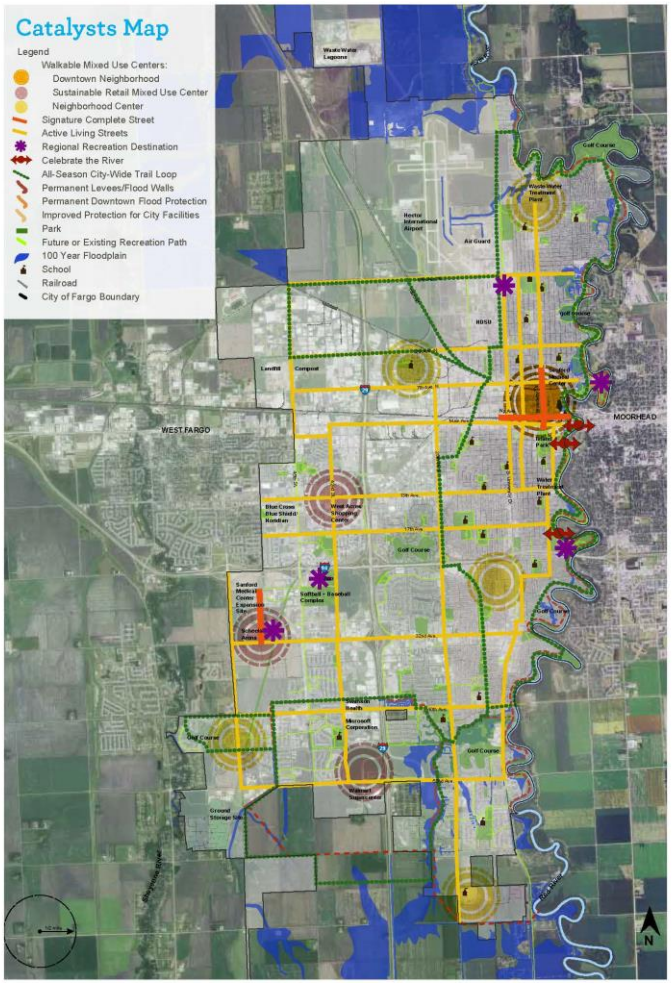
All-Season City-Wide Trail Loop
The city-wide trail loop will connect existing off-street trails and encourage recreation and active transportation throughout the city. The trail loop should be designed to function in the winter and include cross country ski paths.

Regional Recreation Destination
A regional recreation destination, such as a water park, indoor athletic facility, or a conservatory, will provide a community gathering space, promote good health, and will create an attraction for the region.

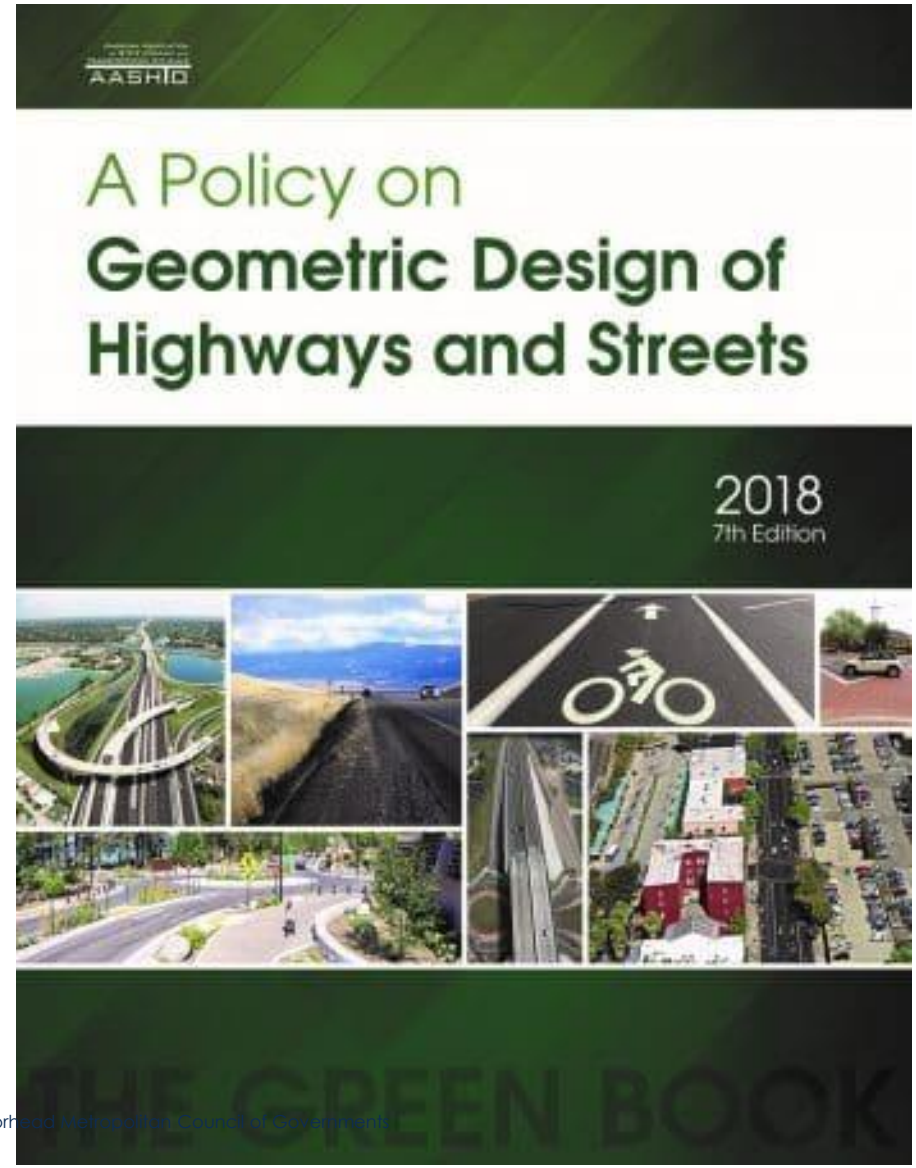
Celebrate the River
Flooding from the river has been a threat in years past, but there is potential to create great public spaces next to the river. These locations would give access to the river and can potentially be combined with flood protection and development projects.

Permanent Flood Protection
Permanent flood protection is necessary for the continued advancement of Fargo. Permanent flood protection would give businesses confidence to invest in Fargo and ensure the city is protected from future flooding threats.

Energy Efficiency and Renewable Generation
Energy efficiency and renewable generation initiatives have the potential to give Fargo a competitive advantage with low energy costs, a high tech smart grid, and reliable power in the uncertain energy future. These initiatives also improve the health of the environment.



Civil Engineer's Bible



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Conceptualizing the Linkage of Land Use and Transportation

Realizing Barriers and Setting Desired Outcomes

Parking and Access Study - Issues

Development pattern assessment

The region's land use patterns are a product of the existing zoning codes, regulations, and transportation policies currently in place. Assessing the site design elements in Fargo and West Fargo today provides valuable insights into which design tools and strategies should be used in shaping the future. Five primary issues were identified and are outlined below.

Separated land uses

KEY ISSUES

Within this single block in Fargo, there are 11 separate land uses, which are each surrounding by their own separate parking field. This type of development pattern segments land uses, encourages additional car trips, disconnects traffic flow and travel patterns, and discourages pedestrian traffic and cross shopping.

Parking and Access Study - Issues (cont.)

Large number of curb cuts

KEY ISSUES

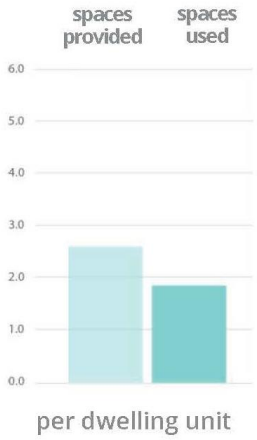
This example examines a portion of 42nd Street South between 13th Avenue South and 15th Avenue South. The west side of the street has seven driveways (curb cuts) to access land uses, while the east side of the street has one driveway to access businesses. Many curb cuts along a single blockface creates an uncomfortable and unsafe pedestrian environment, encourages additional car trips if cross access is not provided, segments land uses, and interrupts traffic flow/ circulation.

Parking and Access Study- Issues (cont.)

Shadow Ridge/ Shadow Bay is a 276-dwelling unit complex with a variety of apartment types ranging from studio to three-bedroom. While there are 188 outdoor parking spaces, there are also 516 enclosed garage spaces, which were unable to be examined as part of the utilization survey. These facilities were assumed as occupied since incoming vehicles were not able to access them.

Utilization survey results

Type	Inventory	Demand
On-street	7	7
Surface lot	188	163
Garage spaces	*516*	*361*
TOTAL	711	531



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Effectuating The Linkage

Roadway Typologies

Parking and Access Study – Roadway Typology

Regional Arterial. Act as a secondary alternative and direct connection to the Interstate system, serving large traffic volumes with highly controlled/limited interruptions.

Commercial Arterial. Act as gateways, connecting people from Fargo, West Fargo, and the wider region to the area's major destinations.

Mixed Use Arterial. Act as cross-town links and business corridors where people live, shop, dine, and work while supplying parking to support economic activity.

Mixed Use Collector. Connect residents from their neighborhoods to commercial nodes and corridors and are critical in enabling economic activity

Residential Collector. Connect neighborhoods and link residents with important facilities like libraries, schools and parks.

Mixed Use Neighborhood. Prioritize pedestrian safety and comfort over the mobility of cars.

Residential Neighborhood. Connect residents to each other and serve as shared space for neighbors to socialize and play.

Parking and Access Study – Roadway Typology

	Functional Classification	Grade Separation	Land Use	Pedestrian Crossing	Median	Travel lanes	Speed Limit	Parking	Access spacing			
									Traffic Signal:	Unsignalized Full Access:	Right-in/ Right-out:	Driveways:
Regional Arterial	Primary Artery	Interstate, other Regional Arterials	Commercial, Industrial, High-density residential	Grade separation, Signal	Yes	4 travel Lanes	45 mph	No	1/2-mile	None/ frontage system	1/4-mile	None
Commercial Arterial	Primary Artery Minor Artery	Interstate, probably Regional Arterials	Commercial, Mixed Use, Multi-family	Signal	Yes	4-6 travel Lanes	30-40 mph	No	1/4-mile	None	400 feet	None
Mixed Use Arterial	Minor Artery	Interstate	Neighborhood, Commercial, Mixed Use, Institutional	Signal, Median protected	Yes or No	3-5 travel Lanes	30-35 mph	Yes	600-800 feet	300-400 feet	200 feet	Preferred on minor street
Mixed Use Collector	Major Collector	No	Commercial, Mixed Use, Multi-family	Median protected, Crosswalk	No	3 travel Lanes	25-30 mph	Yes	N/A	300-400 feet	N/A	200 feet
Residential Collector	Minor Collector	No	Mixed Use, Residential	Crosswalk	No	2 travel Lanes	25 mph	Yes	N/A	300-400 feet	N/A	50-100 feet
Mixed Use Neighborhood	Major/ Minor Collector Local	No	Pedestrian-oriented commercial, Mixed Use, Residential	Highest priority	No/Blvd	2 travel Lanes	25 mph	Yes	600-800 feet	300-400 feet	N/A	150-200 feet
Residential Neighborhood	Local	No	Residential	Crosswalk	No	2 travel Lanes	25 mph	Yes	N/A	300-400 feet	N/A	30-50 feet

Example Typology

MIXED USE NEIGHBORHOOD

Mixed Use Neighborhood streets have a particular focus on prioritizing pedestrian safety and comfort over the mobility of cars. These streets are activity corridors that foster economic interaction and provide convenient parking opportunities to that effect. Mixed Use Neighborhood streets accommodate traffic at low speeds but limit access points to minimize pedestrian conflicts.

Land Use	Speed Limit	Travel lanes	Other	Parking	Pedestrian Crossing
Multi-family Residential, Ped-oriented	25 mph maximum	2 travel lanes	Boulevard	On-street parking	Crosswalk

Access spacing	Traffic Signal:	Unsignalized Full Access:	Right-in/ Right-out:	Driveways:
	600-800 feet	Block-Level (300-400 feet)	N/A	150-200 feet

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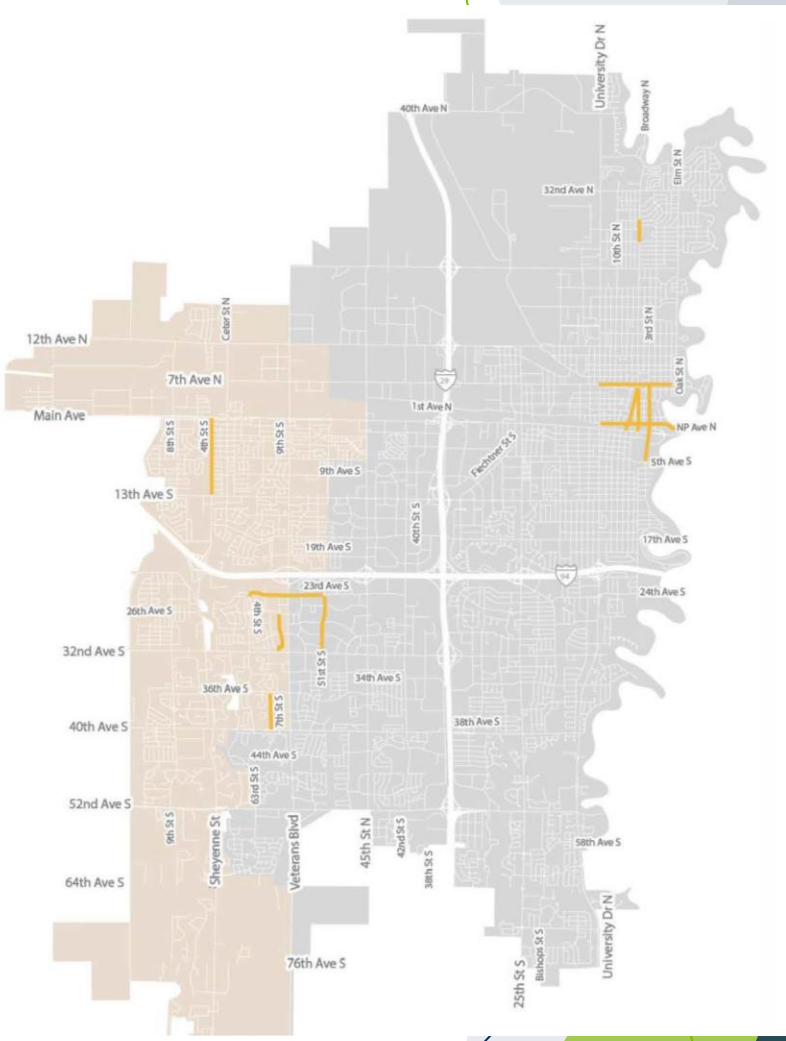


Conceptual Desired Outcome

Commercial Prototype

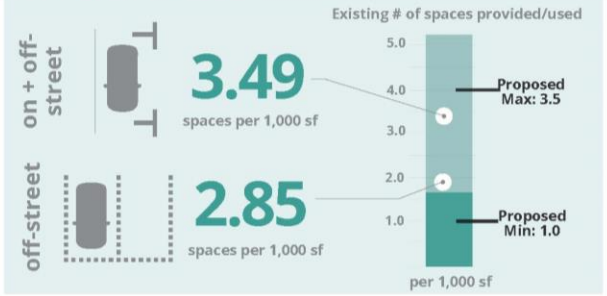
The framework presented here on this ¼-mile by ¼-mile tracts uses regular block sizes to set a walkable grid pattern with sidewalks and plentiful on-street parking to reduce the need for large surface parking lots. Shared parking fields are made feasible by slow traffic speeds and safe pedestrian crossing points. Building fronts are generally oriented toward the street. This development illustration is bordered by a Regional Arterial, which allows only stringent right-in/right-out vehicular access, so neighborhood connections are maintained with sidewalks and grade-separated pedestrian crossings.

Access points managed along the arterial streets while still allowing for a connected, walkable grid

Grade-separated pedestrian crossings needed along Regional Arterial to connect neighborhoods

Shared surface parking lots increase the efficiency of the parking pool and encourages walking

Prototype Parking Ratio



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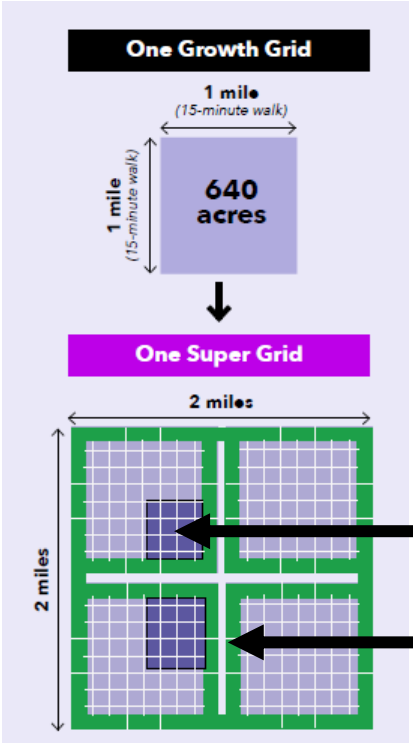
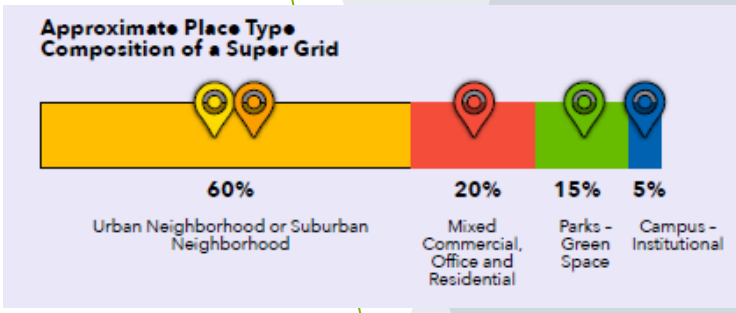
Context-Sensitive Expectations

Growth Grid (ETJ)





Mixed-use, pedestrian-scaled centers to serve residents of surrounding grids

Green corridors to limit commercial sprawl along arterials and concentrate commercial activity

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Furthering the Linkage

Creating Decision-Making Tools

STREET DESIGN GUIDELINES

Street design responds to the needs and context of the surrounding neighborhood. This means that an arterial serving a major regional shopping center must not look the same as a collector street serving a residential neighborhood because those areas have different needs and serve different transportation users.

To effectively design a street that provides for the needs of all transportation users, a 5-step decision-making process will be followed:

Step 1 – Development Context

Determine the desired or future development context. Street design must be responsive to the needs of the neighborhood, so understanding the long-term land use and design of the area is critical.

Step 2 – Prioritized Roadway Users

Determine the street's role in the larger network. Arterials, collector and neighborhood streets have different purposes and must look and function differently.

Step 3 – Street Type

The results of Steps 1 and 2 determine the street type from eight major categories, detailed on the next page.

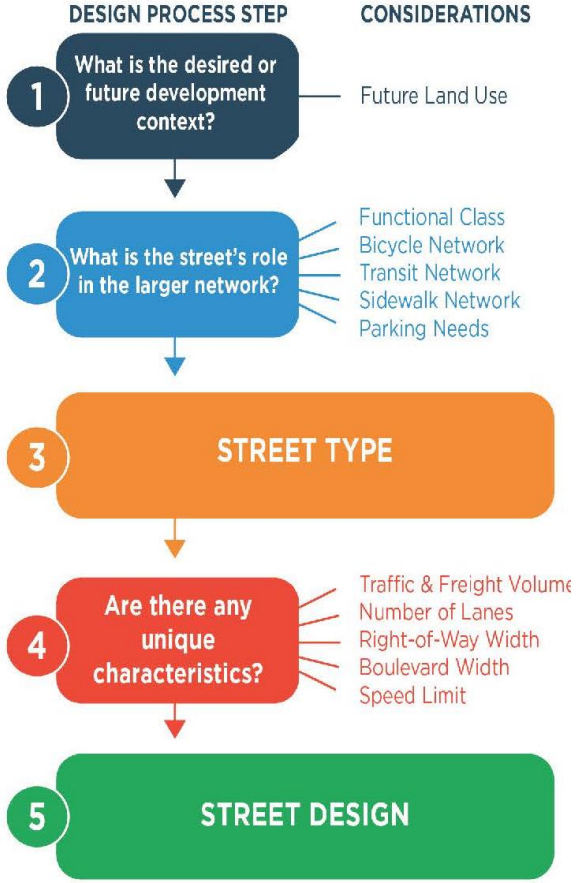
Step 4 – Unique Characteristics

Determine if there are unique characteristics to take into account. Is it a one-way street? What is the projected traffic volume? Will there be a lot of truck activity? What is the right-of-way width? How fast will vehicles be traveling on this street? All of these may influence the specific street design.

Step 5 – Street Design

The street design is customized based on applying any unique characteristics to the general street type guidance.

Figure 24 *City Street Design Process*



The street types described in this guide, originally developed in the 2018 Parking & Access Study, are intended mainly to be used as a framework to help guide the design of new streets as development occurs. Where possible, the guidelines should also be referred to when planning street reconstructions and major projects on existing streets to identify improvements that would bring the current street closer to the multimodal vision of this plan.

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Playbook Approach

Step 1: Development Context

Core Neighborhoods

Residential

Commercial

Mixed Use

Urban Center

Step 2: Street Type/Roadway Combination

Neighborhood

Collector

Arterial

Step 3: Operational Characteristics

- **Core Neighborhood Arterials:**
  - One way or Two-way
- **Other Streets:**

	Arterial		Collector		Local
	Prevailing Speed	**AADT**	**Prevailing Speed**	**AADT**	
Low	< 35 mph	< 10,000	< 30 mph	< 5,000	N/A
High	> 35 mph	> 10,000	>30 mph	> 5,000	N/A

Multimodal Toolkit

Bike Facility Design Options

Bike Route

Standard Bike Lane

Separated Bikeway

Bike Boulevard

Buffered Bike Lane

Shared Use Path

Multimodal Toolkit

Typical Intersection Types

Signal Control

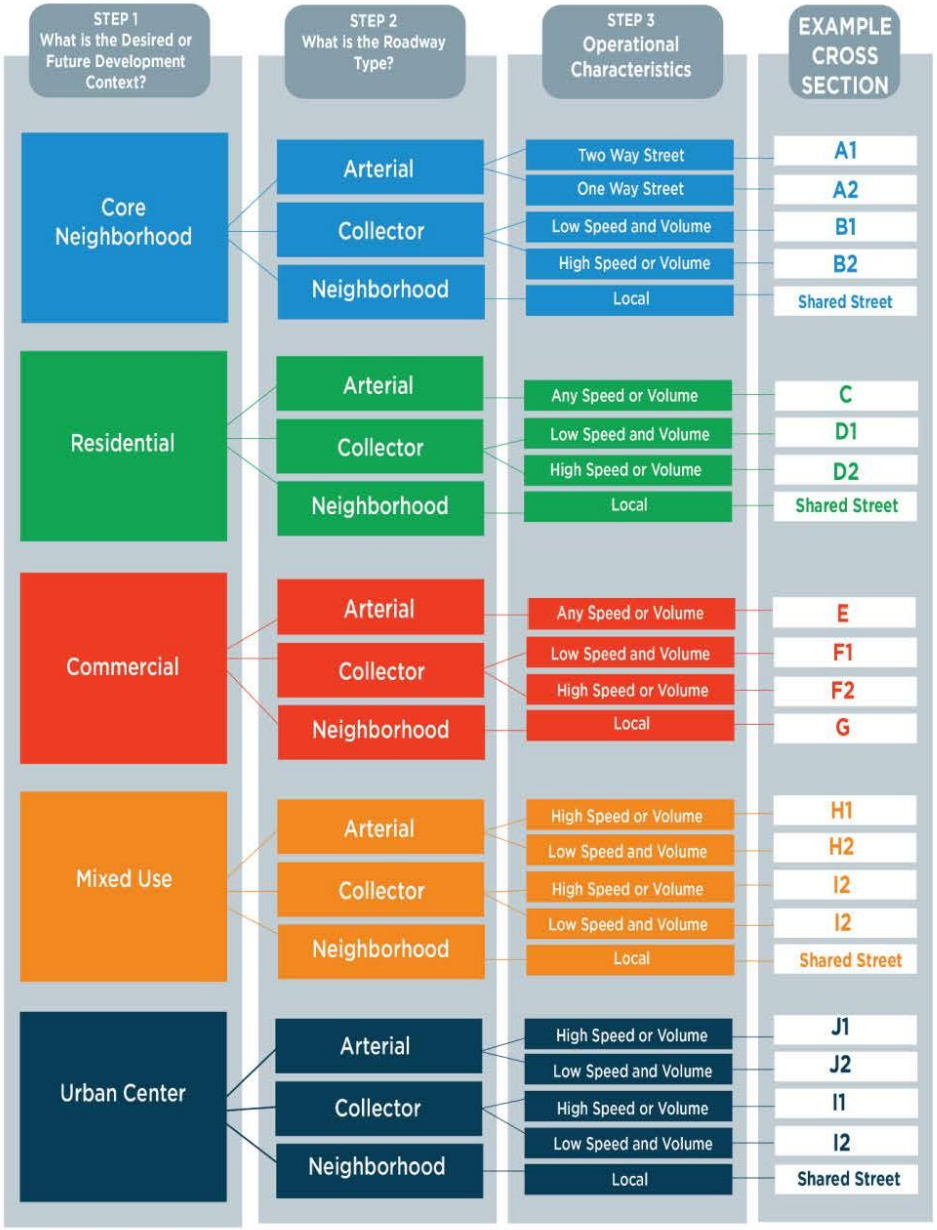
Roundabouts

Multimodal Intersections

Stop Control

Reduced Conflict Intersections

Street Design Matrix



Thank You!

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Questions…???

Find me at the social if you want to talk more