



FREDERICK
MARYLAND

Let's Move, Frederick

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In this presentation...

What are we doing

Why are we doing it

Where we currently are

What are our pedestrian priorities

What are our bicycling priorities



What are we doing: bicycling

- Making a comprehensive bicycling plan for the city
 - What kind of bike lanes where?
 - How do we build a network?
 - Is what we're doing helping people bike more?
- Programs for bicycling
 - Helmet giveaways
 - Urban biking classes
 - Bike parties, races, raffles
- Policy changes



What are we doing: walking

- Making a walking & pedestrian plan
 - Where are we missing sidewalks?
 - Where are sidewalks terrible?
- Programs for walking
 - Walkalong inspections
 - Walk to Work Week
 - Socks & shoes for Frederick residents experiencing homelessness
- Policy changes



Why are we doing it

- People asked:
 - 67% of survey respondents want more on-street biking routes
 - 78% want more off-street biking routes
 - 69% said a pedestrian-friendly neighborhood is appealing
 - 61% said a sidewalk is a desirable part of a neighborhood



Why are we doing it

- Common themes from listening sessions:
 - Fixing and building sidewalks
 - Making it safe to bike
 - Drivers don't feel safe passing bicyclists on the street
 - People want to walk and bike more



Responding with a vision

The City of Frederick will be a community where bicycling and walking is comfortable, useful, and safe and is affordable and accessible to all residents and visitors.

Plan Outline

1. Introduction
2. Vision
3. Existing Conditions
4. Programs
5. Bicycle Projects
6. Pedestrian Projects
7. Maintenance
8. Policy
9. Financing
10. Design Guidance
11. Implementation

Plan Outline

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Existing Conditions



Existing Conditions

- Reviews how Frederick residents walk and bicycle
- Reviews the science on walking and biking:
 - Environment (climate, weather, terrain)
 - Attitude
 - Infrastructure
 - Land use
 - Parking policy
- Examines Frederick through these lenses
- Develops recommendations to bring Frederick more in line with global best practices

Example: Weather

Bicycling

Cold weather **is not** a barrier. Wet weather **is** a barrier but can be overcome with culture and appropriate clothes. Examples: Finland (cold), Netherlands (wet), DC (similar climate)

- Lesson: Promote bicycling; educate re: clothes; give away appropriate clothing

Walking

Wet weather and cold **are not significant** factors to overall mode share. Heat and (lack of) shade **is significant**. Case studies: Brisbane, Toronto.

- Lesson: Plant and nurture street trees, especially along high-demand corridors (like US 40, East Street)



Programs

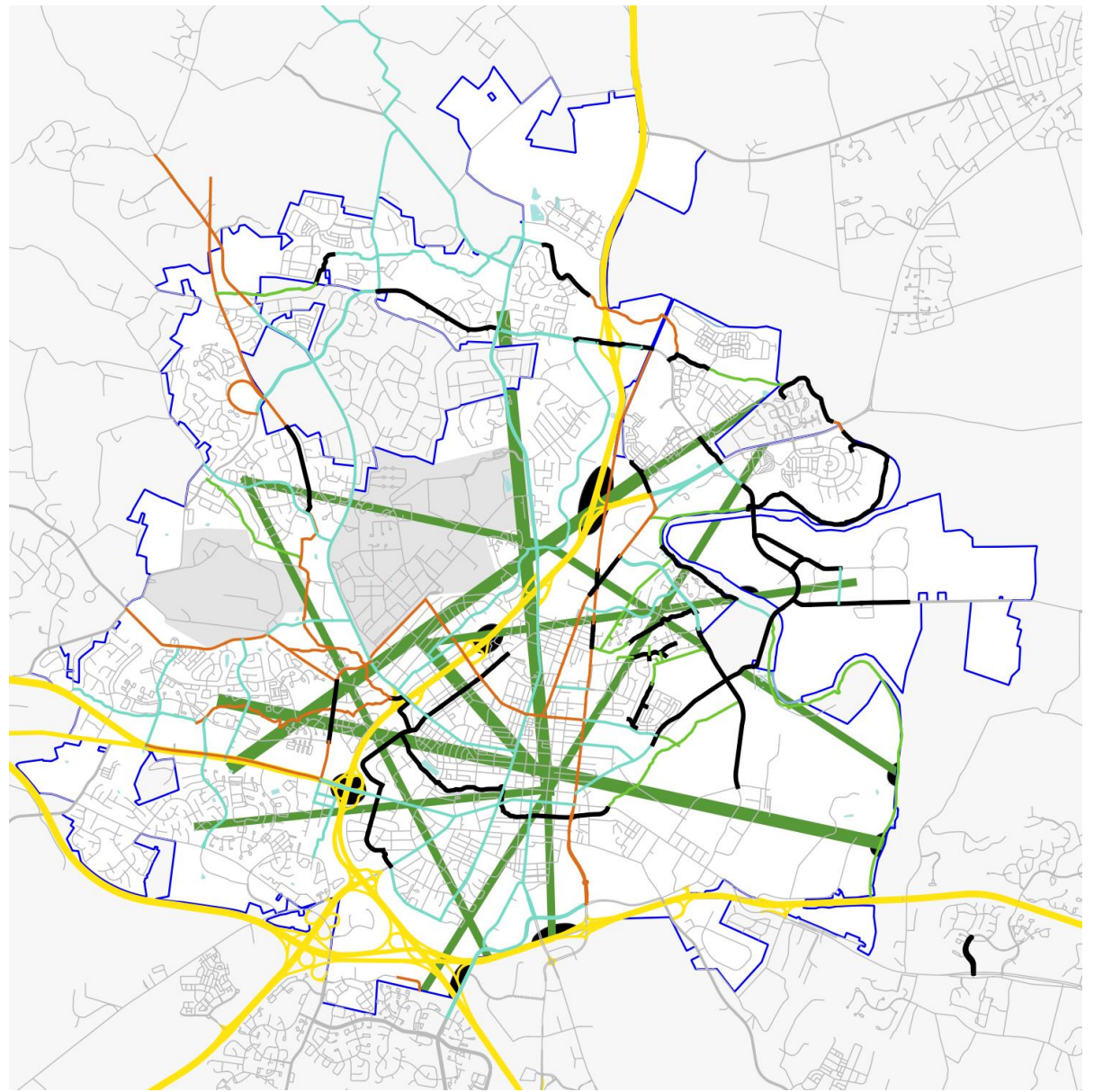
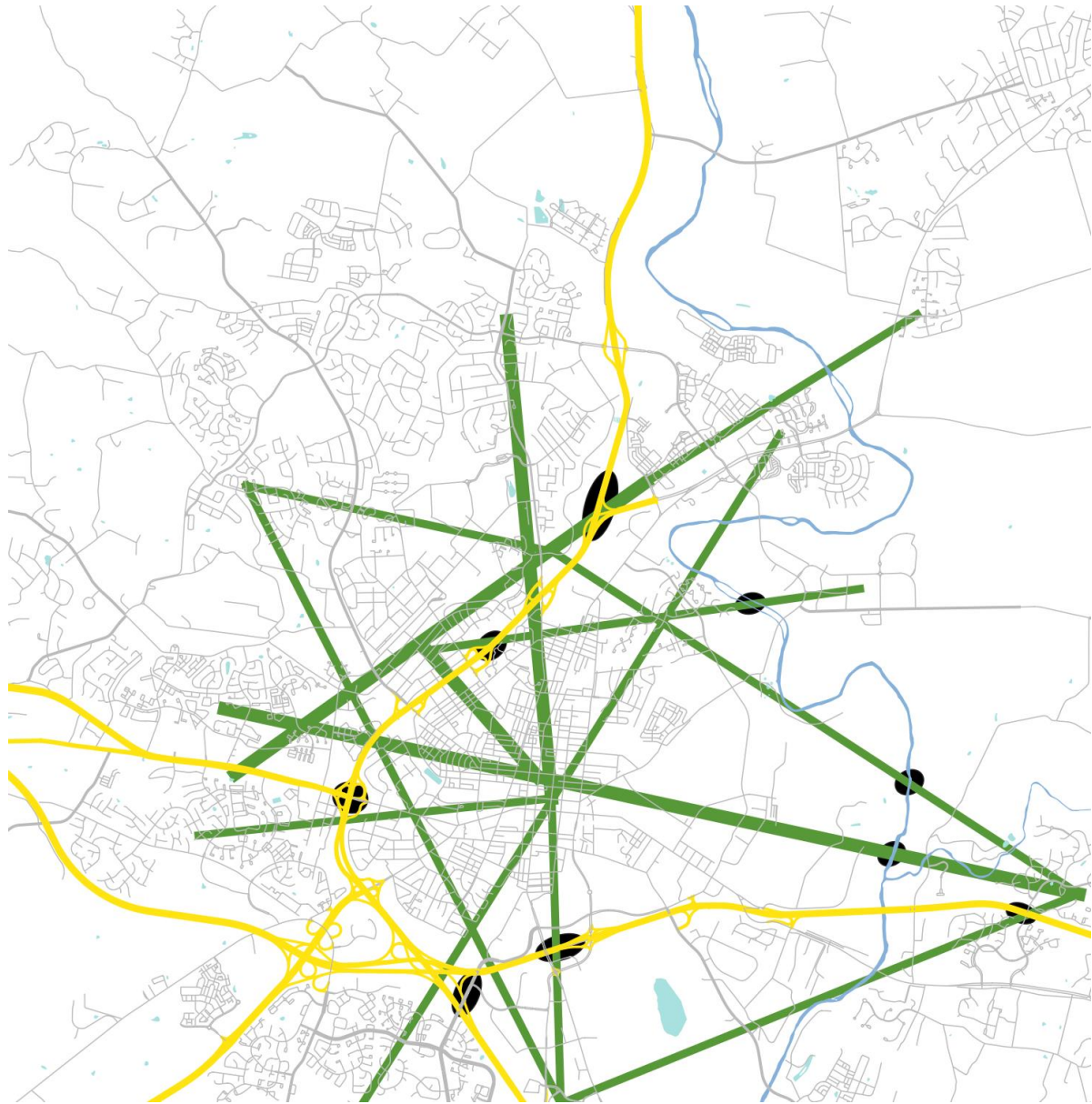
A photograph of three cyclists in a park-like setting. One cyclist on the left is wearing a blue and white jersey with stars. The cyclist in the center is wearing a green t-shirt and a white helmet. The cyclist on the right is wearing a white and yellow checkered jersey with 'San Diego' and 'VET' visible, and a white helmet. They are standing next to their bicycles, which are parked on a paved path. The background shows trees and a building.

- Ambitious plans around the world are foiled by lack of programmatic effort
- Why:
 - Make it normal to walk or bike
 - Make it affordable and accessible to bike
 - Deal with safety issues
 - Catch people at good times:
 - School kids
 - People who just moved

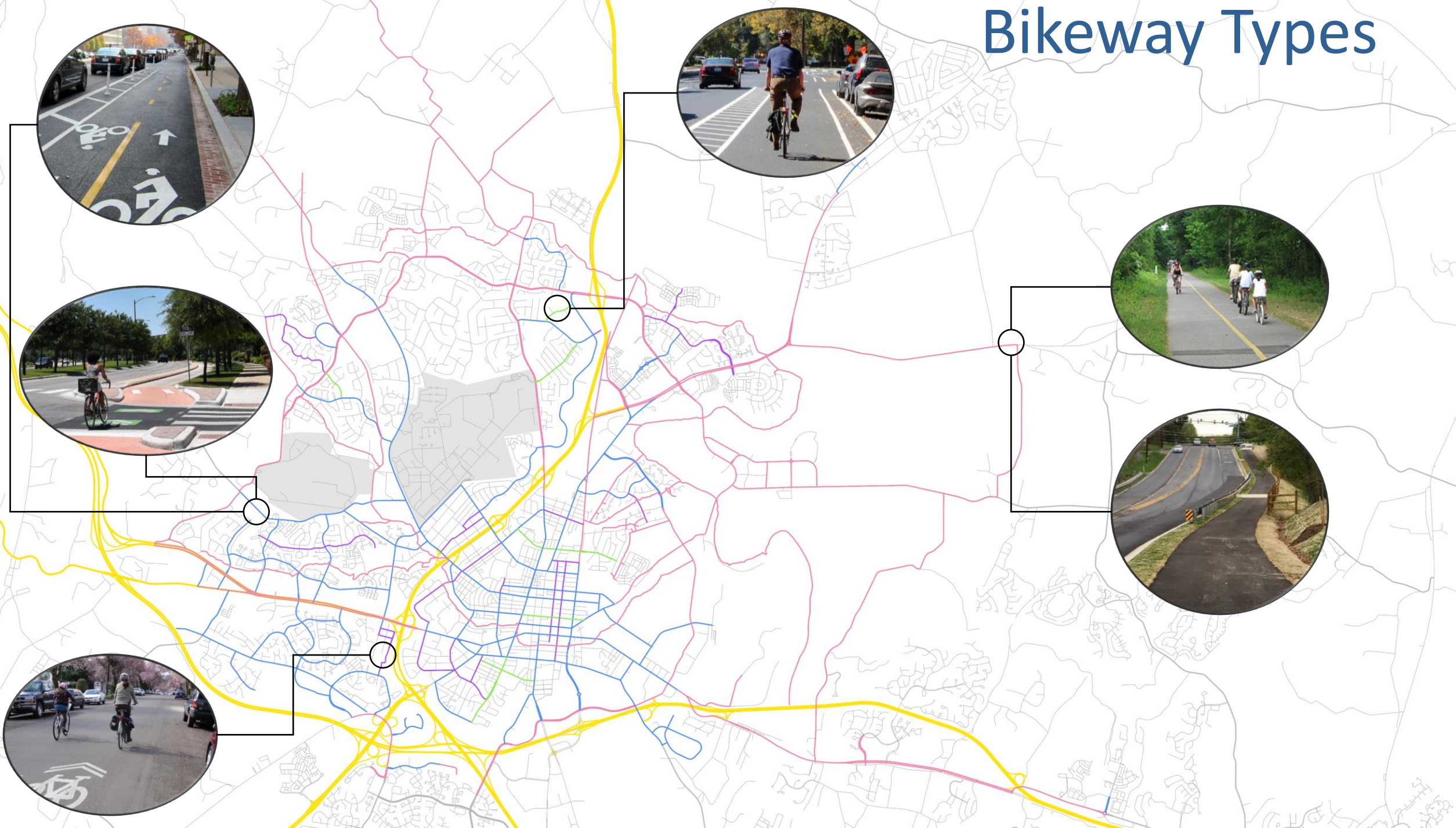
Bicycle Projects

- Created an everywhere-to-everywhere map
- Identified major barriers (highways and rivers)





Bikeway Types



Maintenance

- What: Get a grasp on costs and efforts under existing and new policies
- Why:
 - Maintenance teams are often salty about not being involved in the process
 - Maintenance is a critical problem for bicyclists, particularly
- Lessons:
 - Biggest cost is protected bike lane snow clearing
 - Sidewalk maintenance is NOT expensive



Policy

- Parking policy is key for promoting all non-driving modes
 - Enforcement of, say, unbundling parking from rent is an issue
- Zoning – heterogeneity at the pedestrian scale is important for bicycling and some walking, but not walking-to-school

Costs and Grants

- State grant structures incentivizes contractor rather than in-house expertise, raising costs significantly
- Our 125-mile bikeway network will cost \$123 million under this contractor model



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Thank you!

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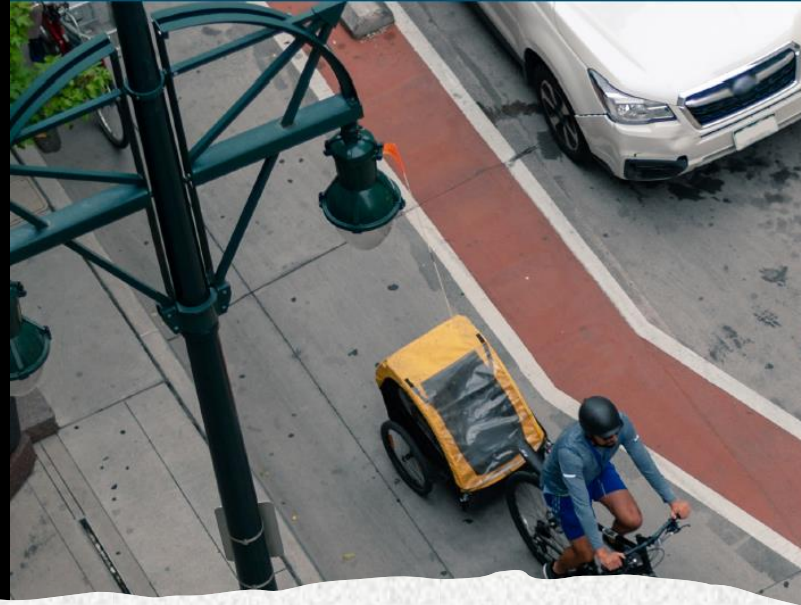


Designing for All Ages & Abilities

Contextual Guidance for High-Comfort Bicycle Facilities



BIKEWAY SELECTION GUIDE



fietsberaad
CROW

Design Manual for Bicycle Traffic

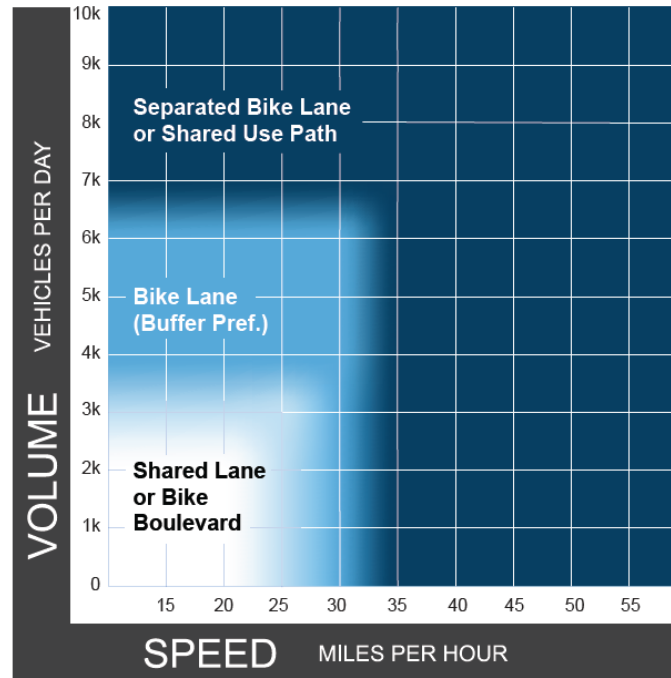


Choosing a schema

FHWA Bikeway Selection Guide



Figure 9: Preferred Bikeway Type for Urban, Urban Core, Suburban and Rural Town Contexts



Notes

- 1 Chart assumes operating speeds are similar to posted speeds. If they differ, use operating speed rather than posted speed.
- 2 Advisory bike lanes may be an option where traffic volume is <3K ADT.
- 3 See page 32 for a discussion of alternatives if the preferred bikeway type is not feasible.

- Detailed and excellent qualitative guidance
- Fuzzy rather than hard boundaries
- Not very stringent

CROW Design Manual for Bicycle Traffic

- Everyone should buy it (just €142 for the English version!)
- Assumes bicycle awareness and competency by drivers
- Optimized for Dutch standards, which does not include protected bicycle lanes



Road category	Speed limit motorized traffic (km/h)	Volume of motorized traffic (PCU / 24-hour period)	Cycle Network Category		
			Basic structure ($I_{\text{bicycle}} < 750$ / 24-hour period)	Main cycle network ($I_{\text{bicycle}} = 500-2,500$ / 24-hour period)	Bicycle highway ($I_{\text{bicycle}} > 2,000$ / 24-hour period)
Residential road	Walking pace or 30 km/h	< 2,500	Mixed traffic	Mixed traffic or bicycle street	Bicycle street (with right of way)
		2,000-5,000		Mixed traffic or cycle lane	Cycle path or cycle lane (with right of way)
		> 4,000	Cycle lane or cycle path		
Distributor road	50	Not relevant	2x1 lane	Cycle path	
	70			2x2 traffic lanes	Cycle/moped path

NACTO Designing for All Ages and Abilities



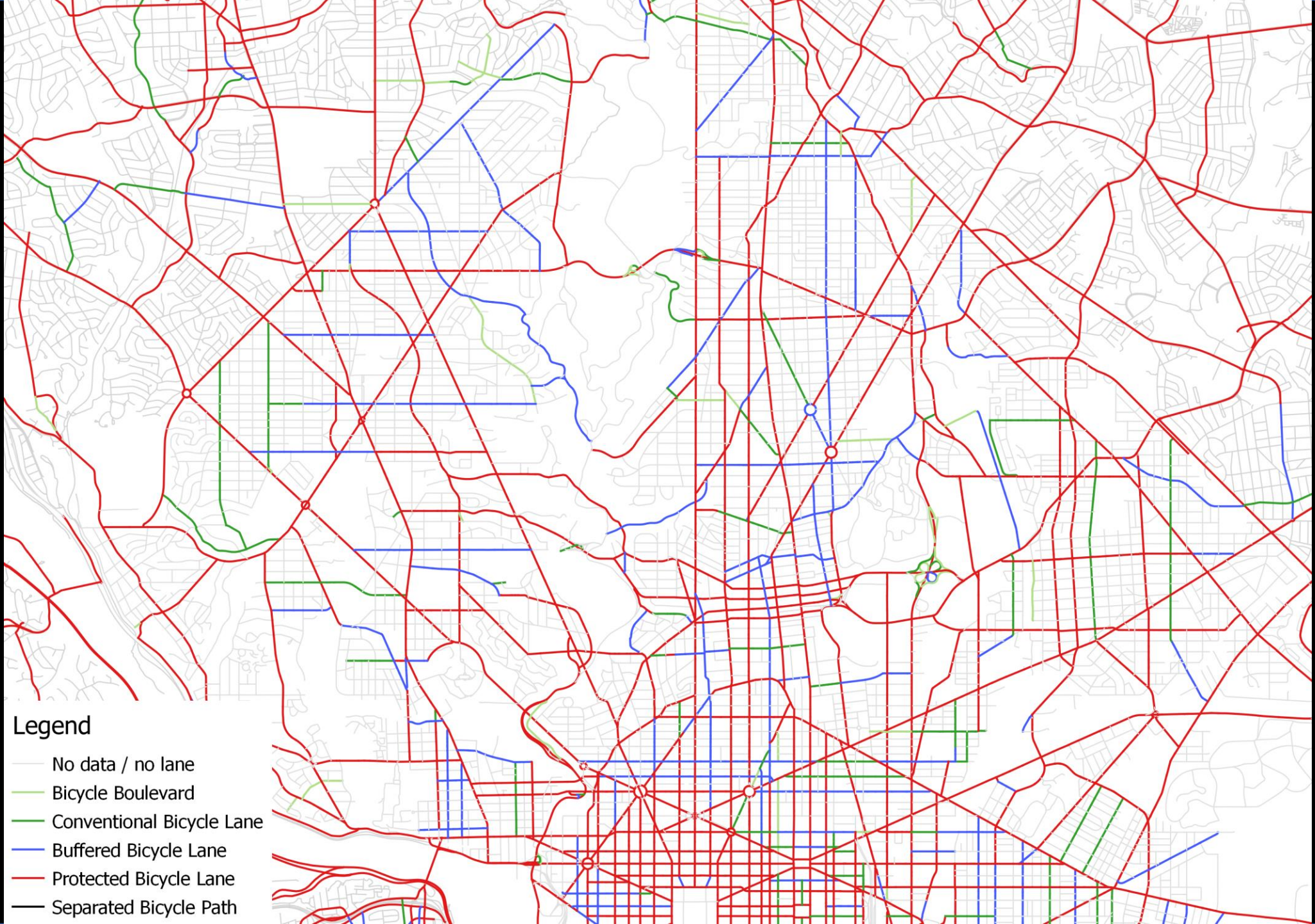
Designing for All Ages & Abilities

Contextual Guidance for High-Comfort Bicycle Facilities



Contextual Guidance for Selecting All Ages & Abilities Bikeways				
Roadway Context				All Ages & Abilities Bicycle Facility
Target Motor Vehicle Speed ¹	Target Max. Motor Vehicle Volume (ADT)	Motor Vehicle Lanes	Key Operational Considerations	
Any		Any	Any of the following: high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts [†]	Protected Bicycle Lane
< 10 mph	Less relevant	No centerline, or single lane one-way	Pedestrians share the roadway	Shared Street
≤ 20 mph	≤ 1,000 – 2,000 ≤ 500 – 1,500	Single lane each direction, or single lane one-way	< 50 motor vehicles per hour in the peak direction at peak hour	Bicycle Boulevard
≤ 25 mph	≤ 1,500 – 3,000	Single lane each direction, or single lane one-way	Low curbside activity, or low congestion pressure	Conventional or Buffered Bicycle Lane, or Protected Bicycle Lane
	≤ 3,000 – 6,000			Buffered or Protected Bicycle Lane
	Greater than 6,000	Multiple lanes per direction		Protected Bicycle Lane
Greater than 26 mph [†]	≤ 6,000	Single lane each direction	Low curbside activity, or low congestion pressure	Protected Bicycle Lane, or Reduce Speed
		Multiple lanes per direction		Protected Bicycle Lane, or Reduce to Single Lane & Reduce Speed
	Greater than 6,000	Any	Any	Protected Bicycle Lane, or Bicycle Path
High-speed limited access roadways, natural corridors, or geographic edge conditions with limited conflicts		Any	High pedestrian volume	Bike Path with Separate Walkway or Protected Bicycle Lane
			Low pedestrian volume	Shared-Use Path or Protected Bicycle Lane

- High-quality quantitative and qualitative design guidance
- Uses the common NACTO designs
- Prescriptive, so it's easy to fall back on the guidance



Legend

- No data / no lane
- Bicycle Boulevard
- Conventional Bicycle Lane
- Buffered Bicycle Lane
- Protected Bicycle Lane
- Separated Bicycle Path

Priorities: Pedestrians



Dutch Planning

Or: Origins and Destinations



Dutch Planning Sketch

1. Identify your origins
2. Identify your destinations
3. Draw lines between them

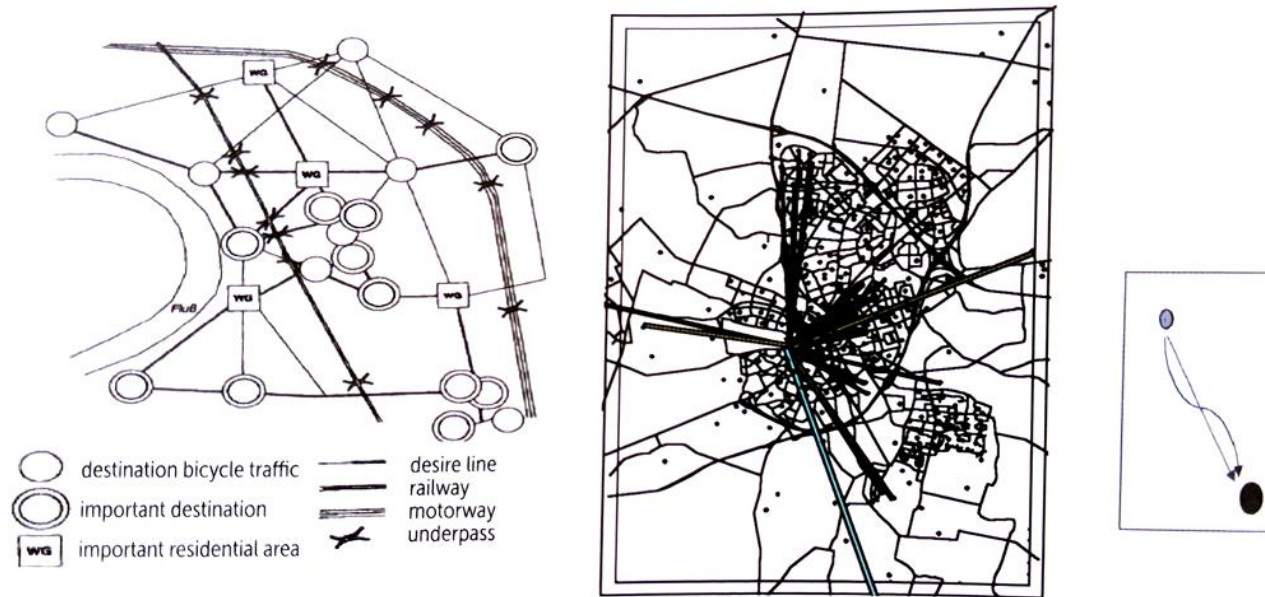
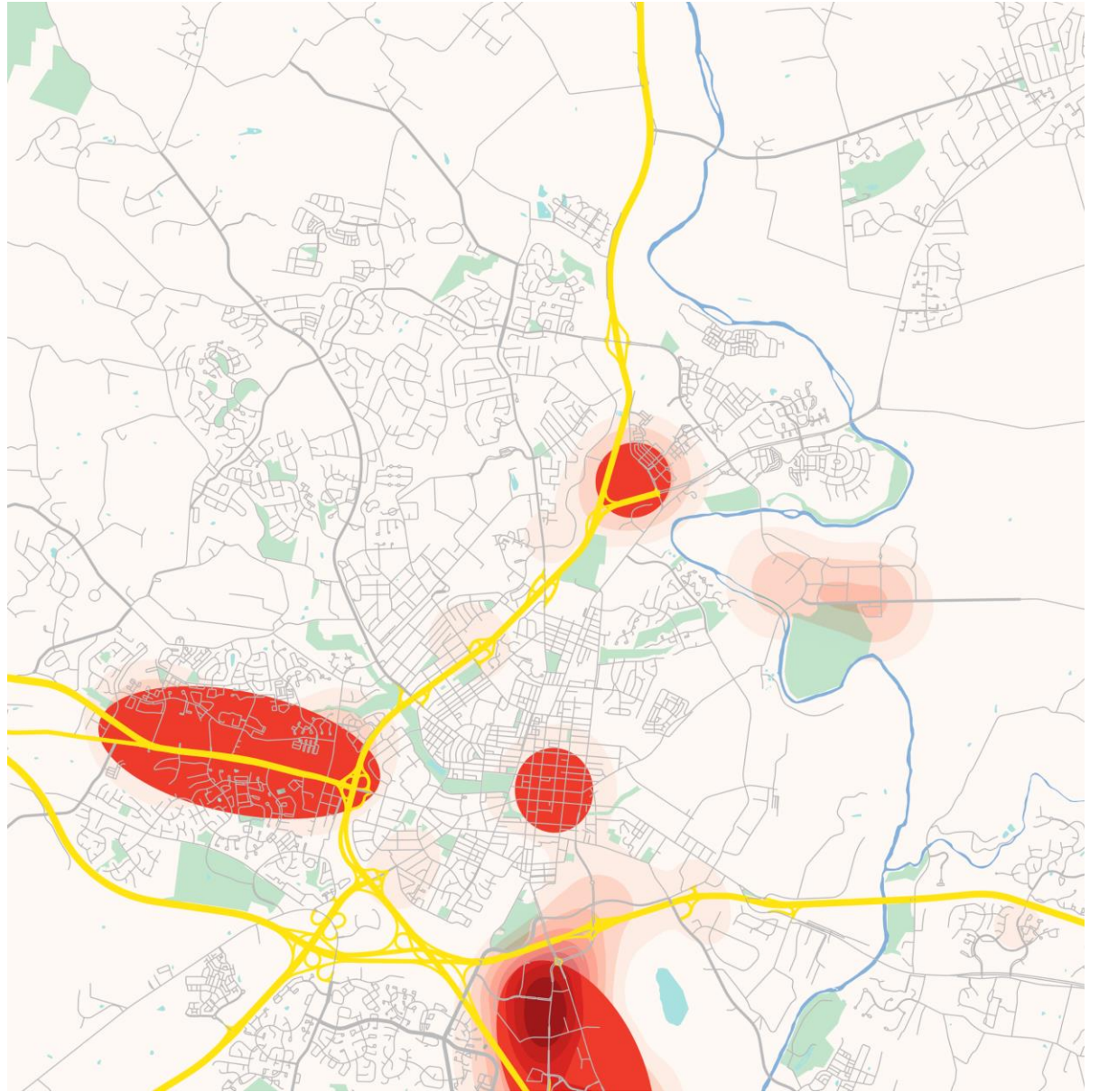
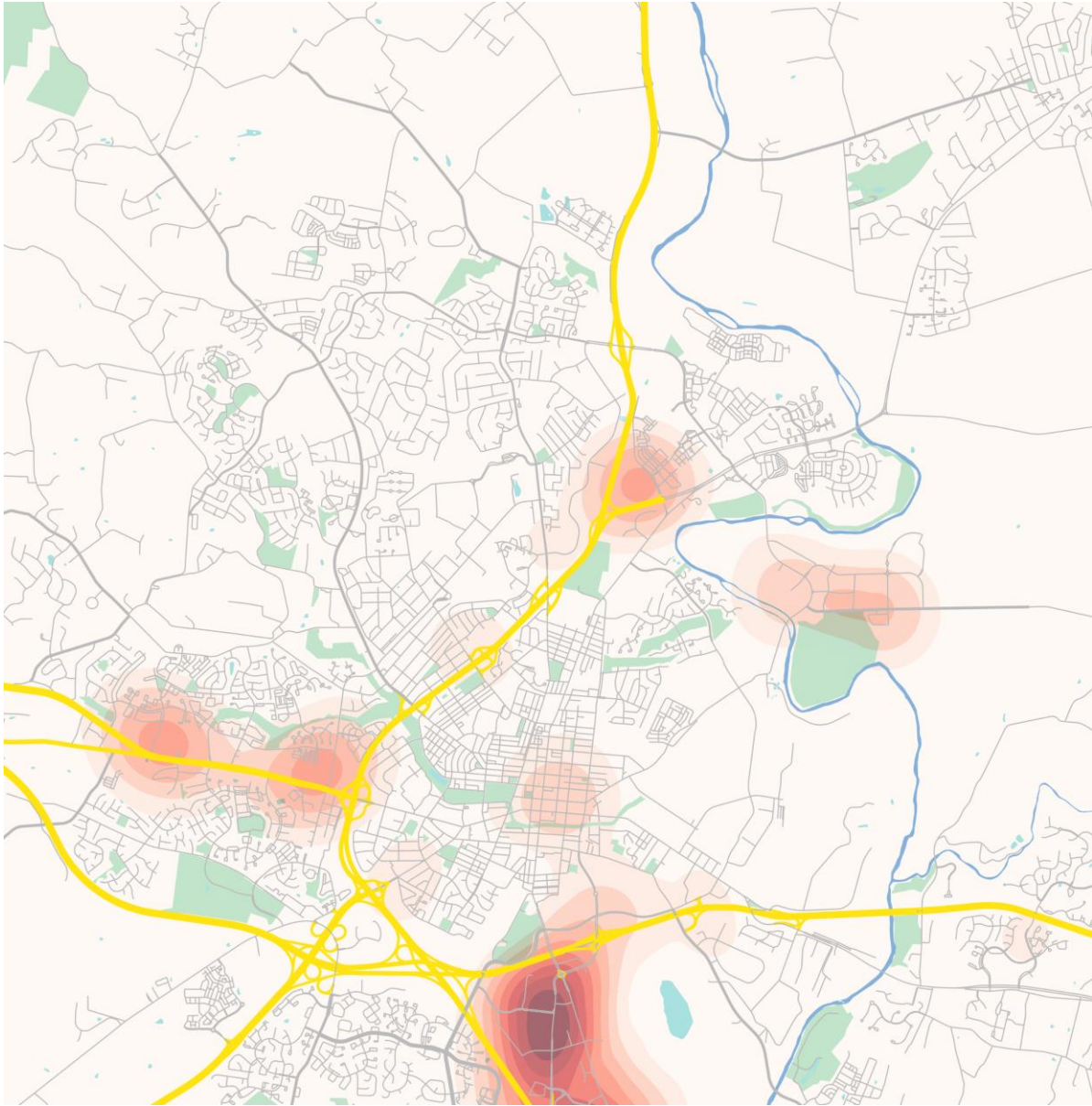
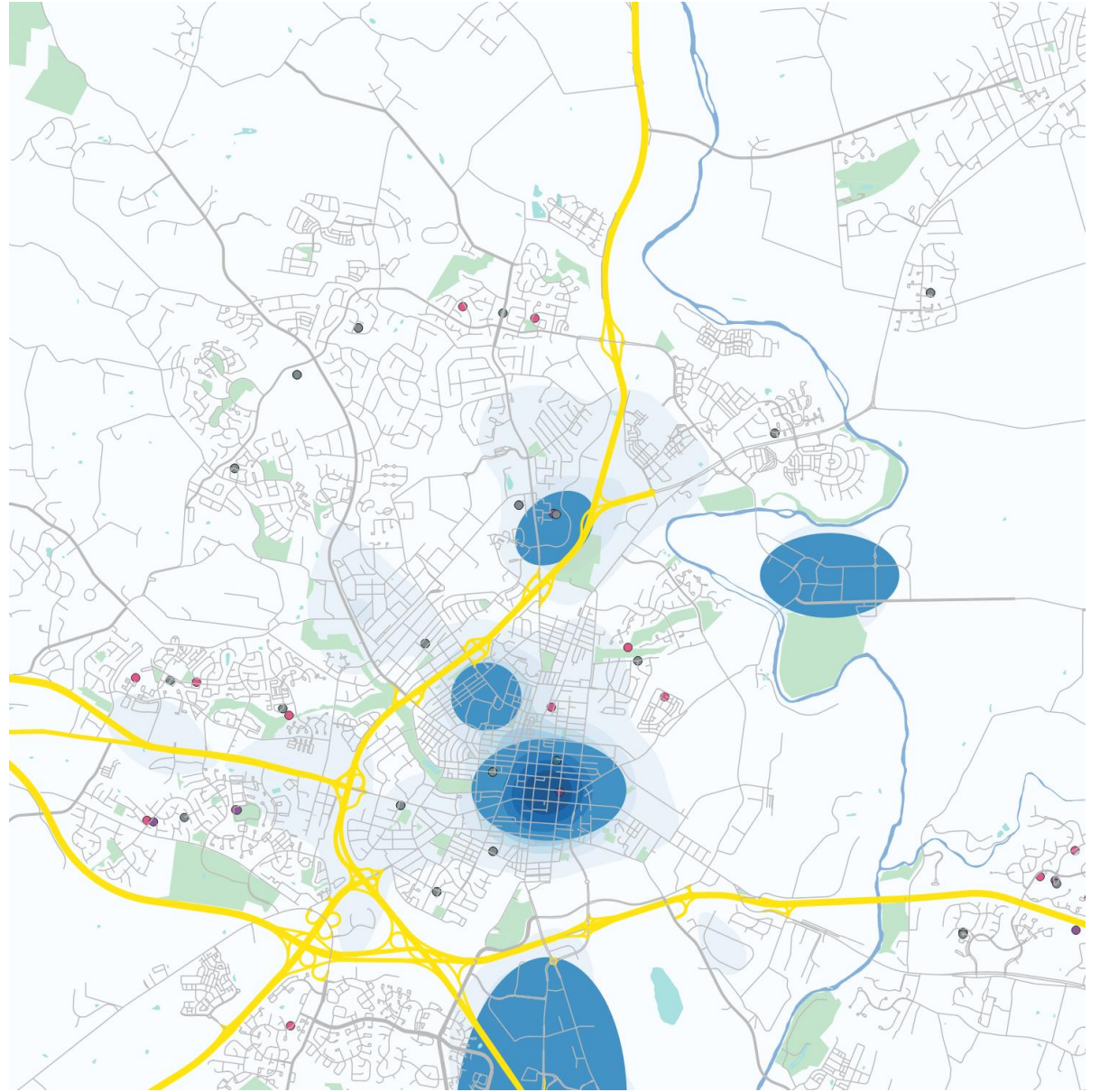
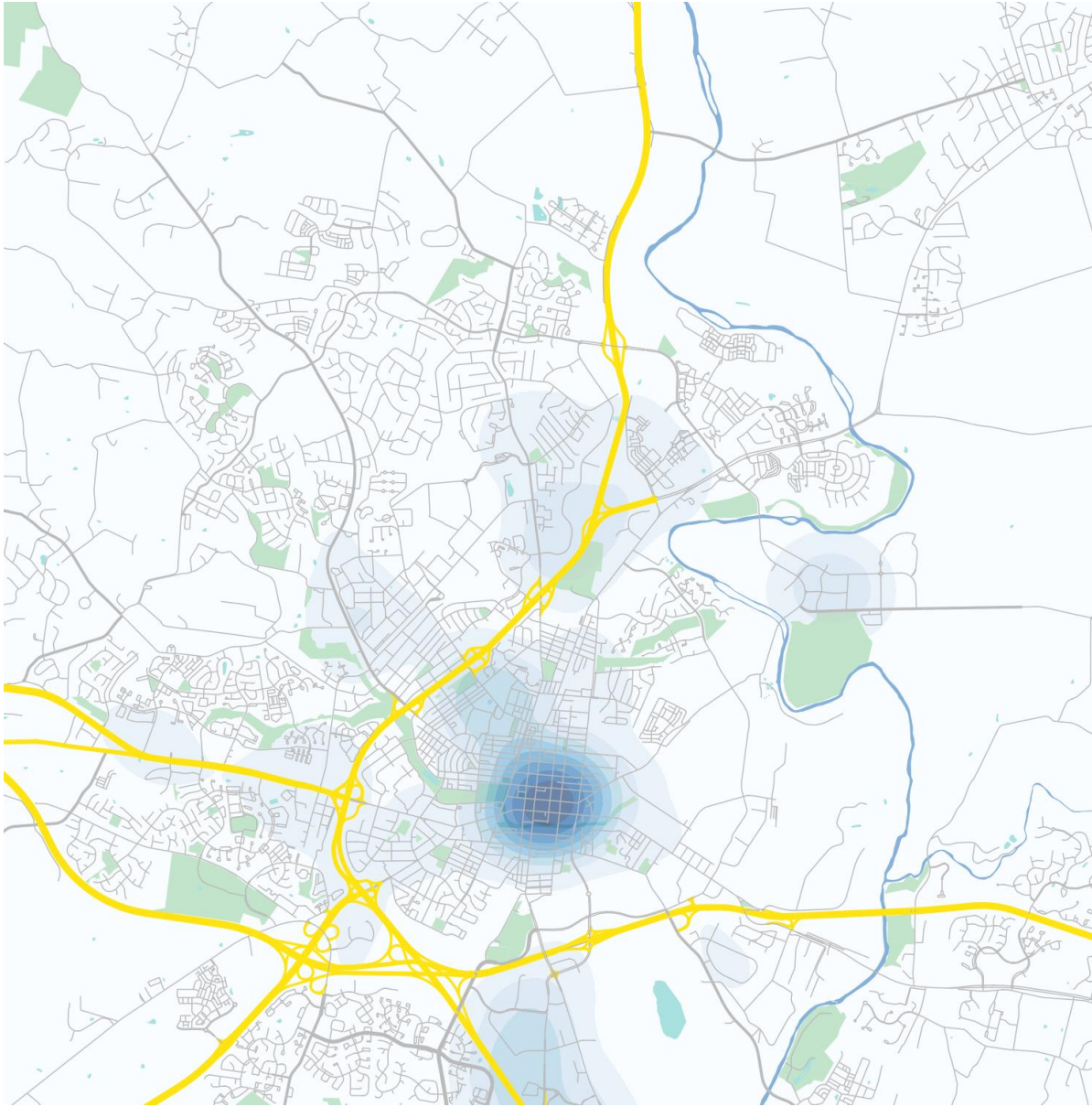


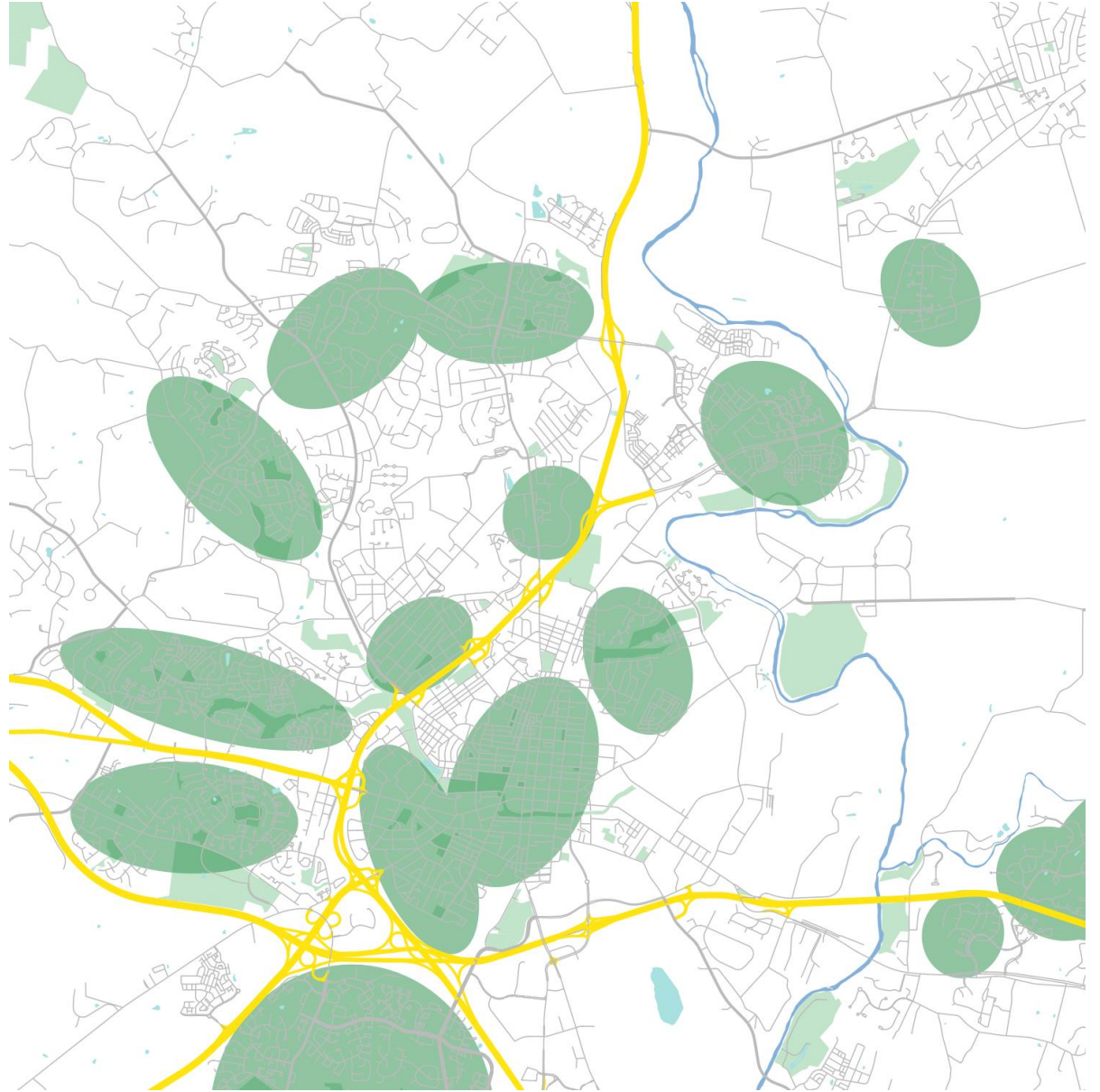
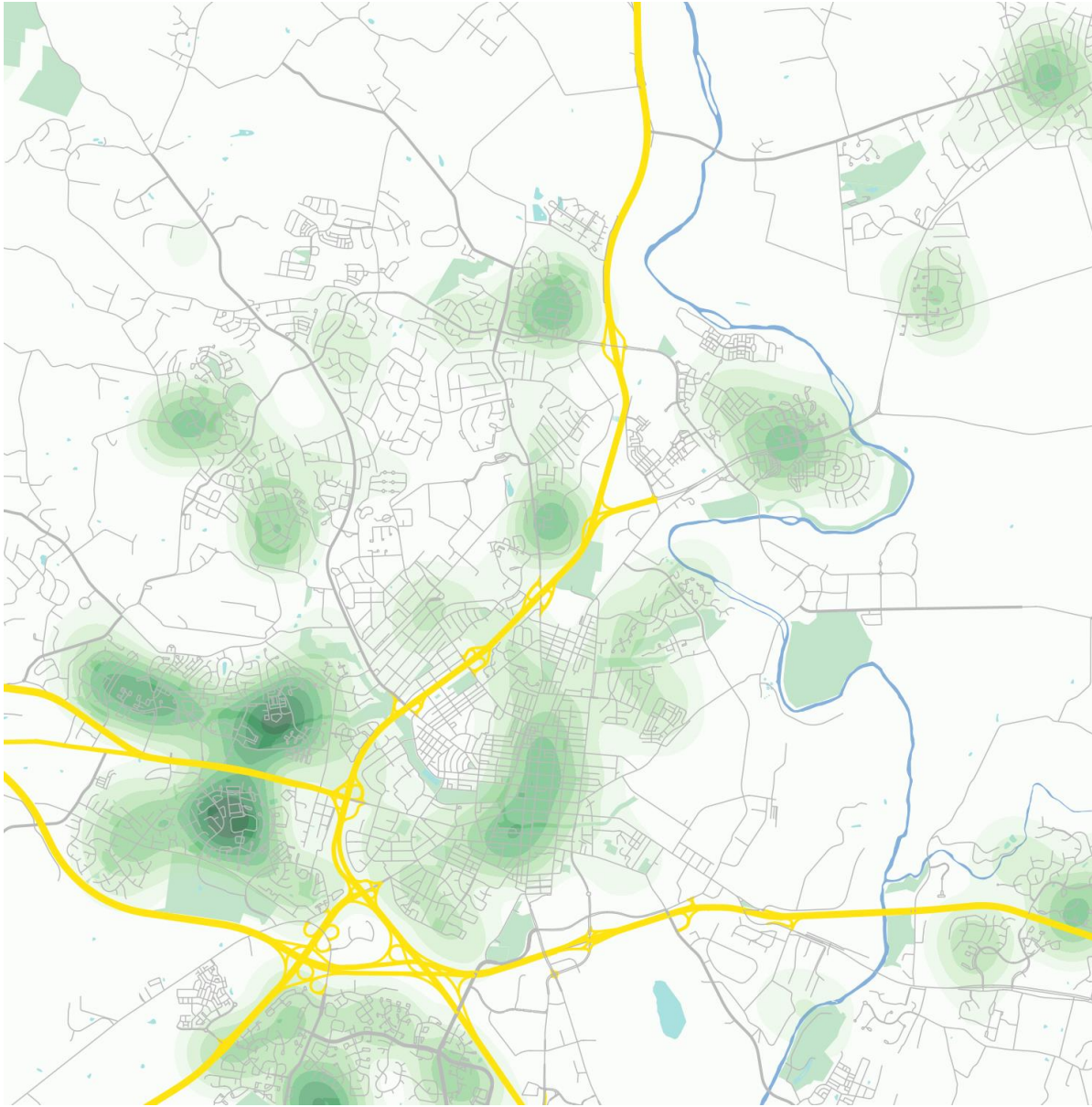
Figure 4-2. Examples of desire lines between destinations

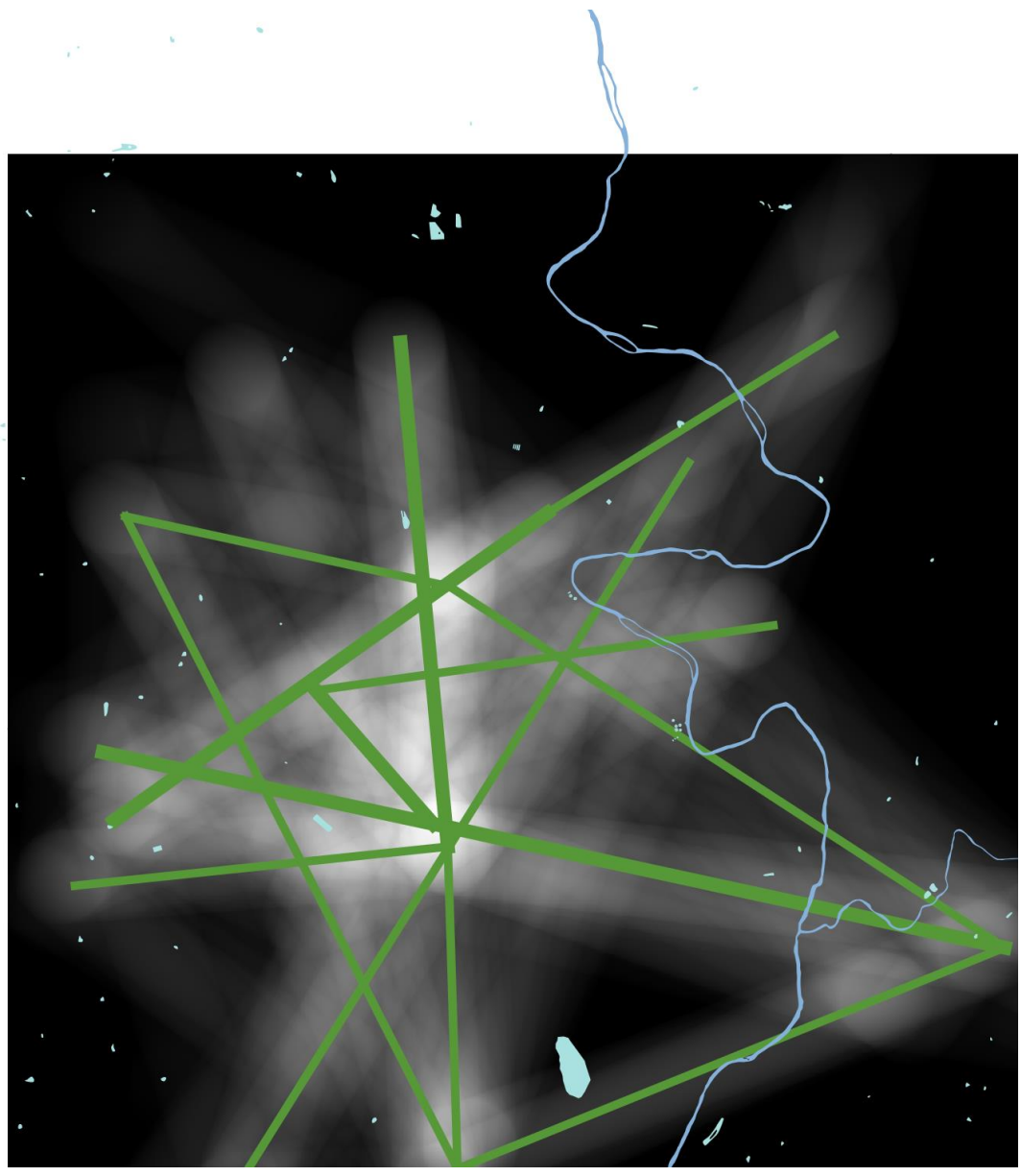
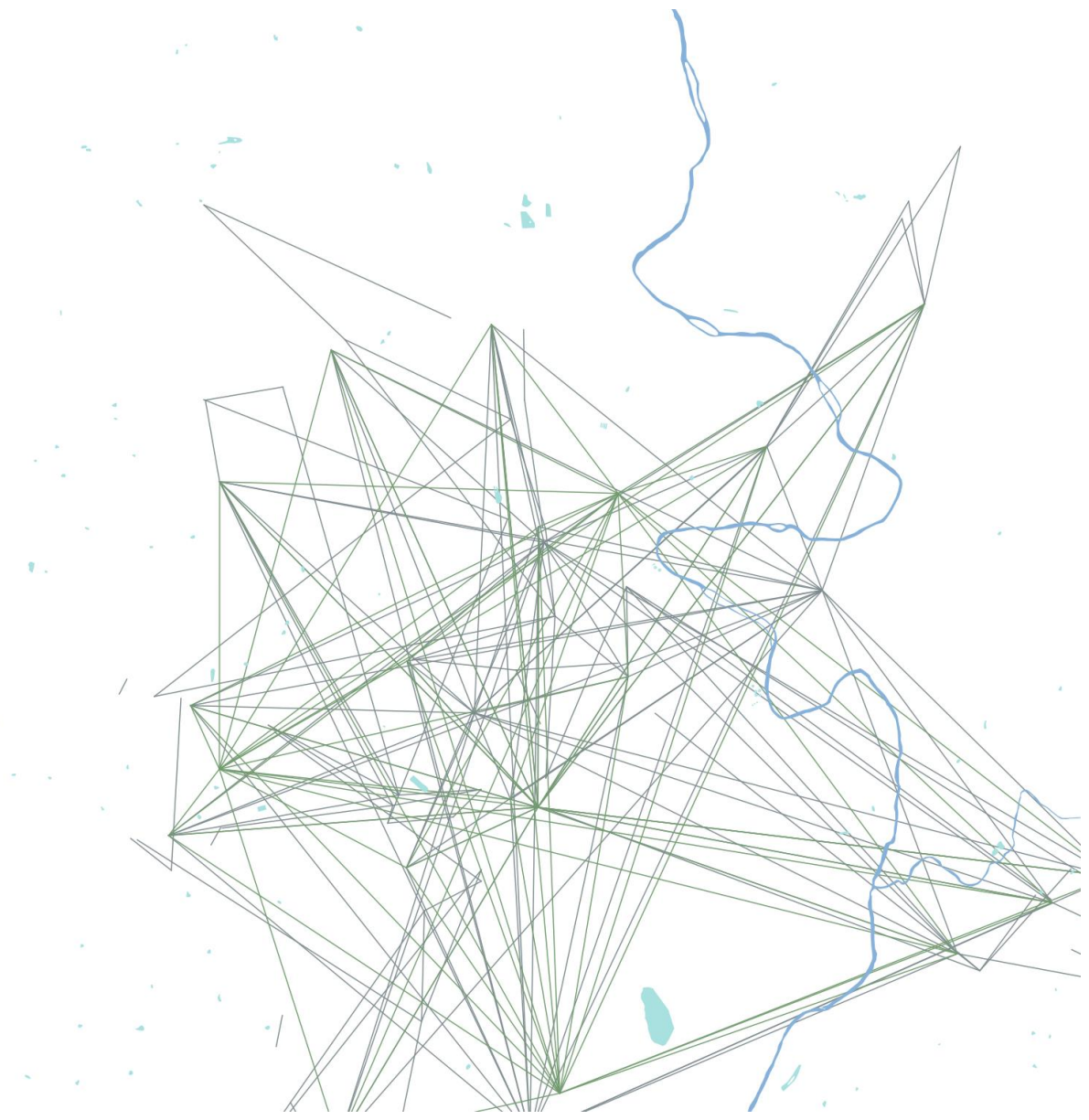
Why?

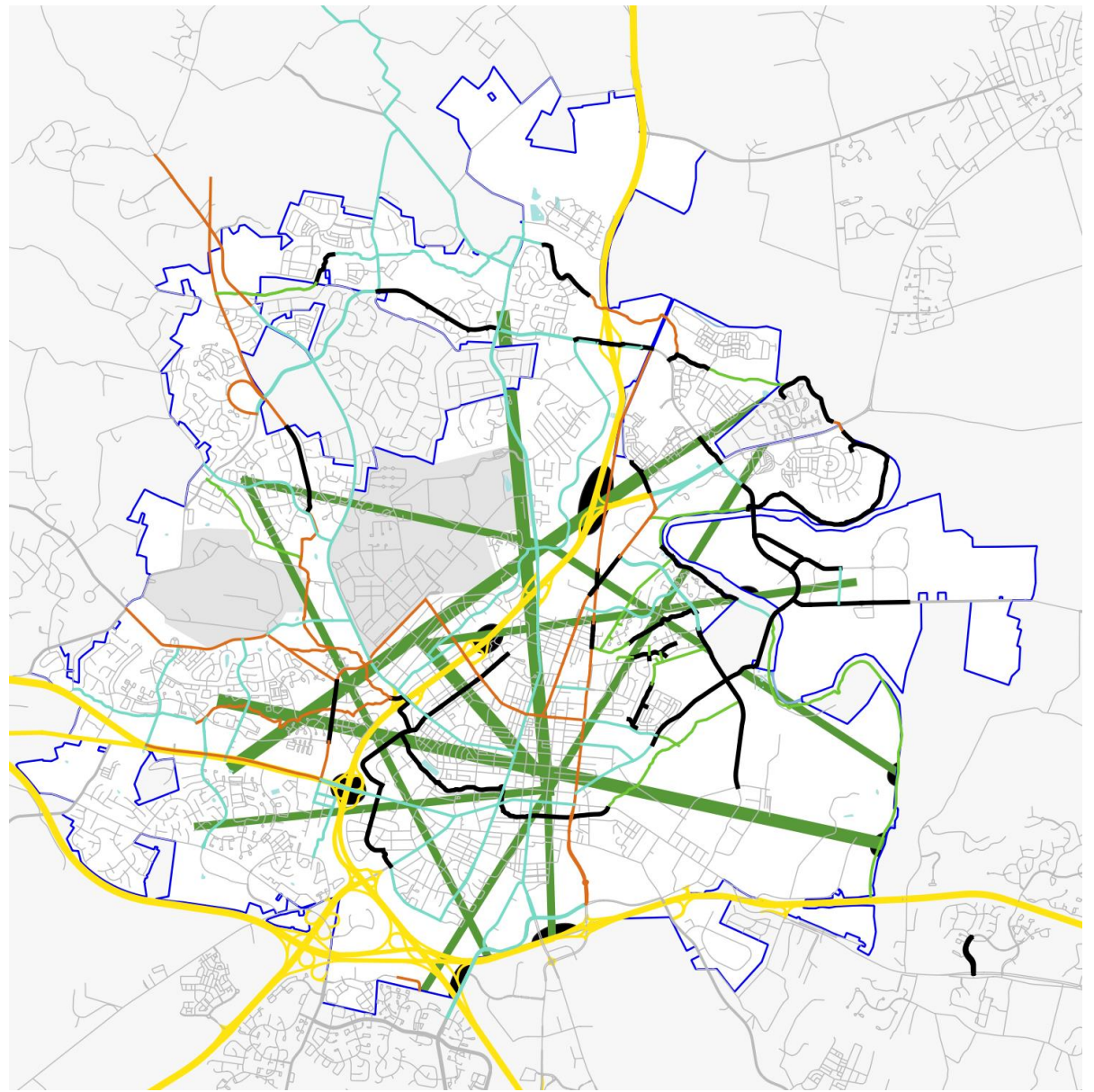
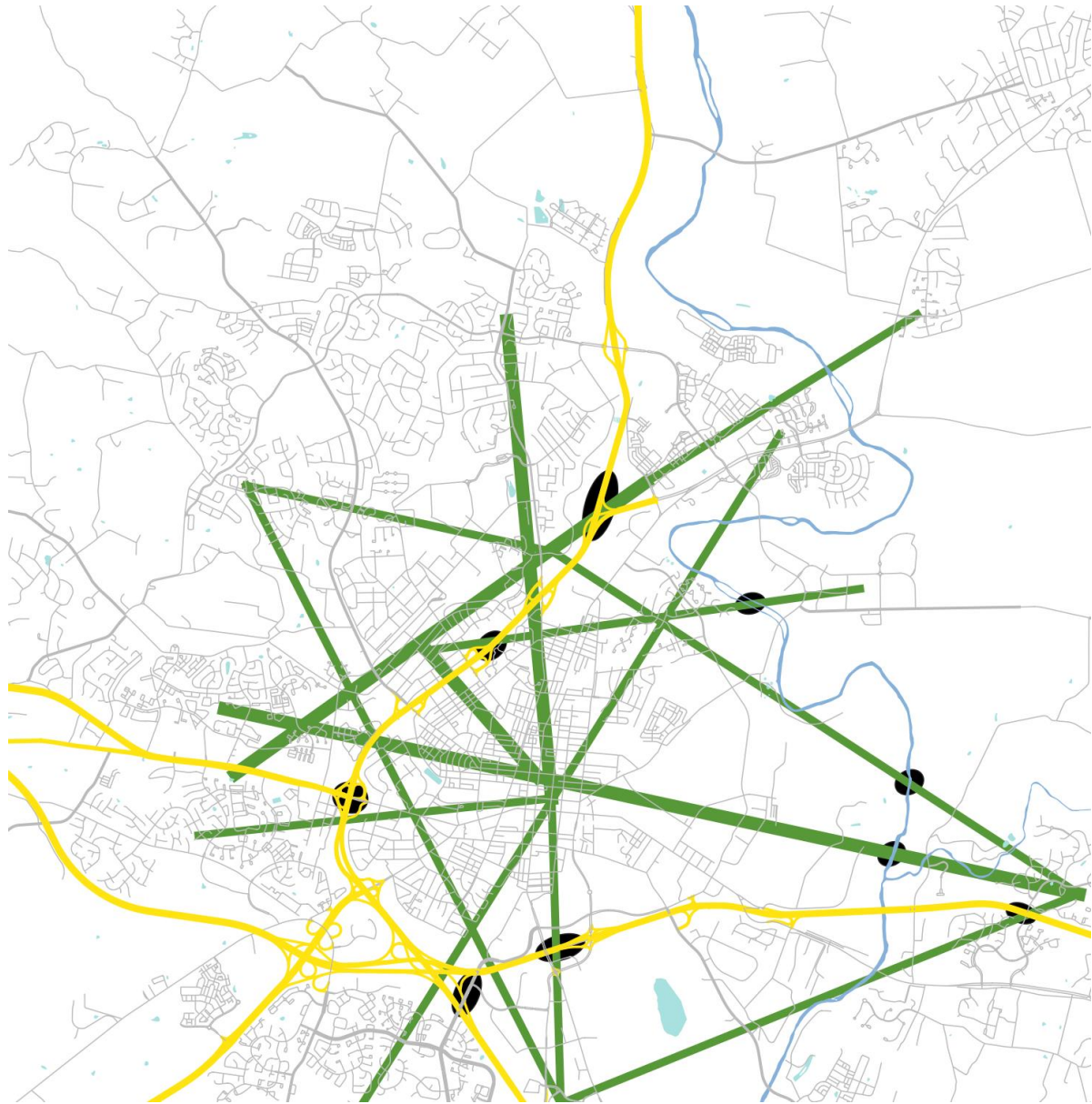
- Straight paths are usually better
- Identifies critical barriers to making straight paths
- Combined with non-road rights-of-way allows for disentangling major routes from major roads





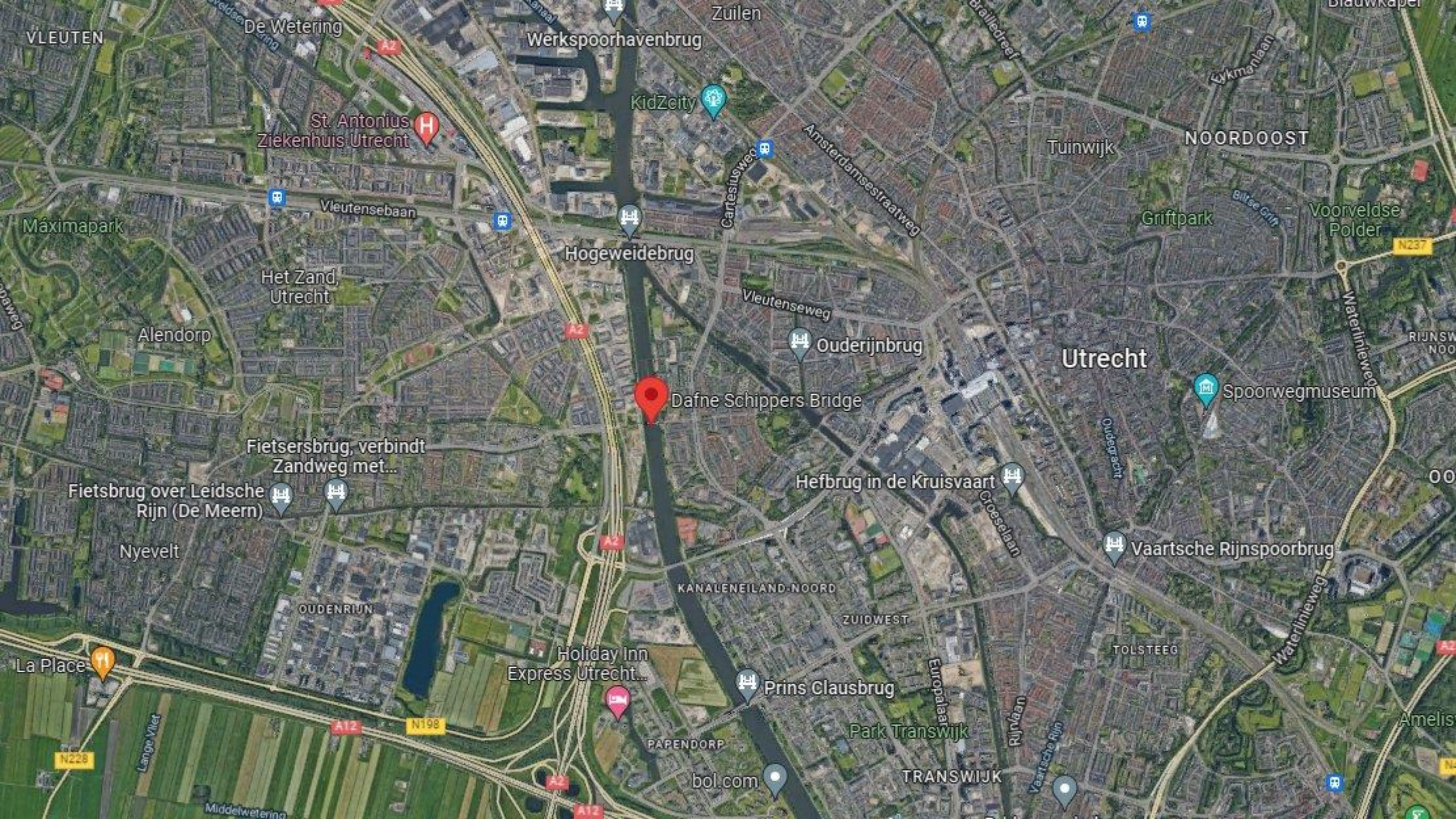








Example: Dafne Schippers Bridge



VLEUTEN

De Wetering

Werkspoorhavenbrug

Zuilen

St. Antonius
Ziekenhuis Utrecht

KidZcity

Tuinwijk

NOORDOOST

Máximapark

Vleutensebaan

Hogeweidebrug

Amsterdamsestraatweg

Griftpark

Voorveldse
Polder

Het Zand
Utrecht

Alendorp

Cartesiusweg

Vleutenseweg

Ouderijnbrug

Utrecht

Spoorwegmuseum

Dafne Schippers Bridge

Fietsersbrug, verbindt
Zandweg met...

Fietsbrug over Leidsche
Rijn (De Meern)

Hefbrug in de Kruisvaart

Vaartsche Rijnspoorbrug

Nyevelt

KANALENEILAND NOORD

ZUIDWEST

Holiday Inn
Express Utrecht...

Prins Clausbrug

TOLSTEEG

La Place

OUDENRIJN

PAPENDORP

Park Transwijk

TRANSWIJK

bol.com

Amelis

N228

N198

Lange Vliet

Middelwetering

Europalaan

Rijnlaan

Vaartsche Rijn

Waterlineweg

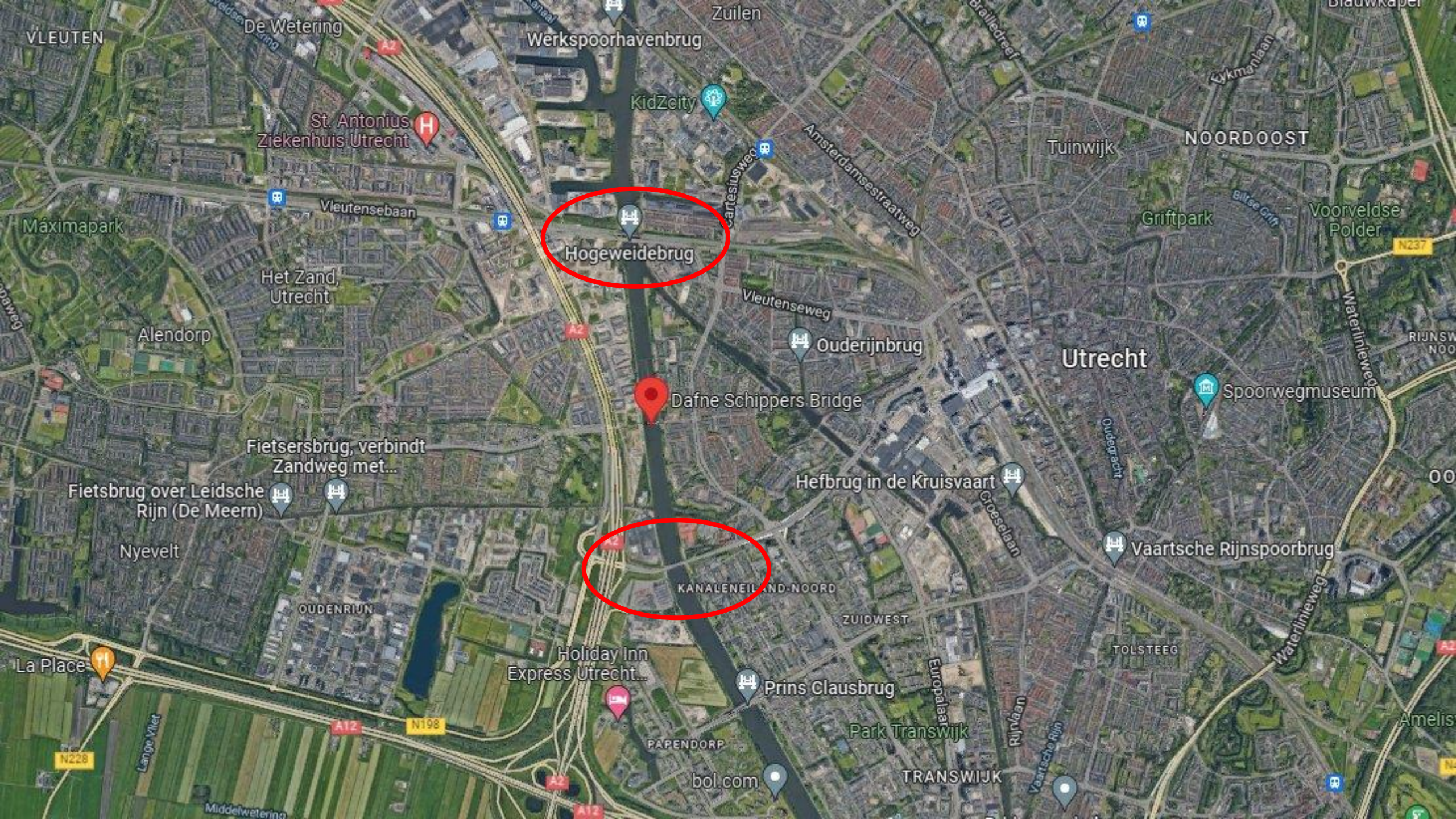
Waterlineweg

N257

RIJNSW
NOO

00

N2



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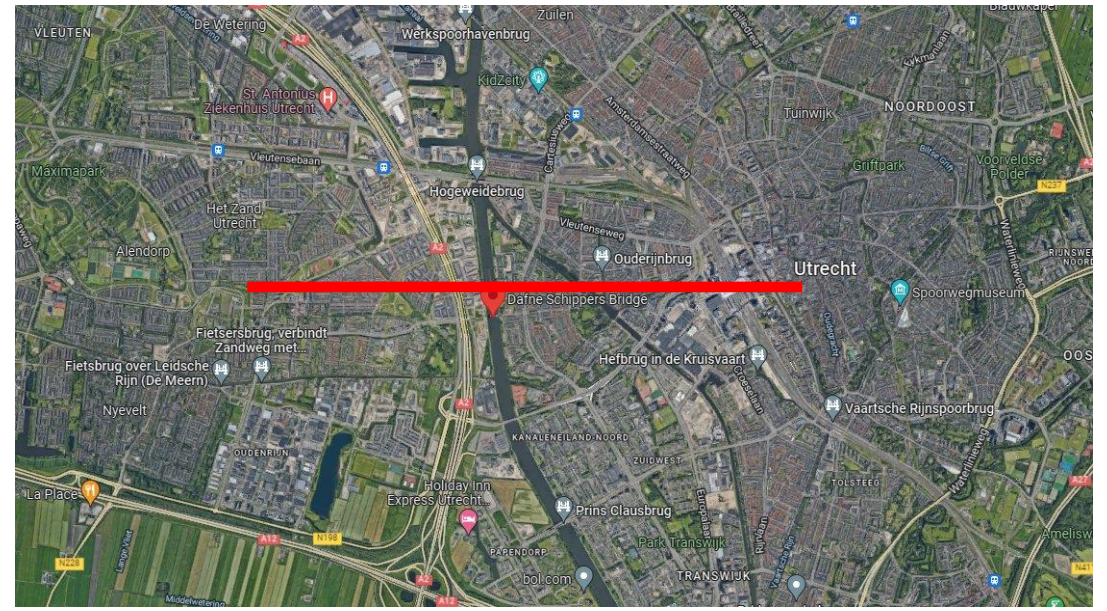
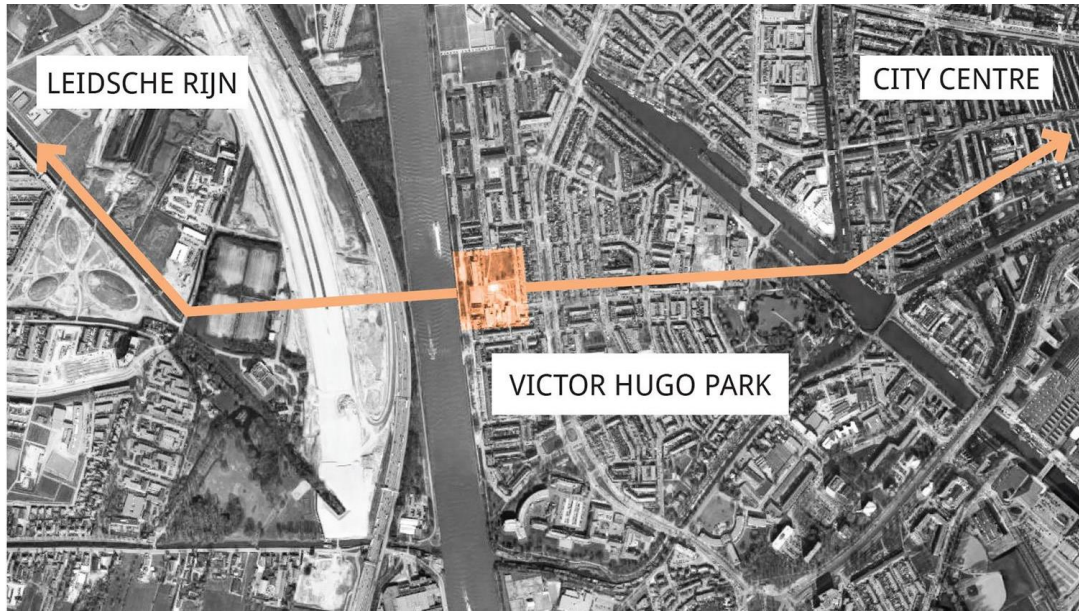
N2

Gelebrug (north)



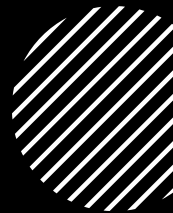
De Meernbrug (south)







Priorities Heatmap



Distance to a park



Distance to a school



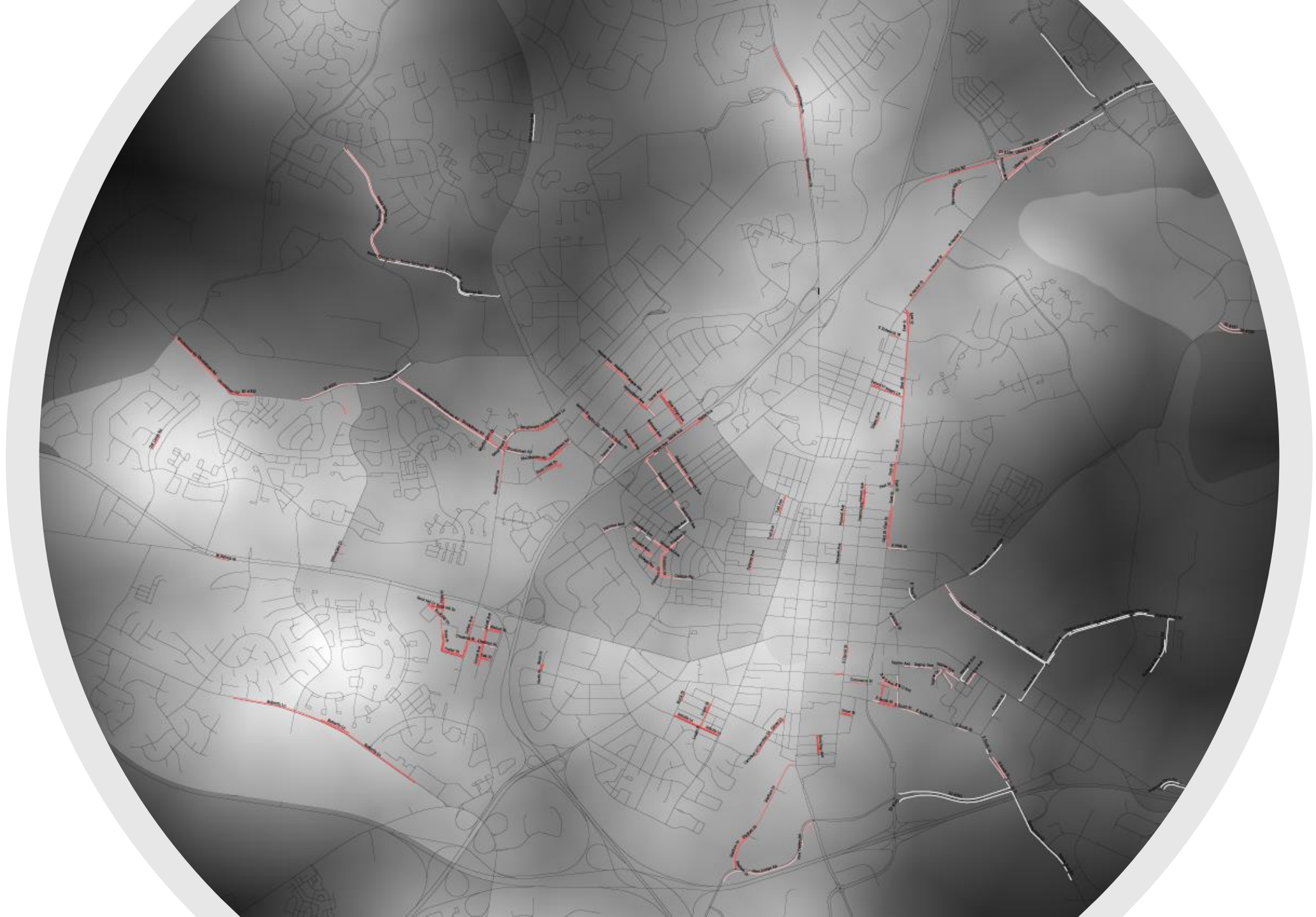
Distance to a bus stop



Population + jobs density



Proportion of residents with fewer cars than workers



Overall Priorities

1. Improve intersections
2. Build sidewalks
3. Enforce sidewalk maintenance ordinance

Priorities: Bicycling





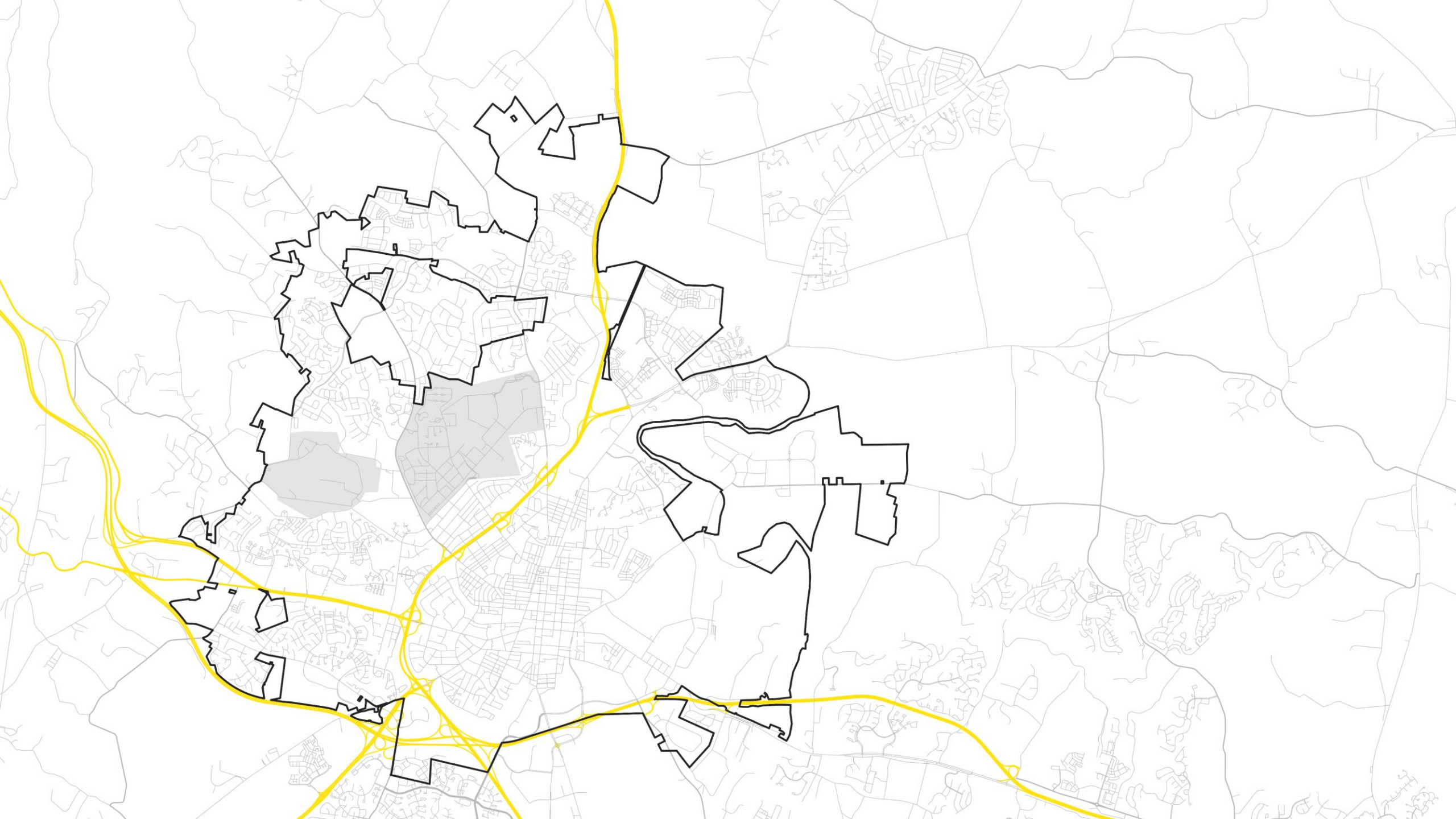
Bicycling Priorities

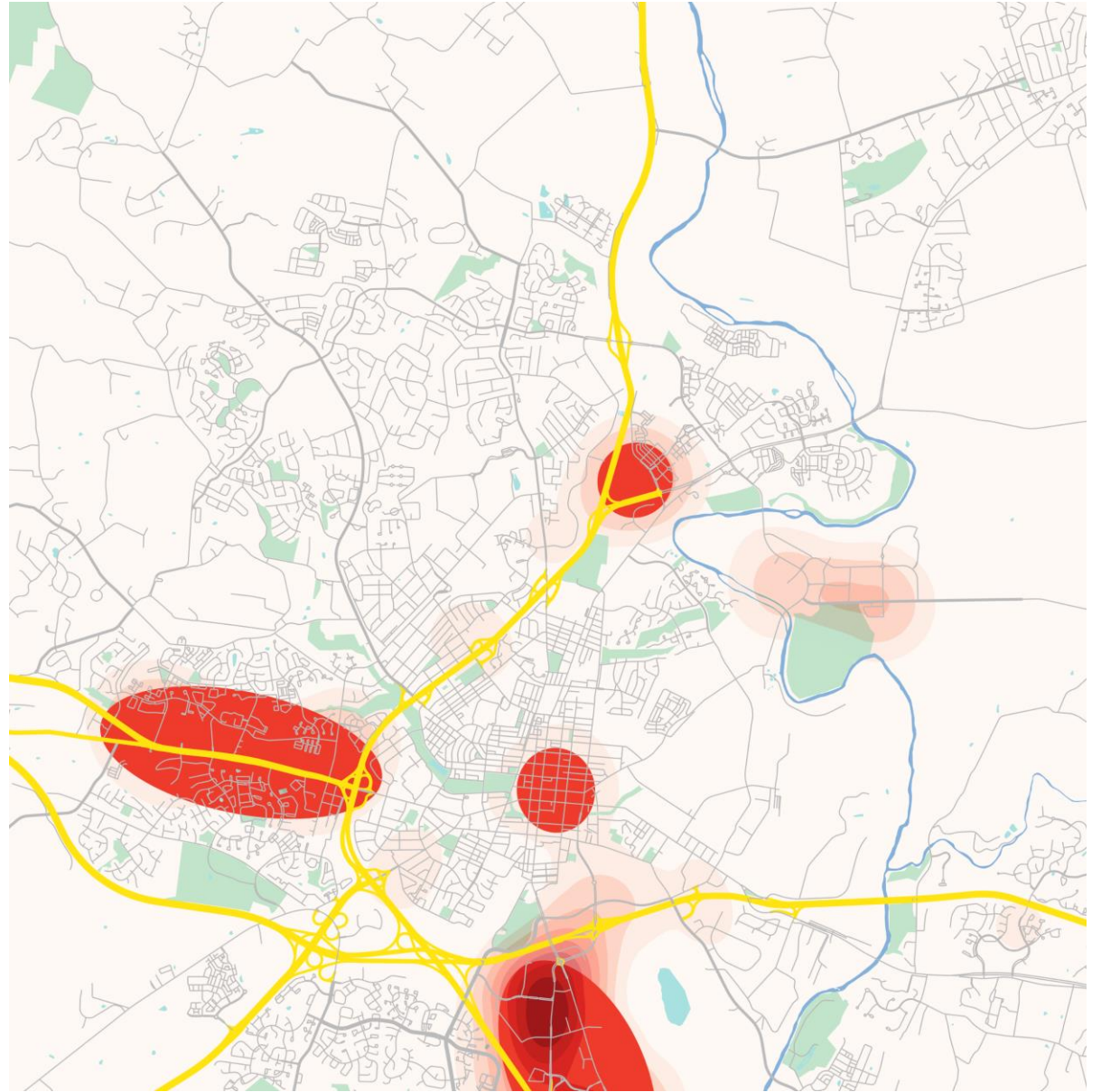
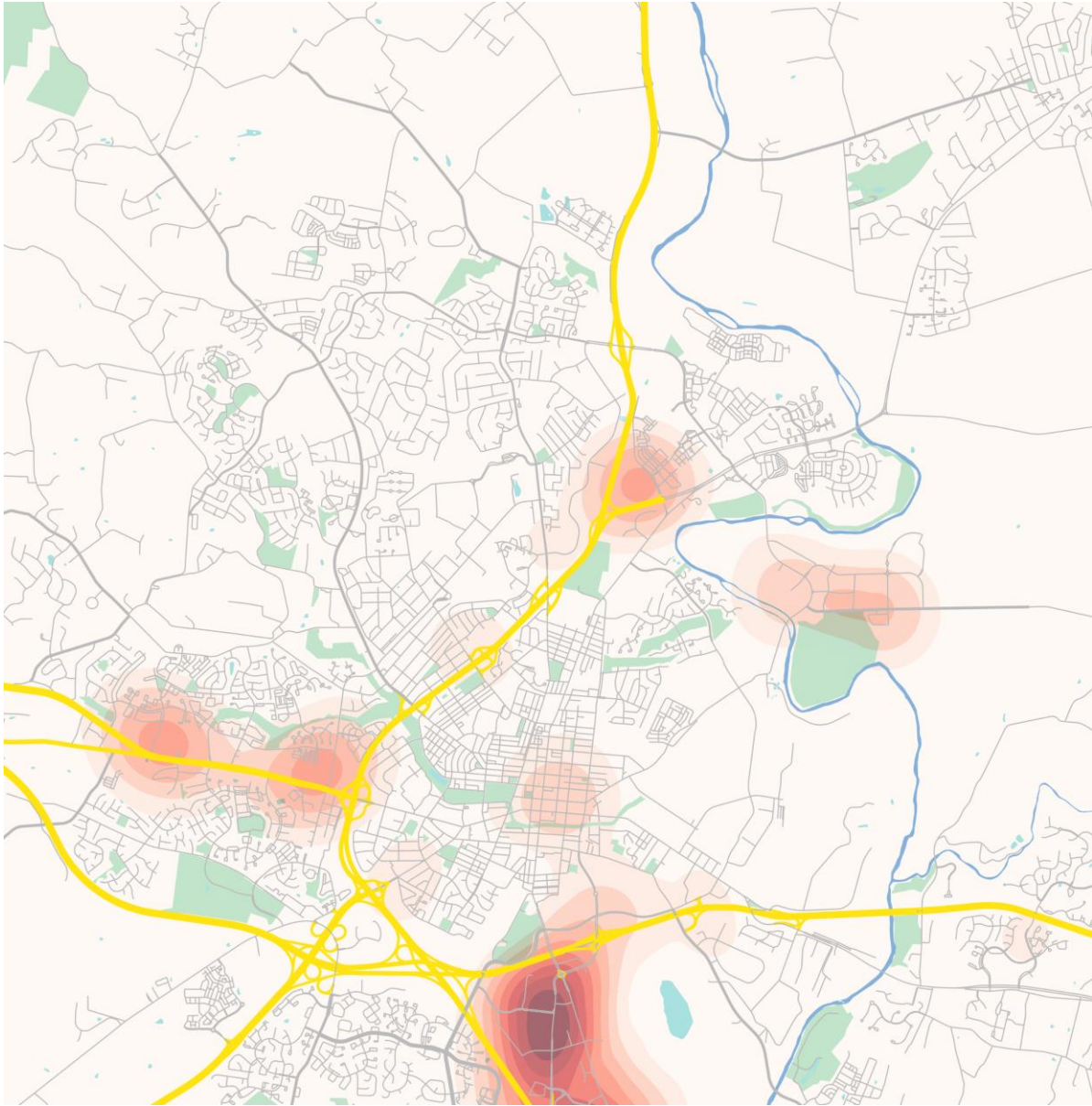


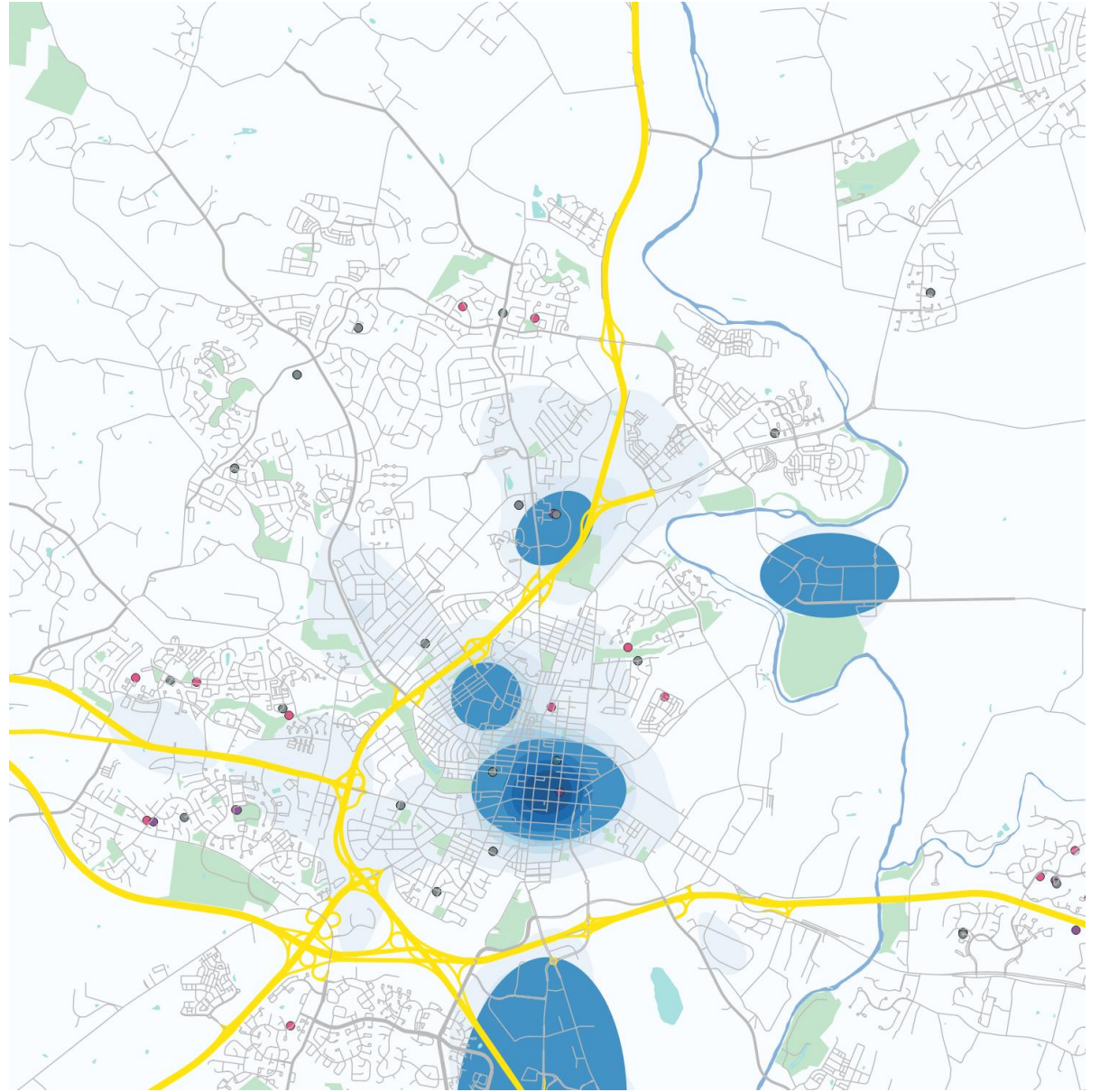
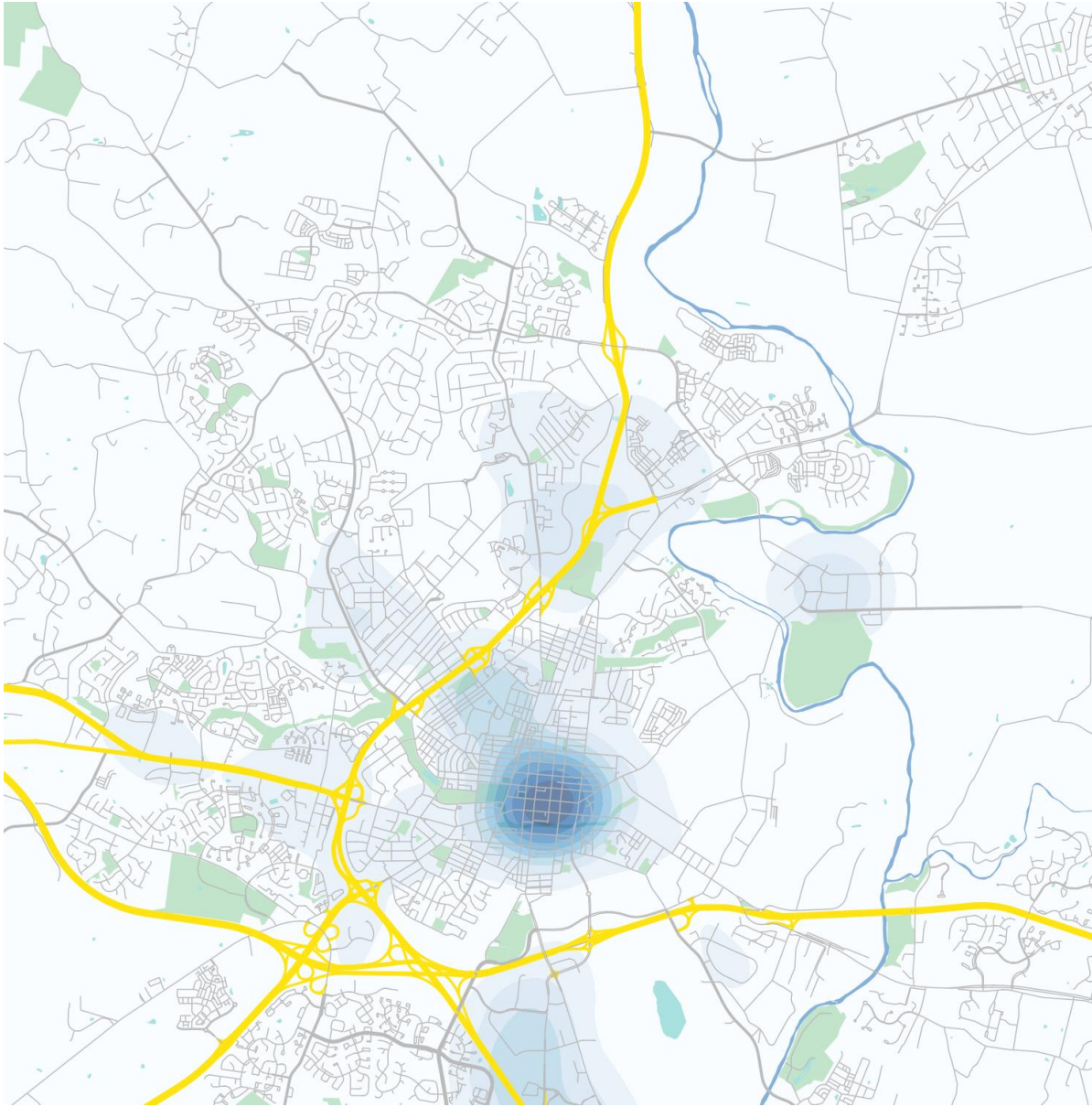
Building a useful network

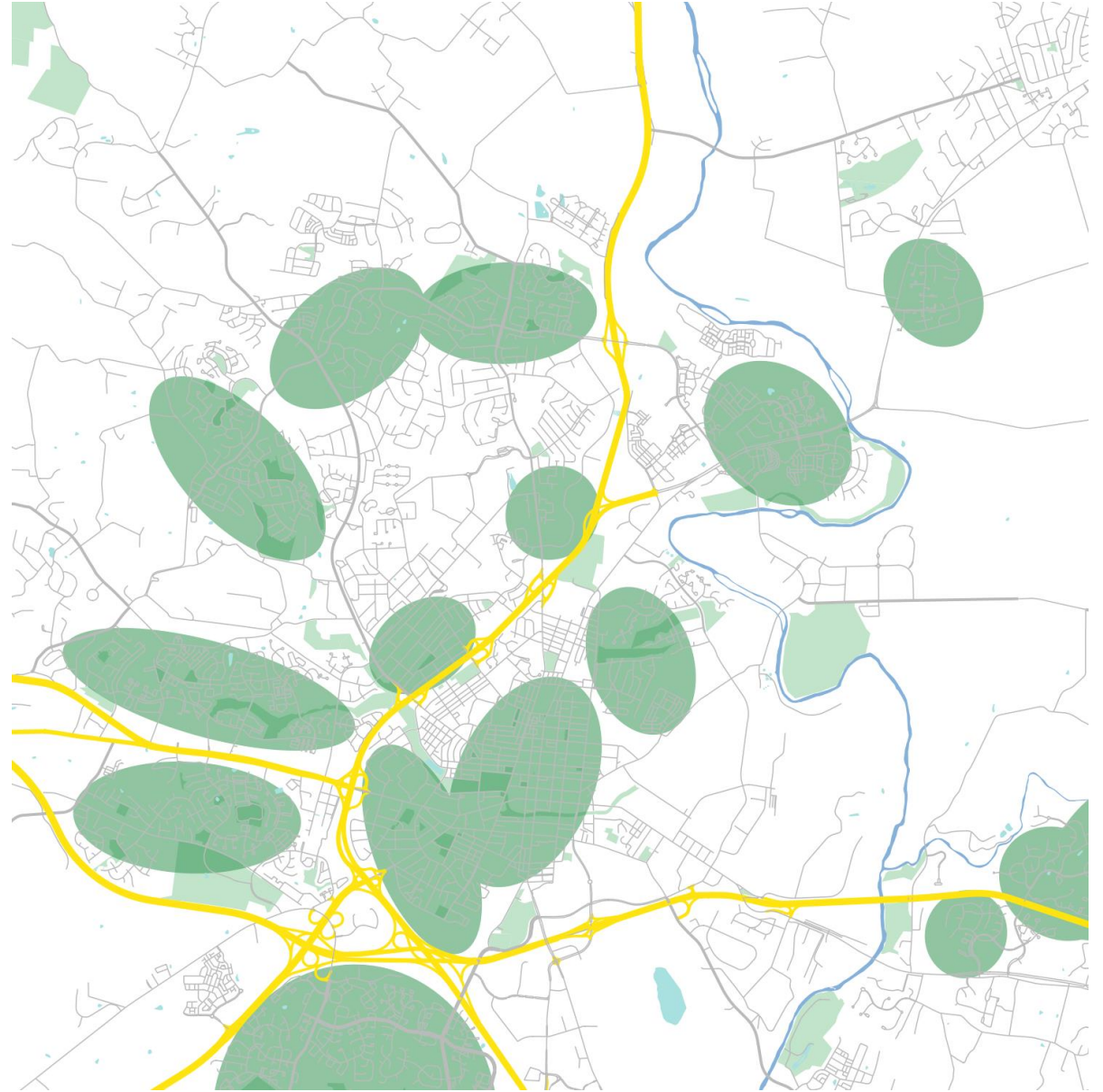
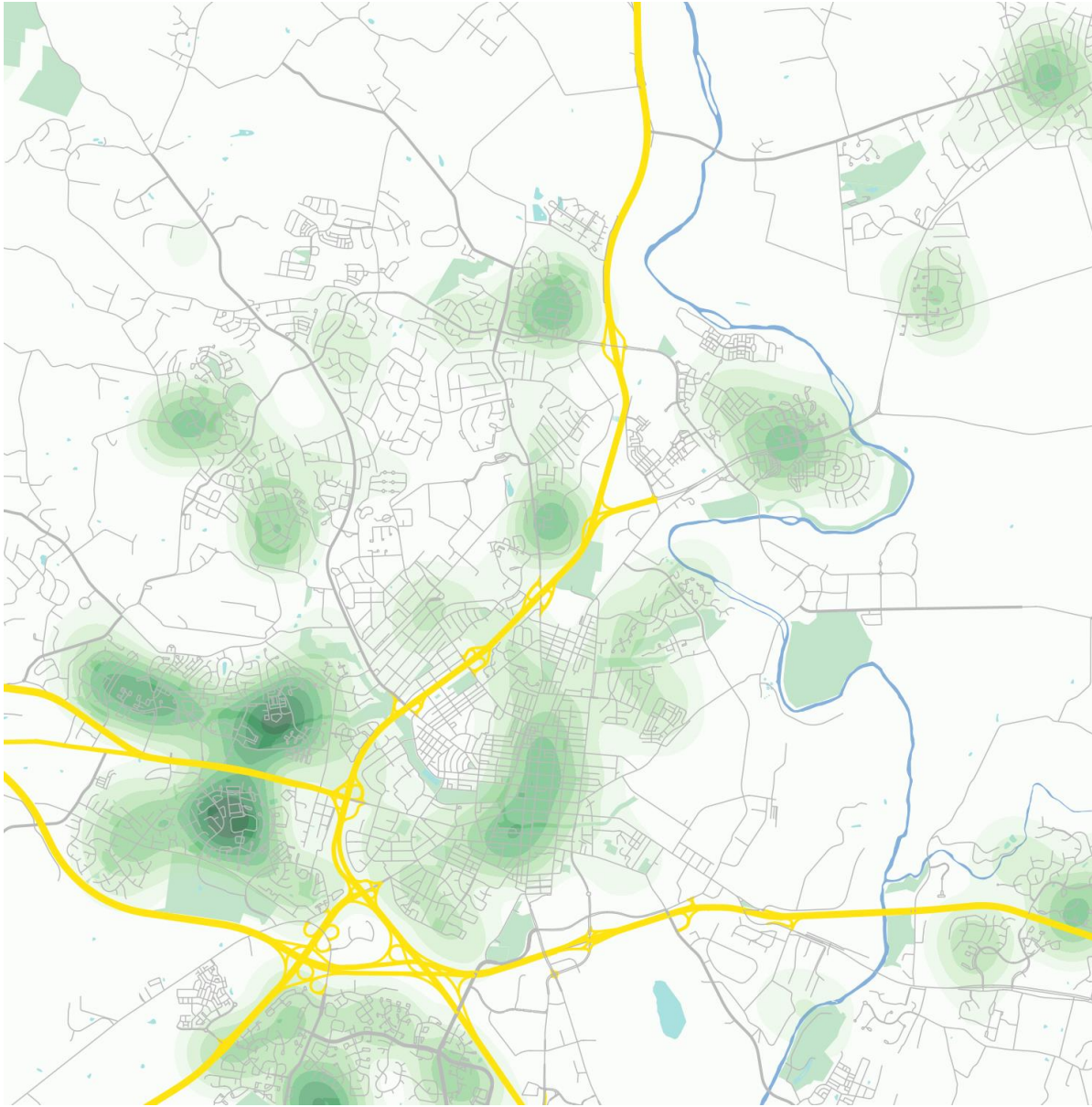


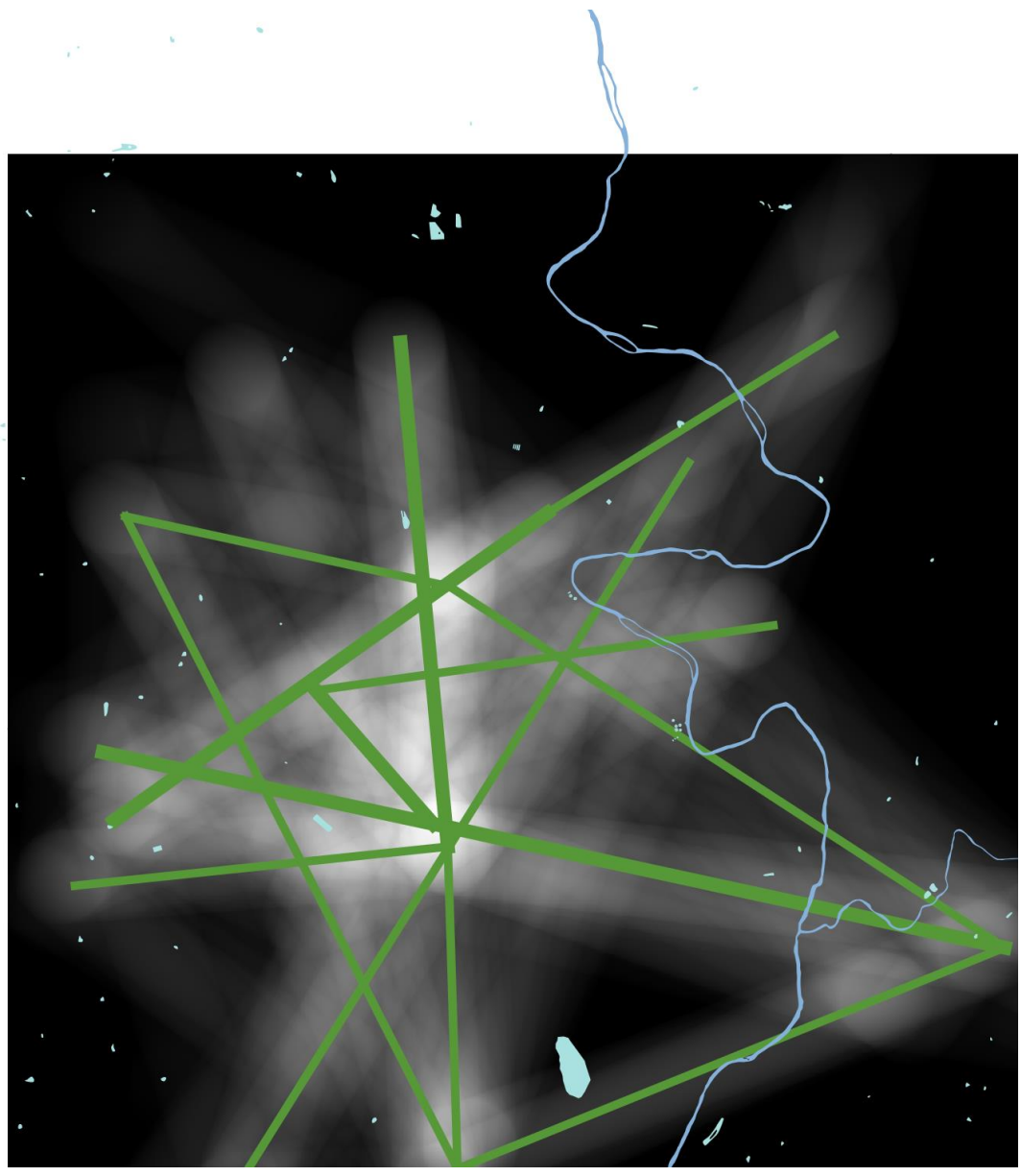
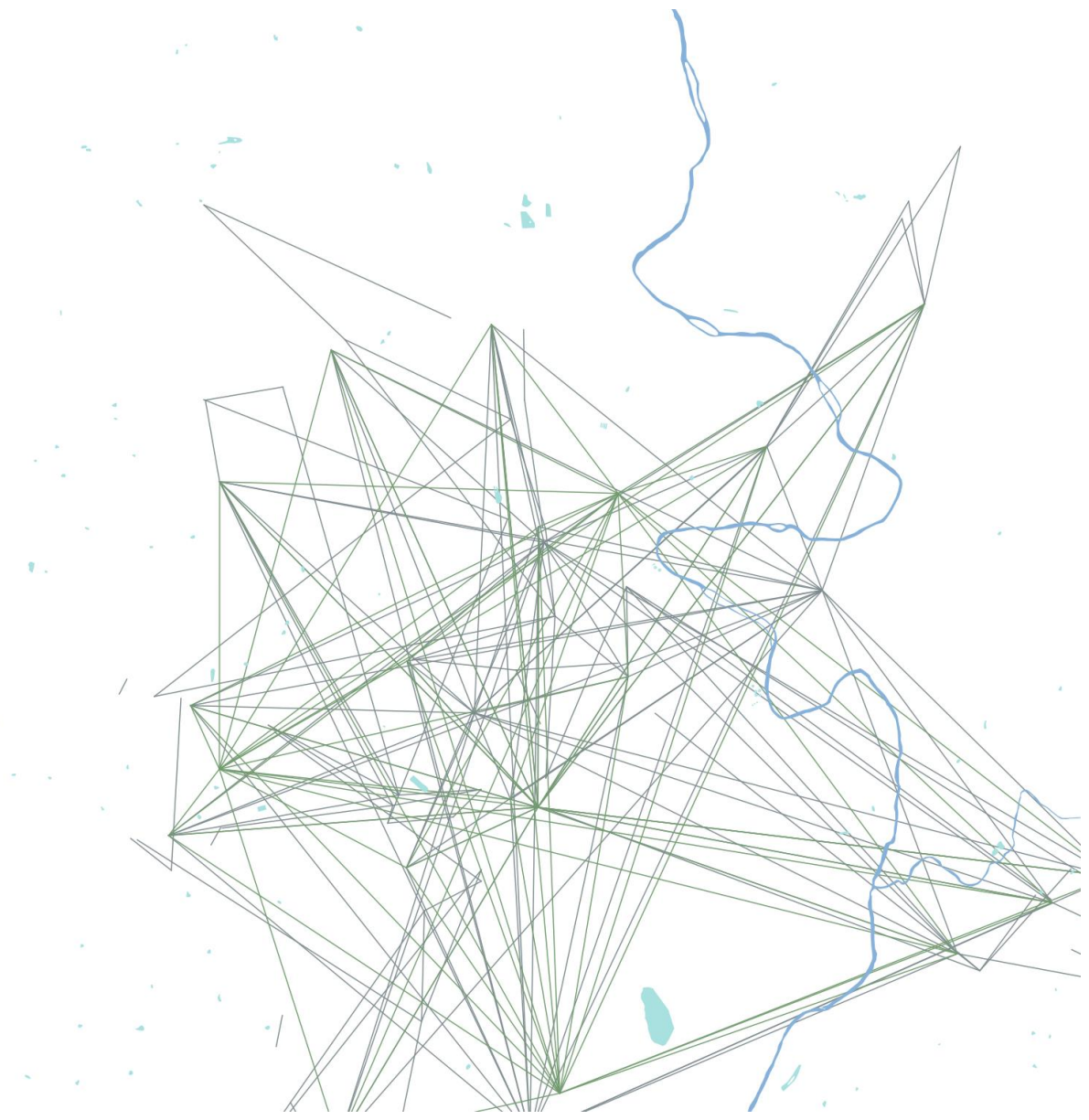
Building a safe network

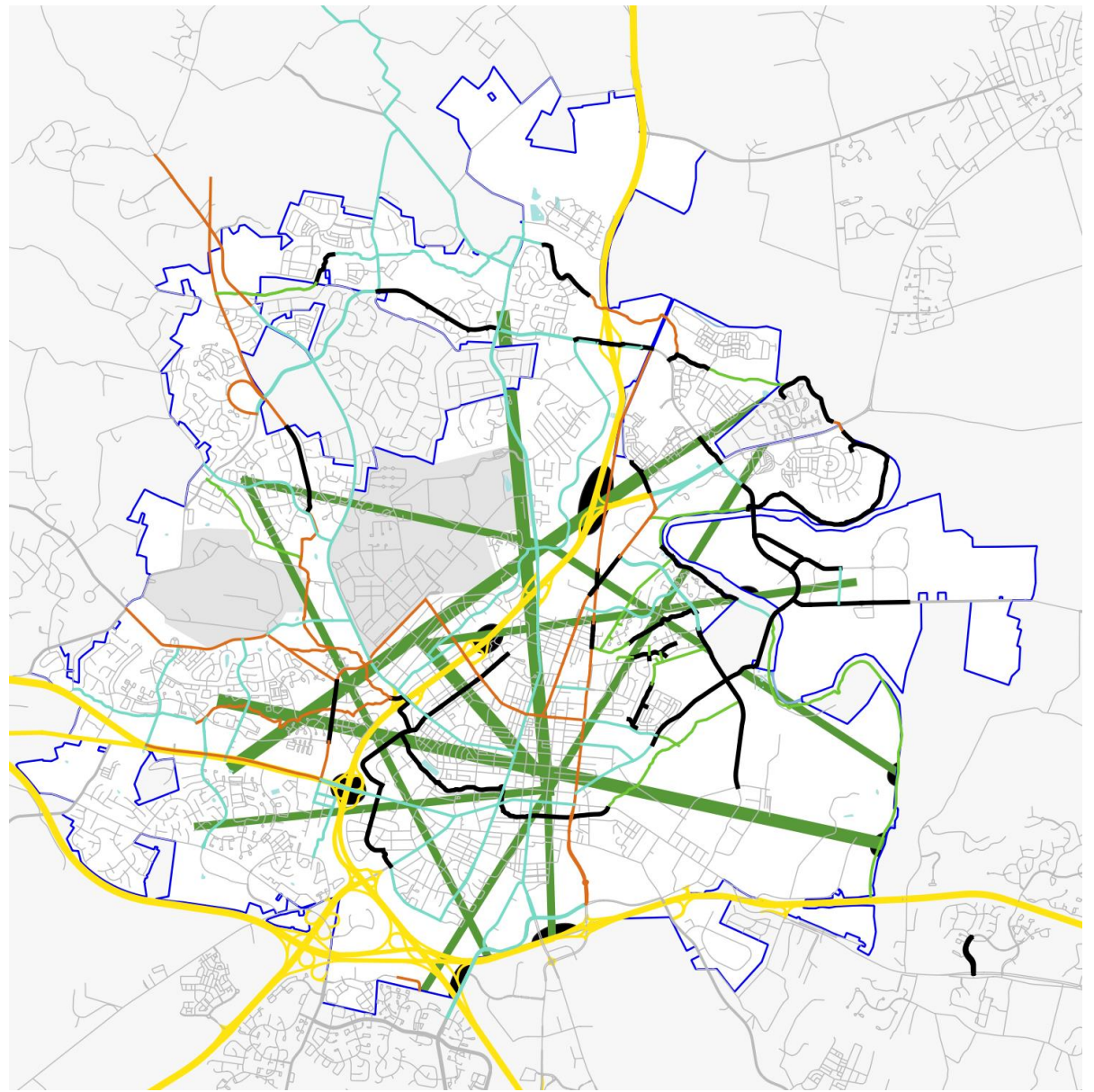
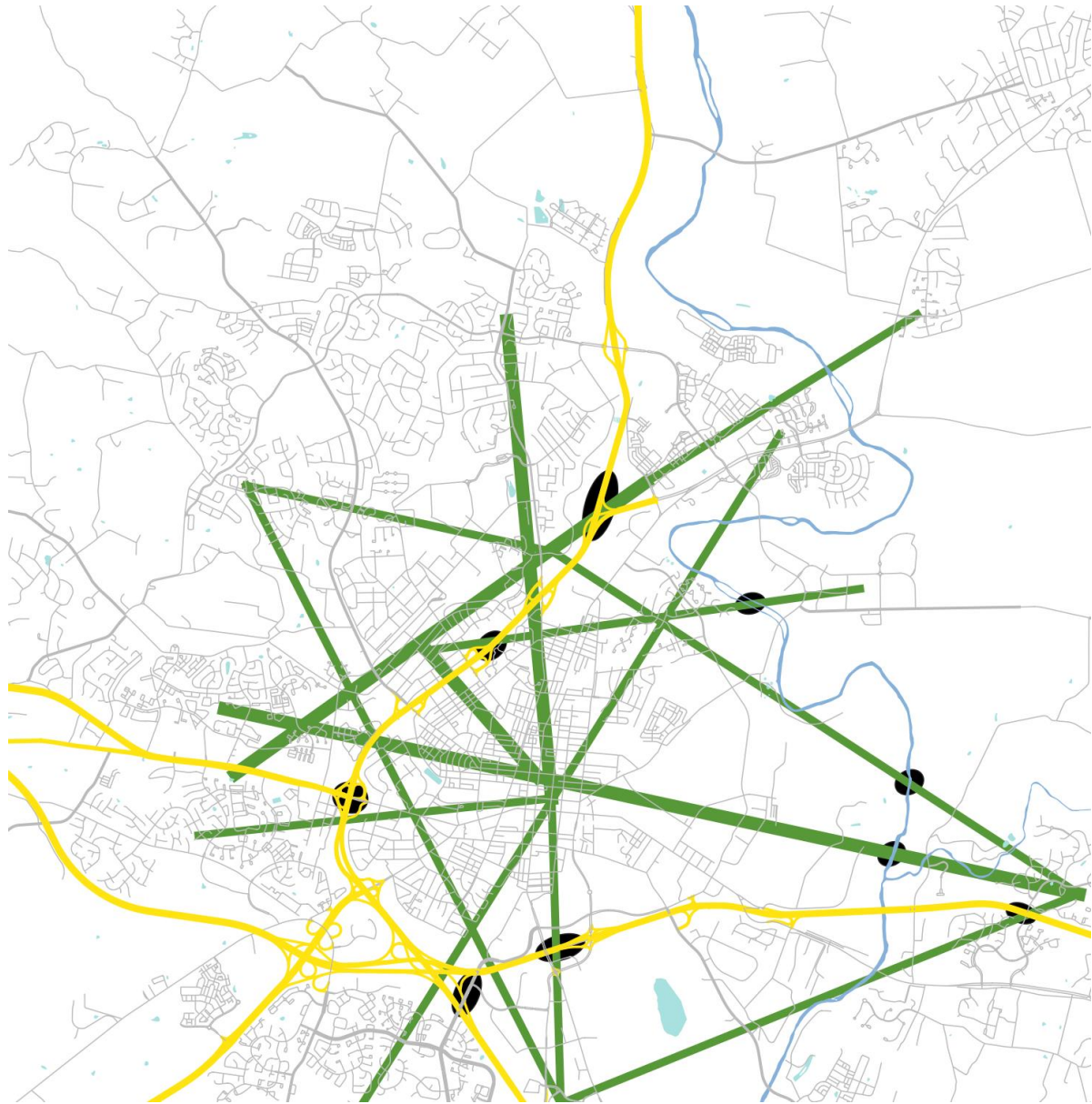




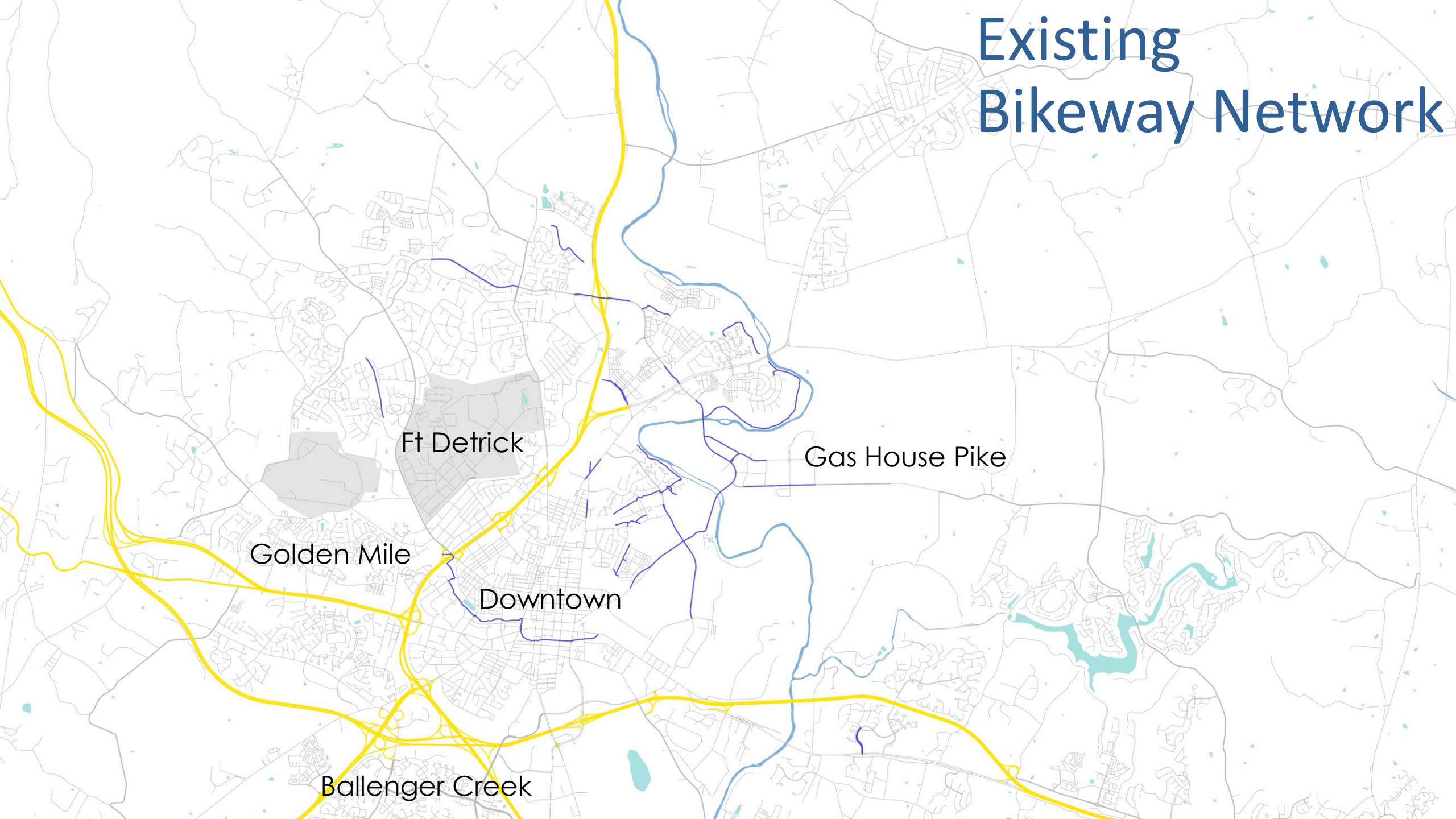




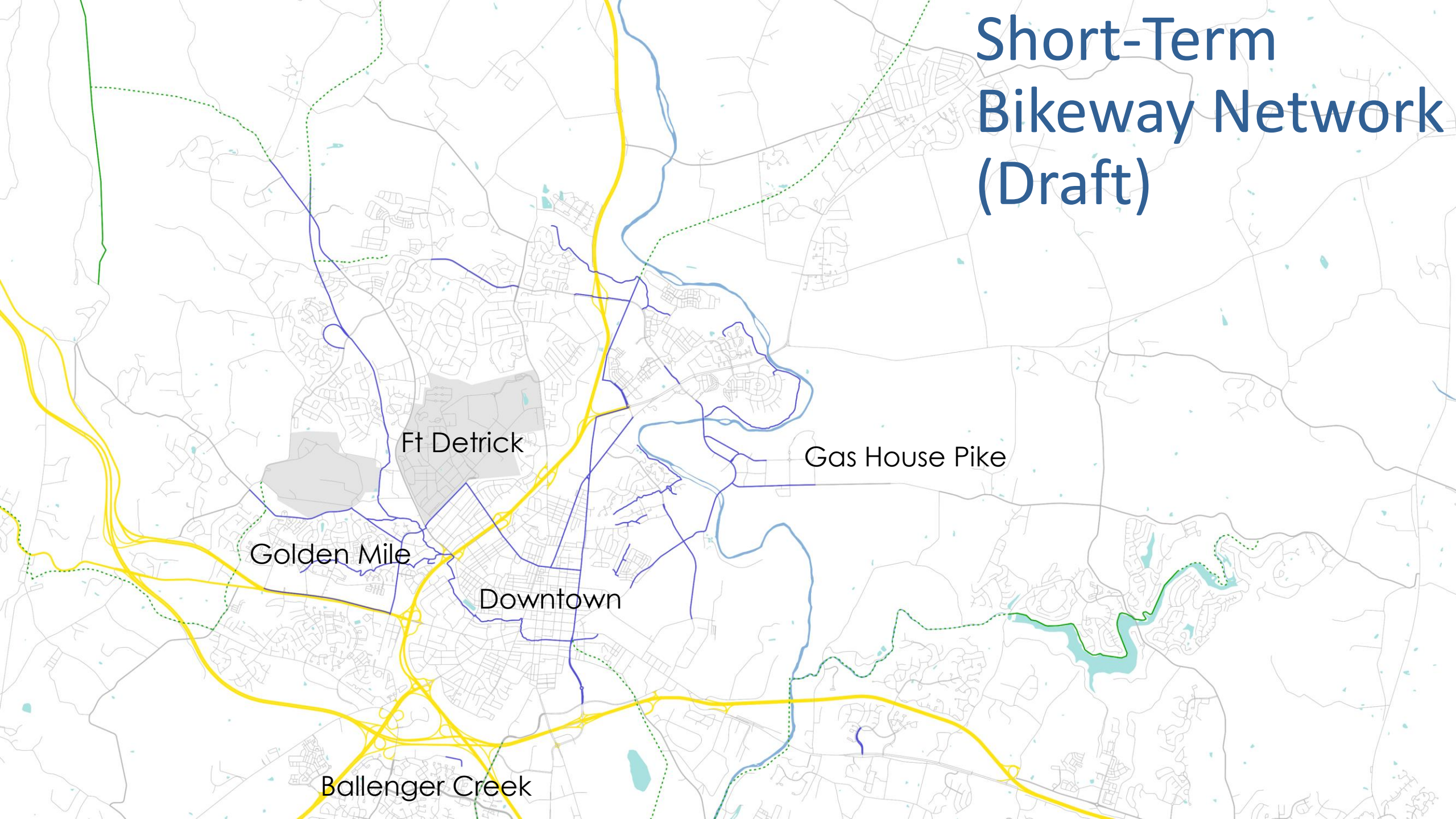




Existing Bikeway Network



Short-Term Bikeway Network (Draft)



Ft Detrick

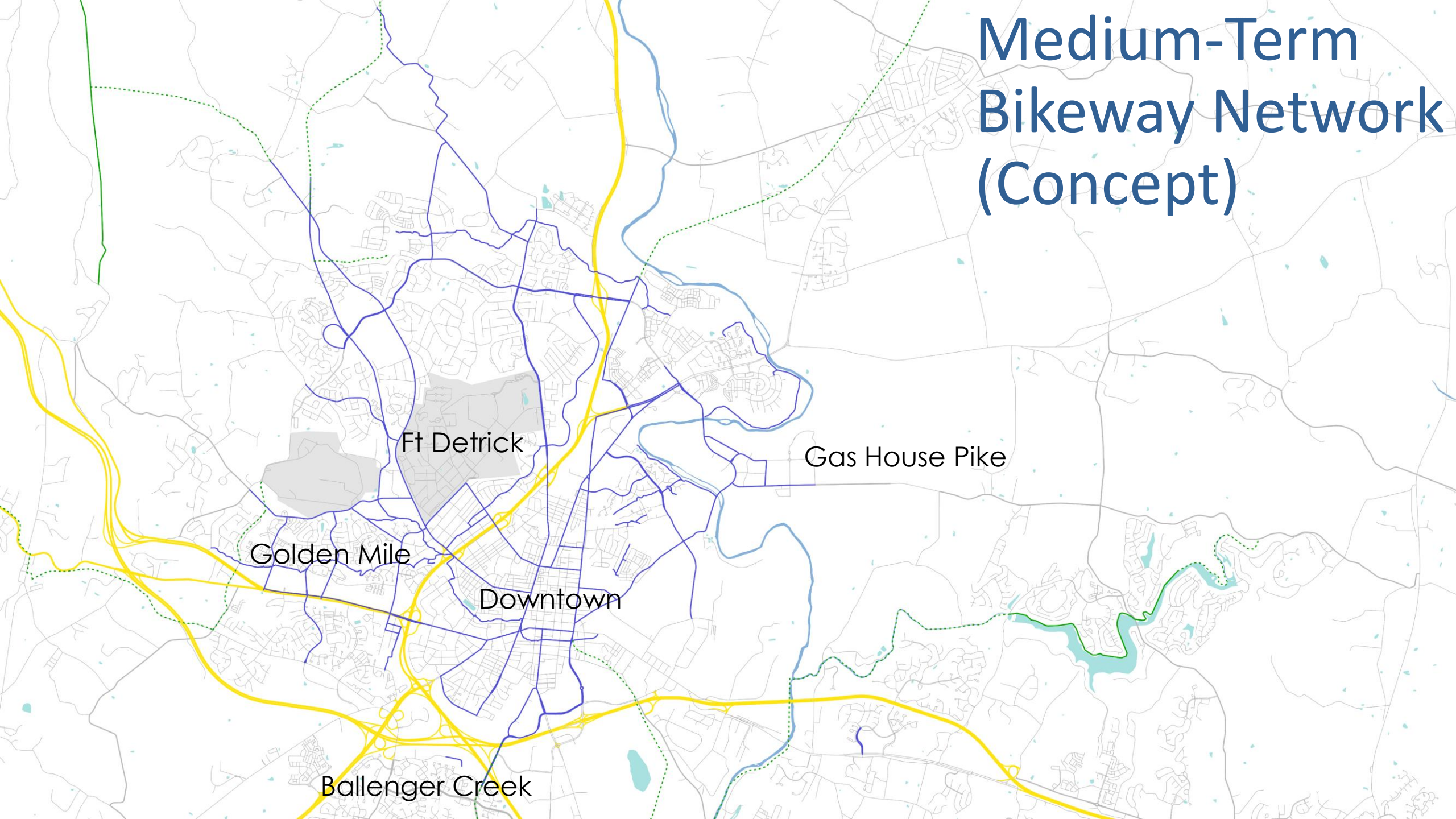
Gas House Pike

Golden Mile

Downtown

Ballenger Creek

Medium-Term Bikeway Network (Concept)



Ft Detrick

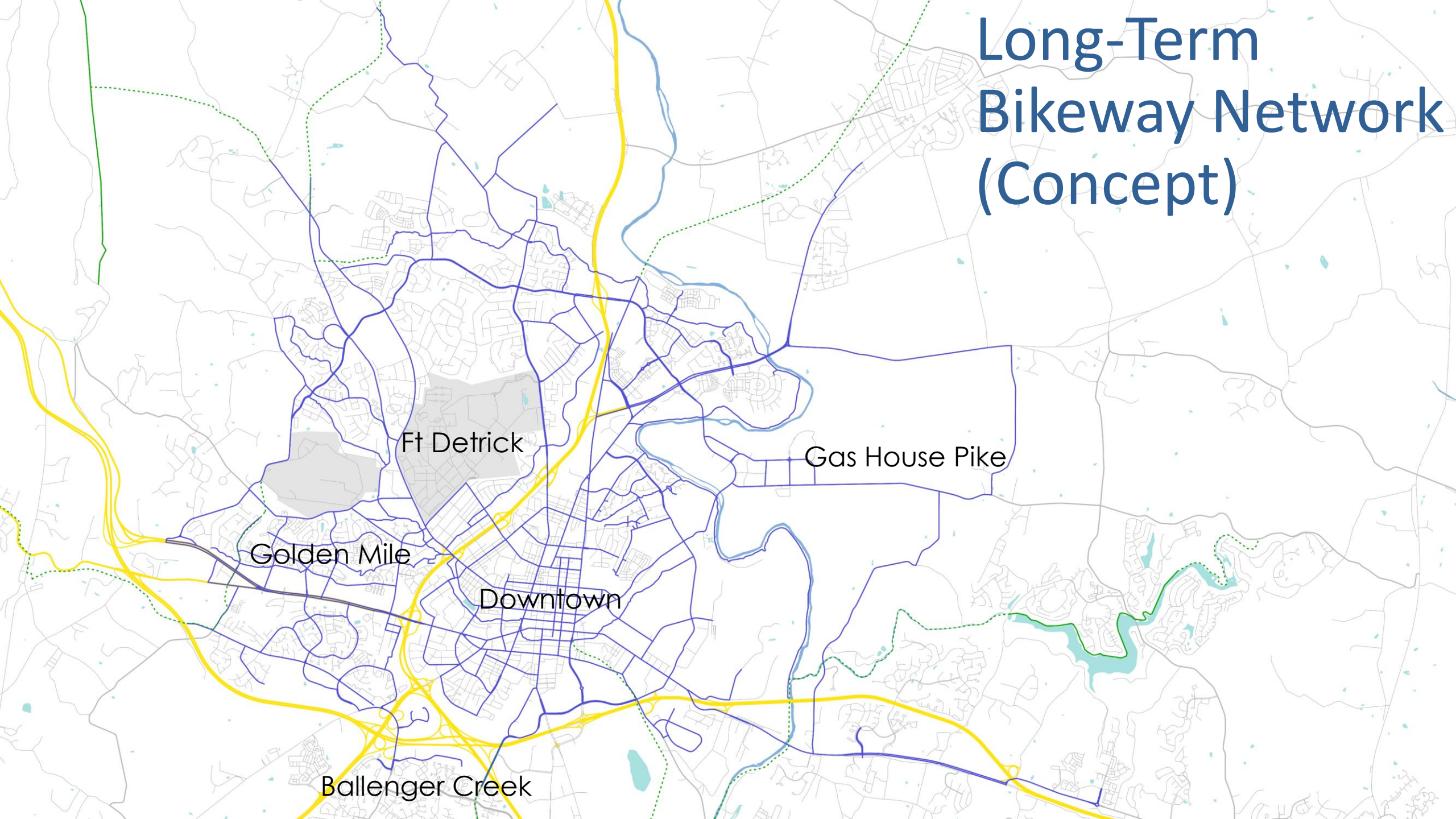
Gas House Pike

Golden Mile

Downtown

Ballenger Creek

Long-Term Bikeway Network (Concept)



Ft Detrick

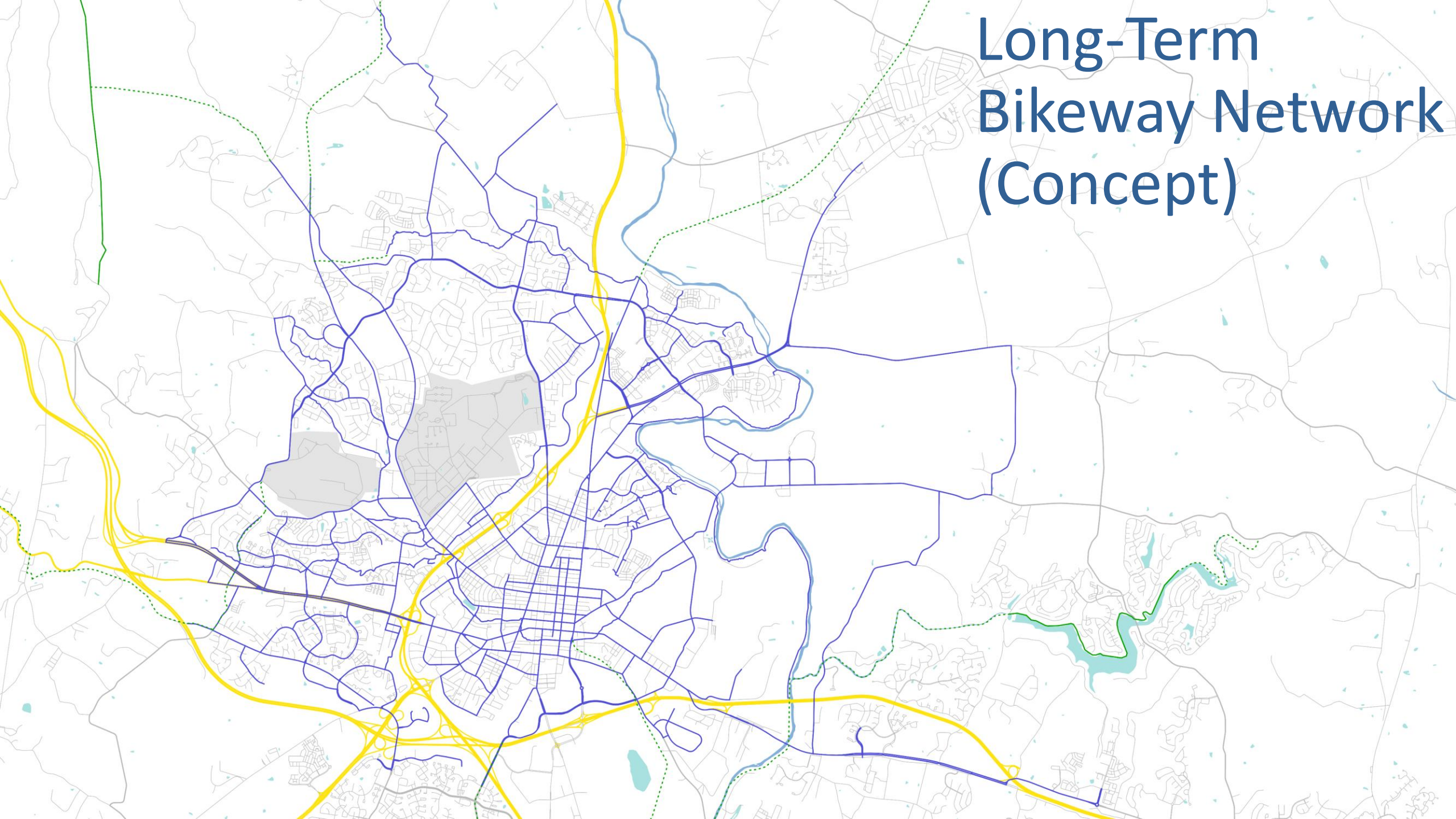
Gas House Pike

Golden Mile

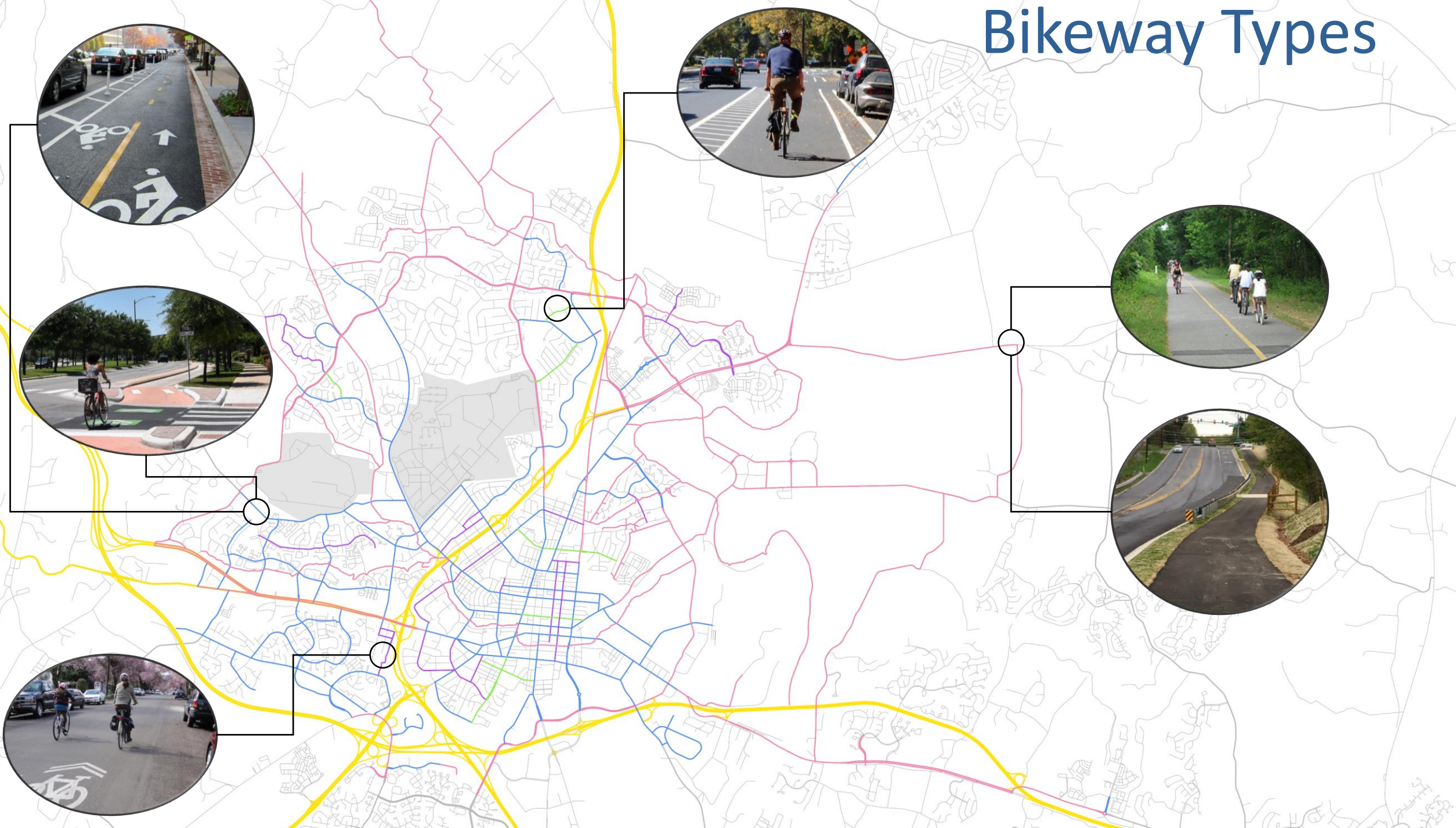
Downtown

Ballenger Creek

Long-Term Bikeway Network (Concept)



Bikeway Types



Policy, Programs, Finance



Proposed Policy Changes

- Parking
 - Reduce or eliminate parking minimums
 - Examine ways to unbundle parking from rent
 - Incentivize businesses to cash-out their parking benefits
- Update Design Standards
- Encourage more mixed developments
- Home bicycle parking
 - Require secure parking new buildings
 - Ban buildings from banning bikes on balconies or in units
 - Encourage in-unit bicycle parking options

Proposed Programs

- City-Supported
 - Bike to Work Day, Walk to Work Day
 - Bikes and Beers, Gran Fondo, High-Wheel Race
 - Bike Classes
 - Walking School Bus / Bike Trains
- City-Coordinated
 - Necessities Giveaways, Earn-a-Bike
 - Walk Audits
- City-Led
 - Marketing, Welcome to Frederick Packets, Bike Share

Financing

- **\$123 million** program if built new with consultants
 - \$7 million for sidewalks and intersections
 - \$116 million for bicycle projects
- Coordinate with paving schedule to bring down construction cost
- Evaluate cost/benefit of dedicated in-house design staff
- Aggressively pursue grant funding
- Spread construction over 30 years



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