

West Orange Township

Complete Streets Concept Plan, 2015



1. Background

1. History
2. West Orange characteristics
3. Demographics
4. Transportation
5. Methodology
6. Overall findings

2. Creating complete streets

1. Northfield Avenue
2. Pleasant Valley Way
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4. Overall suggestions
5. Bicycle network
6. Policy suggestions

3. Beyond the scope

1. Shared streets
2. Visualizing the community
3. Summary



Main Street in downtown West Orange



What are Complete Streets?

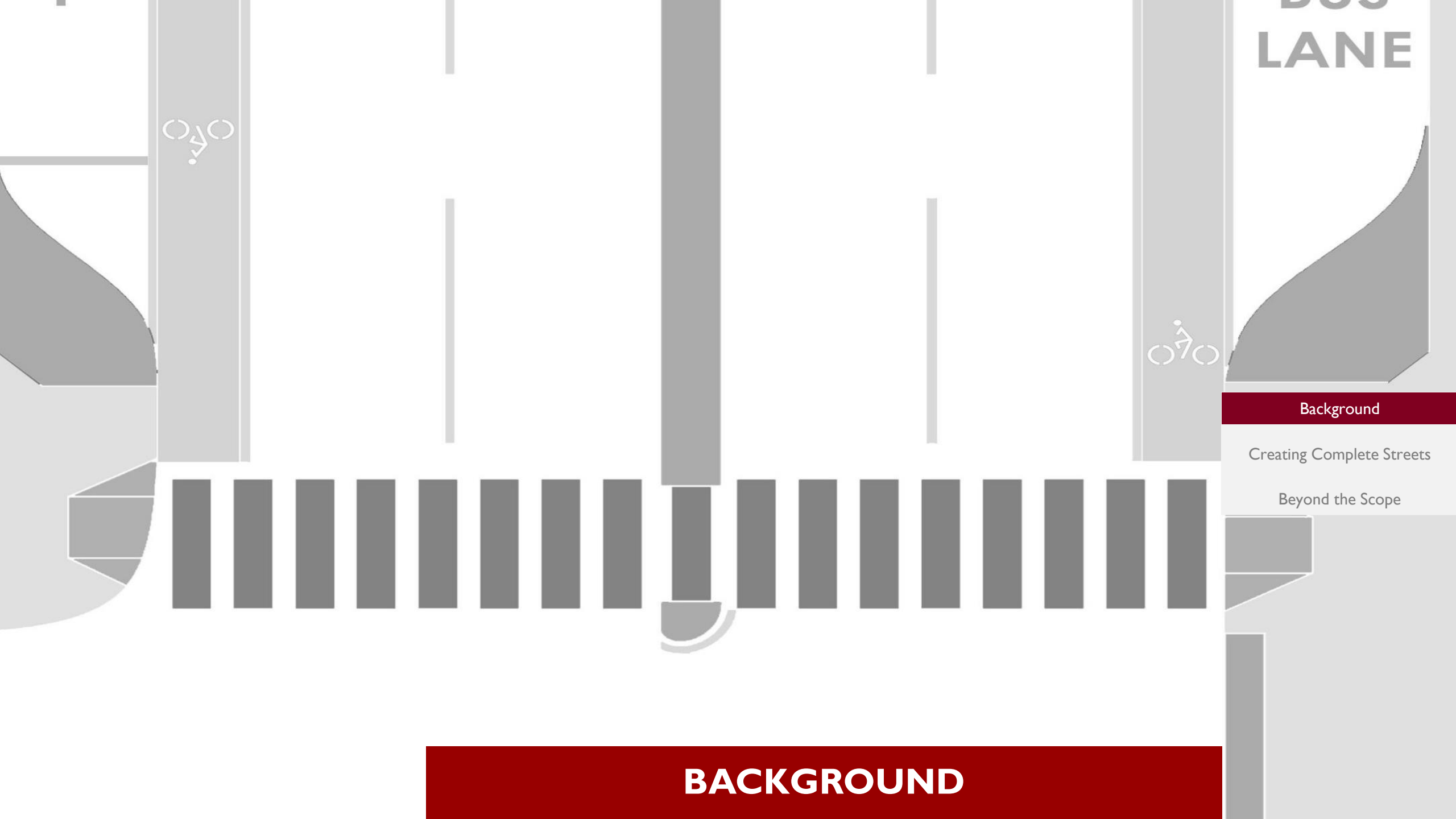
- Complete Streets are streets for everyone
- Enable safe access for pedestrians, bicyclists, motorists, and transit riders of all ages and abilities

Are Complete Streets right for West Orange?

- Improvements must be appropriate for the local context
- Plan gives realistic and meaningful policy guidance for the township



A complete streets design from Redmond, Washington



BUS
LANE



Background

Creating Complete Streets

Beyond the Scope

BACKGROUND

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HISTORY



- 1700s: Oldest homes were built
- 1856: Llewellyn Park established
- 1863: Contemporary boundaries established
- 1886: Thomas Edison arrives
 - Moves into Glenmont
 - Establishes a laboratory, factory, and movie studio.
- 1940s - 1960s: Development of western suburban zone
- 1973: I-280 cuts through community



Thomas and Mina Edison in West Orange, 1902



- Main Street redevelopment area
 - 21-acre site
 - Renovation of 1901 battery factory building
 - 610 Residential units
 - 18,000 sq. ft. commercial space

Renderings of Main Street redevelopment area

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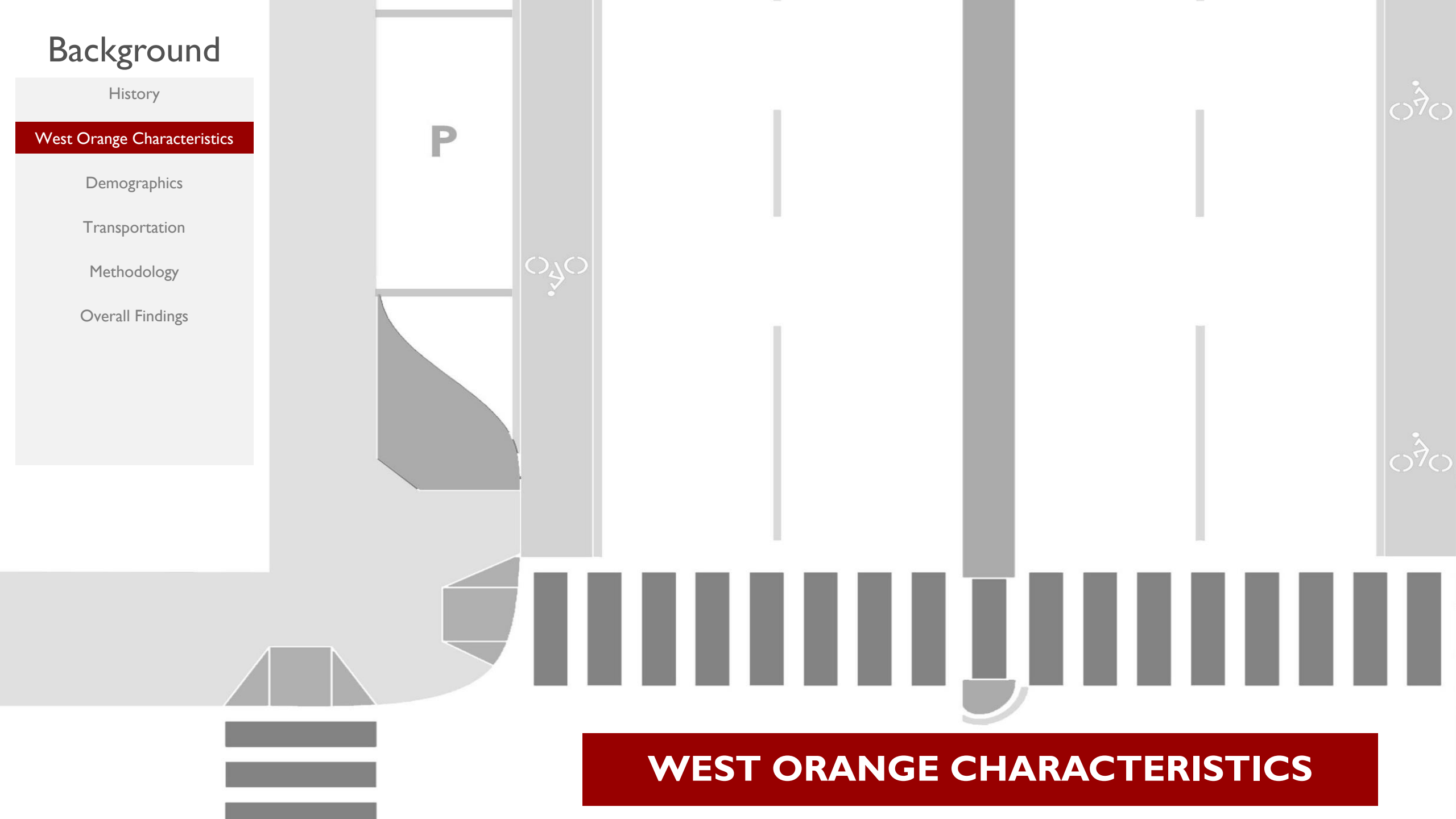
Methodology

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WEST ORANGE CHARACTERISTICS

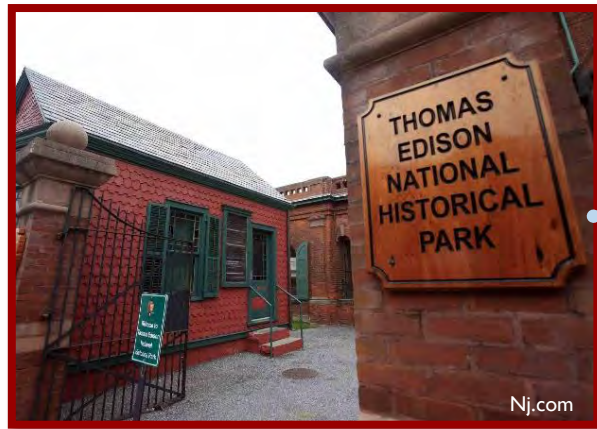




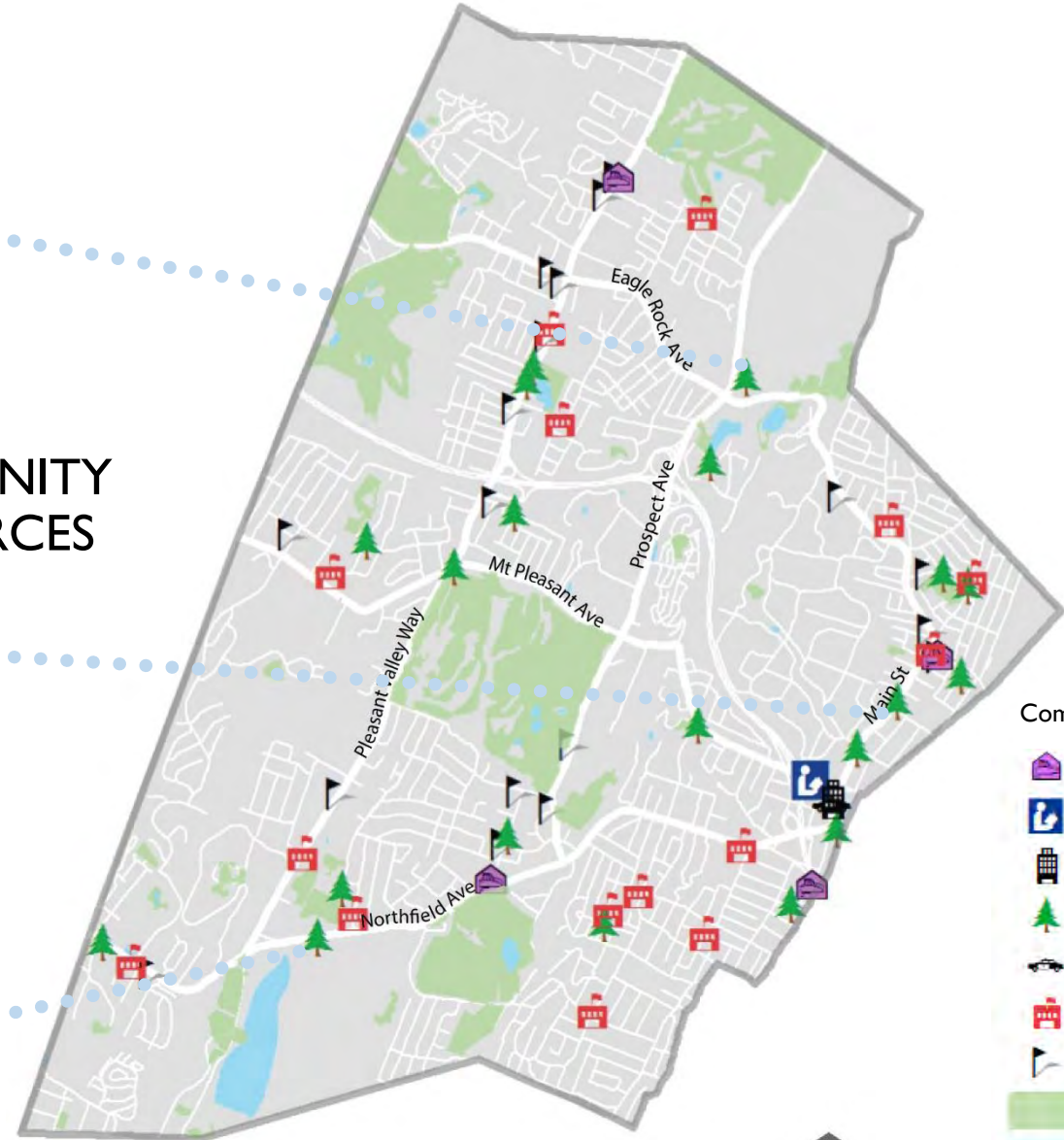
LAND USE LAND COVER

- 44.6% of land use in West Orange is residential
- Nearly 30% of forest cover
- Commercial services around Main Street & Northfield Avenue
- More than half of residential land use is medium density





COMMUNITY RESOURCES



Community Resources

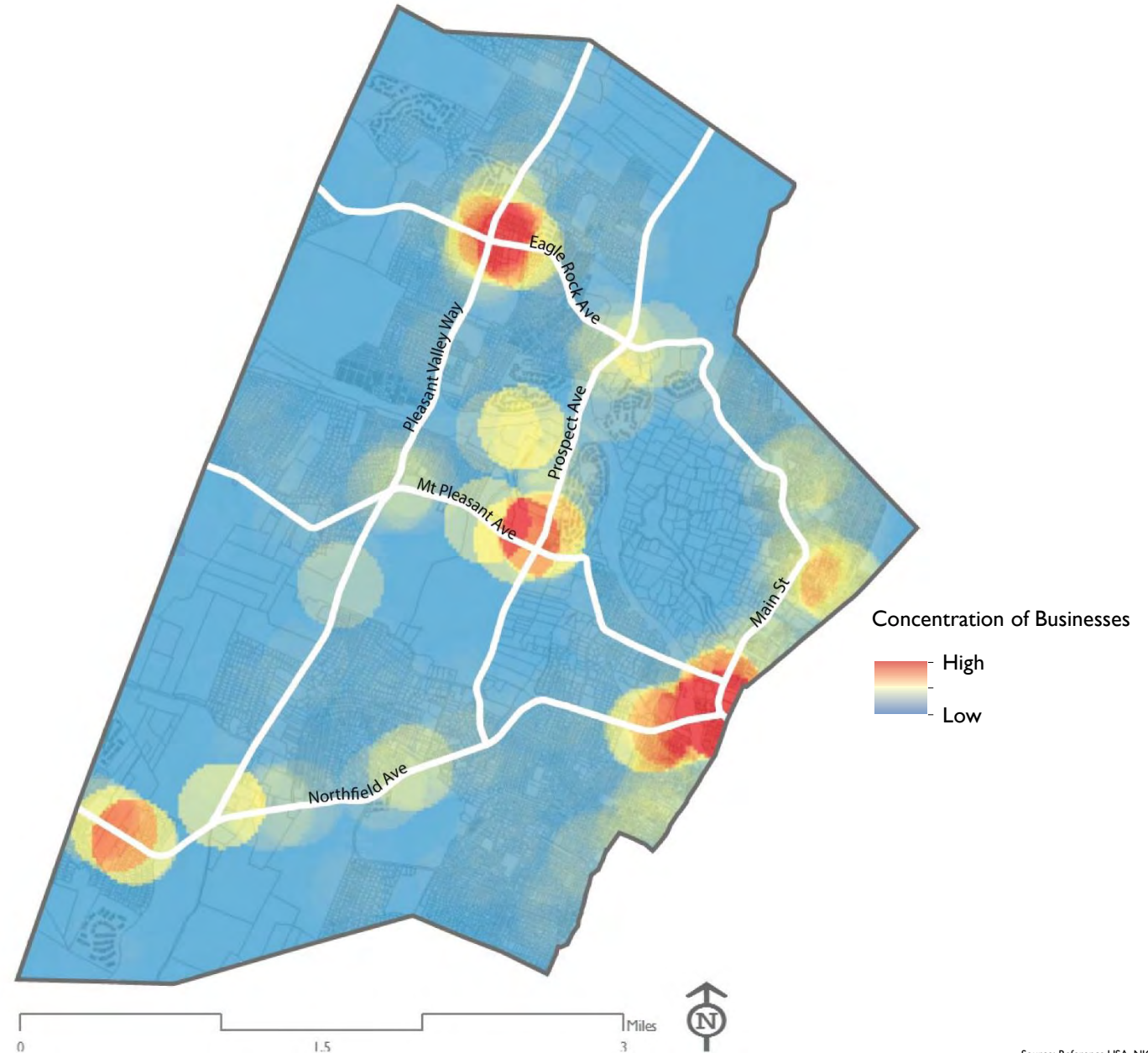
- Fire Station
- Libraries
- Local Government
- Parks
- Police Department
- Schools
- Religious Institutions
- Recreational Land
- Water





BUSINESS CONCENTRATION

- Northfield Avenue & Main Street
- Pleasant Valley Way & Eagle Rock Avenue
- Southwestern corner of Northfield Avenue
- Essex Green Shopping Center



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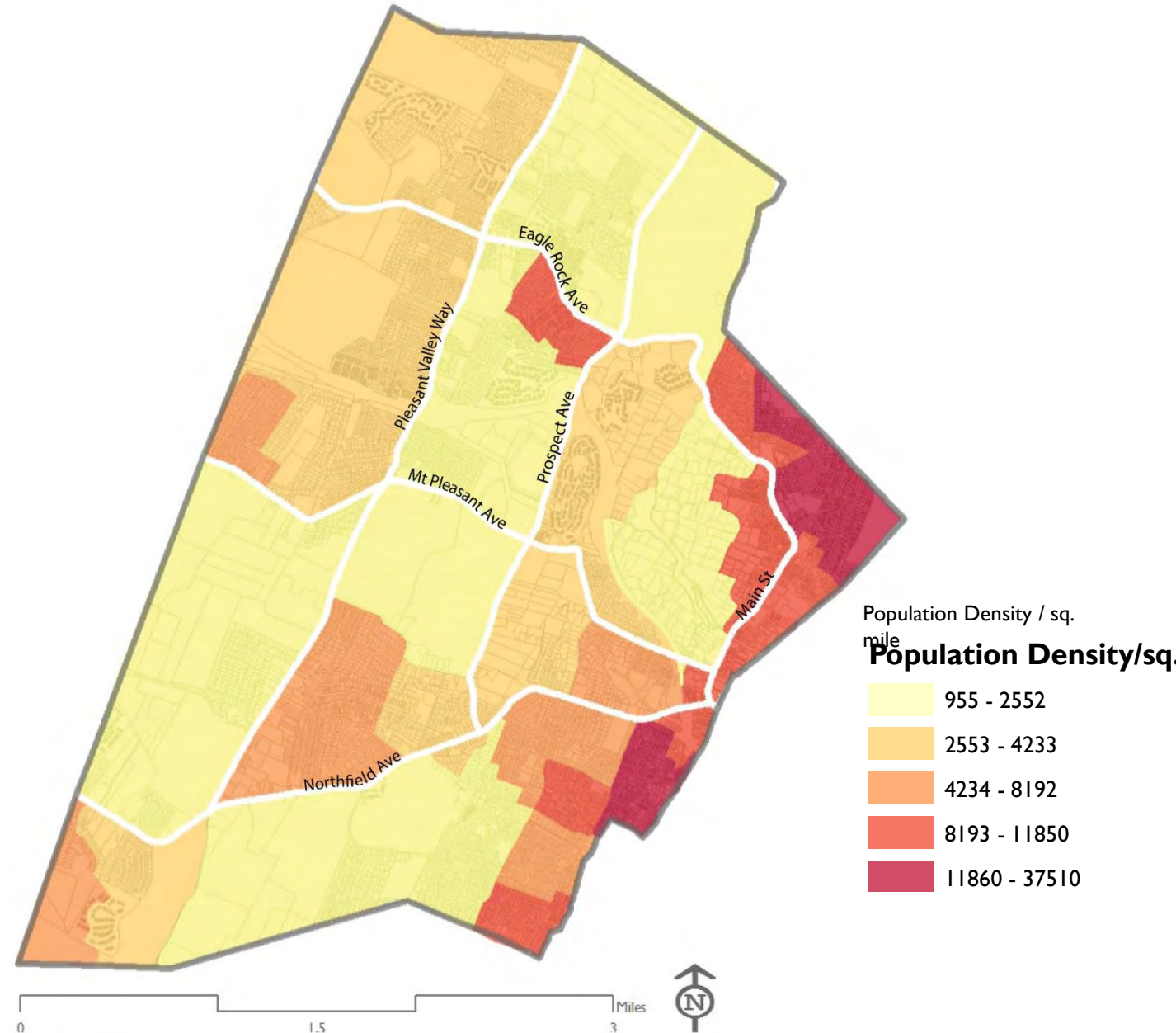


DEMOGRAPHICS



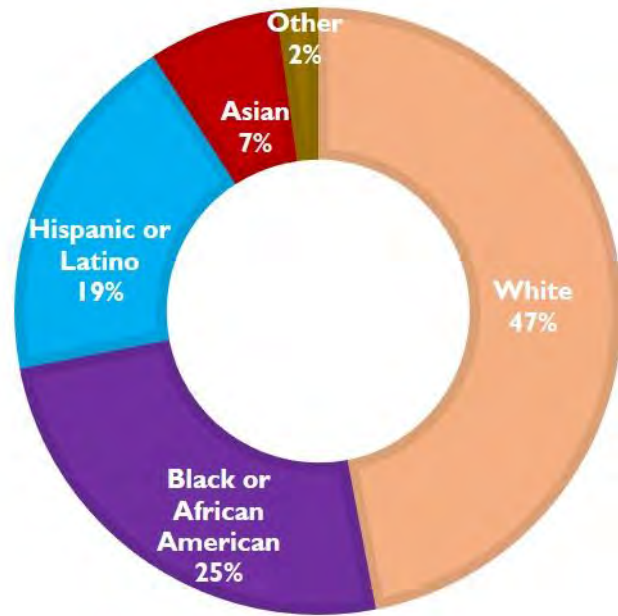
POPULATION DENSITY

- Total Population: 46,425 people
- Population Density: 3,836/sq. mile
- 5th most populated township in Essex County
- Concentration of high population density around Main Street and southeast of Northfield Avenue

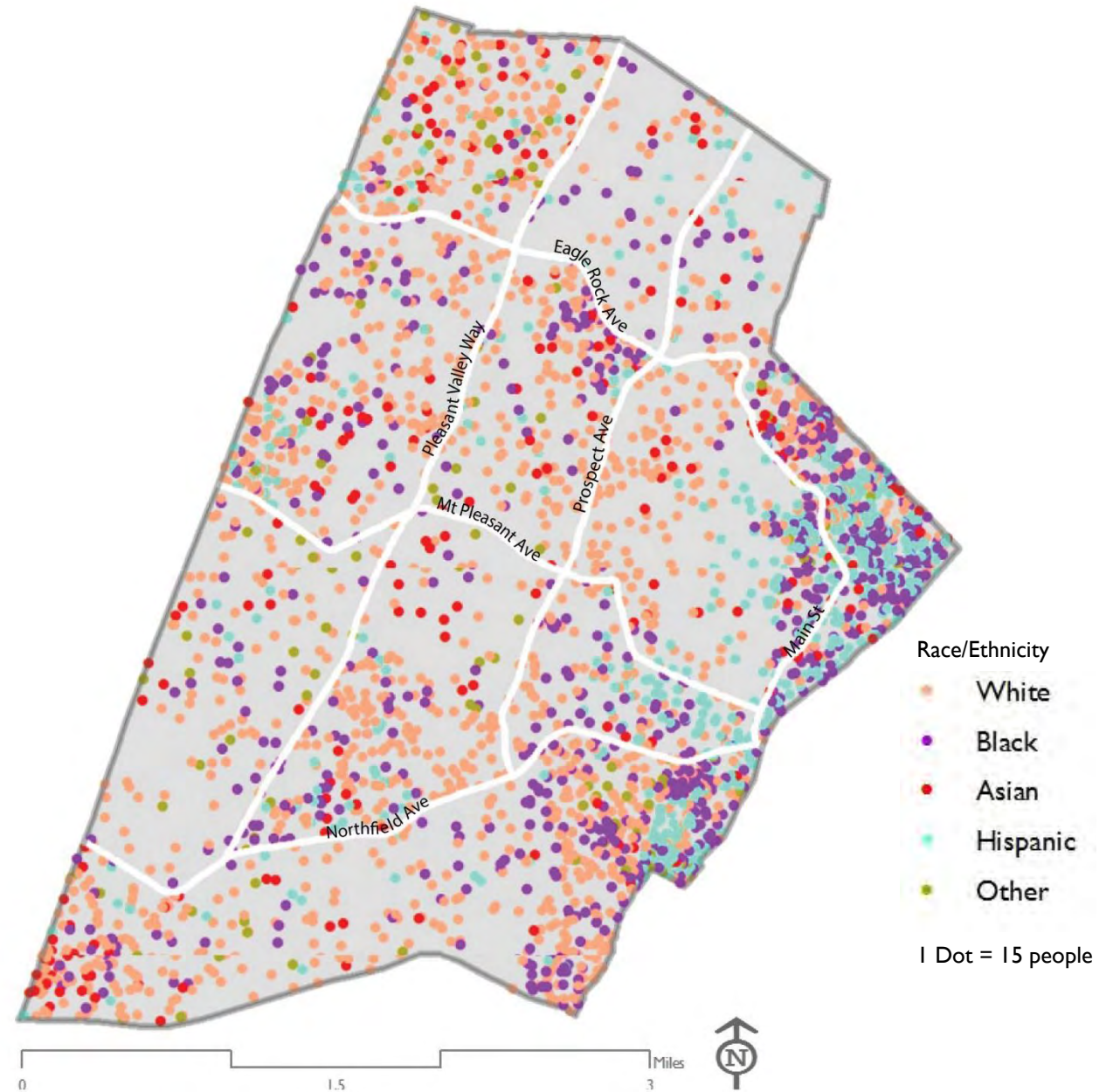




RACE/ ETHNICITY



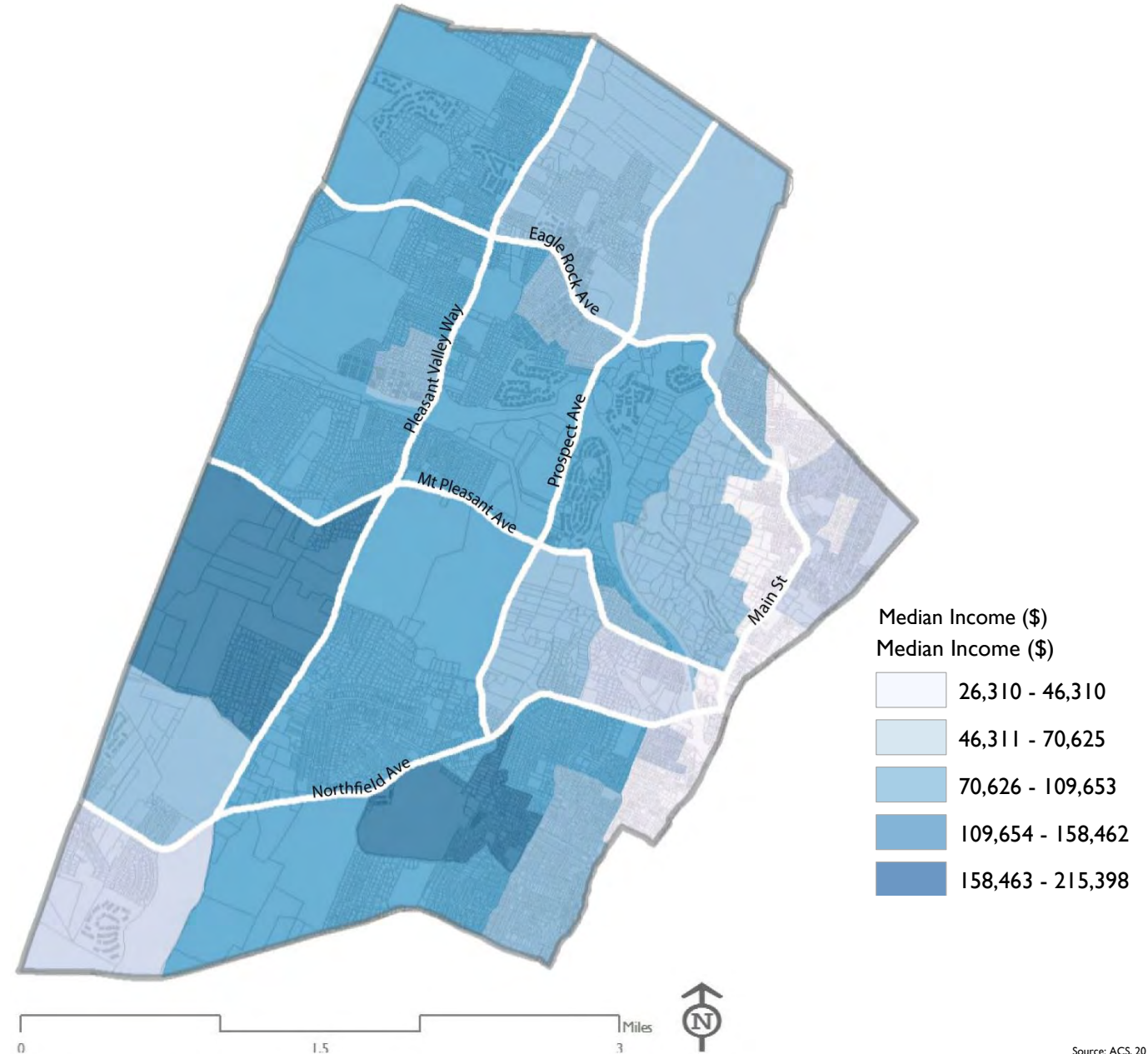
- White
- Black or African American
- Hispanic or Latino
- Asian





MEDIAN INCOME

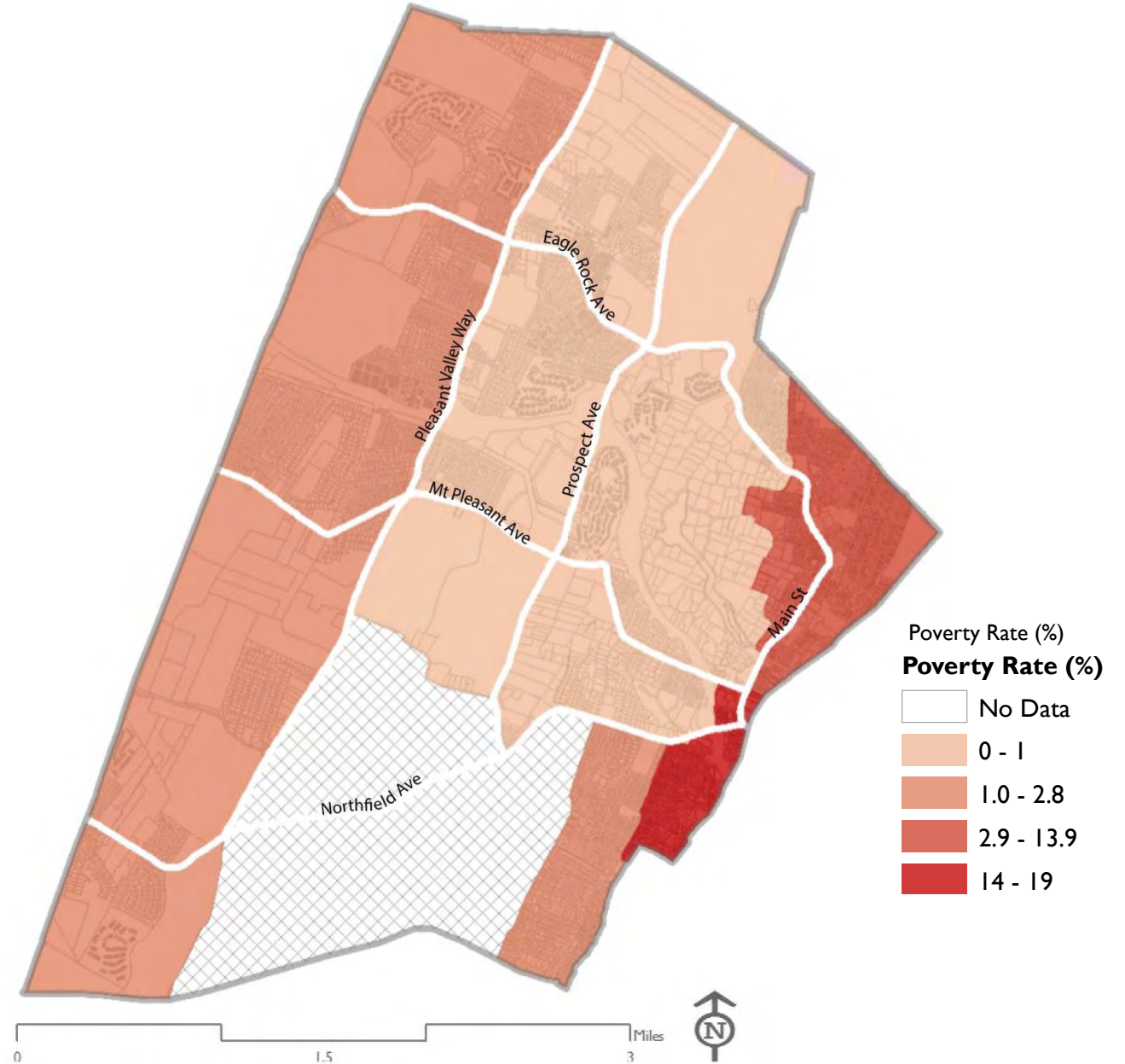
- Median income: \$26,130 – over \$200,000
- Average median income: \$87,516
- Census tracts closest to Orange Township have low median household incomes





PERCENT IN POVERTY

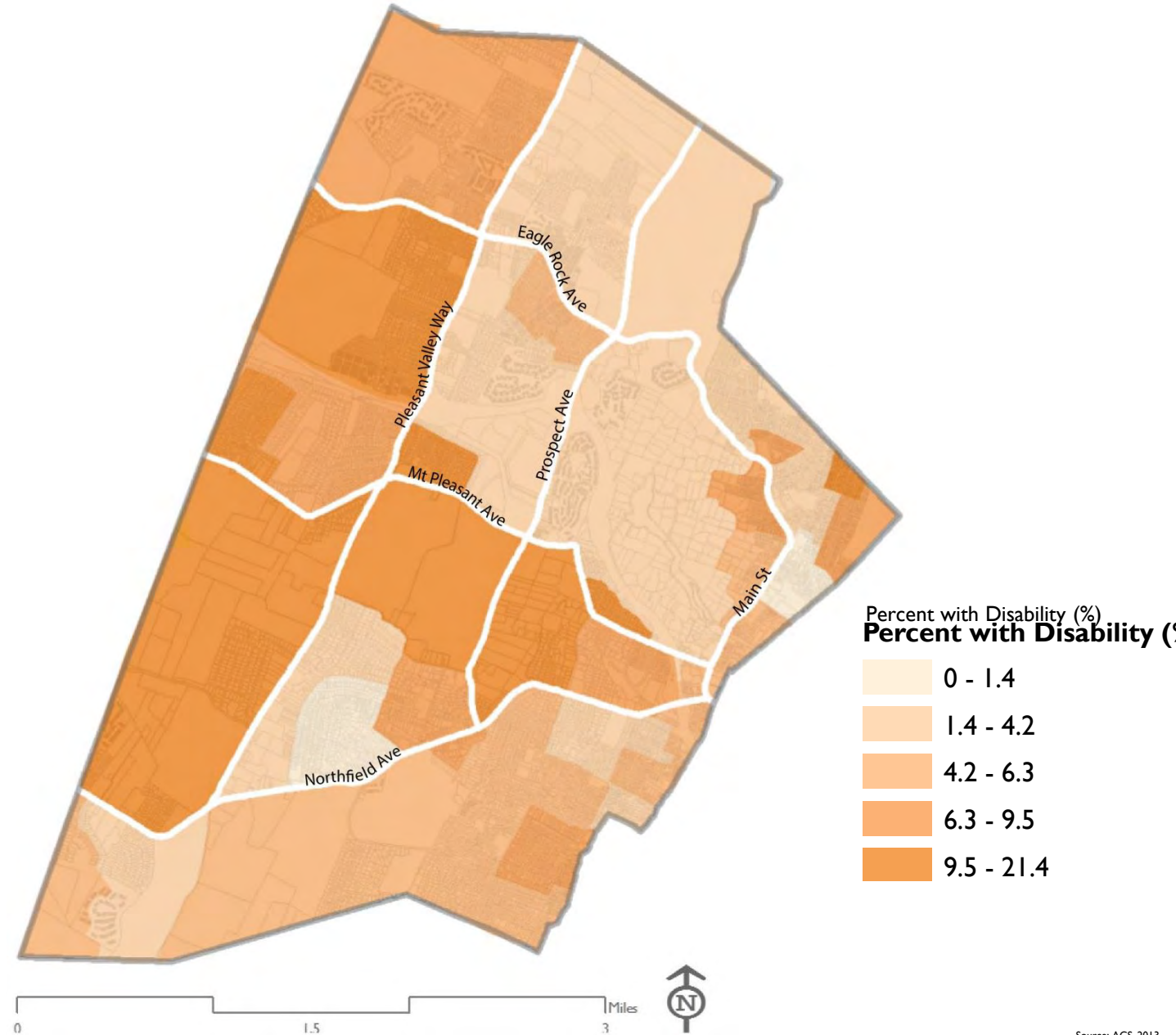
- Average percent in poverty
 - New Jersey: 10%
 - Essex County: 17%
 - West Orange: 7%
- Concentrated in eastern section of West Orange





PERCENT WITH DISABILITY

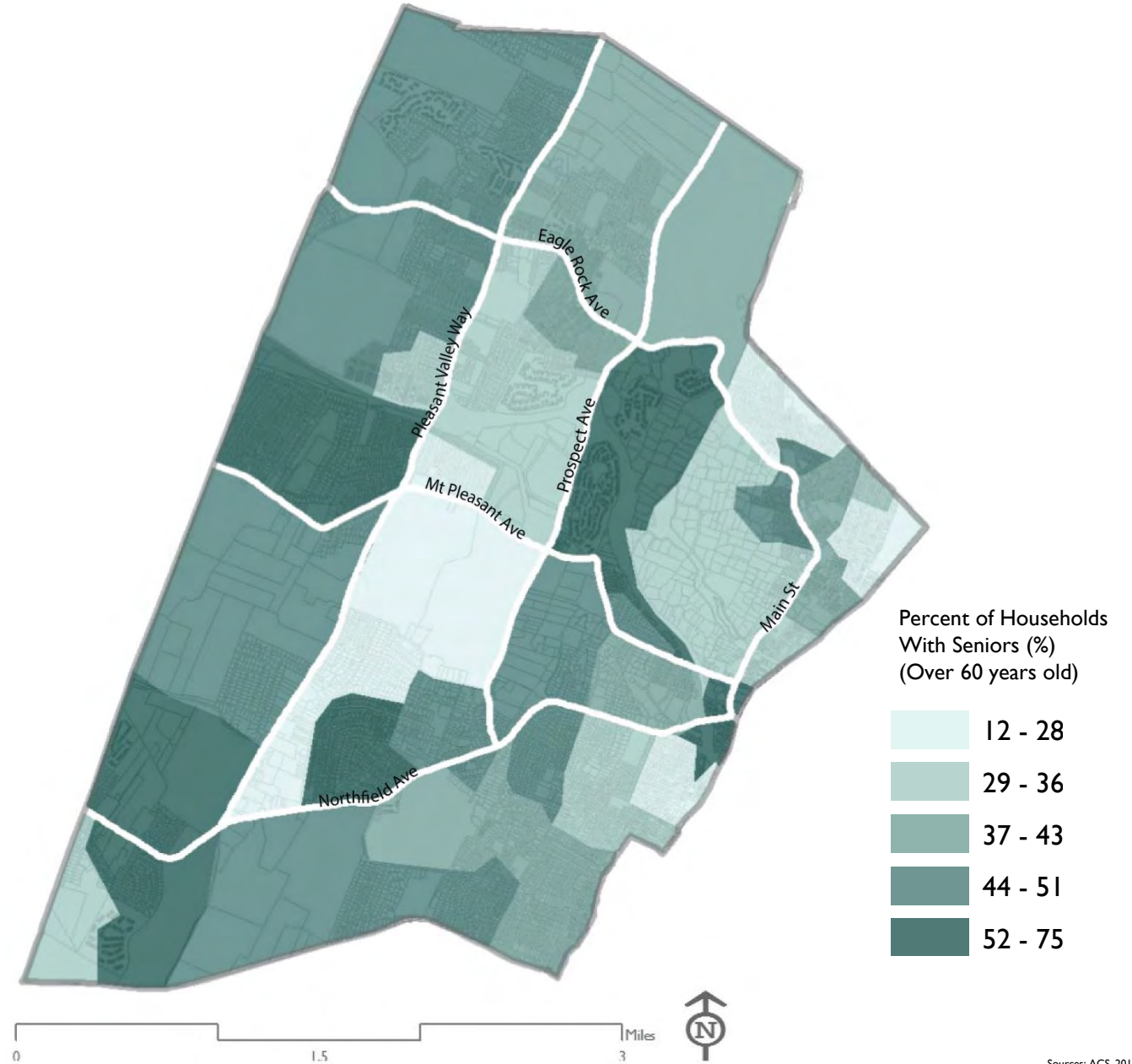
- Concentration of people with disability in:
 - Northwestern section
 - Main Street
 - West of Pleasant Valley Way





PERCENT WITH SENIORS

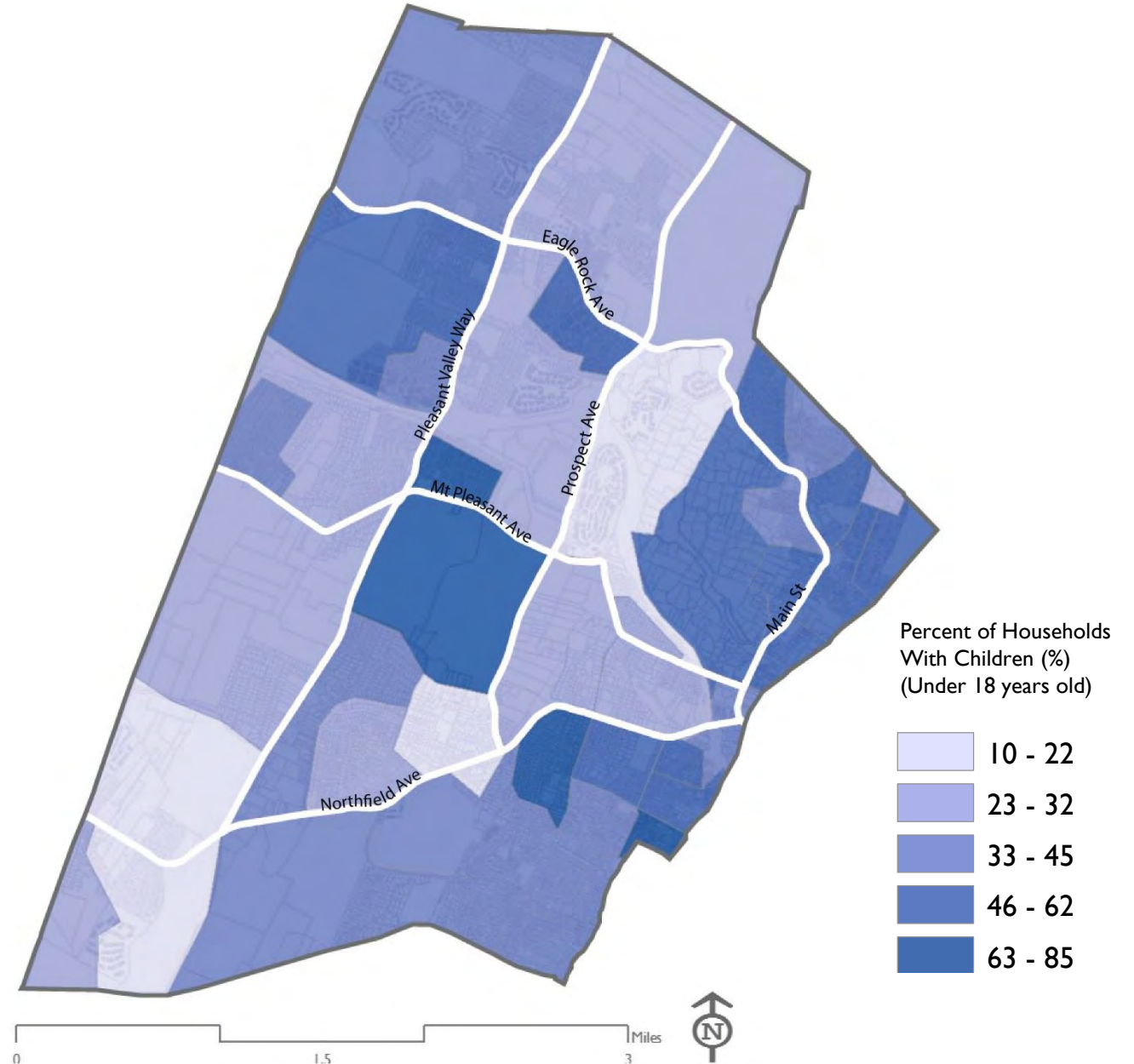
- Median age: 40 years old
- Population 65 years and older: 15%
- 40% of households in West Orange have at least one person 60 years or older





PERCENT WITH CHILDREN

- Nearly ¼ of West Orange population is under 18 years old
- 1969 – 48% of children walked to school
- 2009 – 13% of children walked to school
- Main reason: traffic-related dangers



Background

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Transportation

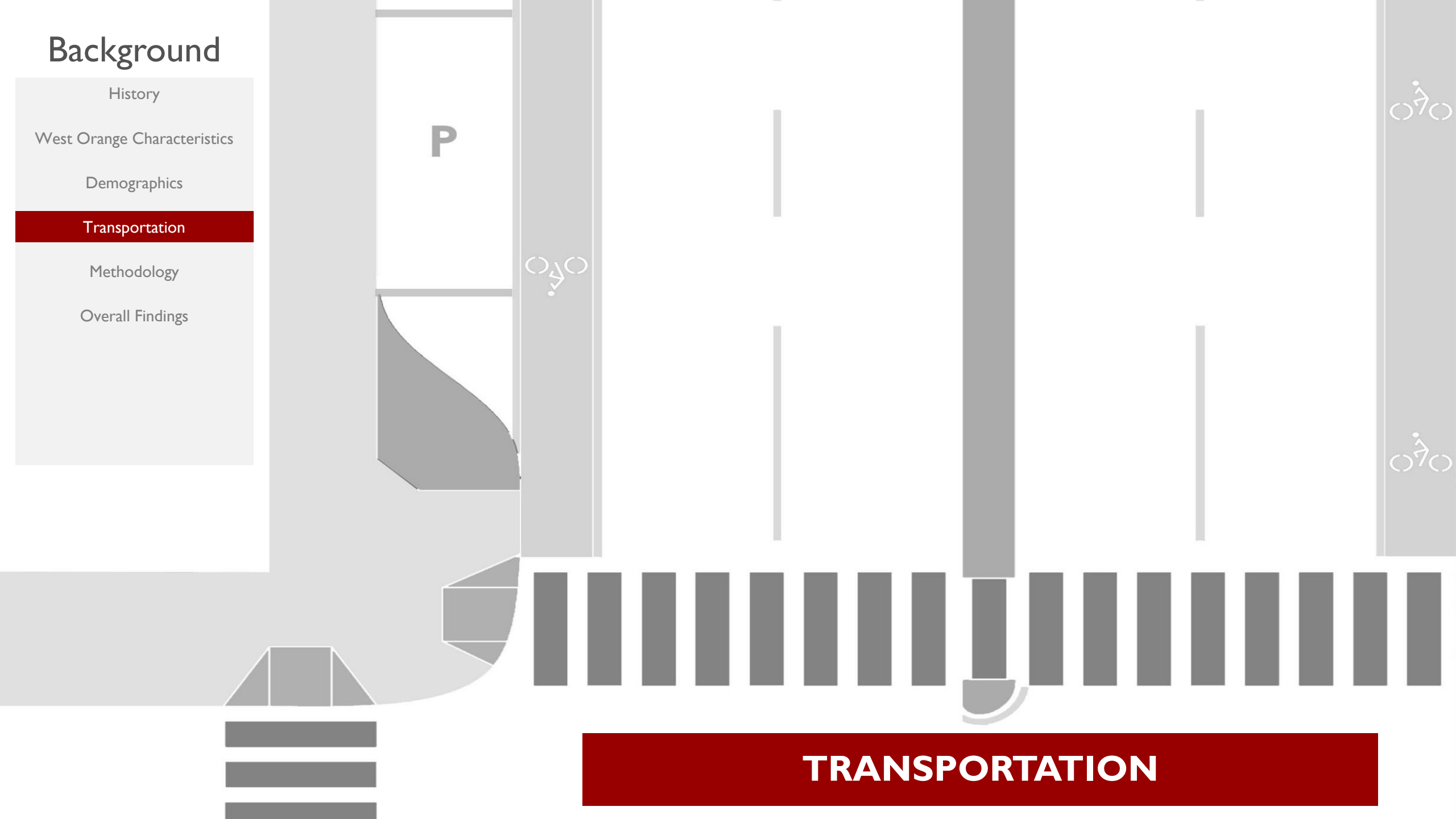
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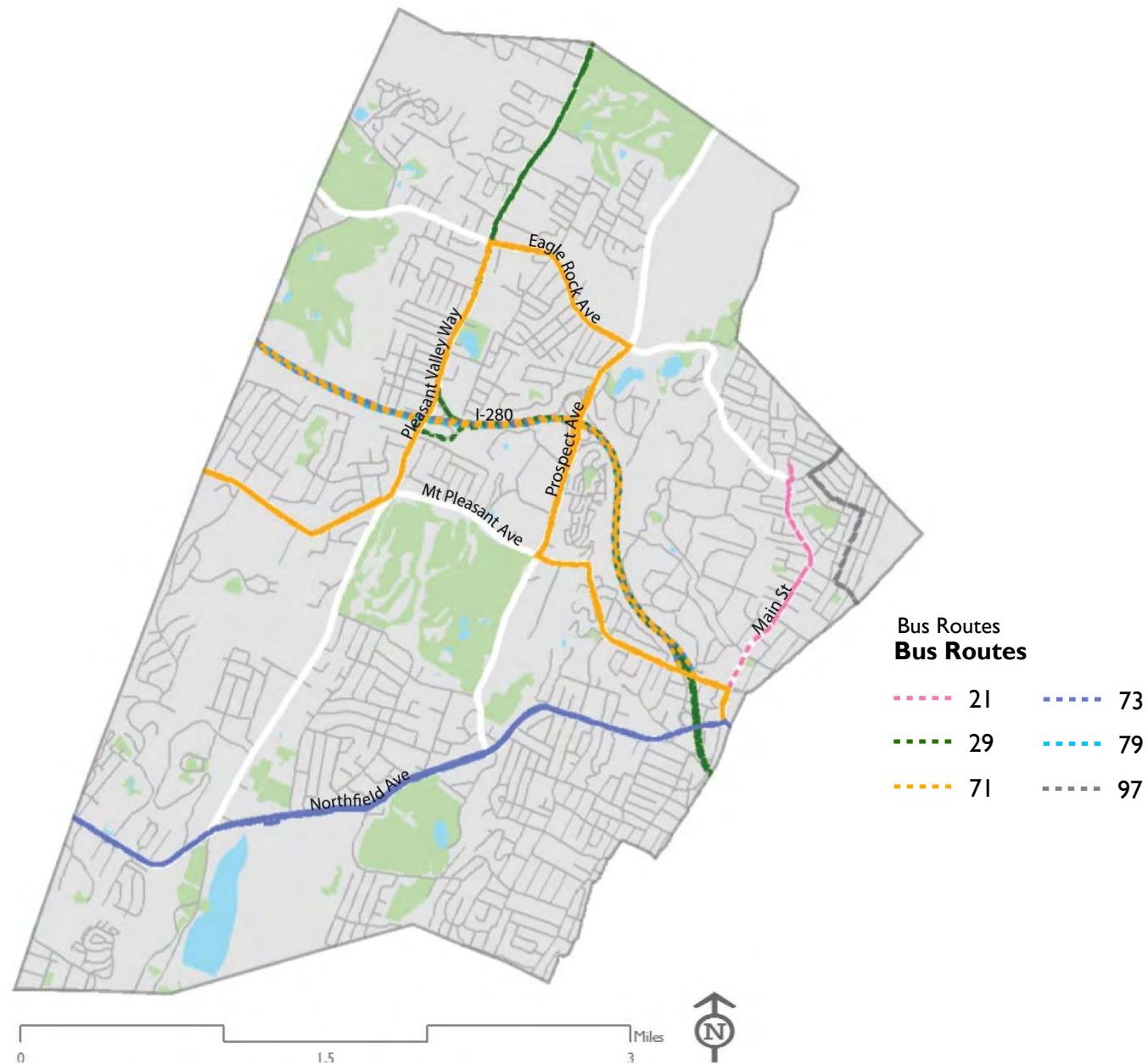
TRANSPORTATION





NJ TRANSIT BUS ROUTES

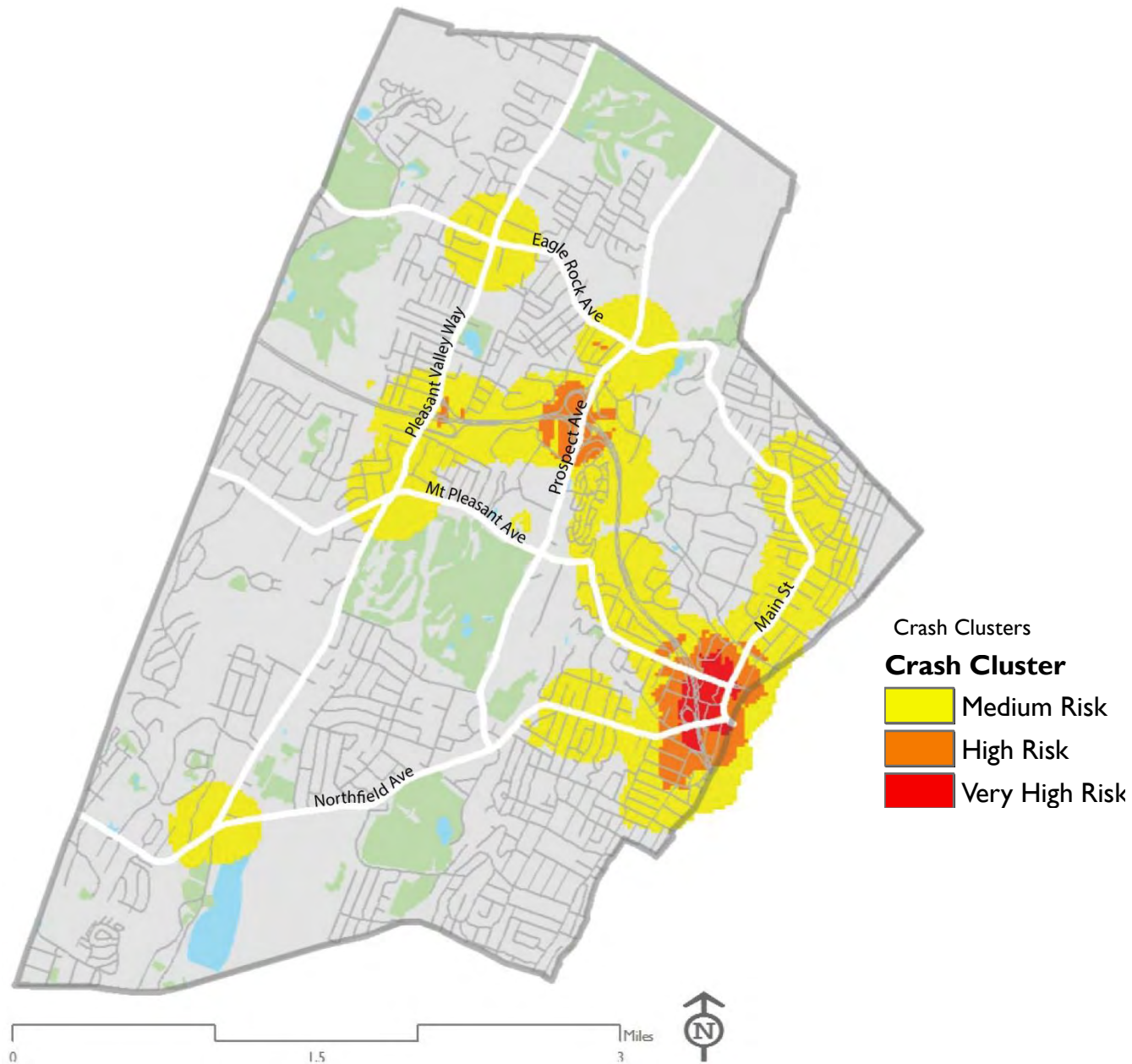
- NJ Transit buses operate along all major streets:
 - Main Street
 - Pleasant Valley Way
 - Northfield Avenue





CRASH DENSITY

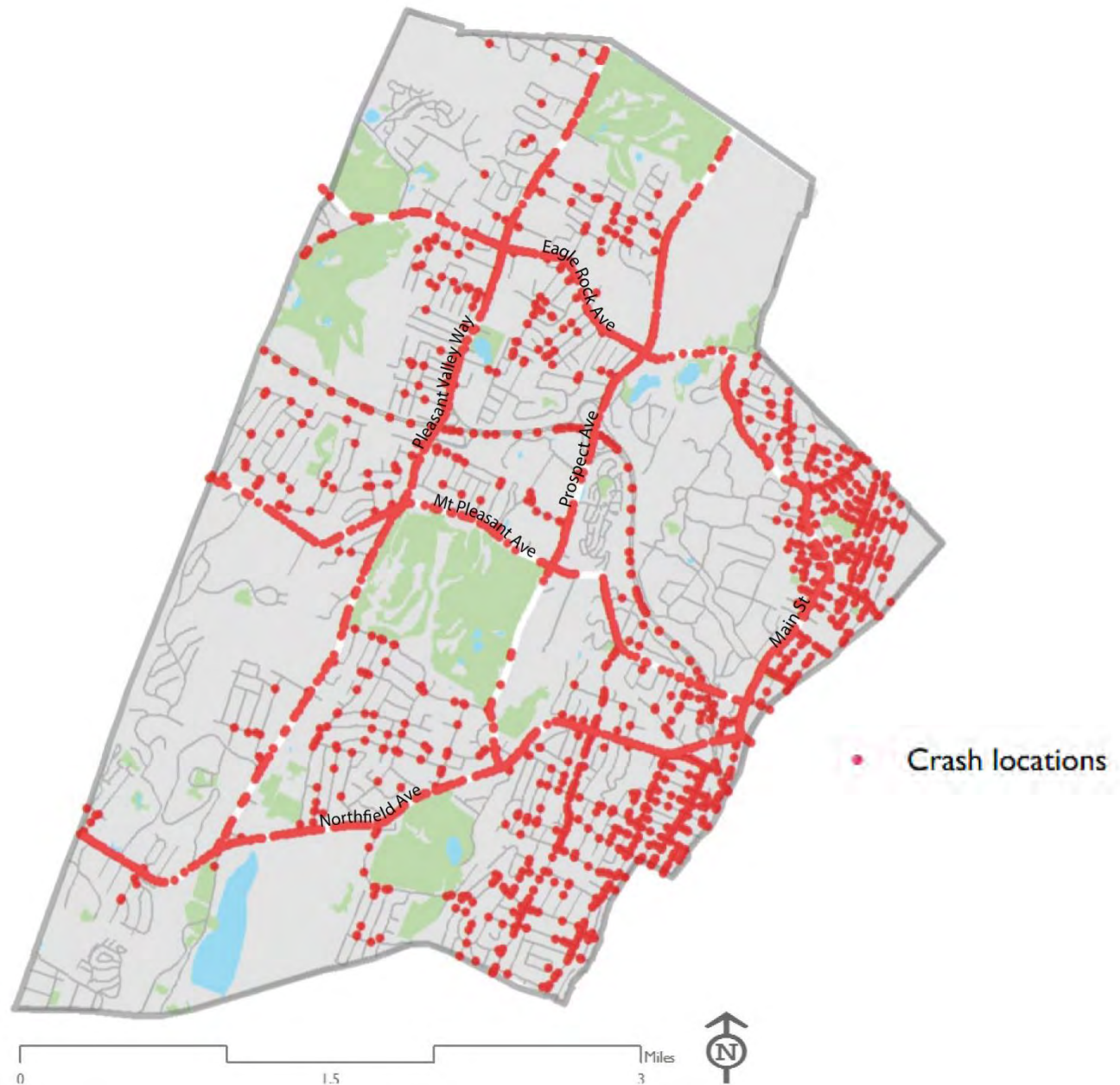
- Heavily concentrated:
 - Intersection of Main Street & Northfield Avenue
 - Intersection of I-280 & other arterial roads





ALL CRASHES

- Crash locations along principal arterial roads*
- NJDOT: 25% of all crashes take place at intersections



* According to the most recent NJDOT data, there were 11,876 total crashes in West Orange from 2003 – 2012. Only 10,630 of them are geo-coded on our map.



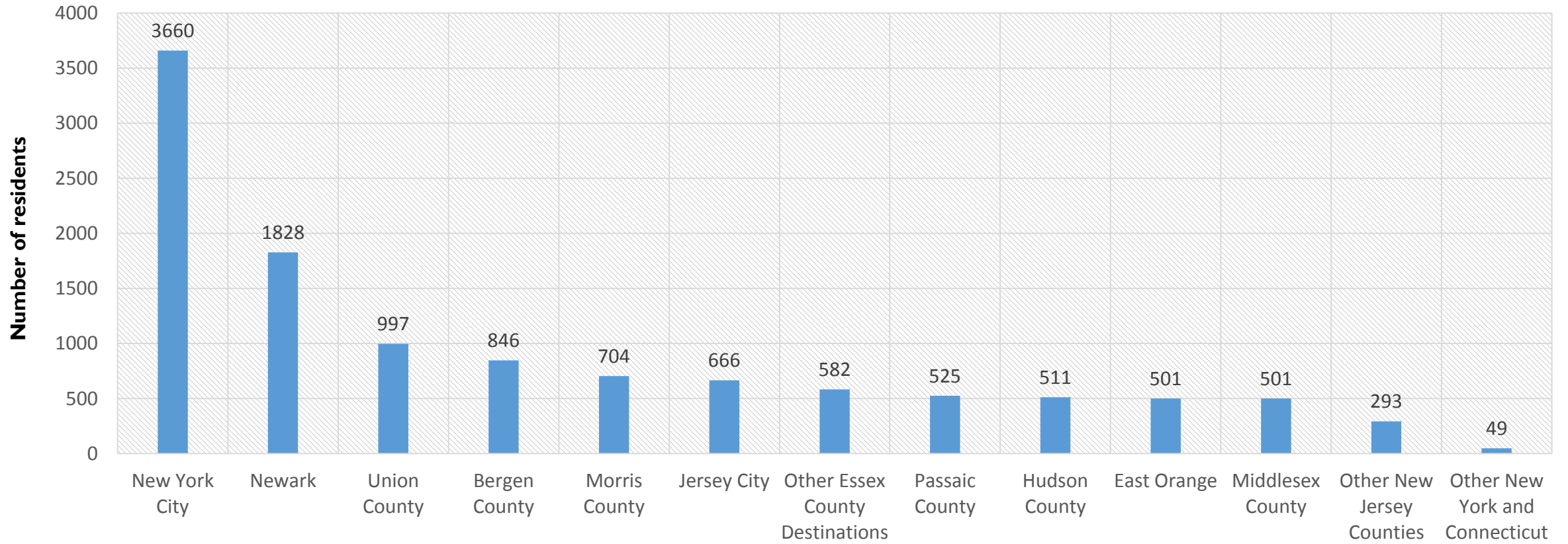
PEDESTRIAN VEHICLE CRASHES

- Along major intersections
- 273 total crashes from 2003 – 2012
- Unmarked crosswalks, vehicle speed, lack of lighting, crosswalk distance, and angle increase risk of crashes





PUBLIC TRANSIT DESTINATION OF WEST ORANGE RESIDENTS





WEST ORANGE MAJOR ROADS AADT COUNTS

Location	Cross Streets	AADT	Date
Eagle Rock Ave	Cliff St, Valley View St	13,033	1/24/12
Main St	Alden St, Lakeside Ave	14,016	6/4/12
Mount Pleasant Ave	Merrywood Dr, Greentree Rd	8,319	5/14/12
Northfield Ave	St Cloud Pl, Ridgeway Ave	21,059	7/10/12
Pleasant Valley Way	Greenwood Ave, Stanford Ave	21,259	1/11/12
Prospect Ave	Eagle Rock Ave, Cannon St	19,645	4/8/14

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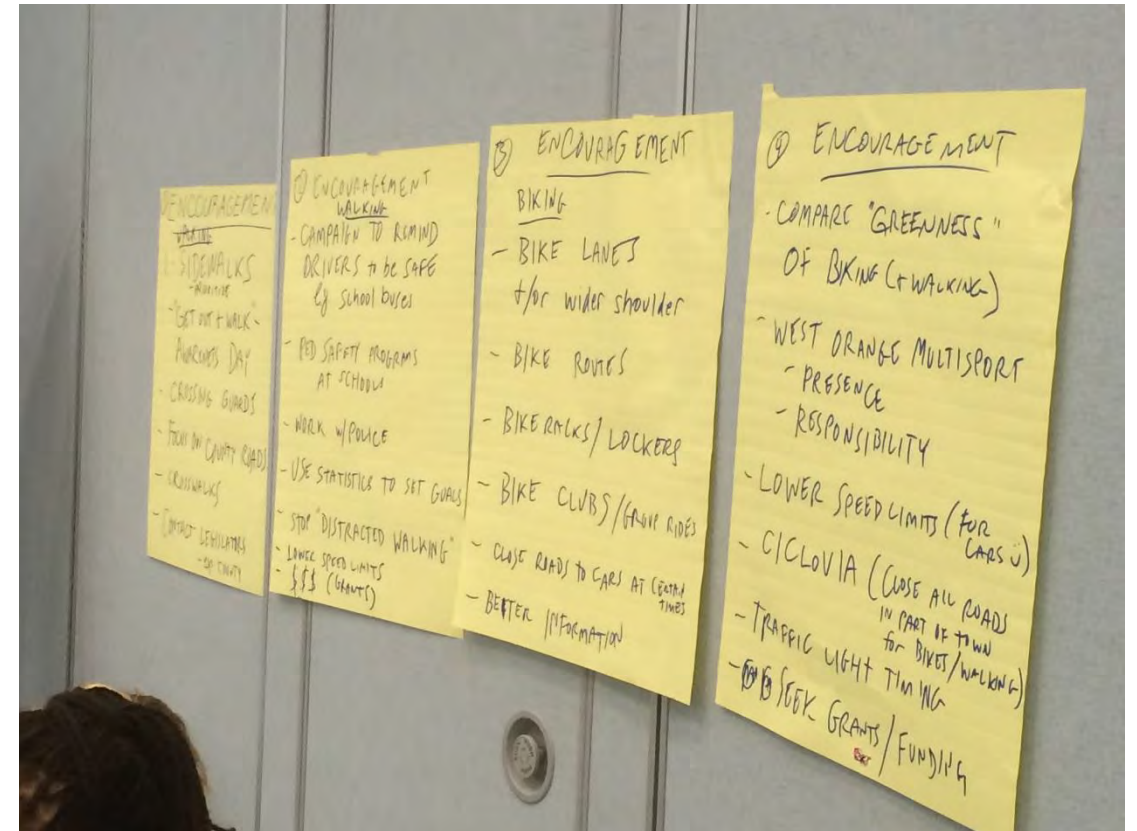
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METHODOLOGY



- Consulted with local stakeholders and residents
- Identified dangerous areas with traffic volume and crash data
- 19 streets were selected for further analysis and walkability audits





ASSESSED STREETS

- Chestnut Street
- Eagle Rock Avenue
- Franklin Avenue
- Harrison Avenue
- Main Street
- Mitchell Street
- Mount Pleasant Avenue
- Northfield Avenue
- Park Avenue
- Pleasant Valley Way
- Prospect Avenue
- Rollinson Street
- Sandford Avenue
- Sheridan Avenue
- Valley Road
- Washington Street
- Wheeler Street
- William Street
- Woodland Avenue





West Orange Walkability Guide

For the use of West Orange Township residents and officials in order to assess the walkability, safety and inclusivity of their community streets.



Source: <http://www.westorange.org/>

	No Instances	1-4 Instances	Issues within School Zone?	5 or more Instances	Issues within School Zone?
Sidewalks					
No sidewalks or paths*	If no sidewalks, add 80 points and move on to Street Crossings				
Sidewalks cracked/broken	0	2	3	4	5
Sidewalks are uneven*	0	5	6	10	11
Sidewalks blocked by lights, poles, signs, plants, vehicles*	0	5	6	10	11
Sidewalks are not continuous*	0	5	6	10	11
Sidewalks are interrupted by driveways	0	2	3	4	5
Sidewalks not wide enough for two people*	0	5	6	10	11
Intersections don't have curb ramps*	0	5	6	10	11
Sidewalks do not have a parkway/buffer separating it from the street	0	3	4	6	7
Existence of overgrowth	0	2	3	4	5
Other**					



Street	Total Walkability Score
Pleasant Valley Way	283
Prospect Avenue	240
Northfield Avenue	208
Wheeler Street	187
Washington Street	140
Chestnut Street	132
Harrison Avenue	129
Main Street	120
Valley Road	118
Mount Pleasant Avenue	118
Woodland Avenue	115
Park Avenue	107
Eagle Rock Avenue	96
Stanford Avenue	89
Mitchell Street	78
William Street	69
Sheridan Avenue	61
Franklin Avenue	57
Rollinson Street	47

Scoring Chart	
0-75	Very Walkable: The best score; many of the elements of this street are working well and only modest adjustments will be needed in select categories, if at all
76-140	Walkable: The street is generally good, but needs improvement in some areas for a better pedestrian environment
141-210	Somewhat Walkable: There is a general need for improvement to improve walkability, safety and inclusivity on this street. Existing conditions may currently pose a hazard to pedestrians
211-270	Not Very Walkable: The street needs a lot of work to improve walkability, safety and inclusivity and is likely a hazard to pedestrians without fixes in the near and long term
271-352	Not Walkable At All: The worst score; this street is not safe to walk and has other barriers to inclusivity and comfort. Immediate attention should be paid for these streets to ensure a safer community and better quality of life for all.

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OVERALL FINDINGS



SAFETY



Open utility ducts

OVERALL FINDINGS



SAFETY



Bus stops without pedestrian infrastructure



Cracked and uneven sidewalks





SAFETY



Unmarked crosswalks

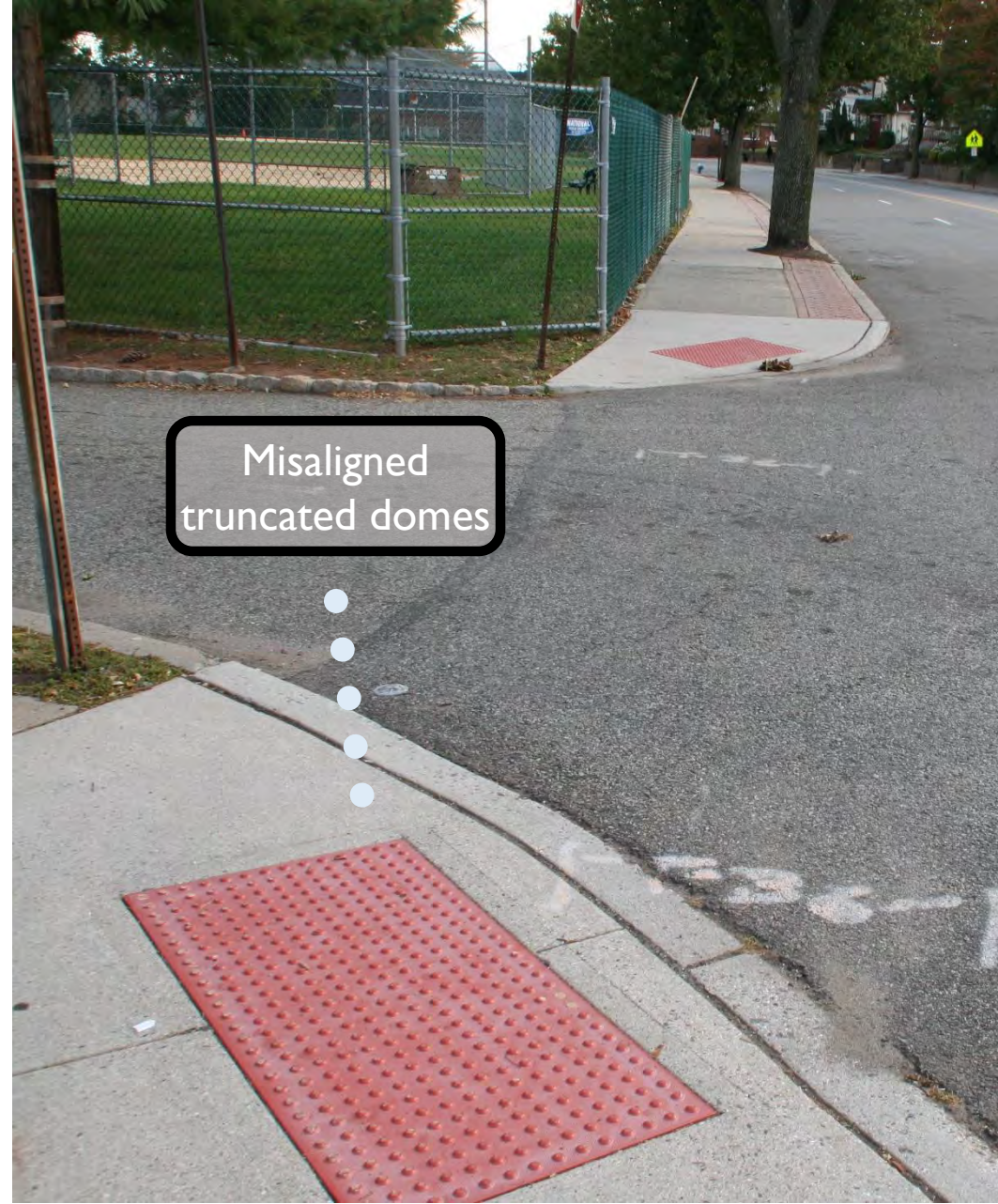
OVERALL FINDINGS



ACCESSIBILITY



Discontinuous sidewalks



Misaligned truncated domes



ACCESSIBILITY



Lack of pedestrian scale lighting





ACCESSIBILITY

Lack of bicycle infrastructure





COMFORT & APPEAL



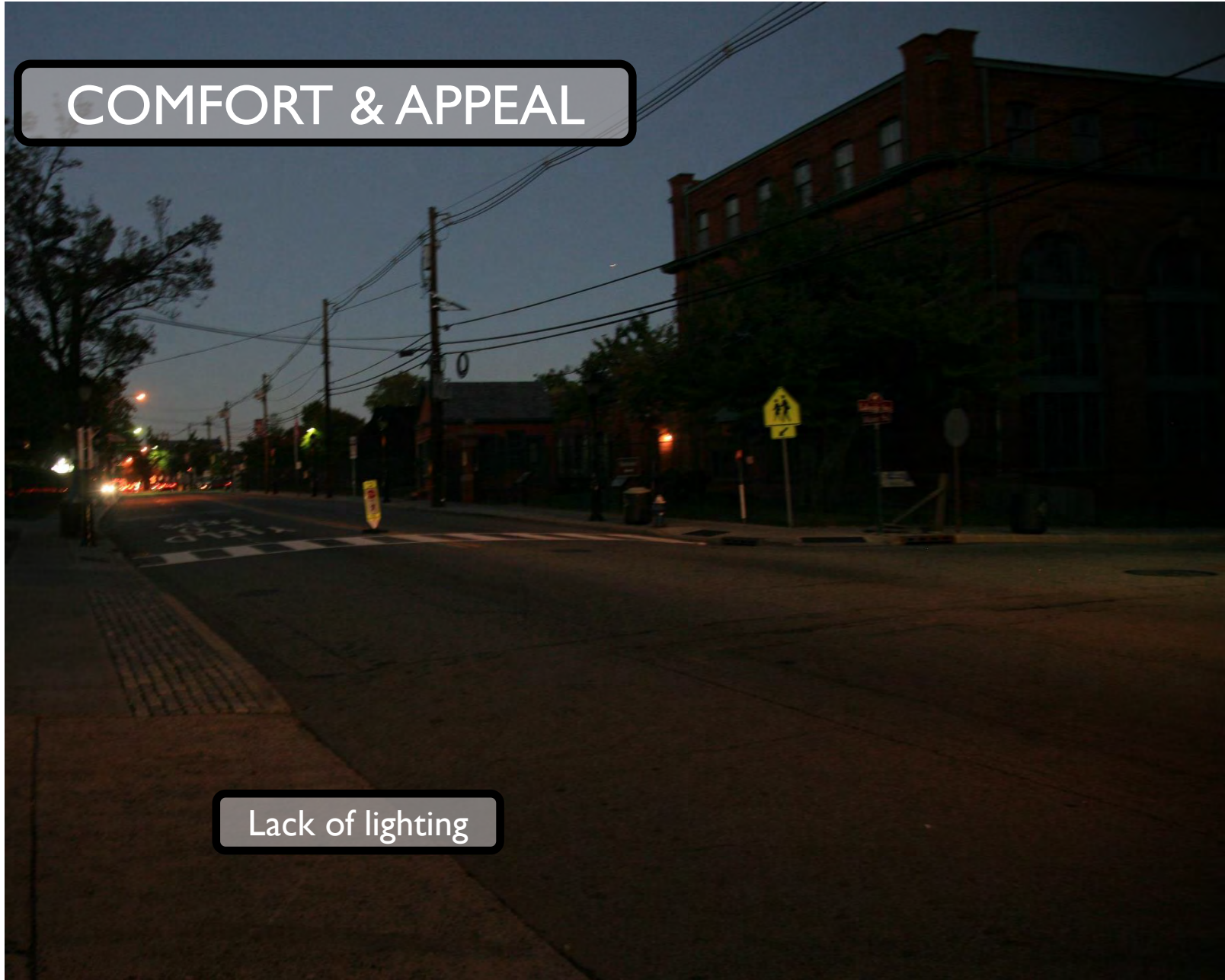
Lack of shoulders and parkways



COMFORT & APPEAL

Lack of lighting

Out-of-order parking meters



OVERALL FINDINGS



Unmarked crossing

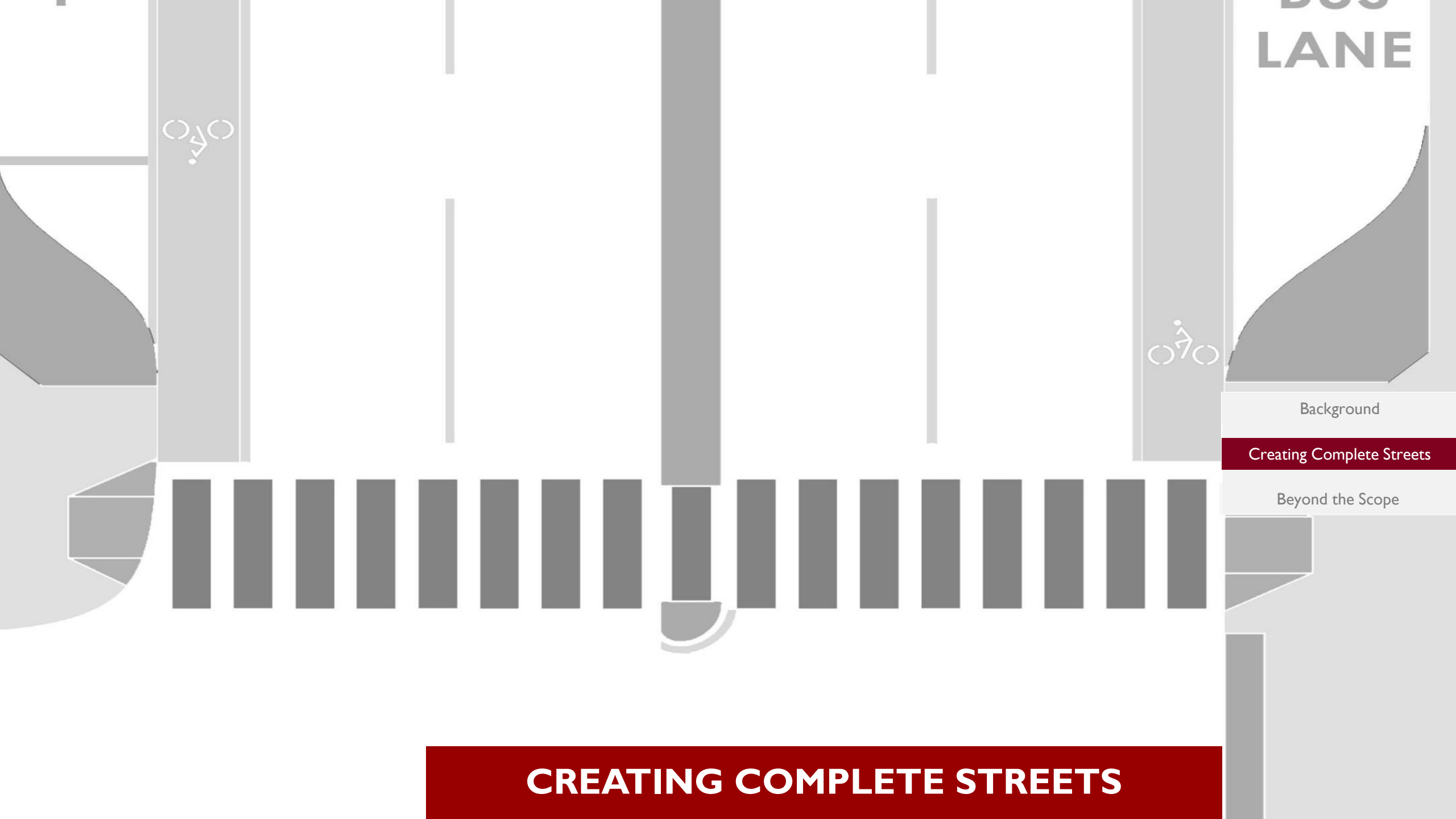
Lack of pedestrian scale lighting

Wide curb radius

No street trees in parkway

Dangerous and confusing intersection

Woodland Avenue, West Orange



BUS
LANE



Background

Creating Complete Streets

Beyond the Scope

CREATING COMPLETE STREETS

Creating Complete Streets

Northfield Avenue

Pleasant Valley Way

Main Street

Overall Recommendations

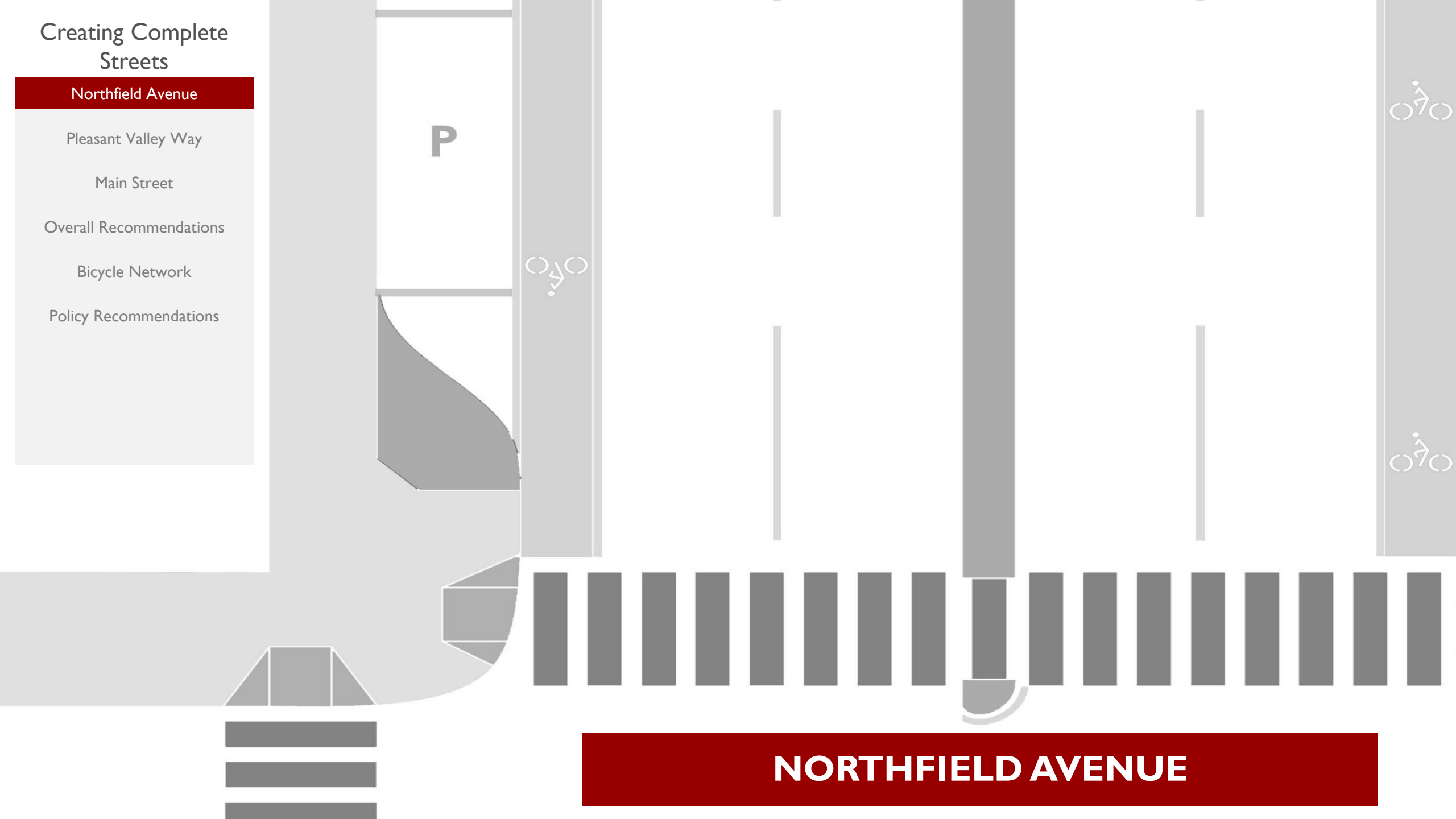
Bicycle Network

Policy Recommendations

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NORTHFIELD AVENUE



NORTHFIELD AVENUE



NORTHFIELD AVENUE

- South side of West Orange
- East – west, 3.43 miles
- Residential, suburban, large elevation changes





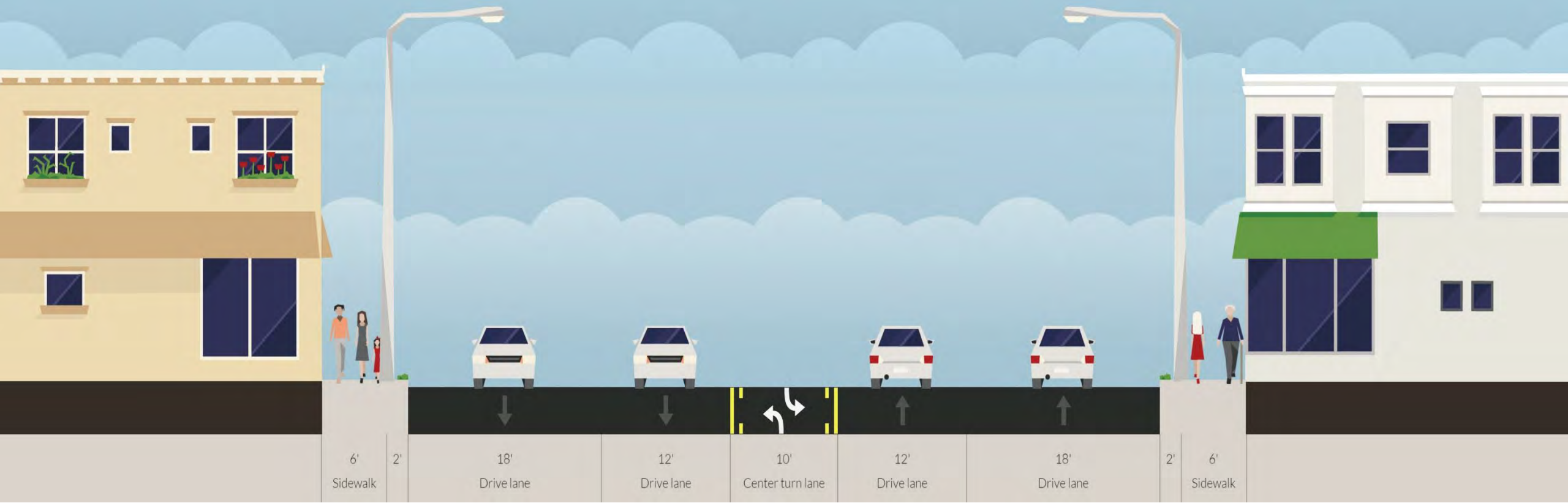
Long distances
between crosswalks



Wide lanes
encourage speeding



Northfield Avenue: Walker Rd - PVW, Before





Northfield Avenue: Walker Rd - PVW, After



NORTHFIELD AVENUE



Northfield Avenue, near Turtleback Zoo, before

NORTHFIELD AVENUE



Northfield Avenue, near Turtleback Zoo, after

NORTHFIELD AVENUE



Presence of overgrowth

No sidewalk

No shoulder

Northfield Avenue, just west of Pleasant Valley Way

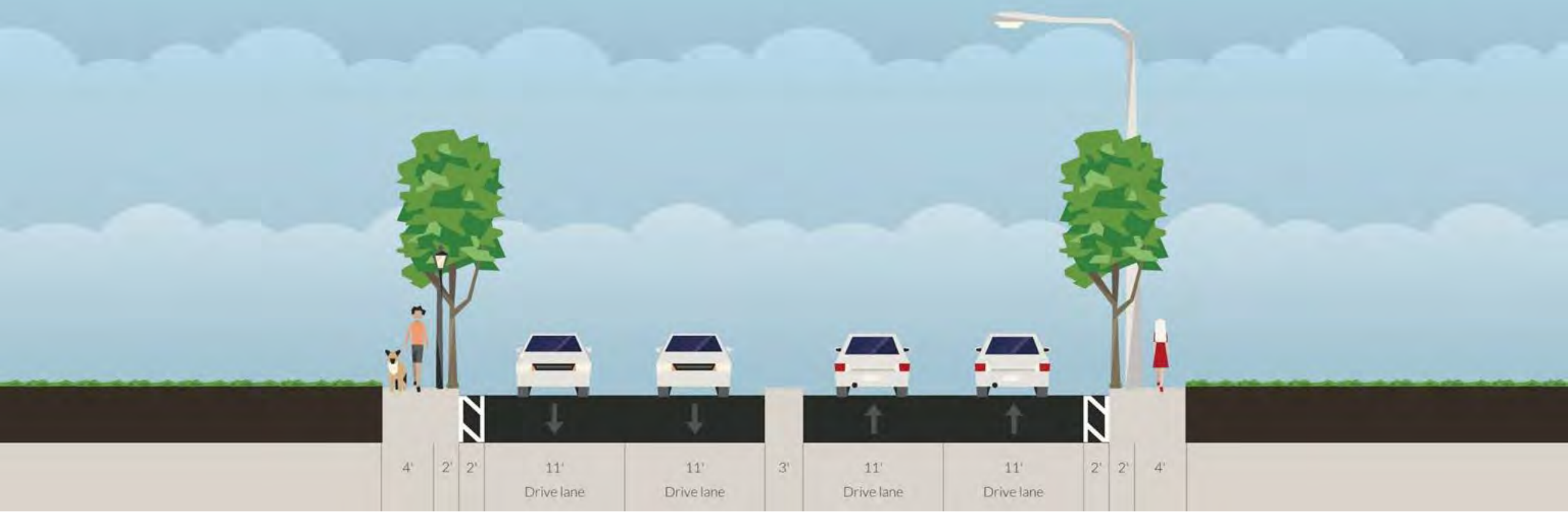


Northfield Avenue: PVW – Woods End Rd, Before





Northfield Avenue: PVW – Woods End Rd, After



NORTHFIELD AVENUE



No transit shelter

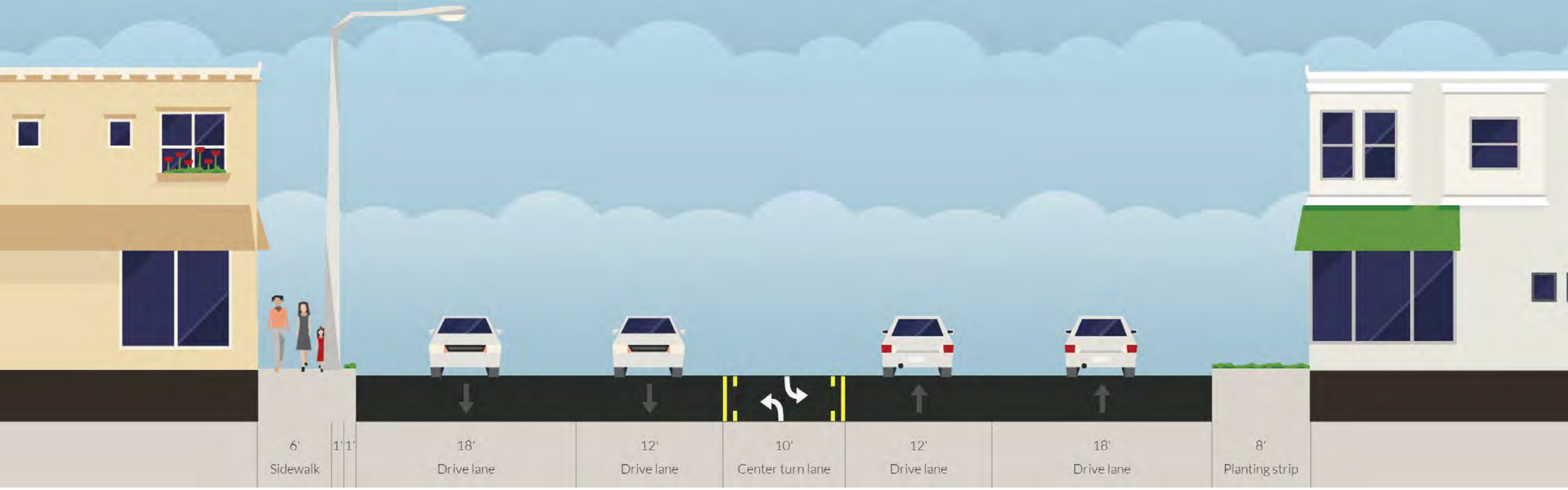
No sidewalks

Wide streets with no crosswalks

Northfield Avenue, facing west near Dogwood Rd

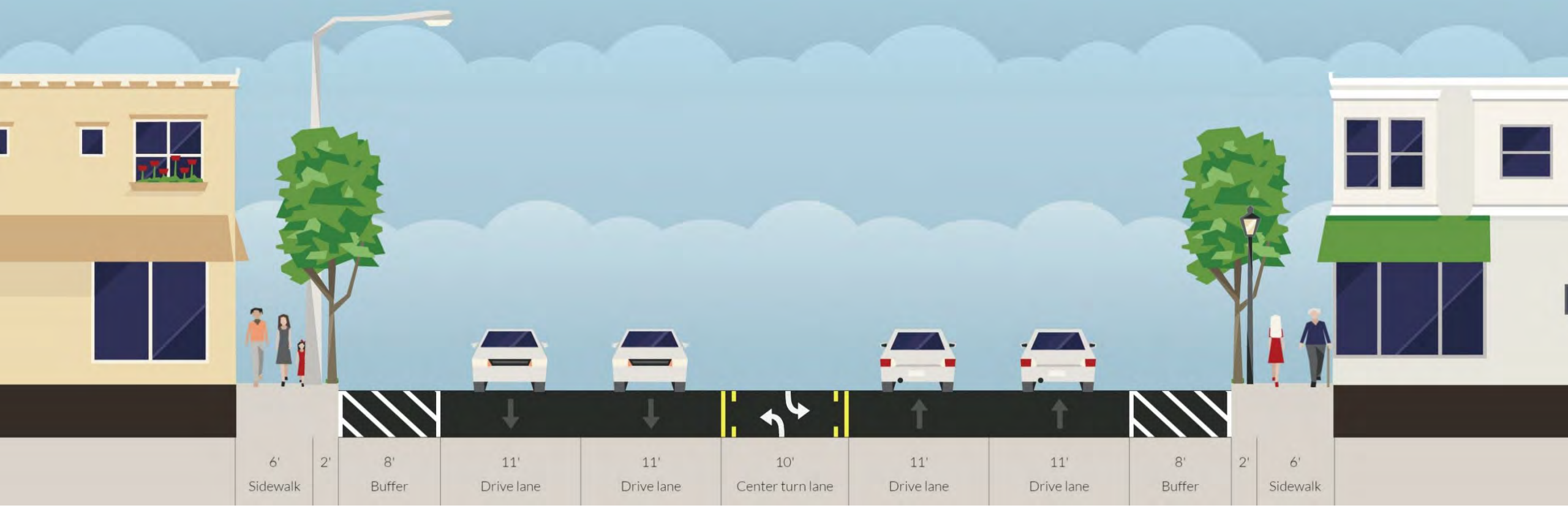


Northfield Ave: Woods End Rd – Glenview Dr, Before





Northfield Ave: Woods End Rd – Glenview Dr, After



NORTHFIELD AVENUE



Northfield Avenue, near Dogwood Ave, before

NORTHFIELD AVENUE



Northfield Avenue, near Dogwood Ave, after

Creating Complete Streets

Northfield Avenue

Pleasant Valley Way

Main Street

Overall Recommendations

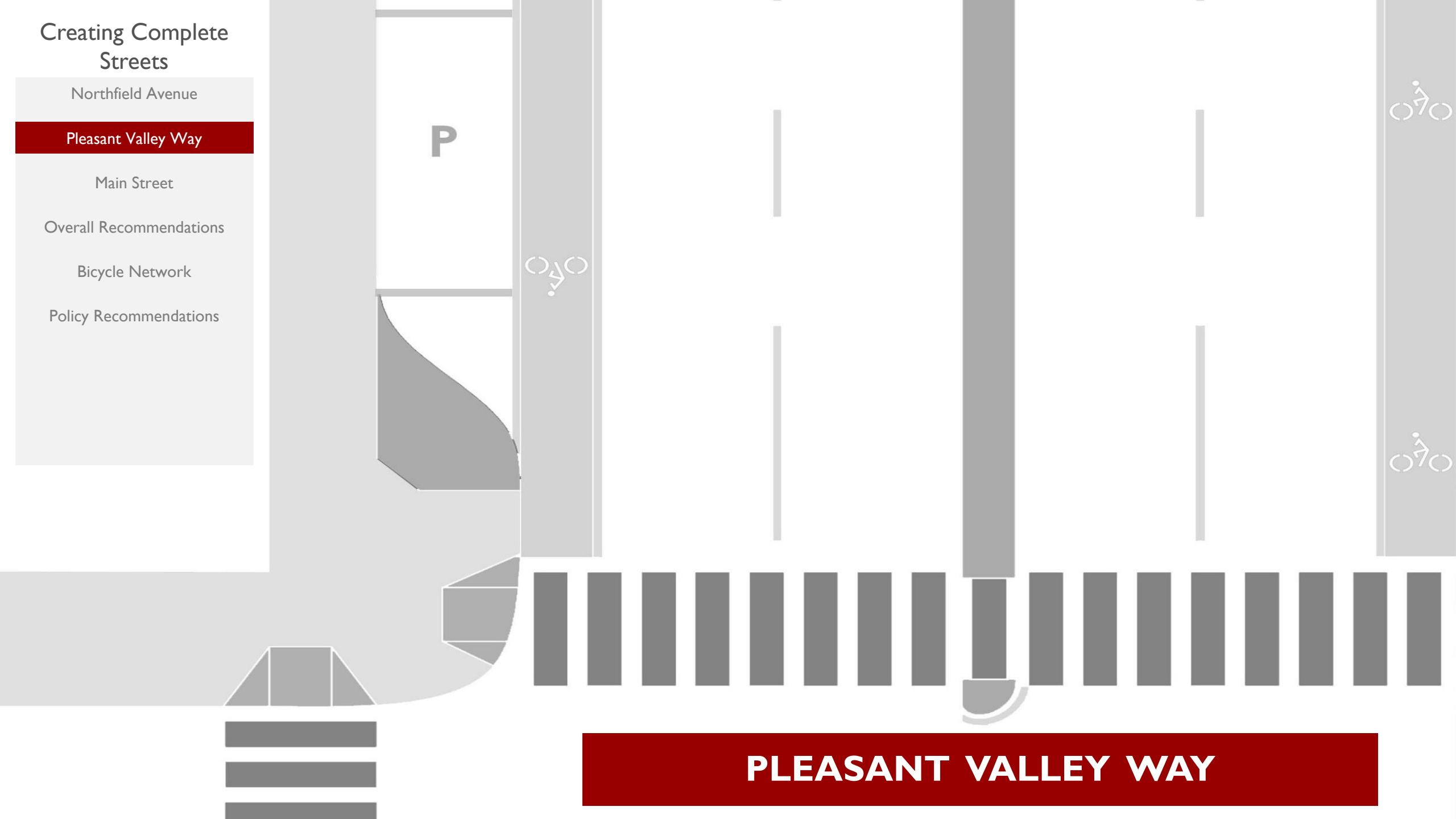
Bicycle Network

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PLEASANT VALLEY WAY



PLEASANT VALLEY WAY



PLEASANT VALLEY WAY

- West side of West Orange
- North – south, 4.28 miles
- Residential, suburban



PLEASANT VALLEY WAY



No bicycle infrastructure

No pedestrian scale lighting

No shoulder striping

Lane width determines speed

Pleasant Valley Way, in front of high school

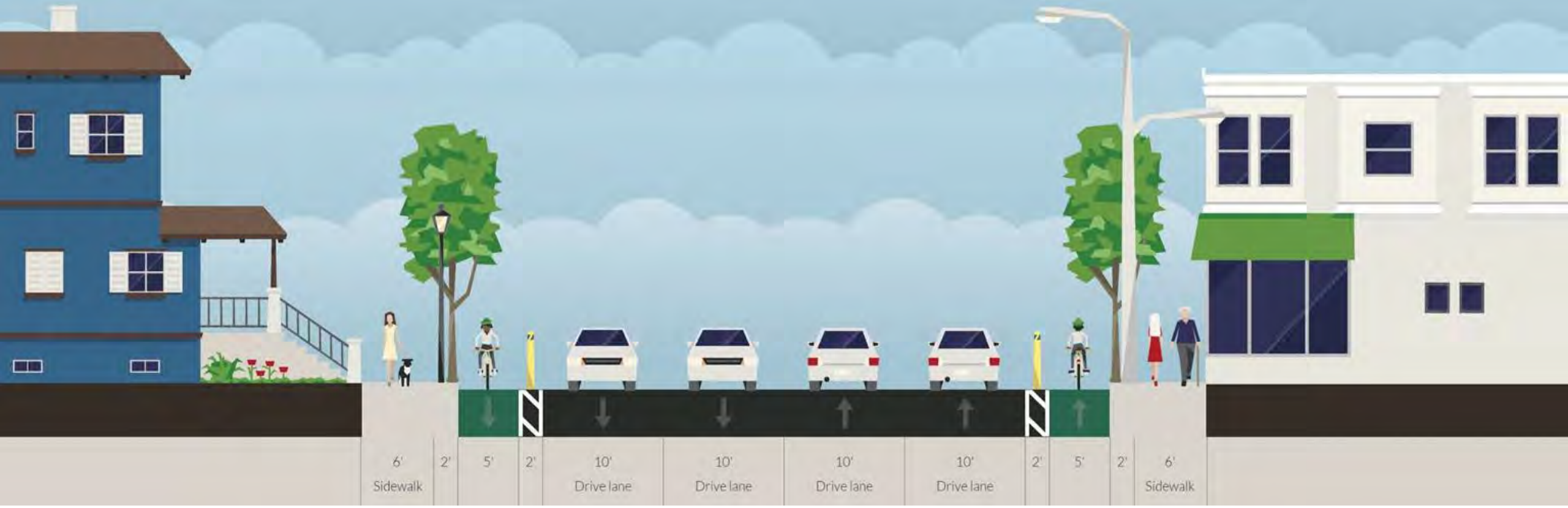


PVW: Parson Dr- Marmon Terrace, Before





PVW: Parson Dr- Marmon Terrace, After



PLEASANT VALLEY WAY



Pleasant Valley Way, north of high school, before

PLEASANT VALLEY WAY



Pleasant Valley Way, north of high school, after

PLEASANT VALLEY WAY



No sidewalks

Lack of crosswalks

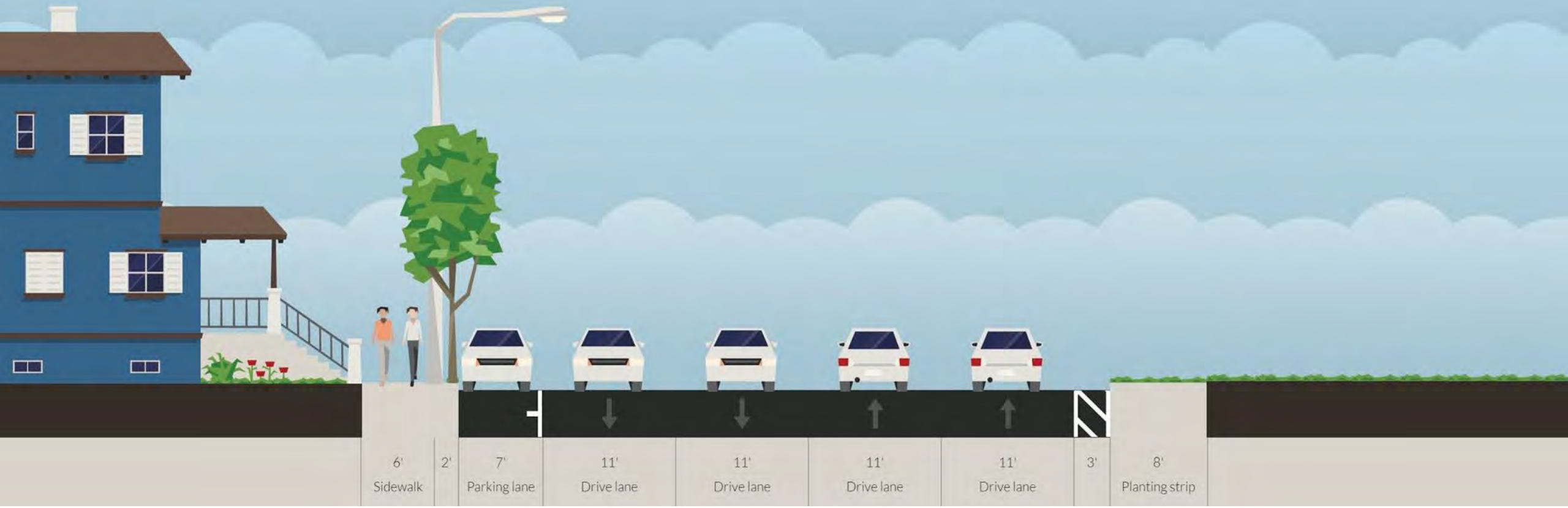
Lack of pedestrian scale lighting

Wide lanes encourage speeding

Pleasant Valley Way, near Cunningham Dr.



PVW: Marmon Terrace - Gerdes Ave, Before





PVW: Marmon Terrace – Gerdes Ave, After



Creating Complete Streets

Northfield Avenue

Pleasant Valley Way

Main Street

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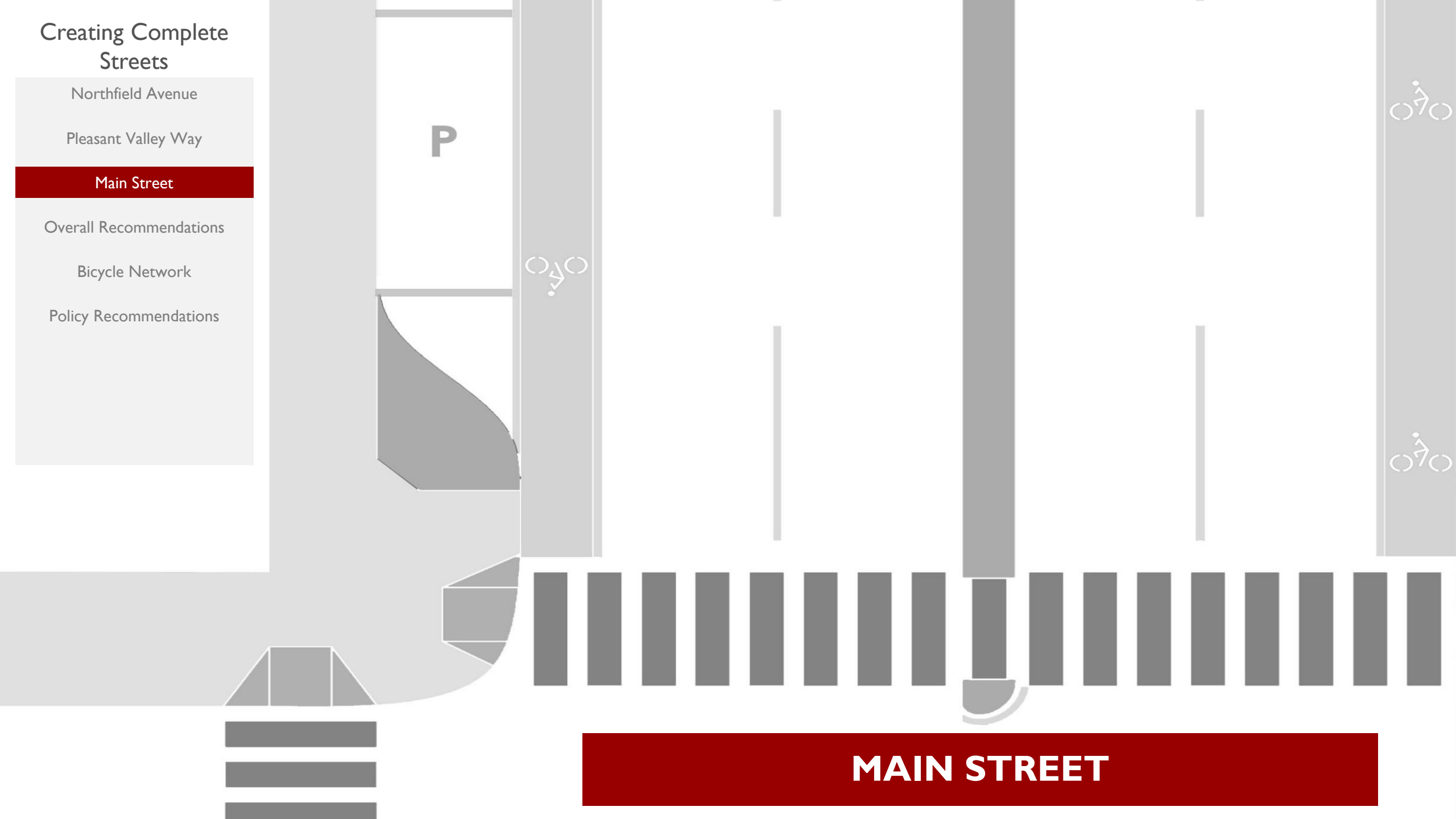
Bicycle Network

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MAIN STREET



MAIN STREET



MAIN STREET

- East side of West Orange
- North – south, 1.36 miles
- Dense, urban, commercial and residential



MAIN STREET



Short cross time

Sidewalks blocked

Lack of pedestrian scale lighting

No shoulder

Large turning radii

Parking unmarked

Main Street at Northfield Avenue and Valley Road

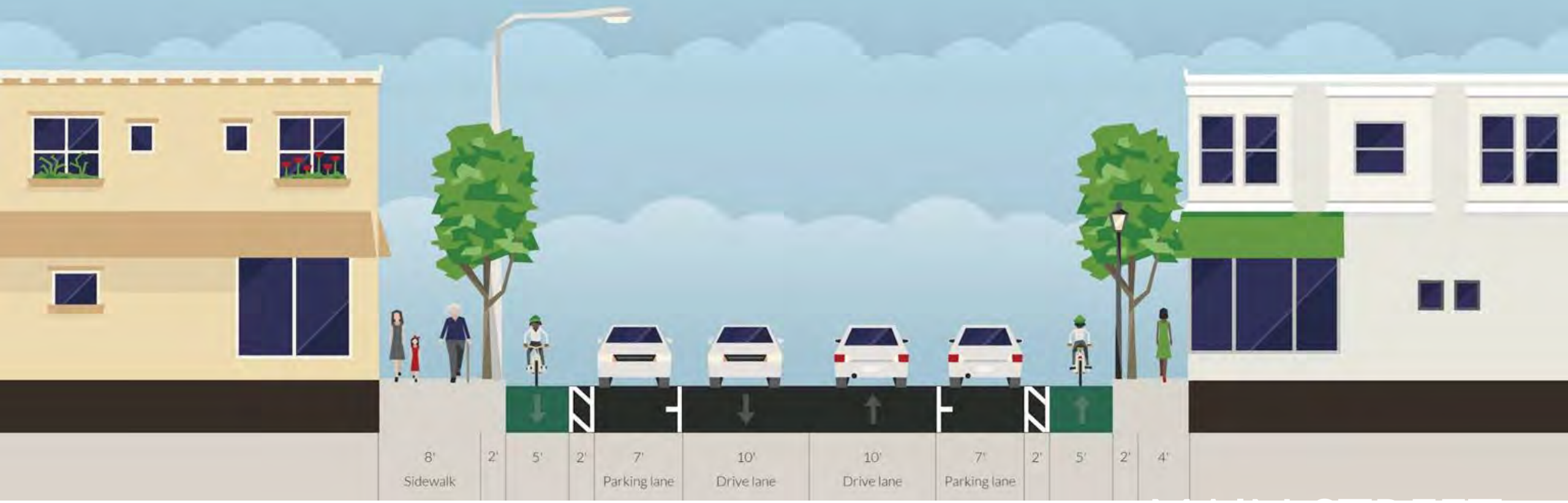


Main Street: Valley Rd – Park Ave, Before





Main Street: Valley Rd – Park Ave, After



MAIN STREET



Main Street just south of Park Avenue, before

MAIN STREET



Main Street just south of Park Avenue, after

MAIN STREET



Lack of sidewalk

No shoulder

Graffiti

Lack of pedestrian scale lighting

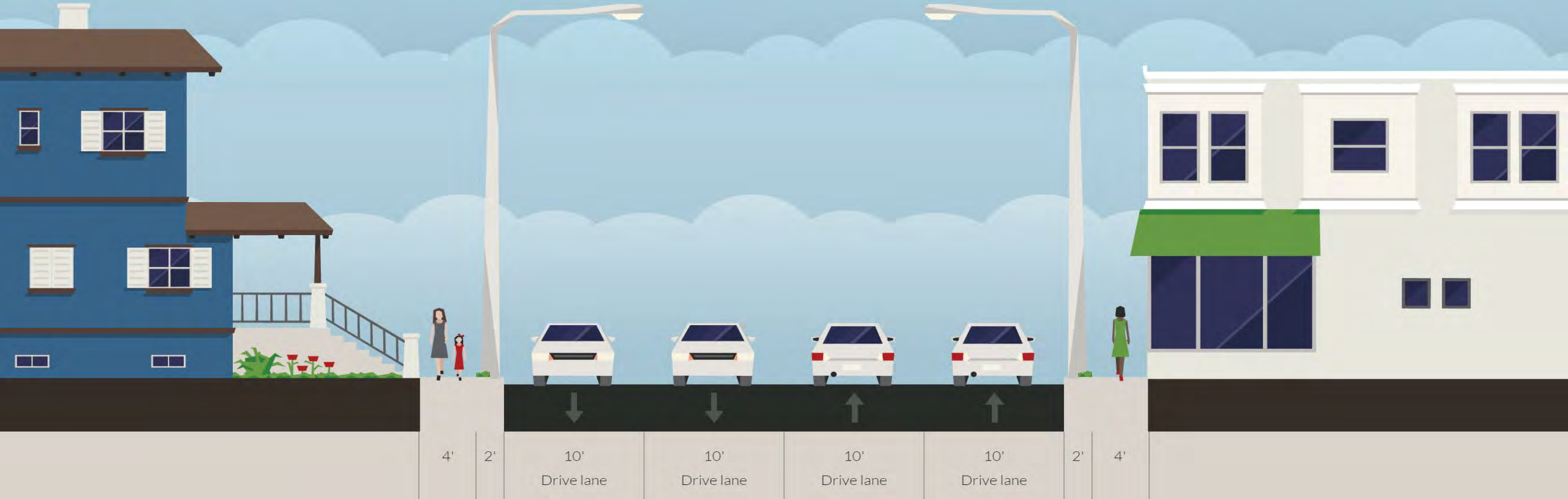
Cracked and uneven sidewalk



Main Street just north of Charles Street



Main Street: Park Ave - Washington St, Before

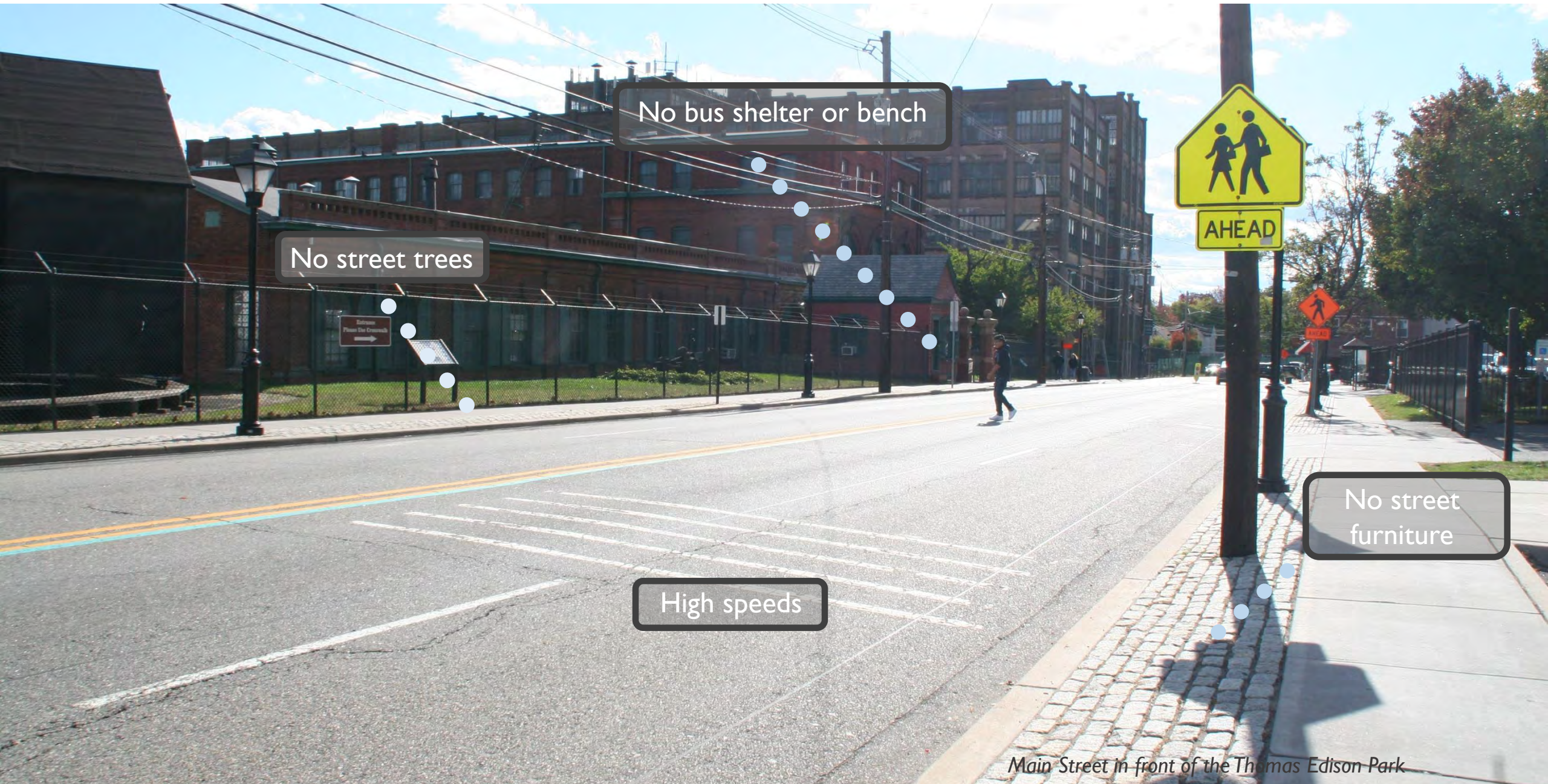




Main Street: Park Ave – Washington St, After



MAIN STREET



No bus shelter or bench

No street trees

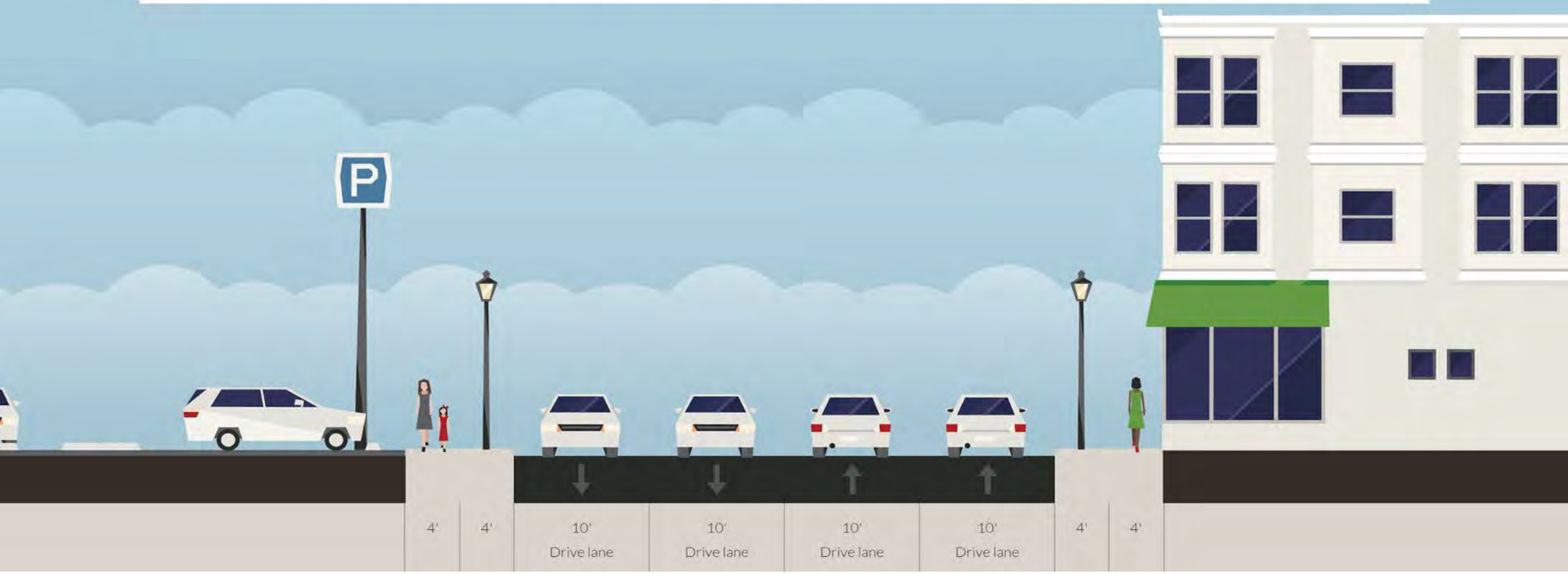
High speeds

No street furniture

Main Street in front of the Thomas Edison Park

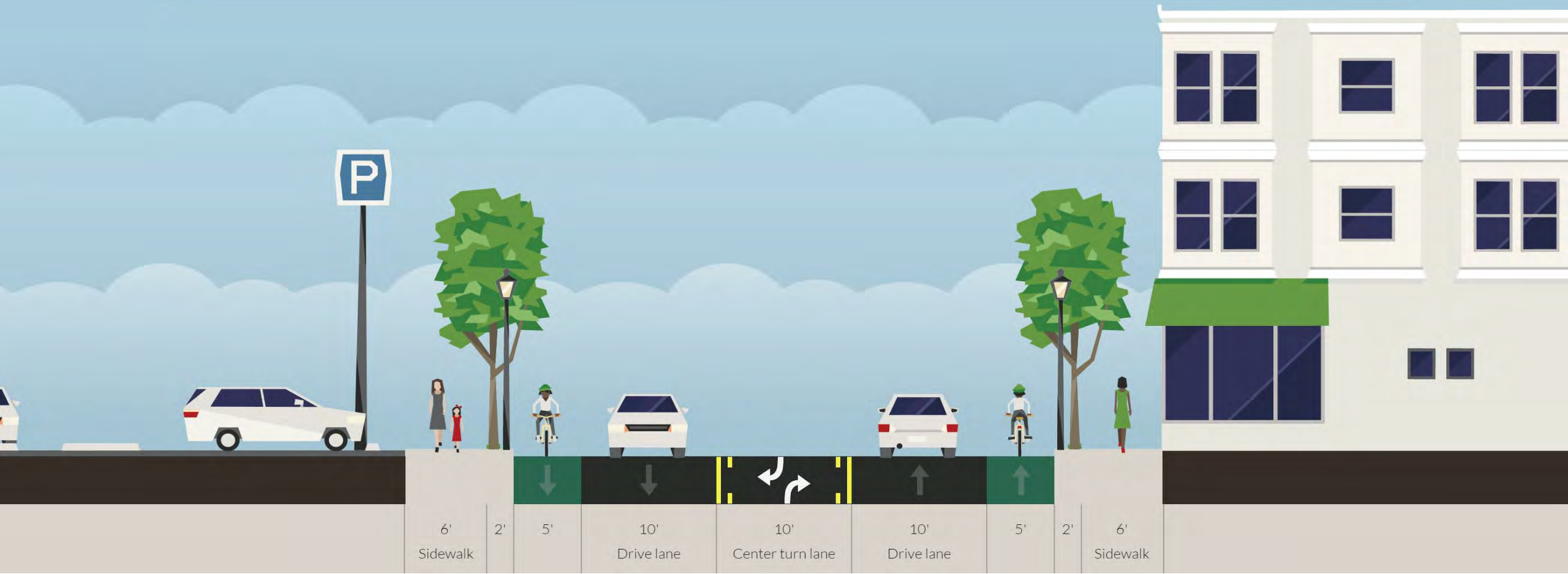


Main Street: Thomas Edison Park, Before





Main Street: Thomas Edison Park, After



MAIN STREET



Main Street in front of the Thomas Edison Park, before

MAIN STREET



Main Street in front of the Thomas Edison Park, after

MAIN STREET



Main Street in front of the Thomas Edison Park, after

MAIN STREET



Main Street in front of the Thomas Edison Park, after

MAIN STREET



Main Street in front of the Thomas Edison Park, after

Creating Complete Streets

Northfield Avenue

Pleasant Valley Way

Main Street

Overall Recommendations

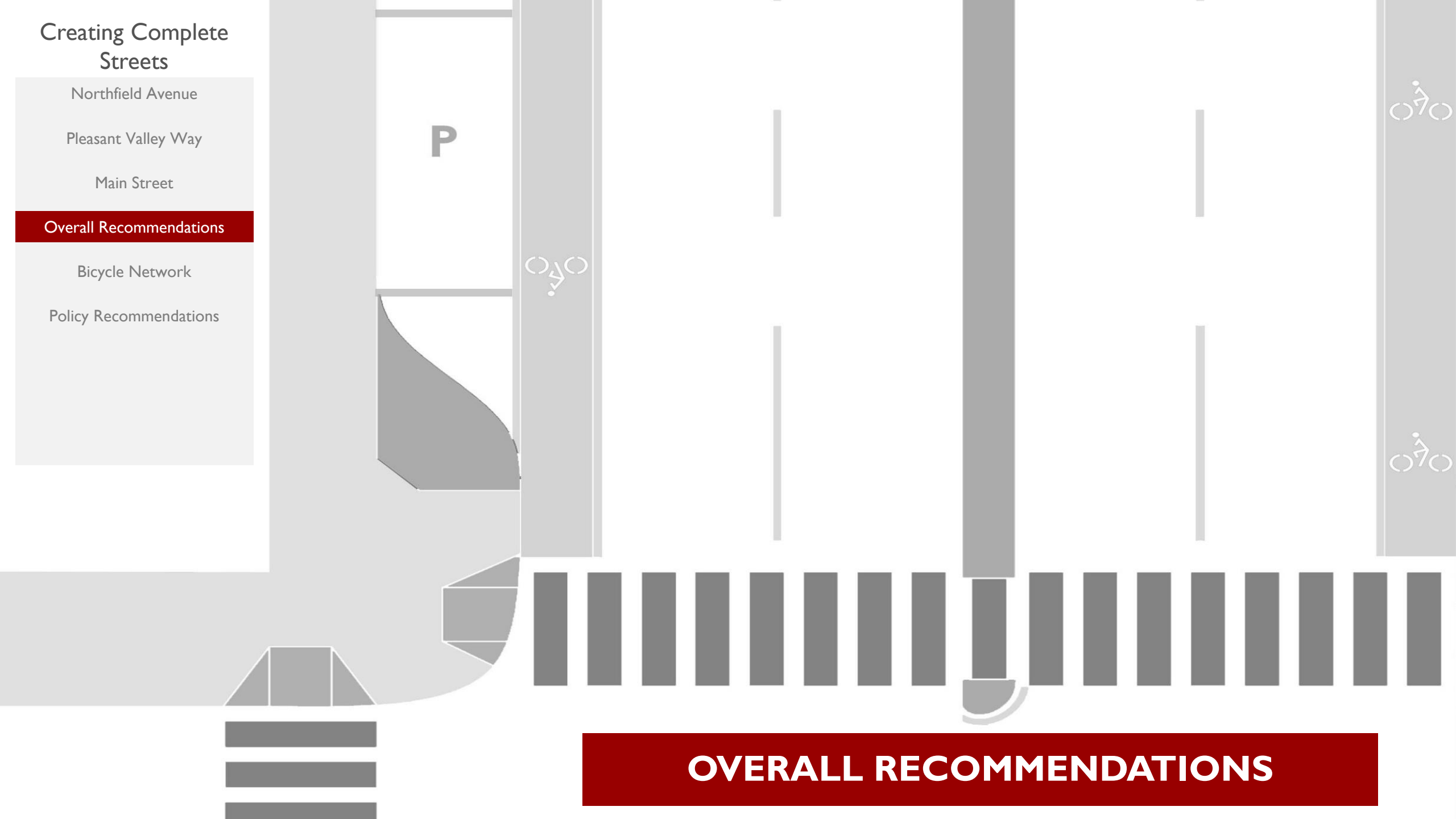
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OVERALL RECOMMENDATIONS



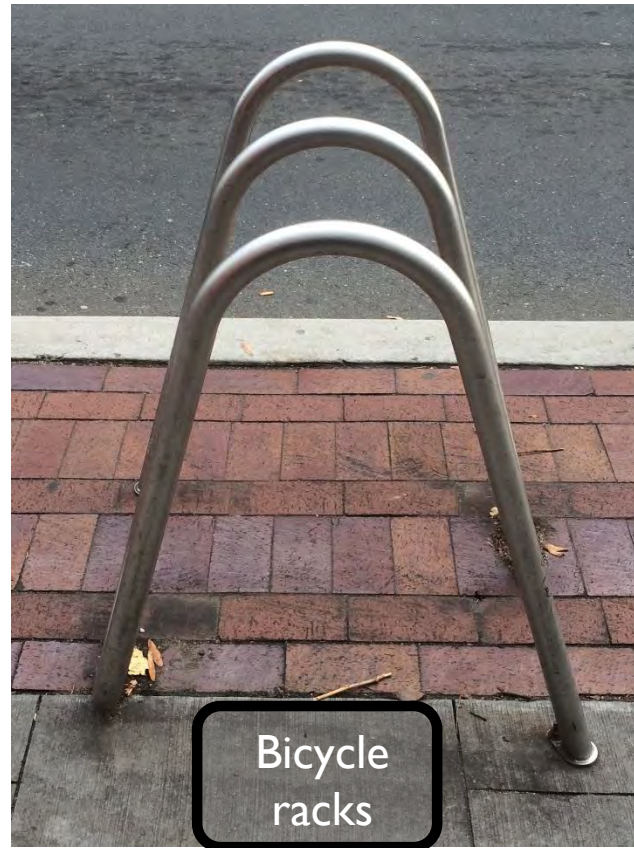
RECOMMENDATIONS



Beautify the Community



Benches



Bicycle racks



Bus shelter



ADA-compliant curbs



Decorations



RECOMMENDATIONS



Pedestrian scale lighting

Shade trees for pedestrian comfort

Wide sidewalk

Albany Street, New Brunswick

RECOMMENDATIONS

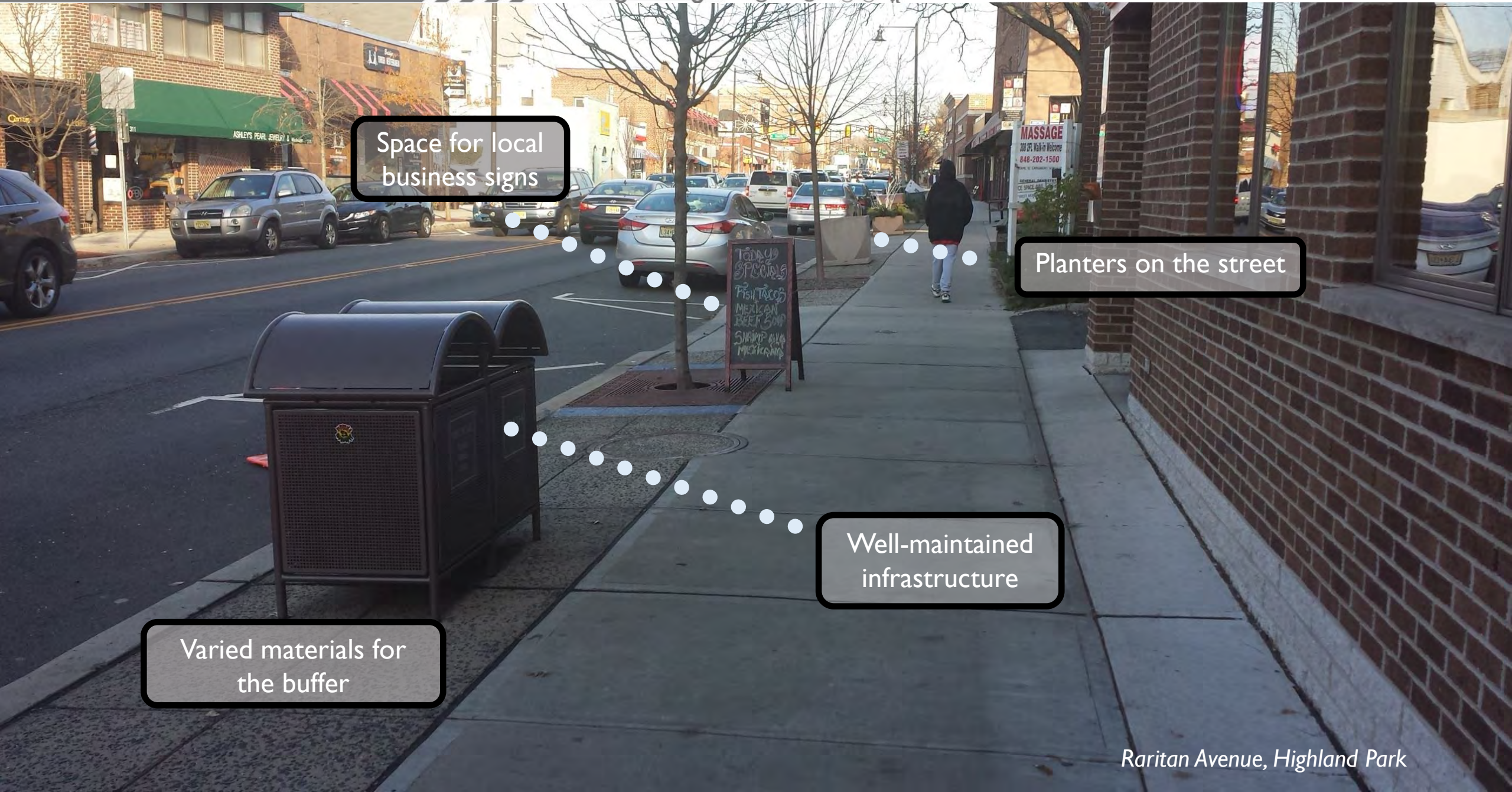


Space for local business signs

Planters on the street

Well-maintained infrastructure

Varied materials for the buffer





Lakeside Ave



Attached to existing poles

Lakeside Ave



Standalone kiosk



Attached to bus shelter



WAYFINDING



- Key component of Complete Streets Plan
- Emphasizes how walkable West Orange can be
- Provides navigation assistance to pedestrians
- Increases foot traffic to local businesses and attractions





Museum in the Streets



Minneapolis, MN



Waterville, ME

Creating Complete Streets

Northfield Avenue

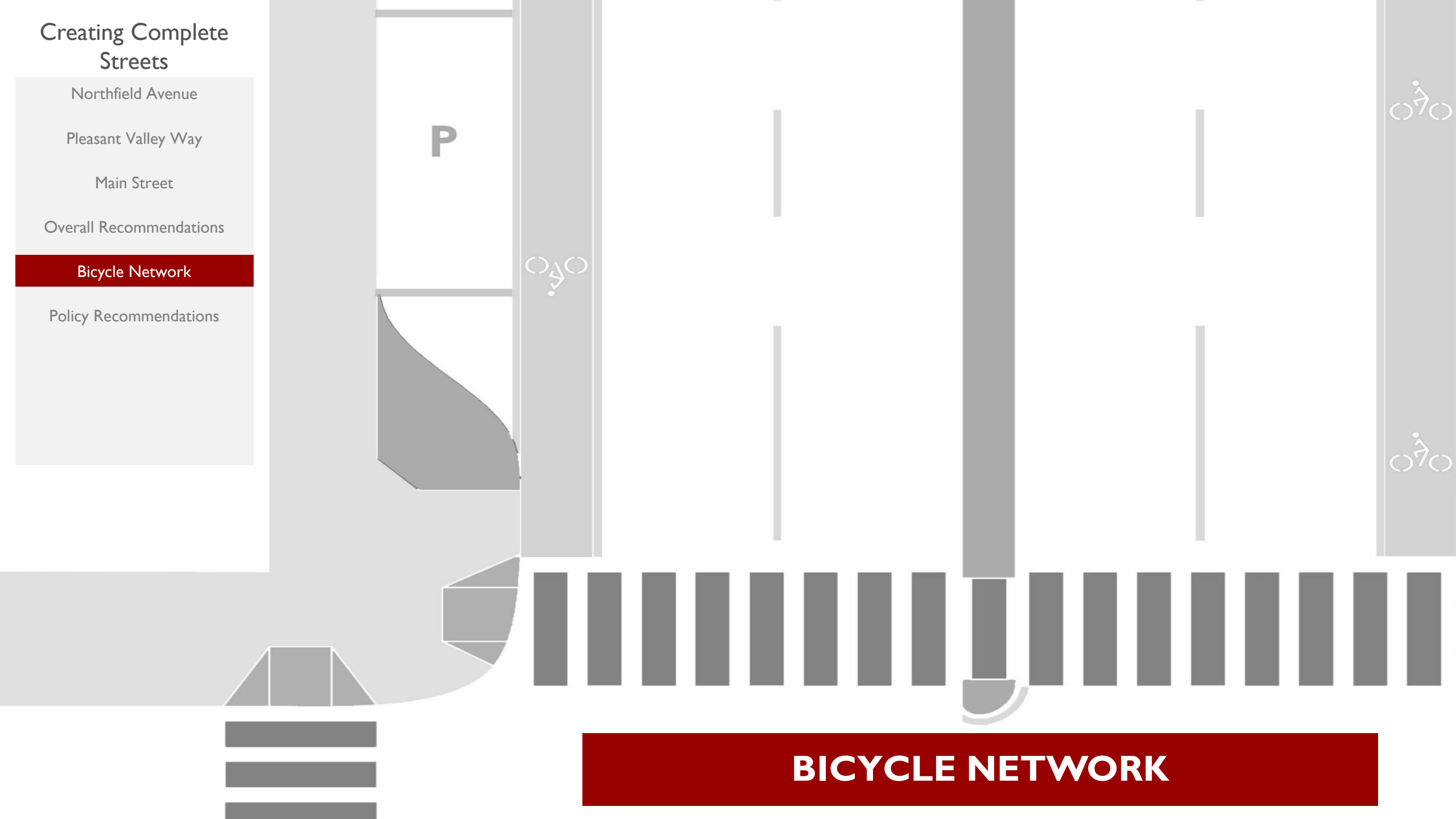
Pleasant Valley Way

Main Street

Overall Recommendations

Bicycle Network

Policy Recommendations



BICYCLE NETWORK



○ Benefits of cycling include:

- Improved physical and mental health
- Elevated property values
- Increased social and cultural interactions
- Expanded transportation equity
- Decreased congestion
- Reduced environmental footprint



Cyclist seen on Northfield Ave during field work 9/30/15



Four Types of Cyclist by Portion of Population



source: Portland, OR, DOT



- A method for comparing the ease and comfort of cycling on different roads
- Level of Stress 1: the level most bicyclists can tolerate, including children and senior citizens
- Level of Stress 2: the level tolerated by most adult bicyclists
- Level of Stress 3: the level tolerated by the “enthused & confident” rider
- Level of Stress 4: the level tolerated by the “strong & fearless” rider

West Orange Level of Stress Criteria			
	Street Width		
Posted Speed Limit	2-3 Lanes	4-5 Lanes	6+ Lanes
≤25 MPH	1-2	3	4
30 MPH	2-3	4	4
35+ MPH	4	4	5
Add 1 LOS for poor pavement			
Add 1 LOS for steep grade			

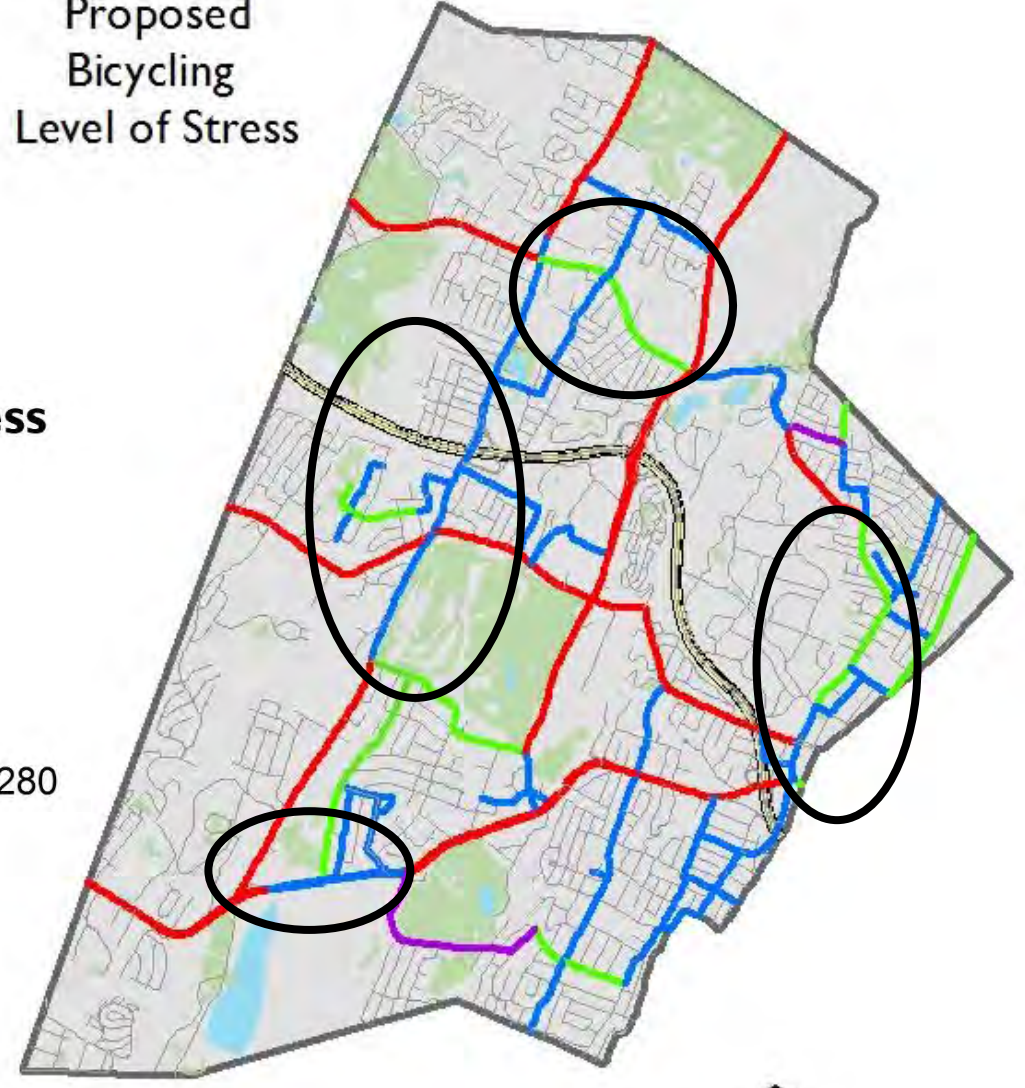
BICYCLE NETWORK








Existing
Bicycling
Level of Stress



Proposed
Bicycling
Level of Stress

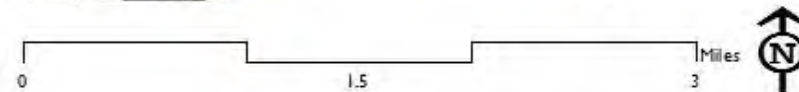


Level of Stress

-  1
-  2
-  3
-  4
-  Interstate 280



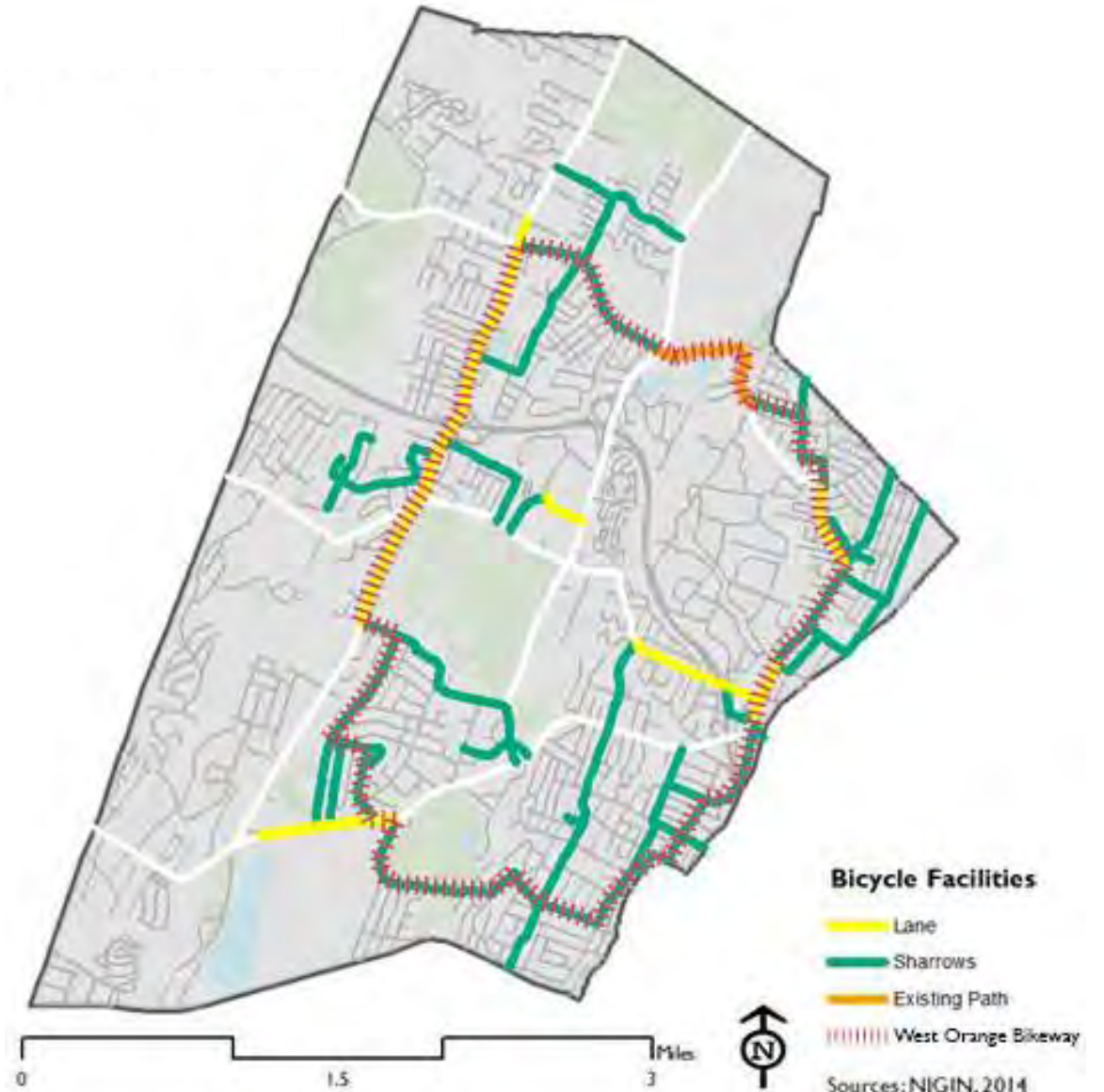
Sources: NJGIN, Mineta Transportation Institute



Sources: NJGIN, Mineta Transportation Institute



- A network of bicycle lanes and sharrows as appropriate
- Includes a continuous, low-stress route allowing cycling access throughout town; the West Orange Bikeway
- Integrated with community resources and major attractions
- Possible expansion to include other important avenues and additional local bicycle paths
- Include new bicycle-specific signage and bicycle racks





- The West Orange Bikeway connects every part of town
- A mix of sharrows, bicycle lanes and protected bicycle lanes depending on the street
- Level of Stress 2 or lower throughout the entire route. Two short sections are Level of Stress 3 due to a steep grade
- Unique and distinct street sign toppers at every intersection of the bikeway



Proposed street sign topper for West Orange Bikeway



Proposed
West Orange-specific
bicycle racks



Proposed
West Orange-specific
bicycle wayfinding signage



To be installed on all
streets with sharrows

Creating Complete Streets

Northfield Avenue

Pleasant Valley Way

Main Street

Overall Recommendations

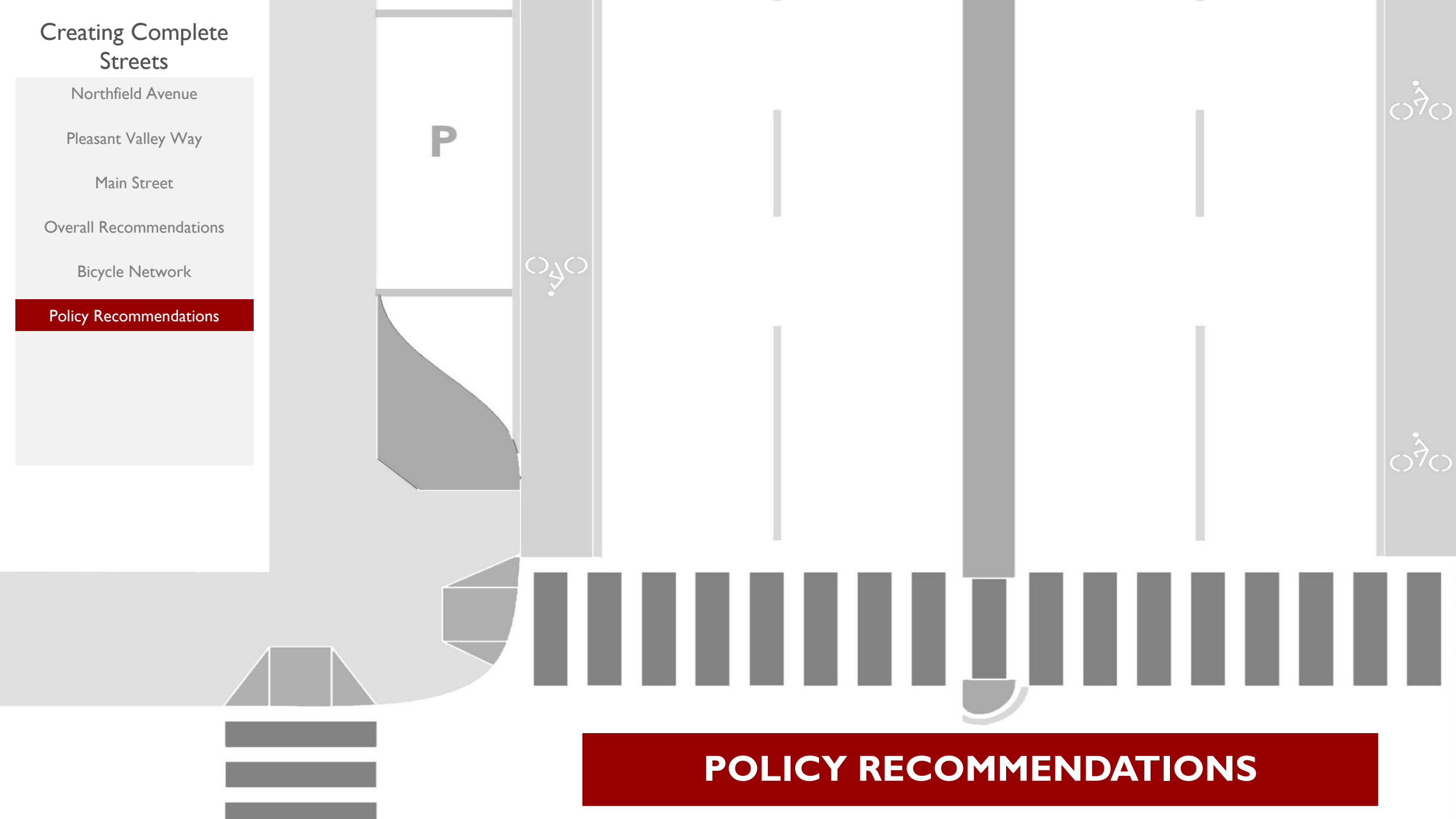
Bicycle Network

Policy Recommendations

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POLICY RECOMMENDATIONS





Vision Zero

- 4 Es – Engineering, Enforcement, Encouragement, Education
- Zero deaths and injuries due to traffic violence

- Community Design
- Infrastructure
- Pricing/Convenience
- Education
- Safety
- Performance Measures

VISION ZERO
Ø DEATH
Ø INJURY
Ø FEAR OF
TRAFFIC



West Orange Vision Zero Action Plan (Years 6-10)

Community Design	Infrastructure	Pricing/Parking	Education	Safety	Performance Measures
<ul style="list-style-type: none"> Require bicycle & pedestrian network integration for all new & re-developments 5-10 year tax abatement for mid-rise & mixed-use developments 	<ul style="list-style-type: none"> Complete Street redesign of 2 Streets annually Complete Streets guidelines for all future maintenance & resurfacing Install remaining pedestrian signals at INTXNs Crosswalks, cut-downs & in-street "state Law: Stop for Pedestrian" at 10 INTXNs annually Install remaining pedestrian wayfinding signage Install remaining bike wayfinding signage & parking 	<ul style="list-style-type: none"> Install/update meters & signage in 1 business district annually — WO Police to enforce ↑ meter fees 2% annually — fees accrue to Vision Zero plan Design plan for zone onstreet parking w/ passes on residential areas near business districts 	<ul style="list-style-type: none"> WOPSAB to begin ad campaign promoting Vision Zero successes 2-4 visits per school per year by WOPSAB Safe Routes to School representative WOSAB continues to hold annual Park(ing) Day, Ciclovía & "West Orange Kids Day" events — expanding each as needed 	<ul style="list-style-type: none"> 25 mph speed limit for all arterial streets (at start of year 6) Add L-turn lights & phases to separate turning cars from other road users at 2-3 INTXNs w/ persistent crashes Reduce night-time speeding by adjusting signal timing Continue adding leading pedestrian & longer yellow change intervals at 1-2 INTXNs w/ high crash rates annually 	<ul style="list-style-type: none"> Overall 100% reduction in traffic crashes 5% annual ↑ in in-person safety education for children and adults ↑ Percentage of sidewalk ramps in compliance w/ ADA standards ↑ Reliability of workday auto-travel via crash reductions Improved health outcomes for West Orange residents via ↑ biking & walking ↑ Sales revenue & occupancy rates via ↑ biking walking & slow driving
<p>ABBREVIATIONS: INTXNs = Intersections WOPSAB = West Orange Pedestrian Safety Advisory Board NJBWC = New Jersey Bike and Walk Coalition</p>					



Safety

- **Year 1:** 20 mph for residential streets
- **Years 2-5:** No right turns on red at dangerous intersections
- **Years 6-10:** 25 mph for arterial streets





Education

- **Year 1:** Celebrate Vision Zero
- **Years 2-5:** WO Pedestrian Safety Advisory Board holds annual “Kids of West Orange” Event
- **Years 6-10:** Safe Routes to School representative visits schools



Image source: newjerseybikewalk.org



Infrastructure

- **Year 1:** Complete street redesign of 2 streets
- **Years 2-5:** Pedestrian wayfinding signage
- **Years 6-10:** Complete streets guidelines





Federal, state and local sources include:

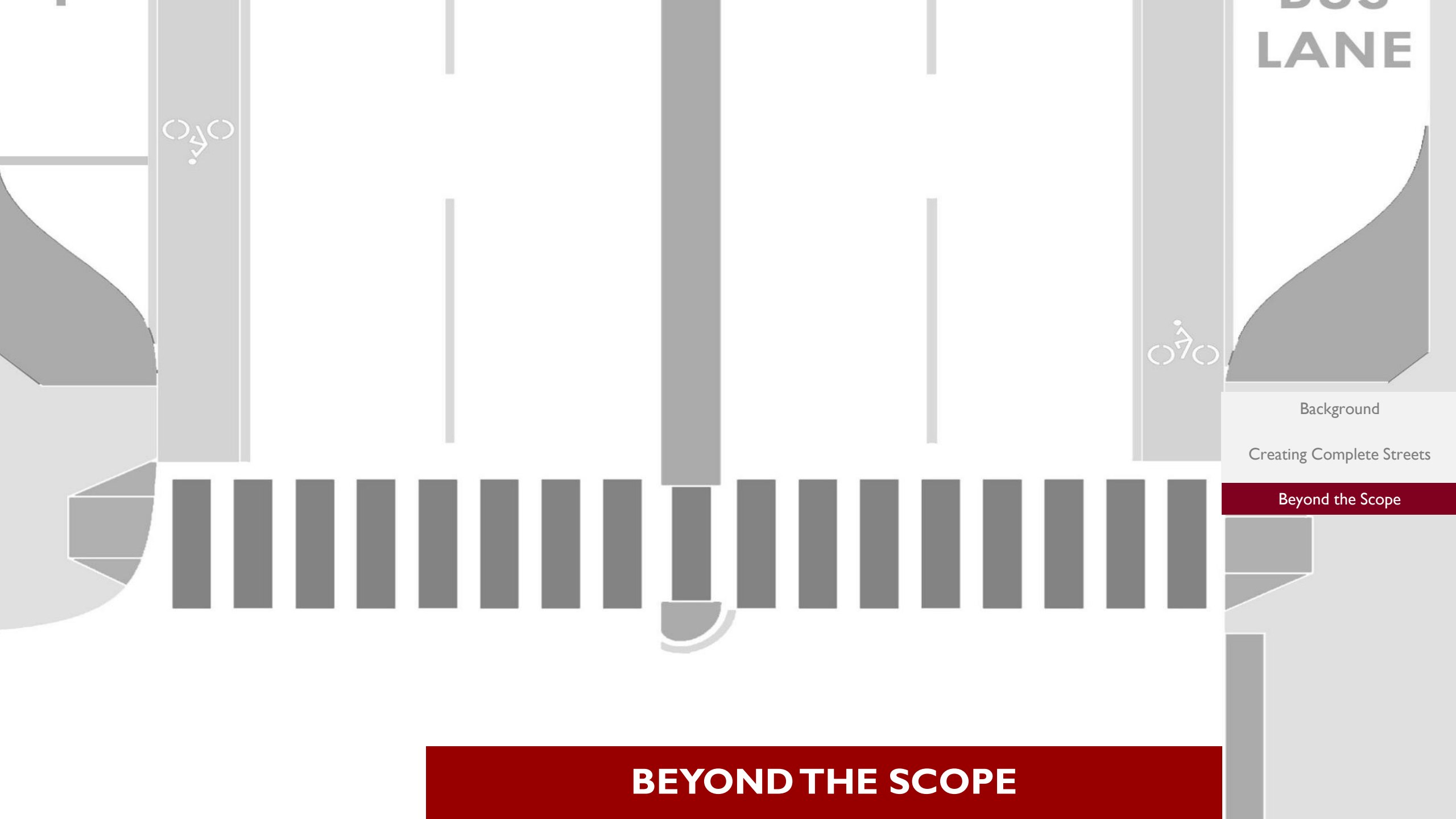
- Community Development Block Grants
- Transportation Alternatives Program (TAP)
- Highway Safety Improvement Program (HSIP)
- NJDOT Bikeway Grant Program
- NJDOT Safe Streets to Transit
- NJDOT Centers of Place Grant Program
- NJDOT Bicycle and Pedestrian Local Transportation Planning Assistance Program

40 Years



Building Better Neighborhoods





BUS
LANE



Background

Creating Complete Streets

Beyond the Scope

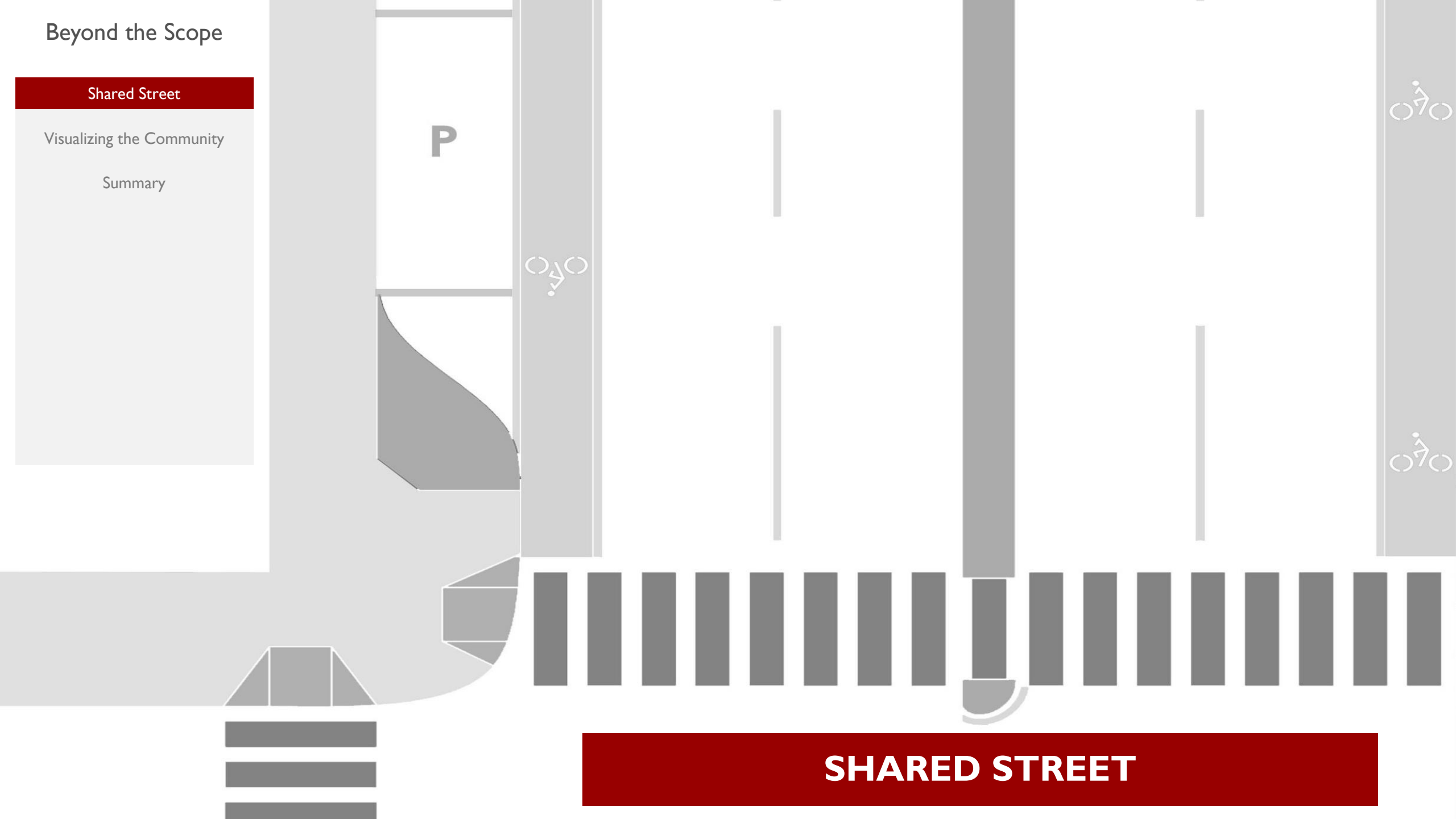
BEYOND THE SCOPE

Beyond the Scope

Shared Street

Visualizing the Community

Summary



SHARED STREET

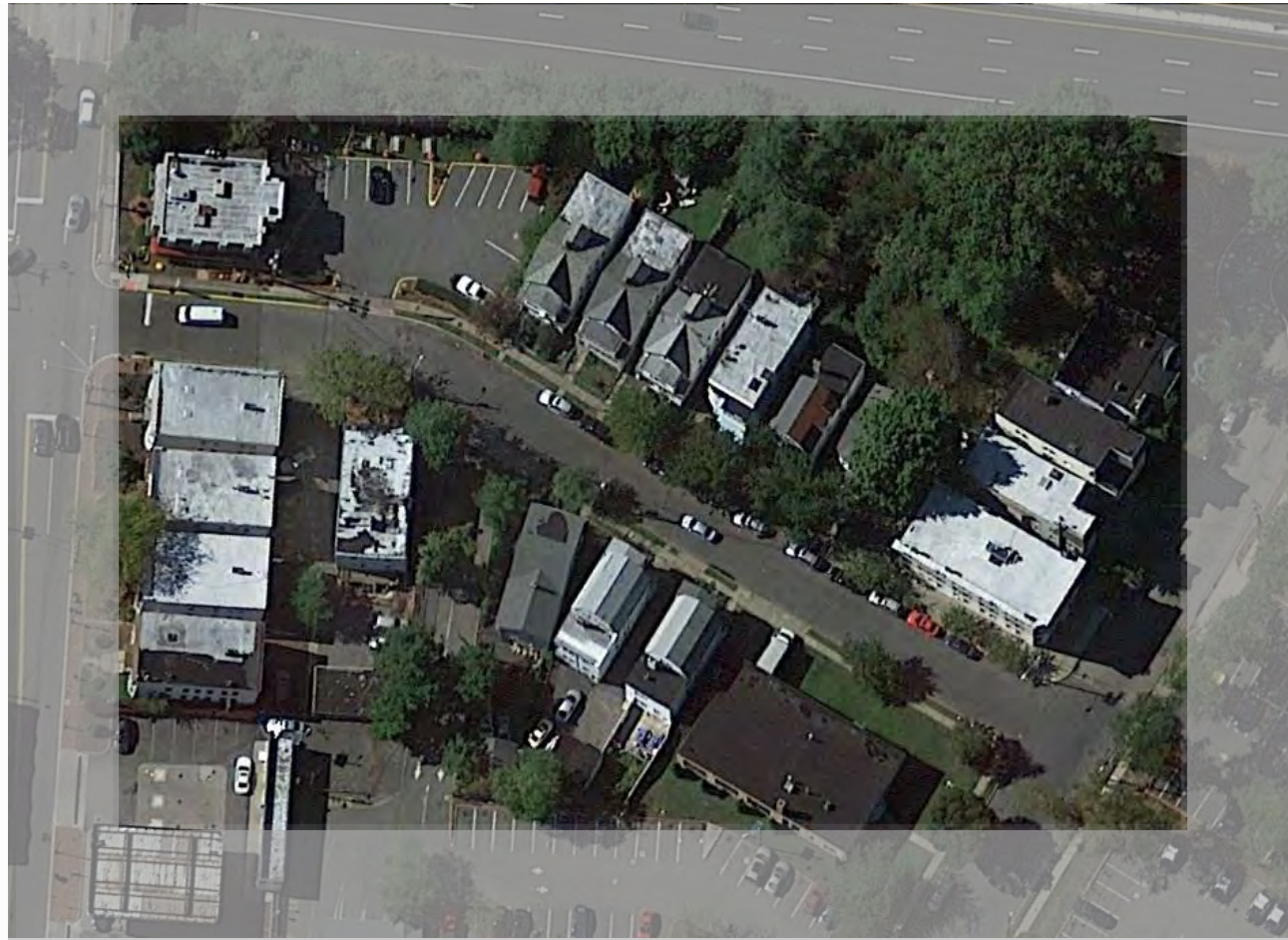


Shared streets: traffic calmed spaces where children play, people walk, bike, and share the road with drivers

SHARED STREET



SHARED STREET



WHEELER STREET

- East side of West Orange
- North – south, less than 1/10th mile
- Dense, urban, commercial, and residential



SHARED STREET



Wheeler Street: Before

SHARED STREET



SHARED STREET



SHARED STREET



SHARED STREET



SHARED STREET



SHARED STREET



SHARED STREET



Beyond the Scope

Shared Street

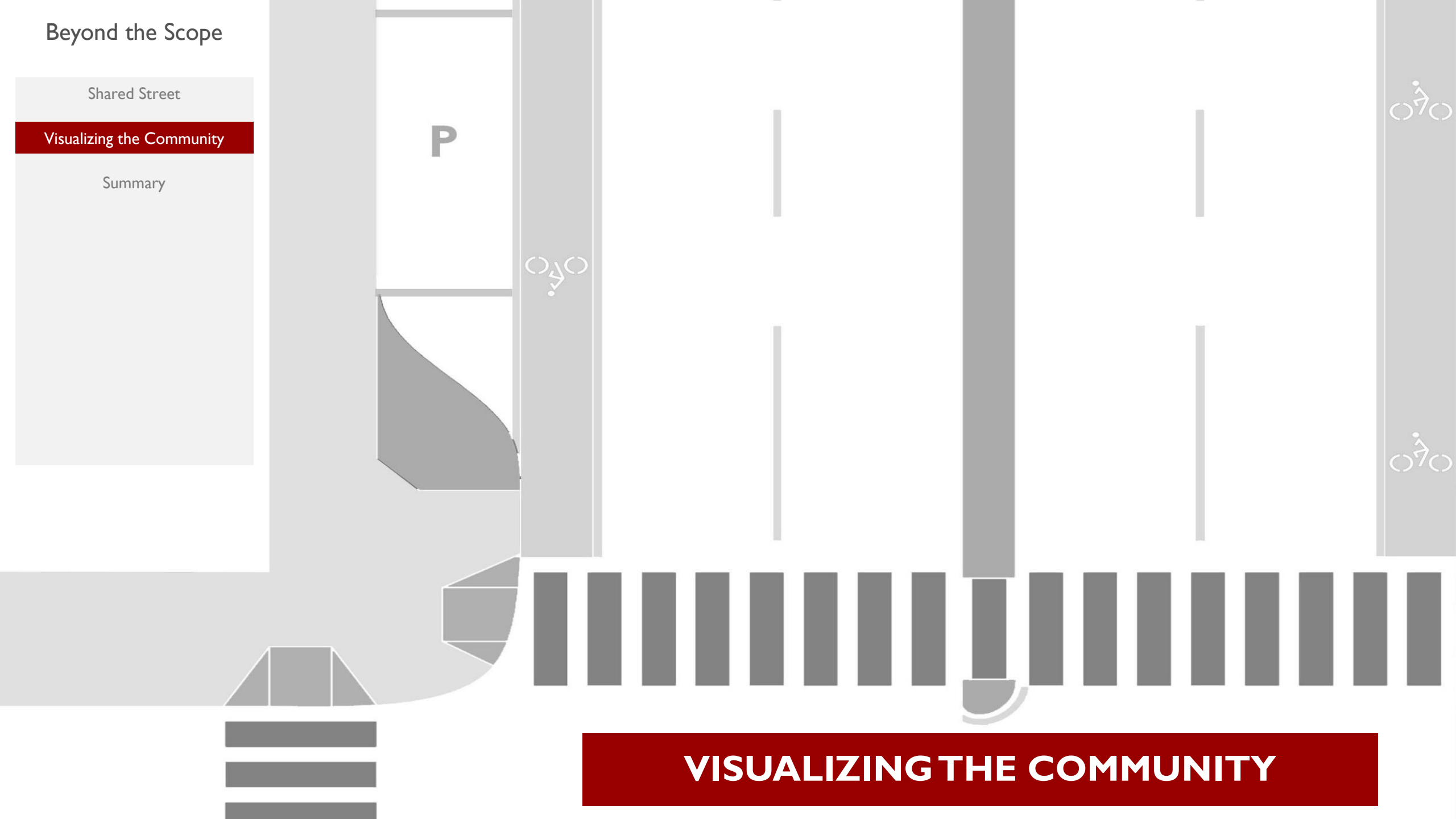
Visualizing the Community

Summary

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VISUALIZING THE COMMUNITY



VISUALIZING THE COMMUNITY







- Good opportunities to make streets safer, more accessible
- Funding is available
- Will require some priority-setting
- Wayfinding and bicycle network support pedestrian improvements
- Zoning and policy changes may help in the future
- Complete Streets will improve the West Orange community for all residents

THANK YOU!

