

Bronxville Complete Streets Workshop

October 15, 2021



Introductions

Westchester County



Consultant Team



Agenda

1. Introductions
2. What are Complete Streets?
3. Visioning Exercise
4. Safe Routes to School
5. Elements of Walkable Streets
6. Virtual Walkthrough of the Corridor
7. Small Group Discussion and Mapping Activity
8. Big Ideas for the Corridor and Discussion
9. Implementation/Next Steps
10. Walkabout (optional: will run from 11:30 a.m. to 12:30 p.m.)

What are Complete Streets?

What are Complete Streets?

Complete Streets are for everyone, no matter who they are or how they travel.



What are Complete Streets?

All ages



All abilities



All modes



What are Complete Streets?

Comfortable



Convenient



Safe



What are Complete Streets?



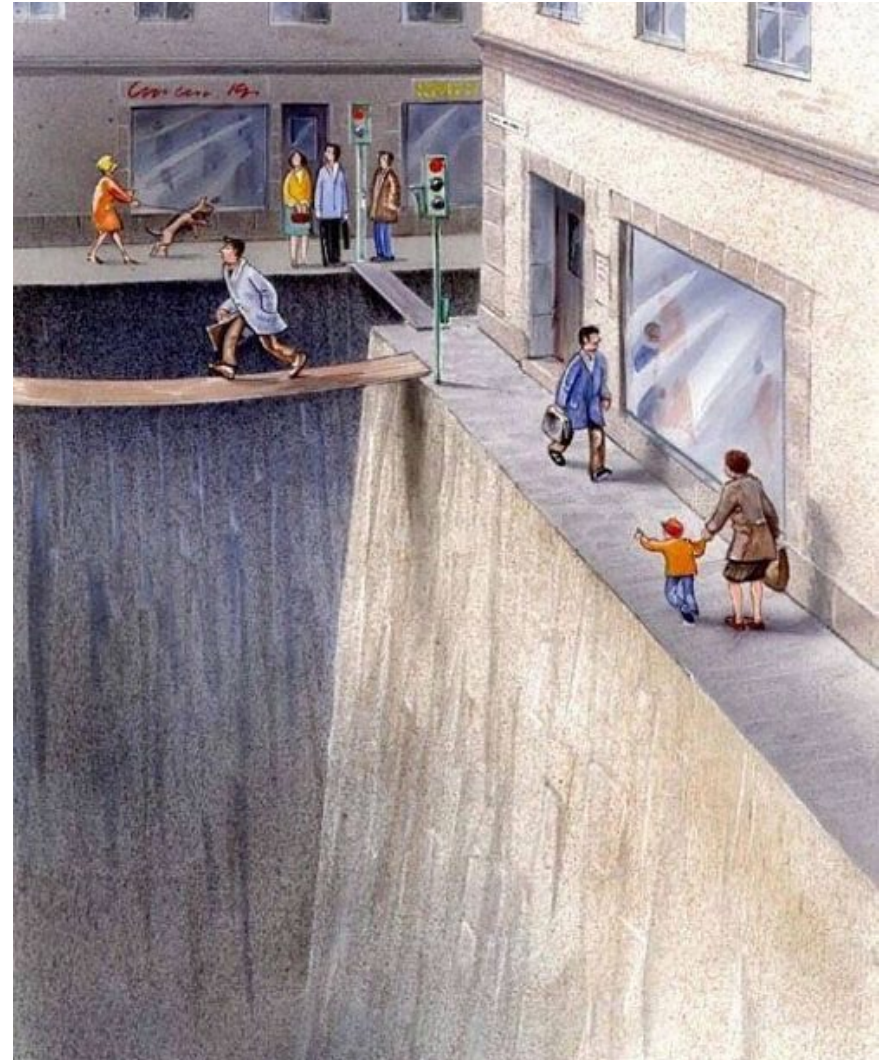
What are Complete Streets?



Google Streetview, Sep 2019

Why build Complete Streets?

- Safety
- Choice
- Quality of Life



Why build Complete Streets?

- Safety
- Choice
- Quality of Life
- Environment
- Equity
- Public health
- Economic development
- Community resiliency



Safety

- Pedestrian crashes:



65%-89% with sidewalks



55% with hybrid beacons



Safety

- Total crashes:



19%-47% with road diets



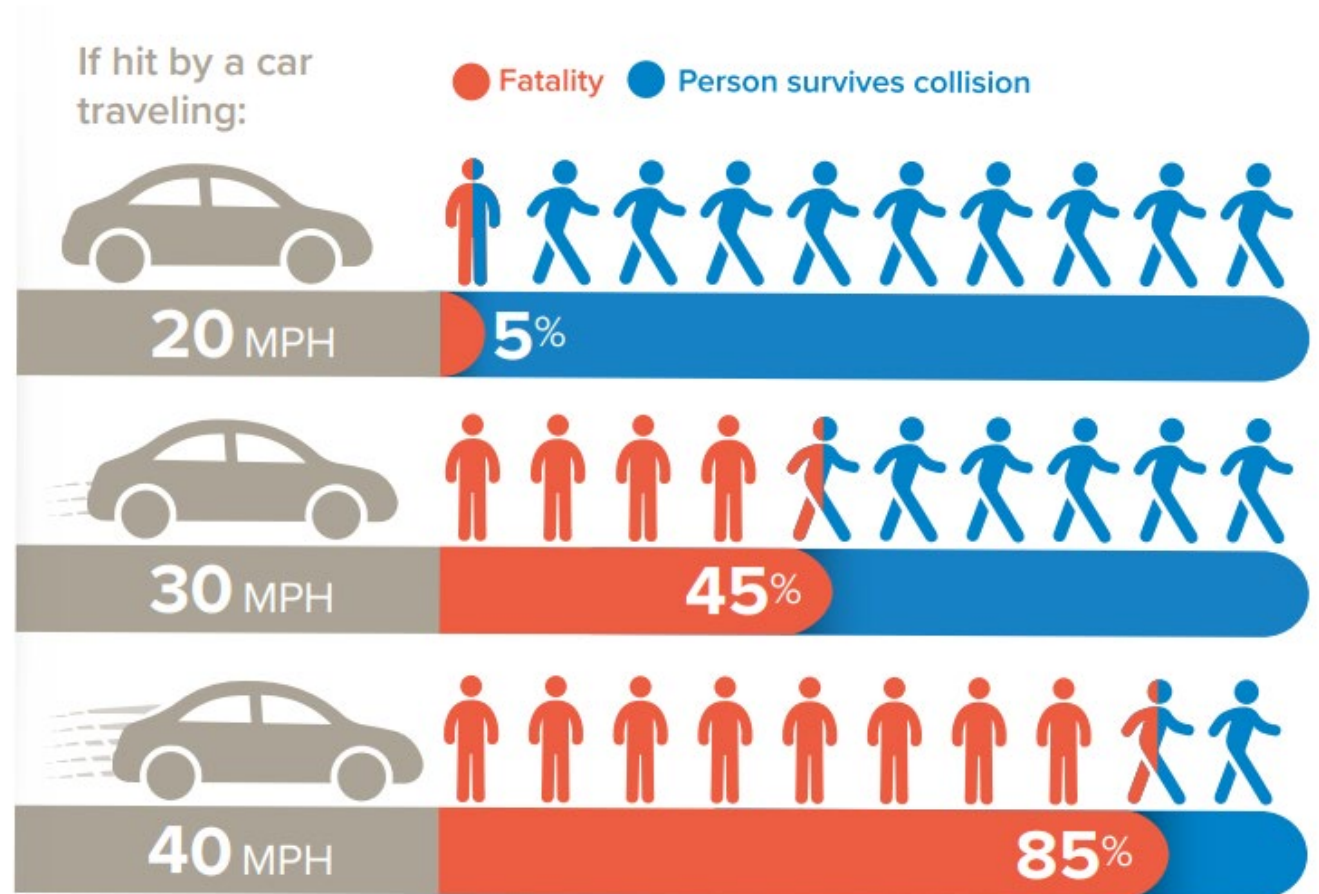
29% with hybrid beacons



Source: Federal Highway Administration, US Dept. of Transportation. Proven Countermeasures. <https://safety.fhwa.dot.gov/provencountermeasures/>

Safety

- Pedestrian safety and vehicle speeds



Source: National Complete Streets Coalition; National Traffic Safety Board (2017) Reducing Speeding-Related Crashes Involving Passenger Vehicles.

Safety

Guiding Principle #1:

We can't talk about pedestrian safety without talking about **reducing vehicle speeds and volumes.**

Choice

- People want choices!
 - Residents are 65% more likely to walk in neighborhoods with sidewalks.
 - Cities with more bike lanes/square mile have higher levels of bike commuting.



Choice

- Younger adults are driving less and looking for other transportation options.



Source: LADOT

Choice

- By 2025, nearly 1 in 5 Americans will be 65 or older.
- About 1/2 of all non-drivers over the age of 65 would like to get out more often.
- Older adults:
 - Prefer to stay in their community
 - Want to live in a connected community



Source: Dan Burden

Choice

- Nearly 1 in 5 Americans are differently-abled.
- Complete Streets = attention to detail for travelers with disabilities.
- Complete Streets can reduce isolation and dependence.



Choice

- Improvements in 4 communities over 4 years:

↑ 22% in walking overall

↑ 49% in bicycling overall

↑ 23% in utilitarian trips made by foot

↑ 5% in utilitarian trips made by bicycle

Choice

Guiding Principle #2:

Design streets that **promote transportation choice.**

Quality of Life

Residents of walkable communities:

- are more likely to be socially engaged and trusting
- report being in good health and happy more often



Source: Dan Burden

Quality of Life

- Older Adults:
 - Prefer to stay in their community
 - Want to live in a connected community
 - Health is important



Quality of Life

- Younger adults want to live and work in areas with high quality transportation and high quality of life.
- Businesses that encourage active transportation attract young professionals and better business.



Source: Julia Diana

Choice

Guiding Principle #3:

Design streets for **the community
you want.**

Guiding Principles

1. We can't talk about pedestrian safety without talking about **reducing vehicle speeds and volumes.**
2. Design streets that **promote transportation choice.**
3. Design streets for **the community you want.**

Visioning

Visioning

- What are the biggest challenges related to Bronxville's streets?
- How should Bronxville's streets look in 20 years?
- What are the indicators of success?

Safe Routes to School

Context

- 10%-14% of car trips during morning rush hour are for school travel
- 17% of kids and teens are obese.
- Limited physical activity contributes to the obesity epidemic.



What is Safe Routes to School?

- Promotes walking and biking to school through:
 - Education
 - Enforcement
 - Evaluation
 - Encouragement
 - Engineering



Five E's

- Education
 - Safety curriculum
 - Safe Routes Presentations
 - Bicycle Rodeos
- Enforcement
 - Enforcement near schools
- Evaluation
 - Parent surveys
 - Student travel tallies
- Encouragement
 - Walking School Bus
 - Bike Trains
 - Walking & Biking contests
 - Walk to School Day
- Engineering
 - Walk Audits
 - Travel Plans

Elements of Walkable Streets

Elements of Walkable Streets

Pedestrians Facilities



- Improvements to sidewalks
- Provide Safe Roadway Crossings

Speed & Volume Reduction



- Speed Control with
 - Vertical Elements
 - Horizontal Elements
 - Cross Sectional Elements
 - Signage
- Volume Reduction with
 - One-way Restrictions
 - Intersection turning restrictions
 - Street Closures
 - Arterial Improvements

Sidewalks

- ADA Accessibility is Required
 - Grade: 5% MAX or Grade of Roadway
 - Minimum Width: 4 feet
 - Smooth surface

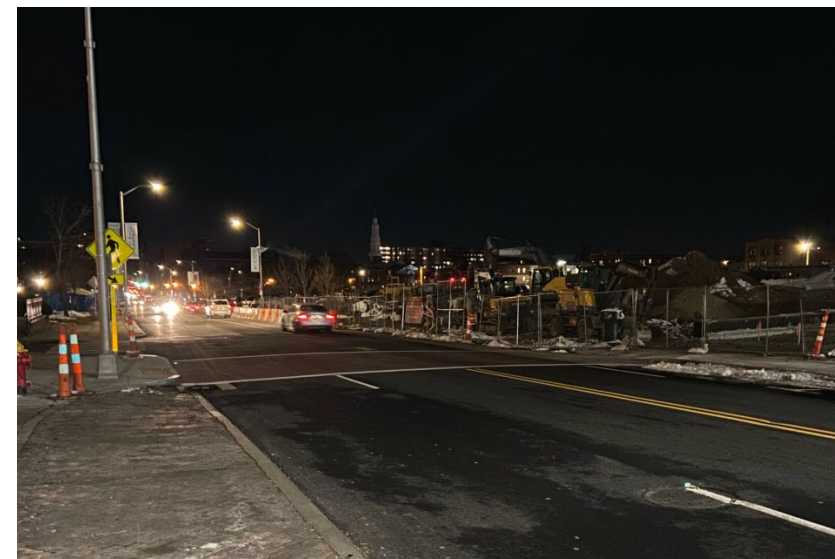
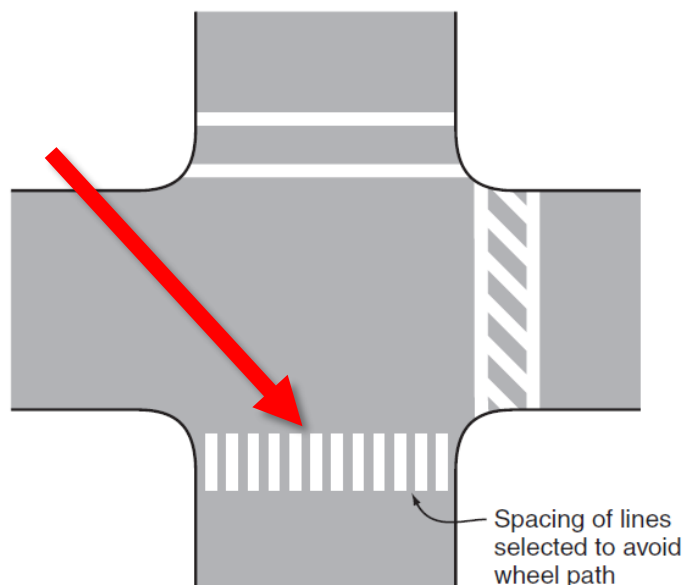


Roadway Crossings

High-Visibility Crosswalks (Continental Style)

- Provides the best visibility for crosswalks especially at night
- Pavers or stamped pavement does not provide visibility benefit

Figure 3B-19. Examples of Crosswalk Markings

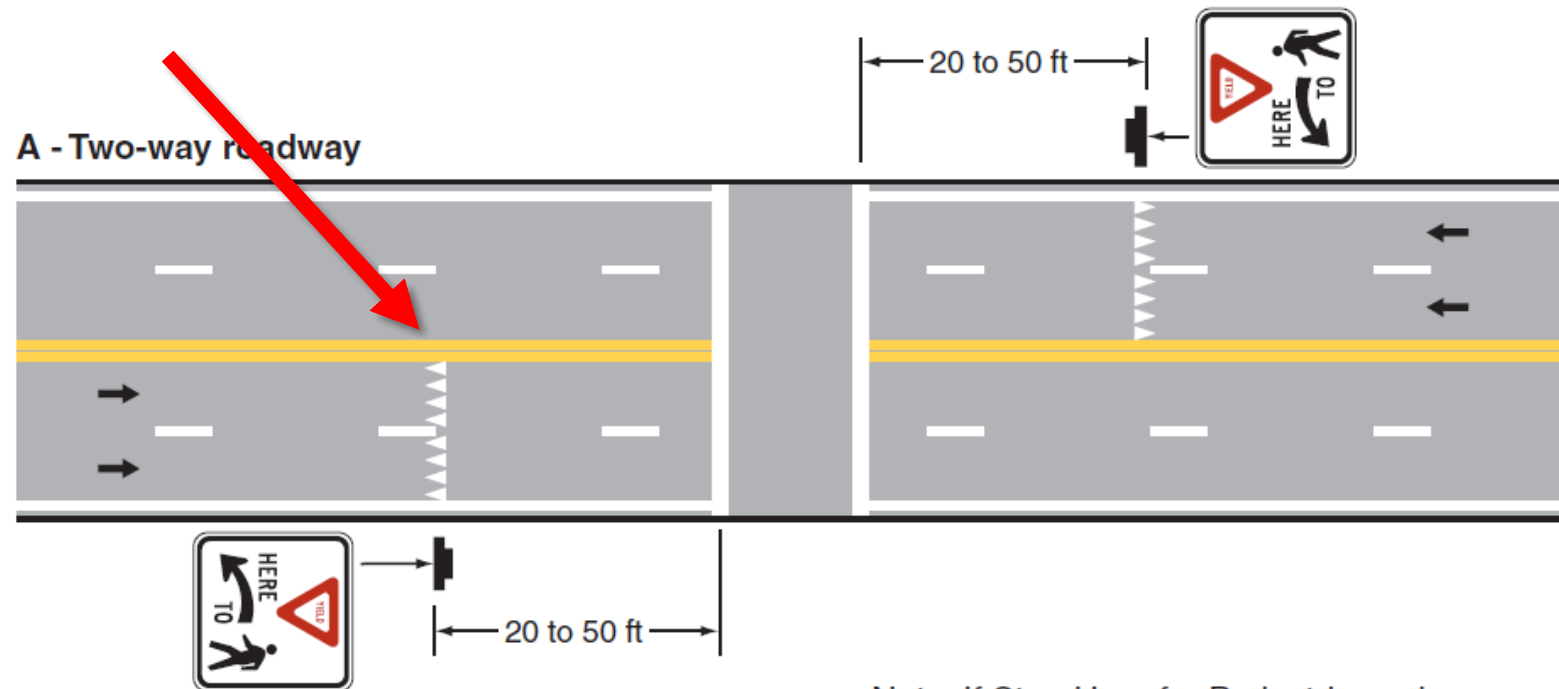


Stamped Pavement Crosswalk at night

Roadway Crossings

Advanced Mid-block Yield Line

- Increases visibility of crosswalk markings
- Encourages motorists to stop in advance of crosswalk



Note: If Stop Here for Pedestrians signs

Roadway Crossings

In-street Pedestrian Crossing sign

- Easily deployable
- One study found yielding rates increased from 1% to 44%



Roadway Crossings

High-visibility crosswalk signage

- Placed in mid-block crossings
- Yellow or fluorescent
- Advanced signage and sign at crosswalk



Roadway Crossings

Rectangular Rapid Flashing Beacon (RRFB)

- Standard crosswalk signage with actuated flashing LED lights
- Must meet NYS DOT pedestrian volume thresholds if on state road:

3. Minimum Pedestrian Volume Thresholds

- a. 20 Pedestrians per hour* in any one hour, or
- b. 18 Pedestrians per hour* in any two hours, or
- c. 15 Pedestrians per hour* in any three hours, or
- d. 10 School Aged Pedestrians traveling to/from school in any one hour

*Young, elderly, and disabled pedestrians count 2X towards volume thresholds

** School Crossing defined as a crossing location where ten or more student pedestrians per hour are crossing



Roadway Crossings

Raised Crosswalks

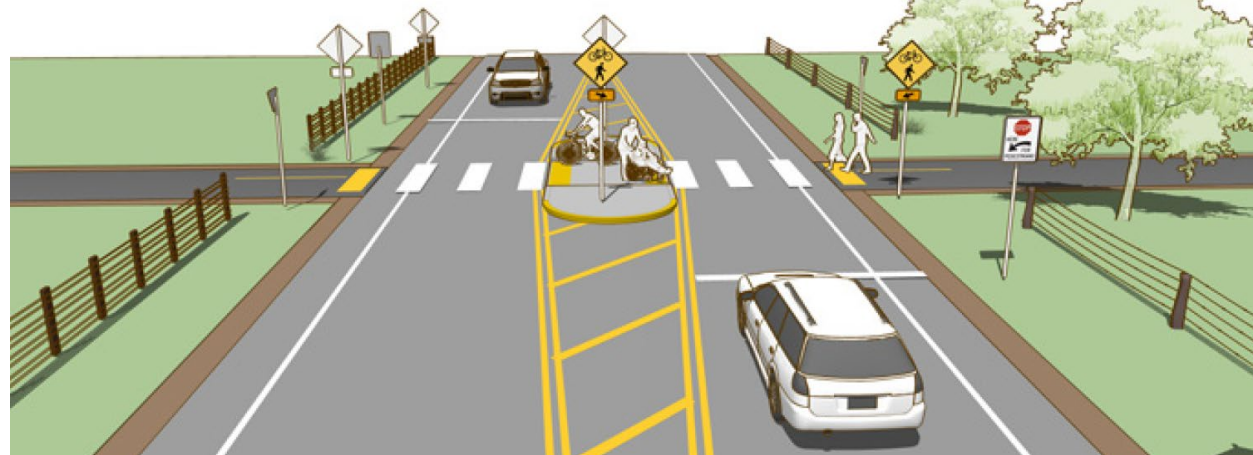
- Reduces vehicular speeds at crosswalks
- Increases yielding rates



Roadway Crossings

Pedestrian Refuge Island

- Allows pedestrians to cross one direction at a time
- Increases yielding rates and reduces crossing distance



Speed Control

Vertical Elements

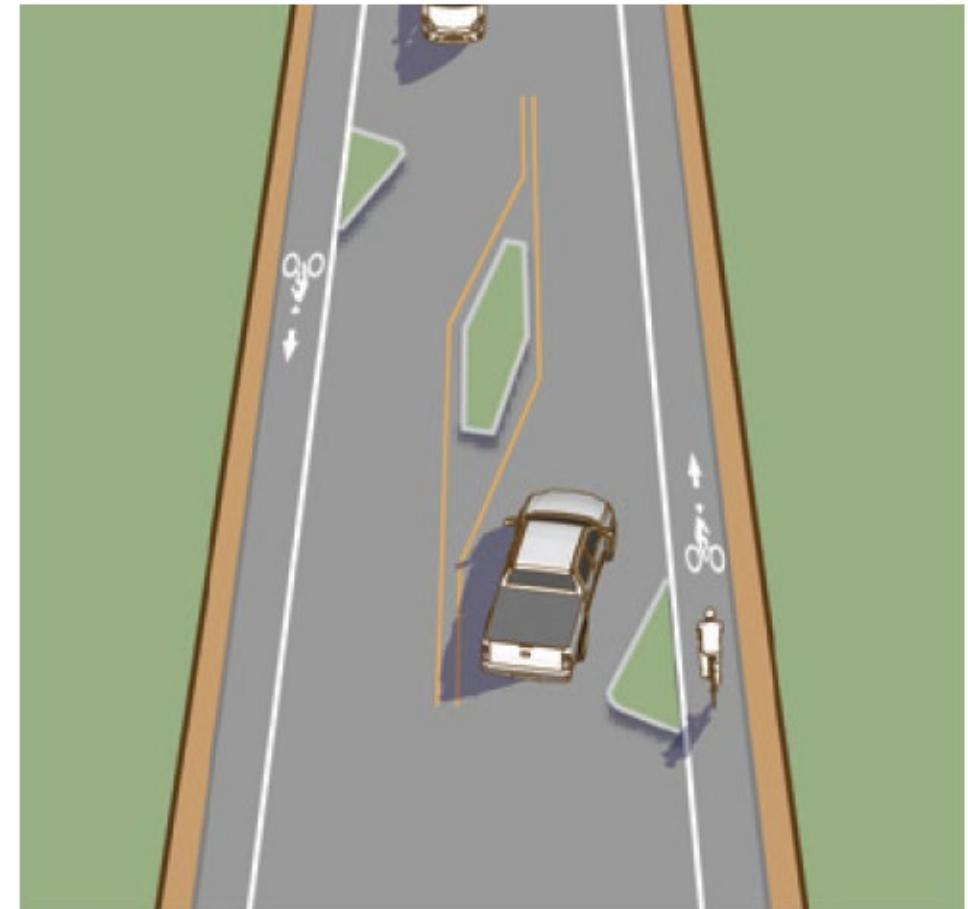
Speed Hump

- May be limited on emergency access routes, bus routes, and areas with truck traffic
- May be limited on areas with slopes and curvature



Speed Control *Horizontal Elements*

Chicanes & Horizontal Deflection



Speed Control *Horizontal Elements*

Yield-Controlled Chokers

- Can be used to create slow-street gateway
- Slows traffic by requiring on-coming traffic to yield
- Can be placed in chicane pattern
- *Similar operation to vehicle parked on street*



Speed Control *Horizontal Elements*

Bump-outs & Curb Extensions

- Reduces pedestrian crossing distance
- Increases pedestrian visibility
- Reduces vehicular turning speeds by reducing turning radius



Speed Control

Cross Sectional Elements

Centerline Removal

- Centerlines are not required on roadways under 6,000 vehicles per day
- Some studies have found a relationship between centerline presence and higher speeds on narrower streets
- Striping can be maintained around curvature



Speed Control

Cross Sectional Elements

Centerline Removal



Google Streetview, June 2018

Speed Control

Cross Sectional Elements

Surface Material & Roadway Narrowing

- Two-way street can be as narrow as 18 feet
- Moving curb or use of material to provide parking location can narrow effective driving width



Speed Control *Signage*

Speed Limit Changes &
Speed Feedback
Signage



Speed & Volume Reduction



Volume Reduction

One-way restrictions

- Can restrict eliminate cut-through traffic if properly implemented
- Can create additional space on roadway
- Should consider access changes to area residents and businesses



Volume Reduction

Turning Movement Restrictions

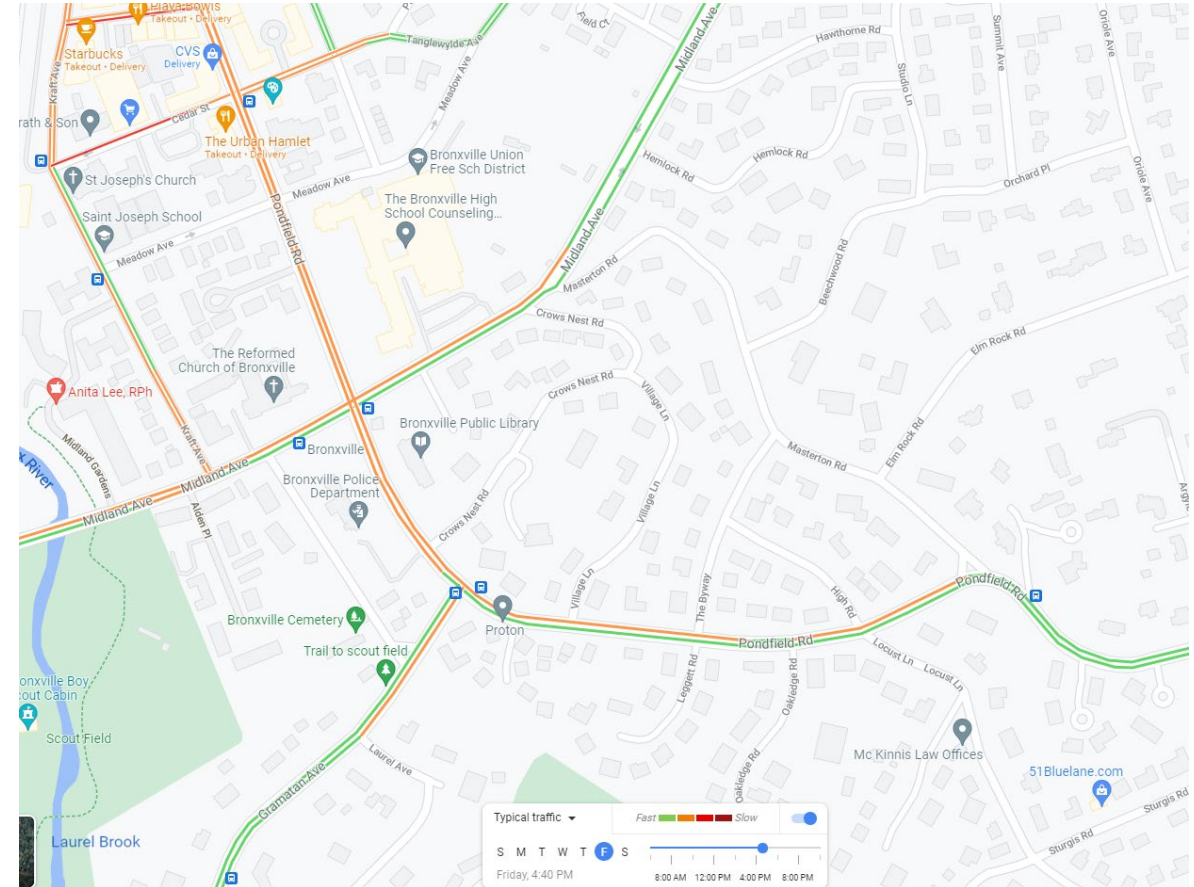
- Restrict turn at intersection to reduce cut-through movement



Volume Reduction

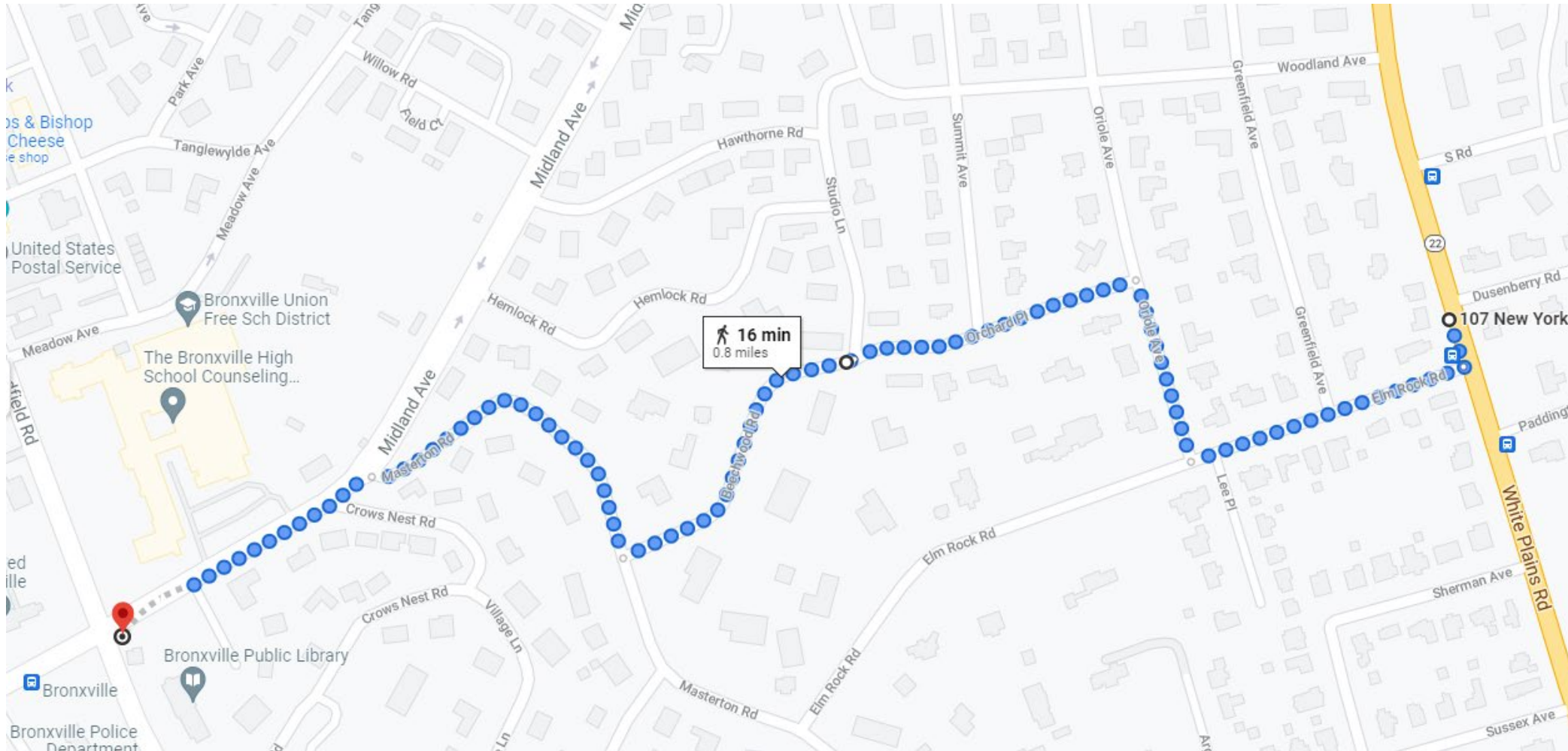
Arterial Improvements

- Improving traffic condition on mainline can reduce need to use local street as cut through



Virtual Walkthrough of Corridor

Corridor Overview



Virtual Walkthrough



Midland Avenue & Masterton Road



Former Design – Masterton & Midland



Google Streetview, July 2018

Masterton Road



Masterton Road



Beechwood Road



Google Streetview, July 2018

Beechwood Road



Oriole Avenue



Elm Rock Road



Google Streetview, June 2018

Route 22 and Elm Rock Road



Google Streetview, June 2018

Route 22 and Dusenberry Road



Challenges & Opportunities

- Challenges:

- Topography
- Winding streets with constrained roadway
- Overgrown shrubbery
- Missing stop bars/crosswalks
- Inconsistent sidewalk
- ADA accessibility

- Opportunities:

- Relatively low-traffic/low-stress streets
- Existing demand
- Interest for safe routes to school
- Right of way
- Aesthetics



Small Group Discussion

Mapping Activity

- Masks are encouraged at stations!
- Limit group size.
- Make sure everyone has a chance to contribute.
- Write your thoughts down.



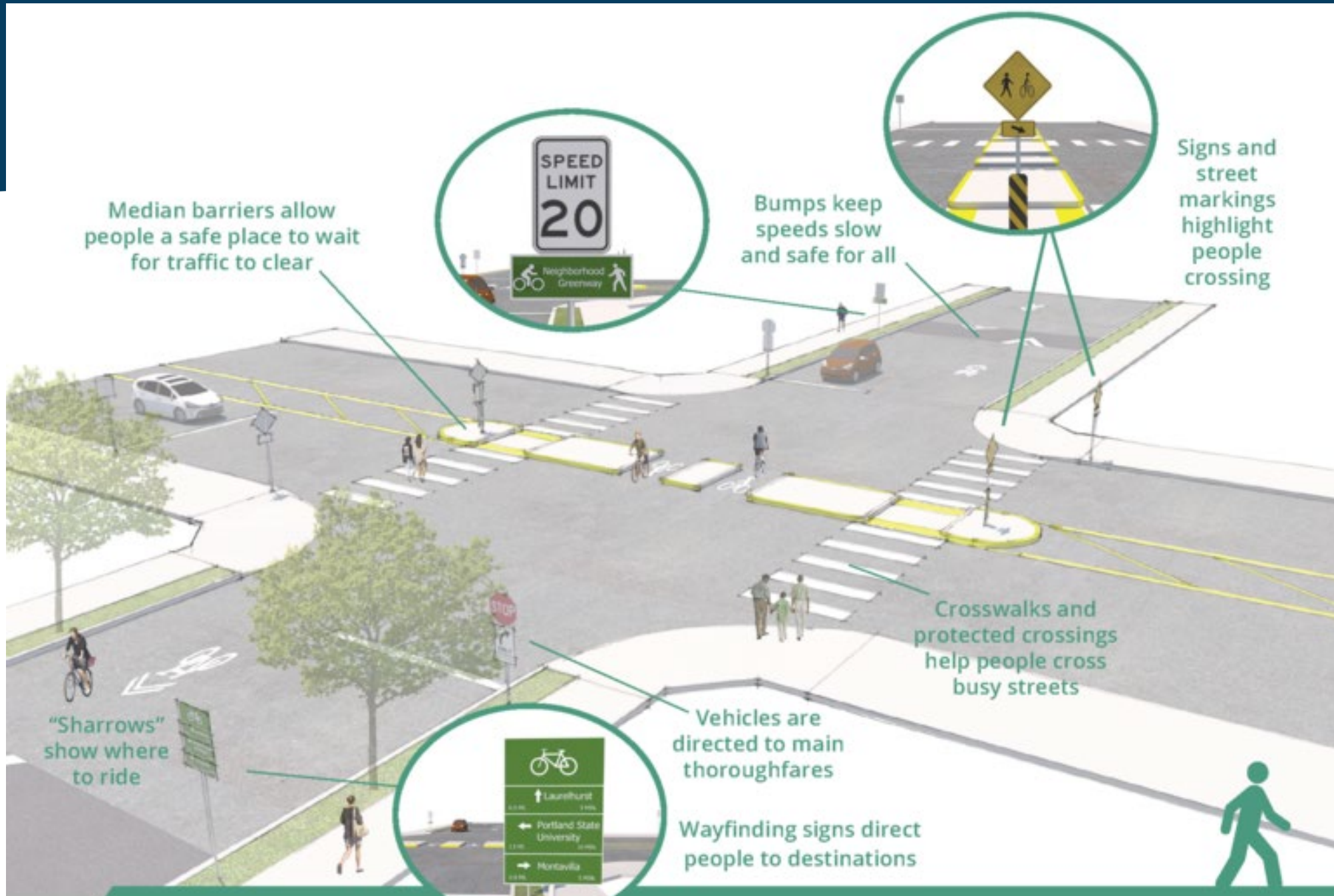


Big Ideas

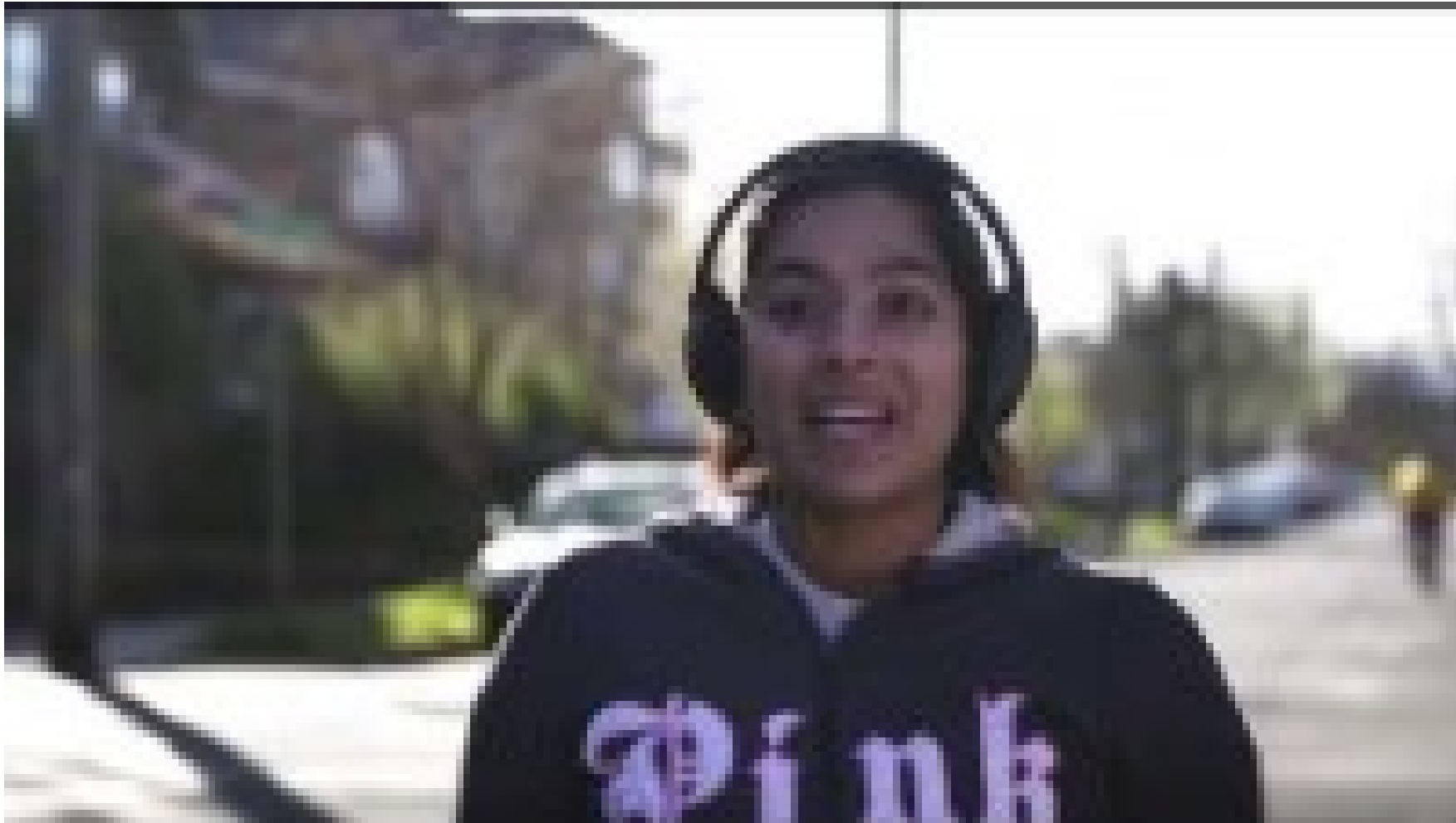
Big Idea #2: Neighborhood Greenway

- 20 mph or less
- Upper limit of 2,000 cars/day; aim for less than 1,000 cars per day
- Not cut-through streets (for cars)
- Low level of stress
- Concentrate infrastructure on a single corridor
- Prioritize for repaving
- **Traffic calming**





Big Idea #2: Neighborhood Greenway



Big Idea #3: Crossing at Route 22

- Crosswalk
 - Pedestrian island likely would require roadway widening
 - Curb extensions could potentially reduce crossing distance from 30' to 26'.
 - Sidewalk needed on east side of Route 22



Big Idea #3: Crossing at Route 22



Rectangular Rapid Flash Beacon (RRFB)

Big Idea #3: Crossing at Route 22

Guidance	Route 22 & Elm Rock Road
Marked Crosswalk	None currently
Minimum Vehicular Volumes: 1500 VPD or 150 VPH	AADT 8327 (estimate)
Minimum Pedestrian Volume Thresholds	Not known
Stopping Sight Distance (SSD) \geq 8 times the Speed Limit	Likely met
300 ft. (minimum) to the nearest protected crossing; 200 ft. in urban areas based on engineering judgment	1,300 ft+
Posted Speed Limit of 30 to 45 MPH	30 MPH
Maximum # of lanes crossed: 4 lanes; with a raised median: 5 lanes.	2 lanes

Big Idea #3: Crossing at Route 22

Minimum Pedestrian Volume Thresholds

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Implementation

Implementation Starts Today!

- Select a plan(s)
- Gather support from across the community (e.g., events)
- Work with Westchester County and NYSDOT, as needed
- Identify funding sources / strategy
- Grant application (CMAQ, TAP, CFA, etc.)
- Incorporate into local capital plans and regional planning
- Advance the plan from Concept to Design / Construction



Questions?
Comments?



Thank you!