Montgomery Planning Midcounty Division

09/25/2024

University Boulevard

Four Corners Transportation Workshop

Tonight's Agenda

Welcome and Introductions

Background and Overview
- What We've Heard
- Policy Guidance

Four Corners Transportation Scenarios
- Limited Change
- Street Grid

Transportation Analysis Results
- Key Differences
- Safety
- Comfort for People Walking & Biking
- Auto and Transit Travel Times

Small Group Q&A and Discussion

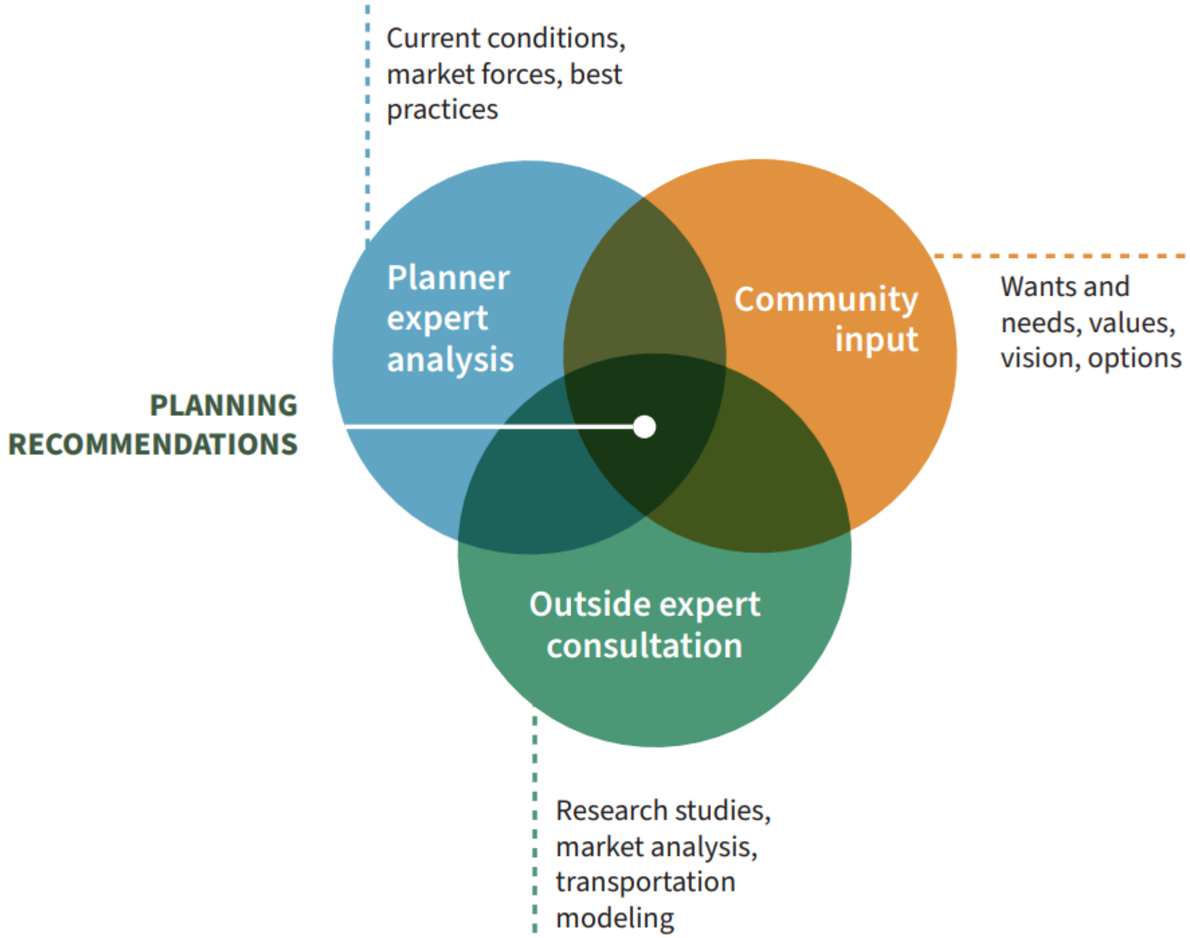
Full Group Report-Out

Plan Purpose

The purpose of the University Boulevard Corridor Plan is to comprehensively review the built, natural, and social environment along the corridor and consider opportunities to further the outcomes and objectives of *Thrive Montgomery 2050*.

What informs planning recommendations?

- Community input is a foundational part of our planning.
- Combined with internal and external expertise and data sources, it has a significant impact on our planning recommendations.

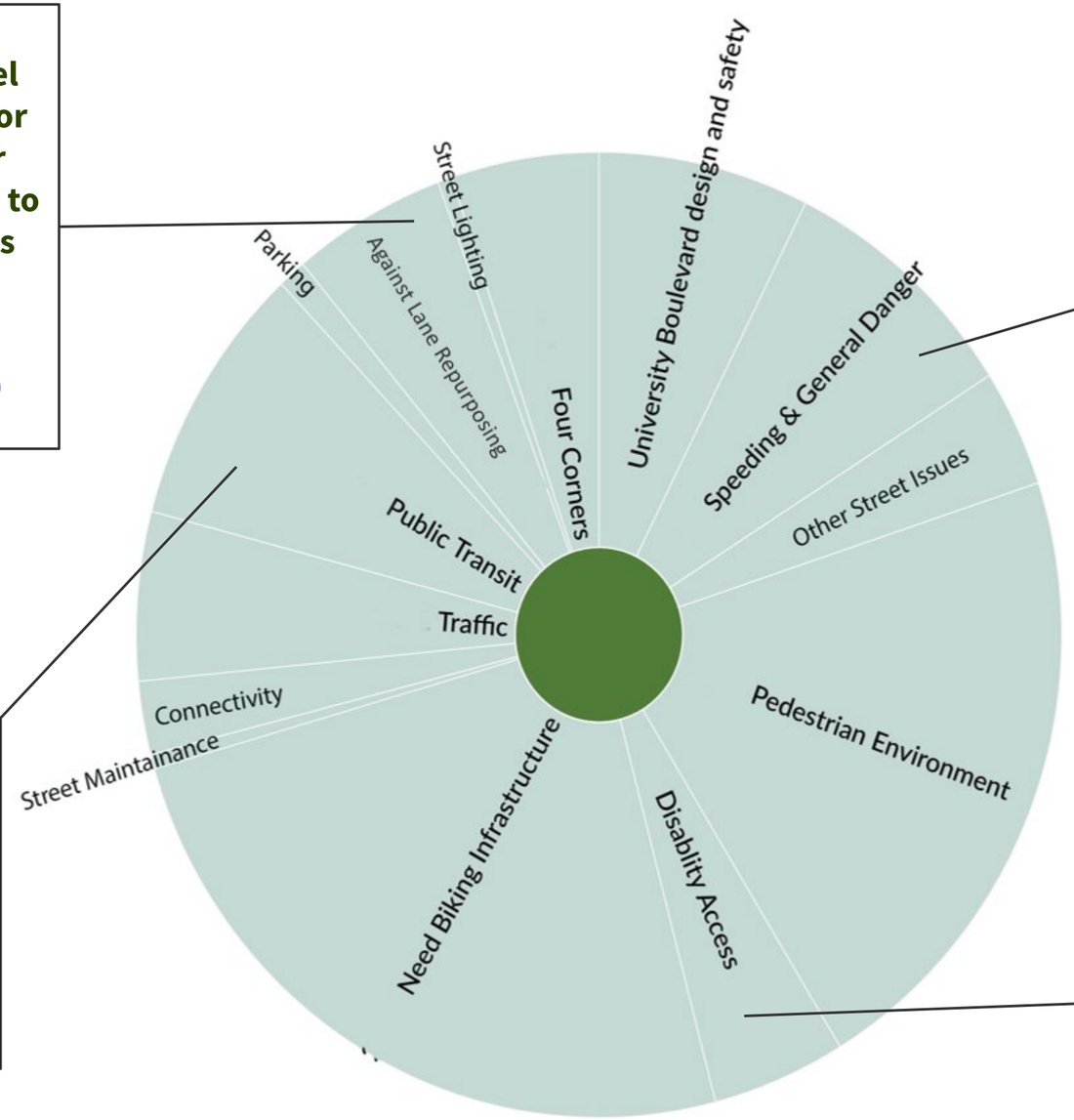


Outreach and Engagement to Date

- Over 16 in-Person or Virtual Meetings & Workshops
- 21+ In-Community Events
- Over 1000 doors knocked for canvassing
  - Conversations in 6 languages
  - 239 One-on-one conversations logged
- 6000+ Mailers & Postcards Sent
- 166 Questionnaire Responses Collected
- 21,000 + words of text analyzed

"University Boulevard is a major arterial that does not have a parallel relief valve. If you make it harder for people to drive, there's no place for them to go. And many people need to drive. Transit, biking and walking is not a solution for everyone."

Community Member Comment (I-495 to Dennis Ave Workshop:4/26/2023, Montgomery Blair High School)



"I am constantly frustrated by the danger of crossing major streets such as University Ave and Colesville. "

Questionnaire Respondent, June 2023

"I rely on public transportation and take buses frequently instead of using my motorcycle. The transportation system in this area is reliable. "

Warwick Apartments Resident Member Comment to Interviewer. May 2023

"The road should be safe for all users-wider sidewalks for pedestrians, bike lanes that are dedicated in both directions, and travel lanes that don't encourage speeding for car drivers."

Questionnaire Respondent, November 2022

Transportation Word Cloud

Top 25 Words

With Stemmed Words (e.g., “talking”)

Four Corners Transportation Mentions

Top transportation conversations about Four Corners include:

- Biking Infrastructure
- Pedestrian Safety
- Speeding and General Danger
- Traffic

Four Corners Transportation Word Cloud

Top 25 Words

With Stemmed Words (e.g., “talking”)

Policy Guidance in Countywide Plans and Policies

- General Plan: Thrive Montgomery 2050
- Vision Zero
- Complete Streets
- Countywide Transit Corridors Functional Master Plan
- Bicycle Master Plan
- Pedestrian Master Plan

Complete Streets icon used with permission. Source: NACTO Transit Street Design Guide.

General Plan: Thrive Montgomery 2050

The county's planning roadmap for creating a thriving economy, equity for all residents, and a healthy environment through 2050 and beyond.

Key Transportation Policies

Develop a safe, comfortable and appealing network for walking, biking, and rolling.

- Expand the street grid to create shorter blocks.
- Convert existing traffic lanes to create space for walkways, bikeways, and landscaped buffers.
- Prioritize safe, comfortable, and attractive sidewalks, bikeways, and roadway crossings.
- Transform the road network by incorporating Complete Streets design principles with the goal of eliminating all transportation-related roadway fatalities and severe injuries.

General Plan: Thrive Montgomery 2050

Key Transportation Policies (Continued)

Build a frequent, fast, convenient, reliable, safe, and accessible transit system.

- Build a network of bus and rail infrastructure that make transit the fastest, most convenient and most reliable way to travel.
- Convert existing general purpose traffic lanes to dedicated transit lanes.
- Prioritize frequent and reliable morning to late night transit service to connect historically disadvantaged people and parts of the county.
- Ensure safe and comfortable access to transit stations via walking, rolling, and bicycling.

General Plan: Thrive Montgomery 2050

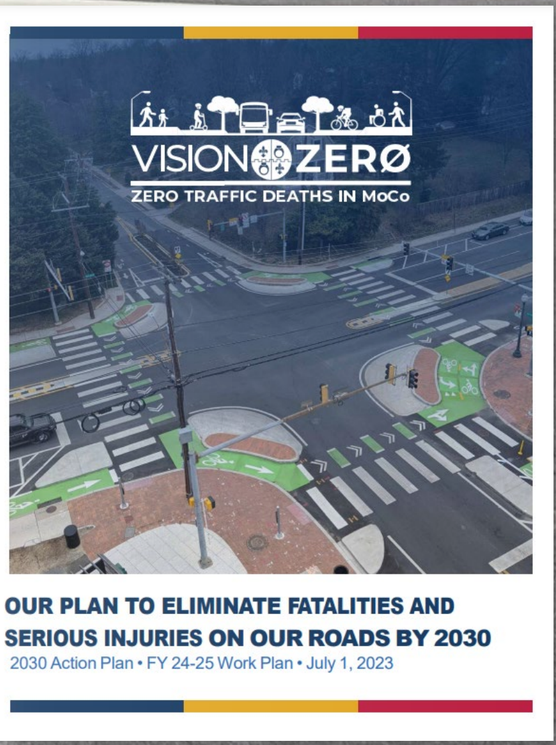
Key Transportation Policies (Continued)

Adapt policies to reflect the economic and environmental costs of driving alone, recognizing car-dependent residents and industries will remain.

- Stop proposing and give a lower priority to construction of new 4+ lane roads, grade-separated interchanges, or major road widenings.

Vision Zero

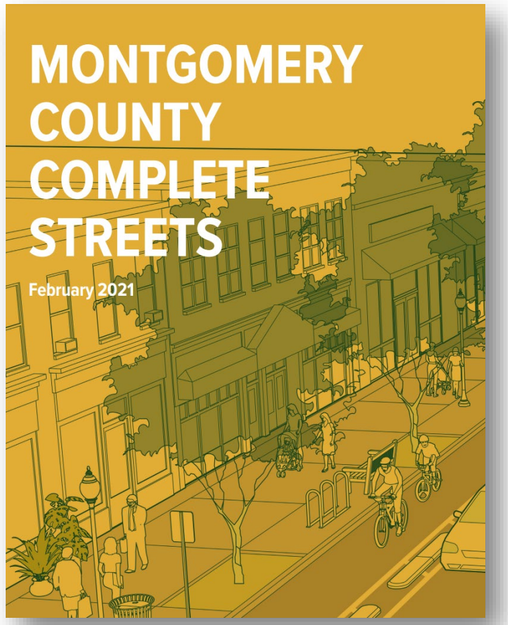
- Holistic transportation strategy adopted by Montgomery County in 2017 with the goal to **eliminate traffic fatalities and severe injuries** on the county's roadways by 2030.
- **Key principles:**
  - Serious and fatal traffic crashes are unacceptable and preventable.
  - The design and construction of roadways can reduce the consequences of human error.
  - Human life takes priority over mobility.
- **Between 2015 and 2022, motor vehicle crashes on University Boulevard in the plan area resulted in 34 severe injuries and three fatalities.**

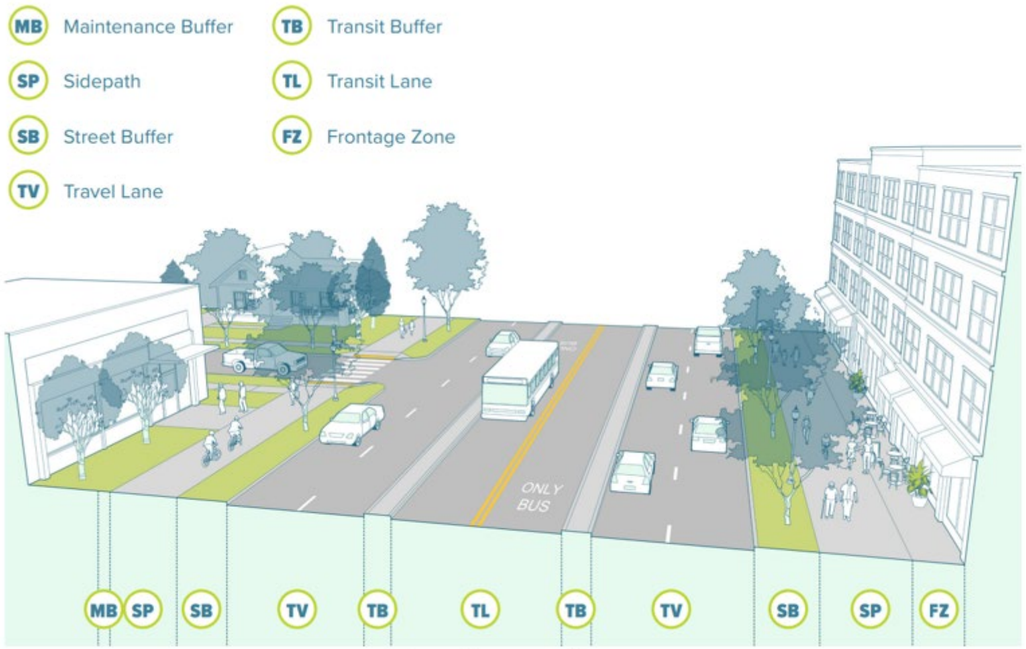


Complete Streets

Complete Streets are designed and operated to provide safe, accessible, and healthy travel for all users of our roadway system, including pedestrians, bicyclists, transit riders, and motorists.

The **Complete Streets Design Guide** identifies land use contexts and street types and specifies street design parameters like target speeds, the dimensions and priorities for street elements, and the maximum spacing for protected crossings.



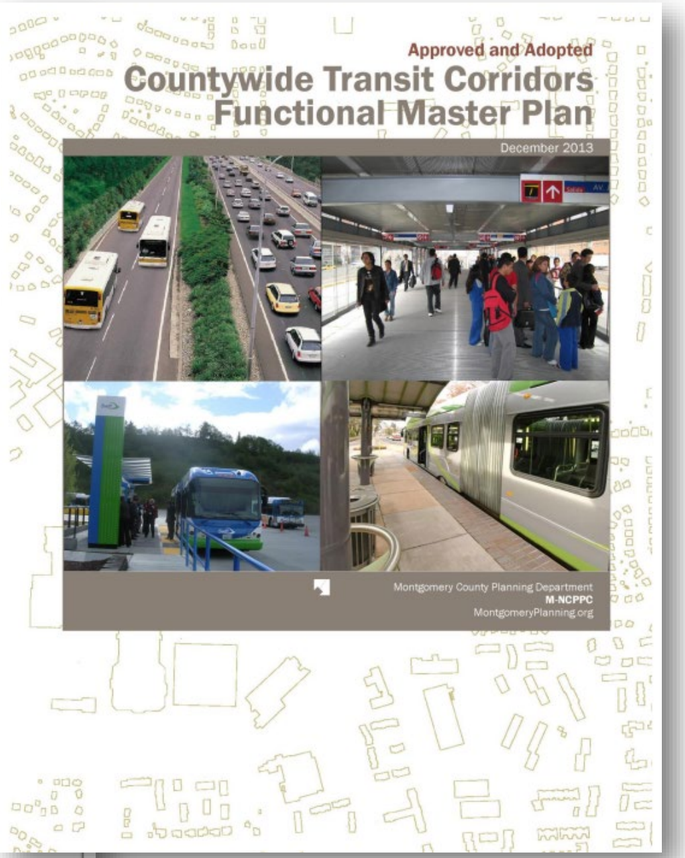


Boulevard

Town Center Boulevard

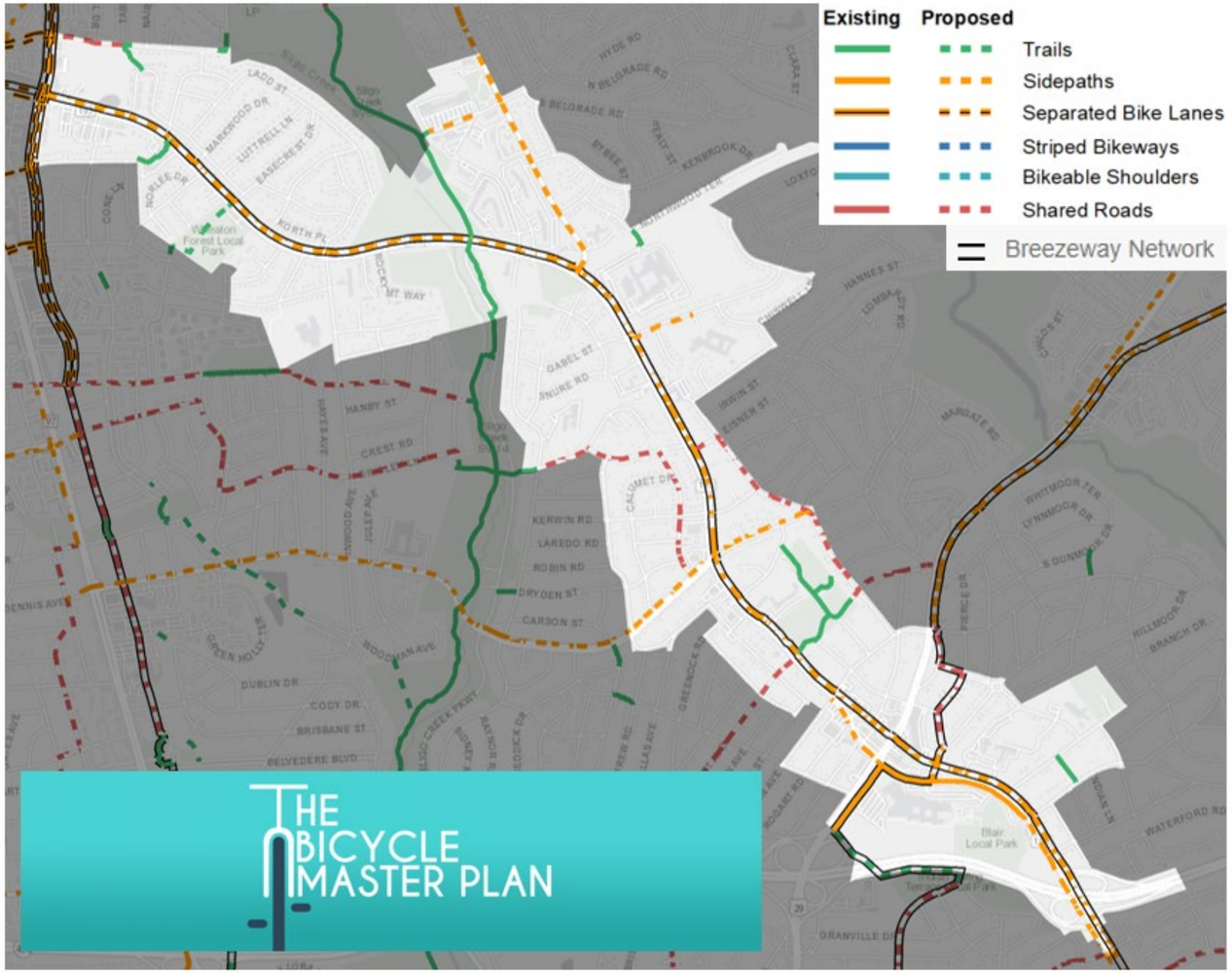
Countywide Transit Corridors Functional Plan

- Identifies University Boulevard as a Bus Rapid Transit (BRT) Corridor
- Identifies eight BRT Station locations on University Blvd with five in the Plan Area:
  - Amherst Ave
  - Inwood Ave
  - Arcola Ave
  - Dennis Ave
  - US 29 / Colesville Rd
- Recommends Dedicated Transit Right-Of-Way along University Blvd, except for a mixed-traffic segment in Four Corners area.



Bicycle Master Plan

- Recommends a framework for establishing a low-stress bikeway network in the county.
- Recommends a Breezeway Network, a high-capacity network of arterial bikeways between major activity centers, enabling bicyclists to travel with fewer delays, and where all users – including slower moving bicyclists and pedestrians – can safely and comfortably coexist.
- Recommends University Boulevard as part of the Breezeway Network, connecting to Breezeways on Amherst Avenue and US 29.



Pedestrian Master Plan

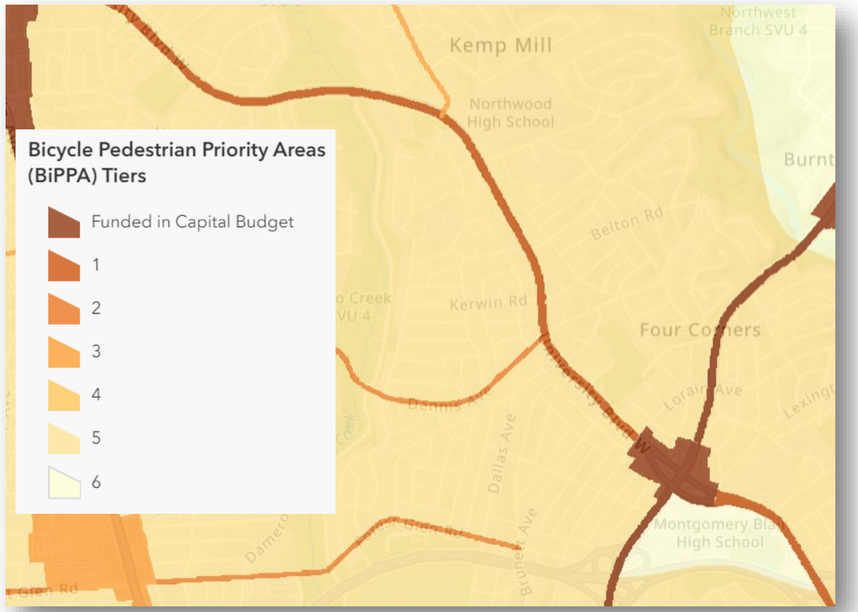
Seeks to make walking safer, more comfortable, convenient, and equitable by improving policy and programming, prioritizing infrastructure investments, and insisting on pedestrian-oriented design in all Montgomery County communities.

Key recommendations include:

- Create direct and accessible street crossings
- Build more walkable places
- Reduce pedestrian pathway temperatures
- Create more pedestrian connections and formalize shortcuts
- Improve and expand protected crossings
- Address access management to reduce pedestrian /vehicle conflicts
- Align speed limits and observed speeds with CSDG target speeds

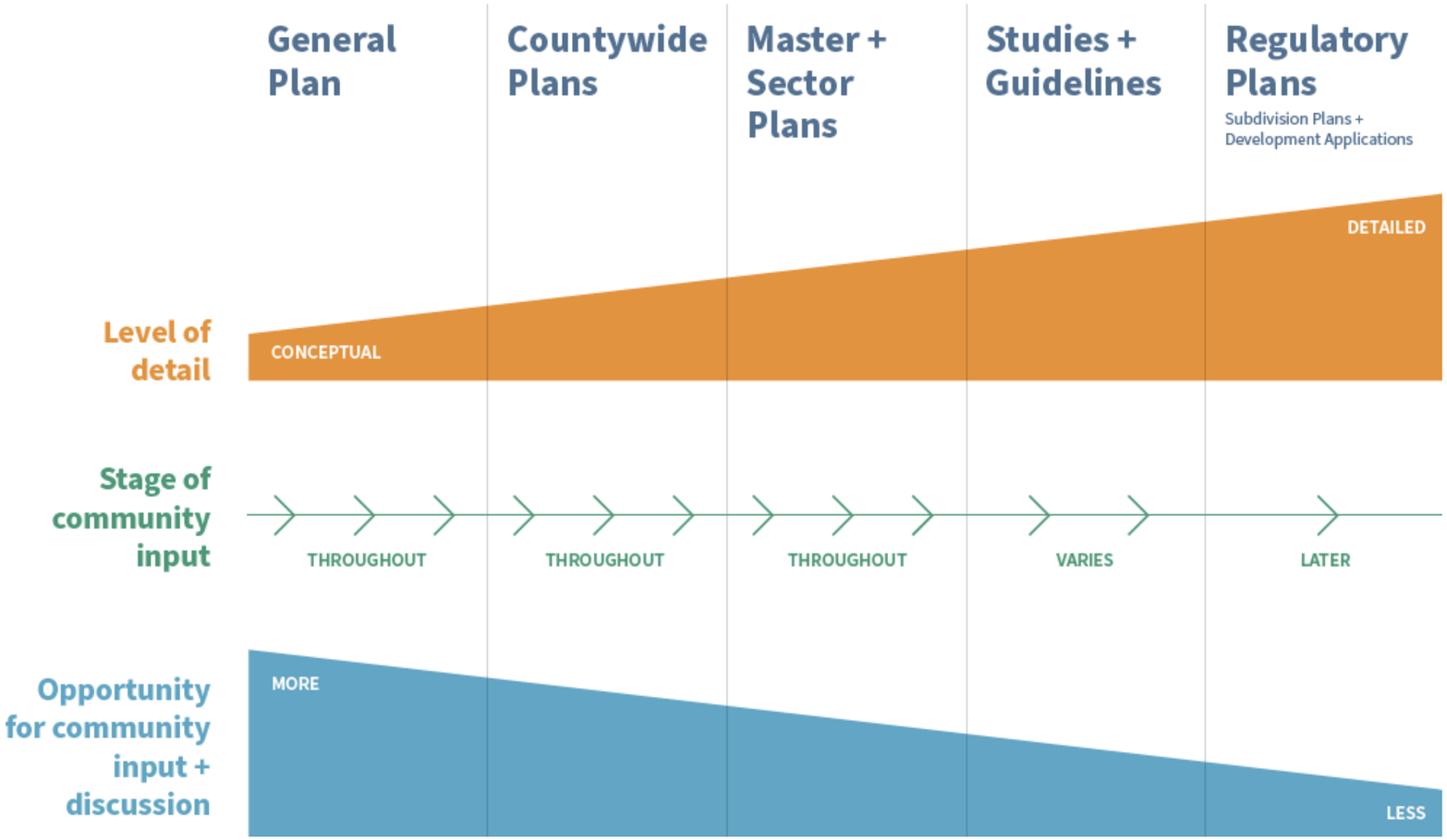
Bicycle and Pedestrian Priority Areas (BiPPAs)

- A funding mechanism for bicycle and pedestrian improvements.
- The Pedestrian Plan prioritized BiPPAs based on need for facilities with emphasis on historically disadvantaged communities. Tiers start with those funded in the capital budget, followed by 1-6, in descending priority.
- BiPPAs in the UBC Plan Area include:
  - Downtown Wheaton – Funded
  - Four Corners – Funded
  - Colesville Road (north and south) – Funded
  - University Boulevard – Tier 1
  - Dennis Ave (Georgia to University) – Tier 2
  - Arcola Ave (Georgia to University) – Tier 3
  - Other Neighborhood BiPPAs (Tier 5 and 6)



Community Input by Type of Planning Wo

- Countywide plans guide large systems like transportation.
- Master plans define policy for specific areas.
- Community input is a key component of all planning stages.



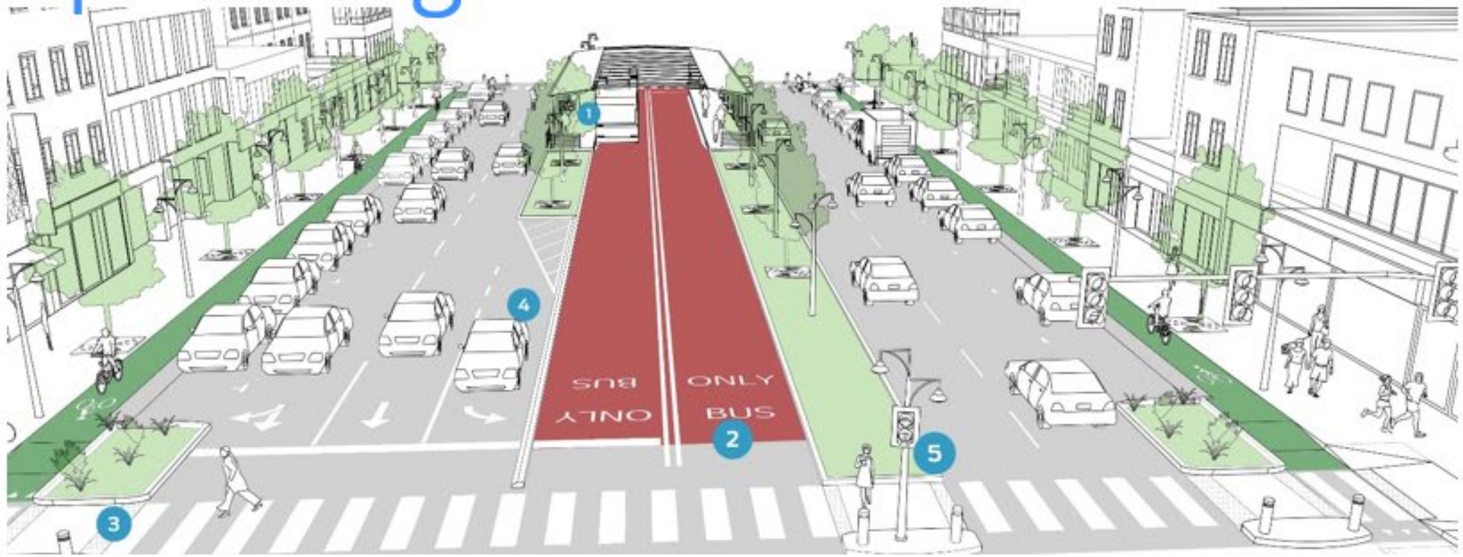
This graphic is for illustrative purposes only. The levels, stages, and degrees represented herein may vary given the specific goals of each plan and project.

Four Corners Key Objectives

- Develop a safe, comfortable and appealing network for walking, biking, and rolling.
- Implement a Breezeway facility through Four Corners.
- Build a frequent, fast, convenient, reliable, safe, and accessible transit system.
- Work to eliminate traffic fatalities and severe injuries.
- Provide safe, accessible, and healthy travel for all users of our roadway system, including people walking, biking, rolling, riding transit and traveling in cars.

Infrastructure Example Images

Center-Running
Bus Rapid Transit



Curb-Running
Bus Rapid Transit

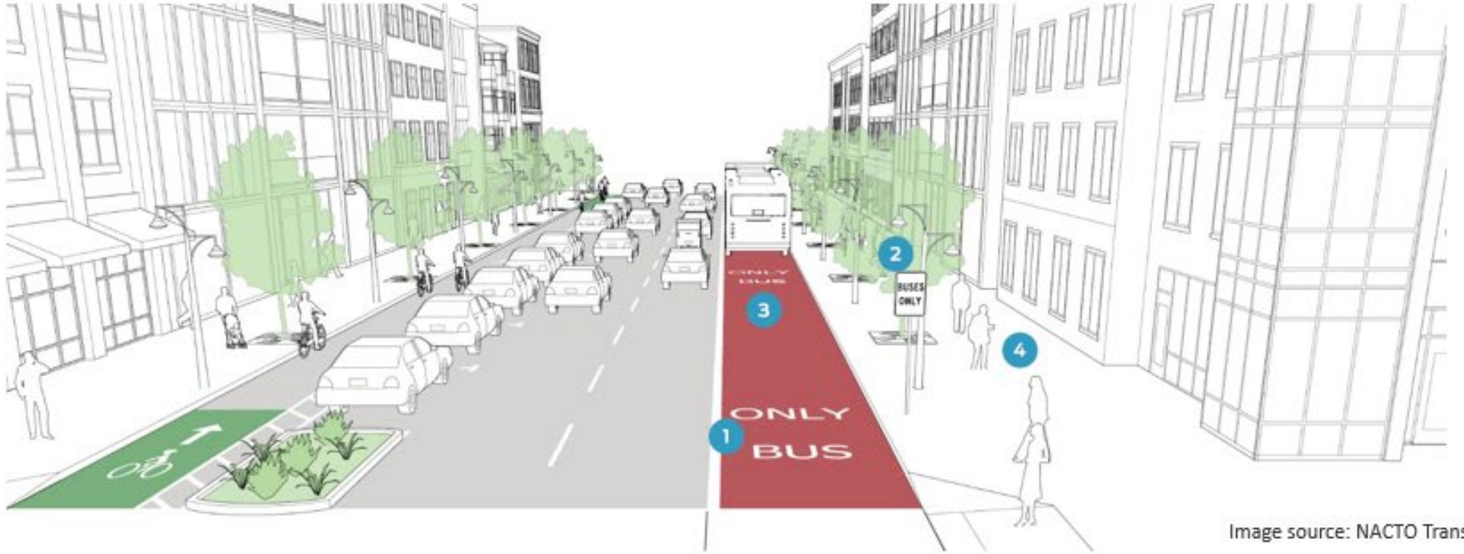
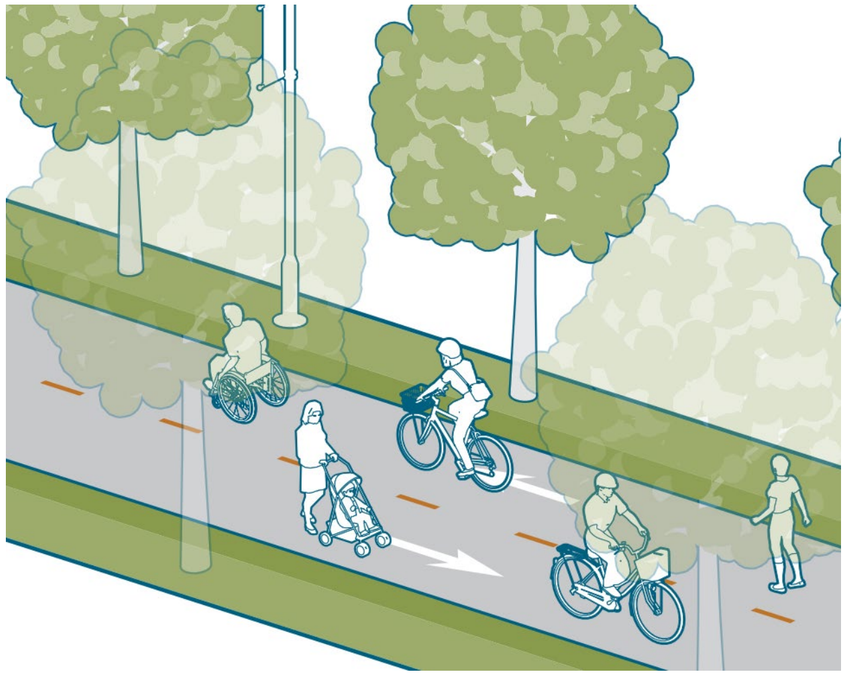
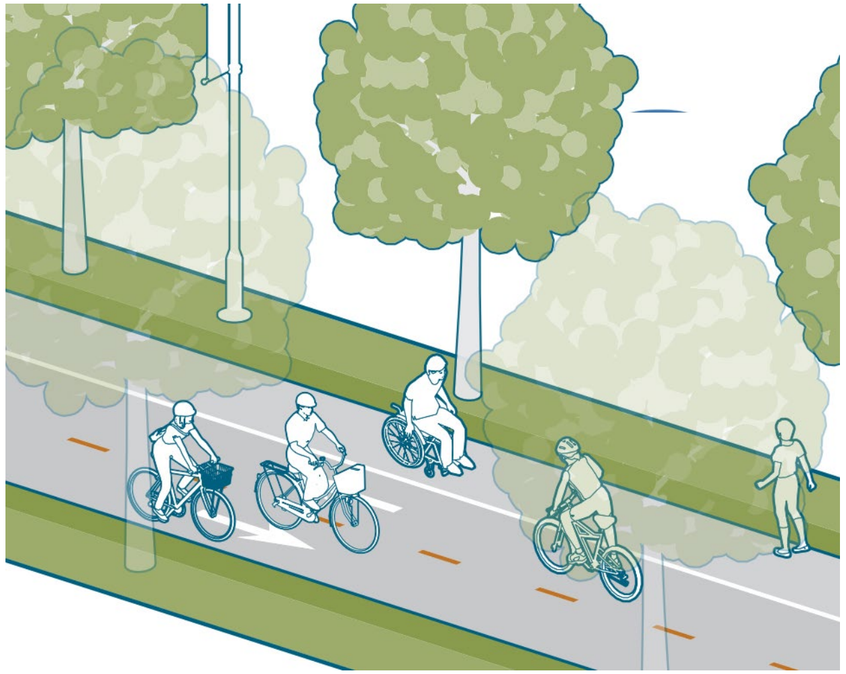


Image source: NACTO Transit Street Design Guide

Infrastructure Example Images



Sidepath with Mixed Uses

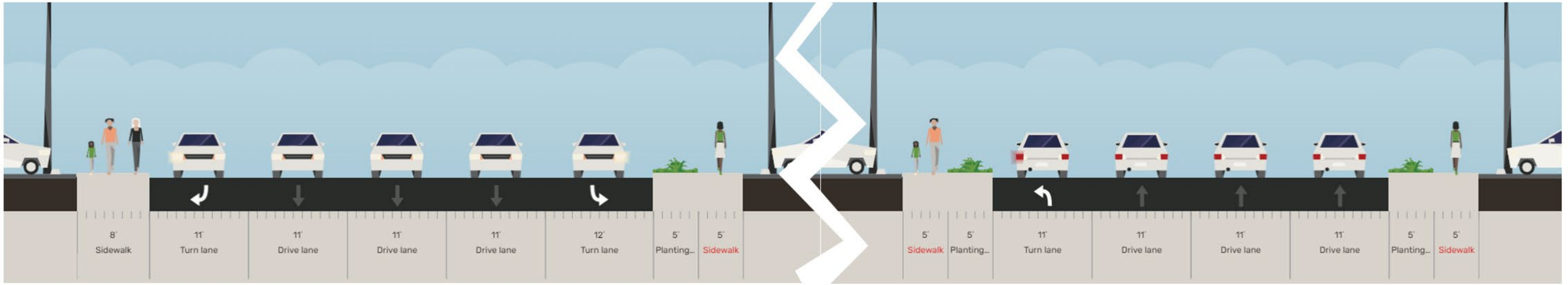


Sidepath with Separate Uses (e.g., Breezeway)

Delineation of Separate Uses (e.g., Breezeway)

Existing Conditions in Four Corners

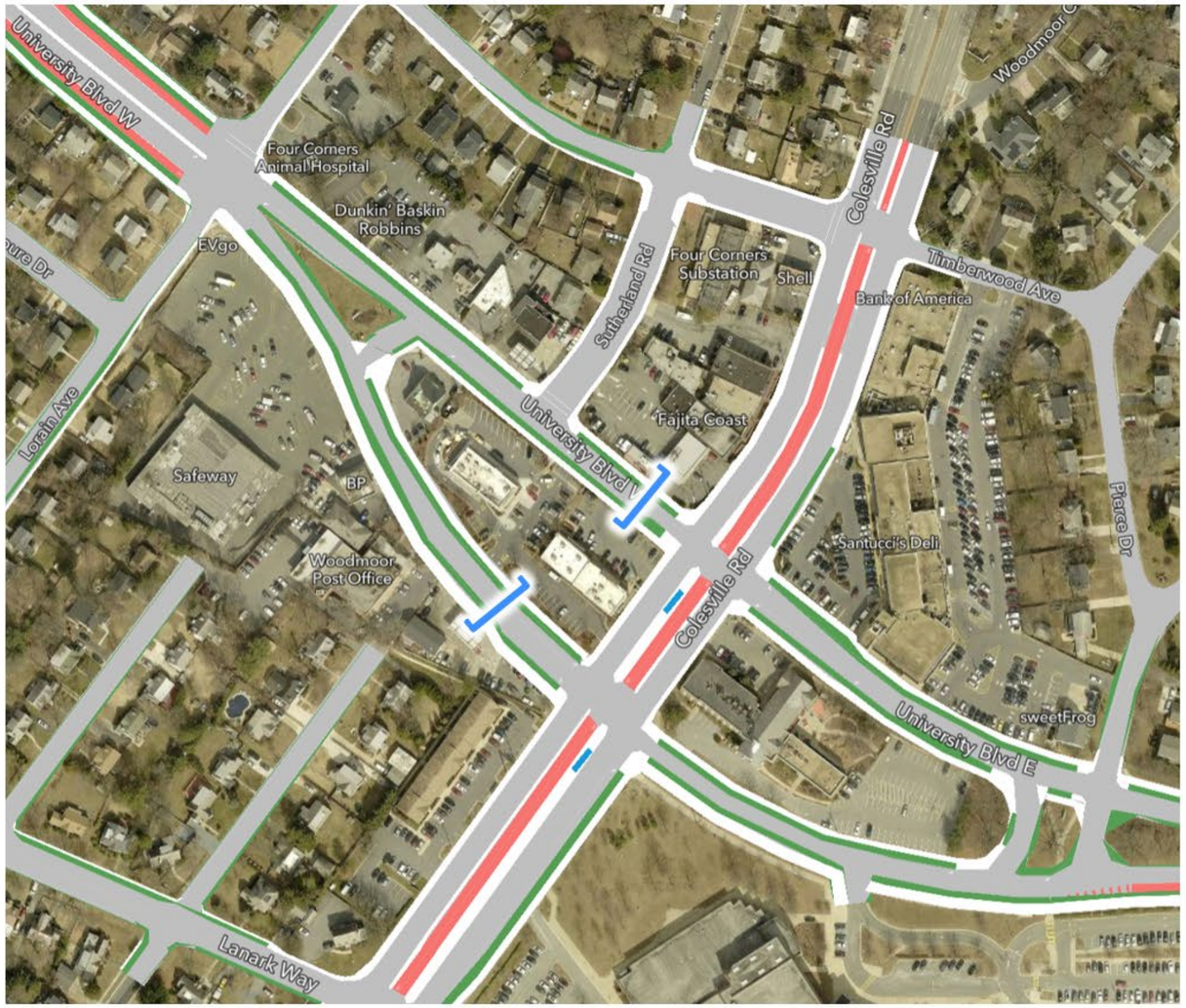
- Inconsistent with the Complete Streets Design Guide (CSDG) and Bicycle Master Plan, does not allow for safe, comfortable, convenient travel for people walking, biking, and rolling through Four Corners:
  - Substandard 5’ sidewalks
  - Substandard 5’ or missing street buffer
  - Missing bicycle facilities
- 11’ inner vehicle travel lanes, inconsistent with CSDG, encourage higher vehicle speeds and poor safety outcomes



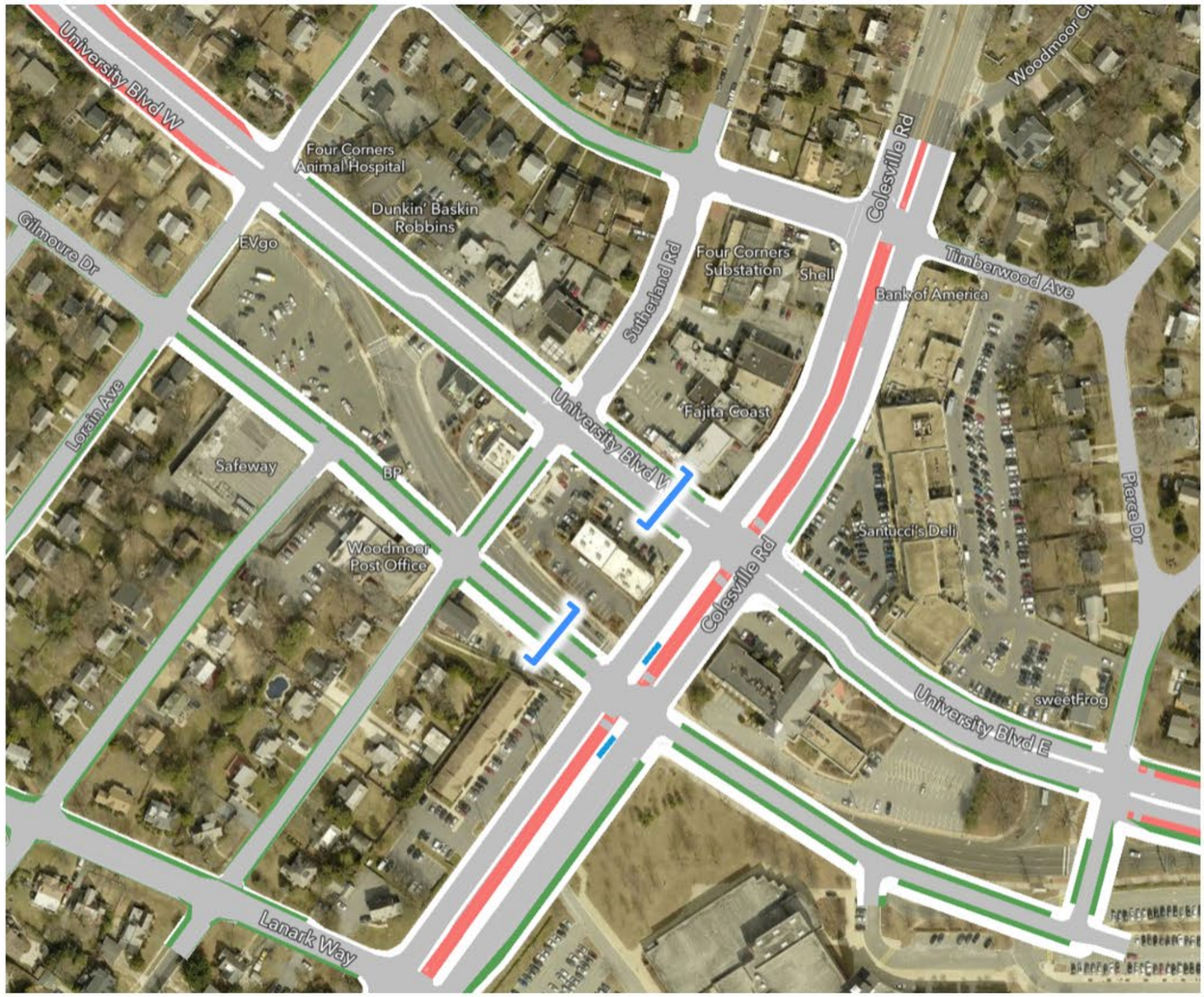
Eastbound University Blvd

Westbound University Blvd

Four Corners Transportation Scenarios



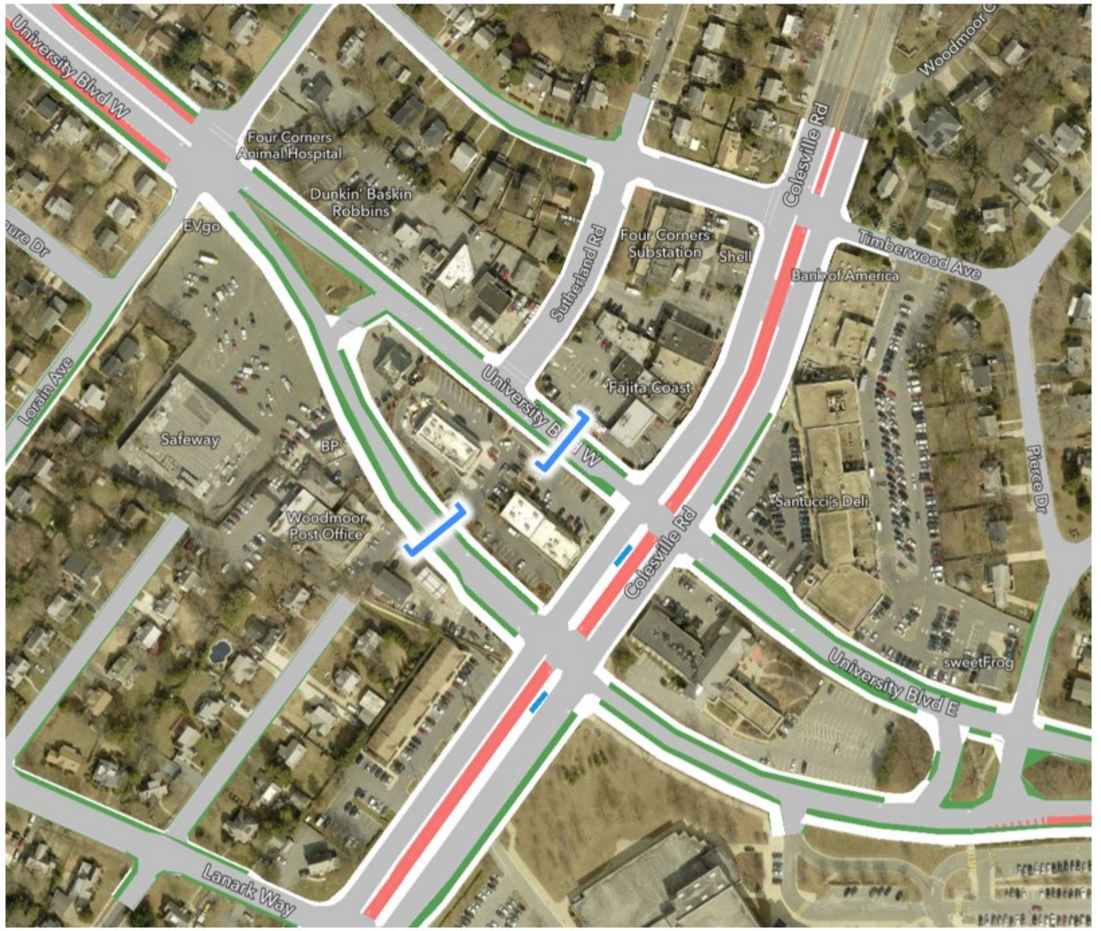
Limited Change



Street Grid

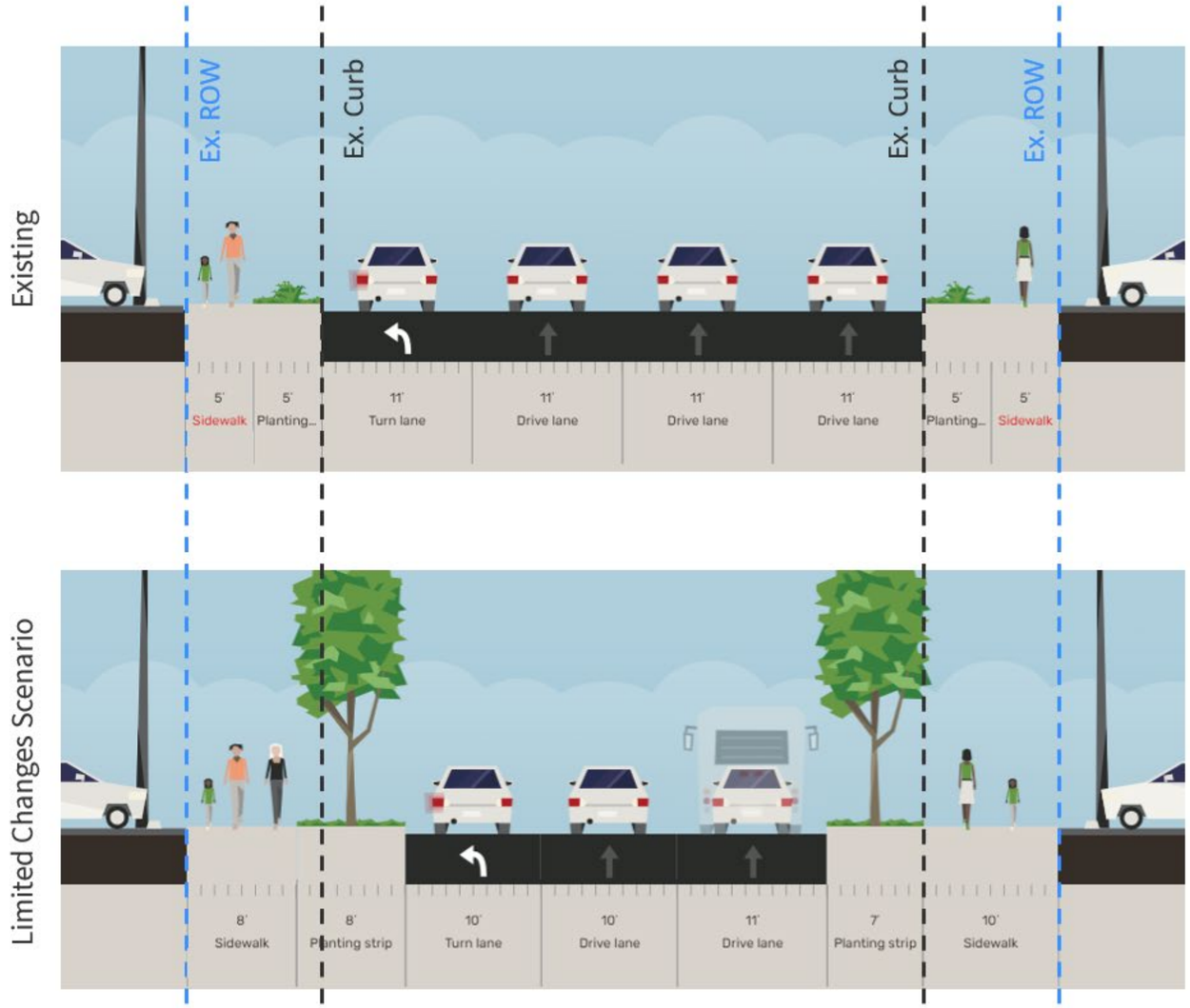
Four Corners – Limited Changes Scenario

- Maintains general existing configuration and right-of-way
- Includes center-running dedicated bus lanes on US 29, consistent with in-progress US 29 Flash Bus Rapid Transit project
- 2 through traffic lanes per direction, split into two legs
- University Blvd buses in mixed traffic
- Wider sidewalks
- Wider street buffers
- Breezeway sidepath on eastbound leg (southernmost side)



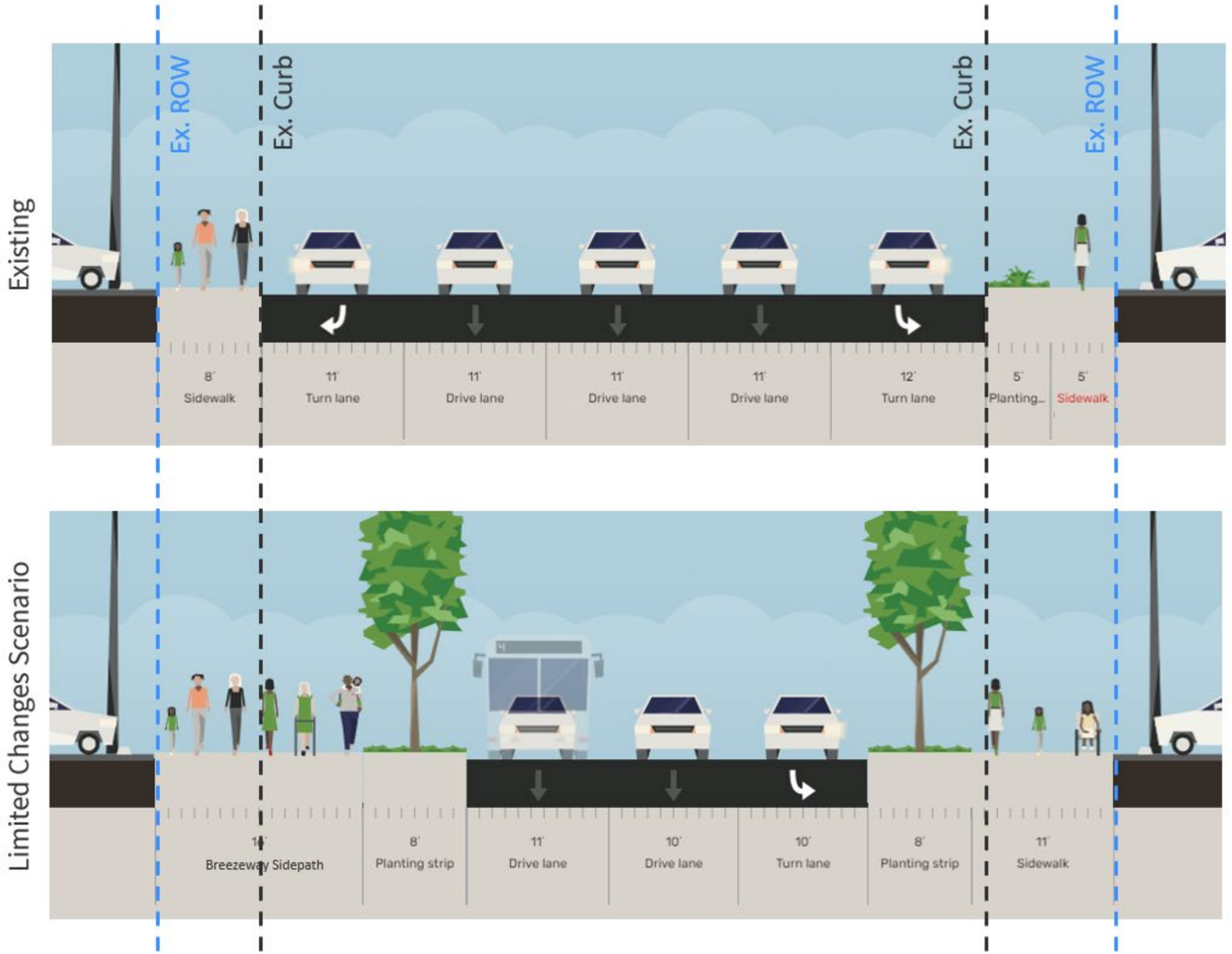
Four Corners – Limited Changes Scenario

Westbound University Boulevard
(Four Corners)



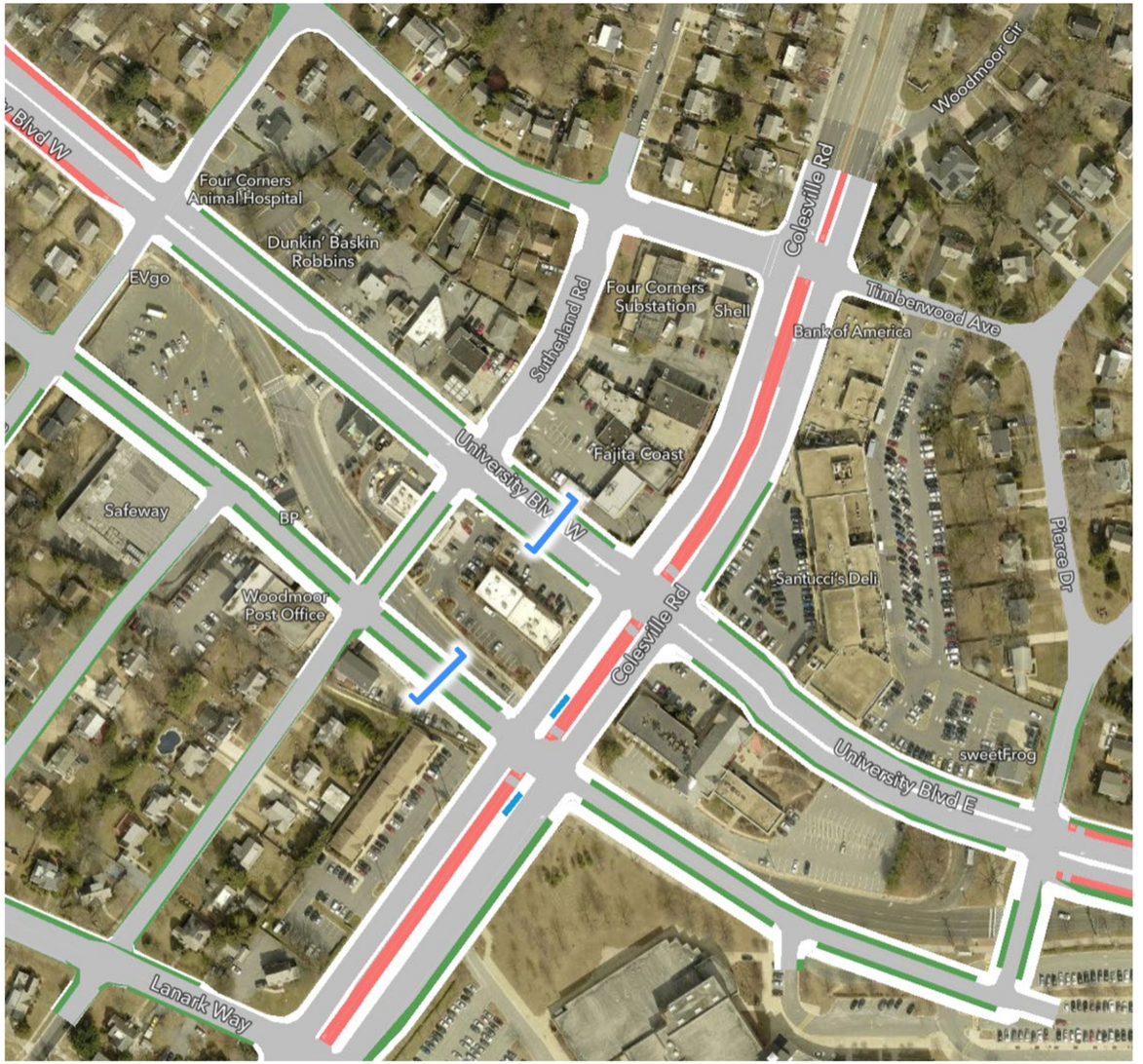
Four Corners – Limited Changes Scenario

Eastbound University Boulevard
(Four Corners)



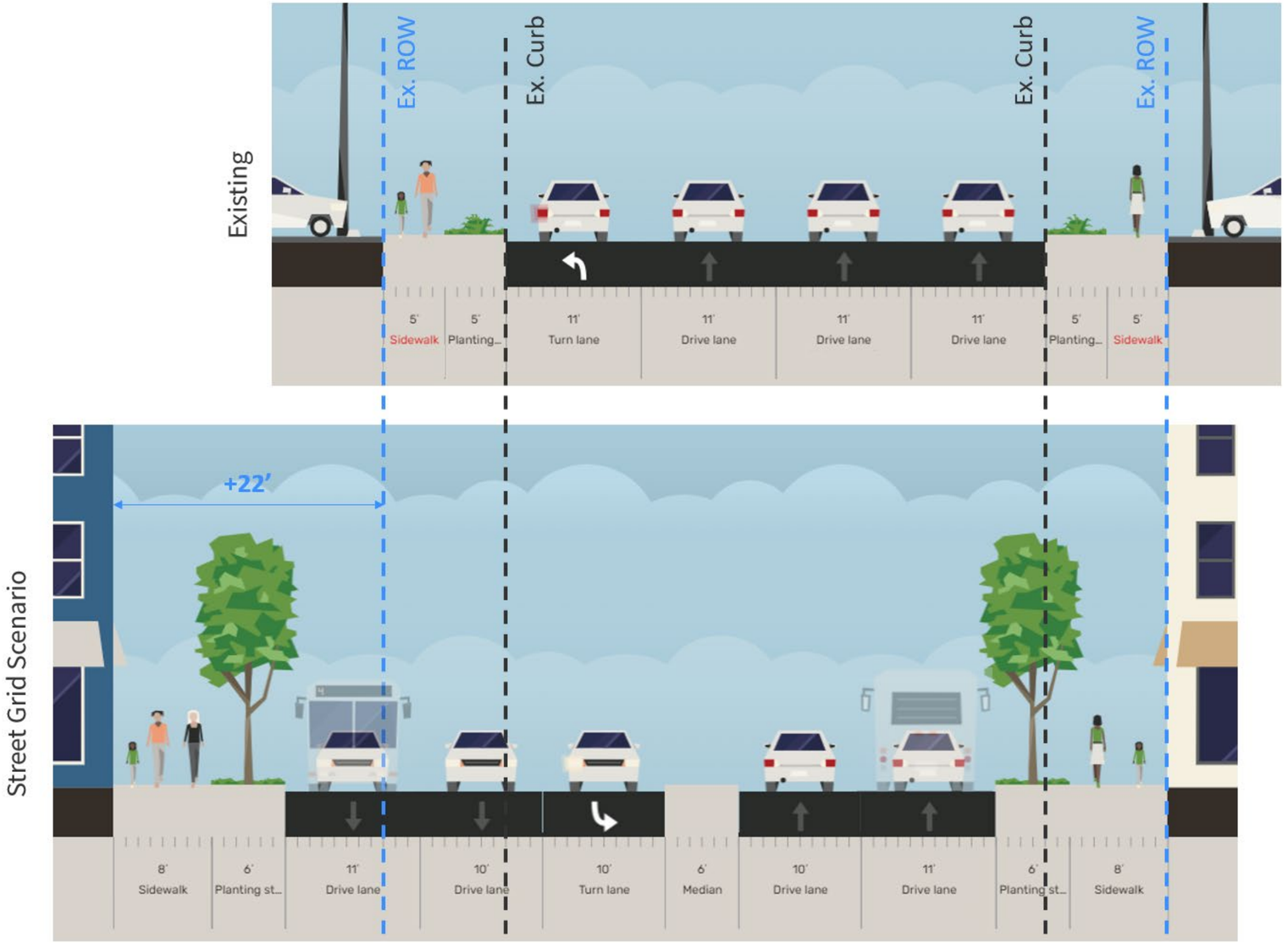
Four Corners – Street Grid Scenario

- Reconfigures street grid and right-of-way through redevelopment or capital investment to provide increased local connectivity for people walking, biking, rolling, taking transit, and driving
- Maintains right-of-way line north of University Blvd
- Includes center-running dedicated bus lanes on US 29, consistent with in-progress US 29 Flash Bus Rapid Transit project
- 2 through traffic lanes per direction on University Blvd
- 1 lane per direction on extended Gilmoure Dr and connected local streets
- University Blvd buses in mixed traffic
- Wider sidewalks and street buffers
- Breezeway sidepath on south side of extended Gilmoure Dr



Four Corners – Street Grid Scenario

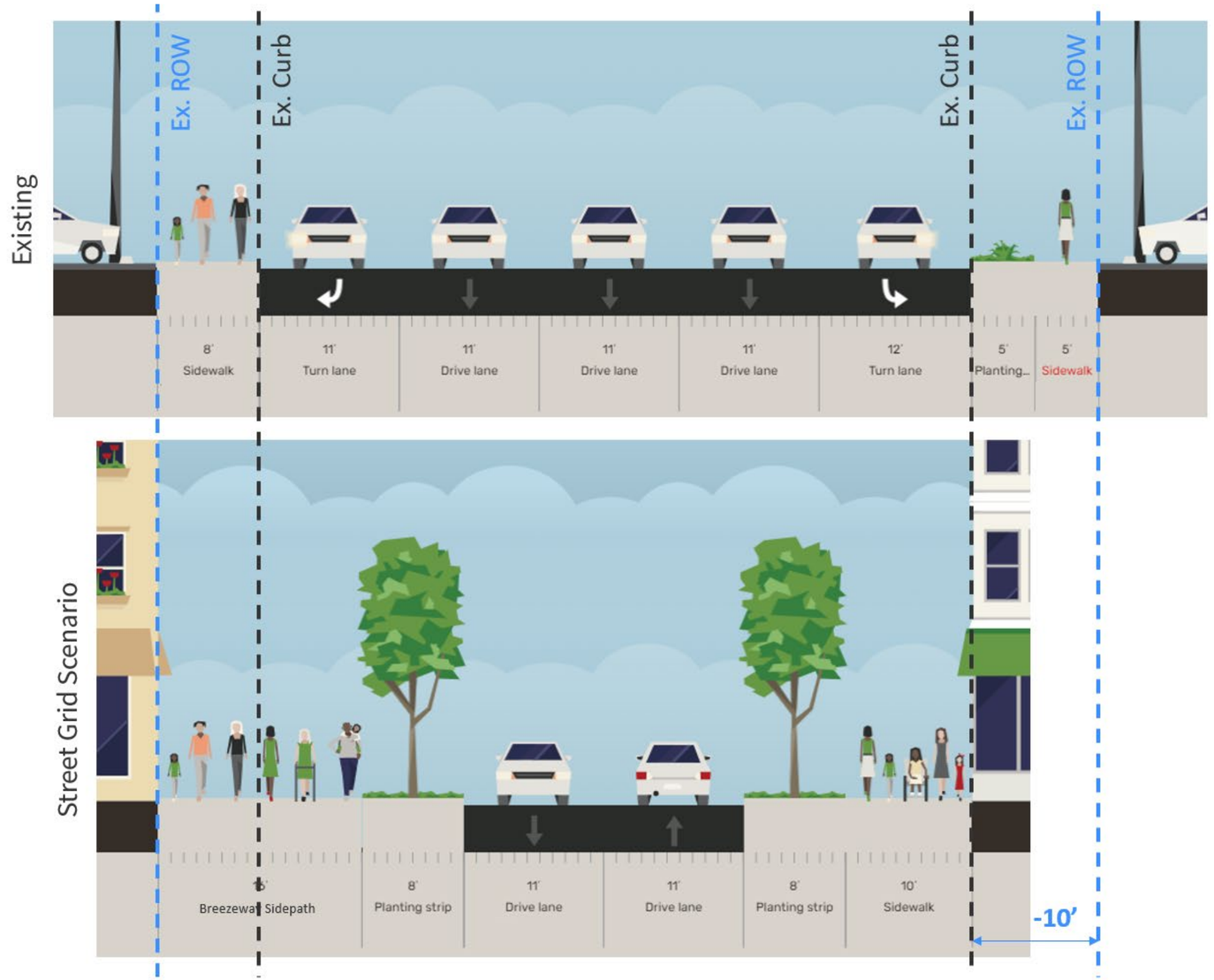
Westbound University Boulevard (Four Corners)

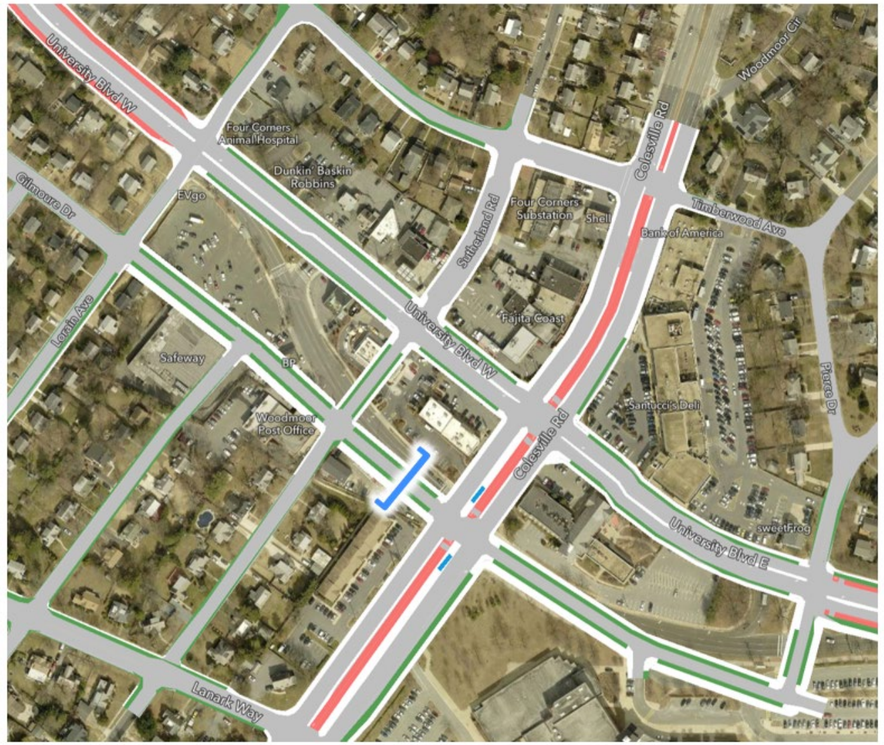


Four Corners – Street Grid Scenario

Eastbound University Boulevard

(Four Corners)





Four Corners Scenario Comparison

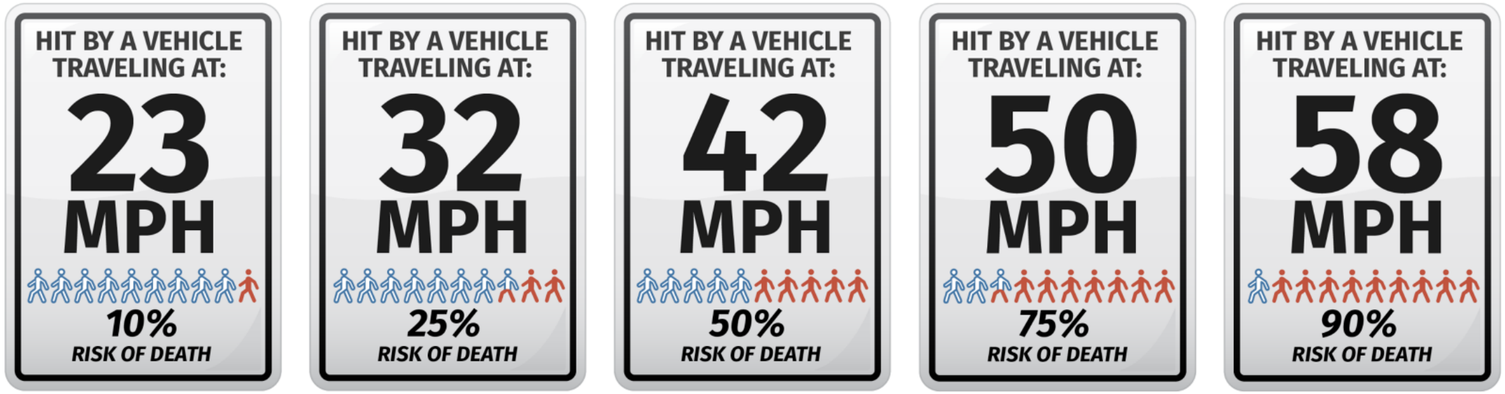
	Existing	Limited Change	Street Grid
Sidewalk Widths*	*5’* | *5’* | *5’* | 8’	**10’** | **8’** | **11’** | **16’**	**8’** | **8’** | **10’** | **16’**
Street Buffer Width*	*5’* | *5’* | *5’* | *0’*	7’ | **8’** | **8’** | **8’**	6’ | 6’ | **8’** | **8’**
Primary Bike Facility	*None*	**Breezeway (16’)**	**Breezeway (16’)**
Secondary Bike Facility	*None*	Sidepath (8’)	Sidepath (8’)
Dedicated Bus Lanes	None	None	None
Through Vehicular Travel Lanes	6	4	4 + 2 local
Through Vehicular Lane Widths	**11’ Outer**; *11’ Inner*	**11’ Outer**; **10’ Inner**	**11’ Outer**; **10’ Inner**
Total Right-of-Way*	64’ + 64’ = 128’	64’ + 64’ = 128’	86’ + 54’ = 140’

*Dimensions listed from north to south

(Consistent with recommended) / (>= minimum) / *(Not consistent with)* Complete Streets Design Guide Town Center Boulevard dimensions

Safety Analysis – Vehicle Speeds

- Complete Streets improvements proposed in both the Limited Change and Street Grid scenarios are consistent with research-based Crash Modification Factors:
  - 15-22% reduction in injury crashes
  - 32-44% reduction in fatal crashes
- Reducing speed from 35mph to 25mph can potentially reduce fatal pedestrian crashes by 50%



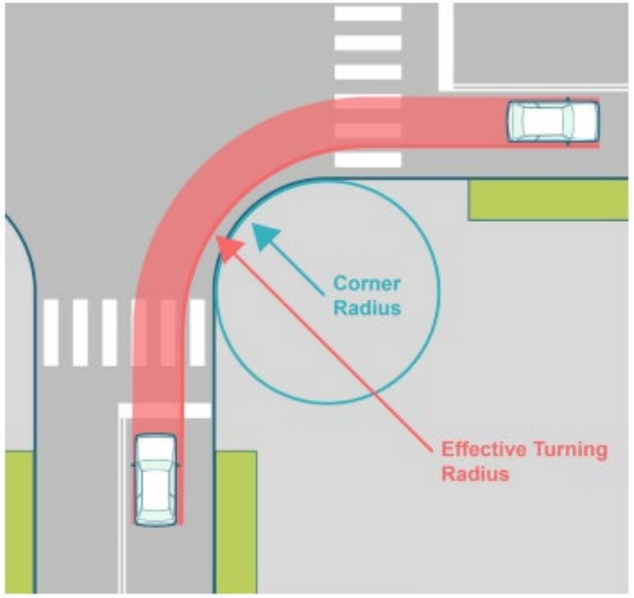
Risk of pedestrian fatality by vehicle speed (Source: FHWA).

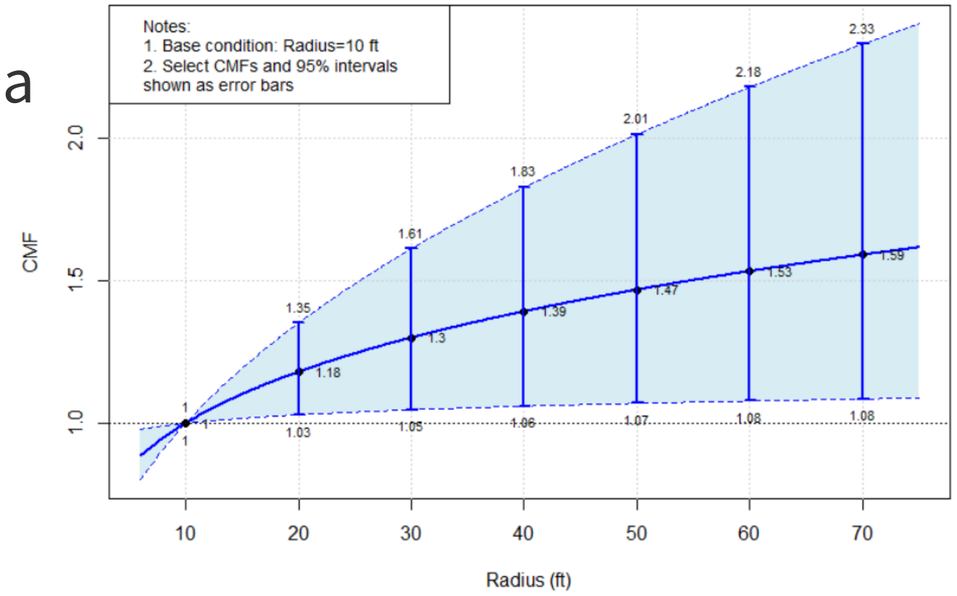
CRASH MODIFICATION FACTORS CLEARINGHOUSE

Safety Analysis – Corner Radii

- Corner radius has a direct impact on vehicular turning speeds and pedestrian crossing distances.

- Reducing corner radii to 15’ in both the Limited Change and Street Grid scenarios is consistent with a 10-25% reduction in pedestrian crashes.





Crash Modification Factor for Corner Radius, Right-Turn Speed, and Prediction of Pedestrian Crashes at Signalized Intersections (Source: FHWA 2022).

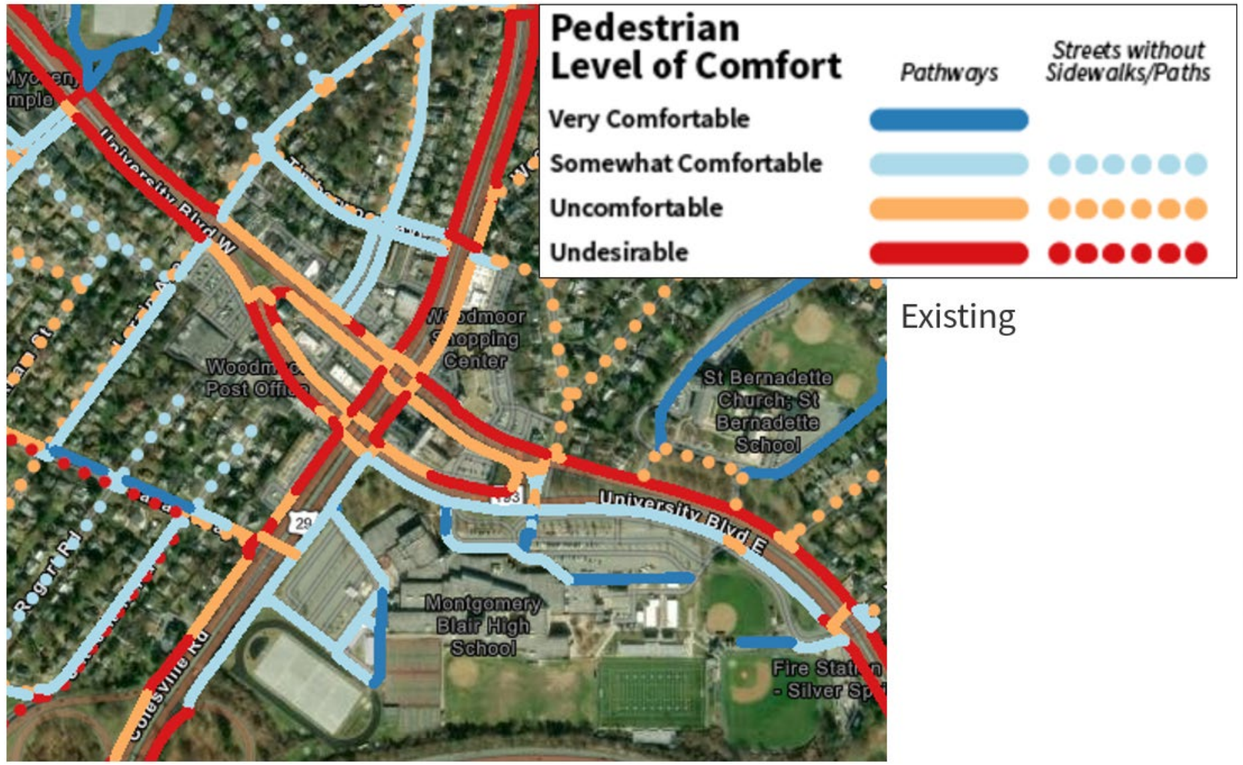
Safety Analysis – Pedestrian Conflict Exposure

- Reducing pedestrian crossing distances limits exposure of people walking to conflicting vehicle travel.

- Reduction in total crossing distance through Four Corners:
  - Limited Change: 216 feet (20% reduction)
  - Street Grid: 465 feet (44% reduction)

Pedestrian Comfort Analysis

- Pedestrian Level of Comfort (PLOC) measures comfort for people walking and rolling along pathways and at crossings using built environment and context factors.

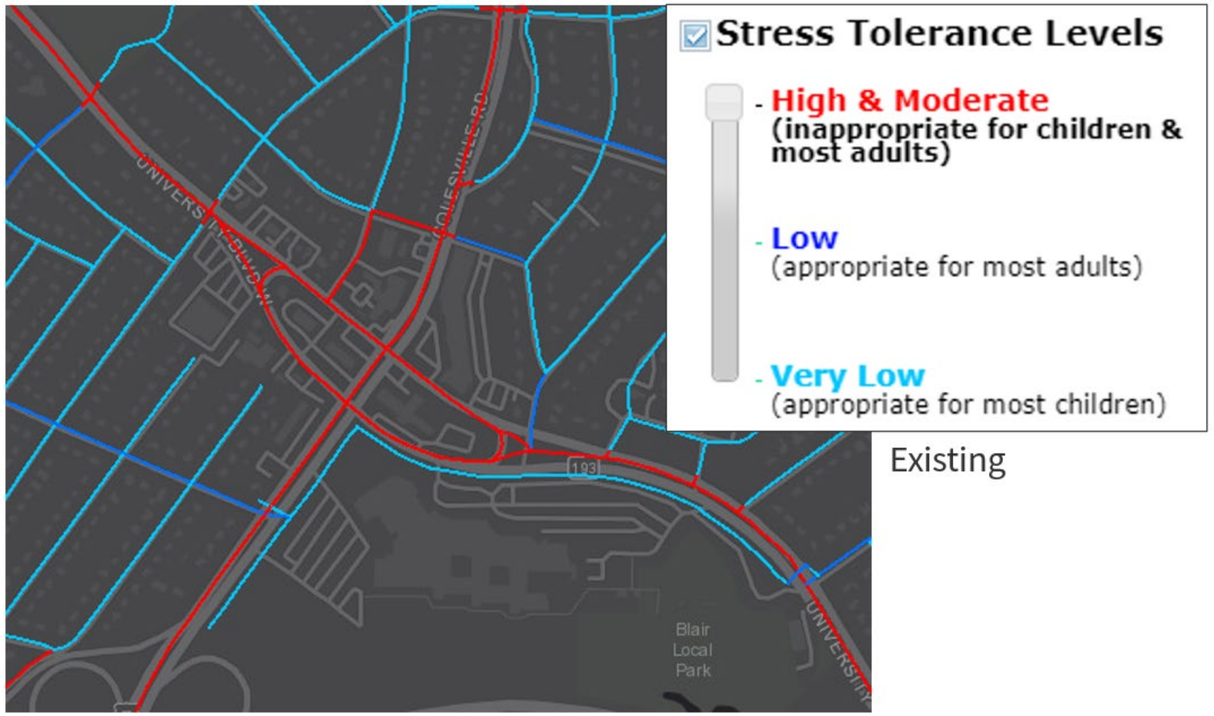


Existing

- Scenarios improve key inputs like pathway widths, buffer widths, and reduced vehicle lanes and speeds.

Bicycle Comfort Analysis

- Level of Traffic Stress (LTS) measures comfort for people bicycling and rolling along segments and at intersections and crossings using built environment and context factors.



Existing

11 Bicycle Crashes (2015-2023)
Including 1 with Serious Injuries

- Scenarios improve key inputs like bikeway facilities and reduced vehicle lanes and speeds.

Modeled Driving Time Analysis Change vs. Existing

Year and Signal Timing:	2023	2045 with Limited Signal Improvements	2045 with Limited Signal Improvements	2045 with Limited Signal Improvements	2045 with Additional Signal Improvements	2045 with Additional Signal Improvements
Scenario:	Existing	US29 BRT Only	US29 BRT + Limited Change	US29 BRT + Street Grid	US29 BRT + Limited Change	US29 BRT + Street Grid
AM Peak Hour						
Colesville NB	1:18	+6s	+6s	+11s	+5s	+11s
Colesville SB	1:31	+93s	+93s	+93s	+24s	+41s
University EB	2:51	-39s	-27s	-23s	-27s	-23s
University WB	3:03	-26s	+13s	-22s	+13s	-22s
Average Change in Travel Time vs. Existing	n/a	**+31s**	**+37s**	**+37s**	**+8s**	**+14s**
PM Peak Hour						
Colesville NB	1:55	±0s	±0s	±0s	-5s	-9s
Colesville SB	1:33	+4s	+4s	+25s	+4s	+25s
University EB	2:07	+2s	+2s	+9s	+1s	+9s
University WB	2:15	+19s	+75s	+19s	+75s	+7s
Average Change in Travel Time vs. Existing	n/a	**+4s**	**+13s**	**+10s**	**+11s**	**+5s**

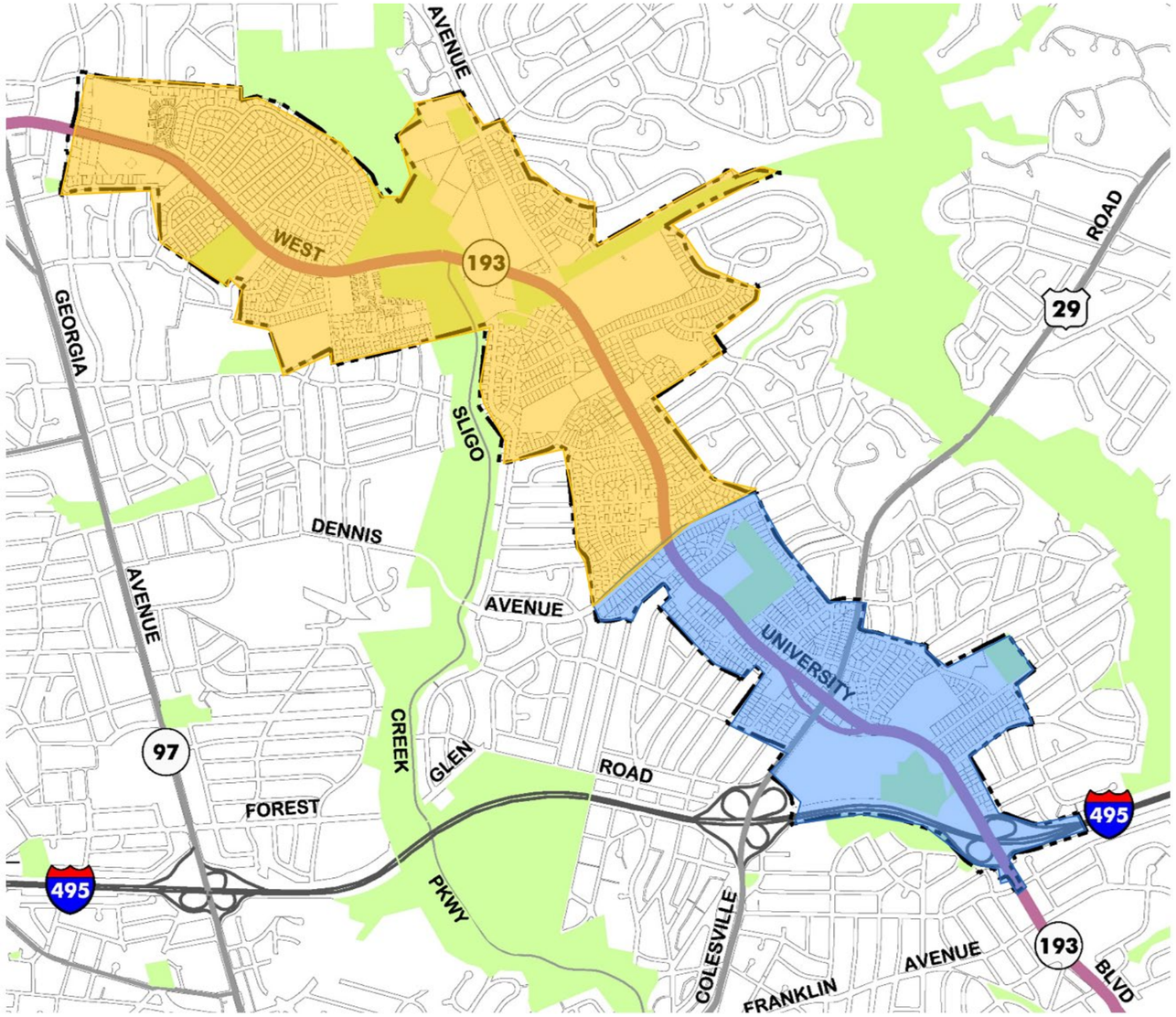
[1] Average Change in Travel Time is weighted by the volume of vehicles traveling through the University/Colesville intersection in each direction.
[2] University Boulevard dedicated bus lanes outside Four Corners (west of Lorain Avenue and east of Lexington Drive) are included in all 2045 scenario travel time analyses, consistent with the Countywide Transit Corridors Functional Plan.
[3] University Blvd travel times between 780’ west of Brunett Ave and 730’ east of Lexington Dr.
[4] Colesville Rd travel times between Lorain Ave and 560’ south of Lanark Way.

Scenario Analysis Summary

*Dimensions listed from north to south

Criterion	US29 BRT Only	Limited Change	Street Grid
Sidewalk Widths*	5’ | 5’ | 5’ | 8’	10’ | 8’ | 11’ | 16’	8’ | 8’ | 10’ | 16’
Street Buffer Width*	5’ | 5’ | 5’ | 0’	7’ | 8’ | 8’ | 8’	6’ | 6’ | 8’ | 8’
Primary Bike Facility	None	Breezeway (16’)	Breezeway (16’)
Secondary Bike Facility	None	Sidepath (8’)	Sidepath (8’)
Dedicated Bus Lanes	None	None	None
Through Vehicular Travel Lanes	6	4	4 + 2 local
Through Vehicular Lane Widths	11’ Curb; 11’ Inner	11’ Curb; 10’ Inner	11’ Curb; 10’ Inner
Total Right-of-Way*	64’ + 64’ = 128’	64’ + 64’ = 128’	86’ + 54’ = 140’
Safety – Reduced Target Speed	—	15% to 22% reduced injury crashes 32% to 44% reduced fatal crashes 50% reduction in fatal pedestrian crashes	15% to 22% reduced injury crashes 32% to 44% reduced fatal crashes 50% reduction in fatal pedestrian crashes
Safety – Reduced Curb Radii	—	10% to 25% reduced pedestrian crashes	10% to 25% reduced pedestrian crashes
Safety – Conflict Exposure	—	20% reduction	44% reduction
Pedestrian Level of Comfort	—	Improved	Improved
Bicycle Level of Traffic Stress	—	Improved	Improved
Travel Time (vs. Existing)	+31s AM; +4s PM	+8s-37s AM; +11s-13s PM	+14s-37s AM; +5s-10s PM

Upcoming Public Meetings



Dennis Avenue to I-495

- In-Person: Tuesday, **October 15, 7-9 p.m**. at the Montgomery Blair High School Cafeteria

Amherst Avenue to Dennis Avenue

- In-Person: Tuesday, **October 22, 7-9 p.m.** at the M-NCPPC Wheaton HQ Auditorium

Amherst Avenue to I-495 (Full Plan Area)

- Virtual: Wednesday, **October 30, 7-9 p.m.**

Next Steps

- **Fall 2024:** Planning Board Review of Preliminary Recommendations and Working Draft Plan.
- **Winter 2025:** Planning Board Public Hearing on Draft Plan
- **Spring 2025:** Planning Board Work Sessions and Planning Board Draft Transmittal to County Executive and County Council.
- **Summer 2025:** County Council Review

Plan to Implementation: Transportation

Small Group Discussion

Ground Rules

1. Be courteous and respectful of each other and of staff.
2. Listen actively and participate fully.
3. Keep comments brief to allow everyone at the table to participate.
4. Direct questions and comments to staff.

Report-Outs

At **8:45**, a volunteer from each table will summarize the discussion (3 minutes per table)

Prompts

1. Do you have general questions about the two concepts shown for Four Corners?
2. Do you have specific questions about any of the transportation facilities?
3. Do you have questions about the analysis?
4. What excites you about each scenario?
5. What concerns you about each scenario?

Contact Information

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For Additional Notes

Four Corners Concepts and Transportation Facility Clarifying Questions

For Additional Notes

Transportation Analysis Clarifying Questions

For Additional Notes

What excites you about the Limited Change scenario? Street Grid Scenario?

For Additional Notes

What concerns you about the Limited Change scenario? Street Grid Scenario?