



Downtown Morgantown Microsimulation Study

May 15, 2025



Kimley»Horn

Project Purpose

To recommend potential future reconfigurations of the downtown Morgantown transportation network based on:

- Assessment of existing safety, parking, and congestion
- Input from the community and stakeholders
- A robust microsimulation model of the network



Study Area

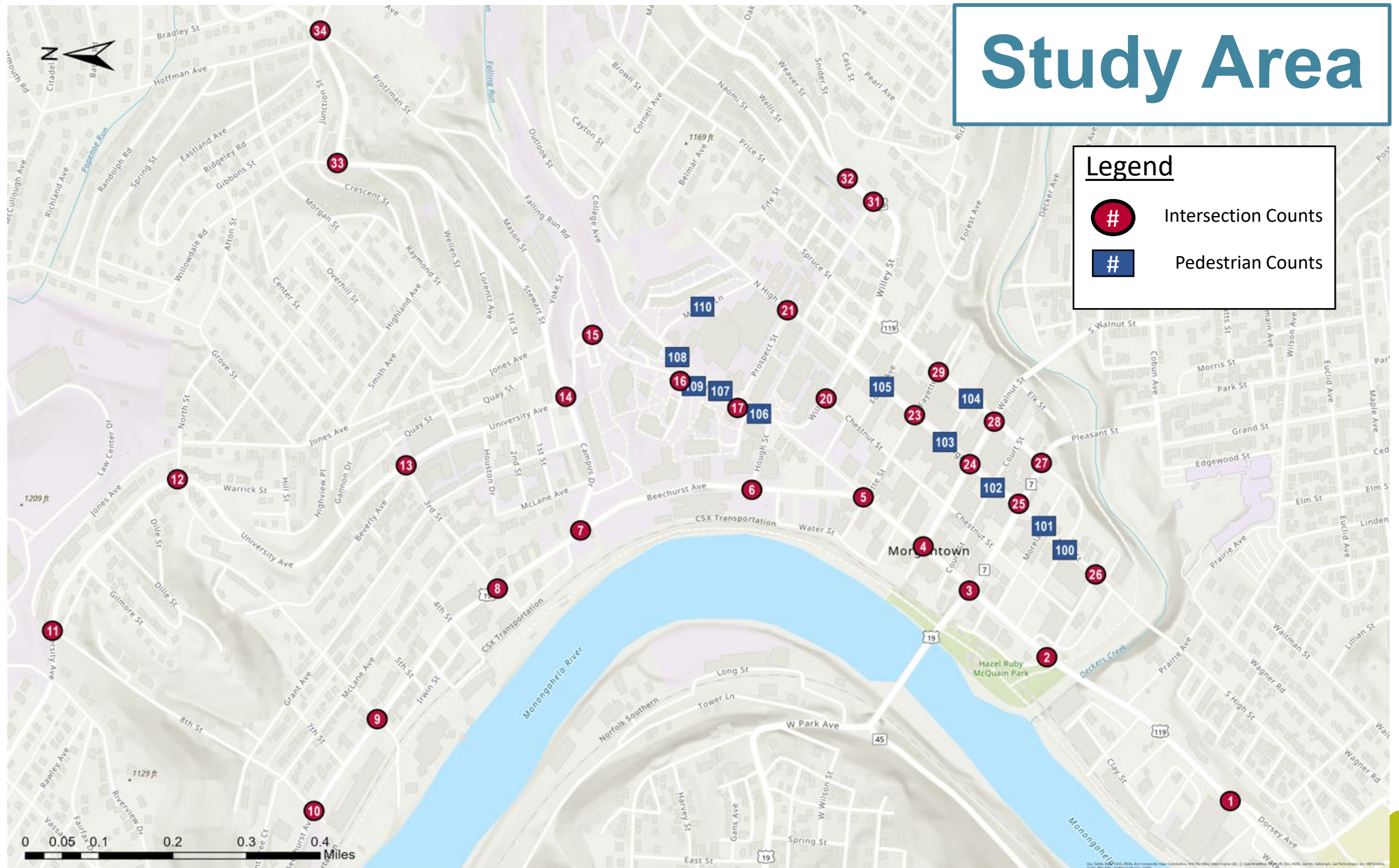
Legend



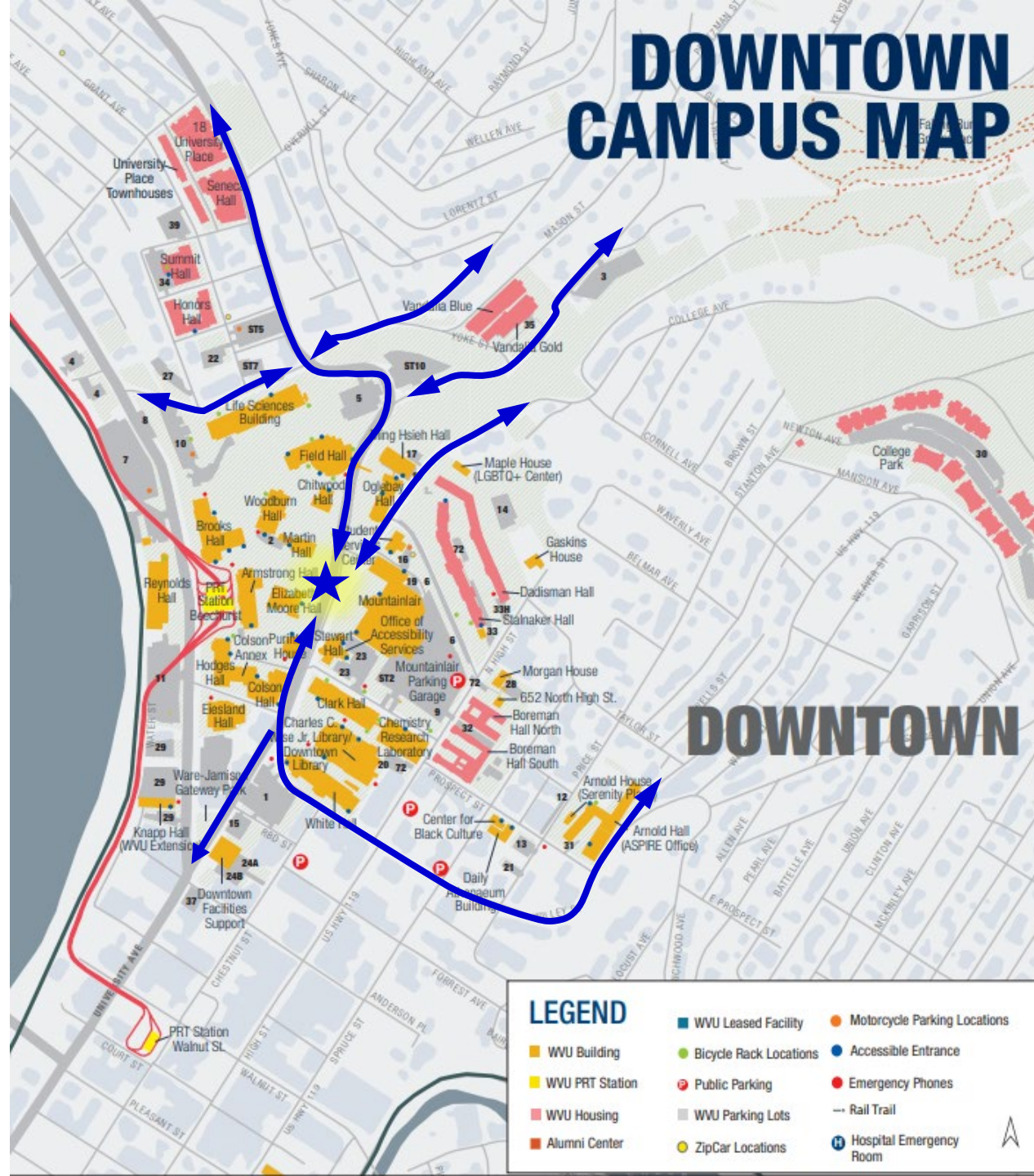
Intersection Counts



Pedestrian Counts



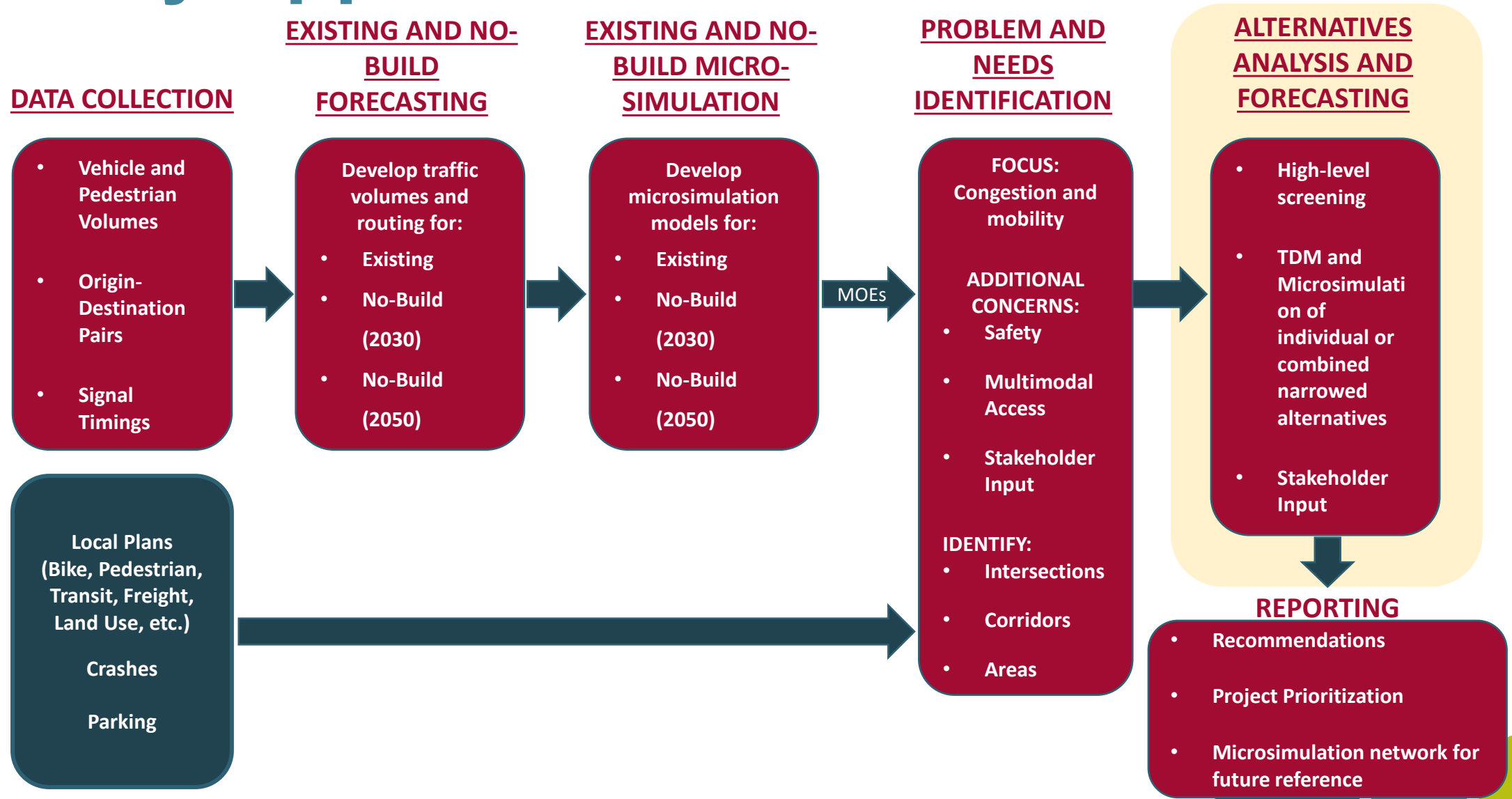
DOWNTOWN CAMPUS MAP



Grumbein's Island

- Centrally located on WVU's Downtown campus
- High pedestrian volumes create a “choke point” for north-south vehicular traffic
- Potential closure of island will need to answer the question – “where will drivers go, and what effect will that have on the network”?
- This study will use TransCAD and TransModeler to address this question

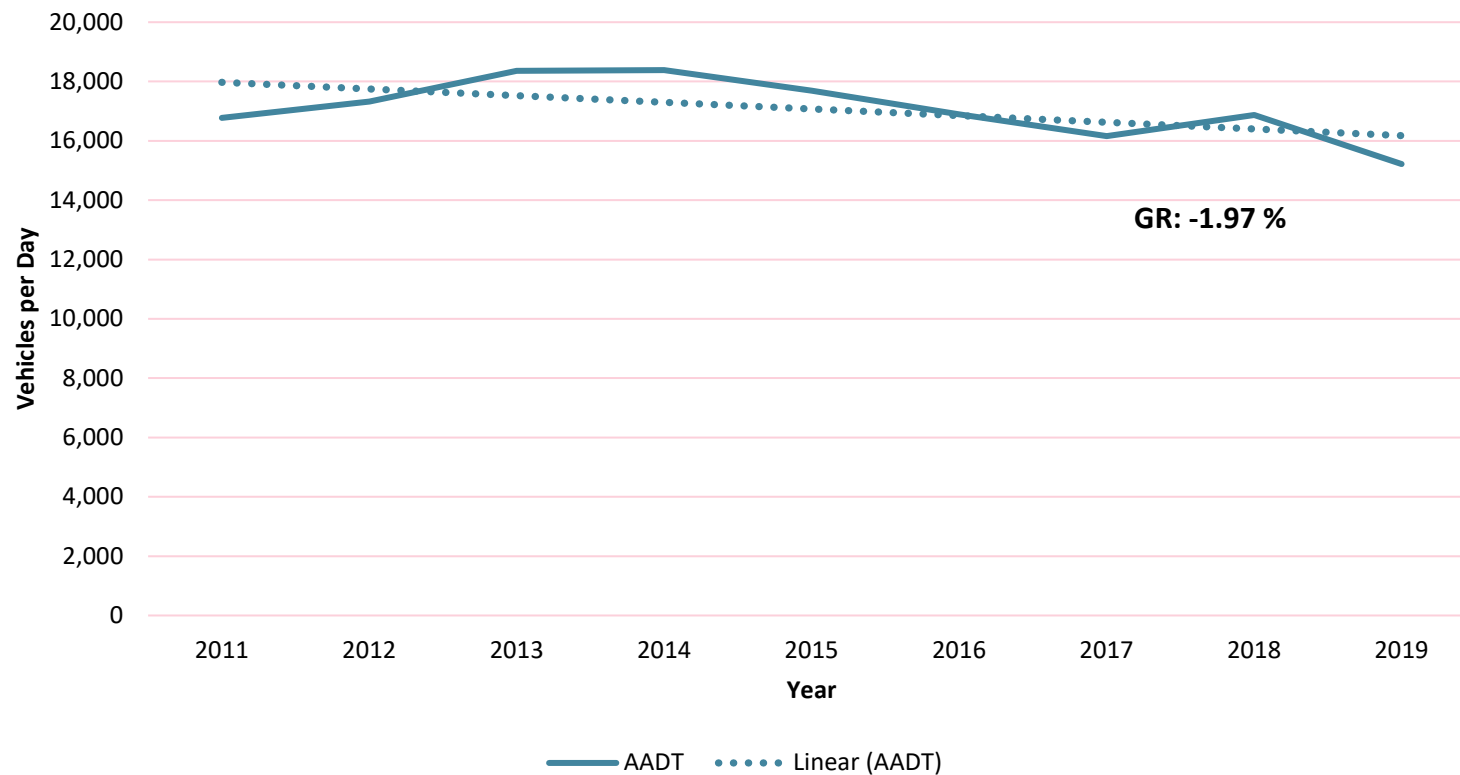
Study Approach



Existing Conditions

Historic AADT Volume Trends

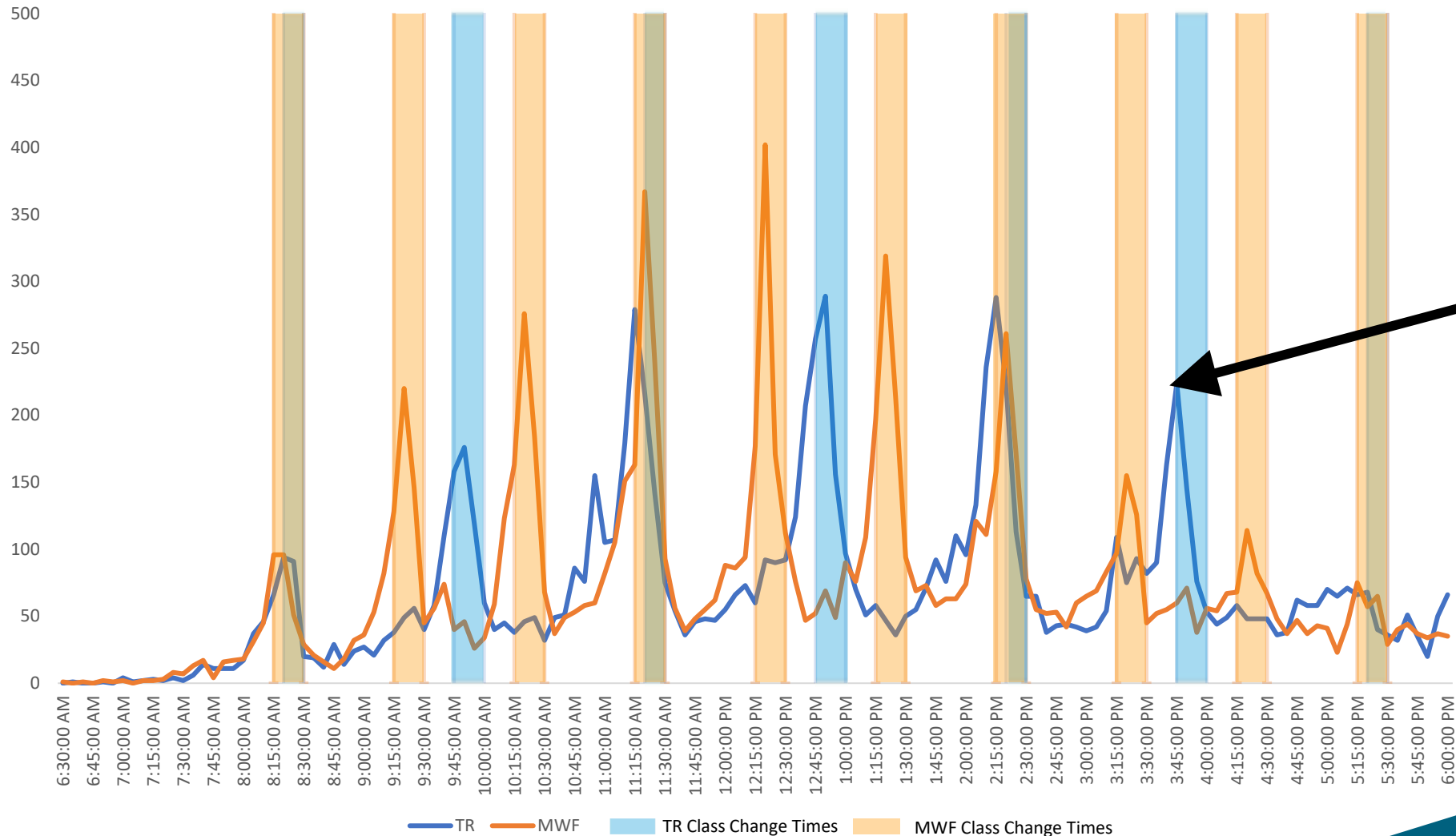
Average of Major Arterial Count Locations



Location	Regression GR
Beechurst Ave North of 8th St	0.90%
Beechurst Ave North of Fayette St	-2.72%
University Ave Southeast of Evansdale Dr	-3.32%
University Ave Southeast of 8th St	-1.19%
University Ave South of 2nd St	-2.97%
University Ave South of College Ave	-2.85%
University Ave South of Westover Bridge	-1.15%
Wiley St Northeast of Spruce St	-2.66%
Wiley St Northwest of Chestnut St	-3.60%
Westover Bridge	-2.37%
All Locations	-1.97%

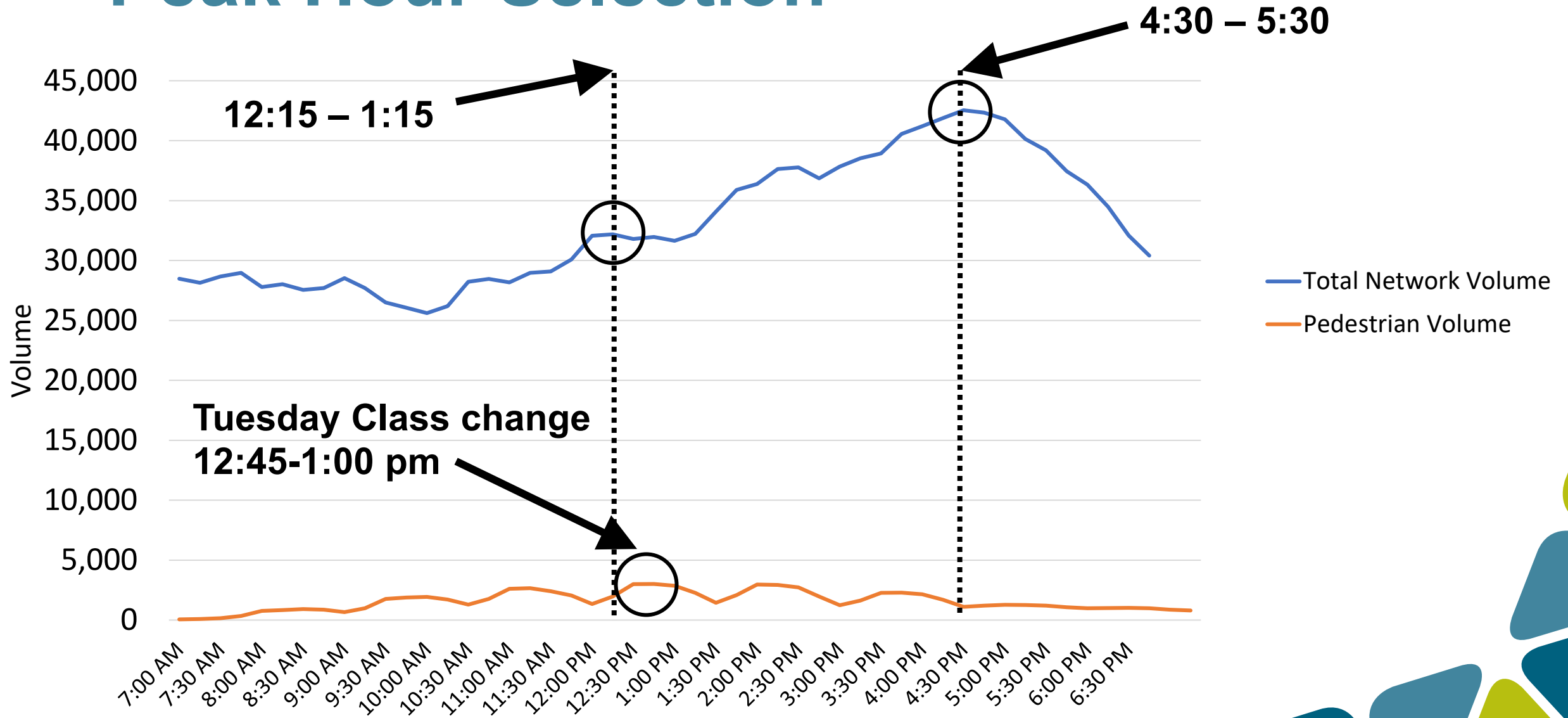
Weekday Pedestrian Volumes at Grumbein's Island

MWF vs TR 5-Minute Ped Volume Comparison at Grumbeins Island Crossing



**Peaks follow
class schedules**

Peak Hour Selection



Crash Analysis

‘More Frequent’ Crash Locations:

- University Avenue and Pleasant Street
- University Avenue and Garrett Street/Foundry Street
- University Avenue and Beechurst Avenue and Fayette Street



Crash Analysis

Severity = (# of Injury Crashes x 11.2) + # of PDO Crashes

‘More Severe’ Crash Locations:

- University Avenue and Pleasant Street
- University Avenue/Don Knotts and Garrett Street/Foundry Street
- University Avenue and Beechurst Avenue and Fayette Street
- High Street and Pleasant Street
- University Avenue and Walnut Street/Water Street
- University Avenue and Campus Drive/Stewart Street
- University Avenue and Falling Run Road
- Stewart Street and Van Gilder Avenue

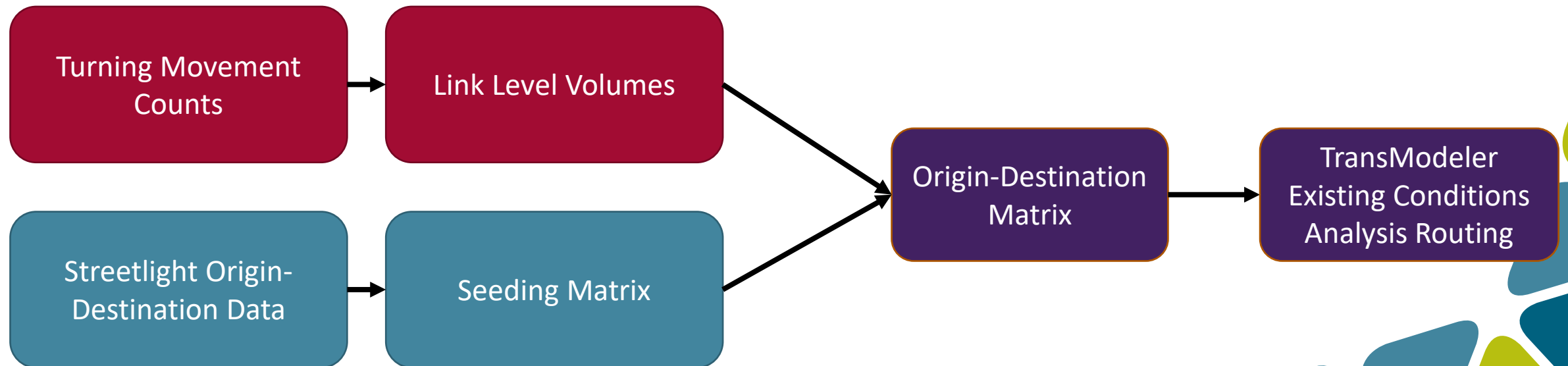


Development of Routing

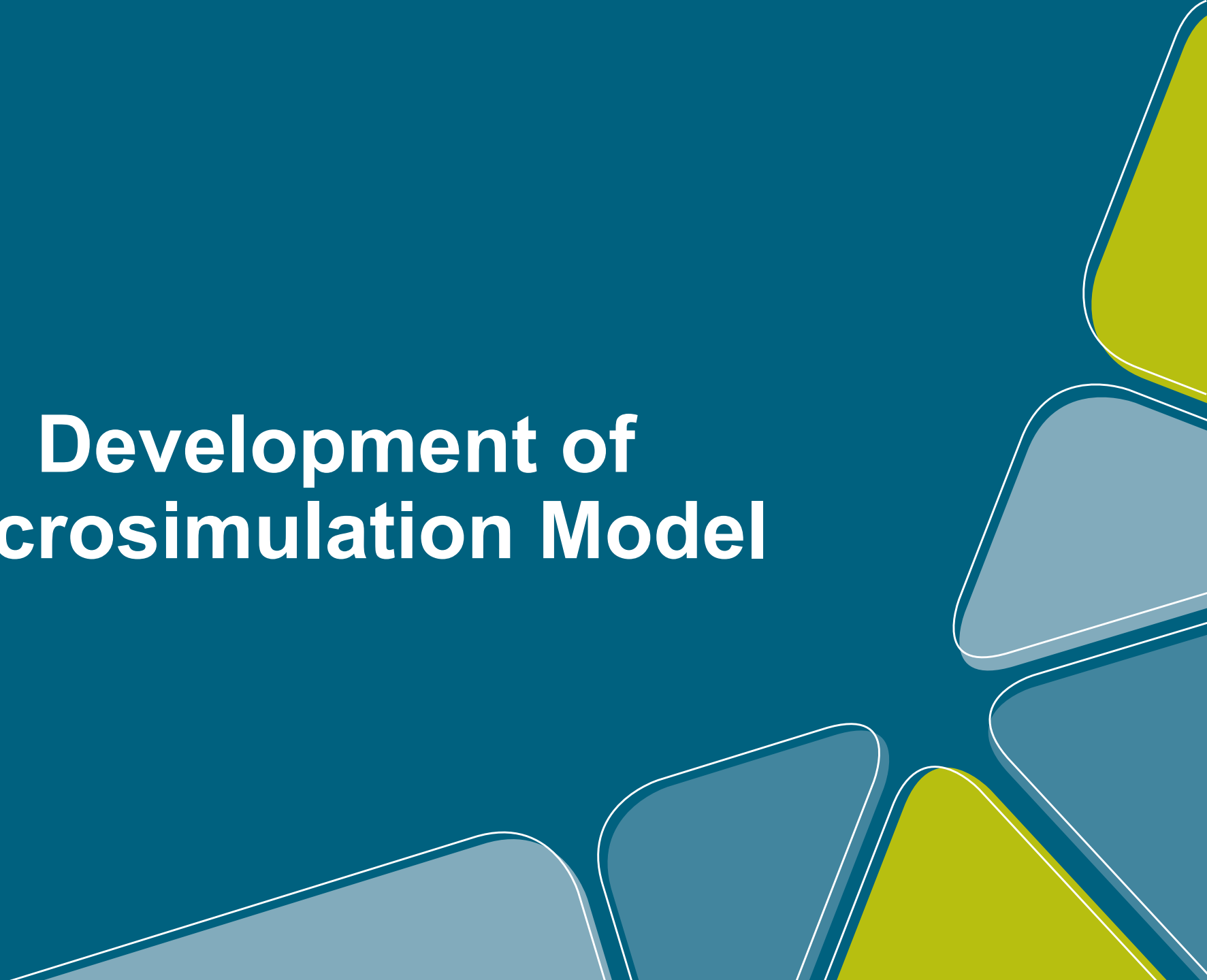


Origin-Destination Routing Development

- Collect turning movement counts
 - Calculate link level ADTs and link level hourly volumes (target matrix)
- Streetlight O-D Matrix
 - Typical distribution of traffic throughout downtown Morgantown (seeding matrix)



Development of Microsimulation Model



Preview of TransModeler Microsimulation

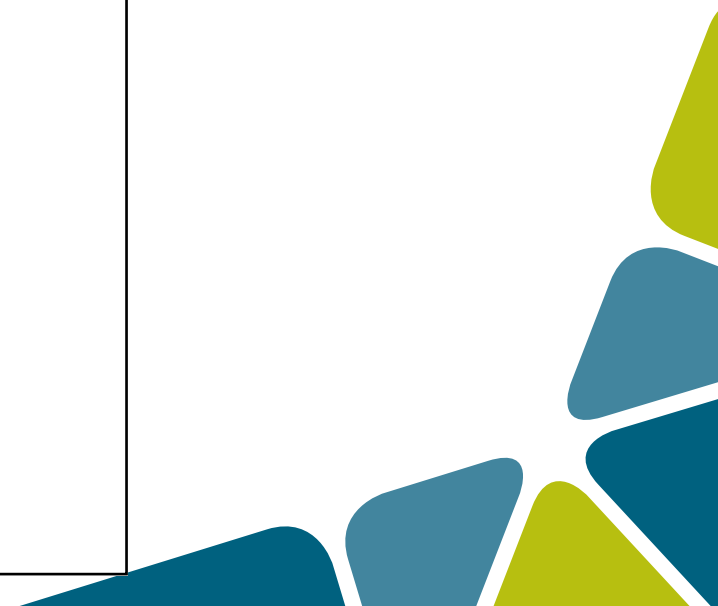
- Tool to simulate future conditions and better understand impacts of potential changes to network
- Models individual vehicles and pedestrians – simulates how they interact within the road network
- Required inputs:
 - Traffic volumes
 - Pedestrian crossings and activity
 - Traffic signal control (16 signalized, 18 unsignalized)
 - Heavy vehicle data
 - Existing O-D patterns
 - Planned projects by others
 - Road characteristics (speed, # of lanes, etc.)

Existing Simulation Calibration

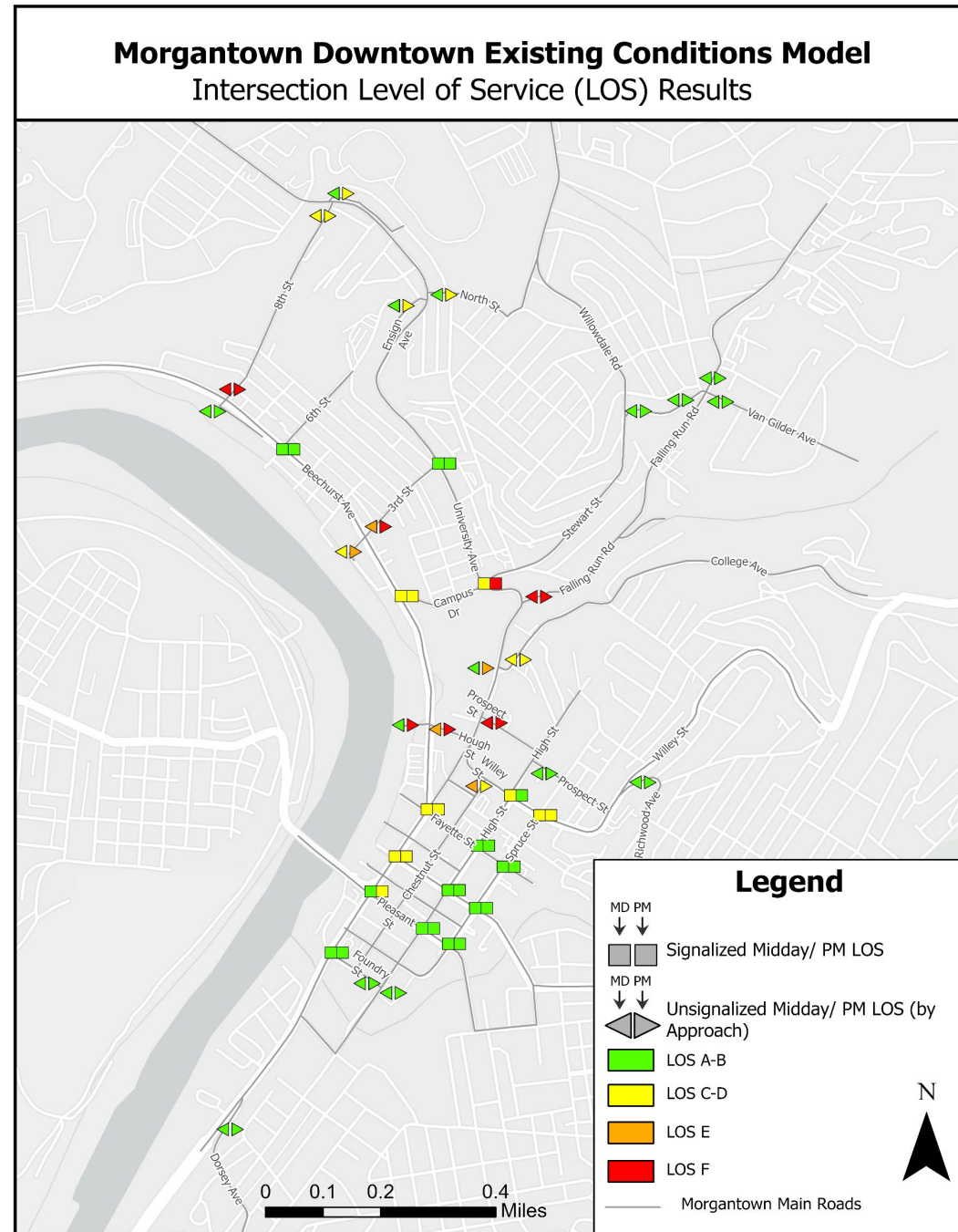
- Need to verify existing conditions model reflects actual traffic conditions observed in the field before proceeding with future models
- Calibration parameters
 - Queueing
 - Travel time
 - Turning movement and throughput volumes
- Calibration is accomplished by adjusting:
 - Routing and volume matrix
 - Pedestrian crossing configuration
 - Global model characteristics such as driver behavior (if needed)



Simulation Recording from the Model

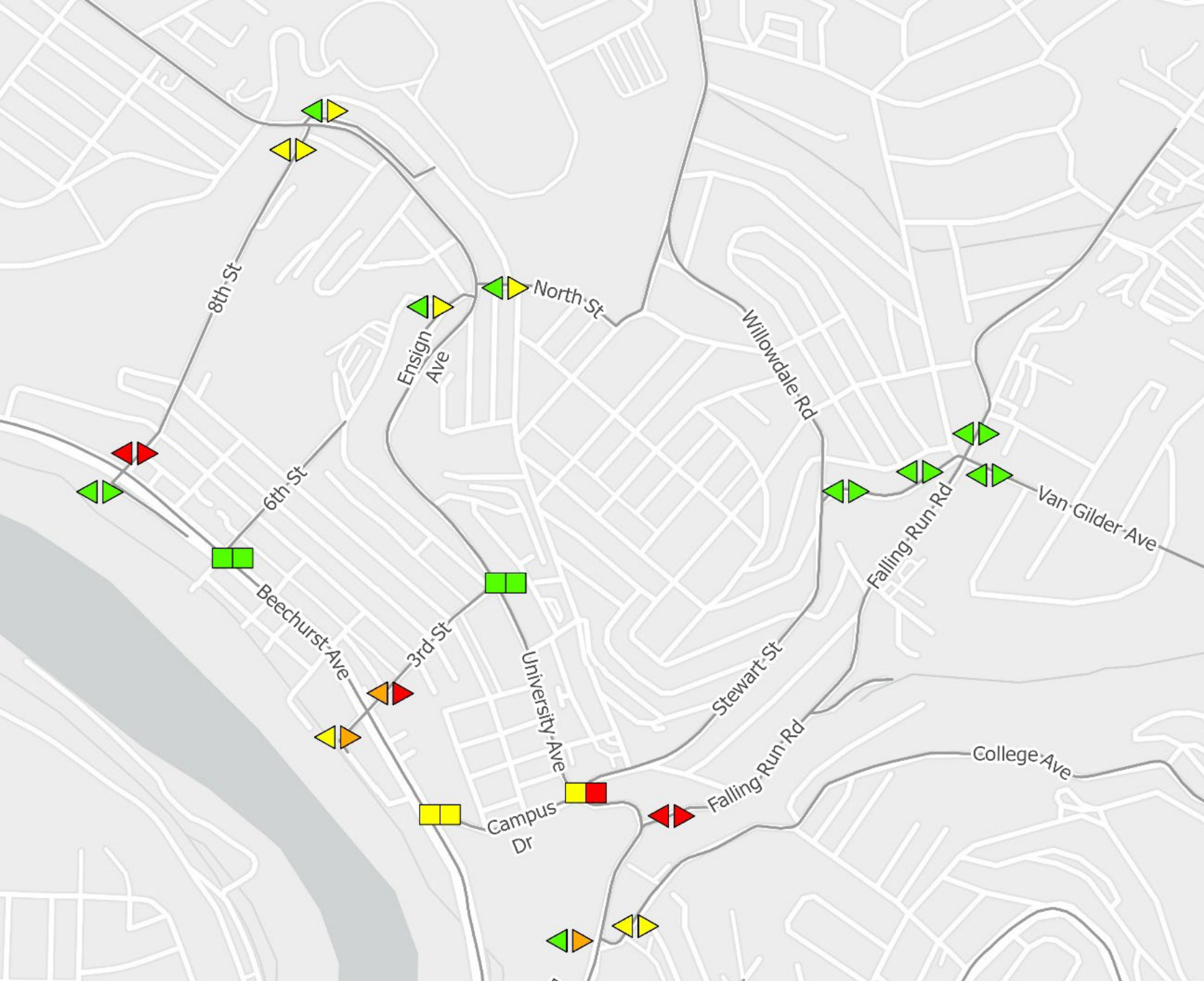
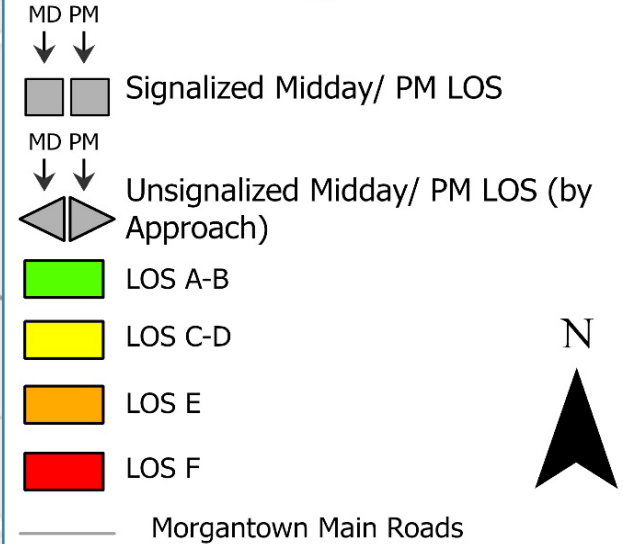


Congestion Model Results

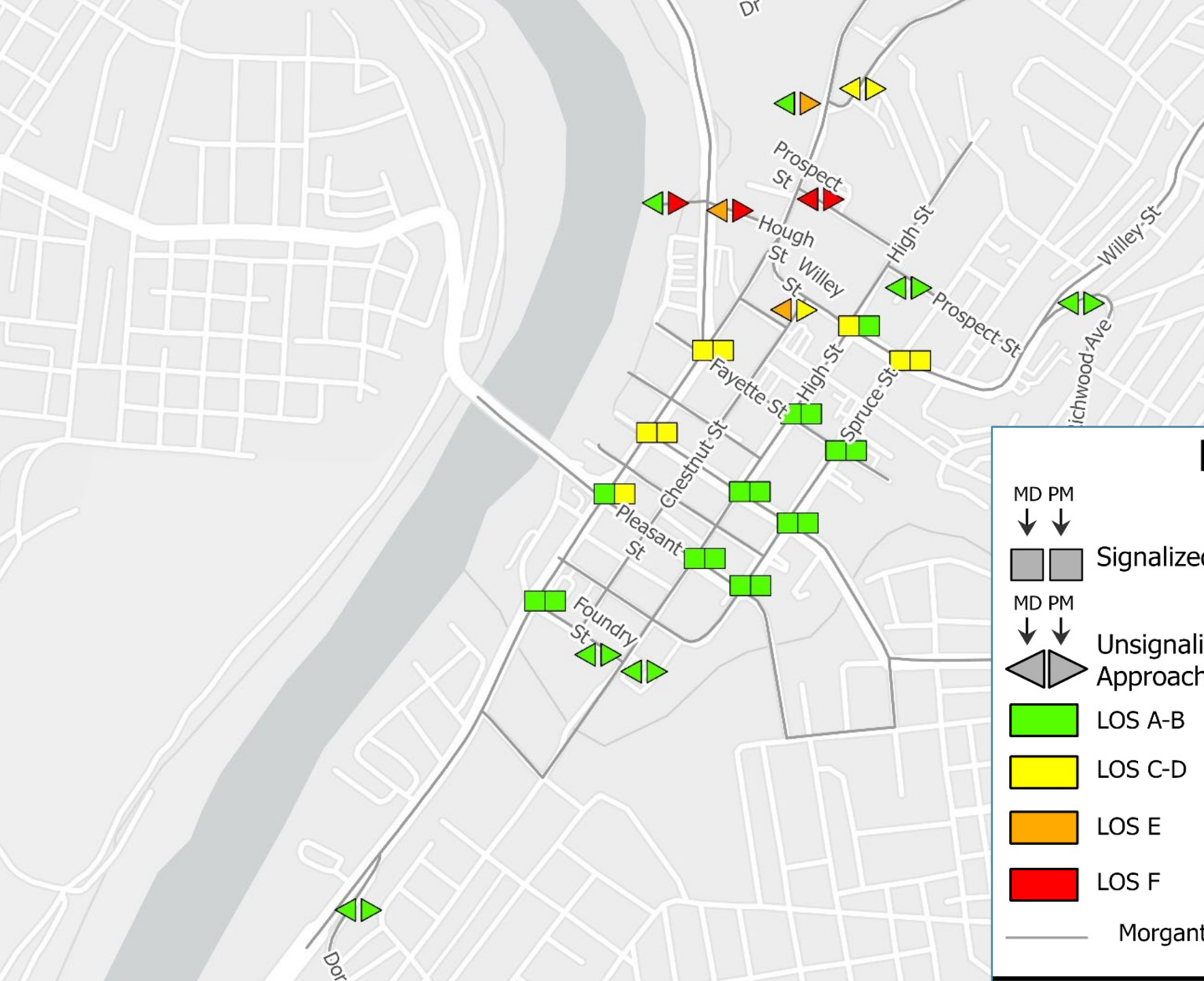


Congestion Model Results

Legend



Congestion Model Results



Legend

MD PM



Signalized Midday/ PM LOS

MD PM



Unsignalized Midday/ PM LOS (by Approach)



LOS A-B



LOS C-D



LOS E



LOS F



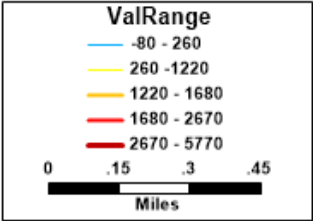
Morgantown Main Roads

N

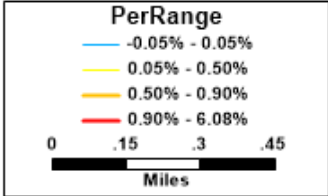


Future Forecasted Growth

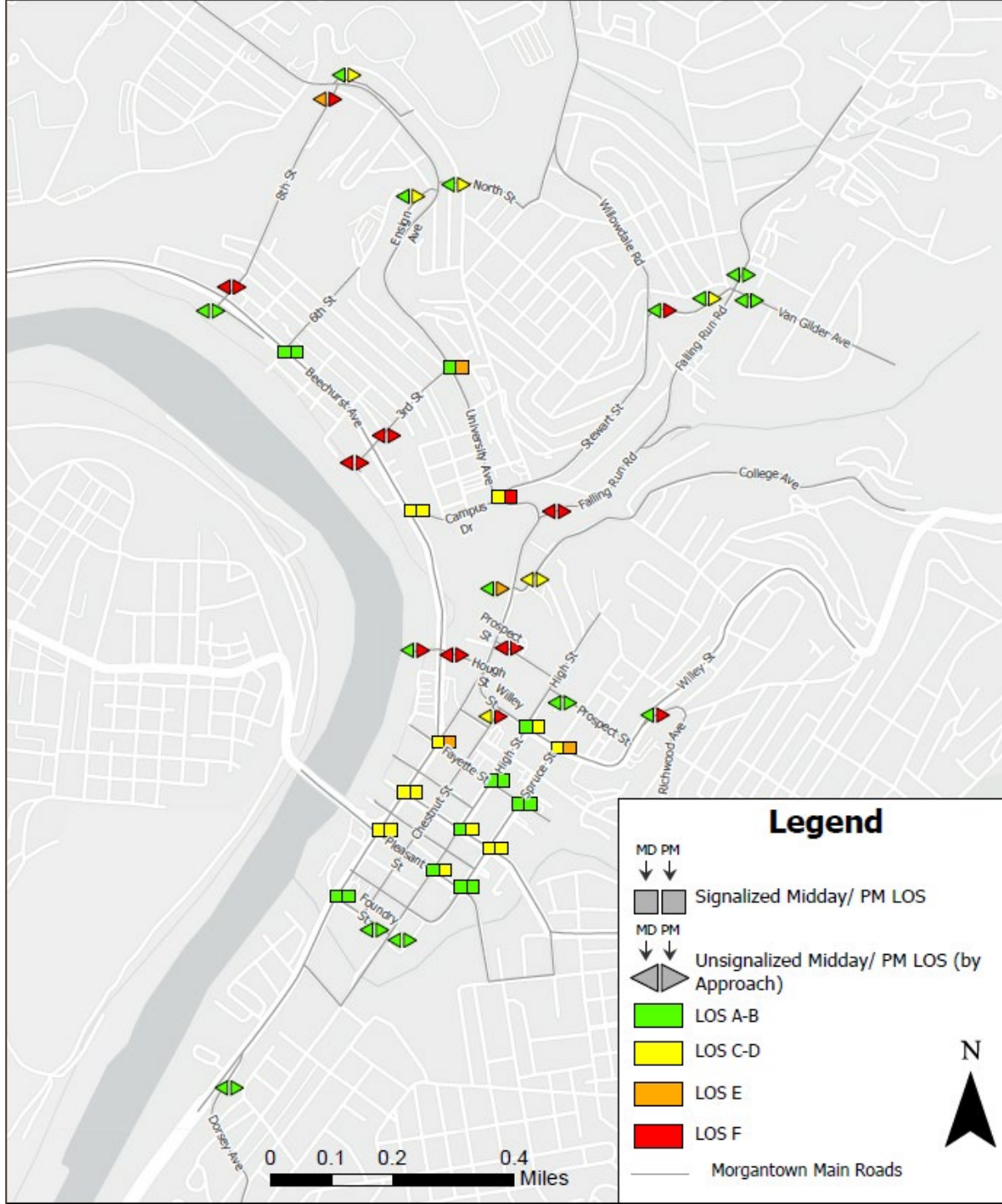
Raw Volume Growth
(Vehicles/Day)



Annual % Growth
(Linear Growth)



2050 No-Build Operations



Public Engagement

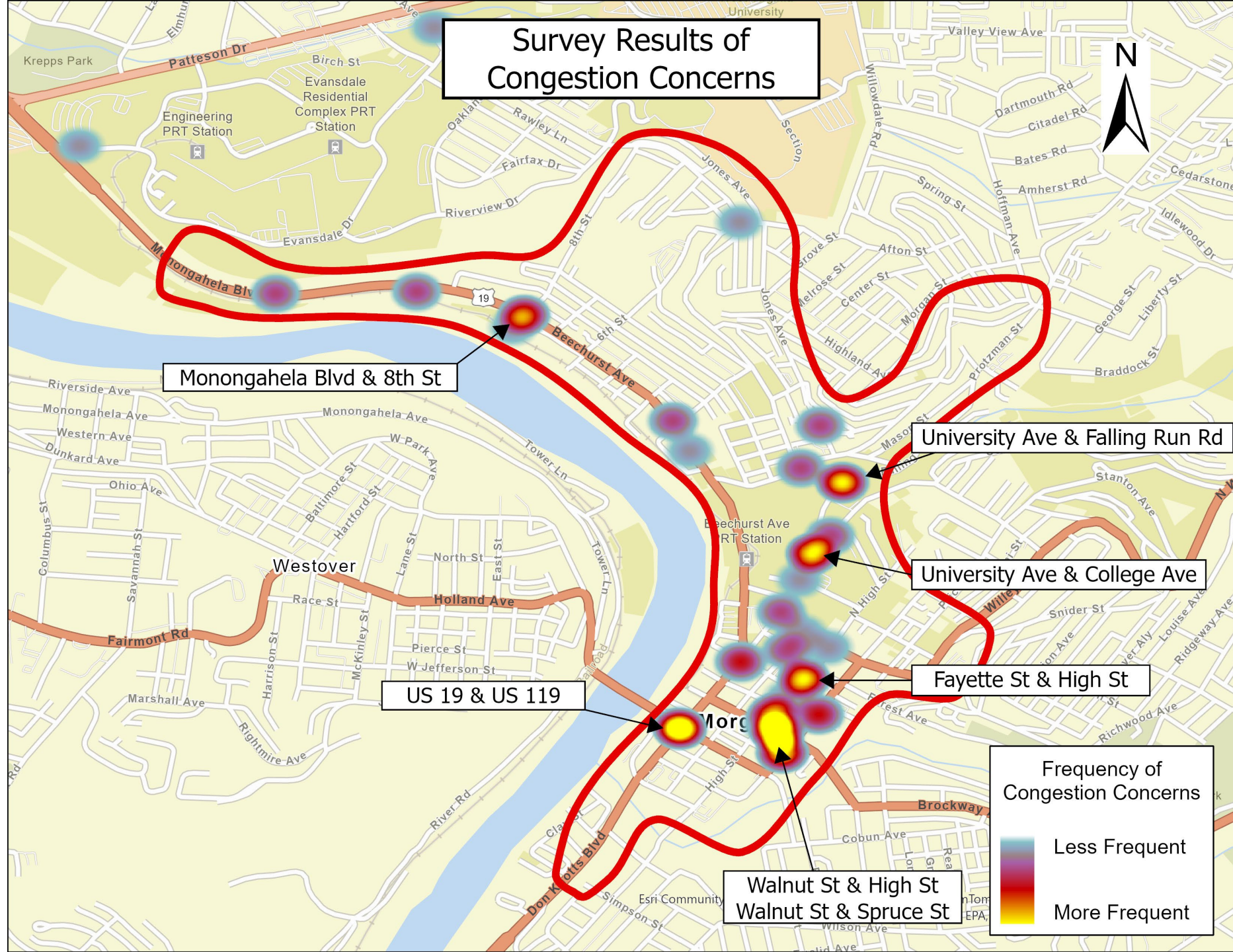


Stakeholder Engagement

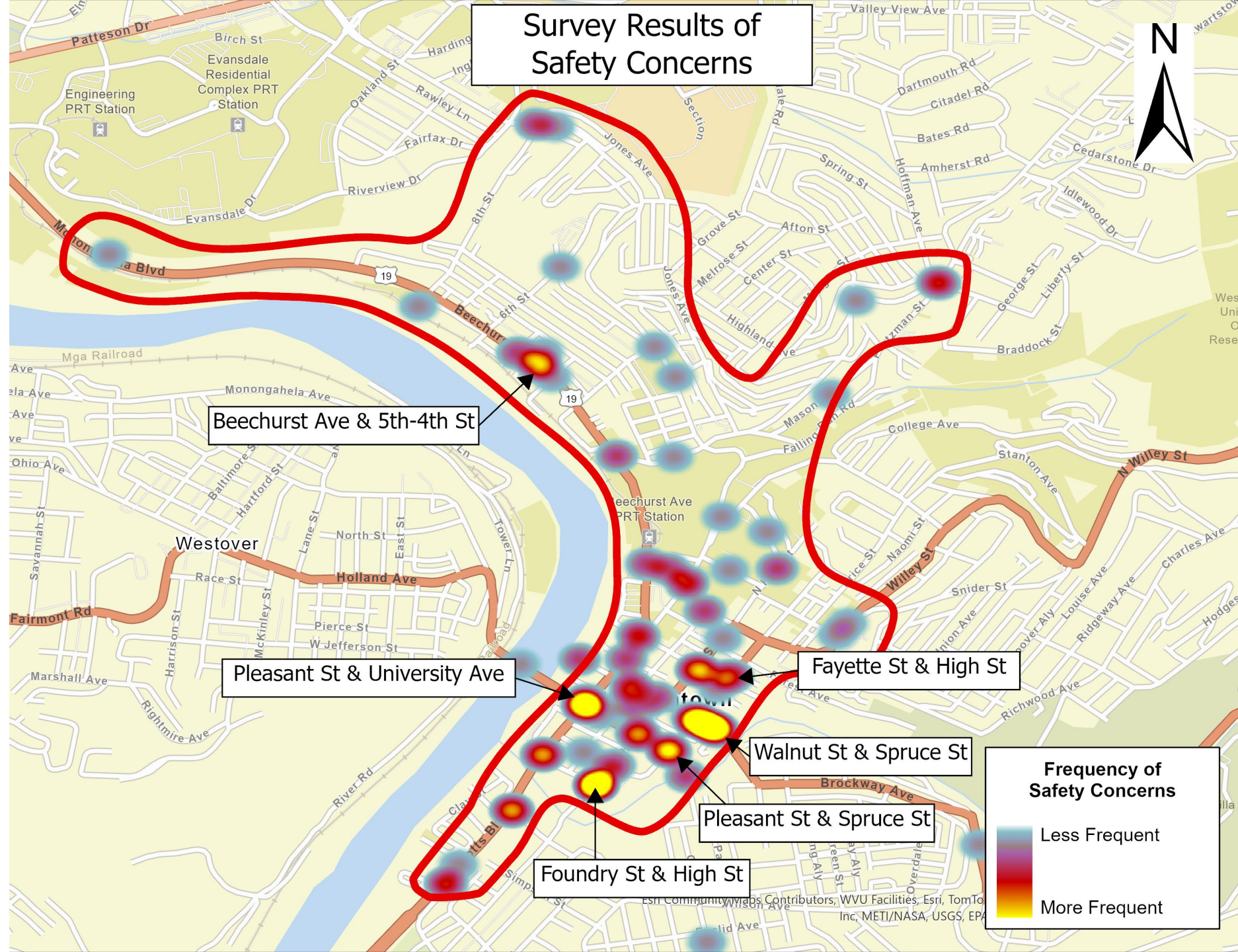
Survey Participation

- Survey ran May 29 – June 19
- 70 total participants

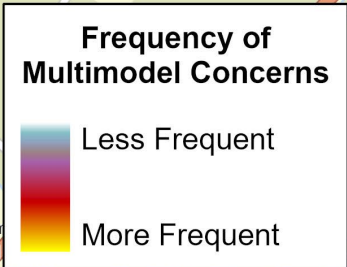
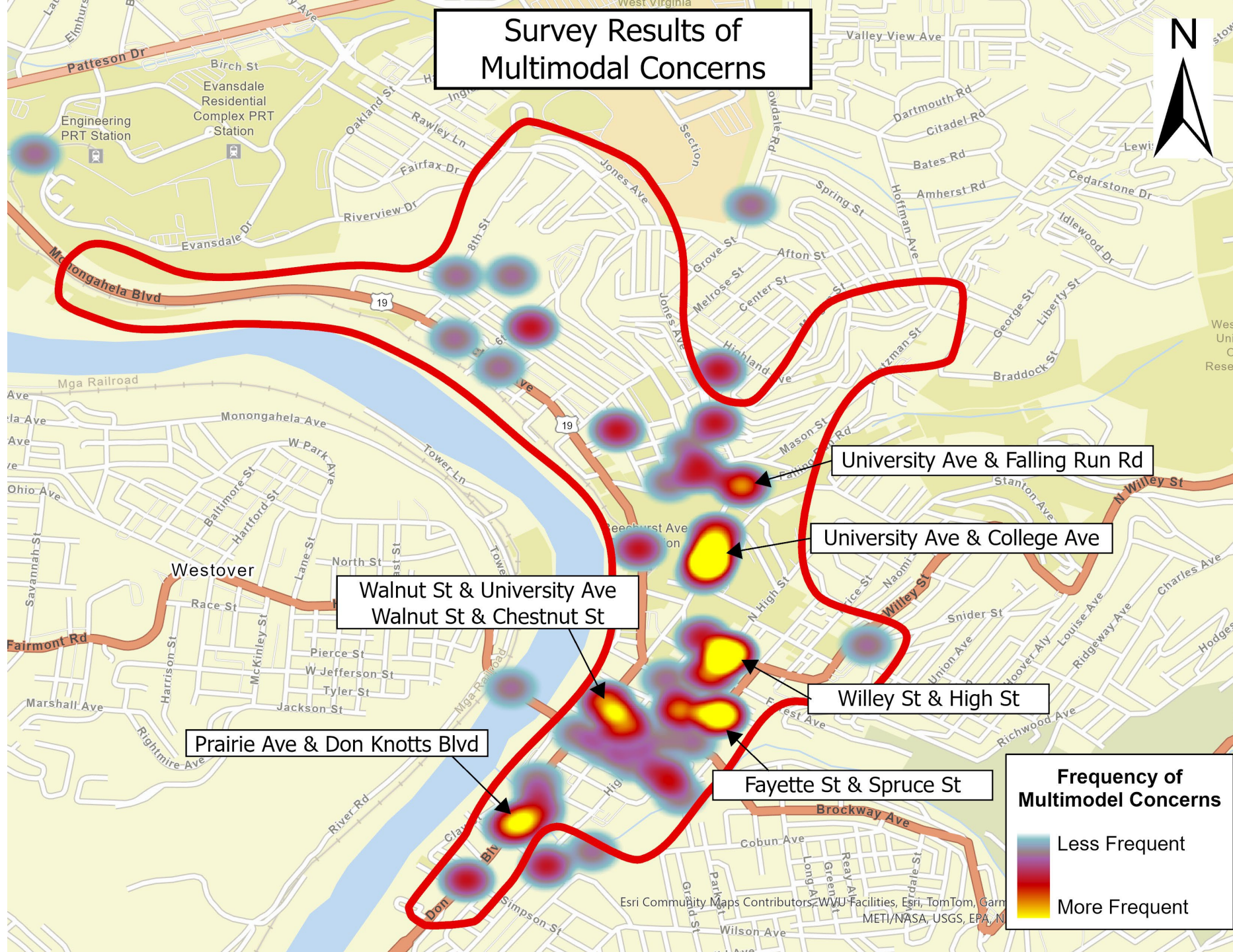
Category Name	Parent Comments	Replies	Total Input
Congestion Concern	35	43	78
Multimodal Concerns	52	29	81
Safety Concern	83	57	140
Total	170	129	299



Survey Results of Safety Concerns



Survey Results of Multimodal Concerns



Purpose and Need Statement



Potential Needs to Address in Study






- Evaluate congestion improvements at hotspots
- Test impacts of safety and multimodal improvements on congestion



Scenario Scoring



Scenario Scoring Rubric

Category	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	Notes
 Traffic Operations (Individual Intersections)	< -7%	-7% to -1%	-1% to 1%	1% to 7%	> 7%	intersection approach movements with an acceptable LOS (D or greater) anticipated to increase or decrease?
 Traffic Operations (Downtown Network)	> 20% increase	4 to 20% increase	4% to -4% change	4 to 20% decrease	> 20% decrease	Is the total delay per vehicle miles traveled anticipated to increase or decrease?
 Bike & Pedestrian Mobility	Notable decrease in mobility	Some decrease in mobility	No change in mobility	Some increase in mobility	Notable increase in mobility	How is bike and pedestrian mobility affected, relative to other scenarios?
 Bike & Pedestrian Safety	Notable decrease in safety	Some decrease in safety	No change in safety	Some increase in safety	Notable increase in safety	How is bike and pedestrian safety prioritized, relative to other scenarios?
 Vehicular Safety	Notable decrease in safety	Some decrease in safety	No change in safety	Some increase in safety	Notable increase in safety	How would vehicular safety be addressed?

Additional Scenario Considerations



Anticipated Public
Support

What is the anticipated public response to the proposed scenario?



Constructability

What level of complexity for design and construction would be entailed?



ROW Impacts

What level of right-of-way impacts are anticipated?



Impact to Business
and Development

What impact to businesses and development is anticipated?



Cost

What is the anticipated relative cost of implementation?

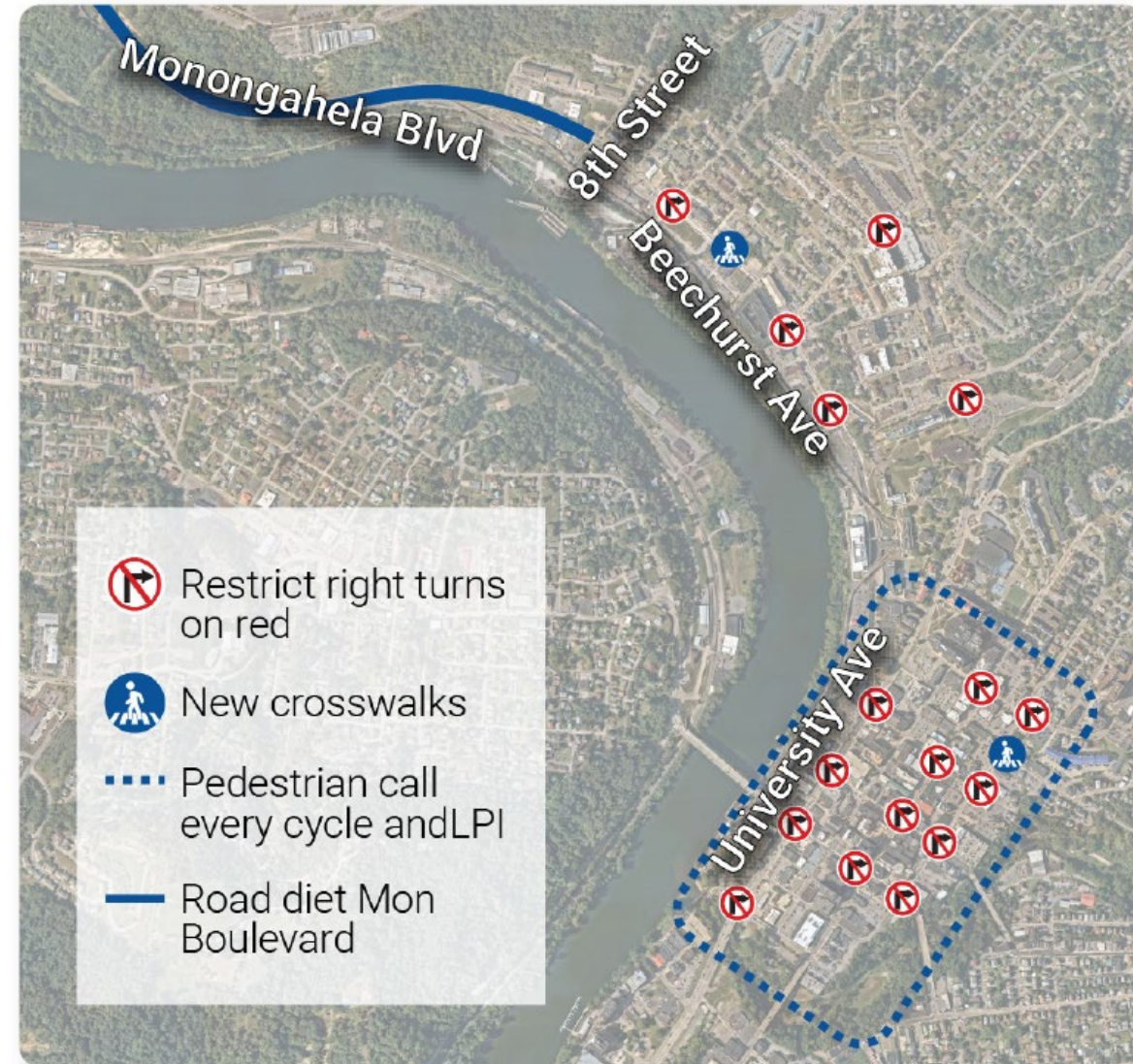
Modeling Scenario Options

1. Signal timing optimization and corridor coordination, and bicycle and pedestrian safety and access improvements
2. Grumbein's island closure
3. One-way street conversions
4. Willey Street improvements (capacity, realignment, or both)
5. Intersection improvements and Beechurst corridor improvements from campus to 8th
6. Combined Grumbein's island, Willey Street, and one-way conversion
7. Combined Grumbein's island, Willey Street, and Intersection Improvements








Modeling Scenario Options






1. Signal timing optimization and corridor coordination, and bicycle and pedestrian safety and access improvements
2. Grumbein's island closure
3. One-way street conversions
4. Willey Street improvements (capacity, realignment, or both)
5. Intersection improvements and Beechurst corridor improvements from campus to 8th
6. Combined Grumbein's island, Willey Street, and one-way conversion
7. Combined Grumbein's island, Willey Street, and Intersection Improvements



Scenario #1 - Scorecard

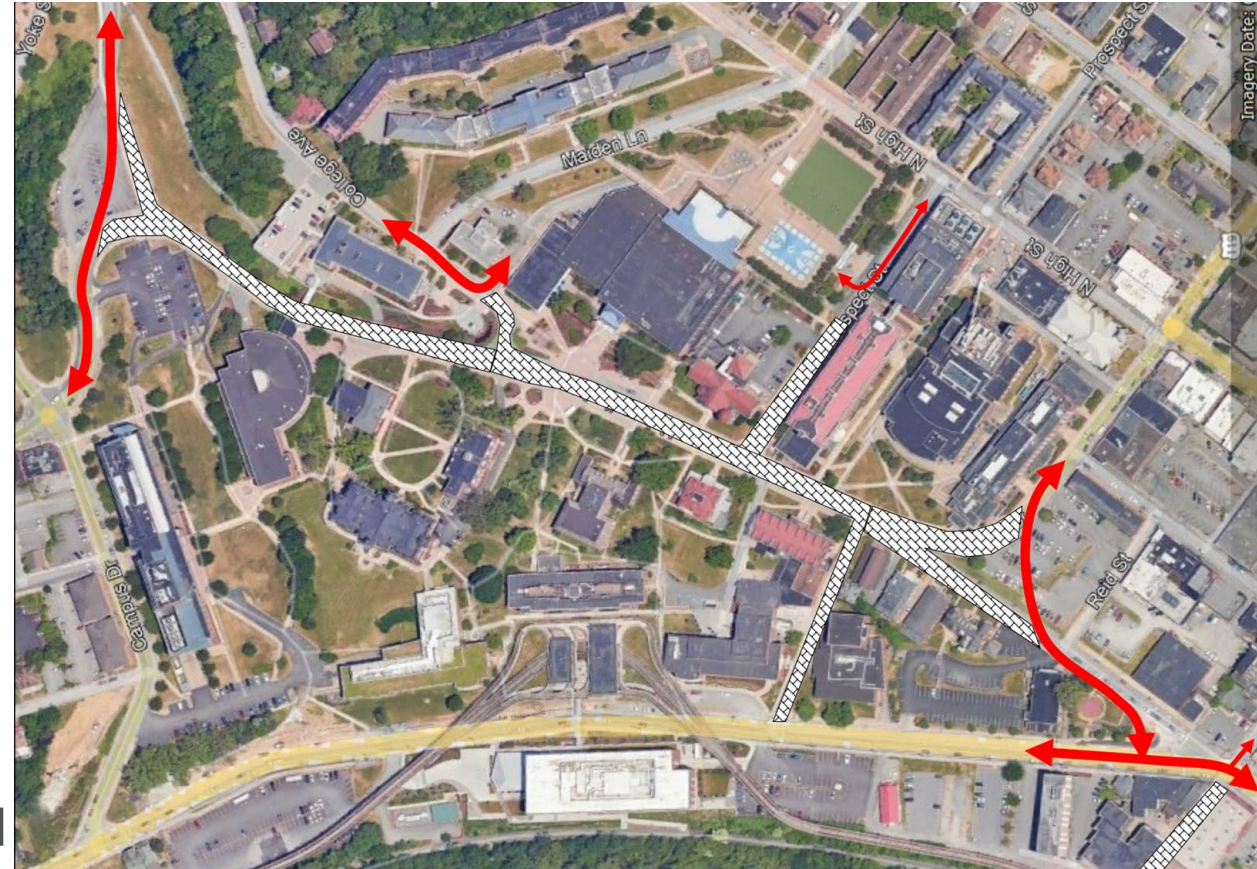
Category	Score (1-5)	Notes
 Traffic Operations (Individual Intersections)	<div><div></div><div></div><div></div><div></div><div></div></div>	The number of intersections with an acceptable level of service is anticipated to moderately increase (3.9%).
 Traffic Operations (Downtown Network)	<div><div></div><div></div><div></div><div></div><div></div></div>	The total delay per vehicle miles traveled is anticipated to moderately decrease (-17.3%).
 Bike & Pedestrian Mobility	<div><div></div><div></div><div></div><div></div><div></div></div>	This scenario would provide new access for pedestrians at crosswalk locations, a new facility connection along Monongahela Boulevard connecting the Downtown and Evansdale areas, and improve the pedestrian experience at signals downtown.
 Bike & Pedestrian Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	Restricting right-turns on red and including a leading pedestrian interval are anticipated to improve safety at the signalized intersections. Adding marked crosswalks and a separated facility would increase safety where there is an existing desire line.
 Vehicular Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	This scenario is not anticipated to notably affect vehicular safety.
Total Score		<div><div></div><div></div><div></div><div></div><div></div></div> 19/25

Scenario #1 - Considerations

Category	Consideration	Notes
 Anticipated Public Support	● Positive	Given the limited impacts but wide-ranging benefits of this scenario, it is anticipated that it may receive very favorable support.
 Constructability	● Straightforward	This project should be very straightforward to design and construct and is not anticipated to present extraordinary challenges.
 ROW Impacts	● Low	No impacts to right-of-way are anticipated with this scenario.
 Impact to Business and Development	● Positive	This scenario is anticipated to increase the attractiveness of pedestrian activity in the downtown core, thereby increasing foot traffic in front of local downtown businesses.
 Cost	● Low	This scenario is anticipated to be the lowest cost alternative. Relatively little new infrastructure construction would be required to take place to implement the recommendations.






Modeling Scenario Options

1. Signal timing optimization and corridor coordination, and bicycle and pedestrian safety and access improvements
2. Grumbein's island closure
3. One-way street conversions
4. Willey Street improvements (capacity, realignment, or both)
5. Intersection improvements and Beechurst corridor improvements from campus to 8th
6. Combined Grumbein's island, Willey Street, and one-way conversion
7. Combined Grumbein's island, Willey Street, and Intersection Improvements








Volume Forecast Changes: Overall downtown network volumes anticipated to decrease by approximately 2% over the course of the day

Scenario #2 - Scorecard

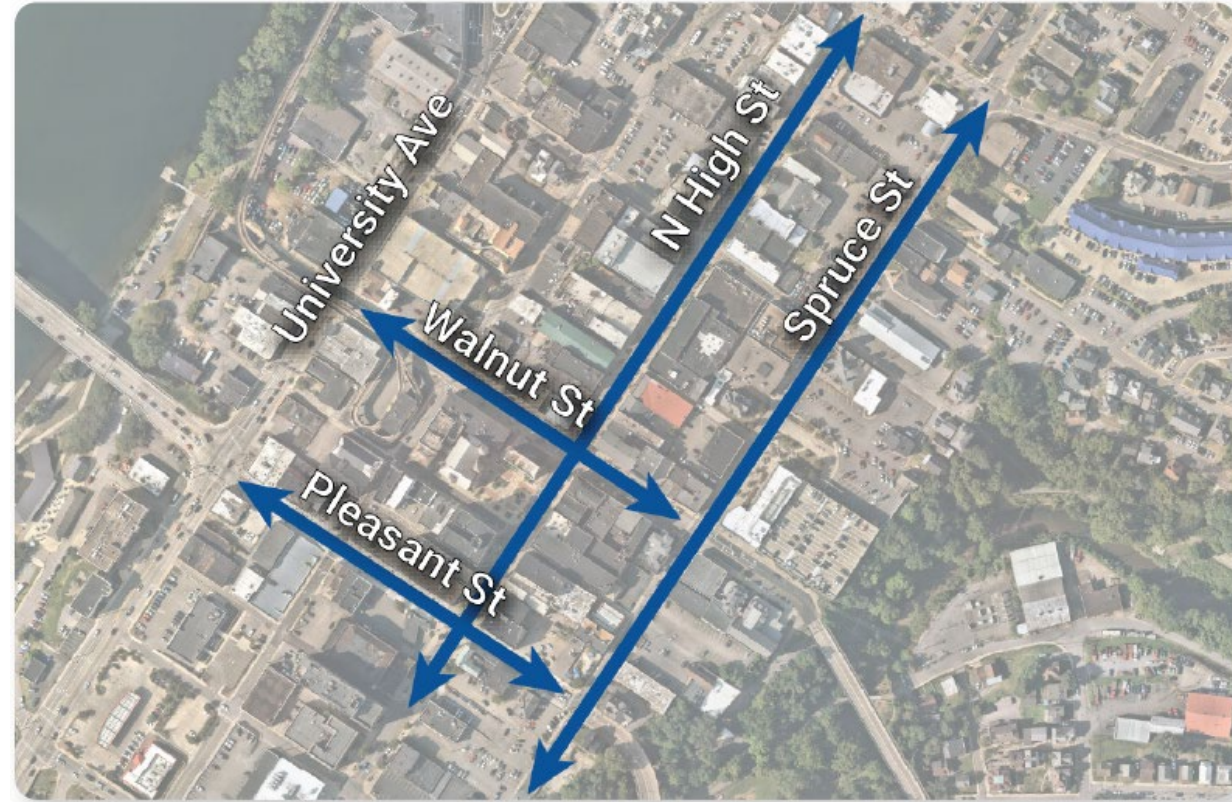
Category	Score (1-5)	Notes
 Traffic Operations (Individual Intersections)	● ● ● ● ●	The number of intersections with an acceptable level of service is anticipated to greatly increase (7.2%)
 Traffic Operations (Downtown Network)	● ● ● ● ●	The total delay per vehicle miles traveled is anticipated to moderately decrease (-18.2%)
 Bike & Pedestrian Mobility	● ● ● ● ●	A dedicated pedestrian zone within the WVU Downtown campus increases mobility and could lead to an increase in pedestrian travel in downtown Morgantown.
 Bike & Pedestrian Safety	● ● ● ● ●	This scenario would provide a conflict-free zone for pedestrians who cross University Avenue between WVU Classes.
 Vehicular Safety	● ● ● ● ●	The elimination of the vehicle-pedestrian conflict at Grumbein's Island and the notable decrease in congestion is anticipated to improve safety for drivers.
Total Score	<div><div></div></div> 23/25	

Scenario #2 - Considerations

Category	Consideration	Notes
 Anticipated Public Support	● Neutral	Given the significant change from the existing and long-standing configuration, balanced with a significant increase in pedestrian mobility and safety, it is anticipated that there may be both strong support and opposition of this scenario.
 Constructability	● Complex	As compared to other scenarios, this scenario scores relatively low based on the number of intersections that need to be re-aligned.
 ROW Impacts	● Medium	Right-of-way impacts are relatively limited as compared to other scenarios, with the only impacts occurring at the new re-alignment at Beechurst Avenue and the new alignment of Falling Run Road and generally limited to WVU owned properties.
 Impact to Business and Development	● Medium	It is not anticipated that there will be notable impact to business and development directly related to this scenario.
 Cost	● High	The cost of this scenario is anticipated to be relatively high as compared to other scenarios. This is due to the scale of the construction, potential for right-of-way impacts, and re-alignment and re-design of numerous intersections.






Modeling Scenario Options

1. Signal timing optimization and corridor coordination, and bicycle and pedestrian safety and access improvements
2. Grumbein's island closure
3. One-way street conversions
4. Willey Street improvements (capacity, realignment, or both)
5. Intersection improvements and Beechurst corridor improvements from campus to 8th
6. Combined Grumbein's island, Willey Street, and one-way conversion
7. Combined Grumbein's island, Willey Street, and Intersection Improvements








Volume Forecast Changes: Overall downtown network volumes anticipated to remain the same over the course of the day

Scenario #3 - Scorecard

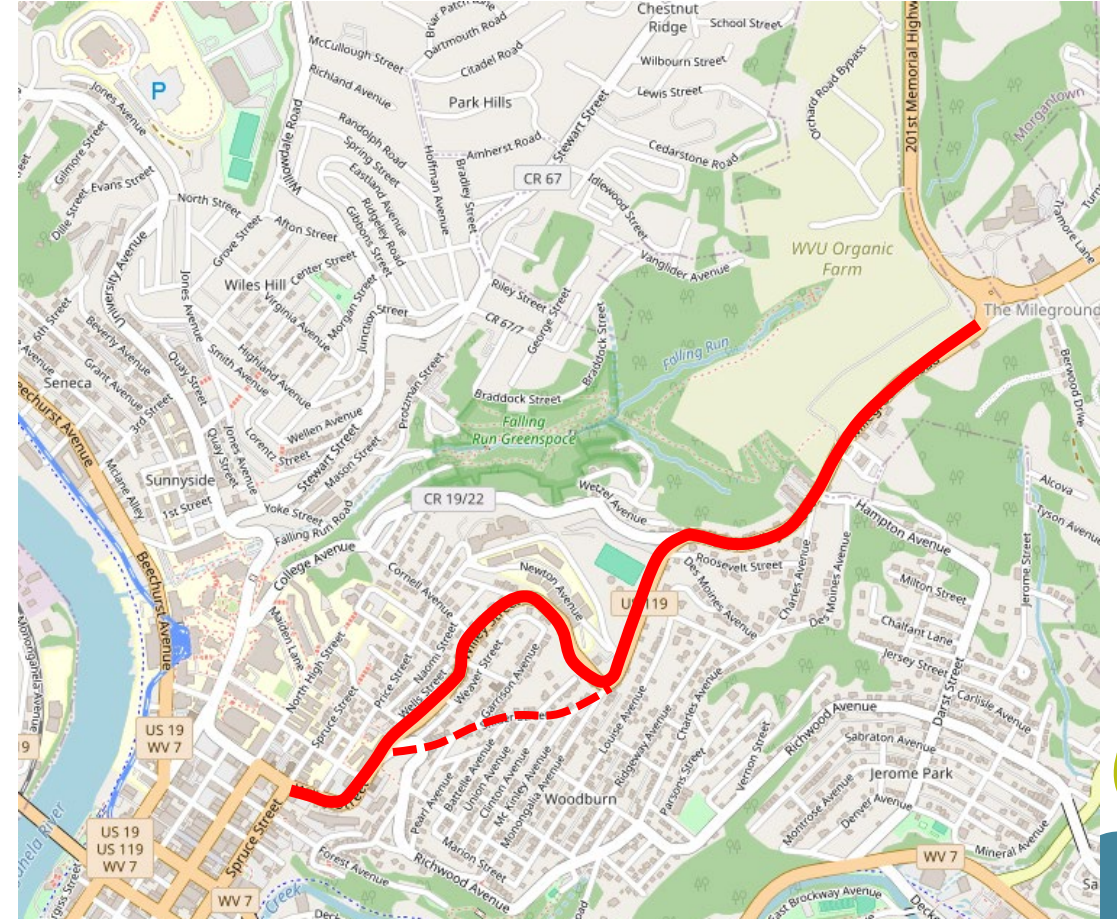
Category	Score (1-5)	Notes
 Traffic Operations (Individual Intersections)	<div><div></div><div></div><div></div><div></div><div></div></div>	The number of intersections with an acceptable level of service is anticipated to moderately decrease (-1.1%)
 Traffic Operations (Downtown Network)	<div><div></div><div></div><div></div><div></div><div></div></div>	The total delay per vehicle miles traveled is anticipated to only slightly decrease (-5.1%)
 Bike & Pedestrian Mobility	<div><div></div><div></div><div></div><div></div><div></div></div>	Converting the one-way streets to two-way may restrict future development/use of the right-of-way for bicycle or pedestrian specific facilities like bike lanes.
 Bike & Pedestrian Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	Conversion to a two-way street is anticipated to have a net neutral change in pedestrian and bicycle safety. For example, pedestrians will now need to be aware of traffic approaching from two directions but may also have increased visibility at mid-block crosswalks.
 Vehicular Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	The two-way street configuration would increase the number of conflict points at intersections but is anticipated to have an overall positive impact to vehicular safety due to the anticipated decrease in vehicular speeds within the urban core.
Total Score	<div><div></div><div></div><div></div><div></div><div></div></div>	14/25

Scenario #3 - Considerations

Category	Consideration	Notes
 Anticipated Public Support	● Negative	Some opposition to the project is anticipated to be presented from the driving public and business owners downtown.
 Constructability	● Complex	The complete replacement of signal control infrastructure and potential intersection modifications could present some challenges during the planning and design process.
 ROW Impacts	● Medium	Due to the potential modification of intersections, there is anticipated to be many instances of minor temporary or permanent right-of-way impacts without any relocations.
 Impact to Business and Development	● Neutral	There is anticipated to be mixed opinions from business owners on the impacts to business and development. The change in parking access or loading zones is anticipated to balance with the potential neutral change in pedestrian safety.
 Cost	● Medium	Relative to other scenarios considered, this project is anticipated to have a moderate cost. No new location roadway facilities would be required but the complete replacement of signal control infrastructure and potential intersection modifications could add sizable costs.

Modeling Scenario Options

1. Signal timing optimization and corridor coordination, and bicycle and pedestrian safety and access improvements
2. Grumbein's island closure
3. One-way street conversions
4. Willey Street improvements (capacity, realignment, or both)
5. Intersection improvements and Beechurst corridor improvements from campus to 8th
6. Combined Grumbein's island, Willey Street, and one-way conversion
7. Combined Grumbein's island, Willey Street, and Intersection Improvements



Volume Forecast Changes: Overall downtown network volumes anticipated to remain the same over the course of the day

Scenario 4: Interim and Long-Term






Scenario 4A – Interim Improvements








Scenario 4B – Long-Term Improvements








Scenario #4A - Scorecard

Category	Score (1-5)	Notes
 Traffic Operations (Individual Intersections)	<div><div></div><div></div><div></div><div></div><div></div></div>	The number of intersections with an acceptable level of service is anticipated to narrowly decrease (-0.3%)
 Traffic Operations (Downtown Network)	<div><div></div><div></div><div></div><div></div><div></div></div>	The total delay per vehicle miles traveled is anticipated to narrowly decrease (-3.1%)
 Bike & Pedestrian Mobility	<div><div></div><div></div><div></div><div></div><div></div></div>	Bike and pedestrian mobility does not increase nor decrease with the configuration of this scenario.
 Bike & Pedestrian Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	Bike and pedestrian safety may slightly increase due to the realignment of the existing intersection.
 Vehicular Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	This scenario's configuration proposes the elimination of the existing intersection at Richwood Avenue and Willey Street which had poor sight distance, providing a potential increase in safety.
Total Score	<div><div></div><div></div><div></div><div></div><div></div></div> <div>17/25</div>	






Scenario #4A - Considerations

Category	Consideration	Notes
 Anticipated Public Support	● Neutral	It is anticipated that there will be balanced support, given the improvements, and opposition, given the potential impacts along Willey Street, for this scenario.
 Constructability	● Complex	The constructability of this project may be somewhat challenging due to the conflicts arising from the widening of Willey Street.
 ROW Impacts	● High	It is anticipated that the widening of Willey Street will impact several properties and homes, leading to multiple full relocation impacts in this scenario.
 Impact to Business and Development	● Positive	This scenario is consistent with development plans for the East End Village and promotes additional connectivity to Downtown Morgantown, which may lead to a positive impact for business owners.
 Cost	● High	The cost of this scenario is expected to be relatively expensive compared to other scenarios. Costs stem from the widening of Willey Street as well as the proposed intersection reconfigurations.

Scenario #4B - Scorecard

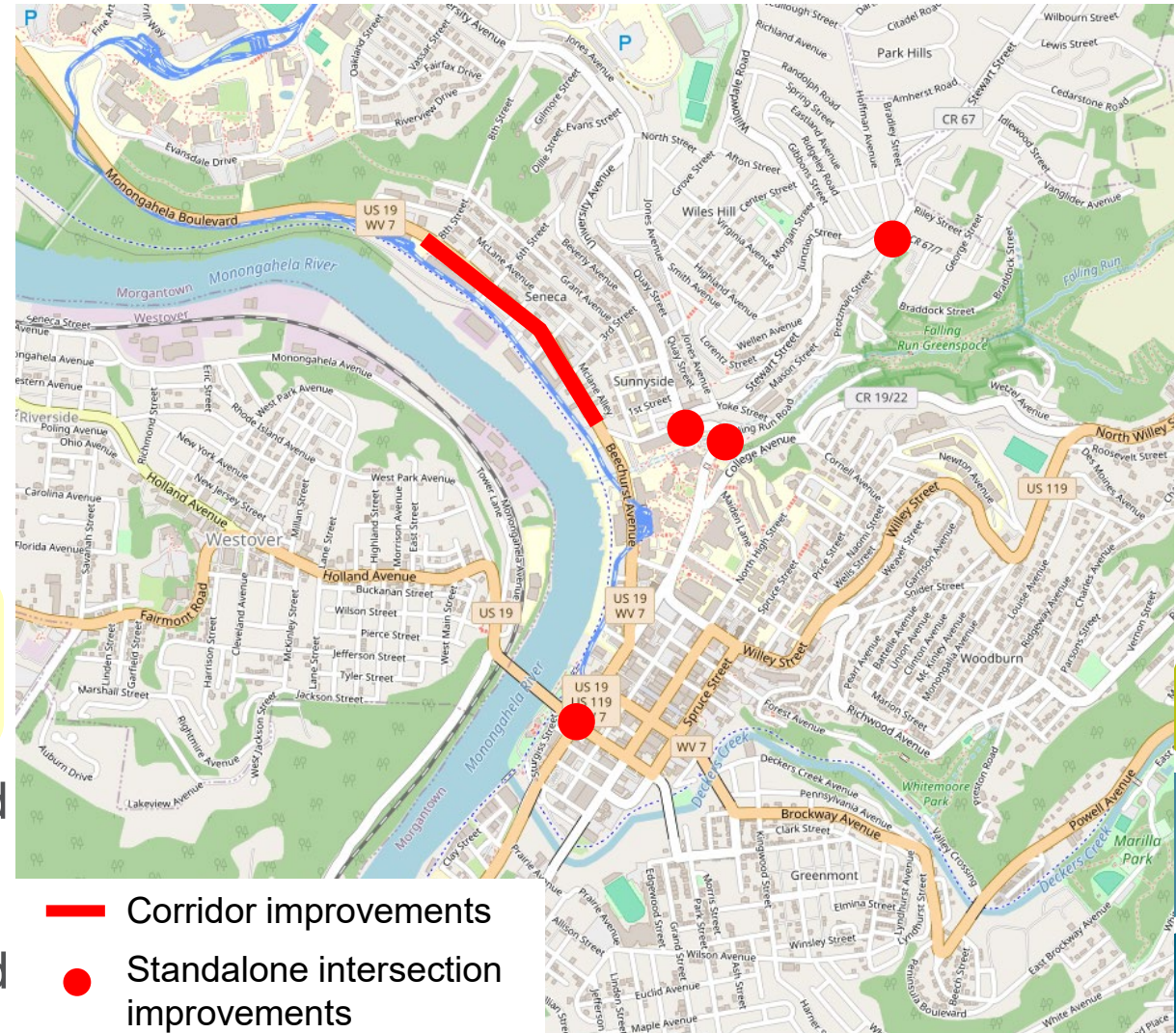
Category	Score (1-5)	Notes
 Traffic Operations (Individual Intersections)	<div><div></div><div></div><div></div><div></div><div></div></div>	The number of intersections with an acceptable level of service is not anticipated to noticeably change (-0.1%)
 Traffic Operations (Downtown Network)	<div><div></div><div></div><div></div><div></div><div></div></div>	The total delay per vehicle miles traveled is anticipated to narrowly decrease (-0.9%)
 Bike & Pedestrian Mobility	<div><div></div><div></div><div></div><div></div><div></div></div>	The bicycle and pedestrian facilities implemented along Snider Street may increase connectivity to the downtown Morgantown area from the neighborhoods northeast of downtown.
 Bike & Pedestrian Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	The bicycle and pedestrian facilities along Snider Street and realignment of Willey Street are anticipated to provide a moderate increase in bike and pedestrian safety.
 Vehicular Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	This scenario may significantly improve vehicular safety due to the elimination of the misaligned intersection at Willey Street and Richwood Avenue and the shift of traffic from the windy portion of Willey Street to the relatively straight Snider Street alignment.
Total Score	<div><div></div><div></div><div></div><div></div><div></div></div> <div>20/25</div>	

Scenario #4B - Considerations

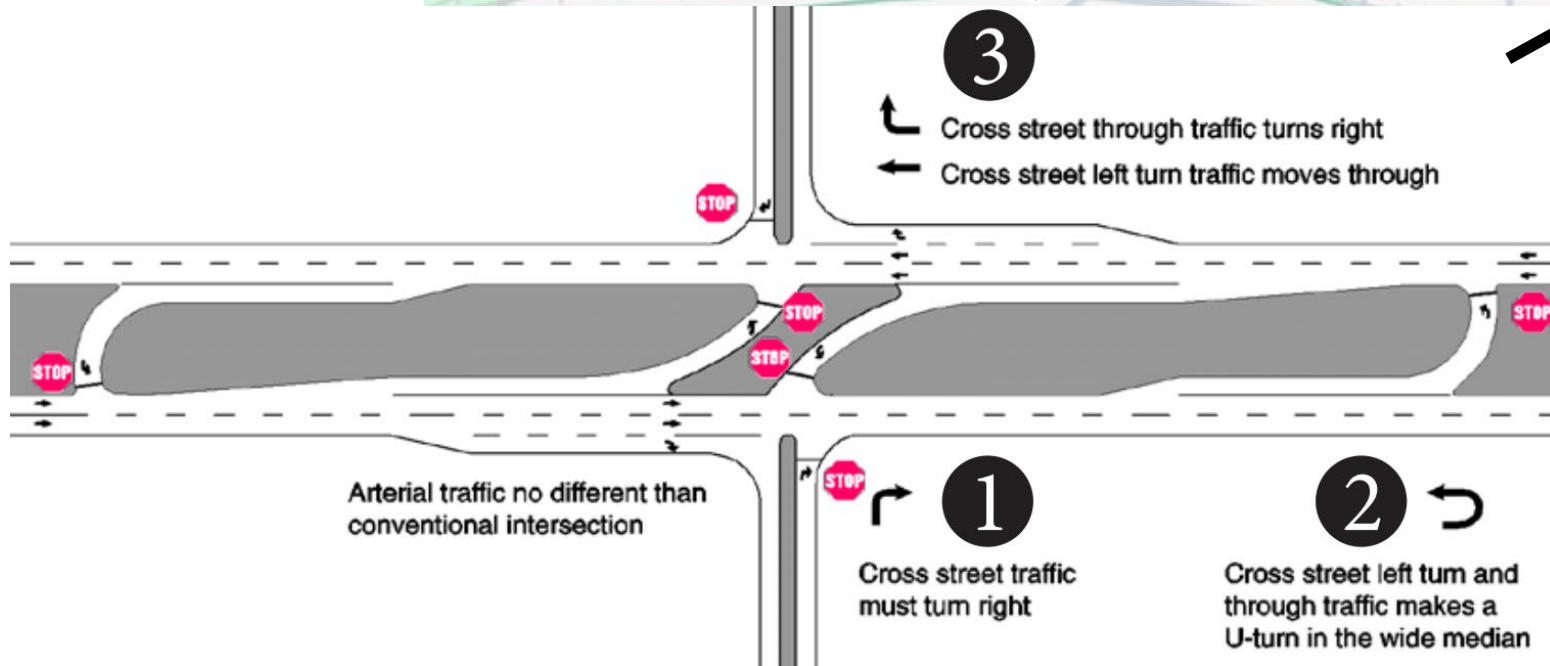
Category	Consideration	Notes
 Anticipated Public Support	● Negative	The acquisition of right-of-way from multiple property owners along Snider Street may present challenges in gaining public support. Travelers using Willey Street today to enter the downtown area from the Mileground are anticipated to support the project.
 Constructability	● Complex	The constructability is anticipated to be somewhat difficult, due to the challenges that may be presented along Snider Street when implementing widened lanes and multi-modal facilities.
 ROW Impacts	● High	It is anticipated that the upgrade of Snider Street will impact several properties requiring multiple full relocations.
 Impact to Business and Development	● Positive	This scenario is consistent with development plans for the East End Village and promotes additional connectivity to Downtown Morgantown, which may lead to positive impact for business owners.
 Cost	● High	This scenario is anticipated to be relatively expensive in comparison to other scenarios. The cost largely stems from the re-alignment of Willey Street and the upgrades to Snider Street.

Modeling Scenario Options

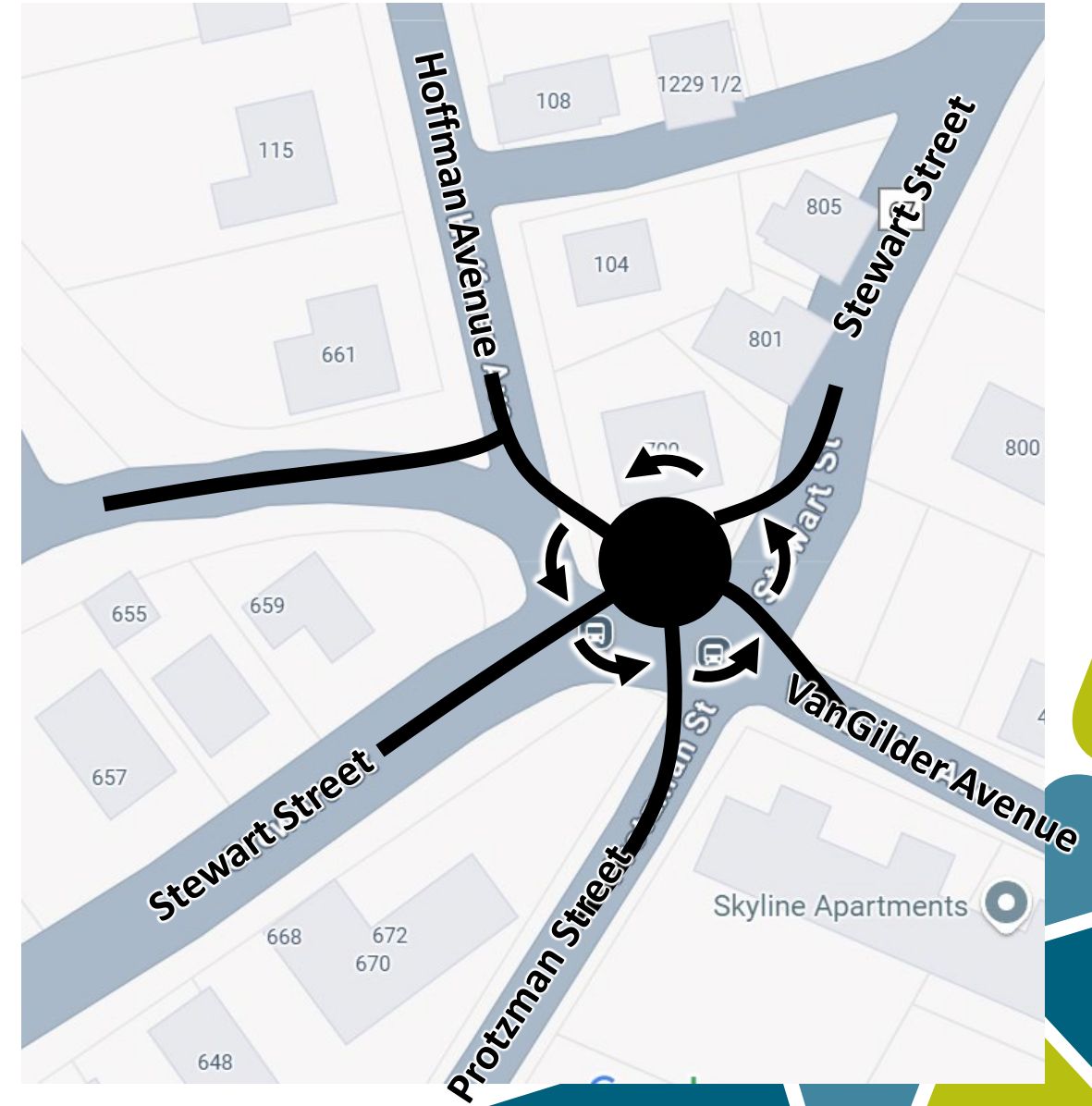
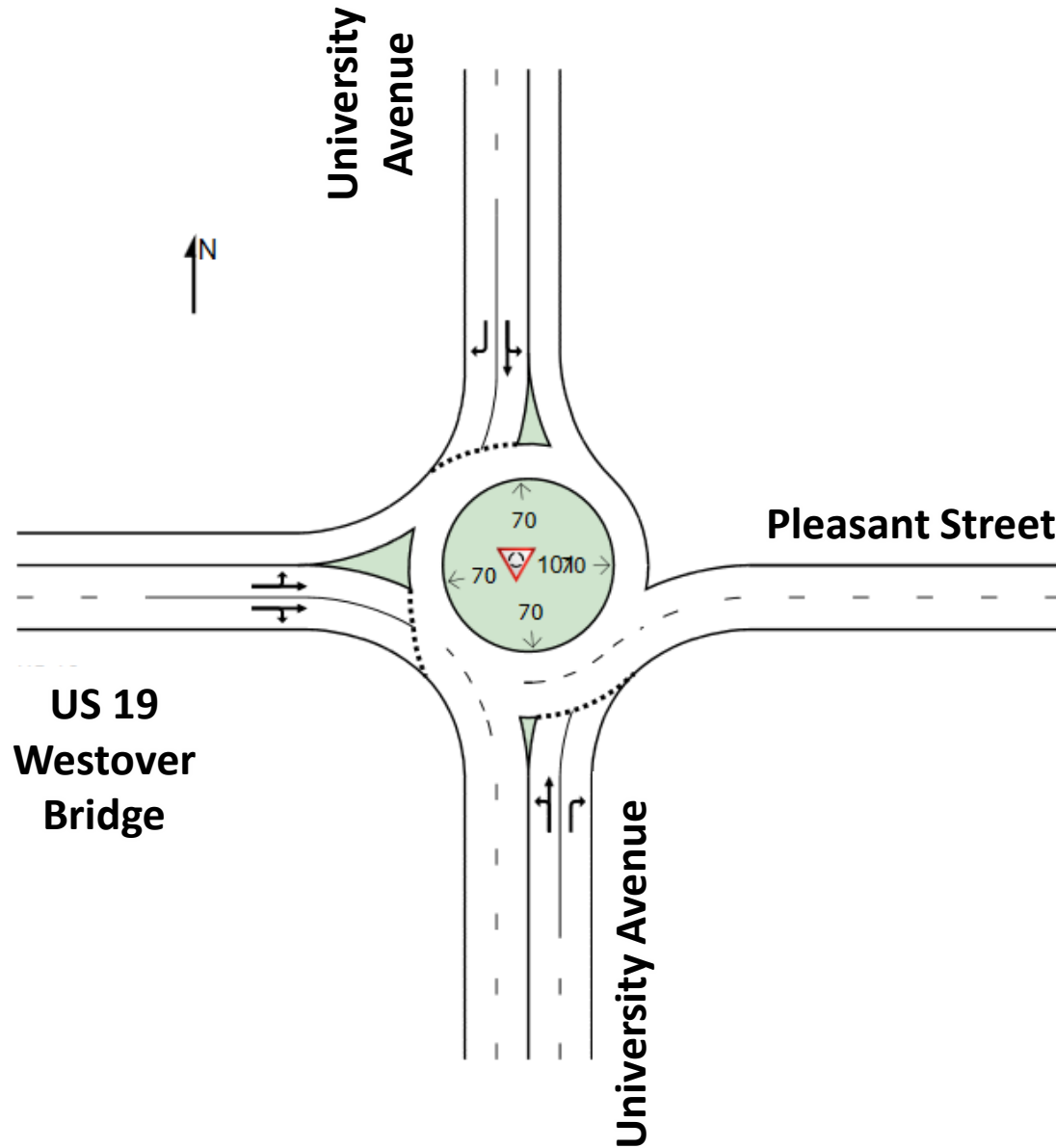
1. Signal timing optimization and corridor coordination, and bicycle and pedestrian safety and access improvements
2. Grumbein's island closure
3. One-way street conversions
4. Willey Street improvements (capacity, realignment, or both)
5. Intersection improvements and Beechurst corridor improvements from campus to 8th
6. Combined Grumbein's island, Willey Street, and one-way conversion
7. Combined Grumbein's island, Willey Street, and Intersection Improvements



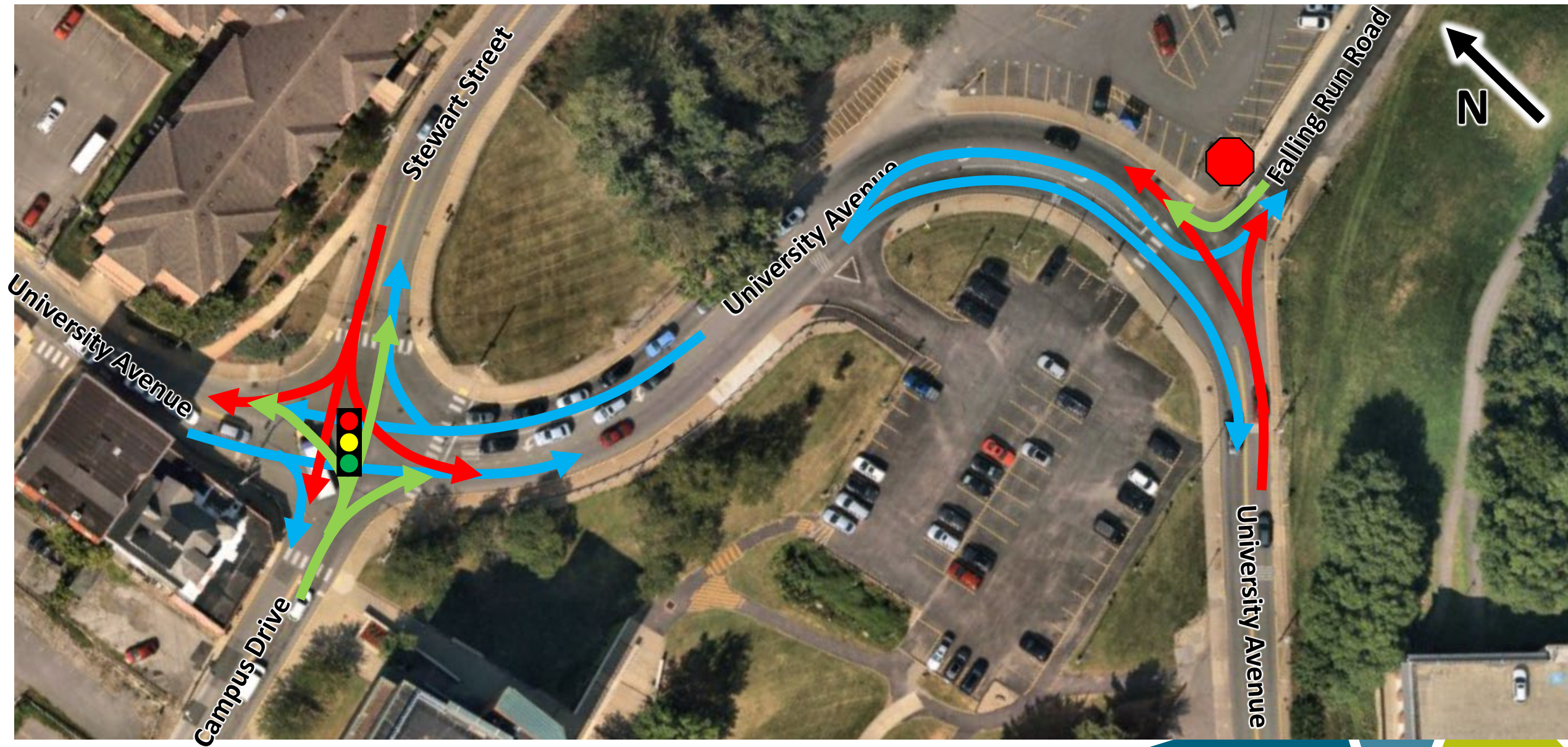
Scenario 5: Beechurst Corridor








Scenario 5: Intersection Improvements








Scenario 5: Intersection Improvements



Scenario #5 - Scorecard

Category	Score (1-5)	Notes
 Traffic Operations (Individual Intersections)	● ● ● ● ●	The number of intersections with an acceptable level of service is anticipated to moderately increase (6.3%)
 Traffic Operations (Downtown Network)	● ● ● ● ●	The total delay per vehicle miles traveled is anticipated to greatly decrease (-22.6%)
 Bike & Pedestrian Mobility	● ● ● ● ●	In general, the intersection improvements proposed will provide additional access for pedestrians and provide separated facilities.
 Bike & Pedestrian Safety	● ● ● ● ●	By providing improved separated facilities, reducing conflict points with drivers, and improving crossings, safety for pedestrians and bicyclists is anticipated to improve.
 Vehicular Safety	● ● ● ● ●	The intersection and corridor improvements proposed will greatly reduce the number of conflict points at intersections, reduce speeds, and improve congestion, all of which are anticipated to significantly increase vehicular safety.
Total Score	<div><div></div></div> 22/25	

Scenario #5 - Considerations

Category	Consideration	Notes
 Anticipated Public Support	● Neutral	There is anticipated to be mixed support for these proposed improvements due to the increase in safety and mobility for multimodal users but also the restrictions in access along Beechurst Avenue and potential for right-of-way impacts.
 Constructability	● Medium	The proposed improvements follow typical intersection configurations and would present neutral challenges.
 ROW Impacts	● Medium	Full relocations are anticipated at the two proposed roundabout locations due to the increased size of the intersections.
 Impact to Business and Development	● Negative	The access restrictions proposed for side street access to Beechurst Avenue may have a possible negative impact to existing businesses, especially freight access.
 Cost	● Medium	Relative to other scenarios considered, this project is anticipated to have a moderate cost. No new location roadway facilities would be required but the complete reconfiguration of multiple intersections and improvements along Beechurst Avenue is anticipated to present sizable costs.






Modeling Scenario Options

1. Signal timing optimization and corridor coordination, and bicycle and pedestrian safety and access improvements
2. Grumbein's island closure
3. One-way street conversions
4. Willey Street improvements (capacity, realignment, or both)
5. Intersection improvements and Beechurst corridor improvements from campus to 8th
6. Combined Grumbein's island, Willey Street, and one-way conversion
7. Combined Grumbein's island, Willey Street, and Intersection Improvements

Volume Forecast Changes: Overall downtown network volumes anticipated to decrease by approximately 2% over the course of the day



Scenario #6 - Scorecard






Category	Score (1-5)	Notes
 Traffic Operations (Individual Intersections)	● ● ● ● ●	The number of intersections with an acceptable level of service is anticipated to greatly increase (8.7%)
 Traffic Operations (Downtown Network)	● ● ● ● ●	The total delay per vehicle miles traveled is anticipated to moderately decrease (-18.4%)
 Bike & Pedestrian Mobility	● ● ● ● ●	Due to the combination of bike and pedestrian mobility improvements associated with the closure of Grumbein's Island and the Snider Street conversion, this scenario provides for significant improvements in bike and pedestrian mobility.
 Bike & Pedestrian Safety	● ● ● ● ●	Due to the combination of bike and pedestrian safety improvements associated with the closure of Grumbein's Island and the Snider Street Conversion, this scenario provides for significant improvement in bike and pedestrian safety.
 Vehicular Safety	● ● ● ● ●	The elimination of the vehicle-pedestrian conflict at Grumbein's Island combined with the reconfiguration of the misaligned intersection at Willey Street and Richwood Avenue provide for a potential moderate increase in vehicle safety.

Total Score



23/25

Scenario #6 - Considerations

Category	Consideration	Notes
 Anticipated Public Support	● Negative	The acquisition right-of-way from property owners along Snider Street as well as the conversion of one-way street to two-way may present challenges for public support.
 Constructability	● Complex	The constructability is anticipated to be somewhat difficult, between the reconfiguration of intersections surrounding Grumbein's Island and the challenges that may be presented along Snider Street when implementing widened lanes and multimodal facilities.
 ROW Impacts	● High	It is anticipated that there will be multiple right-of-way impacts, largely stemming from the updated configuration of Snider Street.
 Impact to Business and Development	● Positive	This scenario provides improved access to businesses, largely stemming from the Snider Street conversion providing additional connectivity to Downtown Morgantown and its consistency with development plans for the East End Village.
 Cost	● High	This scenario is anticipated to be the most expensive due to costs stemming from the closure of Grumbein's Island and the upgrades to Snider Street.






Modeling Scenario Options

1. Signal timing optimization and corridor coordination, and bicycle and pedestrian safety and access improvements
2. Grumbein's island closure
3. One-way street conversions
4. Willey Street improvements (capacity, realignment, or both)
5. Intersection improvements and Beechurst corridor improvements from campus to 8th
6. Combined Grumbein's island, Willey Street, and one-way conversion
7. Combined Grumbein's island, Willey Street, and Intersection Improvements






Volume Forecast Changes: Overall downtown network volumes anticipated to decrease by approximately 2% over the course of the day








Scenario #7 - Scorecard

Category	Score (1-5)	Notes
 Traffic Operations (Individual Intersections)	<div><div></div><div></div><div></div><div></div><div></div></div>	The number of intersections with an acceptable level of service is anticipated to greatly increase (10.2%)
 Traffic Operations (Downtown Network)	<div><div></div><div></div><div></div><div></div><div></div></div>	The total delay per vehicle miles traveled is anticipated to greatly decrease (-23.6%)
 Bike & Pedestrian Mobility	<div><div></div><div></div><div></div><div></div><div></div></div>	Due to the combination of bike and pedestrian mobility improvements associated with the closure of Grumbein's Island, the Snider Street conversion, and intersection improvements, this scenario provides for significant improvements in bike and pedestrian mobility.
 Bike & Pedestrian Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	Due to the combination of bike and pedestrian safety improvements associated with the closure of Grumbein's Island, the Snider Street Conversion, and the intersection improvements, this scenario provides for significant improvement in bike and pedestrian safety.
 Vehicular Safety	<div><div></div><div></div><div></div><div></div><div></div></div>	The reduction of the conflict points and severity of potential crashes with the intersection improvements plus the elimination of the vehicle-pedestrian conflict at Grumbein's Island combined with the reconfiguration of the misaligned intersection at Willey Street and Richwood Avenue provide for a potential notable increase in vehicle safety.

Scenario #7 - Considerations

Category	Consideration	Notes
 Anticipated Public Support	● Negative	The acquisition right-of-way from property owners along Snider Street and at the intersection improvements and the access restrictions along Beechurst may present some public support challenges.
 Constructability	● Complex	The constructability is anticipated to be somewhat difficult, between the reconfiguration of intersections surrounding Grumbein's Island and the challenges that may be presented along Snider Street when implementing widened lanes and multimodal facilities.
 ROW Impacts	● High	It is anticipated that there will be multiple right-of-way impacts, largely stemming from the updated configuration of Snider Street and the proposed roundabouts at Pleasant Street and Stewart Street intersections.
 Impact to Business and Development	● Medium	This scenario provides improved access to businesses, largely stemming from the Snider Street conversion providing additional connectivity to Downtown Morgantown and its consistency with development plans for the East End Village.
 Cost	● High	This scenario is anticipated to be the most expensive due to costs stemming from the closure of Grumbein's Island and the upgrades to Snider Street.

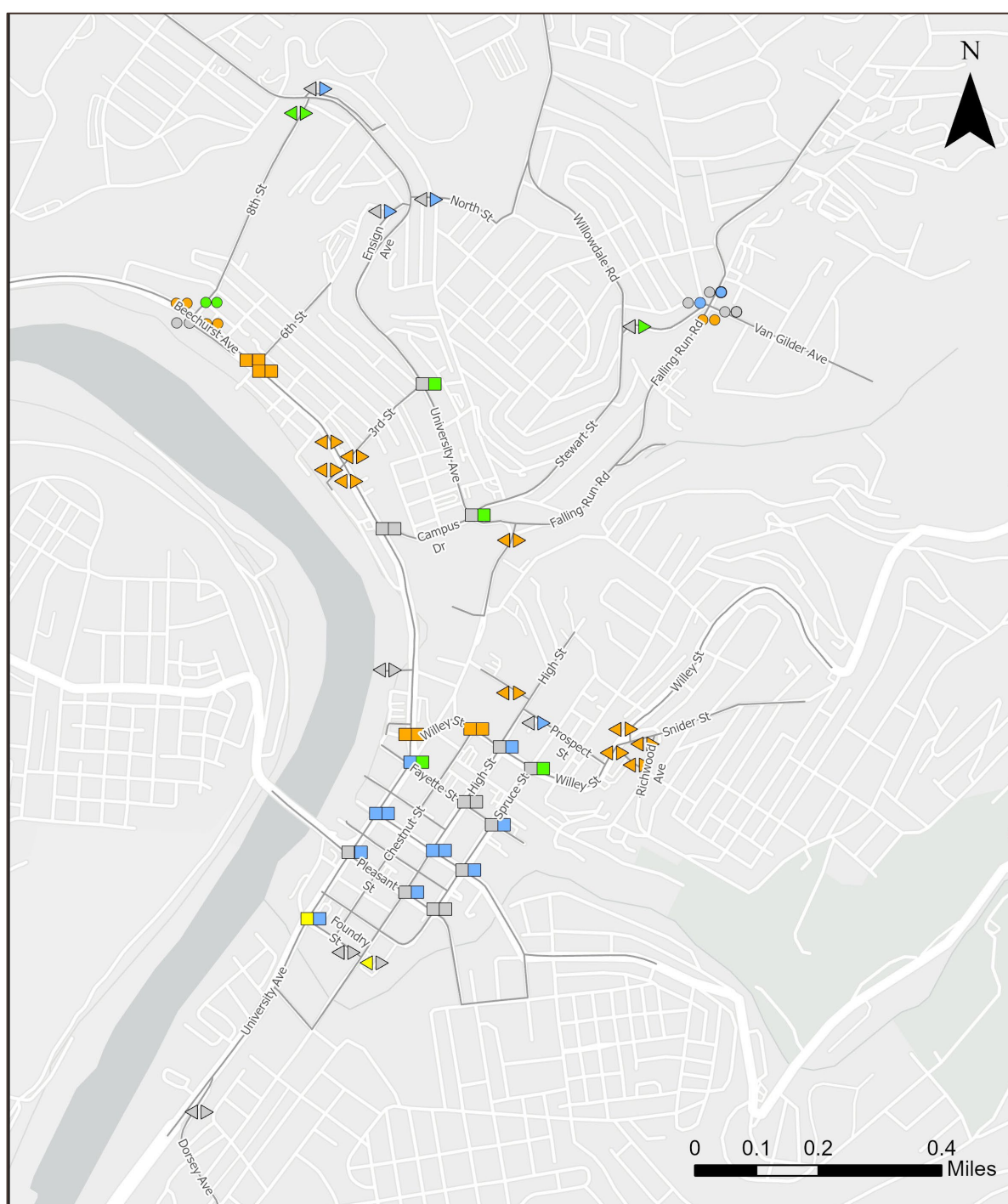
	Scenario 1	Scenario 2	Scenario 3	Scenario 4A	Scenario 4B	Scenario 5	Scenario 6	Scenario 7
Categories	Scores							
 Traffic Operations (Individual Intersections)	4	5	2	3	3	4	5	5
 Traffic Operations (Downtown Network)	4	4	3	3	3	5	4	5
 Bike & Pedestrian Mobility	4	5	2	3	4	4	5	5
 Bike & Pedestrian Safety	4	5	3	4	5	4	5	5
 Vehicular Safety	3	4	4	4	5	5	4	5
Total	19	23	14	17	20	22	23	25

Recommendations

- Include Scenario 7 in long range planning for Morgantown
 - Scenario 1 – Signal optimization and multimodal improvements
 - Scenario 2 – Grumbein's Island closure
 - Scenario 4B – Realignment of US 119 to Snider Street
 - Scenario 5 – Intersection Improvements
- Scenario 7 can be phased as standalone projects
- Not recommended to be carried forward
 - Scenario 3 – one-way street conversions



Scenario #7 - Operations



Legend

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

MD PM

Signalized Midday/ PM Delay Comparison

Unsignalized Midday/ PM Delay Comparison (By Approach)

No change in LOS or change from EF (still failing)

LOS improvement from EF to ABCD

LOS improvement between ABCD (still acceptable)

LOS decrease between ABCD (still acceptable)

LOS decrease from ABCD to EF (acceptable to failing)

Newly Proposed Intersection/ Approach

Morgantown Main Roads

Estimated Costs for Planning

Alternative	Planning Level Cost
Alt 1-Signal Timing and Multimodal Improvements	\$1M—\$5M
Alt 2-Grumbein's Island Closure	\$6M—\$12M
Alt 4B-Realignment of US 119 to Snider Street	\$10M—\$20M
Alt 5-Intersection/Beechurst Corridor Improvements	\$12M—\$24M