MOBILITY METRICS



August 2022

DRAFT

Community goals and metrics based on your input

Effective local and regional mobility

Primary categories of metrics:

- Access: The Ability to Get Places
- Choice: Having Effective Options for Travel
- Character: Making
 Facilities Safe, Pleasant,
 and Accommodating

Replenished parks, parkways, waterways, and places

Primary categories of metrics:

- Identity and heritage
- Natural assets
- Park system and neighborhoods

Enhanced equity and inclusive development

Primary categories of metrics:

- Economic Generators:

 Job growth and
 connections
- Housing Quality and Neighborhood Stability: Housing affordability and security
- Health and Well-being: Safe, healthy, livable neighborhoods

Total scoring including Access, Choice, and Character

Scenario	Scajaquada Corridor	Region Central	Total		
Status Quo+	105	77	182		
At-Grade	182	91	273		
Partial Removal	145	95	240		
Full Removal	146	93	239		

Includes projects on
the Scajaquada
Corridor and
immediate vicinity
(crossings,
intersections, and
ramps)

Includes <u>Supporting</u>
<u>Elements projects</u>
throughout Region
Central

Access: The Ability to Get Places

Scenario	Scajaquada Corridor	Region Central	Total
Status Quo+	68	24	92
At-Grade	98	34	132
Partial Removal	84	37	121
Full Removal	79	36	115

Includes projects on the Scajaquada
Corridor and immediate vicinity
(crossings, intersections, and ramps)

Includes <u>Supporting</u>
<u>Elements projects</u>
throughout region
Central

- At-Grade scores highest in most access metrics
- Status Quo+ scores higher for driving access to most (but not all) local and regional destinations

Access: The Ability to Get Places: Scajaquada Corridor only

	Acc	ess ;			ess t on C		estina ral	atio	ns in	regi	Access #2 - Drive to regional destinations outside Region Central)			Access #3 - Neighborhood Connectivity						Access	Access			
Scen ario		ff Sta			ECM		Des	her l tinat	ions		Uni Buffalo/ VA	Target							Grant	Elmwoo d	Park &	Travel Time	#6 - Conge stion	Total
	Walk	Bike	Driv e	Walk	Bike	Driv e	Walk	Bike	Drive	Buffalo	Medical Center	Shoppin g Center	Airpor t	Rock	rst	de	Leroy	Side		Bidwell	Delevan Girder			
Statu s Quo+	2	2	2	3	3	5	2	3	5	4	4	4	5	2	2	2	2	2	2	2	2	2	5	68
At- Grad e	4	4	5	3	3	4	4	5	4	3	3	5	4	5	5	5	5	5	5	5	5	3	3	98
Parti al Rem	4	4	4	3	3	4	3	4	4	3	3	3	4	3	5	4	3	3	5	4	3	3	4	84
Full Rem oval	4	4	2	3	3	2	5	4	2	2	3	3	3	4	4	4	4	4	4	4	4	4	2	79

- Partial Removal provides the strongest interneighborhood connectivity overall, but individual neighborhoods perform better in other scenarios
- Full Removal offers best connections to Northeast Region Central, while At-Grade offers the best connections to Southeast Region Central

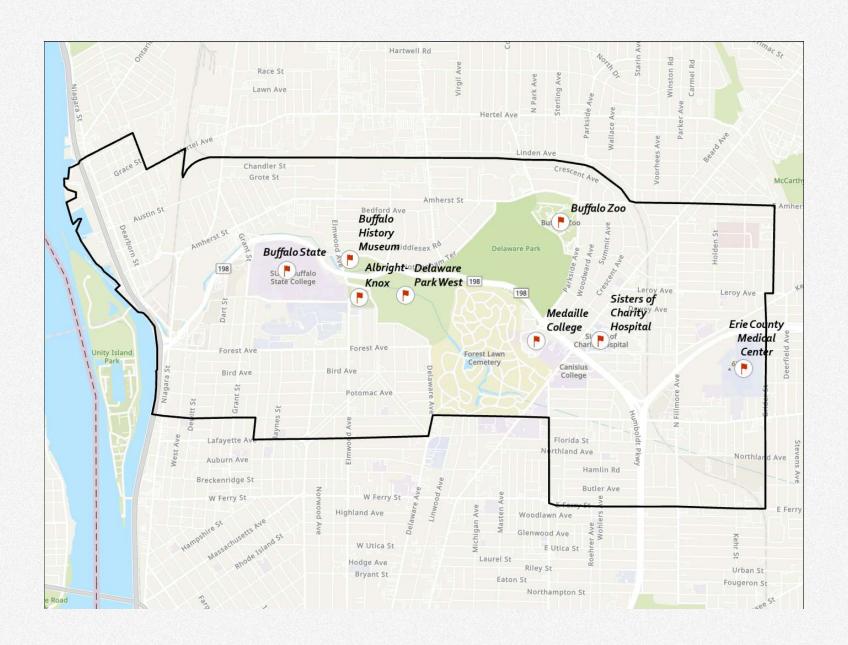
Access: The Ability to Get Places: Region Central (Supporting Elements)

	Access #3 - Neighborhood Connectivity										
Scenario	Black Rock	Grant- Amhers t	Lincoln & Parksid e	Filmore -Leroy	Upper West Side	Grant	Elmwood Bidwell	Hamlin Park & Delevan Girder	Access #5 – Travel Patterns	Access 7 – Mode Share	Total
Status Quo+	2	2	2	2	2	2	3	2	4	3	24
At- Grade	3	2	3	3	4	3	5	5	3	3	34
Partial Removal	4	4	4	4	4	5	4	3	2	3	37
Full Removal	3	3	5	5	3	2	5	4	2	4	36

Access: The Ability to Get Places

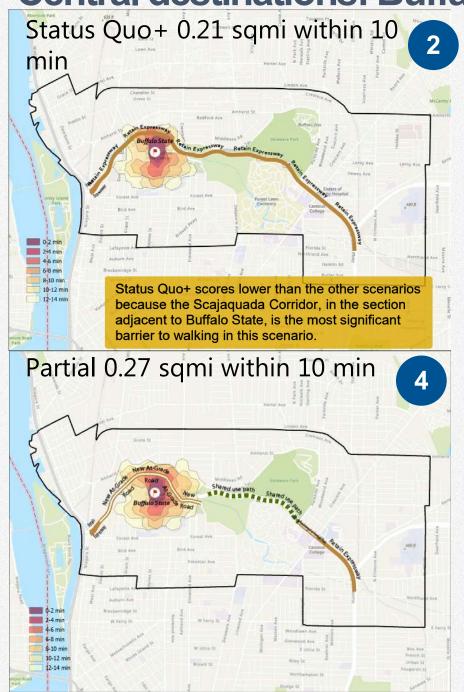
Metric	How Measured	Source	Comments
1) Assessment of connection to Region Central destinations, by mode	-Define destinations in RC -Create an access-shed around each destination, by mode	GIS Network Analysis, Scenario Design	Use destinations from Experiential Guide Show some separately
2) Assessment of connection to key regional destinations	-Define key regional locations outside RC -Create an access-shed around each destination, for driving	GIS Network Analysis, Scenario Design	Define top (4) regional destinations
3) Levels of connectivity between neighborhoods	-Measure current levels of connectivity by mode between scenarios	GIS, Scenario Design	Neighborhood to neighborhood connections

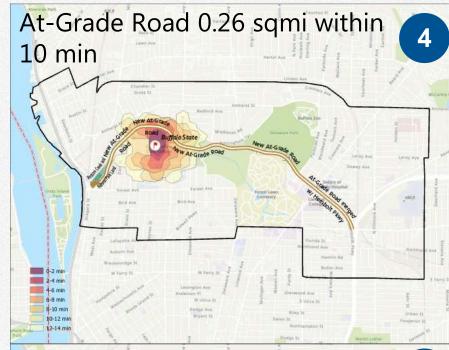
Access #1: Assessment of connection to Region Central destinations, by mode: Destination Reference

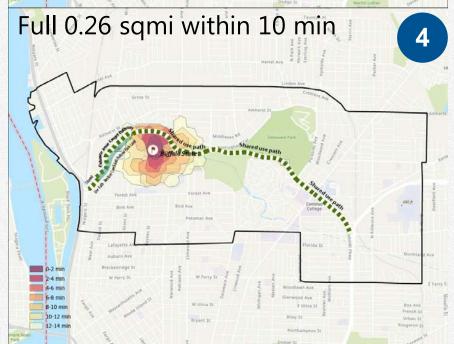


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Central destinations: Buffalo State: Walk

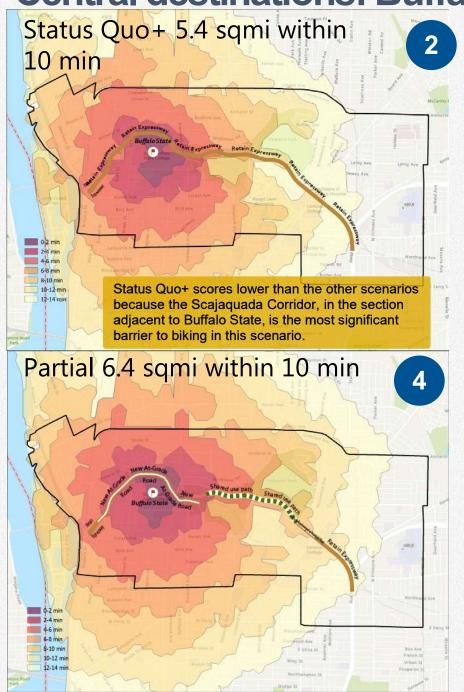


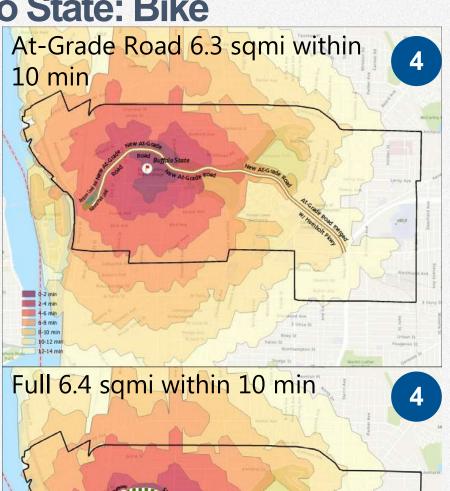


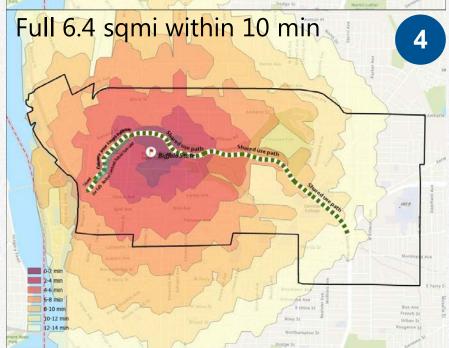


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Central destinations: Buffalo State: Bike

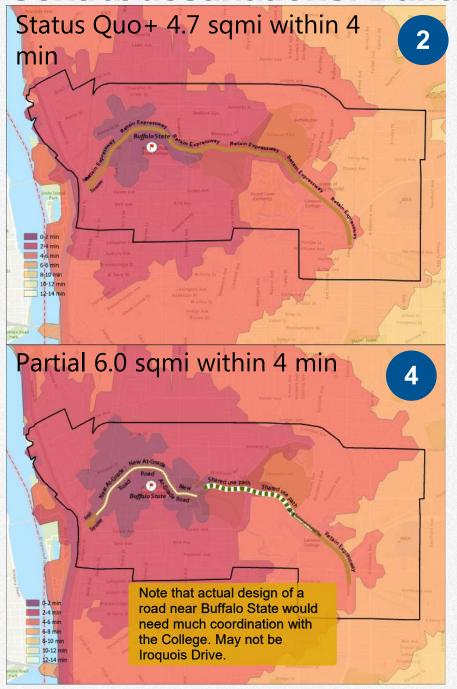


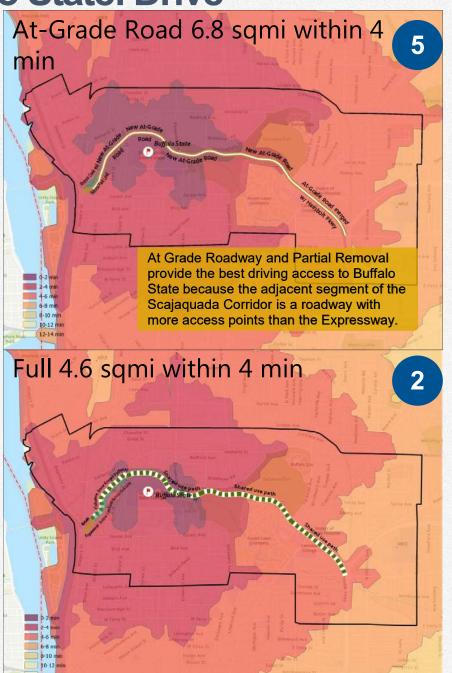




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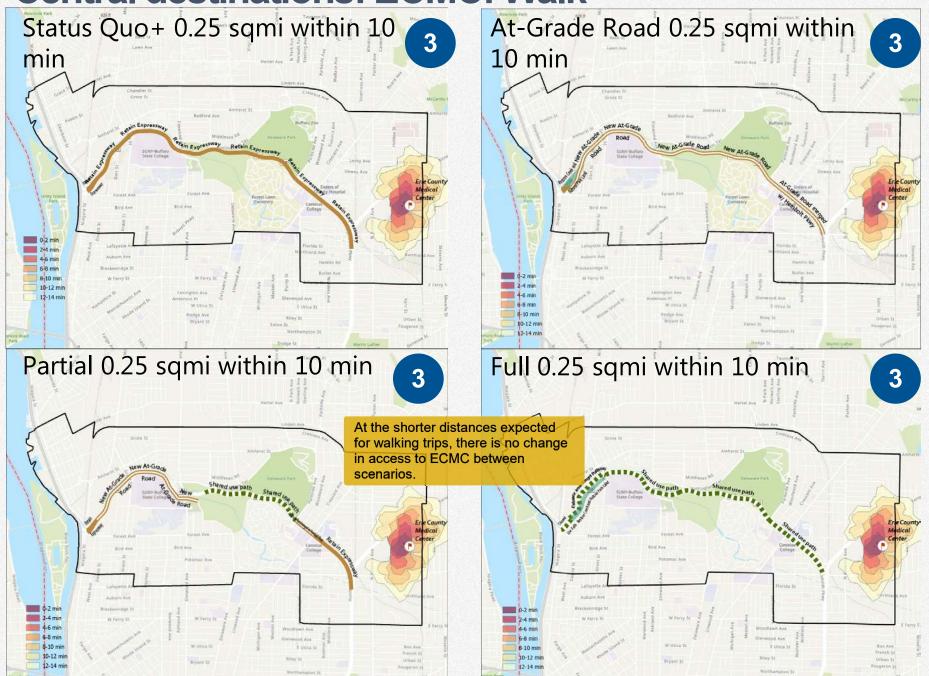
Central destinations: Buffalo State: Drive





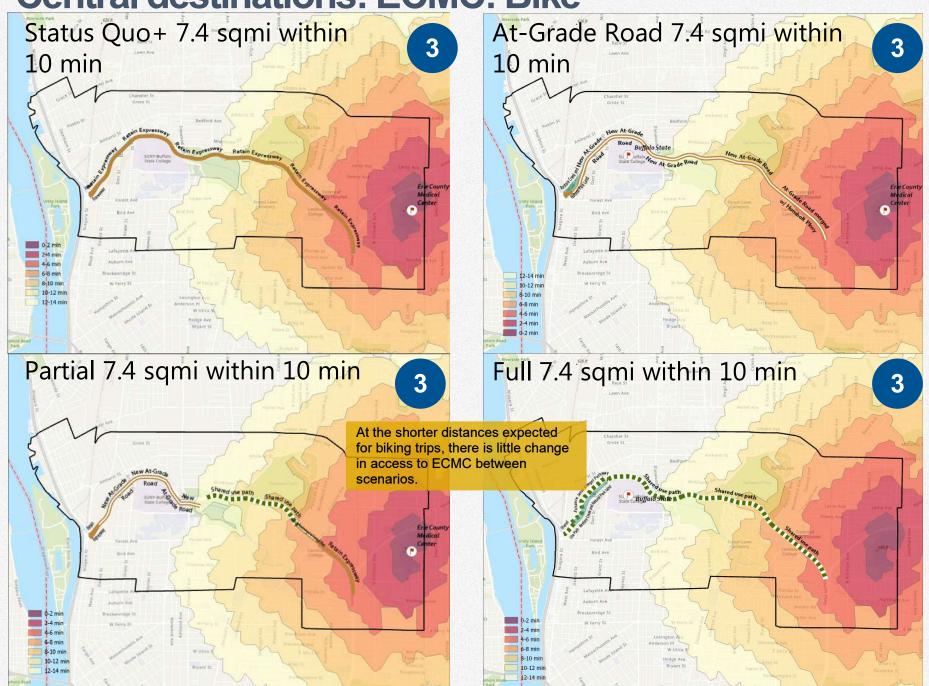


Central destinations: ECMC: Walk



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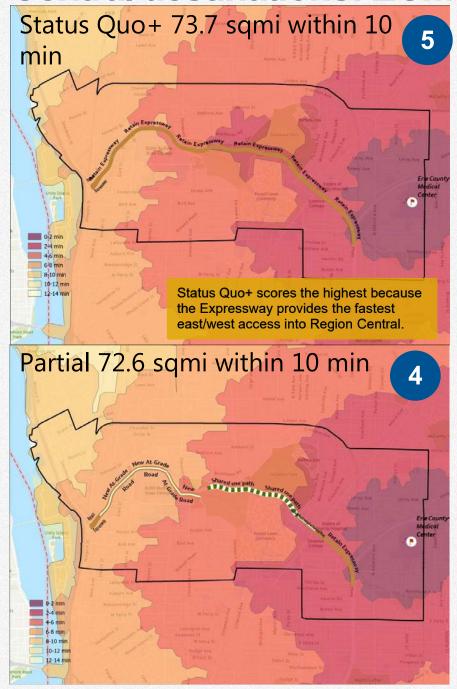
Central destinations: ECMC: Bike

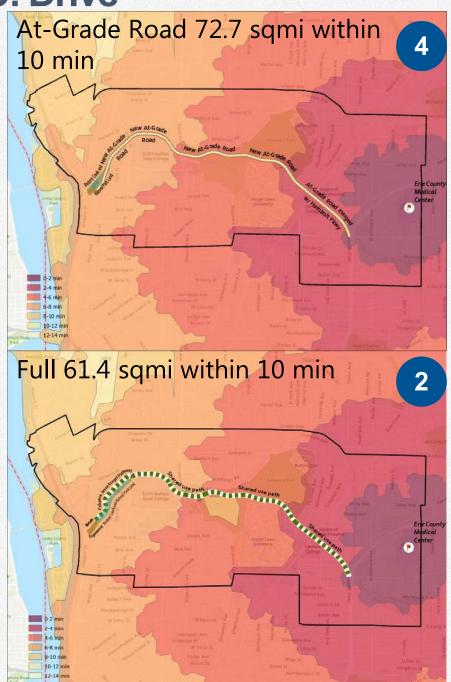






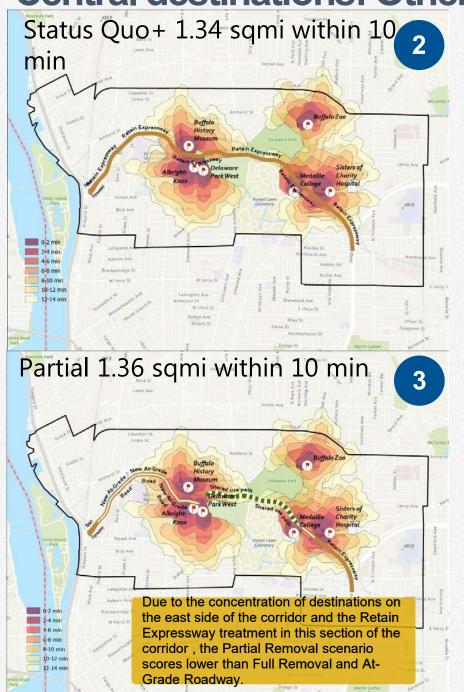
Central destinations: ECMC: Drive

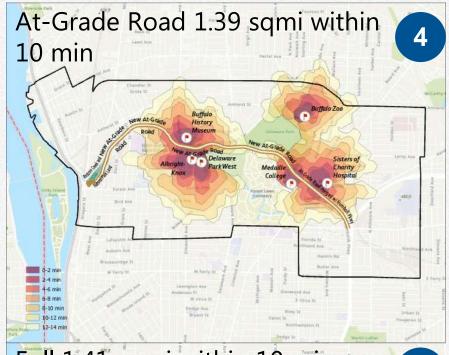


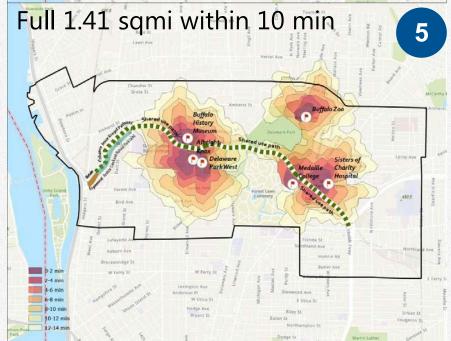


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Central destinations: Others: Walk

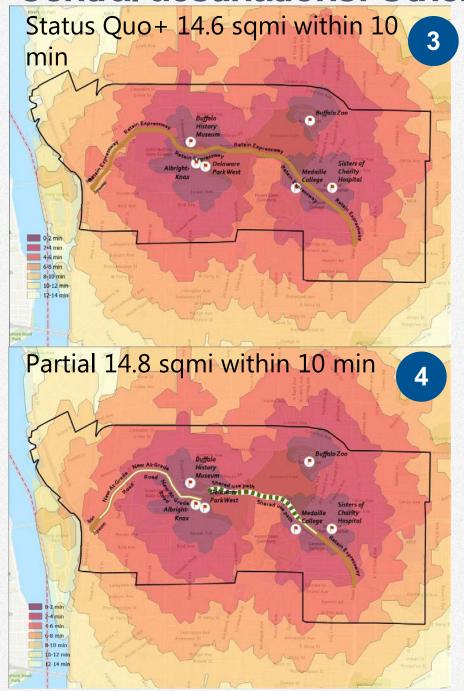


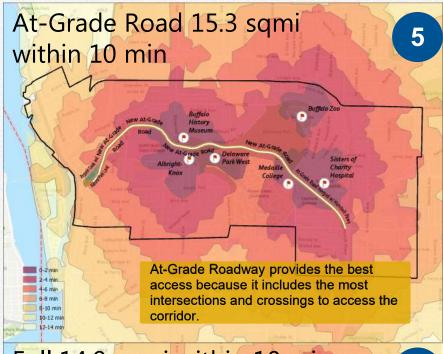


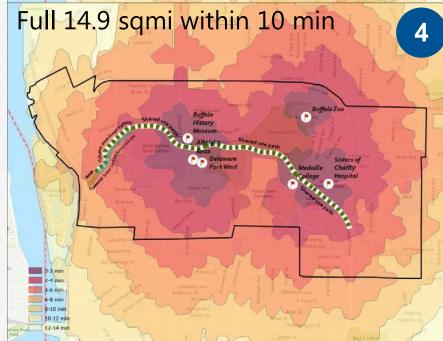


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Central destinations: Others: Bike

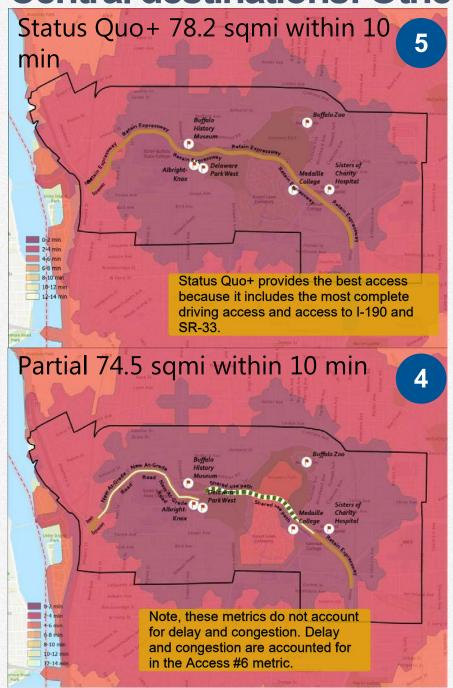


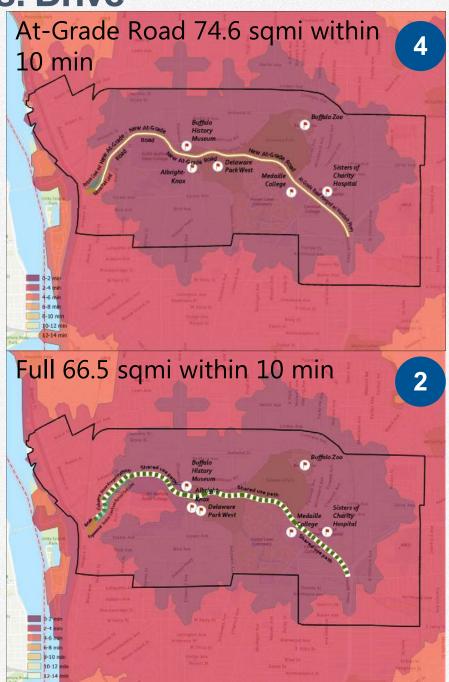






Central destinations: Others: Drive

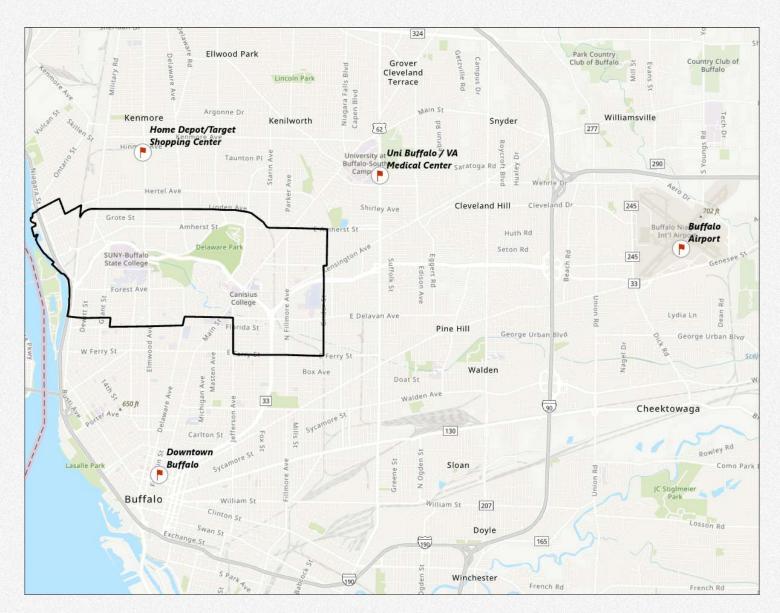




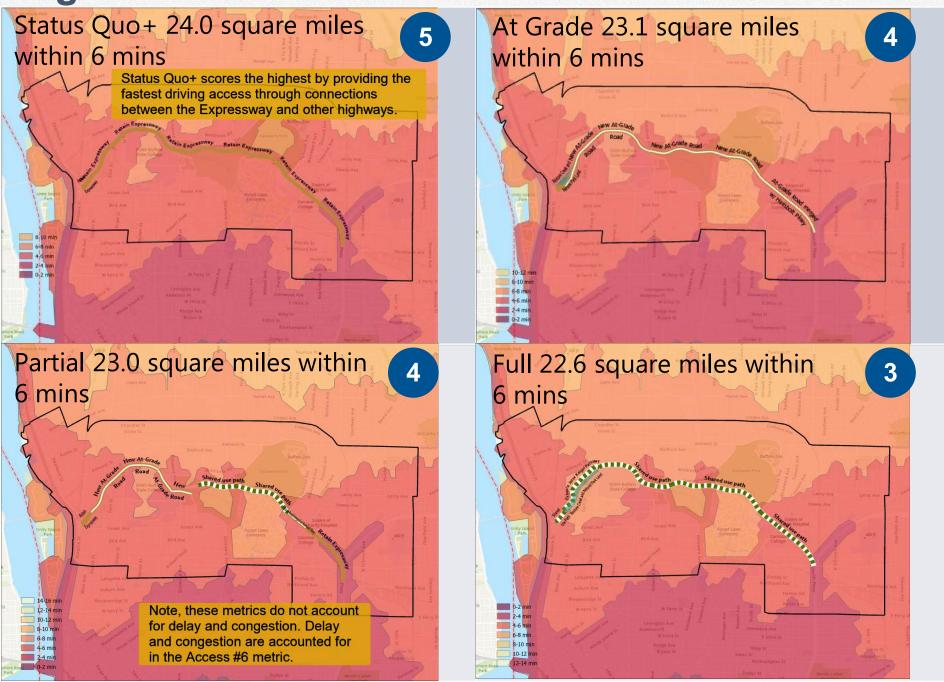
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Access #2: Assessment of connection to key

Regional destinations: Destination Reference



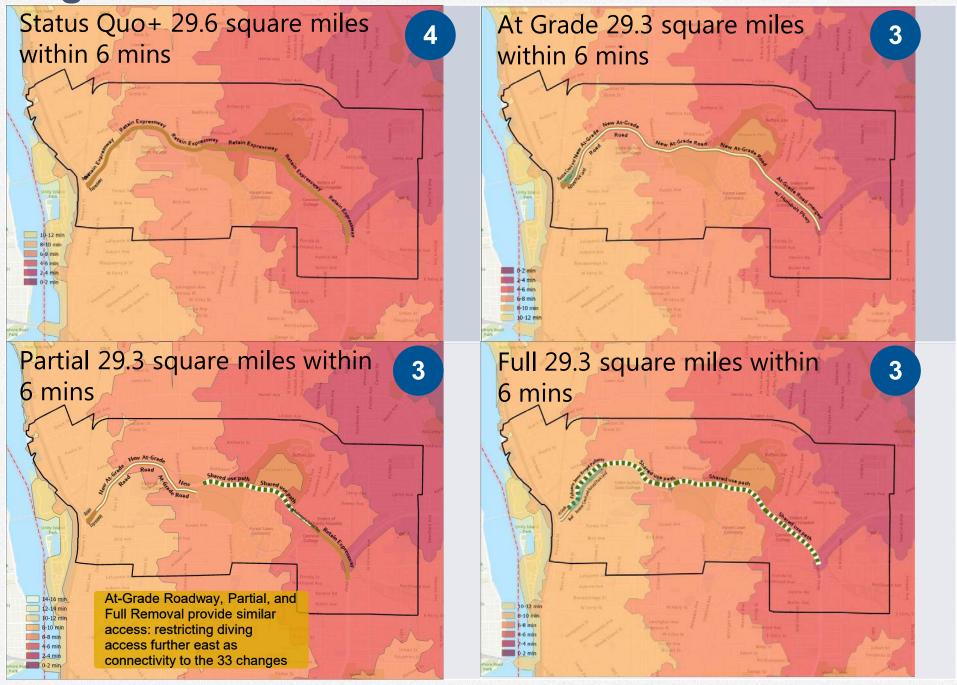
Regional destinations: Downtown Buffalo



Access #2: Assessment of connection to key

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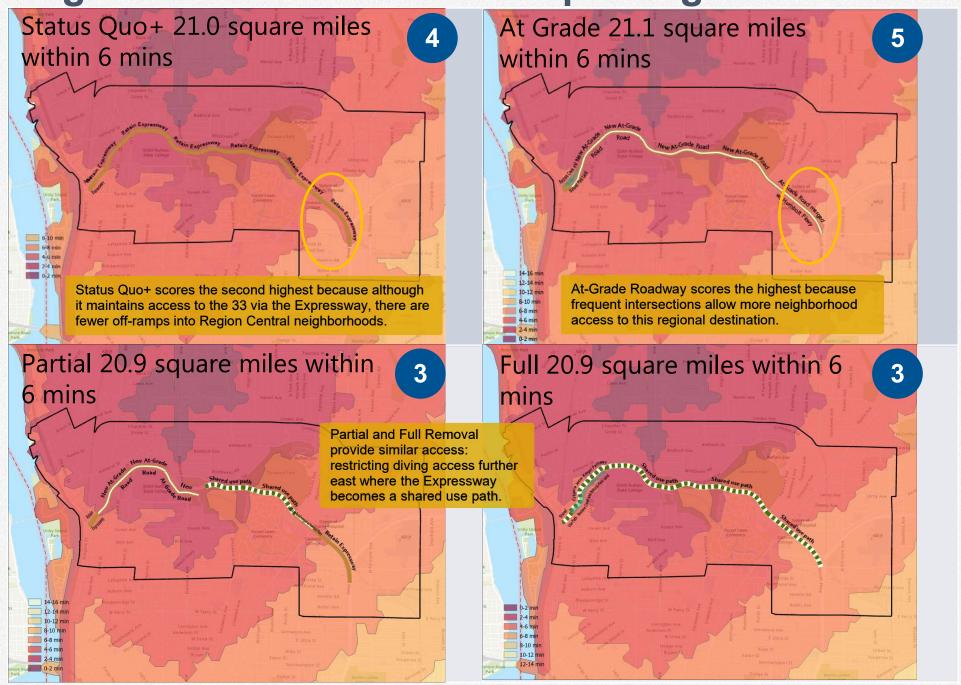
Regional destinations: Uni Buffalo/VA Medical



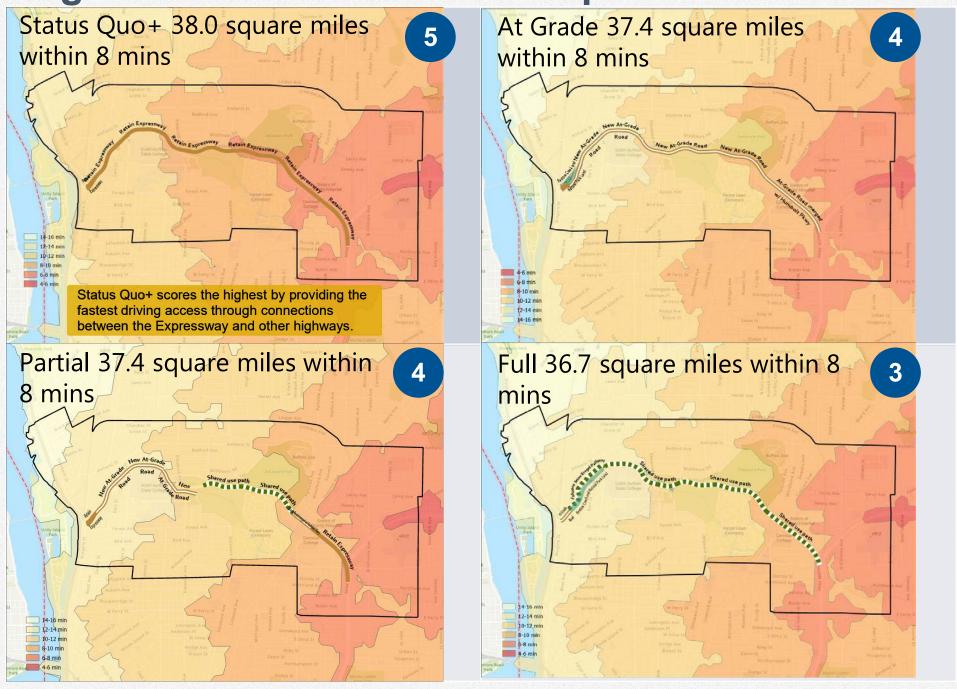
Access #2: Assessment of connection to key

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Regional destinations: Home Depot/Target

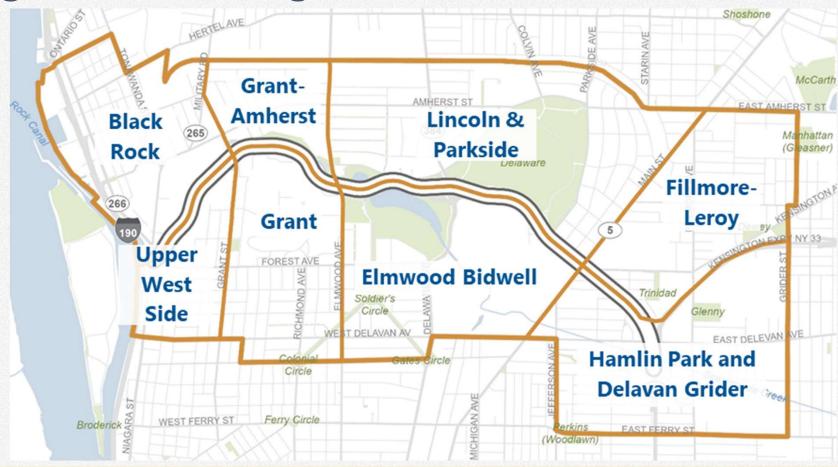


Regional destinations: Buffalo Airport



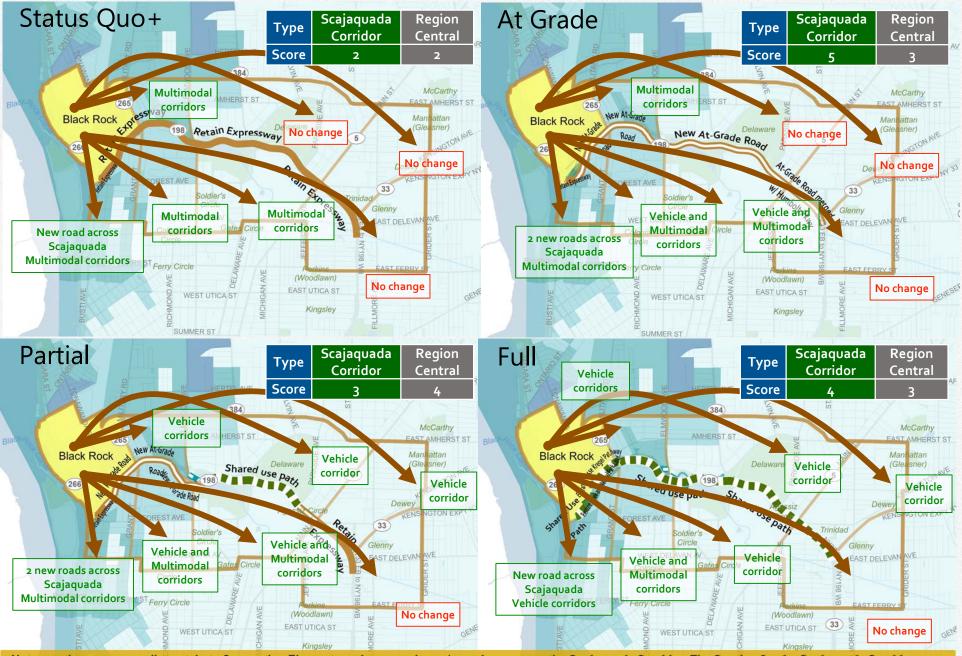
Access #3: Connectivity Between

Neighborhoods: Neighborhoods Reference

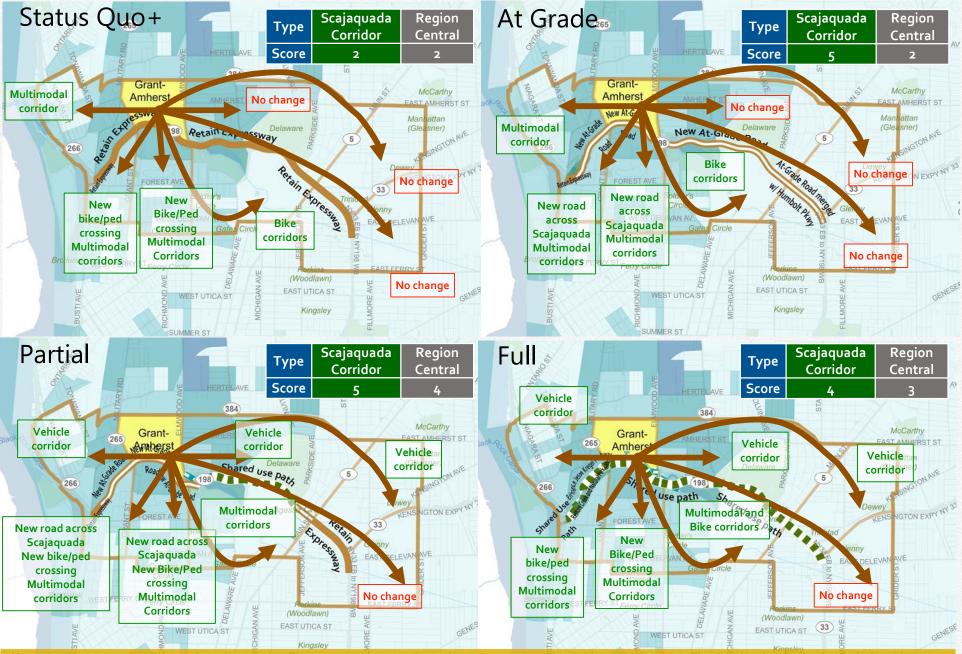


- Scores for the Scajaquada corridor are based on the treatment of the corridor adjacent to the selected neighborhood. Adjacent highway scores 2, adjacent at-grade roadway scores 5, and adjacent shared use path scores 4.
- Scores for Region Central are based on the notes on the graphic which generally pertain to Supporting Elements and new roadways/crossings across the Scajaquada Corridor.

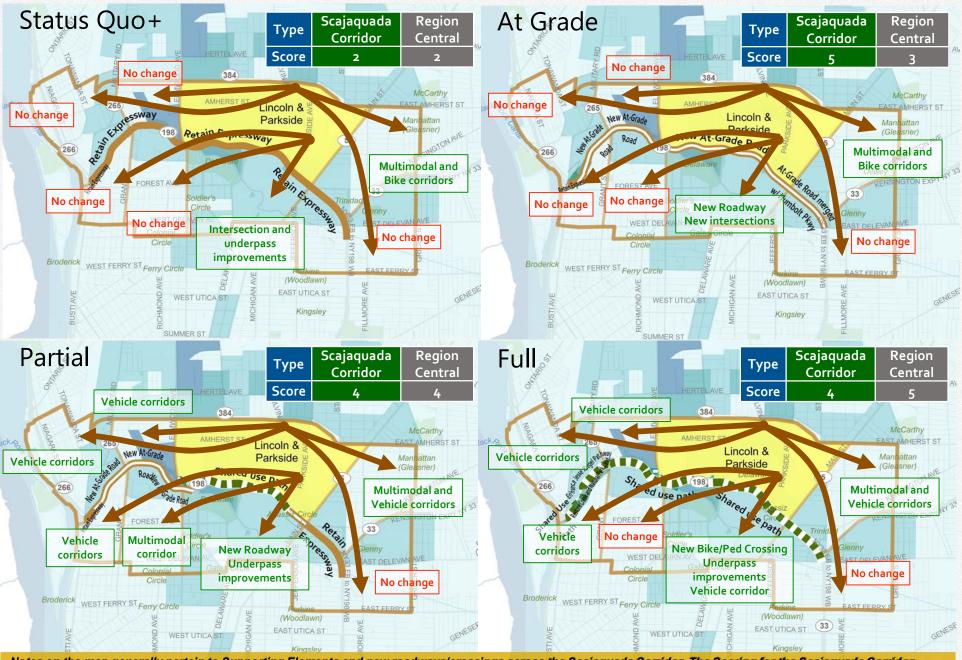
Black Rock



Grant-Amherst

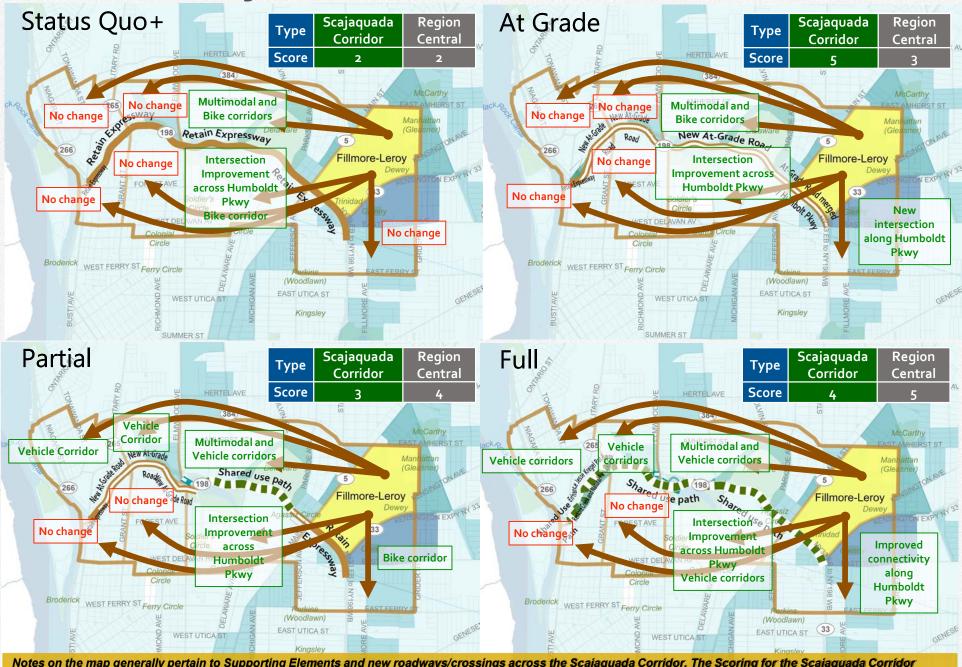


Lincoln & Parkside

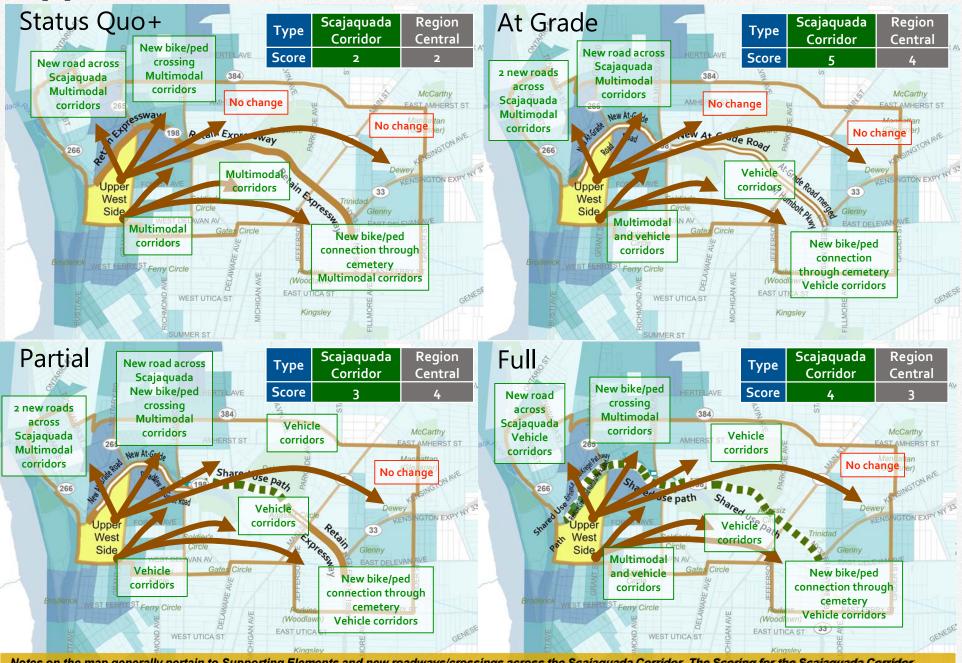


Fillmore-Leroy

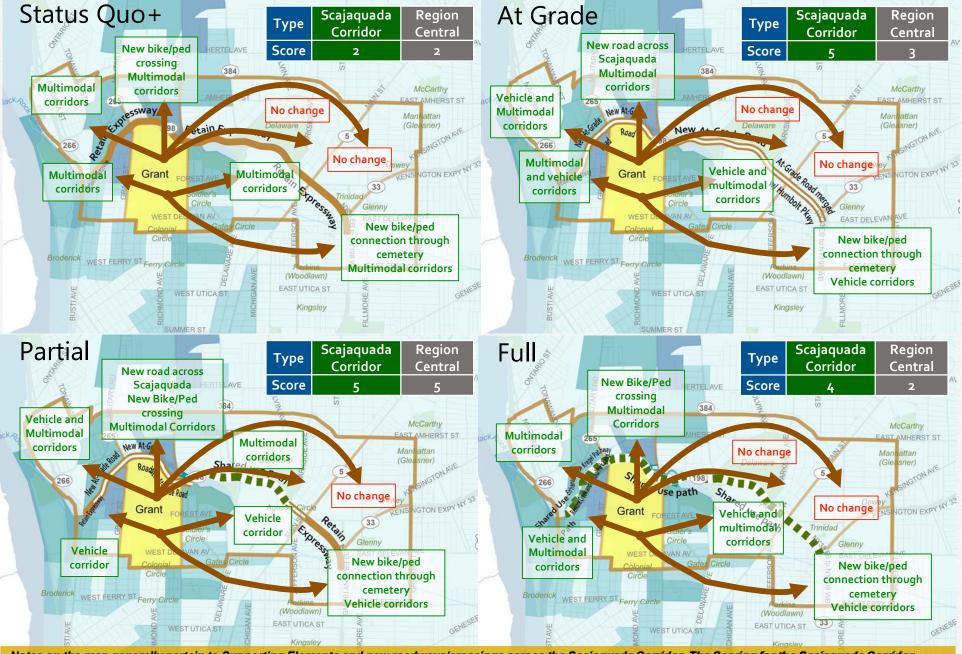
captures connectivity on the Scalaguada Corridor itself.



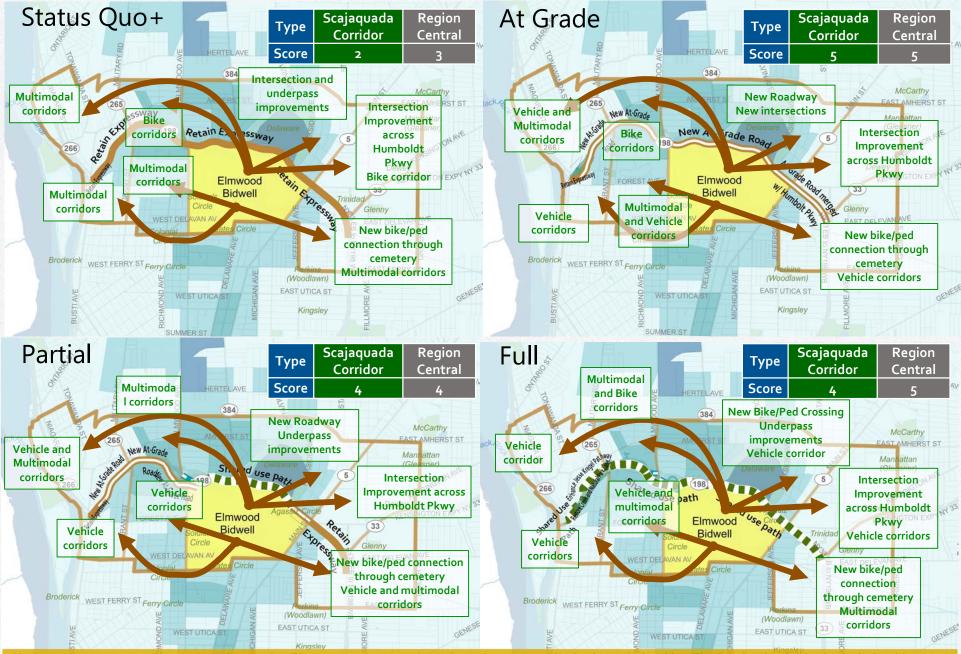
Upper West Side



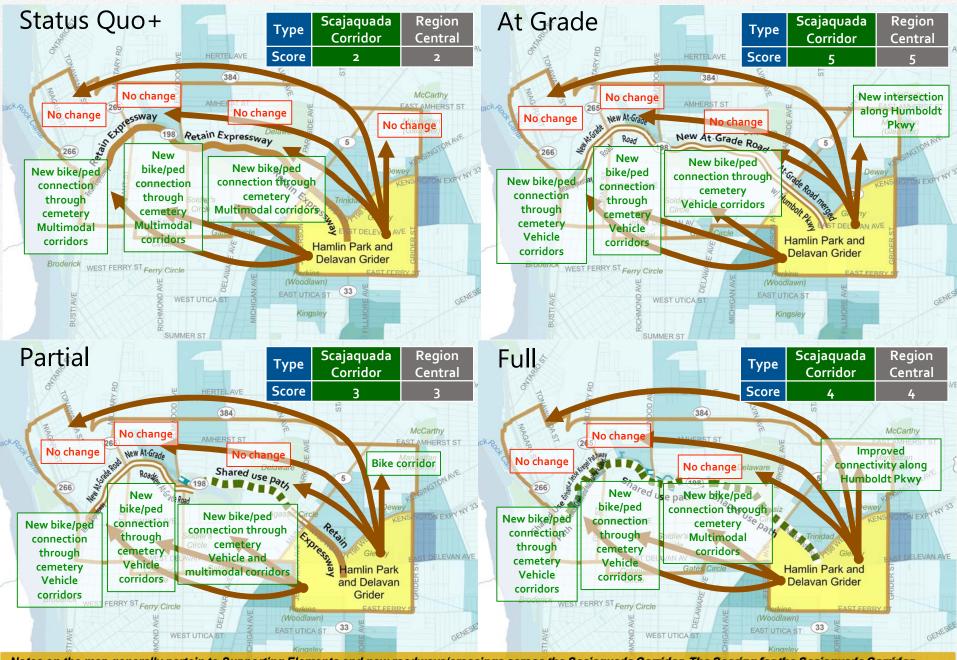
Grant



Elmwood Bidwell



Hamlin Park and Delavan Grider



Work in Progress

Access: The Ability to Get Places

Metric	How Measured (initial ideas)	Source	Model Output Notes	Modeling next steps
4) Travel time , by mode	Pick several connection pairs (north/south and east/west): from previous Streetlight analysis and do travel time analysis (possibly by mode)	Regional Model, Scenario Design	 Pick key OD pairs? Report already provides Downtown to Airport, but the pattern looks reversed? Other key ODs? TT and delay along selected corridors - % change 	 Focus on link-based analysis What modes? – Drive and transit Location selection – input from Dena
5) Changes in vehicle travel patterns	 Identify streets with increased vehicular traffic based on the model Assess impact on streets using a scale based on V/C (apply a 1-5 scale, e.g., -10%, -5%, 0%, 5%, 10%) 	Regional Model, Scenario Design	 Would difference plots be enough to interpret something qualitative here? How aggregate change numbers for many roadways? 	 Updated difference plots Build from Stress Test Would be good to see both % change in volumes & actual change in volumes from model
6) Changes in congestion / delay on Scajaquada Corridor and key corridors	 Use the same/similar measurement scale as Access Metric 5 	Regional Model, Scenario Design	Overall delayCan we get more location specific?	 RC stats for hours of delay
7) Changes in regional mode share	Use provided model output reports	Regional Model, Scenario Design	 ✓ Mode shares (daily, peak, off-peak) ✓ Micromobility modeshare too! 	RC stats for mode share

Note – Emissions outputs for Dena's metrics

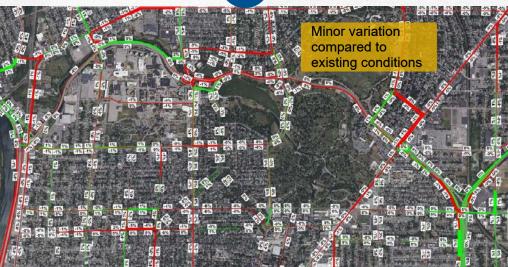
Access #4: Travel Time

Scenario	Scajaquada Corridor: Highway Travel Time: Downton (TAZ=25) to Airport (TAZ=976)	Scajaquada Corridor: Score	Notes
Status Quo+	14.77	2	Same as existing condition
At-Grade Roadway	14.73	3	
Partial Removal	14.71	3	
Full Removal	14.58	4	Less trips on 33 near region central improves travel time

Representative origin and destination pair already programmed in into the GBNRTC model output report.

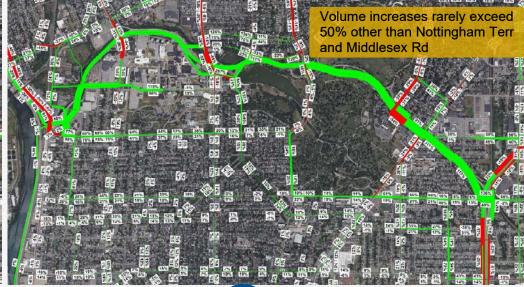
Access #5: Travel Patters

Status Quo+ 4



At-Grade Road





Partial Removal 2



Full Removal





Scenario	Scajaquada Corridor: Hours of Delay	Scajaquada Corridor: Score	Notes
Status Quo+	195,290	5	Full access to 190 and 33 from Scajaquada Expwy
At-Grade Roadway	197,048	3	Access to 190 No access to 33
Partial Removal	196,172	4	Full access to 190 and 33 from Scajaquada
Full Removal	197,490	2	No access to either 190 or 33

The total hours of delay (auto and truck combined) throughout the region is lowest in the Status Quo+ and Partial Removal scenarios likely because the ramps that connect that connect the Expressway to the 190 and 33 remain.



Scenario	Region Central: Drive Mode Share (peak)	Region Central: Score	Notes
Status Quo+	84.1%	3	
At-Grade Roadway	84.0%	3	
Partial Removal	84.0%	3	
Full Removal	83.8%	4	Most aggressive transit service interventions
Full Removal		Carried III	
Partial Removal			
At-Grade Blvd			
Status Quo+			
Base Existing			
0 10 ■ Drive	20 30 40 Alone Shared 2 person Shared 3+ person	50 60 n ∎Walk ∎Bike ∎EM ∎Tra	70 80 90 100 nsit ■ School Bus

Modes shares for the entire regional model are similar across all four scenarios.

Choice: Having Effective Options for Travel

Scenario	Scajaquada Corridor	Region Central	Total
Status Quo+	16	23	39
At-Grade	33	28	61
Partial Removal	24	37	61
Full Removal	31	37	68

Includes projects on the Scajaquada
Corridor and immediate vicinity
(crossings, intersections, and ramps)

Includes <u>Supporting</u>
<u>Elements projects</u>
throughout region
Central

- At-Grade scores highest for choice metrics, looking at the Scajaquada Corridor exclusively
- At-Grade does not have the highest score for each individual metric, but provides the best balance across modes and most choice
- Status Quo+ has the highest score for driving metrics

Choice: Having Effective Options for Travel: *Scajaquada Corridor only*

Scenario	Priori		Modal ridors	aro	ice #2: und M ity Co		Choice #3: Regional			of next-gen	_	Total
	Walk	Bike	Drive	Walk	Bike	Drive						do
Status Quo+	0	0	5	0	0	5	NA	2	2	1	1	16
At- Grade	5	4	2	4	4	0	NA	5	5	2	2	33
Partial Removal	3	3	1	2	2	0	NA	3	4	3	3	24
Full Removal	5	5	0	5	5	0	NA	0	4	4	3	31

- Supporting Elements are designed to increase as more of the Expressway was removed, therefore Partial and Full Removal score higher
- At-Grade scores in the middle
- Status Quo+ scores high on multimodal metrics and low on driving, because driving is focused in the corridor

Choice: Having Effective Options for Travel: *Region Central* (Supporting Elements)

S		Priori		Modal ridors	aro	ice #2: und M ity Co		Choice #3: Regional	Choice #4: Transit coverage	Choice #5: Average	Choice #6: Availability of next-gen	Choice #7: Readiness of next-gen	Total
		Walk	Bike	Drive	Walk	Bike	Drive	Trails	and frequency	Block Size	mobility options	mobility ado ption	
	Status Quo+	5	3	0	5	3	0	2	0	NA	3	2	23
	At- Grade	3	2	3	3	4	2	2	3	NA	4	2	28
	Partial Removal	4	5	4	4	5	4	3	4	NA	2	2	37
F	Full Removal	3	4	5	4	5	5	3	5	NA	1	2	37

Choice: Having Effective Options for Travel

Metric	How Measured	Source	Comments
1) Miles of pedestrian, bike, and vehicle corridors in Region Central	Additive analysis of facilities mileage	GIS based	
2) Overall coverage of transportation facilities by mode	0.25 mi buffer around mileage from #1 (for each mode), as % of Region Central	GIS based	Input into programming supporting elements
3) Miles of the regional trail system	Additive analysis of multimodal and bike facilities that contribute to trails network	GIS based	
4) Assumed transit coverage and frequency	Assessment of transit proposal	Scenario Design	Input into programming supporting elements

* Choice #1: Miles of new/improved pedestrian connections

Scenario	Scajaquada Corridor: miles	Scajaquada Corridor: Score	Region Central: miles	Region Central: Score	Notes
Status Quo+	0 mi	0	18.35 mi	5	
At-Grade Roadway	3.40 mi	5	11.44 mi	3	Entire at-grade roadway includes sidewalk
Partial Removal	2.72 mi	3	13.64 mi	4	All at-grade roadway segments include sidewalk
Full Removal	3.52 mi	5	12.90 mi	3	Entire Expressway becomes shared use path

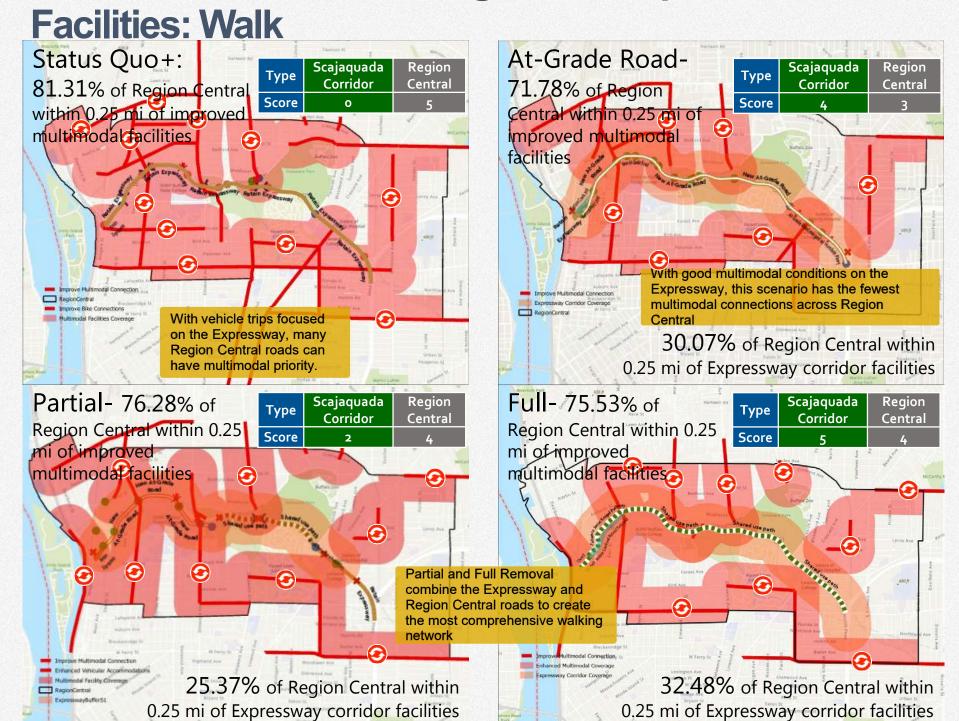
Status Quo+ includes the most pedestrian enhanced corridors in Region Central (Supporting Elements) by limiting vehicle enhancements to the Scajaquada Corridor itself.

* Choice #2: Overall Coverage of Transportation

Facilities: Walk

Scenario	Scajaquada Corridor: % of RC within 0.25 mi of multimodal facilities	Scajaquada Corridor: Score	Region Central: % of RC within 0.25 mi of multimodal facilities	Region Central: Score
Status Quo+	0%	0	81.31%	5
At-Grade Roadway	30.07%	4	71.78%	3
Partial Removal	25.37%	2	76.28%	4
Full Removal	32.48%	5	75.53%	4

With walking facilities on the Scajaquada Corridor and improvements to walking throughout Region Central, Full Removal scores highest on the corridor and highest overall.



Choice #1: Miles of new/improved bike

connections

Scenario	Scajaquad a Corridor: miles	Scajaquad a Corridor: Score	Region Central: miles	Region Central: Score	Notes
Status Quo+	0 mi	0	1.96 mi	3	
At-Grade Roadway	3.40 mi	4	1.56 mi	2	Entire at-grade roadway includes bike path
Partial Removal	2.72 mi	3	3.37 mi	5	All at-grade roadway segments include bike path
Full Removal	3.52 mi	5	2.78 mi	4	Entire Expressway becomes shared use path

With biking facilities on the Scajaquada Corridor and improvements to biking throughout Region Central, Full Removal scores highest on the corridor and highest overall.

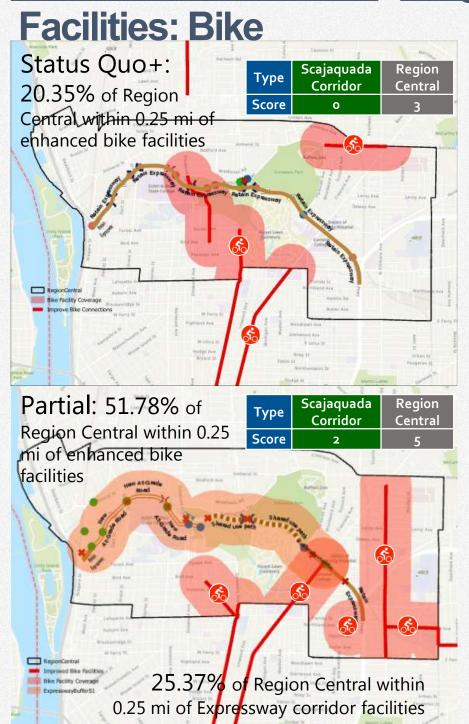
6. Choice #2: Overall Coverage of Transportation

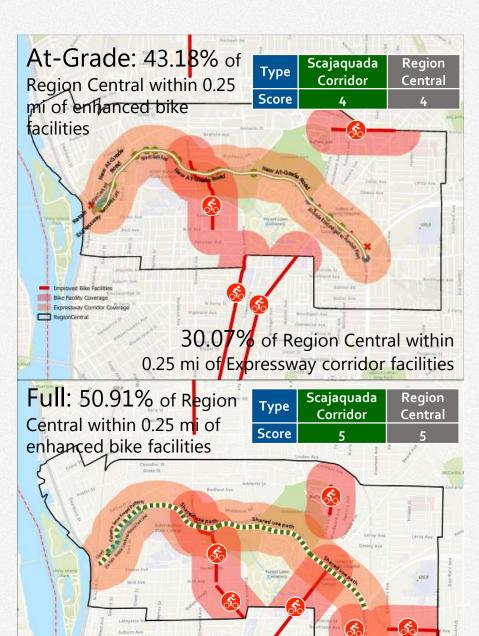
Facilities: Bike

Scenario	Scajaquada Corridor: % of RC within 0.25 mi of bike facilities	Scajaquada Corridor: Score	Region Central: % of RC within 0.25 mi of bike facilities	Region Central: Score
Status Quo+	0%	0	20.35%	3
At-Grade Roadway	30.07%	4	43.18%	4
Partial Removal	25.37%	2	51.78%	5
Full Removal	32.48%	5	50.91%	5

While Status Quo+ includes many multimodal (pedestrian prioritized) facilities, it trails the other scenarios in bike facilities.

6. Choice #2: Overall Coverage of Transportation





32.48% of Region Central within

0.25 mi of Expressway corridor facilities





Scenario	Scajaquada Corridor: Miles	Scajaquada Corridor: Score	Region Central: miles	Region Central: Score
Status Quo+	3.78 mi	5	0 mi	0
At-Grade Roadway	0 mi	2	3.93 mi	3
Partial Removal	0 mi	1	6.83 mi	4
Full Removal	0 mi	0	8.15 mi	5

At-Grade Roadway and Partial Removal are given low scores on the Scajaguada Corridor because, while vehicle trips would not be prioritized, they would be permitted on certain segments.

Full removal includes the most vehicle enhanced corridors by prioritizing vehicles on several alternative routes, without the Expressway.



Choice #2: Overall Coverage of Transportation

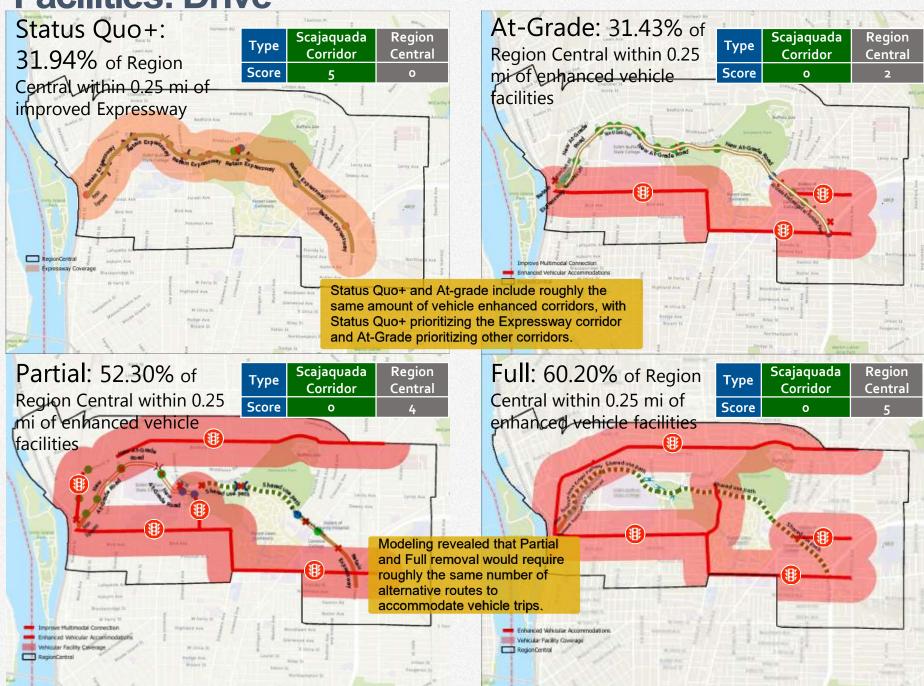
Facilities: Drive

Scenario	Scajaquada Corridor: % of RC within 0.25 mi of vehicle enhanced facilities	Scajaquada Corridor: Score	Region Central: % of RC within 0.25 mi of vehicle enhanced facilities	Region Central: Score
Status Quo+	31.94%	5	0%	0
At-Grade Roadway	0%	0	31.43%	2
Partial Removal	0%	0	52.30%	4
Full Removal	0%	0	60.20%	5

Full Removal and Partial Removal provide similar access to vehicle enhanced corridors by providing multiple parallel alternatives to the Scajaquada Corridor.

Choice #2: Overall Coverage of Transportation





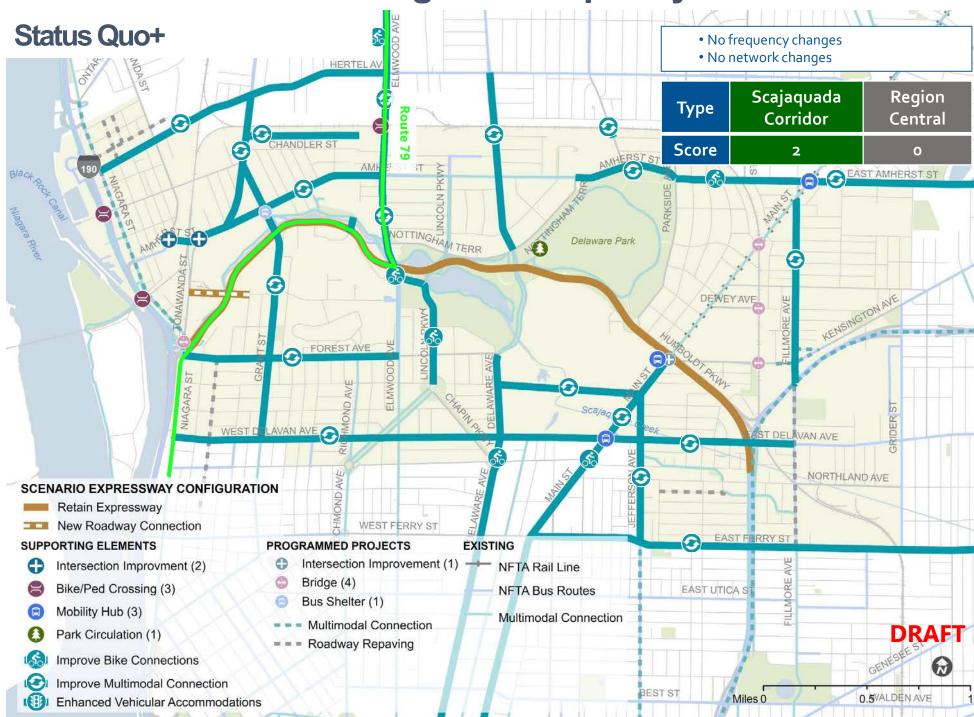
Choice #3: Miles of regional trail system

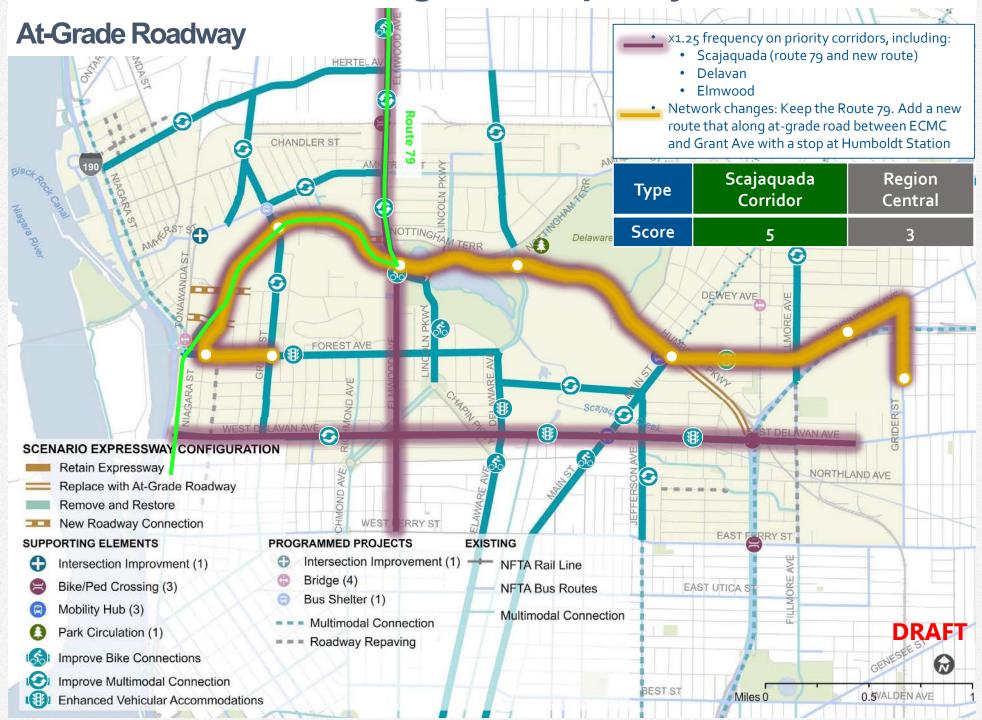
Scenario	Region Central: Miles of regional trail system upgraded	Notes: Included Corridors	Score
Status Quo+	0.50 mi	NY 517 (Main St)	2
At-Grade Roadway	0.50 mi	NY 517 (Main St)	2
Partial Removal	1.28 mi	NY 517 (Main St), New York State Erie Canal Trail	3
Full Removal	1.28 mi	NY 517 (Main St), New York State Erie Canal Trail	3

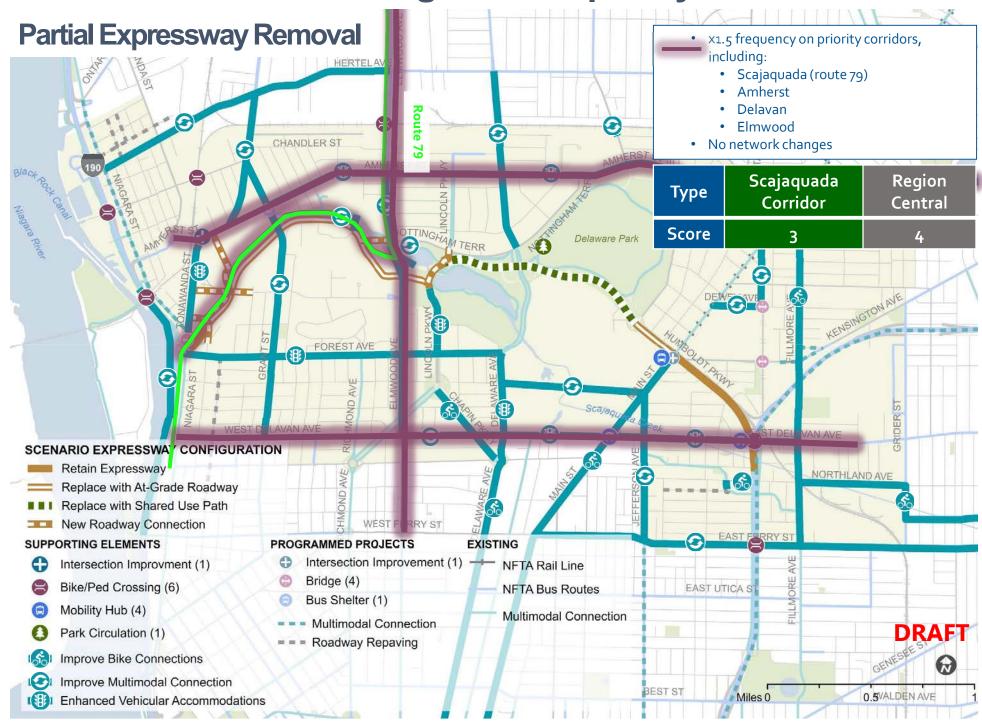
Includes mileage on multimodal or bike designated corridors that tie into the regional trail system.

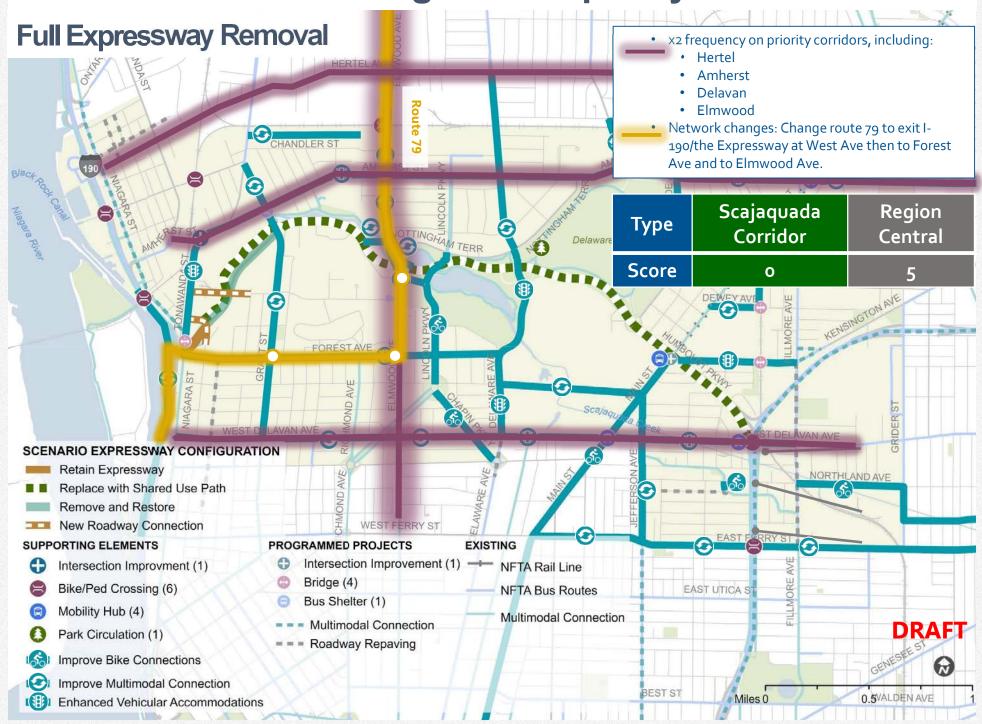
All scenarios include multimodal facilities on Main Street that support NYS Bike Route 517.

Additionally, Partial and Full Removal include bike facilities along the Niagara River that support the New York State Erie Canal Trail.









Choice: Having Effective Options for Travel

Metric	How Measured	Source	Comments
5) Average block size	GIS measurement of average block size: should emphasize area around the Scajaquada Corridor	GIS based analysis	Primary network changes from existing will be between Niagara St and Grant St Other changes result from downgrading Expressway to at-grade road
6) Availability of near-term next generation mobility options	Create 1-5 scale of scenario's ability to accommodate nearterm new mobility services	Market assessment of current timeline for emerging technologies	How do we want to define near-term? 1-2 years, 5 years, 10 years?
7) Readiness assessments and investments for next generation mobility	Create 1-5 scale of scenario's ability to accommodate next generation mobility.	Identification of solutions that can be applied to each scenario.	We would like to do an "adoption" assessment for each scenario.

Choice #5: Average Block Size

Scenario	Average Block Size (Sq Ft)	Score
Status Quo+	276,050	2
At-Grade Roadway	259,740	5
Partial Removal	266,020	4
Full Removal	265,630	4

Blocks are defined by roadways and bike/ped only shared use paths. Block definitions exclude limited access highways.

By providing the most new roadway connections, At-Grade Roadway creates the smallest average block size.

Status Quo+ does not reduce the block size because the Expressway remains a significant barrier.

Choice #6: Availability of next-gen mobility options DRAFT

Next-gen mobility refers to emerging transportation technologies that are changing the way we travel. Near term, it is micromobility options such as electric scooter sharing, transportation electrification, and mobility as a service. Medium term, we'll start to see automated vehicles operating in defined zones, initially focused on commercial goods delivery or rideshare. Long term, there may be personal vehicles that are autonomous, although that is unlikely within the next decade.

Scenario	Scajaquada Corridor: Infrastructure Supports Next-Gen Mobility (1-5)	Region Central: Infrastructure Supports Next-Gen Mobility (1-5)	Notes
Status Quo+	1	3	Corridor has no additional space for new modes; supporting elements improve micromobility & complete streets infrastructure
At-Grade Roadway	2	4	Corridor has some additional space for new modes; supporting elements prioritize complete streets and more connections across the corridor
Partial Removal	3	2	Partial corridor removal provides space for new modes; supporting elements prioritize vehicular movement over new forms of mobility
Full Removal	4	2	Full corridor removal provides space for new modes; supporting elements prioritize vehicular movement over new forms of mobility

Score Definitions

- 1. No supportive infrastructure, no impacts to incentivize user adoption
- 2. Some supportive infrastructure, limited support of new modes
- 3. Policies / Designs under consideration to incentivize adoption of next gen modes, alignment with grant / budget priorities, infrastructure supports new use cases
- 4. Some prioritization / resource allocation of infrastructure for next-gen modes
- 5. Full buildout of infrastructure to support next-gen mobility, impacts incentivize shifts away from personally owned SOVs

Choice #7: Readiness and likelihood of adoption from investments in next-gen mobility

Scenario	Scajaquada Corridor: Investment in next-gen mobility	Region Central: Investment in next-gen mobility	Notes
Status Quo+	1	2	This option works best for personal AVs, which are unlikely in near- to medium-term.
At-Grade Roadway	2	2	Impacts from this scenario would support only limited next-gen investment.
Partial Removal	3	2	Dependent on policy choices. What is allowed in the park along shared use pathway? Reduced vehicular space could lead to new mobility solutions.
Full Removal	3	2	Dependent on policy choices. What is allowed in the park along shared use pathway? Reduced vehicular space could lead to new mobility solutions.

Score Definitions

- 1. Technology will not be available, no user knowledge/acceptance. Scenario impacts do not support investment.
- 2. Tech available in limited pilots, user awareness growing. Scenario impacts support limited investment.
- 3. Tech available for limited commercial deployment (designated zones), growing segment of population interested in using services. Scenario impacts support moderate investment.
- 4. Successful limited commercial deployments with positive user feedback. Scenario impacts support high investment.
- 5. Technology scaled up, user adoption with commercial integration. Scenario impacts support high investment.

Modeling results of e-bikes and e-scooters aligned with the scenario scoring, with status quo plus having about 60% of the daily person trips on electric micromobility compared to the other three scenarios.

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Choice #7: Readiness and likelihood of adoption from investments in next-gen mobility

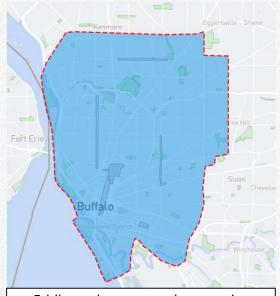
Modeling Details:

Inputs: fleet size and geography

	Status Quo +	At-Grade	Partial Removal	Full Removal
E-Bikeshare Fleet Size	250	500	500	500
E-Scooter Share Fleet Size	500	1,000	1,000	1,000

Outputs: Daily person trips

	Status Quo +	At-Grade	Partial Removal	Full Removal
E-Bikeshare Trips	1,129	2,165	2,169	2,180
E-Scooter Share Trips	3,031	4,445	4,459	4,504



E-bike and e-scooter share service areas align with current Reddy Bikeshare service area.

Character: Making Facilities Safe, Pleasant, and Accommodating

Scenario	Scajaquada Corridor	Region Central	Total
Status Quo+	21	30	51
At-Grade	51	29	80
Partial Removal	37	21	58
Full Removal	36	20	56

Includes projects on
the Scajaquada
Corridor and
immediate vicinity
(crossings,
intersections, and
ramps)

Includes <u>Supporting</u>
<u>Elements projects</u>,
throughout region
Central

- At-Grade scores highest for character metrics, looking at the Scajaquada Corridor exclusively
- At-Grade provides the best access to crossings for all modes, given the access to all modes and connectivity between the corridor and many cross streets.
- Partial and Full Removal provide the highest potential for crash reduction on the Expressway corridor itself.

Character: Making Facilities Safe, Pleasant, and Accommodating: Scajaquada Corridor only

Scenar	#1	Character #1: Crossings		Character #2: Crossing Proximity		Charact er #3:		Ch	aracter #	4: Street	Charact	er		Total
io		Bike/	\A/al			Crash Pattern	Transit	Green	Block	Ped	Bike	Transit	Drive	Total
Status Quo+	2	2	2	2	3	2	1	1	1	1	1	1	2	21
At- Grade	5	0	5	4	5	3	5	2	4	4	4	5	5	51
Partial Remo val	3	1	3	2	3	4	3	3	2	3	3	4	3	37
Full Remo val	2	2	3	2	1	5	1	5	3	5	5	1	1	36

- Metrics related to crossing the Scajaquada Corridor pertain primarily to the Scajaquada Corridor, therefore they are not scored for Region Central separately.
- Status Quo+ scores the highest for crash patterns and street character in Region Central because focusing vehicle traffic on the Scajaquada Corridor creates more opportunity for multimodal corridors in Region Central.

Character: Making Facilities Safe, Pleasant, and Accommodating – Region Central (Supporting Elements)

Scenar	Character #1: Crossings		Character #2: Crossing Proximity		Charact er #3:		Ch	aracter #	4: Street	Characte	er		Total	
io	All Mode	Bike/				Crash Pattern	Transit	Green	Block	Ped	Bike	Transit	Drive	1 o tai
Status Quo+	NA	NA	NA	NA	NA	4	3	4	4	5	4	4	2	30
At- Grade	NA	NA	NA	NA	NA	3	3	4	3	4	5	3	4	29
Partial Remo val	NA	NA	NA	NA	NA	1	4	3	2	2	2	4	3	21
Full Remo val	NA	NA	NA	NA	NA	1	4	3	1	1	4	4	2	20

Character: Making Facilities Safe, Pleasant, and Accommodating

Metric	How Measured	Source	Comments
1) Number of Scajaquada Corridor crossings	Count of crossings, by mode	GIS	
2) Proximity of neighborhoods to Scajaquada Corridor crossings	Access-sheds around crossings, by mode	GIS network analysis	
3) Estimated change in crash patterns	-Measure potential crash reduction per due to design -Measure potential new traffic patterns due to design -Assess impact on overall scenario using a numerical scale (e.g., 1-5)	- FHWA "ProvenSafetyCountermeasures"- NYSDOT "CrashReduction Factors"- Scenario Design	%increases/reductions in crashes due to different design treatments. Will require some judgement as most information for imp. to existing roadways & not new or removed roadways.
4) Assessments of street character (including sidewalk width, curbside use, pedestrian crossings, etc.)	Street character assessment (1-5 scale), based on NACTO best practices	NACTO guidelines	

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Crossings, by mode

Scenario	All Mode: Crossings	All Mode: Score	Bike/Ped Only: Crossings	Bike/Ped Only: Score	Total Score
Status Quo+	10	2	2	2	4
At-Grade Roadway	16	5	0	0	5
Partial Removal	11	3	1	1	4
Full Removal	10	2	2	2	3

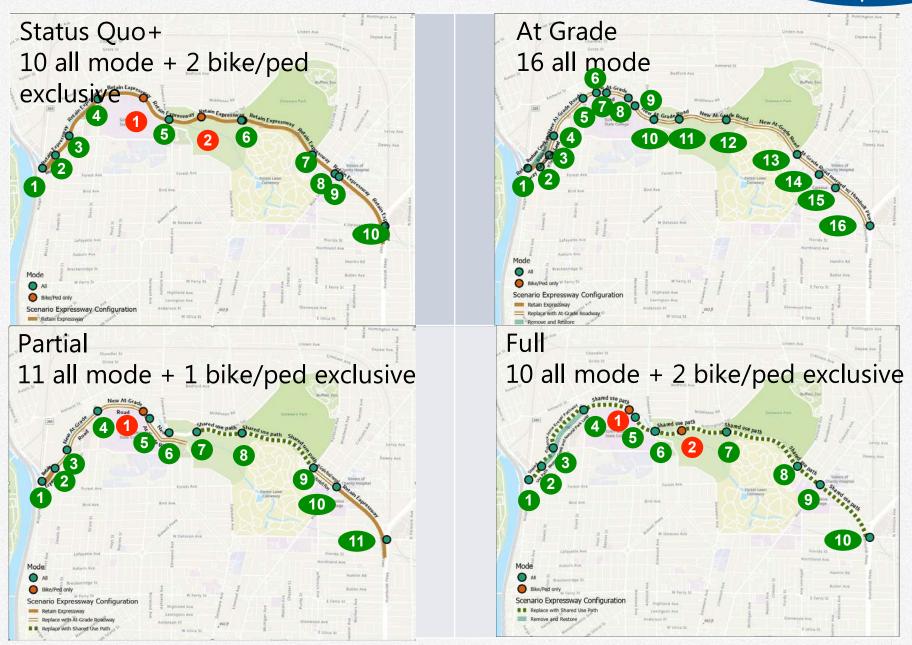
At-Grade Roadway provides the most crossings for people walking, biking and driving.

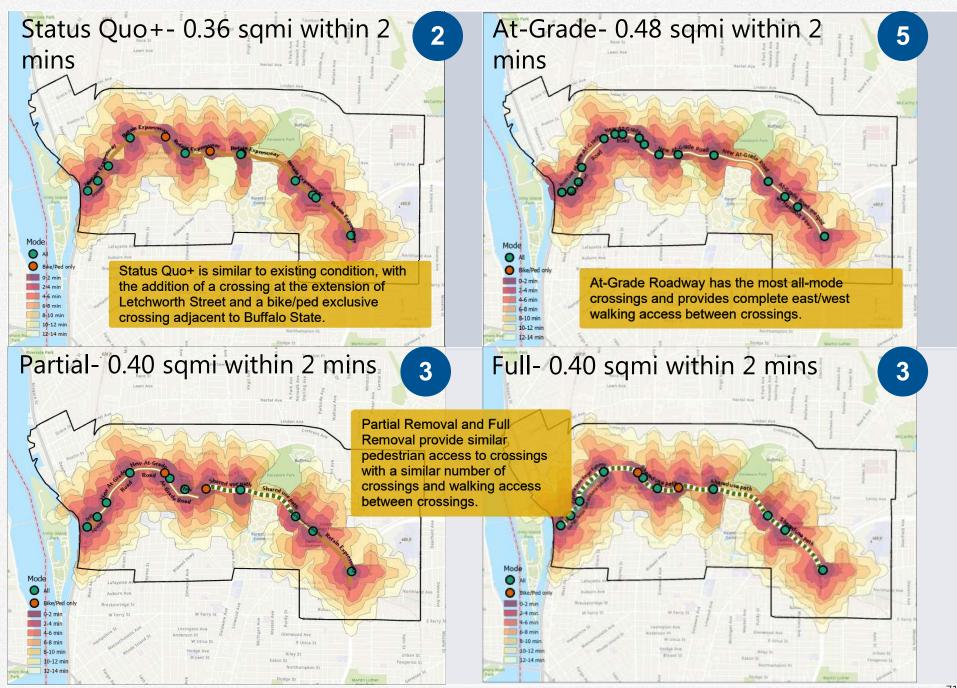
Character #1: Number of Scajaquada Corridor

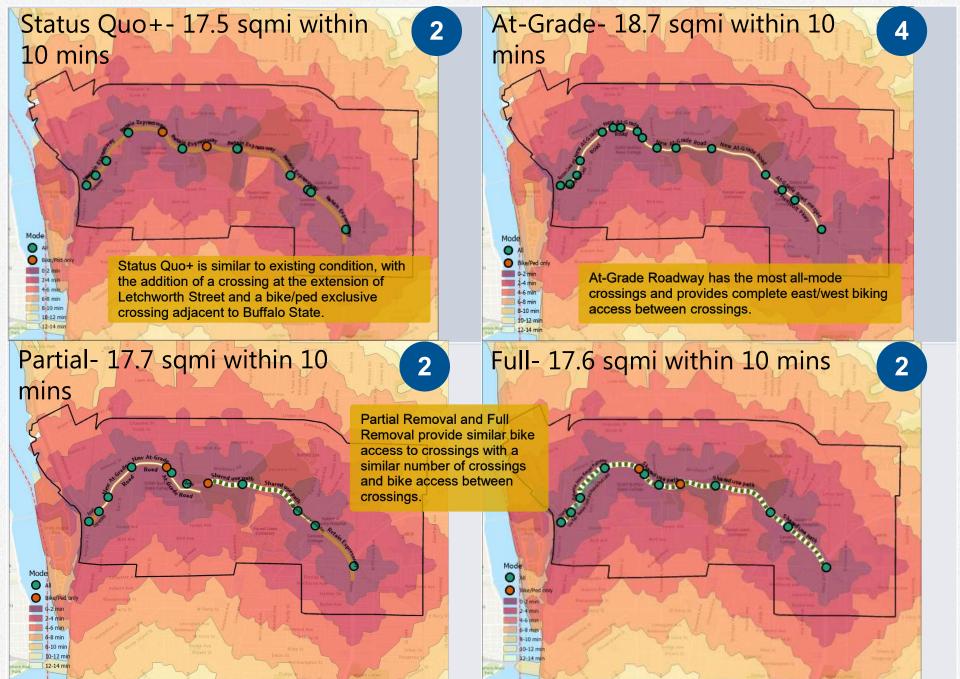
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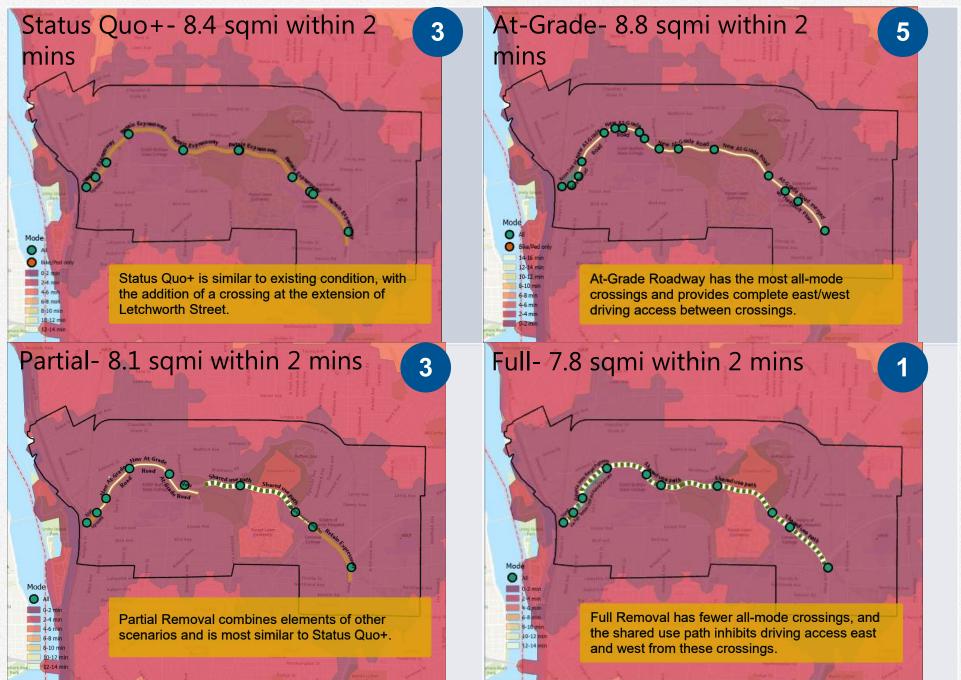
Crossings, by mode

Existing: 8 all modes 2 bike/ped only









Character #3: Change in crash patterns

Scenario	Scajaquada Corridor: Change in crash patterns (1-5)	Region Central: Change in crash patterns (1-5)	Notes
Status Quo+	2	4	SC - Primarily Low Tier Reduction Improvements with some Medium Tier Reduction Improvements. RC - Primarily Medium Tier Reduction Improvements, no new crash patterns, slight reduction in congestion.
At-Grade Roadway	3	3	SC - Medium & High Tier Reduction Improvements, new signals introduce new crash patterns, slight reduction in congestion. RC - Primarily Medium Tier Reduction Improvements, no new crash patterns, slight increase in congestion.
Partial Removal	4	1	SC - Medium & High Tier Reduction Improvements, new signals introduce new crash patterns, moderate reduction in congestion, partial removal eliminates a significant number of crashes from corridor. RC - Primarily Medium Tier Reduction Improvements, no new crash patterns, significant increase in congestion.
Full Removal	5	1	SC - Significant reduction in congestion, removal eliminates a significant number of crashes from corridor. RC - Primarily Medium Tier Reduction Improvements, no new crash patterns, significant increase in congestion.

General projected reduction in crashes based on improvement types, introduction of new crash patterns, & level of crash causing additional congestion.

Character #3: Change in crash patterns:

Methodology Notes

Improvement/ Degradation Type	Point Range	Notes
Increase in Crashes	-5 to -1	Includes: Introduce new crash patterns, add significant congestion to roadway Judgement based on magnitude.
Low Tier Reduction Improvements	1	0-25% Overall and/or Fatal & Injury, Ped Crash Reduction. Includes: SafetyEdge, roadside design improvements at curves, signal backplates, dedicated right turn lanes, RCUT (Restricted Crossing U-Turn intersections) at signalized locations, systemic application of low-cost countermeasures at stop-controlled intersections, appropriate yellow change intervals, Leading Pedestrian Intervals, Pavement Friction Management (intersections), surface treatments, signal timing/phasing improvements, pavement marking improvements, signs, slight reduction in congestion
Medium Tier	2	25-30% Overall and/or Fatal & Injury, Ped Crash Reduction. Includes: Corridor access management, general geometric improvements, improve sight distance
Reduction Improvements	3	30-40% Overall and/or Fatal & Injury, Ped Crash Reduction. Includes: Enhanced delineation for horizontal curves, horizontal alignment changes, median Uturn, bike lanes (2 lane), road diets, ped over/under crossing, moderate reduction in congestion
	4	40-50% Overall and/or Fatal & Injury, Ped Crash Reduction. Includes: Variable speed limits, dedicated left turn lanes, crosswalk visibility enhancements, bike lanes (4 lane), RRFBs, Pavement Friction Management (roadways w/ horizontal curves & ramps), vertical alignment changes, lighting improvements
High Tier Reduction Improvements	5	>50% Overall and/or Fatal & Injury, Ped Crash Reduction. Includes: Speed safety cameras, RCUT (Restricted Crossing U-Turn intersections) at unsignalized locations, roundabouts, medians & pedestrian refuge islands, pedestrian hybrid beacons, sidewalks/walkways, remove high crash roadway, significant reduction in congestion

Scenario scores are an estimated average of points.

Dedicated Public Transit Lanes

Scenario	Scajaquada Corridor: Overall street character (1-5)	Region Central: Overall street character (1-5)	Notes
Status Quo+	1	3	In supporting elements - 3 mobility hubs planned, leads to score of 3. In corridor - 0LF dedicated public transit lane possible if status quo is kept, leads to score of 1.
At-Grade Roadway	5	3	In supporting elements - 3 mobility hubs planned, leads to score of 3. In corridor - approximately 35,857.16 LF of potential for dedicated public transit lanes. Of all four scenarios this is the highest potential LF for dedicated public transit lanes in the corridor, receiving a score of 5.
Partial Removal	3	4	In supporting elements - 4 mobility hubs planned, leads to score of 4. In corridor - approximately 15,882.25 LF of potential for dedicated public transit lanes. Of all four scenarios this is the second highest potential LF for dedicated public transit lanes in the corridor, and approximately ½ of the LF in Scenario 2, receiving a score of 3.
Full Removal	1	4	In supporting elements - 4 mobility hubs planned, leads to a score of 4. In corridor - 0LF dedicated public transit lane possible in corridor, leads to a score of 1.

Green Infrastructure Improvements

Scenario	Scajaquada Corridor: Overall street character (1-5)	Region Central: Overall street character (1-5)	Notes
Status Quo+	1	4	In corridor - no change means no potential for GI improvements, leads to score of 1. In supporting elements – Scenario 1 has 3 transit stops and the most cycling/multimodal improvements in supporting elements, so most potential for dedicated GI improvements
At-Grade Roadway	2	4	In corridor – the corridor is still fully paved; there is still some potential for updated/green infrastructure on or surrounding roadway, receiving a score of 2. In supporting elements – Scenario 2 still has more multimodal/cycling improvements than Scenario 3 or 4 and has 3 transit stops, leading to a score of 4.
Partial Removal	3	3	In corridor - approx. 9,972.26LF dedicated to a shared use path (assumed green infrastructure/pervious materials). This opens potential for approximately 9,972.26LF dedicated to GI, leading to a score of 3. In supporting elements – there are fewer cycling/multimodal improvements, one additional transit stop for a total of 4; this combination of fewer improvements, even with one more hub, receives a score of 3.
Full Removal	5	3	In corridor - approx. 41,545.53LF shared use path (assumed green infrastructure/pervious materials). This opens potential for approximately 41,545.53LF dedicated to GI, leading to a score of 5. In supporting elements – there are fewer cycling/multimodal improvements, one additional transit stop for a total of 4; this combination of fewer improvements, even with one more hub, receives a score of 3.

Green Infrastructure Improvements

Scenario	Scajaquada Corridor: Overall street character (1-5)	Region Central: Overall street character (1-5)	Notes
Status Quo+	1	4	In corridor - no change in corridor, receiving a score of 1. In supporting elements – the supporting elements generally restore multimodal connectivity and access but don't restore any degraded/lost roadway connections, receiving an overall score of 4.
At-Grade Roadway	4	3	In corridor - receives a score of 4 for major improvements to block restoration, even if not always historic alignment, and restoration of functionality of major historic roadways like Humboldt Parkway and Lincoln Parkway, and lost features like Scajaquada Parkway. In supporting elements - receives a score of 3 for slight vehicular increase but overall multimodal improvements.
Partial Removal	2	2	In corridor - the improvements on Lincoln Parkway are positive and share-use path in Delaware Park is partially beneficial but does not preserve the full connectivity in Olmsted's initial vision, plus retaining the expressway degrades historic connectivity and character – receives a score of 2. In supporting elements – decrease of multimodal connectivity and increase of vehicular accommodations needed receives a score of 2.
Full Removal	3	1	In corridor - some benefits attributed to restoration of original character (Humboldt) but removes other historic connectivity and risks straining already strained connections like Delaware Avenue; receives a score of 3. In supporting elements – provides fewest multimodal connections of all scenarios, receives a score of 1.

Anticipated Satisfaction-Pedestrians

Scenario	Scajaquada Corridor: Overall street character (1-5)	Region Central: Overall street character (1-5)	Notes
Status Quo+	1	5	In corridor - expressway is unwalkable, scores a 1. In supporting elements – there are planned multimodal improvements throughout corridor, including on major connectors like Main Street, Delaware Avenue, and Amherst Street, all of which may benefit pedestrians. Receives a score of 5.
At-Grade Roadway	4	4	In corridor – the new at-grade road has potential to add design elements that accommodate pedestrians as well as vehicles. This allows for true multi-modal access and supports individuals who may commute to areas of the city then walk as part of "last mile" in transportation. True multimodal connectivity/options for transportation. In supporting elements – some proposed multimodal improvements from Scenario 1 are removed/more vehicular traffic anticipated from Forest Avenue, part of Delaware Avenue, part of West Delevan Avenue, and part of Kensington Avenue. Due to some multimodal loss, though more prolific in Scenario 3 and 4, receives a score of 4.
Partial Removal	3	2	In corridor – there is a much better pedestrian outcome within Delaware Park, but the Humboldt Parkway remains expressway and Black Rock retains expressway ramps and removes a portion of Jesse Kregal path. All of these factors are highly detrimental to pedestrians on the east and west of Delaware Park, receiving a score of 3. In supporting elements – more multimodal improvements from Scenario 2 removed/more vehicular traffic anticipated from Forest Avenue, Amherst Street, part of Delaware Avenue, part of West Delevan Avenue, and part of Lincoln Parkway. Due to increased traffic, especially on north/south connections running through the park like Delaware Avenue and Lincoln Parkway, receives a score of 2.
Full Removal	5	1	In corridor - dedicated areas for pedestrians throughout corridor (Park, along Creek, Humboldt). Within the corridor receives a score of 5. In supporting elements – more multimodal improvements removed/more vehicular traffic anticipated from Forest Avenue, Delaware Avenue, part of West Delevan Avenue, and part of Kensington Avenue, Amherst Street. Receives a score of 1.

Anticipated Satisfaction-Bicyclists

Scenario	Scajaquada Corridor: Overall street character (1-5)	Region Central: Overall street character (1-5)	Notes
Status Quo+	1	4	In corridor - expressway cannot accommodate cyclists, receives a score of 1. In supporting elements – there are planned multimodal improvements throughout corridor. Due to the amount of improvements receives a score of 4.
At-Grade Roadway	4	5	In corridor – potential to add design elements that accommodate cyclists as well as vehicles, supporting "last mile" transportation options or choice in transportation type for individuals who may cycle in some seasons and drive in others, etc. In supporting elements – multimodal improvements removed/more vehicular traffic anticipated. Overall these cycling improvements appear more extensive and receive a score of 5.
Partial Removal	3	2	In corridor - much better cyclist outcomes within Delaware Park, but Humboldt Parkway remains expressway and Black Rock retains expressway ramps and removes a portion of Jesse Kregal path. These issues outside of Delaware Park lead to a score of 3. In supporting elements – the decrease in cycling options, especially on major north/west park connections like Lincoln Parkway and Delaware Avenue, lead to a score of 2.
Full Removal	5	4	In corridor - dedicated areas for cyclists throughout corridor (Park, along Creek, Humboldt). This dedicated pathway leads to a score of 5. In supporting elements – multimodal improvements removed/more vehicular traffic anticipated from Forest Avenue, Delaware Avenue, part of West Delevan Avenue, and part of Kensington Avenue, Amherst Street. Restoring the cycling improvements on Lincoln Parkway and Elmwood Avenue in particular leads to a score of 4.

Anticipated Satisfaction-Transit Users

Scenario	Scajaquada Corridor: Overall street character (1-5)	Region Central: Overall street character (1-5)	Notes
Status Quo+	1	4	In corridor – expressway has small stretch of transit currently (special route to HS at limited times per day) but otherwise not transit friendly, scoring a 1. For supporting elements – three mobility hubs planned and multimodal/cycling access planned for the streets leading to all three hubs, which supports transit users in their commute to the transit station. However transit hubs concentrated on east project area, not on west. Receives a score of 4.
At-Grade Roadway	5	3	In corridor – there is potential to add comprehensive transit throughout the corridor. The efficiency of the direct route and extent of options/possibility in the corridor leads to score of 5. For supporting elements – three mobility hubs planned. Increased vehicle traffic on some roadways may pose difficulty for transit users heading to their destination if cycling/walking. Leads to score of 3.
Partial Removal	4	4	In corridor – potential to add comprehensive transit west of park and east of park but no direct through connection. Lack of through-connections decreases score from 5 (scenario 2) to 4. For supporting elements – four mobility hubs are proposed. This proposes one more transit hub than Scenario 2, so receives a higher score than Scenario 2 of 4.
Full Removal	1	4	In corridor – the shared use path throughout the corridor removes potential for improving transit on that east-west connection, receiving a score of 1. For supporting elements – four mobility hubs are proposed. Similar comments to above; increased vehicle accommodations may cause issues for transit users. However, this proposes one more transit hub than Scenario 2, so receives a higher score than Scenario 2 of 4.

Anticipated Satisfaction-Motorists

Scenario	Scajaquada Corridor: Overall street character (1-5)	Region Central: Overall street character (1-5)	Notes
Status Quo+	2	2	In corridor – expressway allows for vehicular travel east-west but current users and local attitude towards the Expressway is generally low/dissatisfied, so receives a score of 2. In supporting elements – receives a score of 2 because no improvements for vehicles are proposed, but traffic levels are not anticipate to drastically change on the supporting elements in this scenario.
At-Grade Roadway	5	4	In corridor – provides direct east-west access for vehicles without undue traffic caused by using the Expressway as a "giant offramp and onramp" between I-190 and Rt-33. In supporting elements - vehicular improvements planned on part of Delaware Avenue, East/part of West Delevan Avenue, Forest Avenue, and part of Kensington Avenue. Overall, receives a 4.
Partial Removal	3	3	In corridor – vehicular access is provided east and west of park but does not allow through-access. Overall, receives a score of 3. In supporting elements - vehicular improvements planned on part of Delaware Avenue, Amherst Street, Forest Avenue, Tonawanda Street, East/part of West Delavan Avenue. Receives an overall score of 3 accounting for benefits from vehicular accommodations but inconvenience and potential traffic increase from cutting off park access.
Full Removal	1	2	In corridor – removes potential for direct east-west vehicular access so receives a score of 1. In supporting elements - due to many limitations and expected traffic increases, despite vehicular accommodations proposed, receives a score of 2.