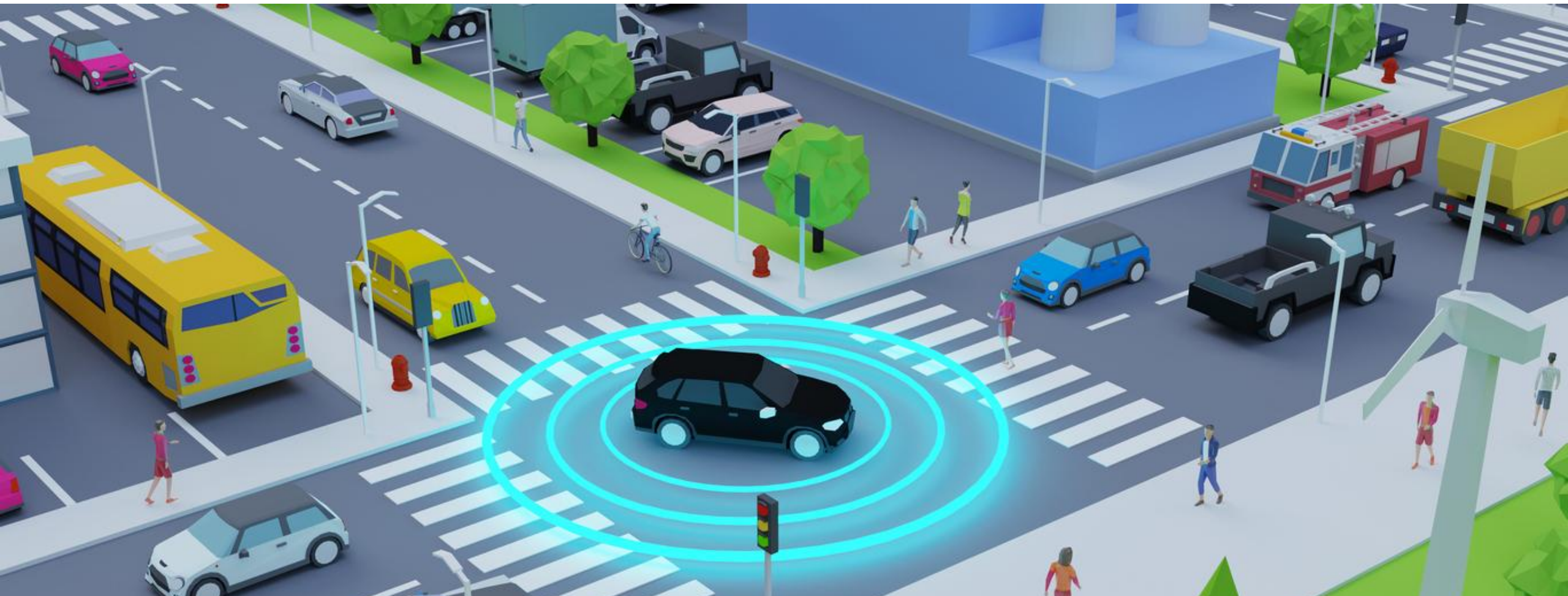




Smartly Enhanced Multimodal Arterial (SEMA) Phase 1 Study

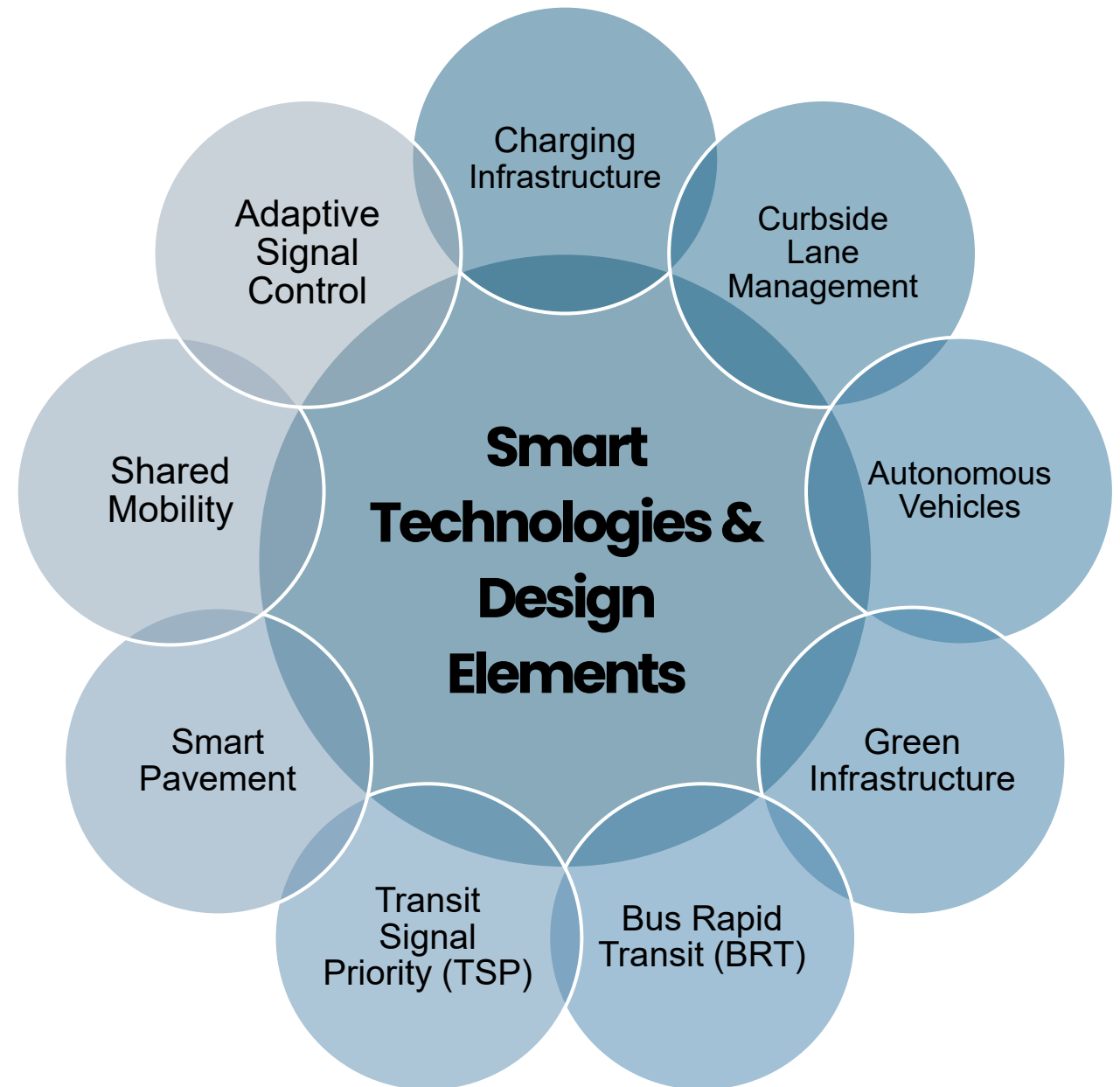




What is SEMA?

Smartly Enhanced Multimodal Arterial

A SEMA is a major roadway designed for cars, transit, bicycles, and pedestrians. It is equipped with advanced transportation technologies and smart design features that integrates infrastructure, operations, and technology at the corridor scale.



SMARTLY ENHANCED MULTIMODAL ARTERIALS: PHASE 1 SUMMARY REPORT

FEBRUARY
2026

PREPARED FOR :



transpogroup **7T**
WHAT TRANSPORTATION CAN BE.



Project Scope



Interviews with
agencies and
vendors



Research
existing and
emerging
technologies
and uses



Develop a
scoring
framework and
criteria for
evaluation



Identify
deployment and
implementation
strategies

Criteria – Why it Matters



Safety

Targets corridors where smart technologies can reduce serious crash and injury risk.



Congestion

Targets congested corridors where smart technologies can improve traffic flow and reliability.



Active Travel Usage

High pedestrian and bicycle activity identifies corridors where smart technologies can enhance safety, accessibility, and comfort for vulnerable road users.



Transit activity

Targets high-transit corridors where smart technologies can improve reliability and rider experience.



Traffic Volumes

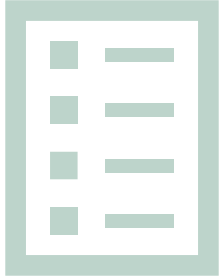
Higher traffic volumes identify corridors where smart technologies can deliver the greatest operational and safety benefits.



Technology Readiness

Existing assets allow smart corridor strategies to be deployed more quickly, cost-effectively, and with lower implementation risk.

Criteria – Why it Matters



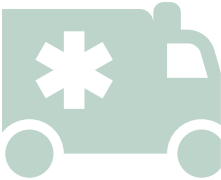
Consistency with other Plans

Alignment with local and regional plans ensures investments reinforce regional goals, avoid conflicts, and strengthen grant competitiveness.



Freight Activity

Smart corridor improvements can improve reliability, reduce delays, and enhance safety for freight and general traffic.



Proximity to Emergency Services

Prioritizes corridors near emergency services where smart technologies can improve response times and safety.



Communities of Concern

Prioritizes corridors serving communities of concern to advance equity, improve access, and support local economic development through smart technologies.



Proximity to Schools

Uses school proximity and pedestrian activity to guide smart corridor investments that improve safety and travel reliability.

How we selected Scoring Criteria

We sought to balance:

1. Simplicity
2. Differences (not helpful if all corridors score the same on a given metric)
3. Ease of data access
4. Ease of updating data in future



Scoring Criteria

Criteria	Max. # of points
Safety (RACE Safety Plan priority locations)	2
Traffic level (AADT)	2
Transit ridership	2
Active travel usage	2
Congestion (“Travel Time Index” data from Univ-Albany’s AVAIL Lab)	2
Technology readiness (MioVision, ErieNet, Bikeshare, electric-vehicle infrastructure)	2
Consistency with other plans (Smart Streets Design Plan, Bicycling Master Plan, Bus Rapid Transit, Emergency Evacuation Route Plan)	2
Freight activity (% of AADT)	2
Communities of concern (both locally-defined and federally-defined)	2
Proximity to emergency services (police, fire, EMS, hospitals)	2
Proximity to schools	2
Total	22

Scoring Results

Overall regional prioritization: Highest scoring corridors in and immediately adjacent to Buffalo

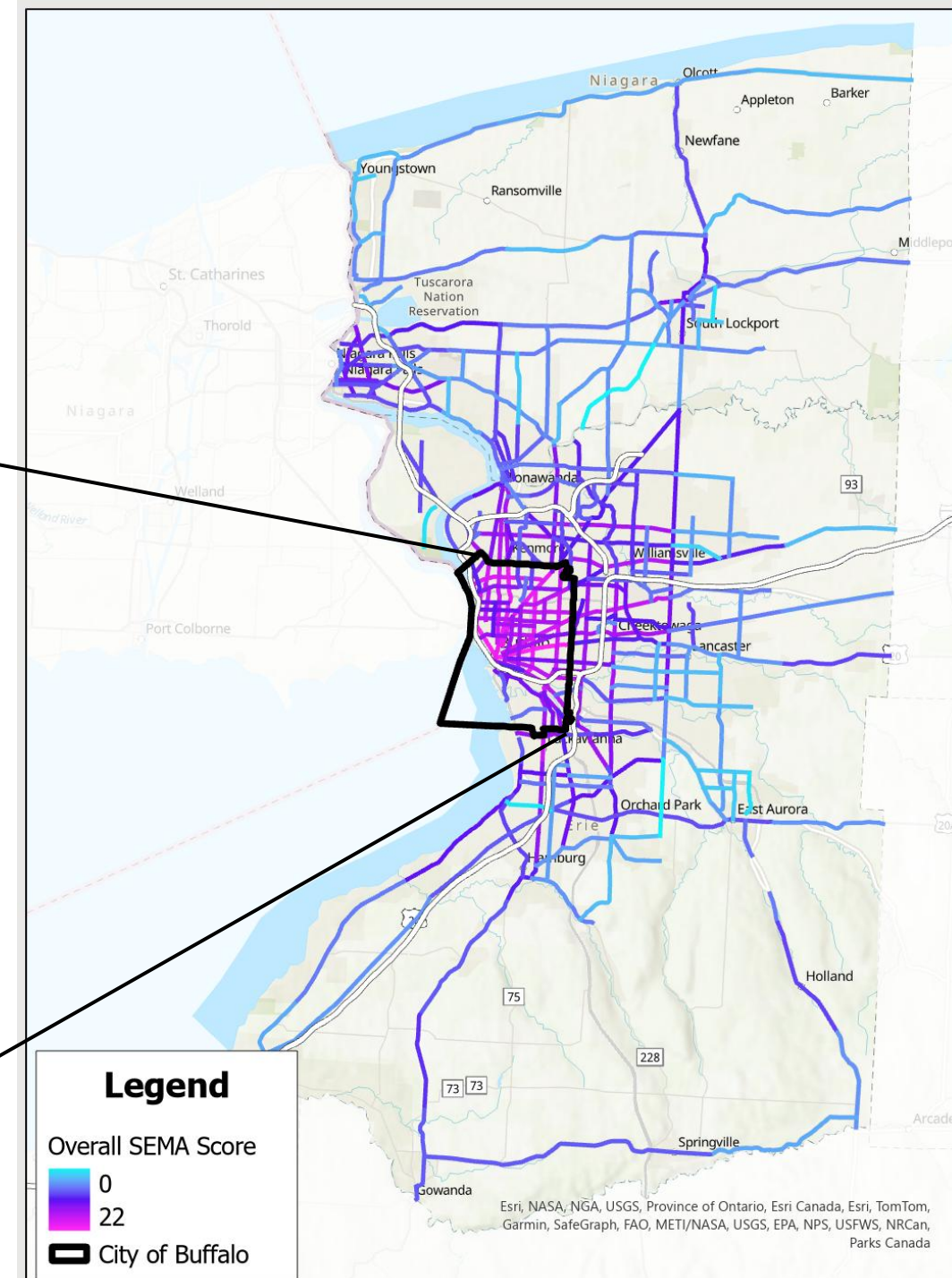
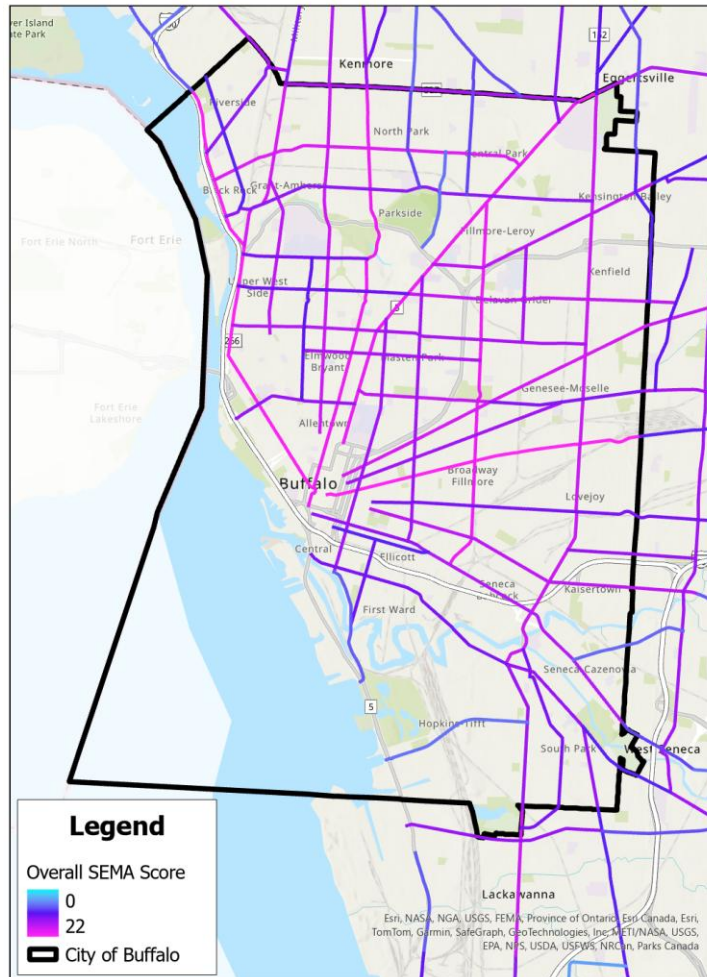


Figure 4.9 **Priority Safety Network**

1) Safety

1 = corridor contains one or more ints/secs
with index score of **3 or 4**

2) Traffic level (AADT)

1 = AADT is 10K – 20K

Niagara Falls Inset

Buffalo Inset

Top 3 Breaks

Intersections	Segments
● 3	— 3
● 4	— 4
● 5 (Highest)	— 5 (Highest)

0 2 4 8 12 16 20 Miles

Scoring Results

Criteria: Scoring

3) Transit activity

0 = bottom half of corridors defined by NFTA ridership/day

1 = 50th-75th percentile defined by NFTA ridership/day

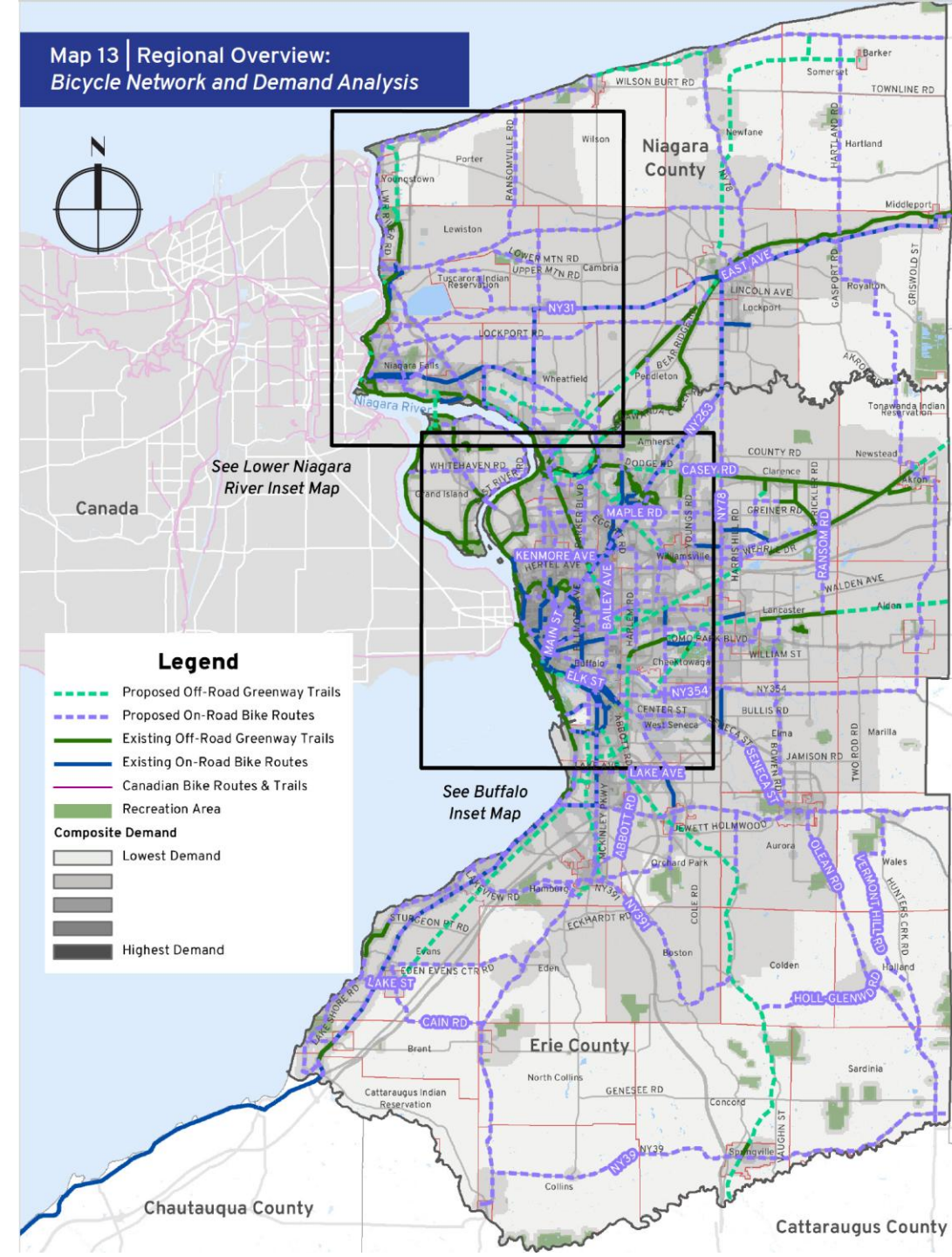
2 = 76th-100th percentile corridors defined by NFTA ridership/day

4) Active travel usage

0 = bottom half of corridors defined by sum of pedestrians and cyclists per day

1 = 50th-75th percentile defined by sum of pedestrians and cyclists per day

2 = 76th-100th percentile corridors defined by sum of pedestrians and cyclists per day



Scoring Results

Criteria:	Scoring
5) Congestion	0 = bottom half of corridors defined by “Travel Time Index”
	1 = 50 th -75 th percentile defined by TTI
	2 = top-25% most congested corridors, defined by TTI
	0.5 point each for the presence of any of these assets in the corridor:
6) Technology readiness	• Public EV charging • Miovision cameras • ErieNet • Bikeshare station

Travel time index: ratio of the travel time during the peak period to the time required to make the same trip at free-flow speeds

i.e. A TTI value of 1.5 means a 20-minute trip off-peak takes 30 minutes during the peak

Scoring Results

Criteria:	Scoring
7) Consistency with other plans	0.5 point each for the corridor being identified as a priority corridor in one of these plans: • City of Buffalo Smart Streets Design Plan (but note SSDP was downtown-focused) • NFTA-Metro Bus Rapid Transit Network Study • Regional Bicycle Master Plan • Emergency Evacuation Route Plan
8) Freight activity	0 = bottom half of corridors defined by truck-percent of AADT 1 = 50th-75th percentile defined by truck-percent of AADT 2 = 76th-100th percentile corridors defined by truck-percent of AADT

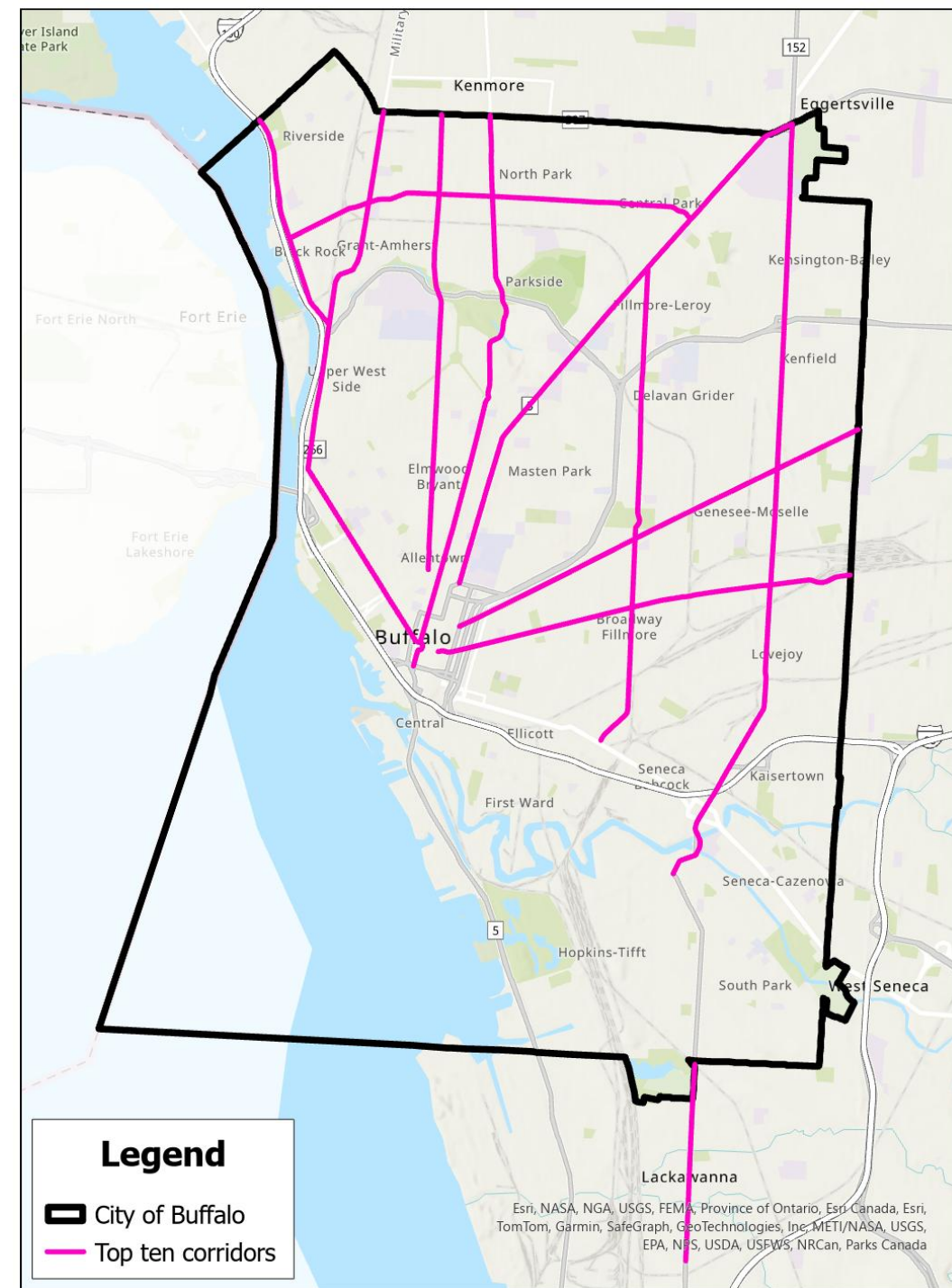
Scoring Results

Criteria:	Scoring
9) Communities of concern	0 = corridor is not within ¼ mile of an Underserved Community as currently defined by USDOT (based on poverty measure) or Community of Concern as defined by GBNRTC 1 = corridor is within ¼ mile of <u>one or the other</u> 2 = corridor is within ¼ mile of <u>both</u>
10) Proximity to emergency services	0 = corridor is not within ¼ mile of an emergency services facility (police station, fire station, EMS station, hospital) 1 = corridor is within ¼ mile of <u>one facility</u> 2 = corridor is within ¼ mile of <u>2+ facilities</u>
11) Proximity to schools	0 = corridor is not within ¼ mile of a P-12 school 1 = corridor is within ¼ mile of <u>one school</u> 2 = corridor is within ¼ mile of <u>2+ schools</u>

Scoring Results

Top ten scoring corridors (region-wide)

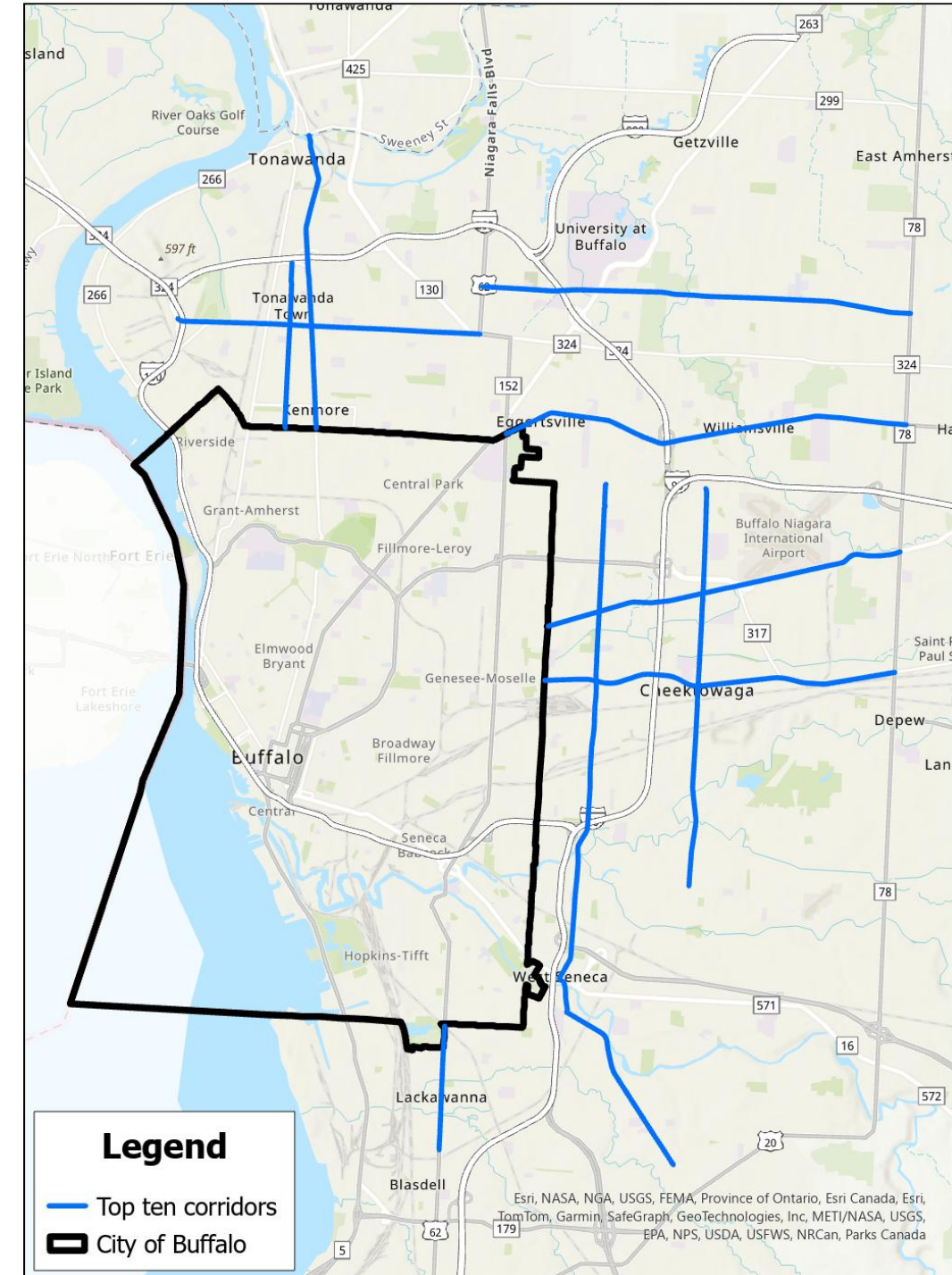
	Rank	Scoring
Broadway (b/w Court St and N Ogden St)	1	19
Niagara St (b/w Niagara Sq and Vulcan St)	2	18.5
Fillmore Ave (b/w Seneca St and Main St)	3 (tie)	17.5
Delaware Ave (b/w Church St and Kenmore Ave)	3 (tie)	17.5
Main St (b/w Goodell St and Bailey Ave)	3 (tie)	17.5
Hertel Ave (b/w Niagara St and Main St)	6	16.5
Genesee St (b/w East End Ave and Ellicott St)	7 (tie)	16
Military Rd (b/w Niagara St and Kenmore Ave)	7 (tie)	16
South Park Blvd (b/w Dorrance Ave and Willett Rd)	9 (tie)	15.5
Bailey Ave (b/w South Park Ave and Main St)	9 (tie)	15.5
Elmwood Ave (b/w Kenmore Ave and Virginia)	9 (tie)	15.5



Scoring Results

Top ten scoring corridors (**outside** City of Buffalo)

	Rank	Scoring
South Park Blvd (b/w Dorrance Ave and Willett Rd)	1	15.5
Genesee St (b/w Transit Rd and East End Ave)	2	15
Main St (b/w Bailey Ave and Transit Rd)	3 (tie)	14
Elmwood Ave (b/w Kenmore Ave and I-290)	3 (tie)	14
Maple Rd (b/w Transit Rd and Bailey Ave)	5 (tie)	13.5
Walden Ave (b/w Pine Ridge Rd and Transit Rd)	5 (tie)	13.5
Delaware Ave (b/w Kenmore Ave and Ellicott Creek)	5 (tie)	13.5
Union Rd (b/w French Rd and Wehrle Dr)	5 (tie)	13.5
Harlem Rd (b/w Clinton St and Kensington Ave)	9 (tie)	13
Sheridan Dr (b/w Niagara Falls Blvd and Military Rd)	9 (tie)	13
Harlem Rd / Orchard Park Rd (b/w Clinton St and Michael Rd)	9 (tie)	13



Scoring Results: Example comparison of corridors

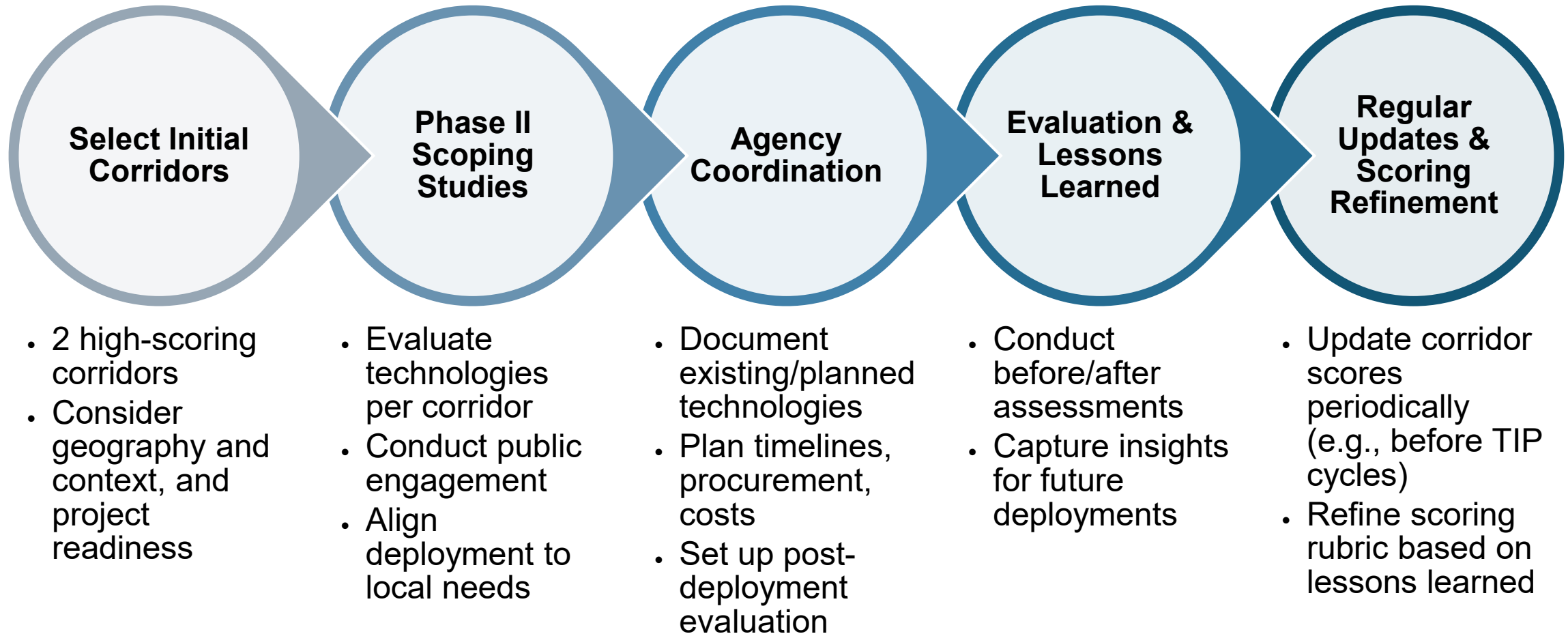
3 corridors with equal scores, but different issues

High scores for each criteria are highlighted in red

Criteria	Elmwood Ave (b/w Kenmore Ave and Virginia)	Bailey Ave (b/w South Park Ave and Main St)	South Park Blvd (b/w Dorrance Ave and Willett Rd)
Safety	1	2	2
Traffic level	1	1	1
Transit ridership	2	2	0
Active travel usage	2	1	2
Congestion	1	1	1
Technology readiness	1.5	1	1
Consistency w/other plans	1	0.5	1.5
Freight activity	0	1	1
Communities of concern	2	2	2
Proximity to emergency services	2	2	2
Proximity to schools	2	2	2
Total	15.5	15.5	15.5

SEMA Corridor Implementation

Next Steps – Phase 2



Review Questions

1. What are the goals of SEMA corridors?
2. Identify three considerations that were used to support the choice of criteria for SEMA prioritization.
3. Name three criteria which were used in prioritizing corridors for inclusion in the SEMA network.

