

ACTION REQUESTED

No action requested at this time. This item is for presentation and discussion.

PREVIOUS ACTION

None

INTRODUCTION

This NOACA ACTIVATE Plan includes:

1. Purpose, Vision & Goals
2. Definitions, Problems & Benefits
3. Non-motorized Infrastructure Data Collection
4. Quality of Data
5. Current Volumes & Future Demand
6. Prioritization Models for the Non-motorized Facility Investments
7. Estimated Benefits of Investments in Non-motorized Facilities
8. Pedestrian & Cyclists Safety

PURPOSE OF THE ACTIVATE PLAN

To provide guidelines for

- Practitioners,
- Planners (transportation /urban/community), and
- Decision makers

to expand and improve the existing bikeways and walkways in order to increase the travel share of non-motorized modes safely and use the street network more equitably.

PLAN VISION IS ACTIVATE

**ACTIVATED
STREETS**



**ACTIVATED
COMMUNITIES**



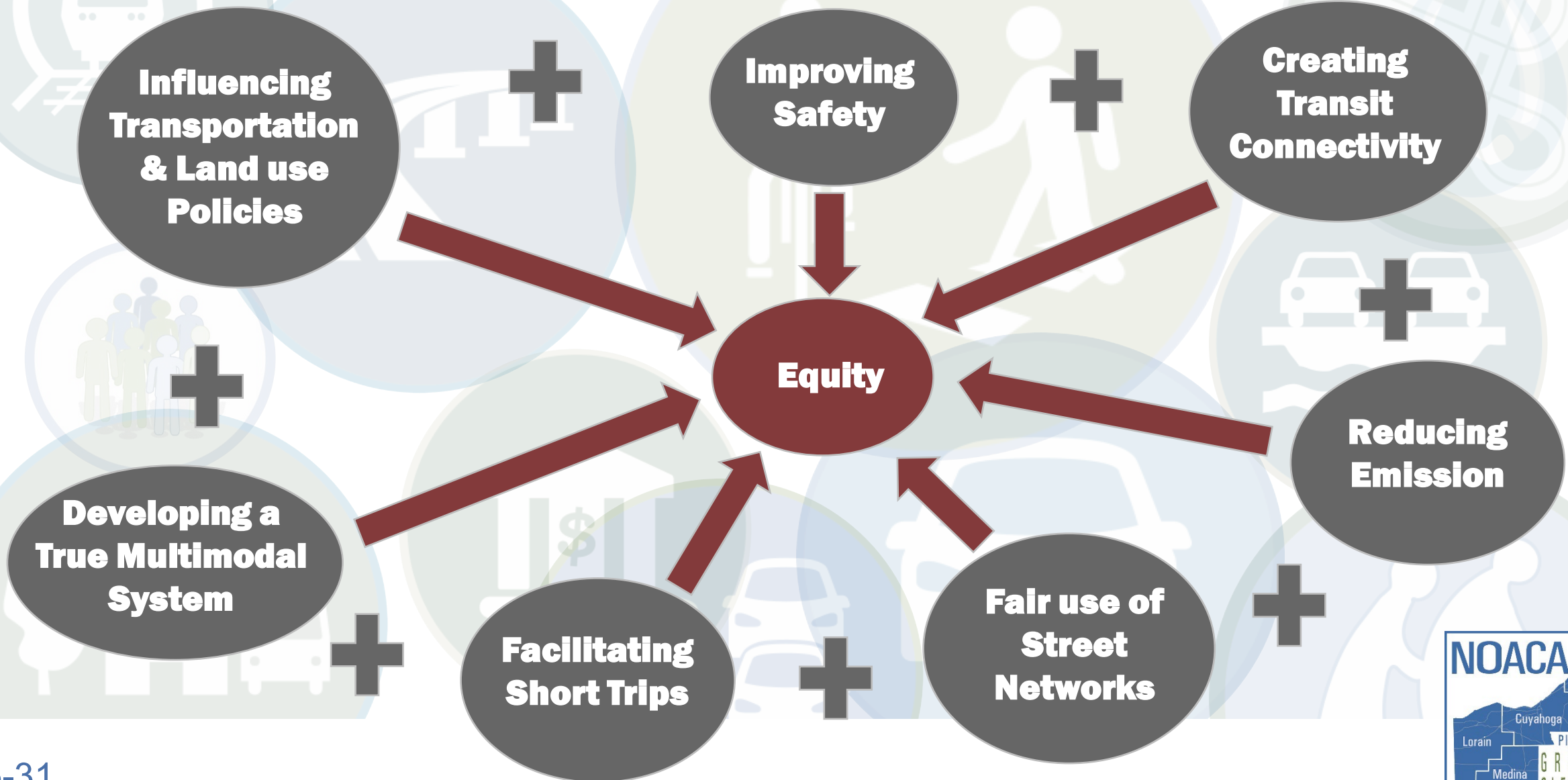
**ACTIVATED
PROGRAMS**



**ACTIVATED
PEOPLE**

- *ACTIVATE STREETS* into networks for safely traveling by non-motorized modes;
- *ACTIVATE COMMUNITIES* to encourage and support the use of non-motorized modes;
- *ACTIVATE PROGRAMS* to develop policies and plans for increasing travel share of non-motorized modes
- *Doing the above will ultimately ACTIVATE PEOPLE.*

GOALS OF THE ACTIVATE PLAN



NON-MOTORIZED MODE USAGE CATEGORIES

1. **Utilitarian trips** are trips undertaken with the purpose of reaching a particular destination for accomplishing an activity,



2. **Access to transit services**



3. **Recreational pursuits**



GUIDELINES FOR COLLECTING WALKING INFRASTRUCTURE DATA

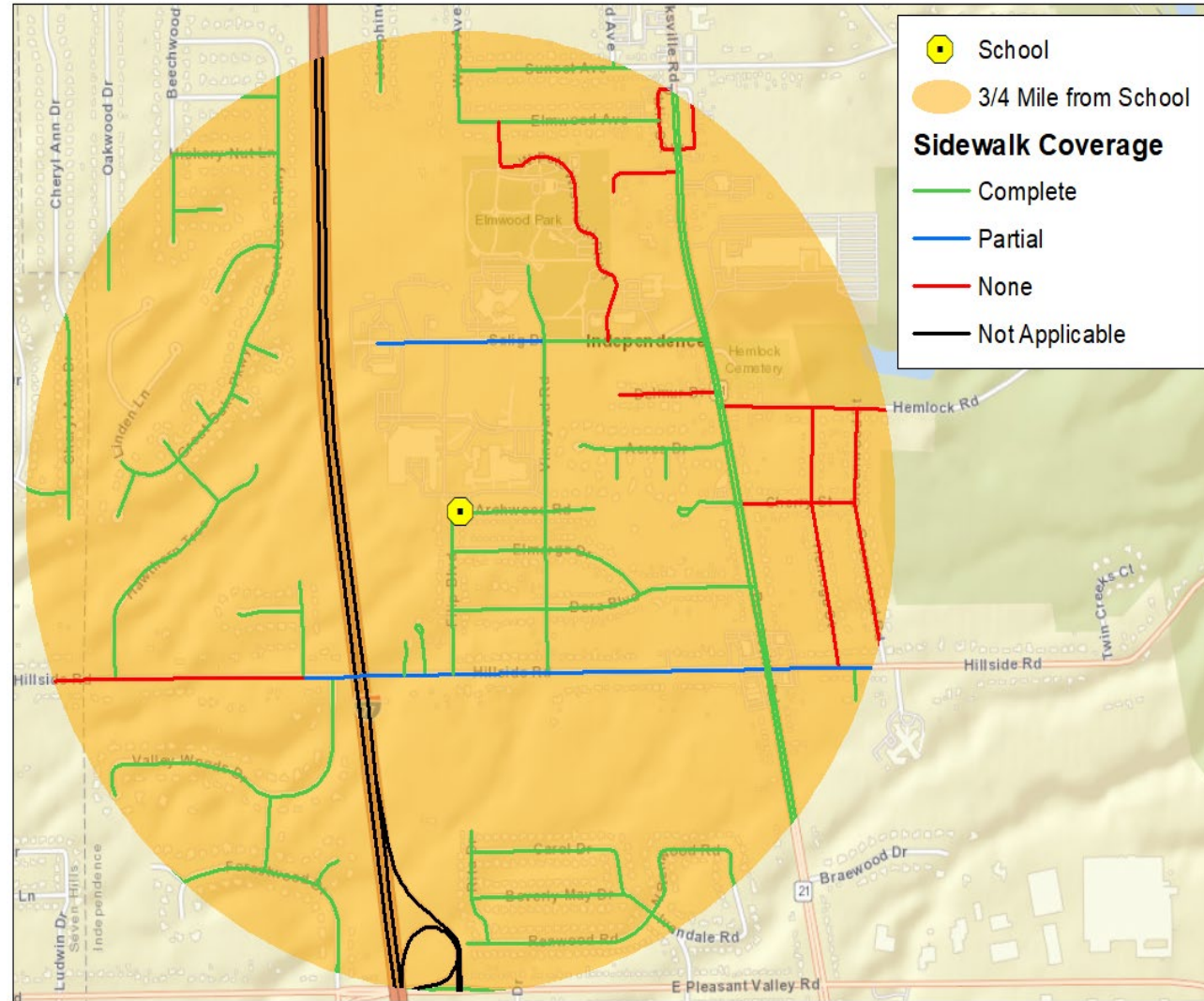
In the absence of comprehensive walking infrastructure, purposeful data in four classifications is recommended.

- “Complete” – sidewalks on both sides of the entire length of a road segment exist.
- “Partial” – sidewalks only present on a portion of the road segment.
- “None” – sidewalk does not exist at all.
- “Not Applicable” – roadways where sidewalks would not be expected.

Use a roadway GIS data layer (Census TIGER road network file) for future analysis and mapping.



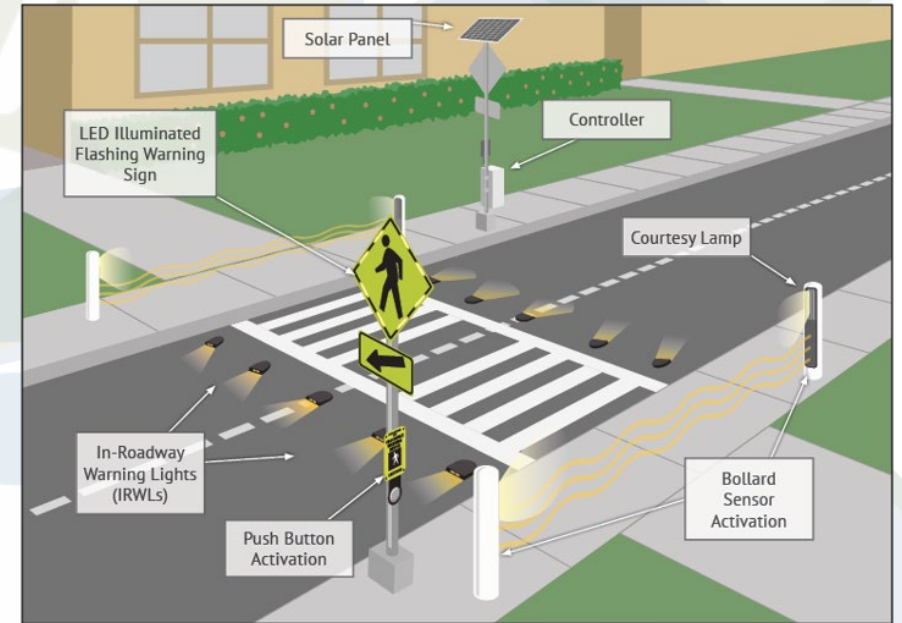
A TYPICAL SIDEWALK COVERAGE AROUND A SCHOOL



GUIDELINES FOR COLLECTING WALKING INFRASTRUCTURE DATA

The points where pedestrians interact with other modes of travel are critical for a truly multimodal transportation system.

- **Signalized Intersection Crossing**
- **Mid-block Crossing**



GUIDELINES FOR COLLECTING CYCLING INFRASTRUCTURE DATA

Cycling facility Definitions

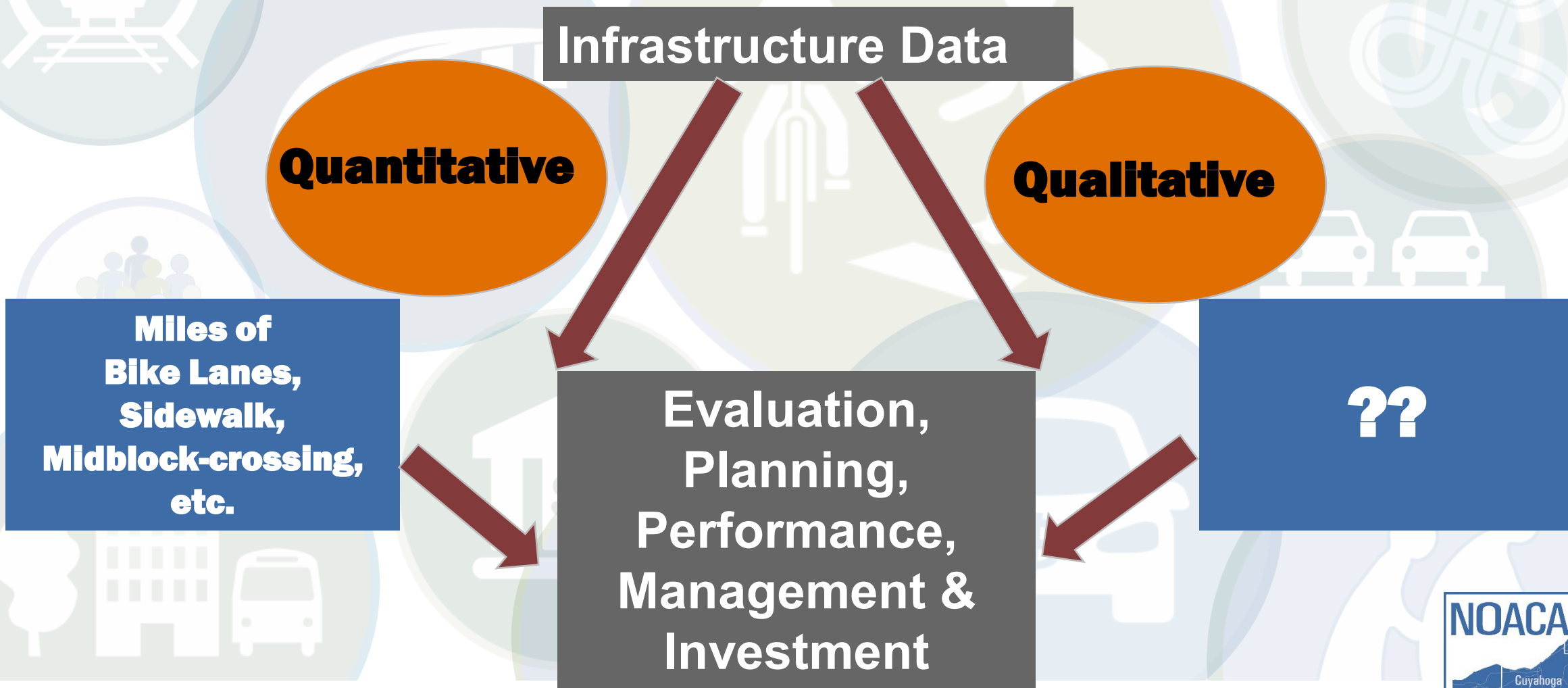
- **Segregated**
 - All purpose trails
 - Separated bike lanes
 - Buffered bike lanes
- **Shared**
 - Bike lanes
 - Bike routes



GUIDELINES FOR COLLECTING CYCLING INFRASTRUCTURE DATA

County	Bike Facility Type Length (Miles) - 2020					
	All Purpose Trail	Separated Bike Lane	Buffered Bike lane	Shared Bike lane	Shared Bike route	Total
Cuyahoga	202	1	5	71	108	387
Geauga	25					25
Lake	62			19	4	85
Lorain	87			24	49	160
Medina	30					30
Total	406	1	5	114	161	687

GUIDELINES FOR EVALUATING WALKING AND BIKING INFRASTRUCTURE



EVALUATING QUALITY OF WALKING INFRASTRUCTURE (3C & 2S)

Connectivity



Connecting residential neighborhoods/ employment locations to transit system in a reasonable time/distance

Direct and short routes

Convenience



Appropriate crossings for walking path continuity

Short waiting times and adequate crossing times

Meet the American with disability Act (ADA) requirements

Comfort



Covered and/or shaded shelters in reasonable distances

Smoother surface with adequate width

Avoiding overpasses and underpasses

EVALUATING QUALITY OF WALKING INFRASTRUCTURE (3C & 2S)

Safety



Segregated sidewalks from vehicles

Safe islands for pedestrian crossing

Safe routes to schools

Security



Adequate lighting

Sufficient police surveillance

EVALUATING QUALITY OF CYCLING INFRASTRUCTURE

Level of Traffic Stress (LTS)



A measure of level of stress that vehicular traffic imposes on cyclists riding the same roadway and crossing the same street intersection.

EVALUATING QUALITY OF CYCLING INFRASTRUCTURE

- LTS = 1
- LTS = 2
- LTS = 3
- LTS = 4
- LTS = 5



Roads for all ages
These roads tend to be neighborhood streets with low speeds and very little traffic.



Roads for most adults
These roads have low speeds and low traffic volumes. Most adults and supervised children will find these roads comfortable.



Roads for confident cyclists
These roads have higher speeds (at least 35 MPH) with low traffic or may have lower speeds with higher amounts of traffic.



Roads for expert cyclists
This is the greatest stress level. Roads intend to be multilane, higher speeds, and higher volume.



EVALUATING QUALITY OF CYCLING INFRASTRUCTURE – LTS LEVELS IN MILES

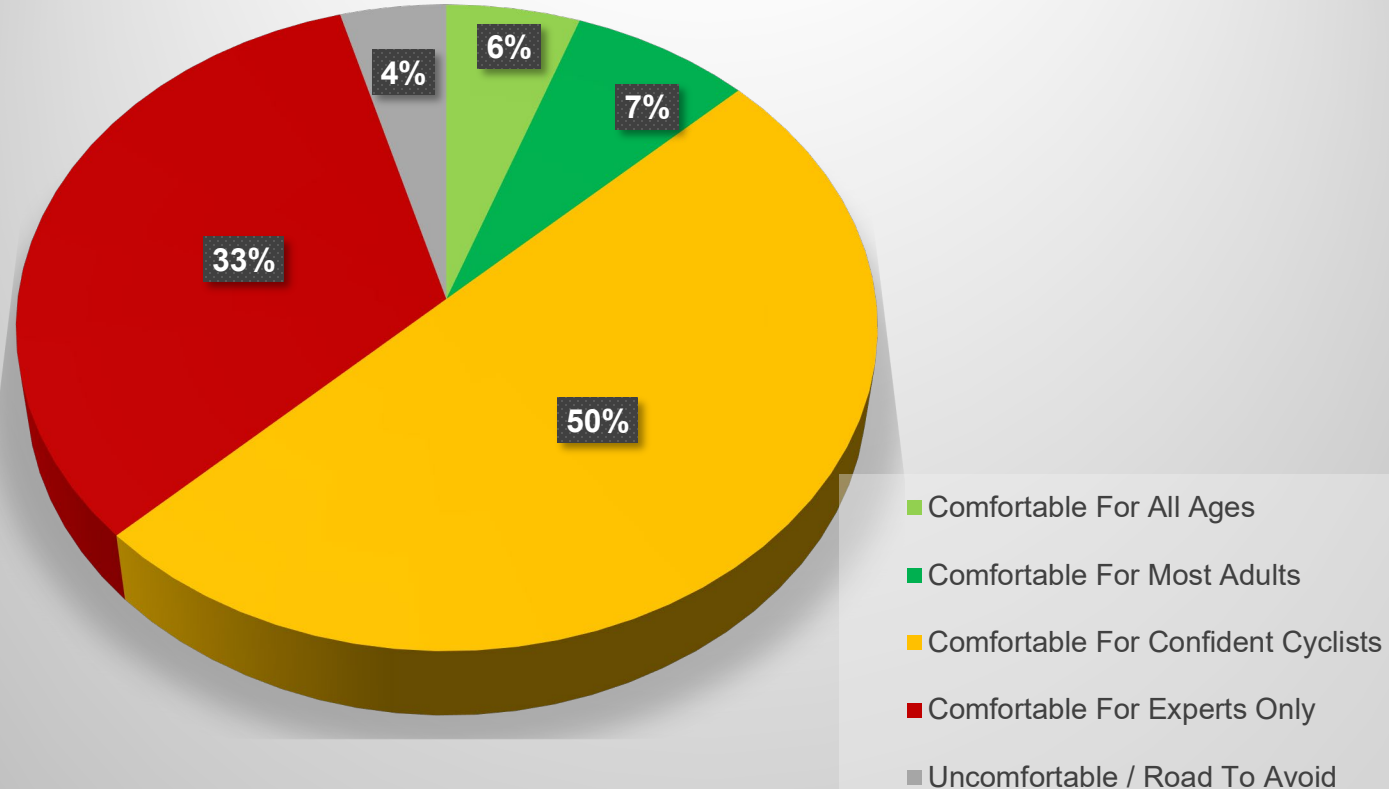
LTS SCORE		BI-DIRECTIONAL LENGTH (MILES)
1	Comfortable For All Ages	435
2	Comfortable For Most Adults	587
3	Comfortable For Confident Cyclists	3,965
4	Comfortable For Experts Only	2,605
5	Uncomfortable / Road To Avoid	344
TOTAL		7,936

Not all the access streets



EVALUATING QUALITY OF CYCLING INFRASTRUCTURE – PERCENT OF LTS LEVELS

REGIONAL LTS LEVELS IN PERCENT



EVALUATING QUALITY OF CYCLING INFRASTRUCTURE ROUTE SELECTION WITH THE OPTIMAL LTS LEVEL



EXISTING DAILY TRAVEL SHARE OF NON-MOTORIZED MODES

- About 27,000 daily utilitarian trips by non-motorized modes
- About 0.5% of the total number daily trips in the NOACA region
- Number of non-motorized trips during peak periods is slightly higher than those of non-peak periods.
- 90% walking share and 10% cycling share

Source: NOACA travel forecasting model

FUTURE DAILY TRAVEL SHARE OF NON-MOTORIZED MODES



- Increasing work commute by transit and non-motorized shares is one of objectives of the *eNEO2050* plan.
- This objective is quantified in Congestion Management Plan (CMP) of *eNEO2050*.

Mode of Travel	Work Commute Mode Share	
	Transit	Non-motorized
Current Share	5.5%	0.8%
Decade	Transit	Non-motorized
2020 - 2030	6%	1%
2030 - 2040	7.5%	1.5%
2040 - 2050	9%	2%



EXPANDING WALKING FACILITIES

Walking Facilities	2020 - 2030	2030 - 2040	2040 - 2050	Total
Smart Pedestrian Crossing (Number)	50	50	0	100
ADA Curb Ramp (Number)	540	42	0	582
High Visibility Crosswalk (Number)	5,858	301	0	6,159
Pedestrian Signal (Number)	4,058	166	0	4,224
Midblock Enhancements (Number)	89	15	0	104
Total Number	10,595	574	0	11,169



Source: eNEO2050



EXPANDING BIKING FACILITIES

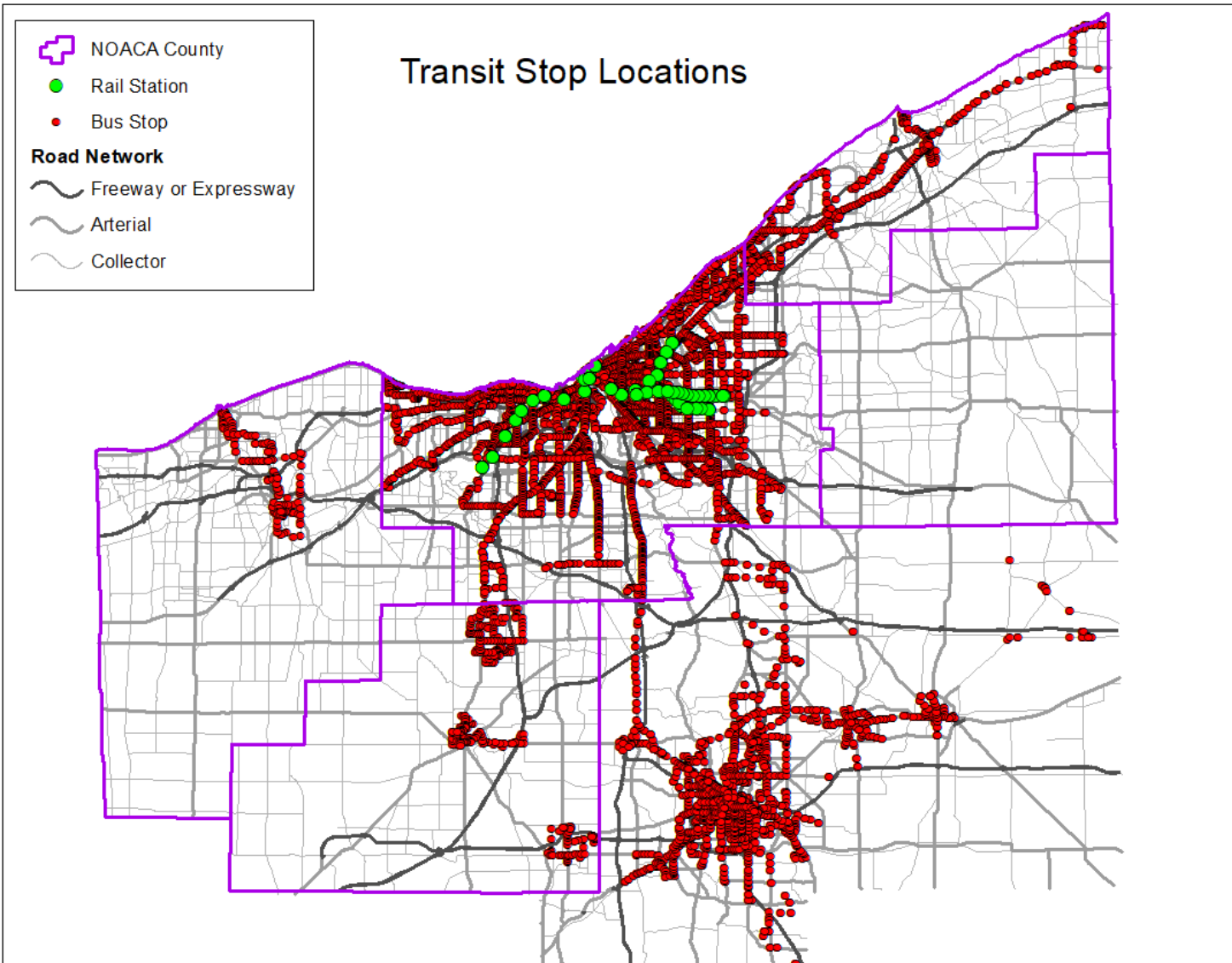
Biking Facilities	2020 - 2030	2030 - 2040	2040 - 2050	Total
Conventional Bike Lanes (Miles)	17	206	45	269
Buffered Bike Lanes (Miles)	76	7	1	84
Separate Bike Lanes / Cycle Track (Miles)	15	16	0	31
All Purpose Trail (Miles)	205	252	85	542
Total Miles	313	481	132	926
Bike Storage Lockers (Number)	0	240	0	240



Source: eNEO2050



TRANSIT STOPS



CQS (CONNECTIVITY QUANTITATIVE SCORE) INDEX

- The estimated CQS indices of stops are utilized to prioritize the non-motorized facility investments for accessing to the transit network.

$$CQSI = CQSWI + CQSBI$$

- CQSWI: CQS Walking Index
- CQSBI: CQS Biking Index

GUIDELINES FOR TRAIL NETWORK EXPANSION

Goal: To develop a connected trail network in the region

Criteria:

- Connect park areas to each other,
- Provide park access to residential neighborhoods,
- Percent of population within walking or biking access to the connected trail network,
- Percent of the Environmental Justice communities with a short walking or biking access to the connected trail network,
- Percent of jobs within walking or biking distance to the connected trail network,
- Percent of non-recreational trips using the trail network,
- Percent of transit and non-motorized work commute shares,



GUIDELINES FOR TRAIL NETWORK EXPANSION

Goal: To develop a connected trail network in the region




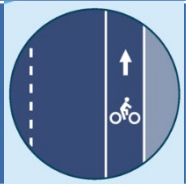
Criteria:

- Access improvements to park entrance locations as needed,
- Access to first and last mile connections from trail network to transit,
- Safety improvements based on existing Federal Highway Administration (FHWA) Proven Safety Countermeasures,
- Level of Traffic Stress (LTS) imposed on cyclists when connecting to the trail network,
- Trail network benefits to region based on the emission reduction, and mode shift,
- Opportunity areas for bike and micro mobility parking, and
- Total cost of the trail network infrastructure.







GUIDELINES FOR PEDESTRIAN AND CYCLIST SAFETY

FHWA Recommends Proven Safety Countermeasures that offers significant and measurable impacts to improving safety

Proven Safety Countermeasures for Pedestrian / Bicycles		Safety Benefits Reduction in Pedestrian/ Bicycle Injury Crashes up to
Crosswalk Visibility Enhancements		40%
Leading Pedestrian Interval		13%
Road Diets (Roadway Reconfiguration)		19 – 47%
Bicycle Lanes		57%

GUIDELINES FOR PEDESTRIAN AND CYCLIST SAFETY

FHWA Recommends Proven Safety Countermeasures that offers significant and measurable impacts to improving safety

Proven Safety Countermeasures for Pedestrian / Bicycles		Safety Benefits Reduction in Pedestrian/ Bicycle Injury Crashes up to
Medians and Pedestrian Refuge Islands		47%
Walkways		65 – 89%
Rectangular Rapid Flashing Beacons (RRFB)		47%
Pedestrian Hybrid Beacons		55%

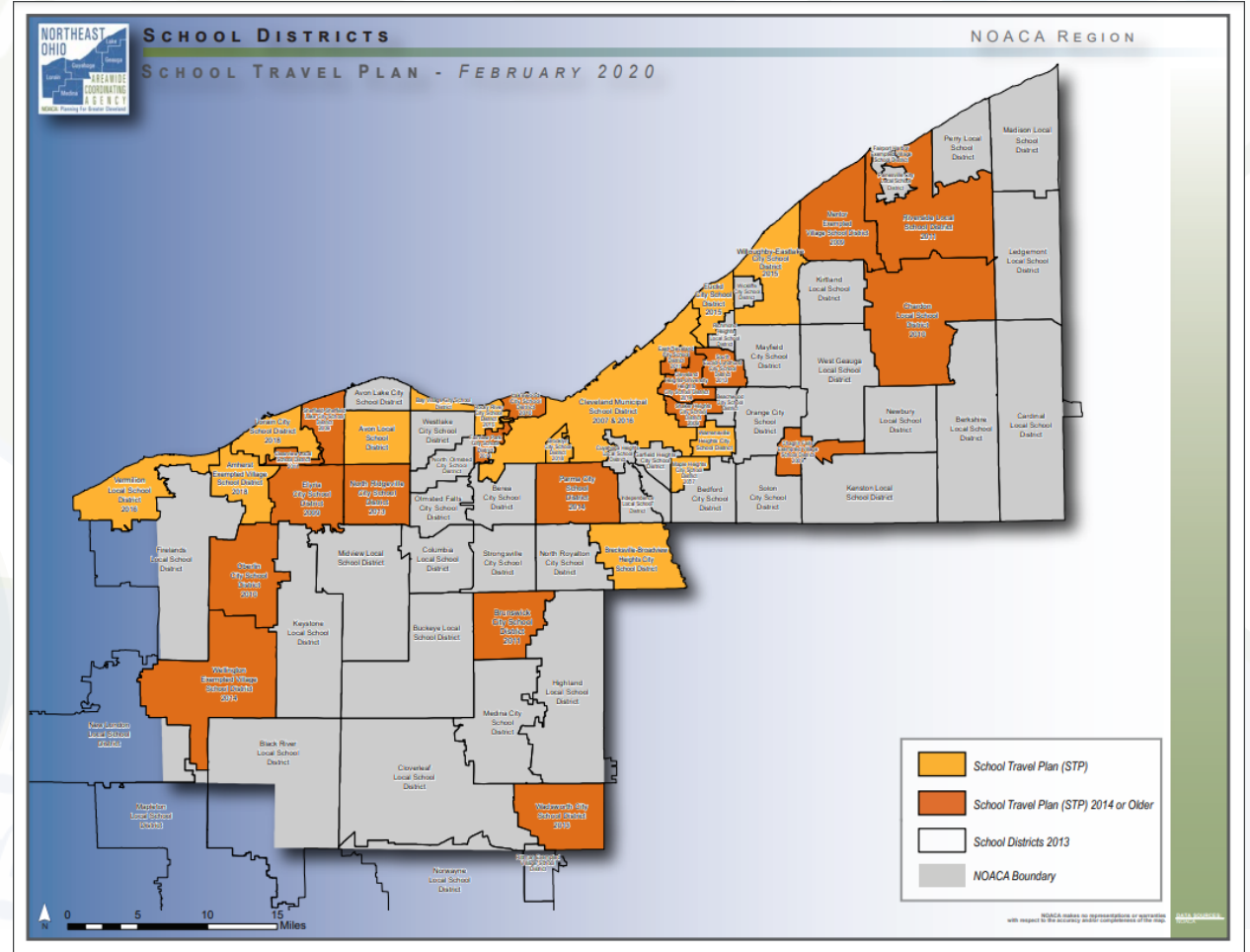
GUIDELINES FOR PEDESTRIAN AND CYCLIST SAFETY

SAFE ROUTES TO SCHOOL



GUIDELINES FOR PEDESTRIAN AND CYCLIST SAFETY

- Active Transportation Plan (ATP)
- School Travel Plan (STP)



NEXT STEPS

We encourage council members, officials and planners to use the guidelines of the NOACA ACTIVATE Plan in expanding and improving the existing bikeways and walkways and also inform staff of their feedbacks.

NORTHEAST OHIO



AREAWIDE
COORDINATING
AGENCY

NOACA: Planning For Greater Cleveland

NOACA will **STRENGTHEN** regional cohesion, **PRESERVE** existing infrastructure, and **BUILD** a sustainable multimodal transportation system to **SUPPORT** economic development and **ENHANCE** quality of life in Northeast Ohio.

