

# **RBTN Bikeway Facility Guidelines & Measures Study**

**TAC Planning Committee**

**February 11, 2021**



# Background

## RBTN Updates

- Local agencies given opportunity to request minor changes to RBTN corridors or alignments, prior to each Regional Solicitation
- Requests reviewed qualitatively in context with the 11 Guiding Principles
- Developed new process to allow for more significant RBTN changes to be considered starting this year
- Desirable to have quantitative measures to evaluate proposed changes to the RBTN

# Scope of Work

## Study is conducted in two phases

### Phase 1: Development of Quantitative Measures

Purpose: To develop recommended guidelines for applying quantifiable measures when evaluating potential RBTN corridors & alignments

### Phase 2: Development of Bikeway Facility Types for RBTN

Purpose: To provide recommendations for preferred facility treatments on RBTN alignments in urban, suburban, and rural areas

# Schedule

## RBTN Study

- Phase I draft tech memo under review by Bicycle & Pedestrian Peer Discussion Group (BPPDG)
- Complete phase I memo by early March
- Phase II begins mid-March & concludes this summer
- RBTN update process to be presented at TAC Planning in March

# Scope of Work

## Phase 1: Measures Development

### Key work tasks

1. Create a methodology to measure spacing between RBTN alignments & corridor centerlines across multiple jurisdictions.
2. Create a methodology to measure the “route directness” of a proposed RBTN segment and compare with “directness” of existing parallel routes.
3. Review the RBTN Guiding Principles and develop additional measures to aid in evaluating proposed RBTN routes
4. Develop guidelines for how the new measures can be applied in evaluating potential extensions, additions, or shifts to RBTN routes.

# Measures

## Application Guidelines

### Qualifiers:

1. Each measure will be evaluated in context with other measures.
2. Measure thresholds are not 'absolute' with respect to RBTN change request evaluations.
3. Some measures may not apply to a specific proposed route change due to atypical circumstances (e.g., converging routes near major urban & suburban centers).
4. Measures will be applied in context with sub-regional or local conditions.

# Spacing Measure

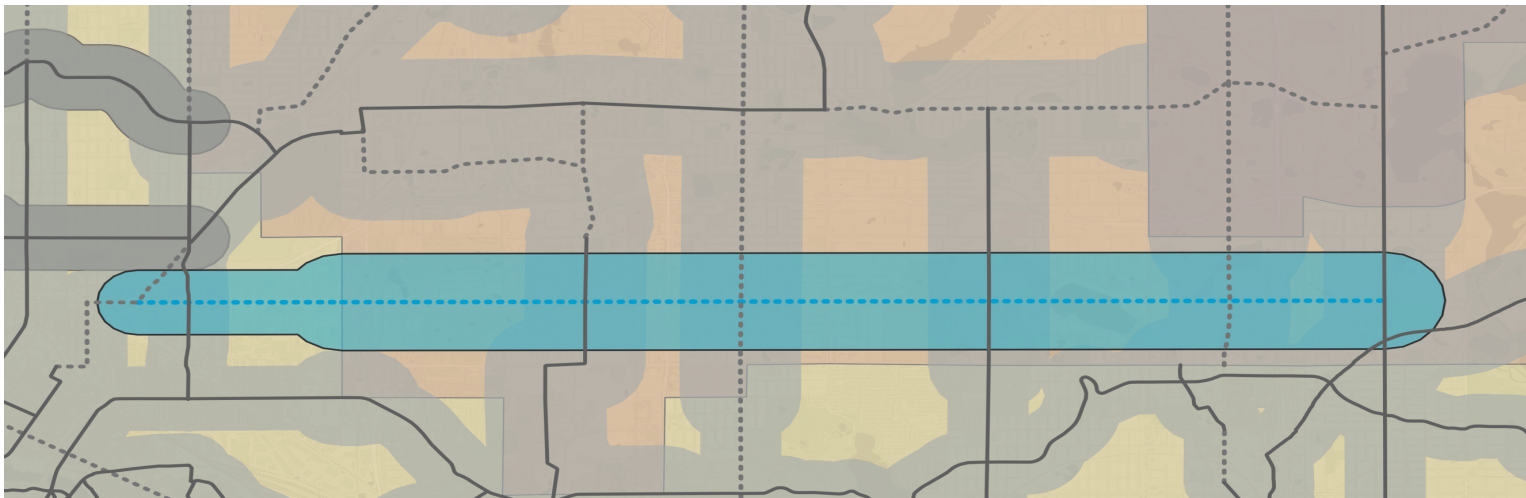
## Buffered Corridor Method

**Guiding Principles supported:** “Follow spacing guidelines that reflect established development and transportation patterns”

**Application:** Used primarily in Urban and Suburban Thrive community designation groups.

**Data metric:** Apply buffers of one-half the recommended minimum spacing threshold to existing & proposed routes.

**Threshold:** According to recommended buffered distances that vary by Thrive community group.



# Spacing Measure

## Recommended RBTN Spacing Thresholds

Thrive Community Designation Group	Preferred max. distance bet. Reg. Barrier Crossings	Existing average spacing	Preferred min. distance bet. RBTN routes
Urban Center	1/2-mile	N to S: 0.98 mi E to W: 0.98 mi	1/2-mile
Urban	3/4-mile	N to S: 0.94 mi E to W: 1.94 mi	3/4-mile
Suburban group communities	1 mile	N to S: 2.30 mi E to W: 2.42 mi	1 mile
Rural group communities	2 miles	Varies	2 miles



# Directness Measures

## Out-of-Direction Ratio

### Guiding Principles supported:

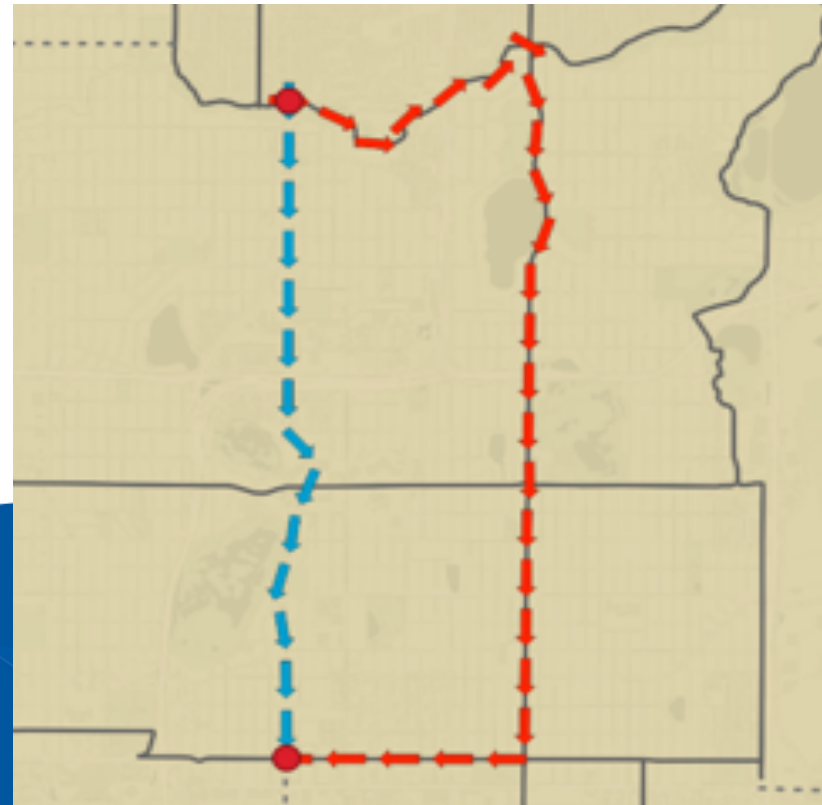
“Function as arteries to connect regional destinations & the transit system year-round”

“Overcome physical barriers and eliminate critical system gaps”

**Application:** Best use to compare existing route to proposed route for RBTN route shifts.

**Data metric:** Ratio of proposed route distance to existing route distance.

**Threshold:** Initial target of 2.0 max.; ratio of 2.0 indicates required detour from existing route is 2X the original route distance.



# Directness Measures

## Directness to Regional Destinations

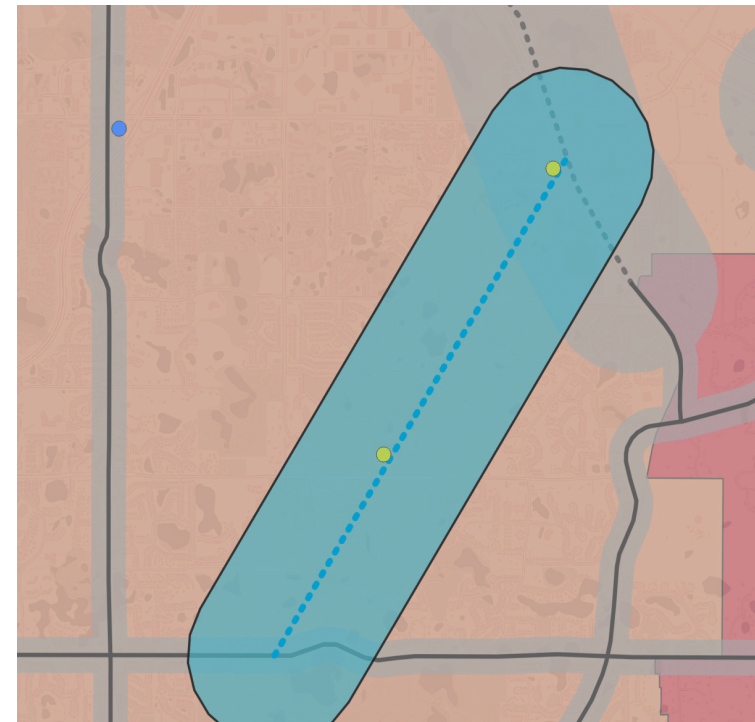
### Guiding Principles supported:

“Function as arteries to connect regional destinations & the transit system year-round”

“Overcome physical barriers and eliminate critical system gaps”

**Data metric:** Number of new regional destinations (or net # added destinations for route shifts) within 1/10<sup>th</sup> mile of an alignment, or within the corridor buffer (1/4- or 1/2-mile).

**Threshold:** Proposed route shift should not reduce number of regional destinations/transit centers compared to existing route.



# Directness Measures

Regional Destinations and Transit Nodes include:

- Metropolitan, regional, and subregional job centers
- Colleges & universities (enrollment  $\geq 2,000$ )
- Large High Schools (2000+ enrolled)
- Major Sport & Entertainment Centers
- Highly-visited Regional Parks ( $\geq 400,000$  visits/yr)
- Existing & planned regional transitway stations
- Park & ride lots ( $\geq 200$  spaces)
- Bus transit centers
- Bike & ride centers

# Connectivity Measures

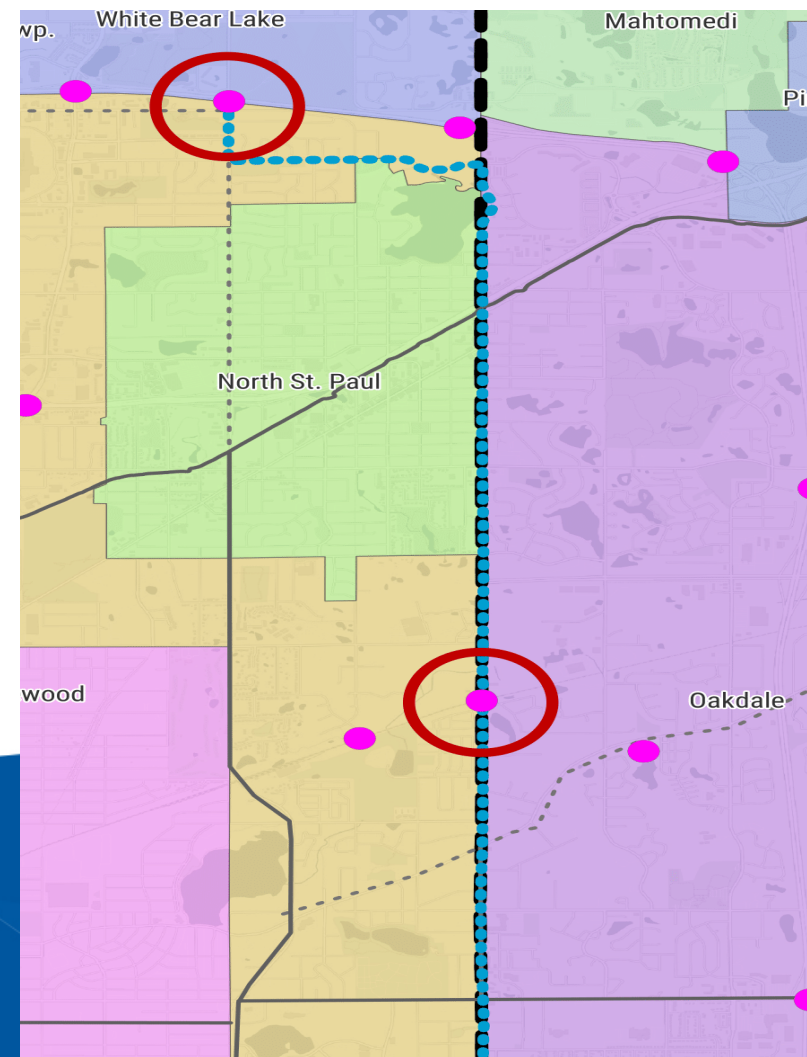
## Connectivity to regional bike barrier crossings

### Guiding Principle supported:

“Overcome physical barriers & eliminate critical system gaps”

**Data metric:** Number of new connections to regional barrier crossings with proposed route (or net change in # of direct connections for route shifts).

**Threshold:** Proposed change should not reduce the number of direct connections to reg. barrier crossings.

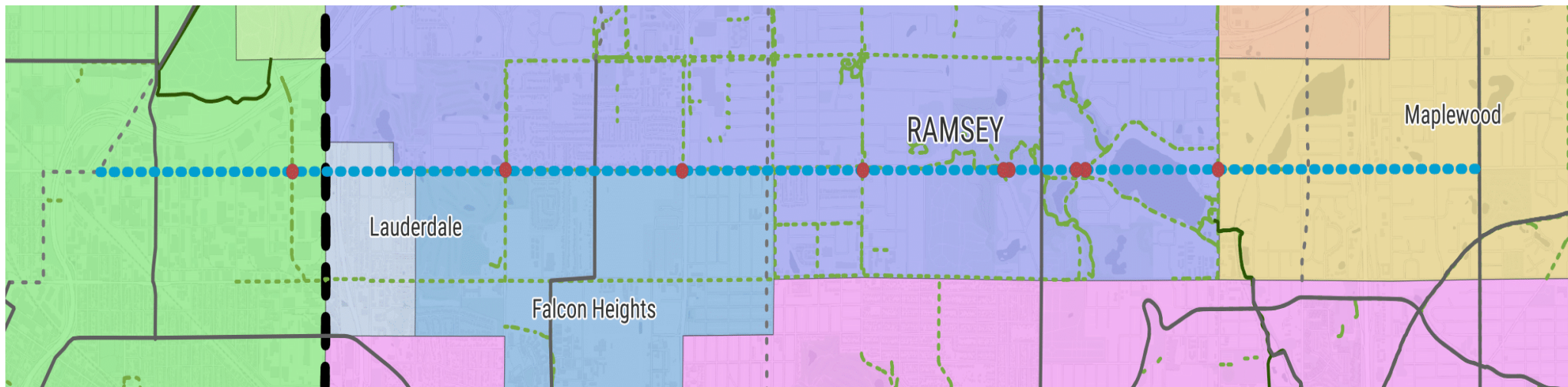


# Connectivity Measures

## Continuity/connectivity between adjacent city and county bikeway networks

**Guiding Principle supported:** “Facilitate safe and continuous trips to regional destinations”

**Data metric:** Number of adjacent city/county bikeway networks with new connections to the proposed RBTN route.



# Connectivity Measures

## Connectivity with local, state, & regional bikeway networks

### Guiding Principle supported:

“Connect to local and state bikeway networks”

### Data metrics:

- Number of new state or regional trail access points/intersections.
- Total of *all* new connections to or intersections with local bikeway networks.

# Equity Measures

## BIPOC individuals and people in poverty with access to RBTN

### Guiding Principle supported:

“Be equitably distributed throughout the region”

**Application:** Only used for proposed shifts to RBTN alignments or corridors.

### Data metric:

- Net change in BIPOC residents within 1 mile of RBTN route
- Net change in people in poverty within 1 mile of RBTN route

**Threshold:** Net change resulting from proposed route shift should be positive.

# Equity Measures

## Qualitative assessment of benefits to disadvantaged or vulnerable populations

### Guiding Principle supported:

“Be equitably distributed throughout the region”

**Application:** Agencies to provide self-assessment of probable benefits from implementing a facility according to the proposed change.

**Assessment:** Description of benefits of proposed change to

- BIPOC populations
- People w/physical disabilities
- People in poverty
- Youth (ages 5 to 15)
- Immigrant communities
- Senior citizens



# Proximity Measures

## Proximity to population and jobs

### Guiding Principle supported:

“Follow spacing guidelines that reflect established development and transportation patterns”

**Application:** Only applied in urban & suburban communities

**Data metric:** Number of projected people + jobs per square mile within ½-mile of RBTN route

**Threshold:** Initial targets vary across Thrive community designation types.

# Proximity Measures

Initial target thresholds (Projected pop./jobs per mile)

Thrive Community Designation	Existing Pop. + Jobs per square mile	75% of Pop. + Jobs per square mile	Initial target threshold
Urban Center	6,804	5,103	5,000
Urban	4,393	3,294	3,000
Suburban	1,965	1,474	1,300
Regional Average	2,953	2,215	

# Proximity Measures

## Activity per mile Ratio

### Guiding Principle supported:

“Follow spacing guidelines that reflect established development and transportation patterns”

**Application:** Only in rural areas for new routes or extensions of existing routes.

**Data metric:** Sum of projected people + jobs within ½-mile of the RBTN route, divided by the segment length.

**Threshold:** Initial target of 800 people + jobs per mile of proposed route, or an increase in pop. & jobs per mile for route shifts.

# Proximity Measures

## Initial target threshold (Activity Ratio)

Existing RBTN Route Test Case	Pop. + Jobs	Route length (mi)	People + Jobs/mile	75% of Pop. + jobs/mile	Initial target threshold
8. Stillwater	30,174	11.22	2,689	2016	
9. Medina	1,119	4.05	277	207	
11. Waconia	4,549	7.18	634	475	
12. Waconia	3,080	6.11	504	378	
13. Waconia	19,578	10.8	1,813	1359	
Test Case Average			1,183	887	800



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