

BRT

Regional BRT Feasibility Study

RTD is exploring opportunities for Bus Rapid Transit (BRT), based on existing and anticipated travel demands. BRT offers the potential for mobility and access improvements at relatively modest capital and operating costs. The study's primary goal is the identification and prioritization of corridor-based or fixed-guideway BRT projects within RTD's service area.



Outcomes

- Planned BRT network
- Prioritized list of short-term BRT investments
- Identification of one or more projects ready for project development

RTD Project Manager

Brian Welch, AICP

Project Manager

Holly Buck, PE, PTP | FHU

Principal-in-Charge

Elliot Sulsky, PE, AICP | FHU



Data Collection & Analysis

Emma Belmont, AICP | FHU



Identification of Potential Physical/Operation Enhancements

Jim Baker | CTG
Molly Veldkamp, AICP | Apex



Evaluation & Prioritization

Holly Buck, PE, PTP | FHU
Phil Hoffmann | PTG
Patty Gude | HE
Brian Duffany | EPS



Public Information/Engagement

Cady Dawson | FHU



Agency Coordination

Holly Buck, PE, PTP | FHU



Final Deliverables

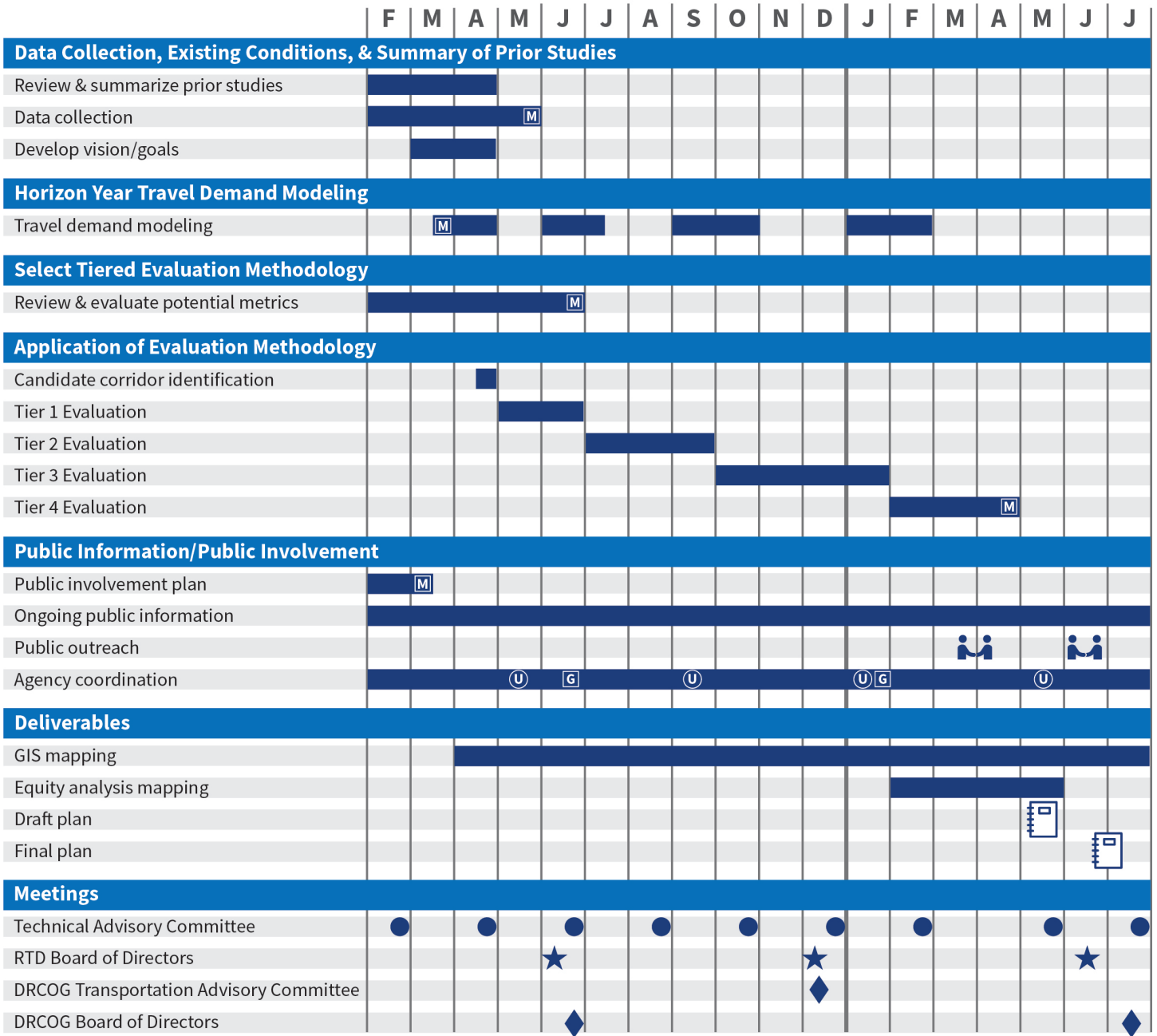
Documentation Oversight
Cady Dawson | FHU

Organization

Schedule

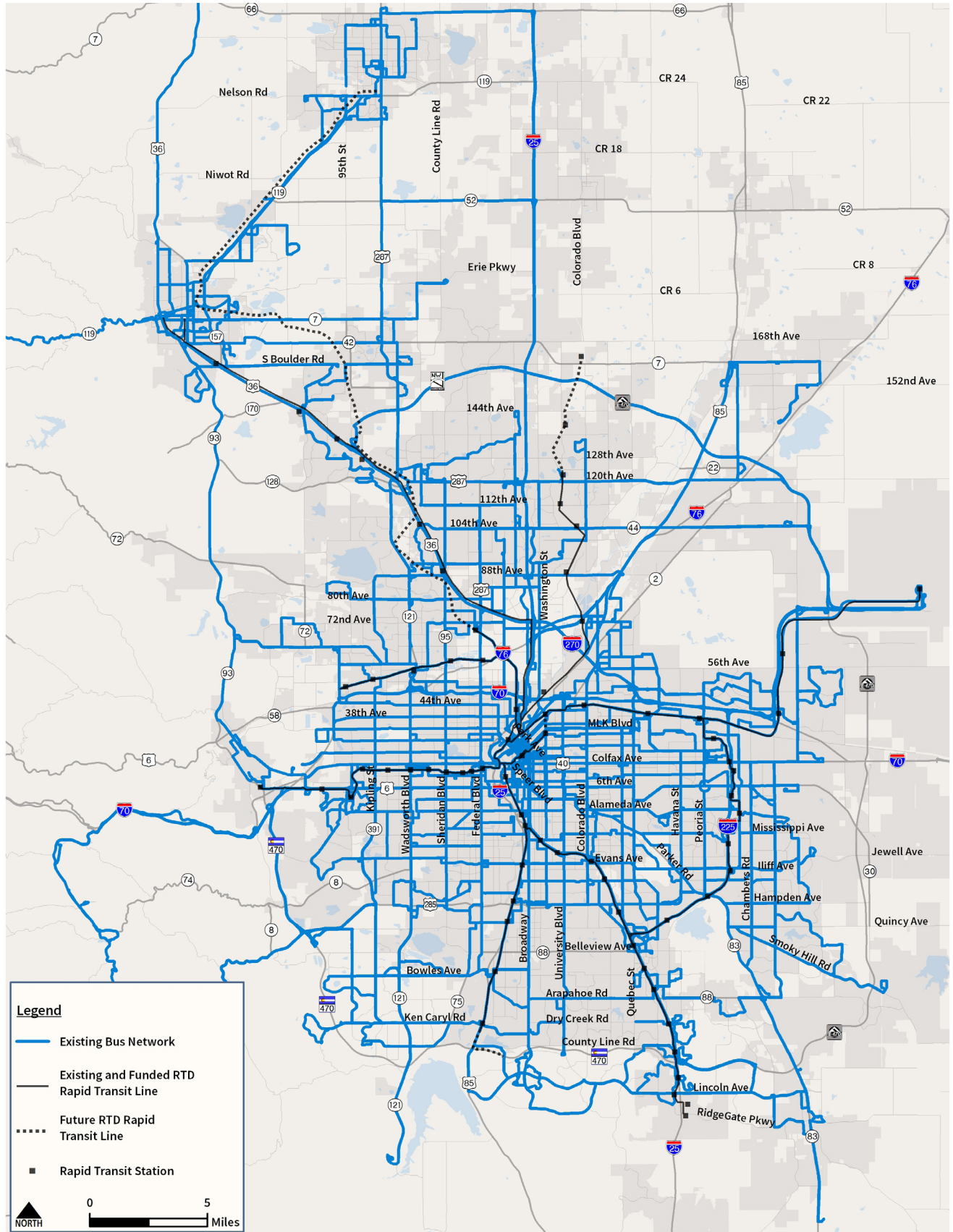
2018

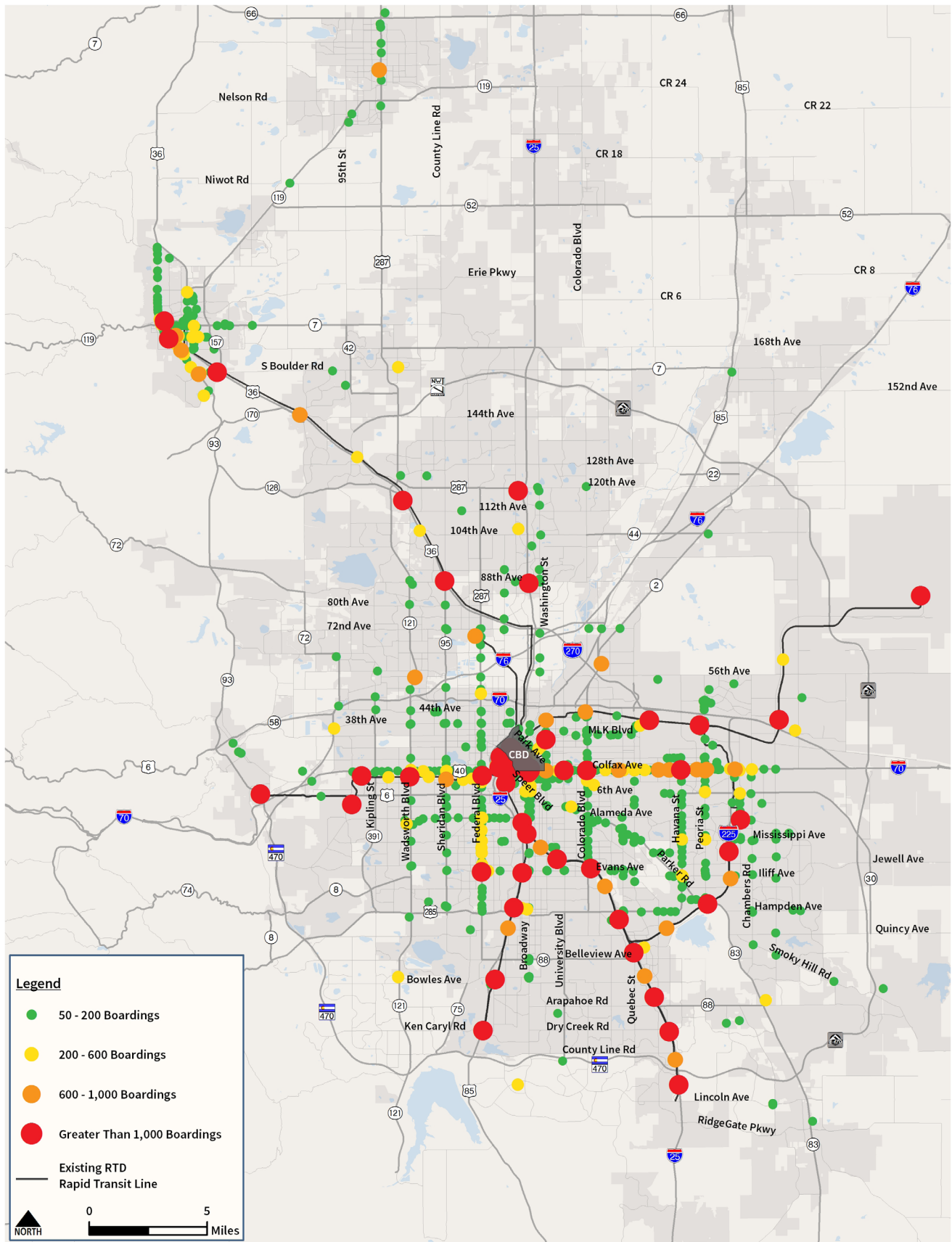
2019



KEY: **M** Technical Memorandum **G** Local Government Planning Meeting **U** Web Update

RTD Service Network





RTD Boardings by Stop

Complementary Studies and Plans

- 2040 Metro Vision Regional Transportation Plan
- Aurora Northeast Area Transportation Study
- Boulder County SH 7 Bus Rapid Transit Study
- Boulder County Transportation Master Plan
- Centennial Transportation Master Plan
- City of Boulder Transportation Master Plan
- Colfax Corridor Connections
- Denver Moves: Transit
- Denver Union Station Bus Facility Shared Use Study
- Denver Union Station-Cherry Creek-Glendale Corridor Feasibility Study
- Downtown Boulder Station Feasibility Study
- Federal Boulevard Corridor Plan
- Go Speer Leetsdale
- Mobility Choice Blueprint
- Northwest Area Mobility Study
- North I-25 Environmental Impact Statement
- RTD Network Analysis and Transit Priority Analysis
- RTD First and Last Mile Strategic Plan
- RTD Mobility on Demand, Transportation as a Service, and Technology Providers Study
- RTD Quality of Life Study
- State Highway 119 Bus Rapid Transit Study
- The Mall Experience: Alternatives Analysis and Environmental Clearance
- Town of Parker Fixed Guideway Transit Study

Vision *A Bus Rapid Transit (BRT) network that enhances regional connectivity, supports future travel demand, and improves attractiveness of transit.*

E v a l u a t i o n

P r i n c i p l e s

- Provides connectivity and access
- Increases ridership
- Enhances expandability, equity, and sustainability
- Ensures cost-effectiveness
- Aligns with state and local agency recommendations
- Considers technological innovation/Smart Cities
- Adheres to FAST Act BRT definition
- Integrates engineering/operation feasibility/safety
- Acknowledges potential environmental impacts
- Capitalizes on financial resources

Tiered Evaluation Methodology

CANDIDATE CORRIDORS

Identify all Potential Corridors



TASKS

- Identify all corridors for evaluation of BRT feasibility

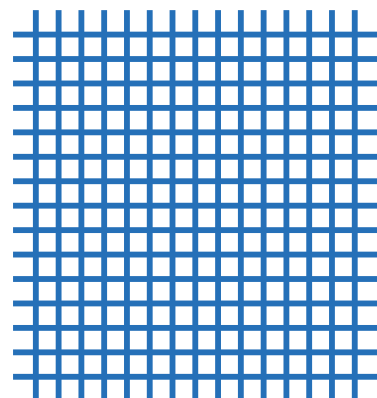


EVALUATION CRITERIA

- Community/TAC identified BRT corridors
- Existing RTD bus routes > 1 million annual boardings
- Roads with > 40,000 vehicles per day in 2040

RESULTS

- Identify potential corridors for advancement to **Tier 1** evaluation



TIER 1

Identify High Demand Travel Corridors



TASKS

- Evaluate candidate corridors

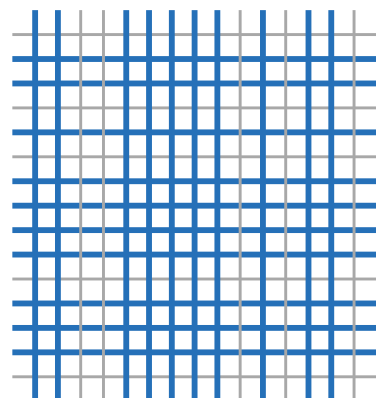


EVALUATION CRITERIA

- Highest 25% 2040 population/corridor mile (1/2 mile buffer)
- Highest 25% 2040 employment/corridor mile (1/2 mile buffer)
- Highest 25% employment plus population growth between 2015 and 2040/corridor mile (1/2 mile buffer)
- Population plus job density > 17/acre in 2040 (1/2 mile buffer)
- Potential access to key activity centers/TOCs
- Connections to transit and other modes

RESULTS

- Identify top 20-30 corridors for advancement to **TIER 2** evaluation



TIER 2

Identify Congestion and/or Delay



TASKS

- Evaluate top 20-30 corridors retained in **TIER 1**

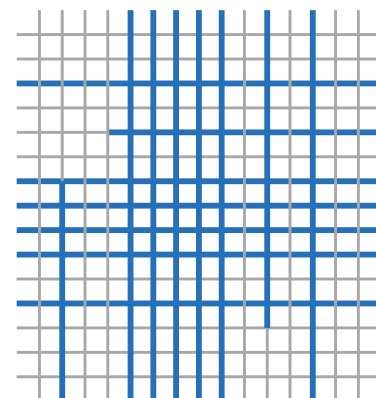


EVALUATION CRITERIA

- 2040 peak travel time comparisons (auto to bus)
- 2040 daily ridership projections >TBD
- 2040 v/c ratios > 0.8
- 2040 highest line loads on links approaching capacity (v/c >0.8)
- Existing locations with high bus delays

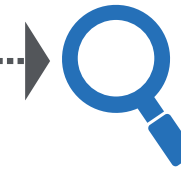
RESULTS

- Identify top 10-20 corridors/corridor segments for advancement to **TIER 3** evaluation



TIER 3

Identify Viability of Capital Investment



TASKS

- Evaluate top 10-20 corridors/corridor segments retained in **TIER 2**

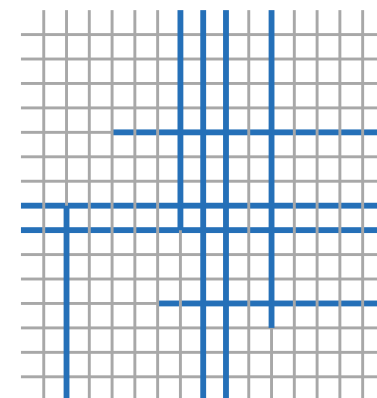


EVALUATION CRITERIA

- Alignment with stakeholder agencies' plans and policies
- ROW availability
- Viability of lane repurposing
- Viability of exclusive and/or semi exclusive travelways
- Capital cost by route
- Viability and cost advanced technology implementation
- Meets FTA definition of BRT
- Potential to impact sensitive resources (historic, visual, noise, drainage, open space/parks/trails)

RESULTS

- Identify top 5-10 corridors/corridor segments for advancement to **TIER 4** evaluation



TIER 4

Final Evaluation & Prioritization



TASKS

- Evaluate 5-10 corridors/corridor segments retained in **TIER 3**

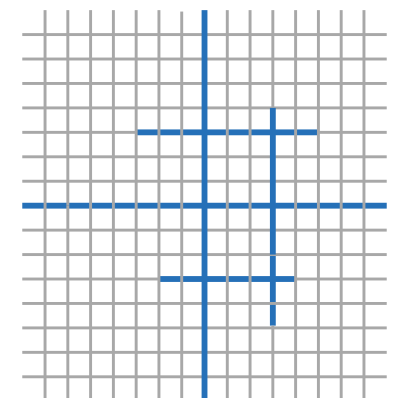


EVALUATION CRITERIA

- Travel time savings by route (no action vs. proposed)
- Operating costs
- Boardings
- Boardings per service hour
- Annualized cost per rider (capital and operating)
- Transit dependent populations served (existing census)
- Jobs and households served (1/4 mile buffer)
- Potential to address community-identified safety concerns
- Suitability for Small Starts funding
- Connectivity to other multimodal facilities
- Availability of local agency financial support
- Neighborhood buy-in
- Supports community economic development goals

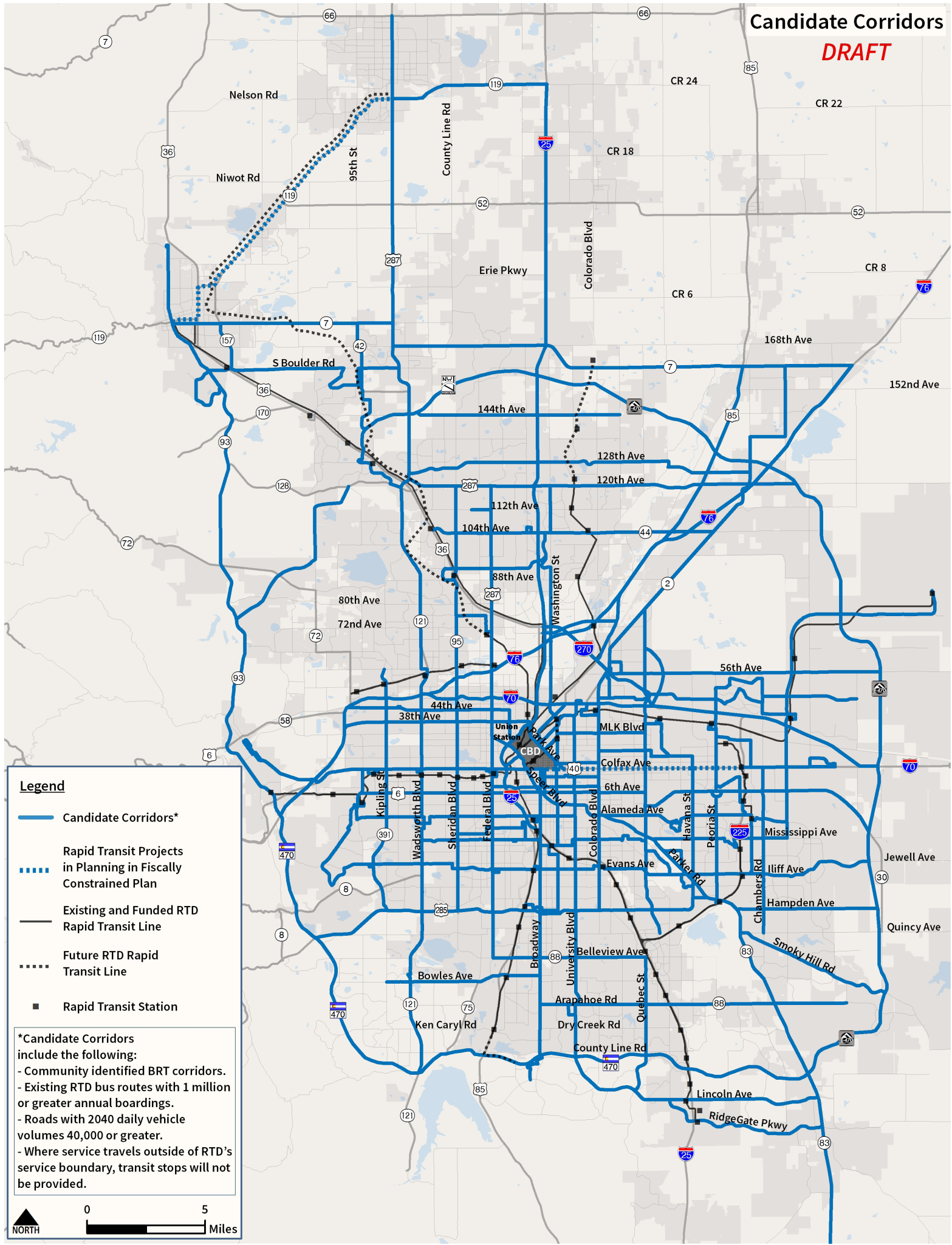
RESULTS

- Identify top 3-5 corridors/corridor segments for investment



Candidate Corridors

DRAFT



Legend

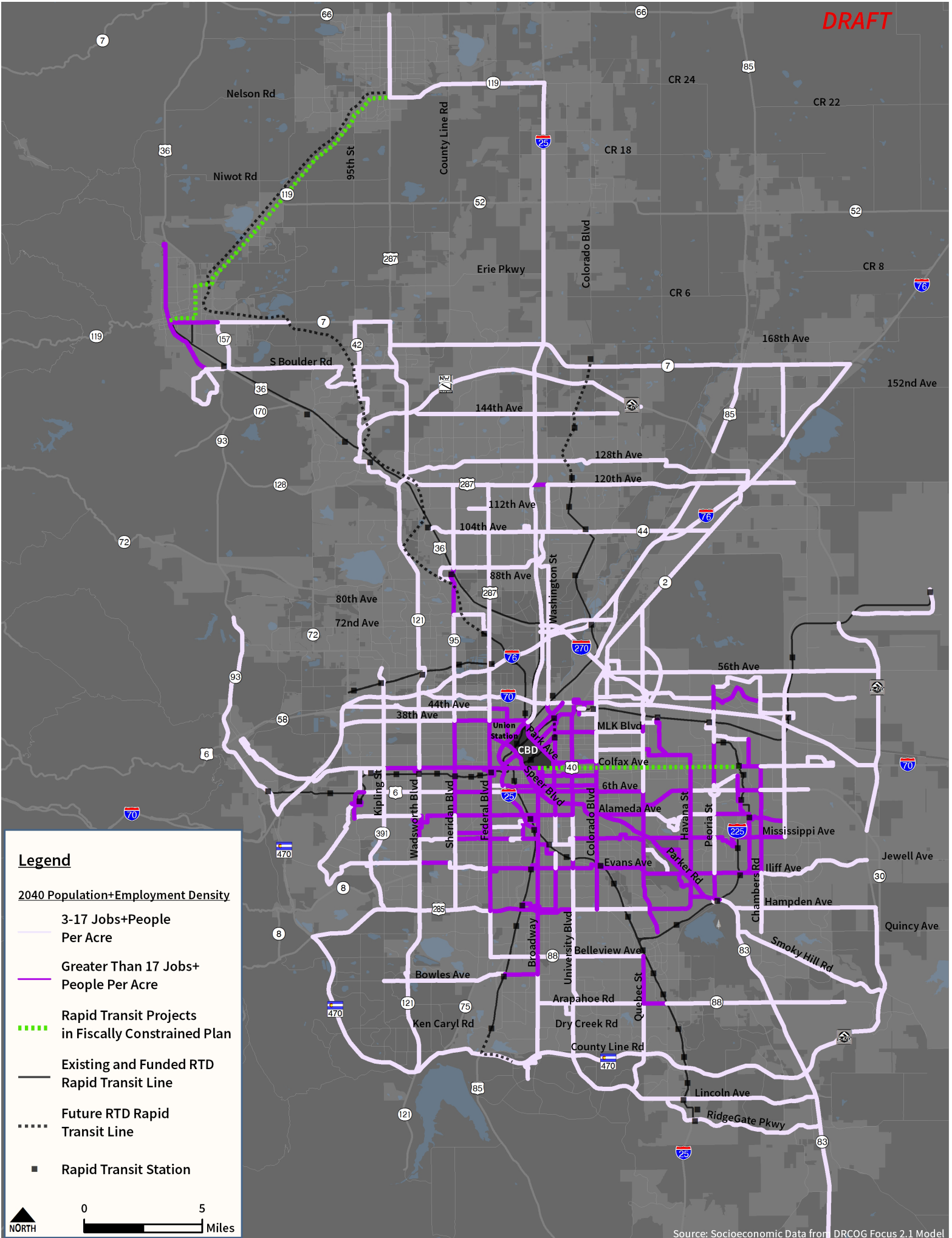
- Candidate Corridors*
- - - - Rapid Transit Projects in Planning in Fiscally Constrained Plan
- Existing and Funded RTD Rapid Transit Line
- - - - Future RTD Rapid Transit Line
- Rapid Transit Station

*Candidate Corridors include the following:

- Community identified BRT corridors.
- Existing RTD bus routes with 1 million or greater annual boardings.
- Roads with 2040 daily vehicle volumes 40,000 or greater.
- Where service travels outside of RTD's service boundary, transit stops will not be provided.

0 5 Miles

NORTH



Legend

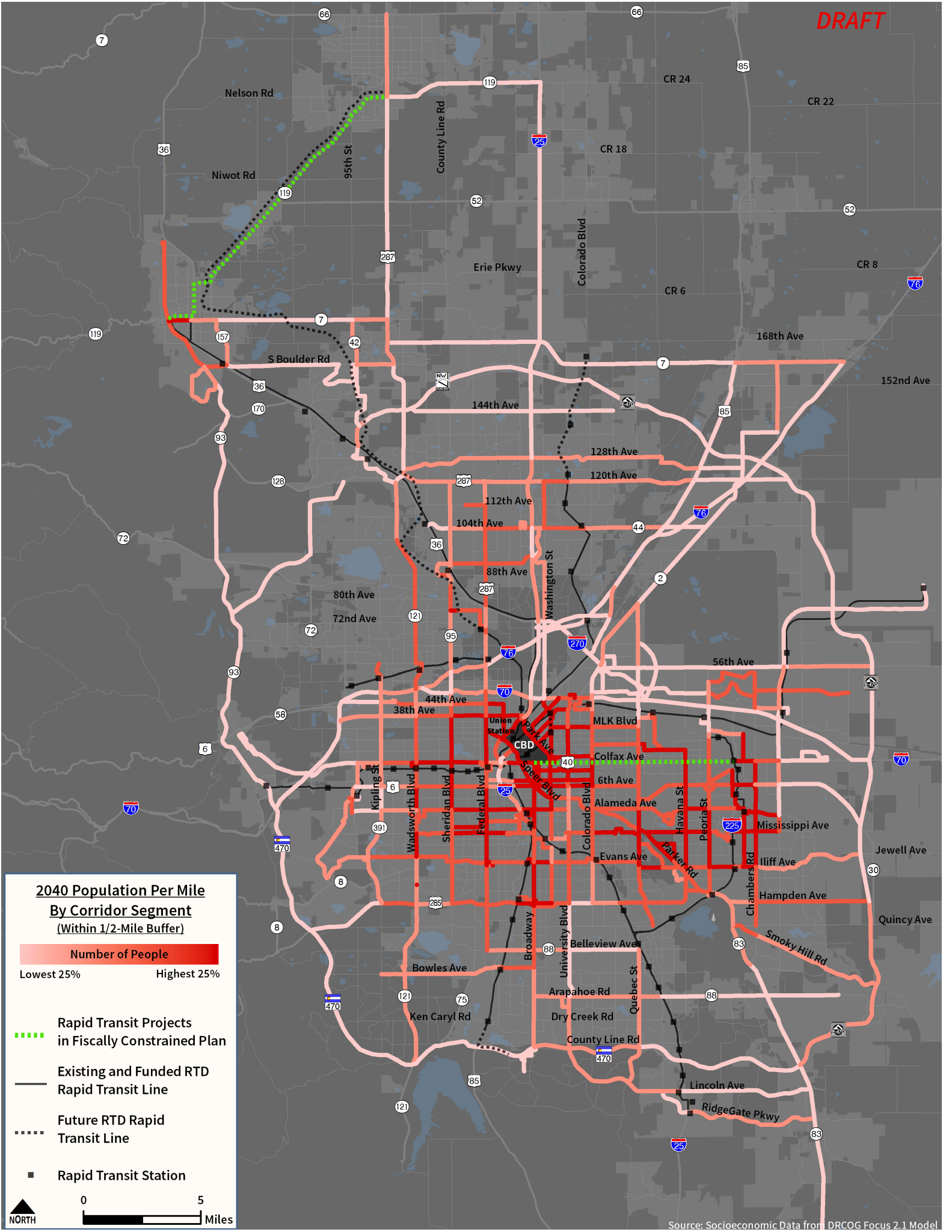
2040 Population+Employment Density

- 3-17 Jobs+People Per Acre
- Greater Than 17 Jobs+People Per Acre

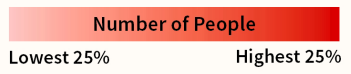
Rapid Transit Projects in Fiscally Constrained Plan

- Existing and Funded RTD Rapid Transit Line
- Future RTD Rapid Transit Line
- Rapid Transit Station



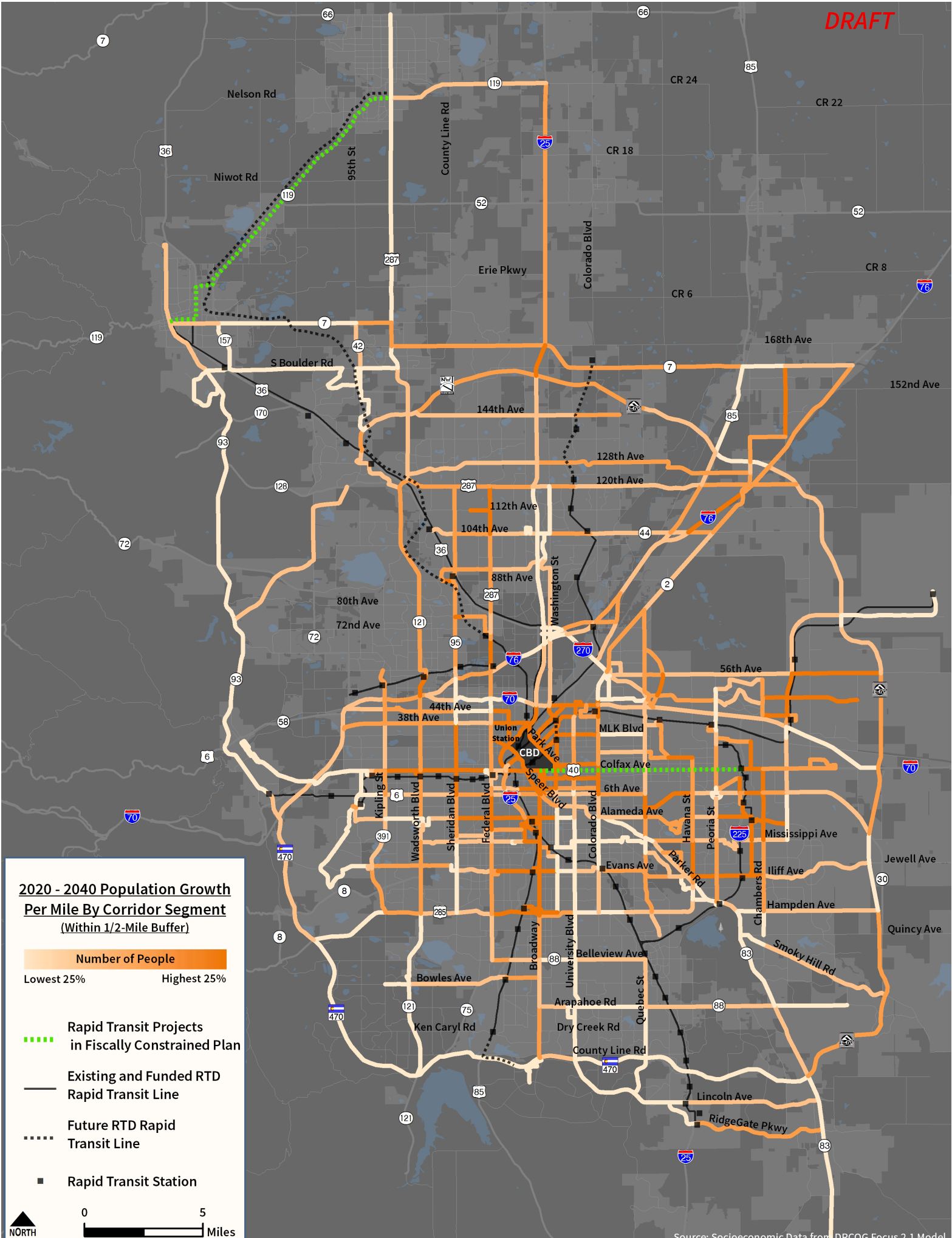


**2040 Population Per Mile
By Corridor Segment
(Within 1/2-Mile Buffer)**



- Rapid Transit Projects in Fiscally Constrained Plan
- Existing and Funded RTD Rapid Transit Line
- - - - Future RTD Rapid Transit Line
- Rapid Transit Station





2020 - 2040 Population Growth Per Mile By Corridor Segment (Within 1/2-Mile Buffer)

Number of People
 Lowest 25% Highest 25%

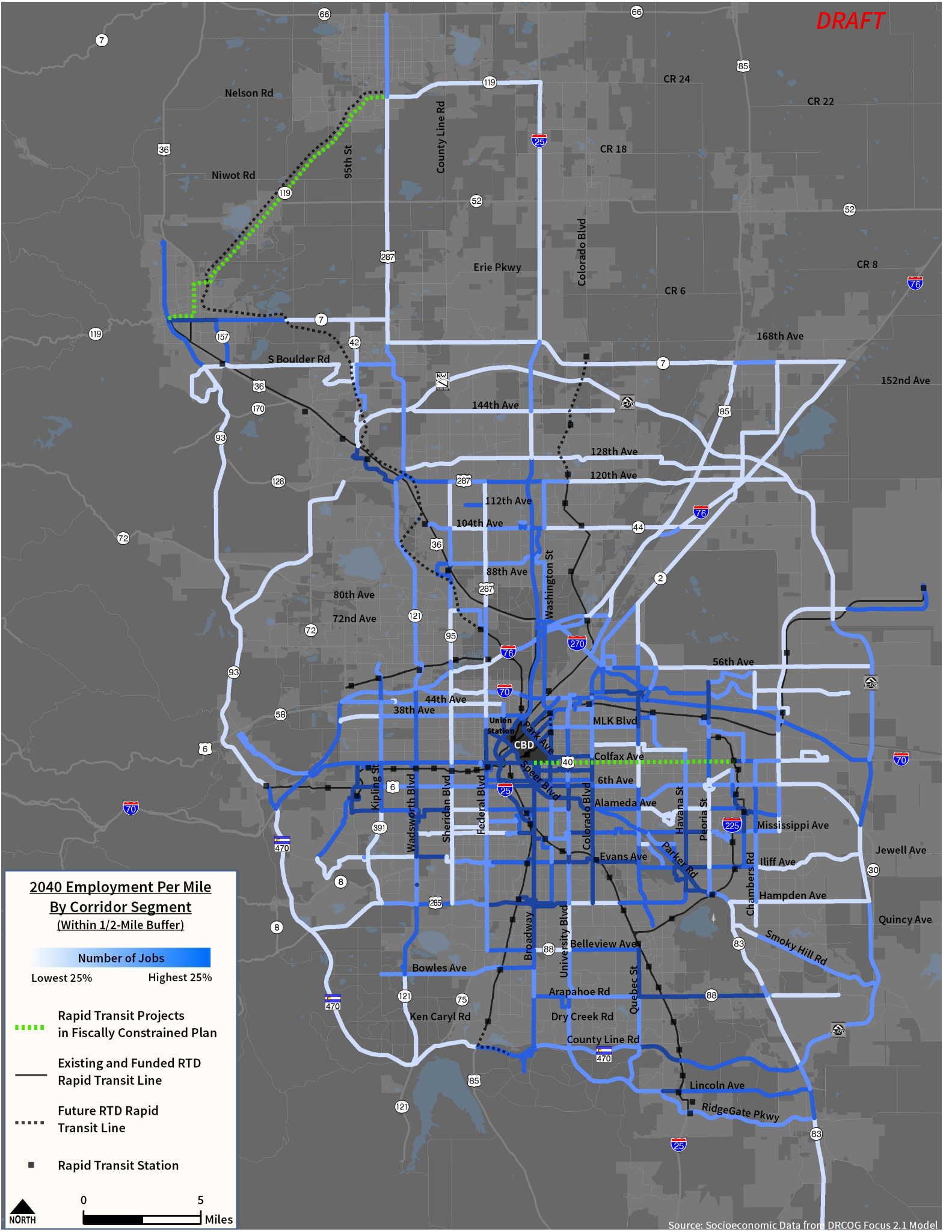
Rapid Transit Projects in Fiscally Constrained Plan

Existing and Funded RTD Rapid Transit Line

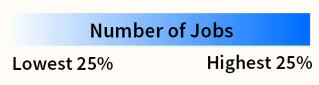
Future RTD Rapid Transit Line

Rapid Transit Station





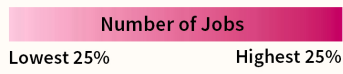
**2040 Employment Per Mile
By Corridor Segment
(Within 1/2-Mile Buffer)**



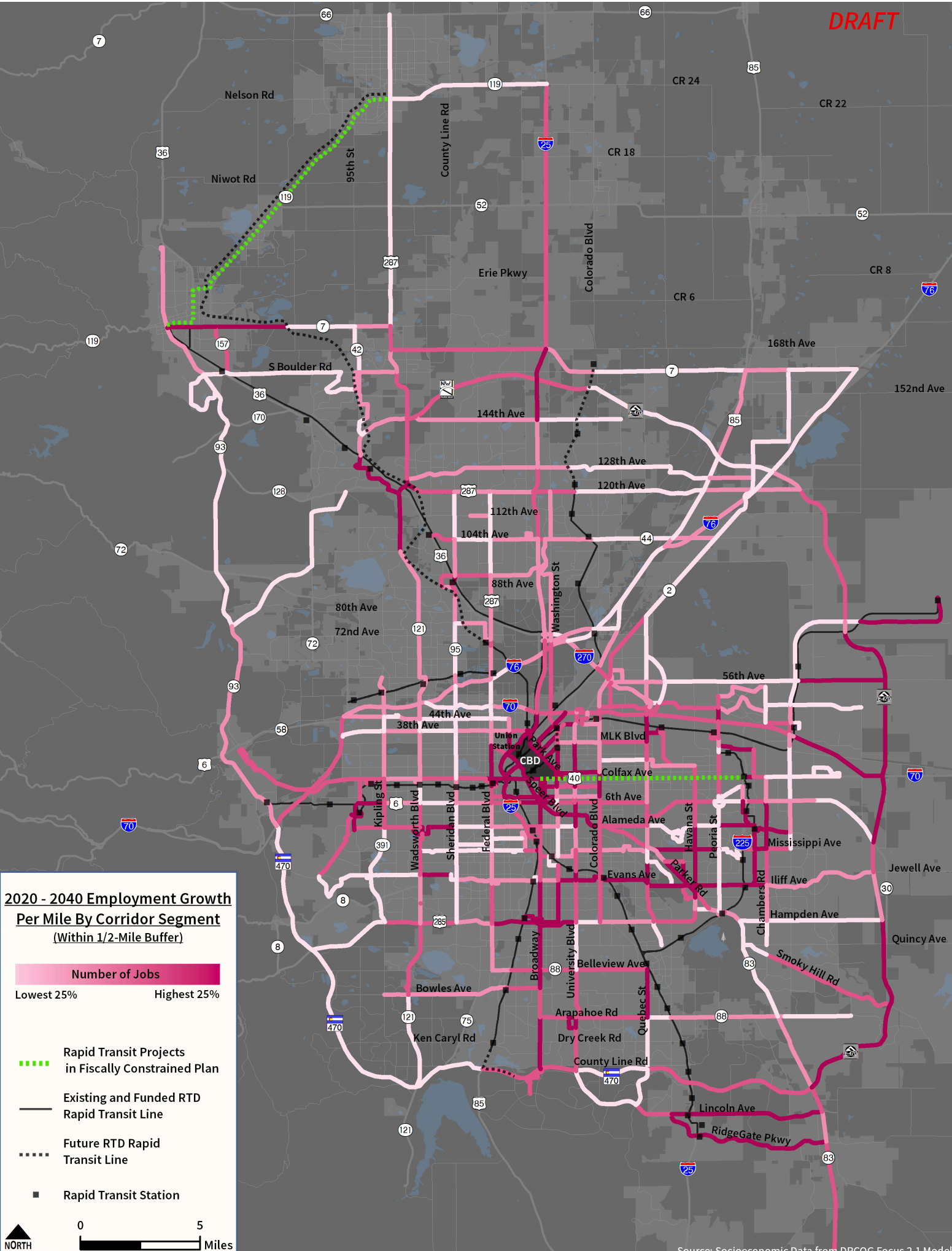
- - - - Rapid Transit Projects in Fiscally Constrained Plan
- Existing and Funded RTD Rapid Transit Line
- · · · Future RTD Rapid Transit Line
- Rapid Transit Station



2020 - 2040 Employment Growth Per Mile By Corridor Segment (Within 1/2-Mile Buffer)



- Rapid Transit Projects in Fiscally Constrained Plan (dashed green line)
Existing and Funded RTD Rapid Transit Line (solid black line)
Future RTD Rapid Transit Line (dotted black line)
Rapid Transit Station (black square)



Contacts

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Web Site

www.rtd-denver.com/BRT-study.shtml

Web Mapping

Draft Candidate Corridors:

<https://rtd-denver.maps.arcgis.com/apps/webappviewer/index.html?id=d0b7e52e598240c68536bf9016280896>

Preliminary Tier One Analysis:

<https://rtd-denver.maps.arcgis.com/apps/webappviewer/index.html?id=93813d60b5ff48d6b0a16410a32d408c>