

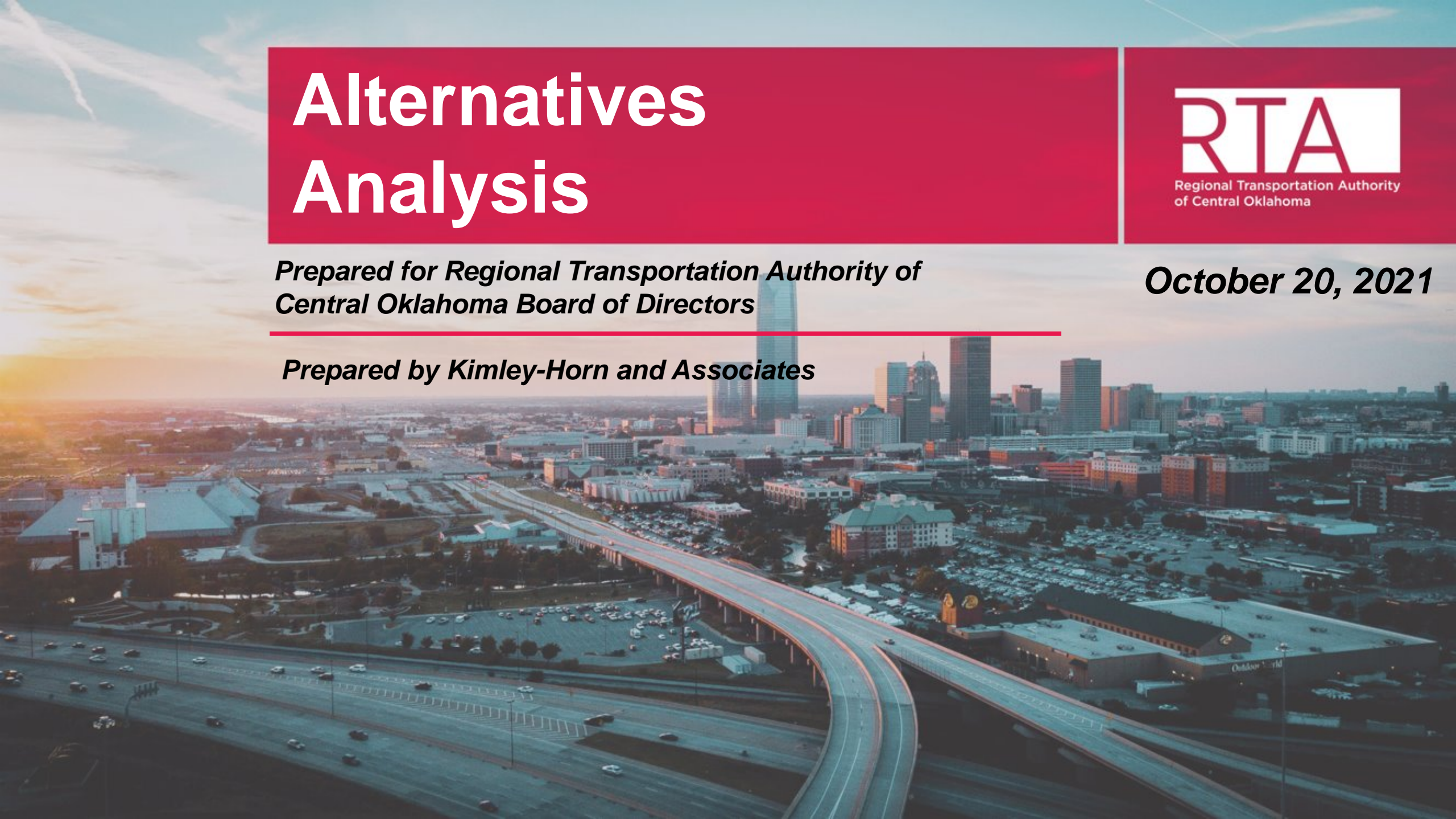
Alternatives Analysis



*Prepared for Regional Transportation Authority of
Central Oklahoma Board of Directors*

October 20, 2021

Prepared by Kimley-Horn and Associates



Agenda

- Engagement Status
- Part 1: North/South Corridor Feasibility Study Update
- Part 2: East Corridor Alternatives Analysis Update
- Next Steps

Current Engagement



3,800
Website
Views



30
Comments



92
Survey
Responses



Local Media



Press Release



Social Media



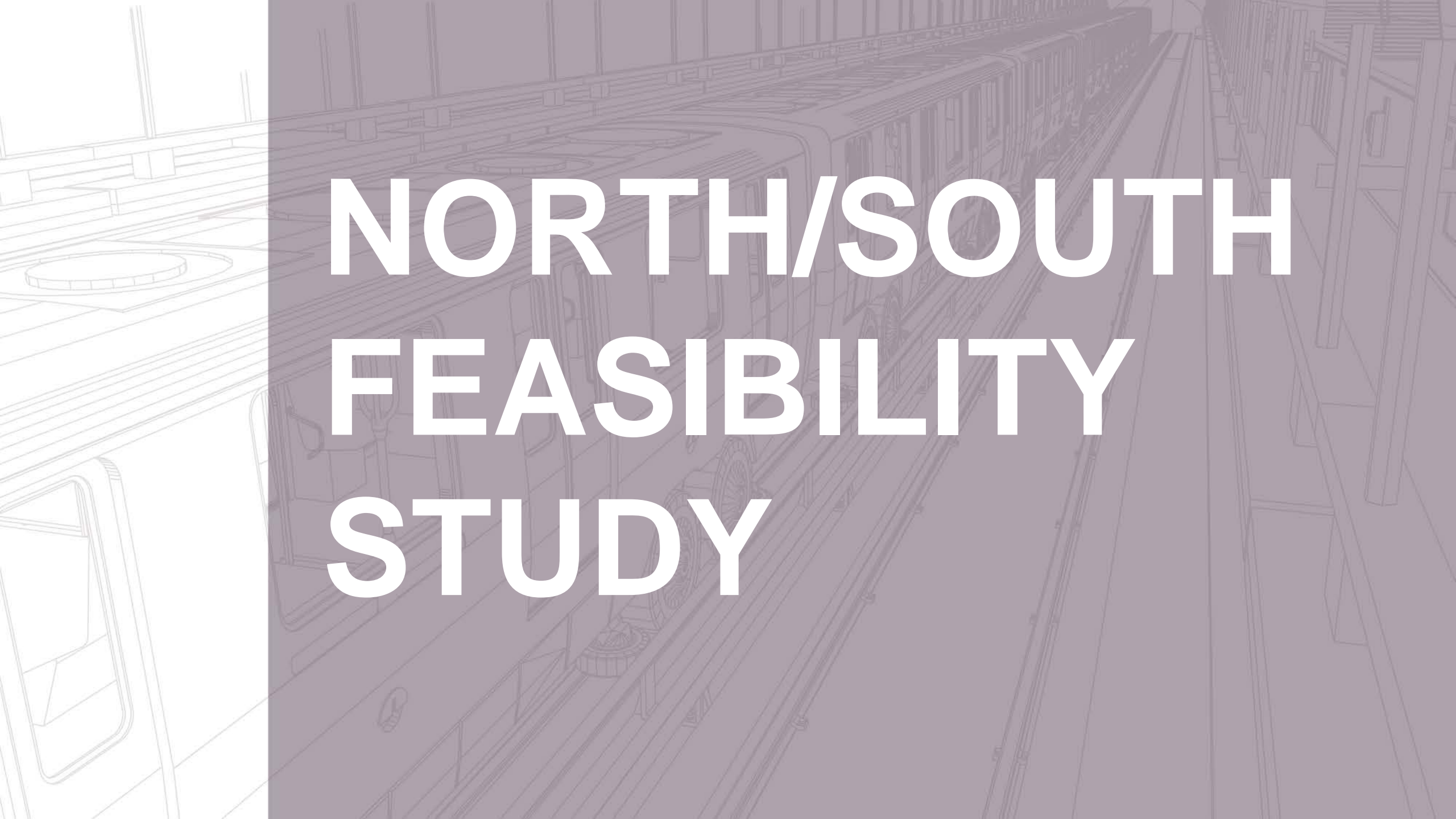
Emails

High-Level Takeaways

- High interest in possible transportation route from Edmond to Norman
- Curiosity about project completion date and implementation
- High participation from non-transit users
 - 68% of survey responders do not use transit
 - 30% of survey responders use transit a few times a year
 - 2% of survey responders use transit all the time
- Dependability, frequency, and speed are most important when considering using transit

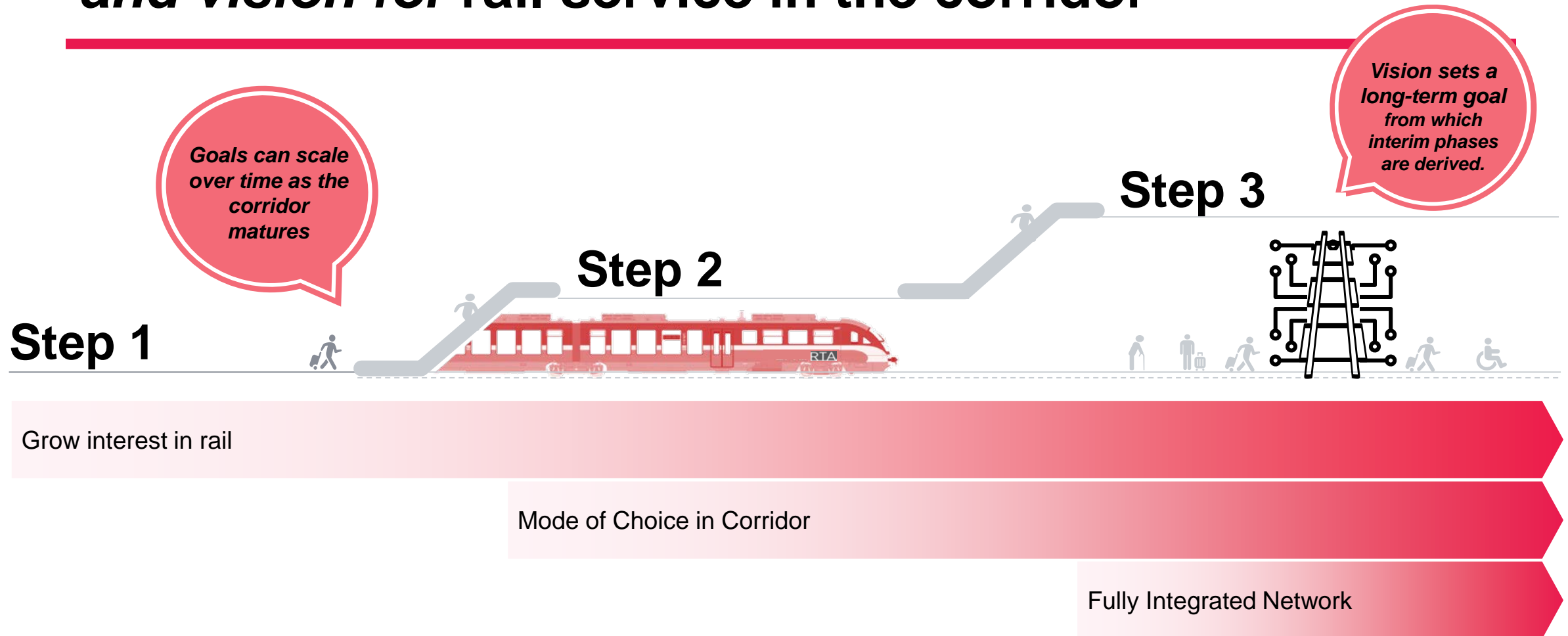
A detailed line drawing of a train in a station. The train is composed of several connected carriages, each with multiple windows and doors. It is positioned on tracks that recede into the distance. To the right of the tracks, there is a platform with a series of vertical support poles. The entire scene is rendered in a minimalist, line-art style. Overlaid on the center of the image is the text 'PART 1' in a large, bold, white sans-serif font. The background is split vertically: the left side is white, and the right side is a solid dark purple color.

PART 1



NORTH/SOUTH FEASIBILITY STUDY

The RTA Board determines the *strategic policy goals and vision* for rail service in the corridor



How Do We Decide Where to Focus?

What travel markets are we trying to serve?

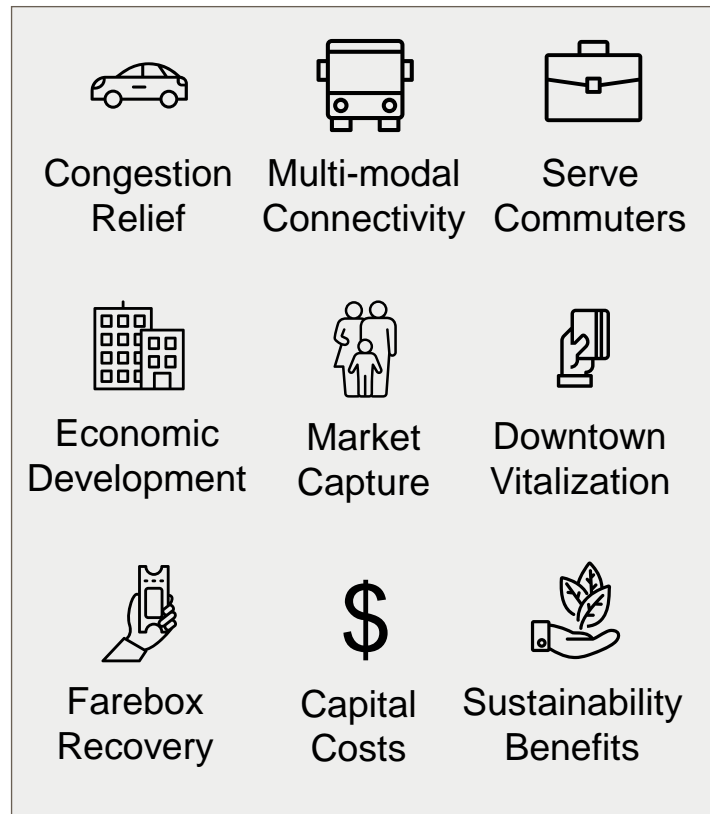
Provide lots of access points
9 to 5 commuter to OKC
transit dependent
leisure markets
Edmond and Norman to OKC
All stations to all other stations
special events/OU Football game
non-commute business travel
Universities

How do we serve these markets?

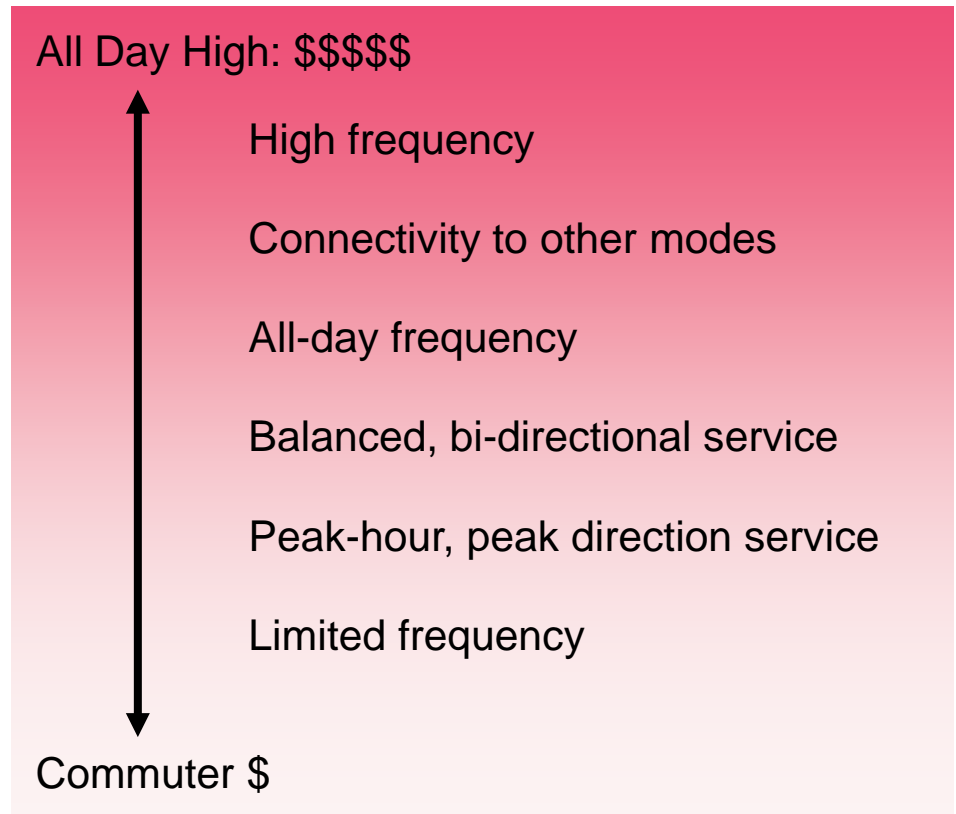
peak-oriented express service
weekdays
special events
bi-hourly
30-minute service
hourly
all day local service
weekends
peak direction
bi-directional

How Do Goals Translate to Service?

Policy Goals / Vision



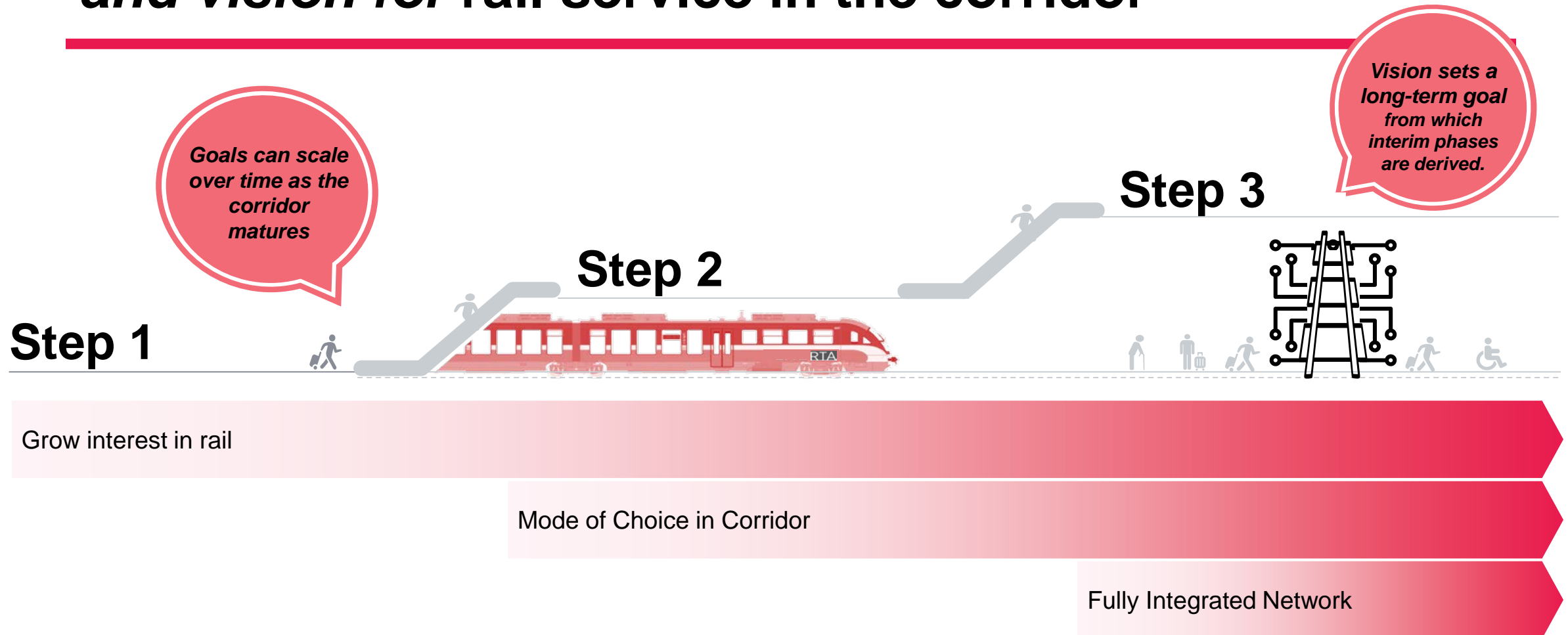
Service Design





ASPIRATIONAL SERVICE VISION

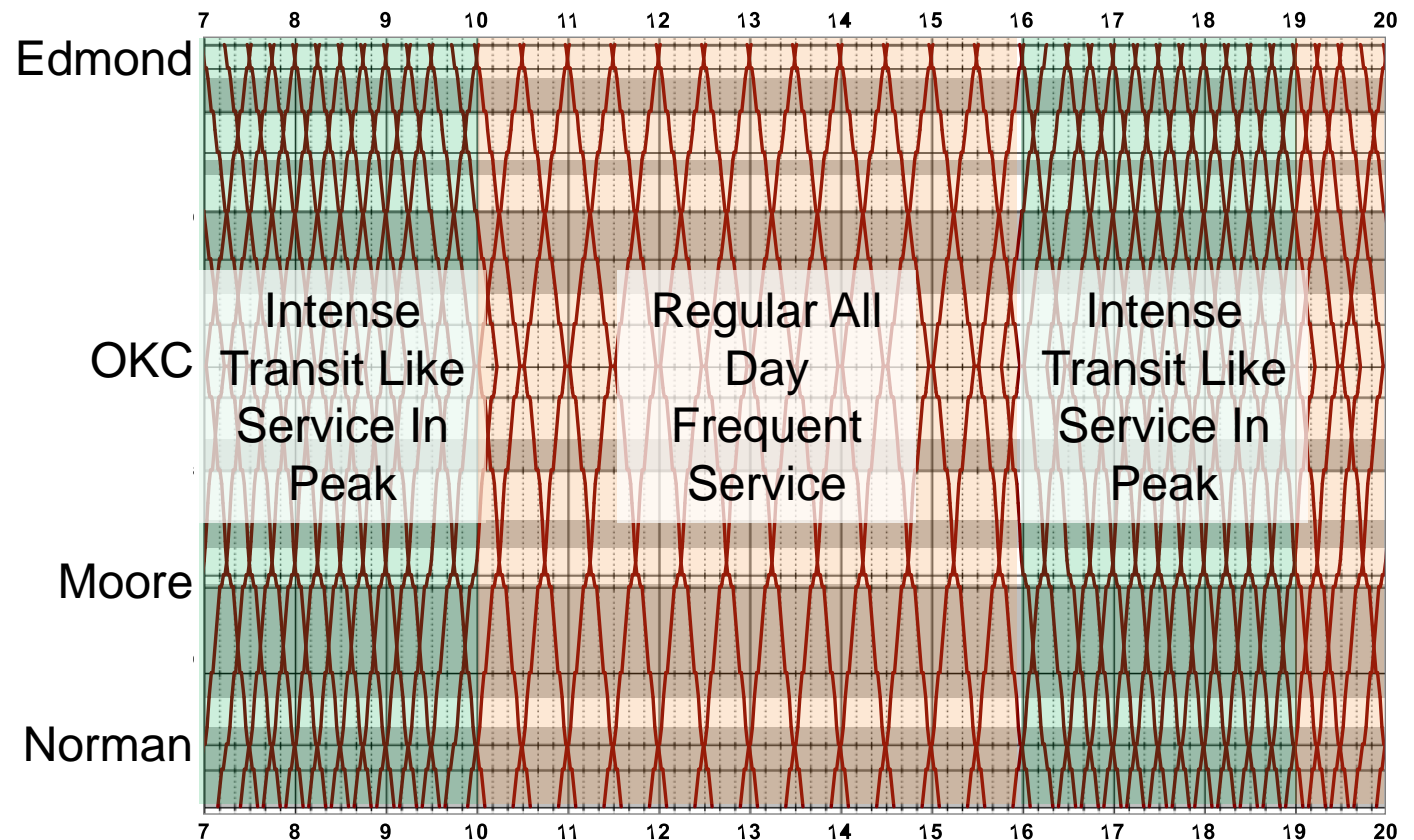
The RTA Board determines the *strategic policy goals and vision* for rail service in the corridor



What Could Step 3 Look Like?

From a **Customers** Perspective:

- Go wherever you want whenever you want on the corridor with frequent service all day long
- Make convenient transfers with other regional services at key hubs
- Service is convenient for work, leisure, weekday, weekend, special events
- Mobility offered is worth locating near stations – residential and commercial

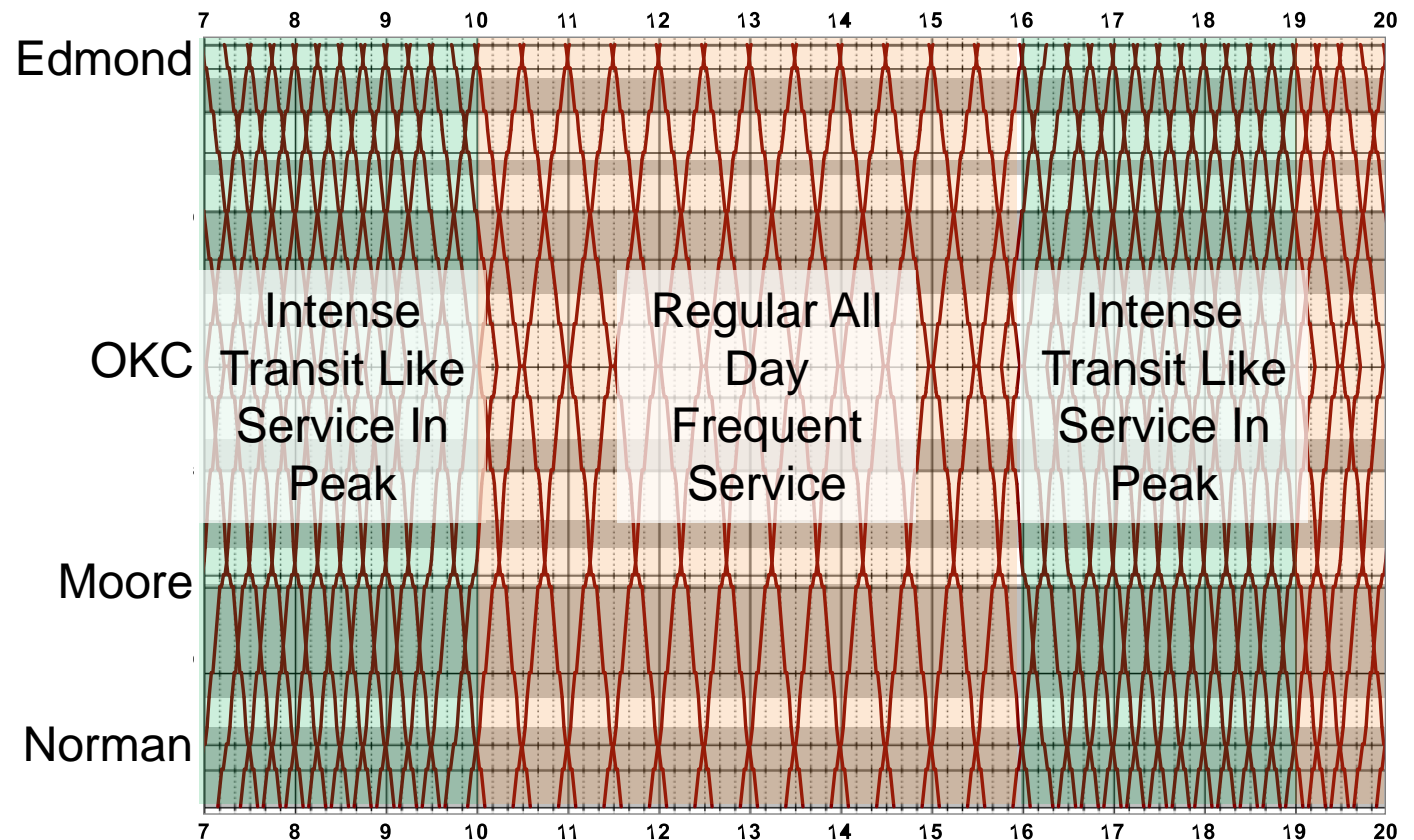




What Could Step 3 Look Like?

From the **Agency** Perspective:

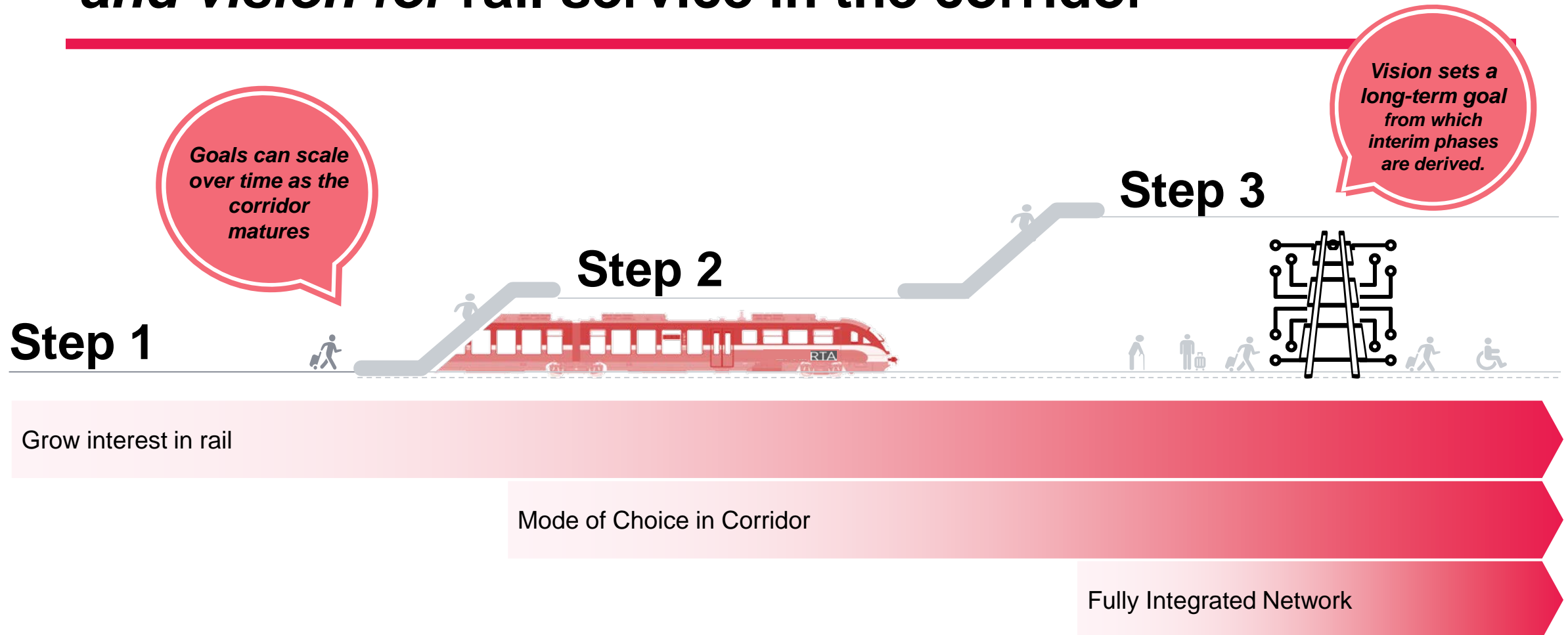
- Very high capital costs with extensive construction of additional track within or adjacent to BNSF ROW (presumed)
- High fleet acquisition and maintenance costs
- High operating costs
- Uncertain market response = high risk



The background features a photograph of a train track with a train receding into the distance. A semi-transparent purple vertical band is positioned on the left side of the image. Overlaid on the left side is a white line-art illustration of a train car, showing its side profile and windows.

BUILDING TOWARDS THE VISION

The RTA Board determines the *strategic policy goals and vision* for rail service in the corridor



How can we build toward the vision?

What we *need* to do now

- Negotiate with host railroad an incremental investment program that allow for incremental service expansion
- Scale facilities for long term vision

What we *don't need* to do now

- Commit to full capital program
- Purchase fleet needs for full long-term vision

Plan for aspirations but pay for starter service

Purpose of Step 1:

1. Justify increased capital investment by creating excitement (community demands more)
2. Lay groundwork for private investments around rail



Why not go straight to step two? -
Cost prohibitive? - Ridership risk for cost?



Risks of step one? - Service is not good enough to encourage ridership, to have positive impact on mobility

Step 1 must have positive impact on mobility

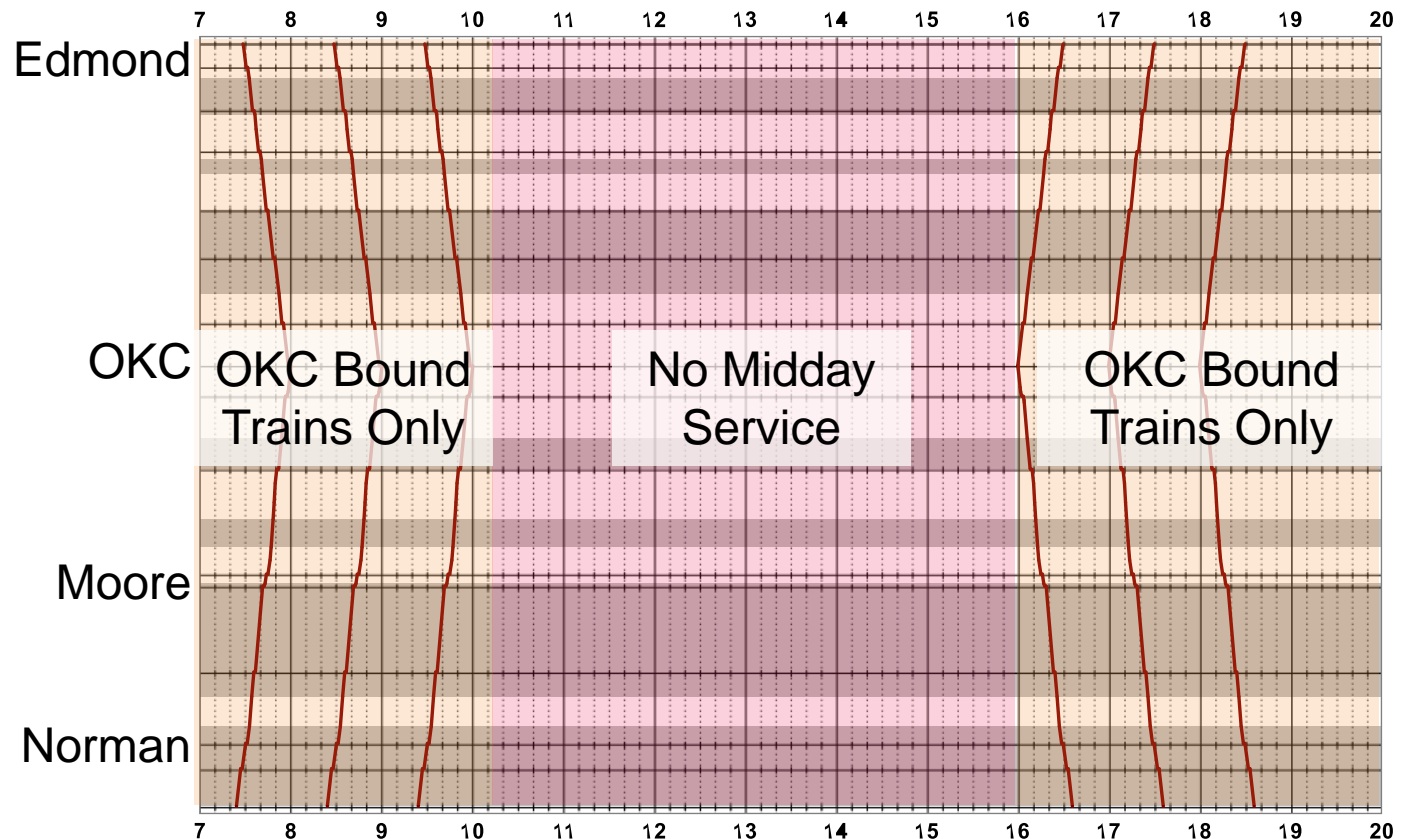
What Could Step 1 Service Look Like?



From a Customers Perspective:

- Go to work in OKC in traditional business hours from Edmond, Moore, and Norman
- Service not useful for other purpose and mobility in daily life
- Lack of midday service causes anxiety if need to get home.

Will this Create Enough Positive Impact on Mobility?



The background features a detailed line drawing of a train on tracks, viewed from a low angle looking down the length of the train. The train has multiple windows and doors. To the right of the tracks, there are vertical support structures. The entire scene is rendered in a light gray line-art style. A vertical white bar is positioned on the left side of the image, partially obscuring the train. Overlaid on the right side of this bar is the text 'PEER COMPARISON' in a large, bold, white sans-serif font.

PEER COMPARISON



Where are our peers?







Step 1

Step 2

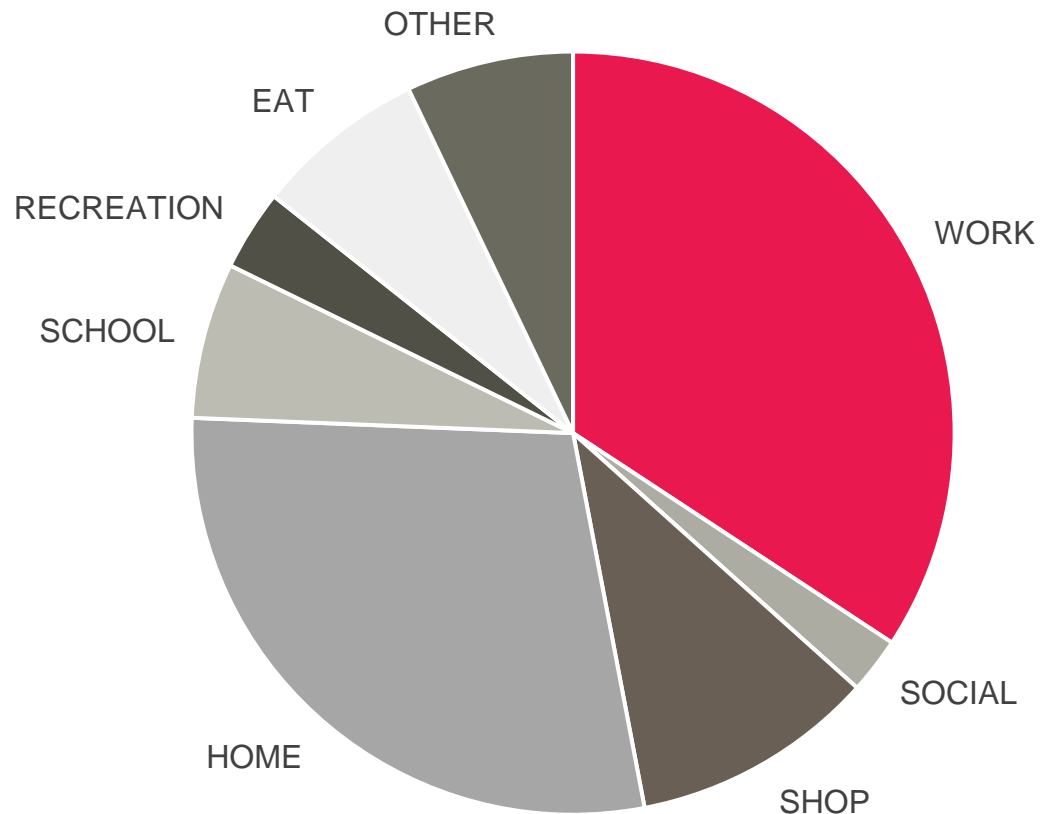
Step 3



Market Compares Favorably to Peers

Peer	System	Commuter Rail Line	Relative Market Comparison	Market Capture
Oklahoma City	Regional Transportation Authority of Central Oklahoma	North-South Line		
Austin	Capital MetroRail	Red Line		1.1%
Fort Worth	Trinity Metro	TRE		1.1%
Minneapolis	BNSF – Met Council	Northstar Line		1.9%
Salt Lake City	Utah Transit Authority	FrontRunner		2.0%
Denver	Regional Transportation District	A Line		5.1%

Central Oklahoma Addressable Market by Trip Purpose



- Work trips single largest market accounting for approximately one third of all trips
- Work trips likely easiest to convert to rail given regularity of travel and destination accessible to rail
- Two-thirds of market remains to be captured



What Can We Control?



Outside RTA's Sphere of Influence

This is the context in which you operate



Population



Population Density



Weekday Addressable Market



Rail Corridor Mileage



Highway Congestion



Within RTA's Sphere of Influence

These are the levers you can control



Average fares



Service Type: Frequency and Pattern



Travel Time (Competitiveness with auto)





Metro Area Transit Mode Share

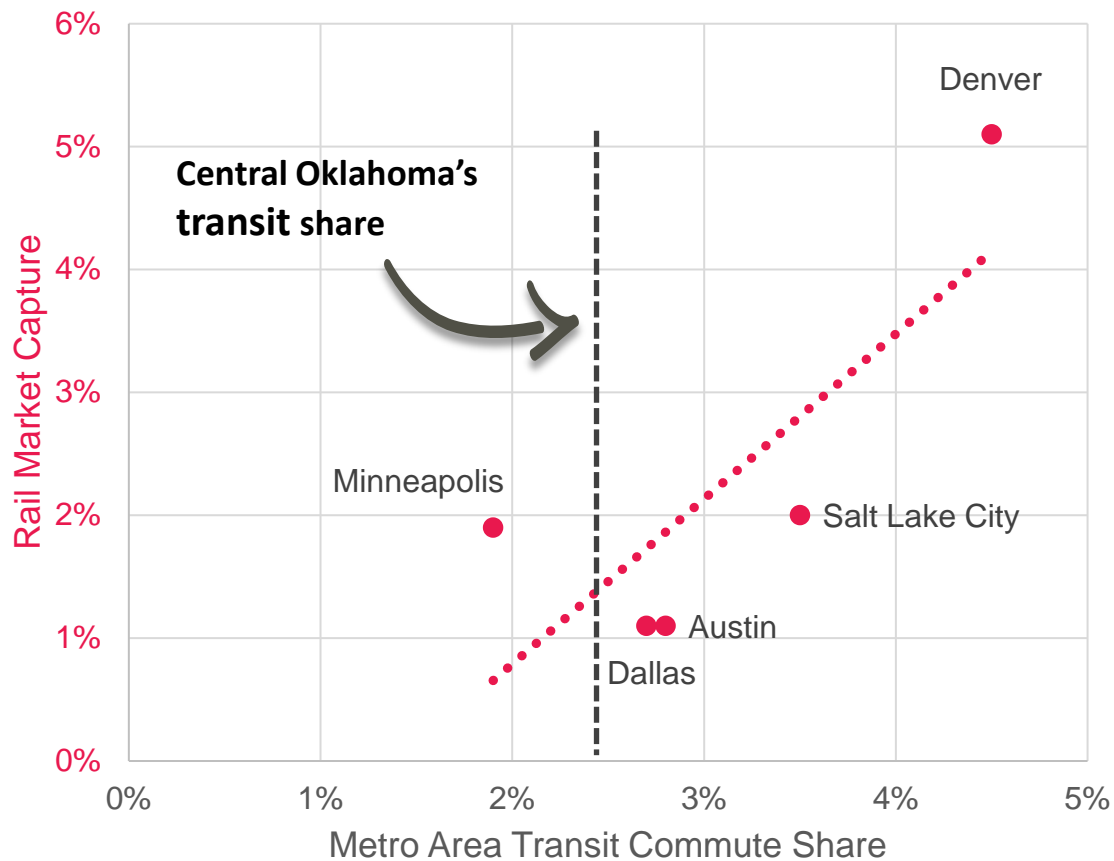


Special attractions / Major Events

How are our peers driving ridership?

	Minneapolis	Austin	Fort Worth	Salt Lake City	Denver
Weekday Round Trips	7	20	31	30	72
Service Type	Peak Only	Hourly	30 Min Peak / 60 Min Off Peak	30 Min Peak / 60 Min Off Peak	15 Min All Day
Average Fare	\$3.39	\$2.09	\$5.24	\$1.36	\$3.40
Boost from Special Events					

Boosting rail ridership potential by serving special events



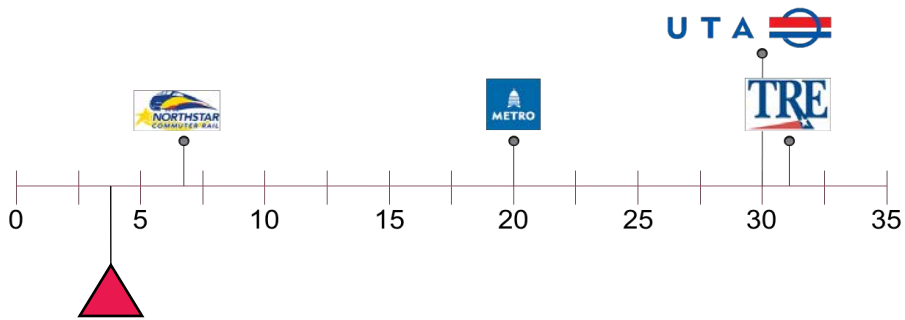
- How does Minneapolis outperform in rail market capture with lower transit use?
 - Special event service to EVERY Vikings and Twins game
- How does Denver outperform in rail market capture relative to transit use?
 - Special event service
 - Very frequent, all-day service

The background of the image is a grayscale photograph of a train at a station platform. The train is positioned horizontally, receding into the distance. On the left side of the image, there is a vertical white line that separates a white area from a dark gray area. The text is centered in the dark gray area.

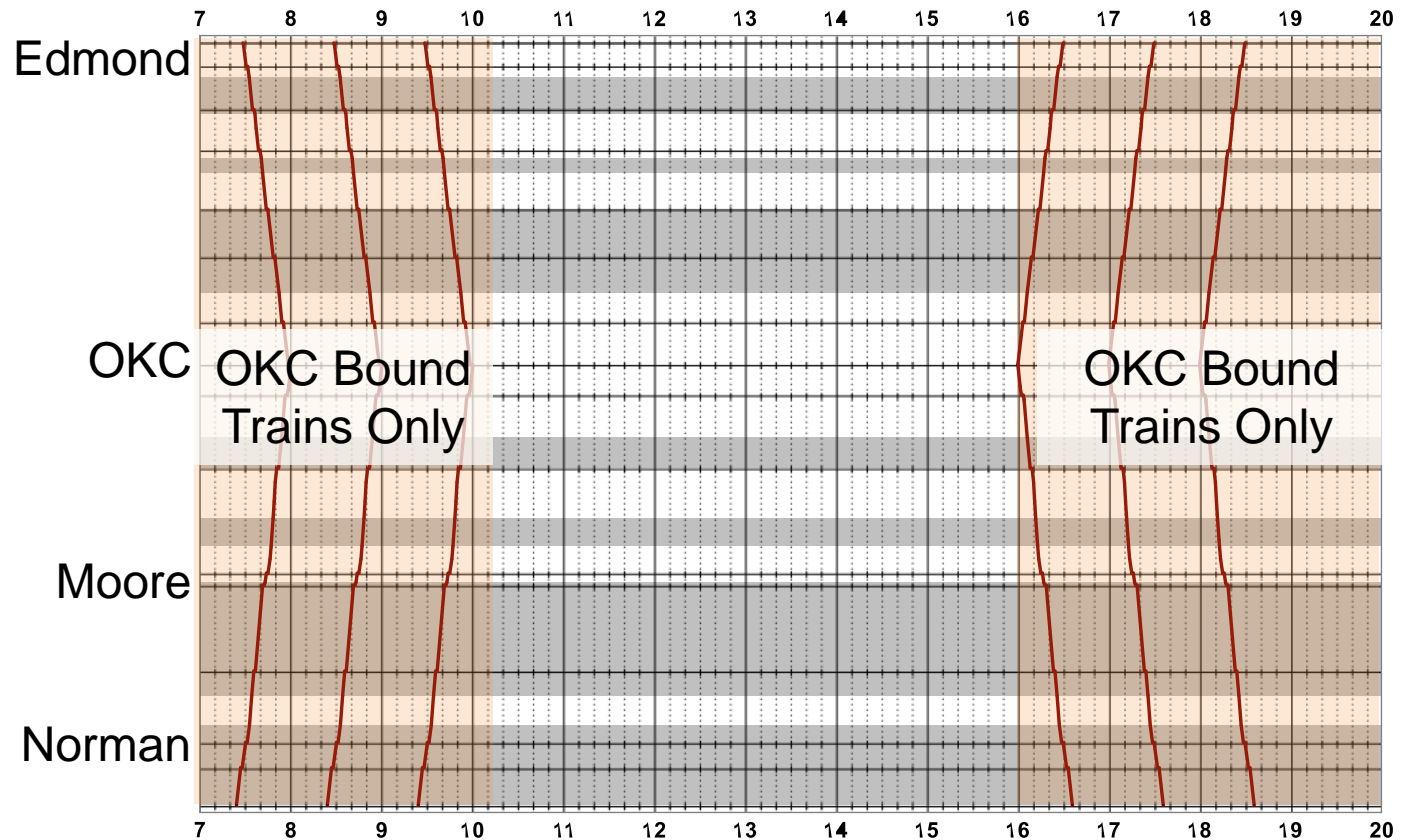
POSITIVELY IMPACTING MOBILITY

How to Ensure Initial Service Provides positive impact on mobility?

Round Trip Trains Per Day

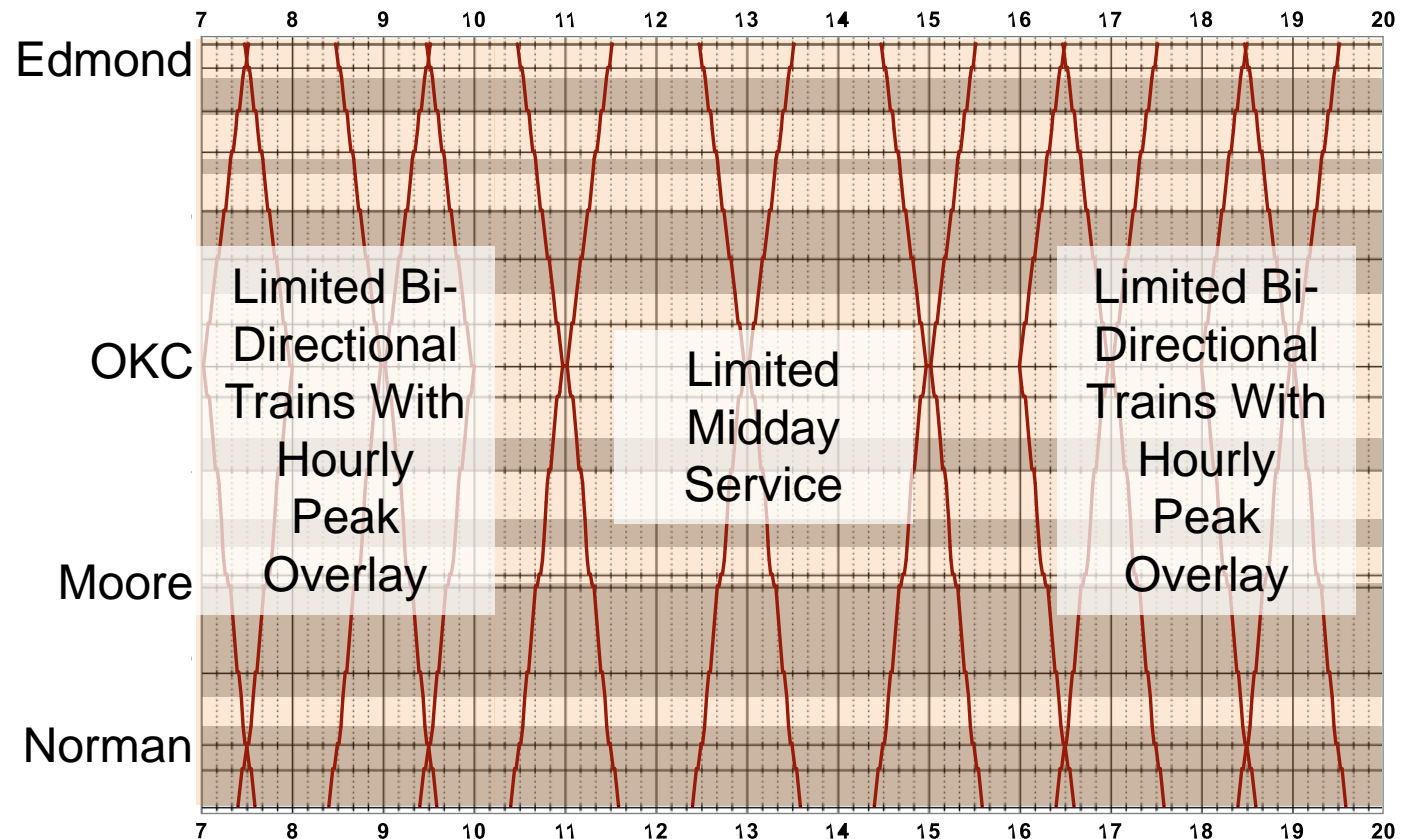
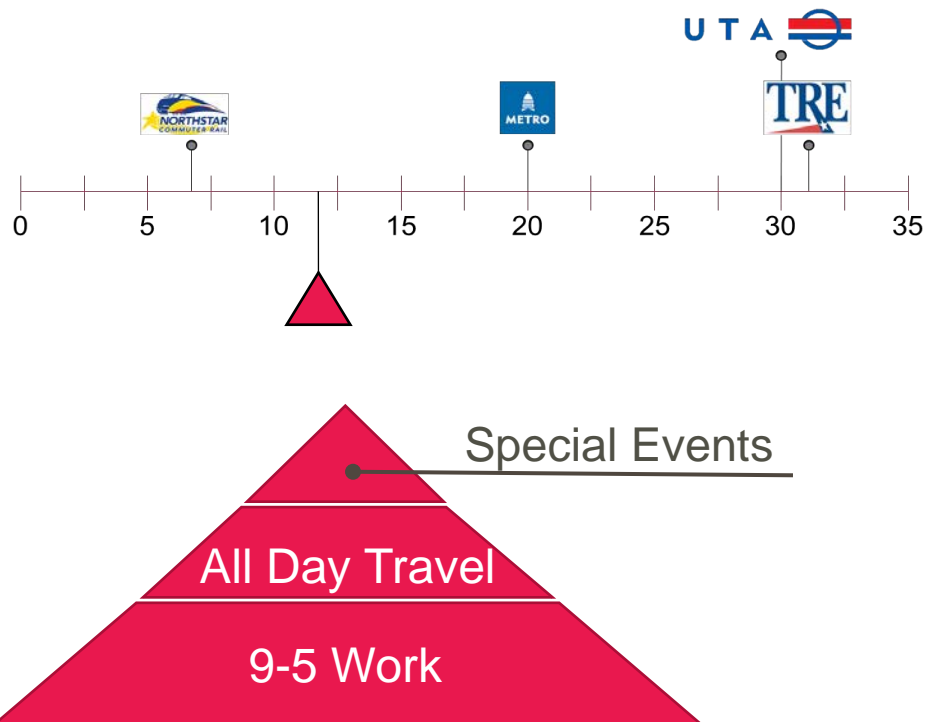


9-5 Work



How to Ensure Initial Service Provides positive impact on mobility?

Round Trip Trains Per Day



What does service look like at the end of Phase 1 through eyes of regular traveler?

12 Round Trips
Trains per Day

Hourly Service
in Peak

SOUTHBOUND												
EDMOND STATION	6:31	7:31	8:31	9:31	10:31	12:31	14:31		16:31		18:31	20:31
OKLAHOMA CITY	7:01	8:01	9:01	10:01	11:01	13:01	15:01	16:01	17:01	18:01	19:01	21:01
MOORE STATION	7:16		9:16		11:16	13:16	15:16	16:16	17:16	18:16	19:16	21:16
NORMAN	7:29		9:29		11:29	13:29	15:29	16:29	17:29	18:29	19:29	21:29
NORTHBOUND												
NORMAN	6:31	7:31	8:31	9:31	10:31	12:31	14:31		16:31		18:31	20:31
MOORE STATION	6:45	7:45	8:45	9:45	10:45	12:45	14:45		16:45		18:45	20:45
OKLAHOMA CITY	7:01	8:01	9:01	10:01	11:01	13:01	15:01	16:01	17:01	18:01	19:01	21:01
EDMOND STATION	7:29		9:29		11:29	13:29	15:29	16:29	17:29	18:29	19:29	21:29

9 Intermediate
stations not shown
in timetable, but
served by train

Consistent Service All Day Long to
Plan Connections Around

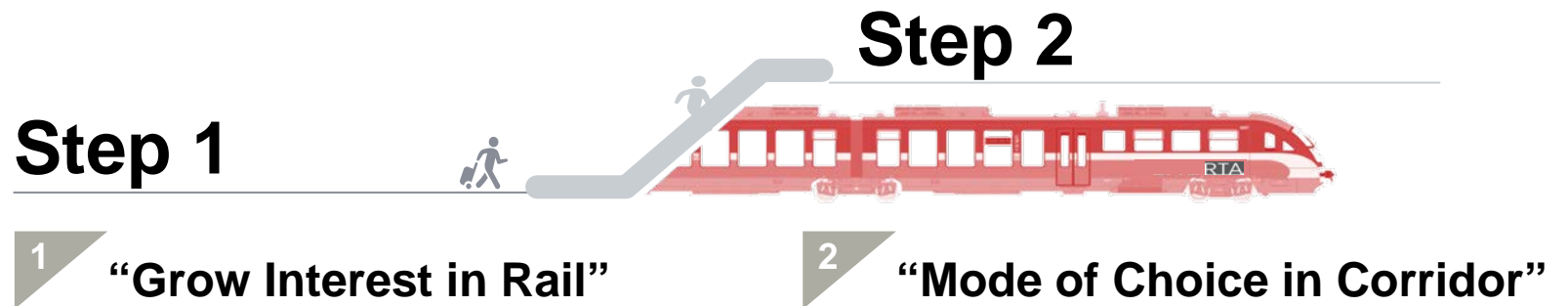
The background of the slide features a photograph of a train on tracks, viewed from a low angle looking down the length of the train. Overlaid on this photograph is a white line-art technical drawing of the same train and track system, creating a layered, engineering-like aesthetic. The text is centered over the middle of the image.

CONSIDERATIONS TO MOVE TO STEP 2

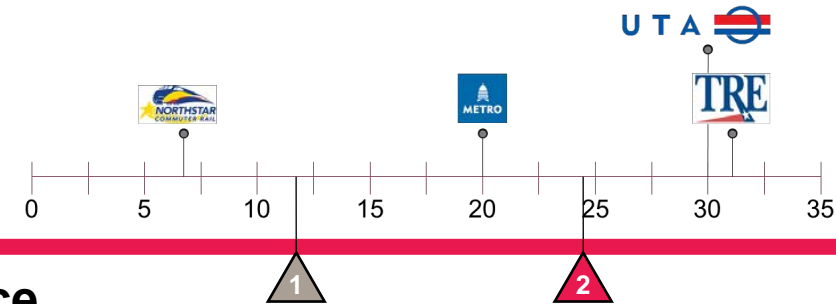
What allows us to go to next step?

Milestones:

- Ridership / Load Factors
- Cost Recovery Ratio
- Economic Development



Step 2 Schedule...



Illustrative Schedule for 24 Round Trips Trains per Day

30-Min Service in Peak

9 Intermediate stations not shown in timetable, but served by train

SOUTHBOUND																								
EDMOND STATION	5:31	6:31	7:01	7:31	8:01	8:31	9:01	9:31	10:31	11:31	12:31	13:31	14:31	15:31	16:31	17:01	17:31	18:01	18:31	19:01	19:31	20:31	21:31	22:31
OKLAHOMA CITY	6:01	7:01	7:31	8:01	8:31	9:01	9:31	10:01	11:01	12:01	13:01	14:01	15:01	16:01	17:01	17:31	18:01	18:31	19:01	19:31	20:01	21:01	22:01	23:01
MOORE STATION	6:16	7:16	7:46	8:16	8:46	9:16	9:46	10:16	11:16	12:16	13:16	14:16	15:16	16:16	17:16	17:46	18:16	18:46	19:16	19:46	20:16	21:16	22:16	23:16
NORMAN	6:29	7:29	7:59	8:29	8:59	9:29	9:59	10:29	11:29	12:29	13:29	14:29	15:29	16:29	17:29	17:59	18:29	18:59	19:29	19:59	20:29	21:29	22:29	23:29
NORTHBOUND																								
NORMAN	5:30	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:30	21:30	22:30
MOORE STATION	5:44	6:44	7:14	7:44	8:14	8:44	9:14	9:44	10:44	11:44	12:44	13:44	14:44	15:44	16:44	17:14	17:44	18:14	18:44	19:14	19:44	20:44	21:44	22:44
OKLAHOMA CITY	6:01	7:01	7:31	8:01	8:31	9:01	9:31	10:01	11:01	12:01	13:01	14:01	15:01	16:01	17:01	17:31	18:01	18:31	19:01	19:31	20:01	21:01	22:01	23:01
EDMOND STATION	6:29	7:29	7:59	8:29	8:59	9:29	9:59	10:29	11:29	12:29	13:29	14:29	15:29	16:29	17:29	17:59	18:29	18:59	19:29	19:59	20:29	21:29	22:29	23:29

**Consistent Hourly Service All Day
Long to Plan Connections Around**

The background is a detailed line drawing of a train station. A train is stopped at the platform, with its side profile clearly visible. The drawing uses fine lines to depict the train's windows, doors, and wheels. The platform and tracks extend into the distance, creating a sense of depth. The overall style is technical and architectural. The word "CONCLUSIONS" is superimposed in the center in a large, white, sans-serif font.

CONCLUSIONS

Preparing for Step 1!



- Negotiate access agreement
- Equipment Maintenance Plan
- Fare structure / customer's payments
- Information systems
- Station selection and development
- Timetable Development
- Service Initiation
- Governance structure to oversee operations

Plan for Vision with Ability to Scale Over Time

Next Steps for Analysis

- Calculate O&M Costs for steps 1 and step 3
 - Analysis of infrastructure investment by step
 - Capital cost required to access the corridor
- Physical infrastructure improvements needed
- Scale equipment and facility needs by step
- Examine the financial plan (costs and revenue)

For Discussion



As basis of next steps analysis...

What is appropriate
for Step 1?

Starter Service:

- 12 Round Trips
- 60 Min Peak
- 120 Min Off-Peak

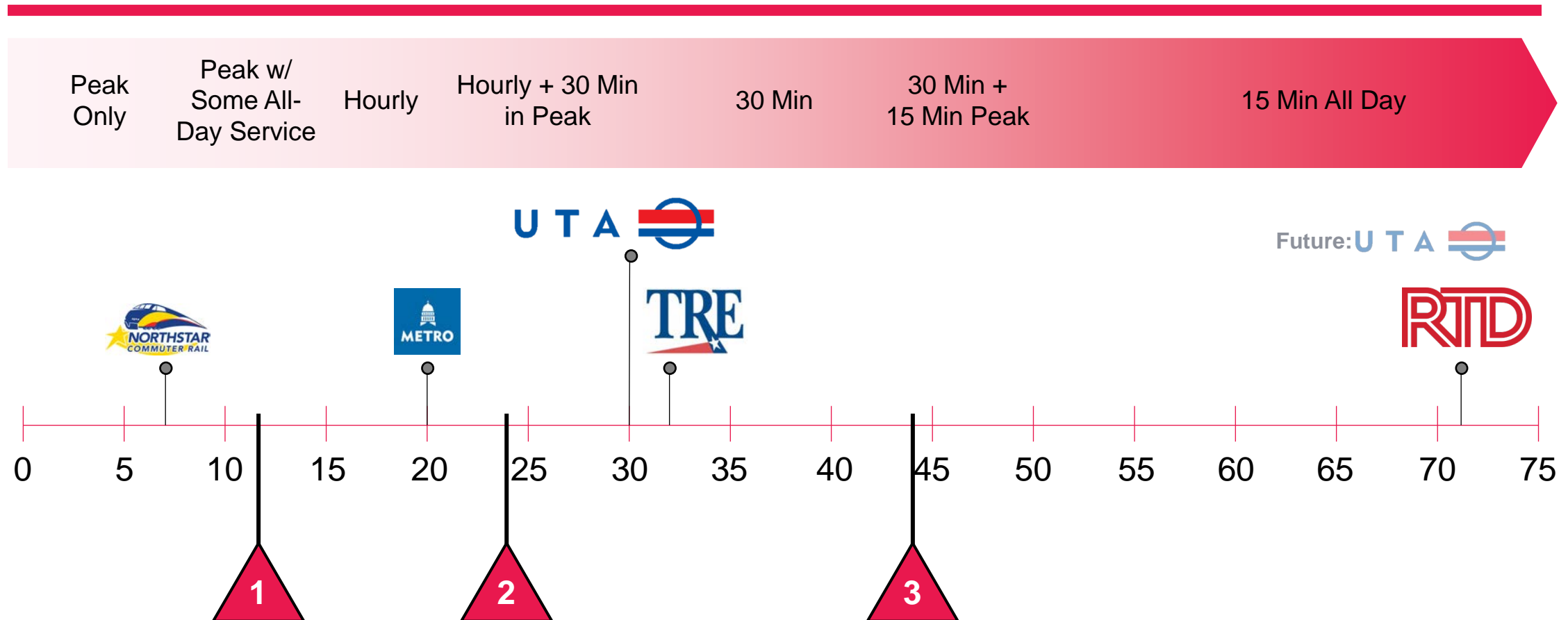
Phased Investment Plan

What is the vision for
Step 3?

Aspirational Plan:

- 44 Round Trips
- 15 Min Peak
- 30 Min Off-Peak

RTA Steps relative to Peers



November Meeting Discussion



- Progress update on operating cost methodology
- Progress update on additional detail on Steps 1 – 3

A detailed line drawing of a train in a station. The train is composed of several connected cars, each with multiple windows and doors. It is positioned on tracks that recede into the distance. To the right of the tracks, there is a platform with a series of vertical support poles. The entire scene is rendered in a minimalist, line-art style. Overlaid on the center of the image is the text 'PART 2' in a large, bold, white sans-serif font. The background is split vertically: the left side is white, and the right side is a solid dark purple color.

PART 2



EAST CORRIDOR ALTERNATIVES ANALYSIS

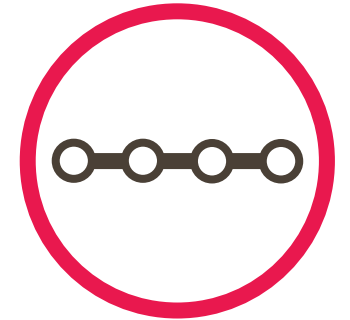
What still needs to be determined



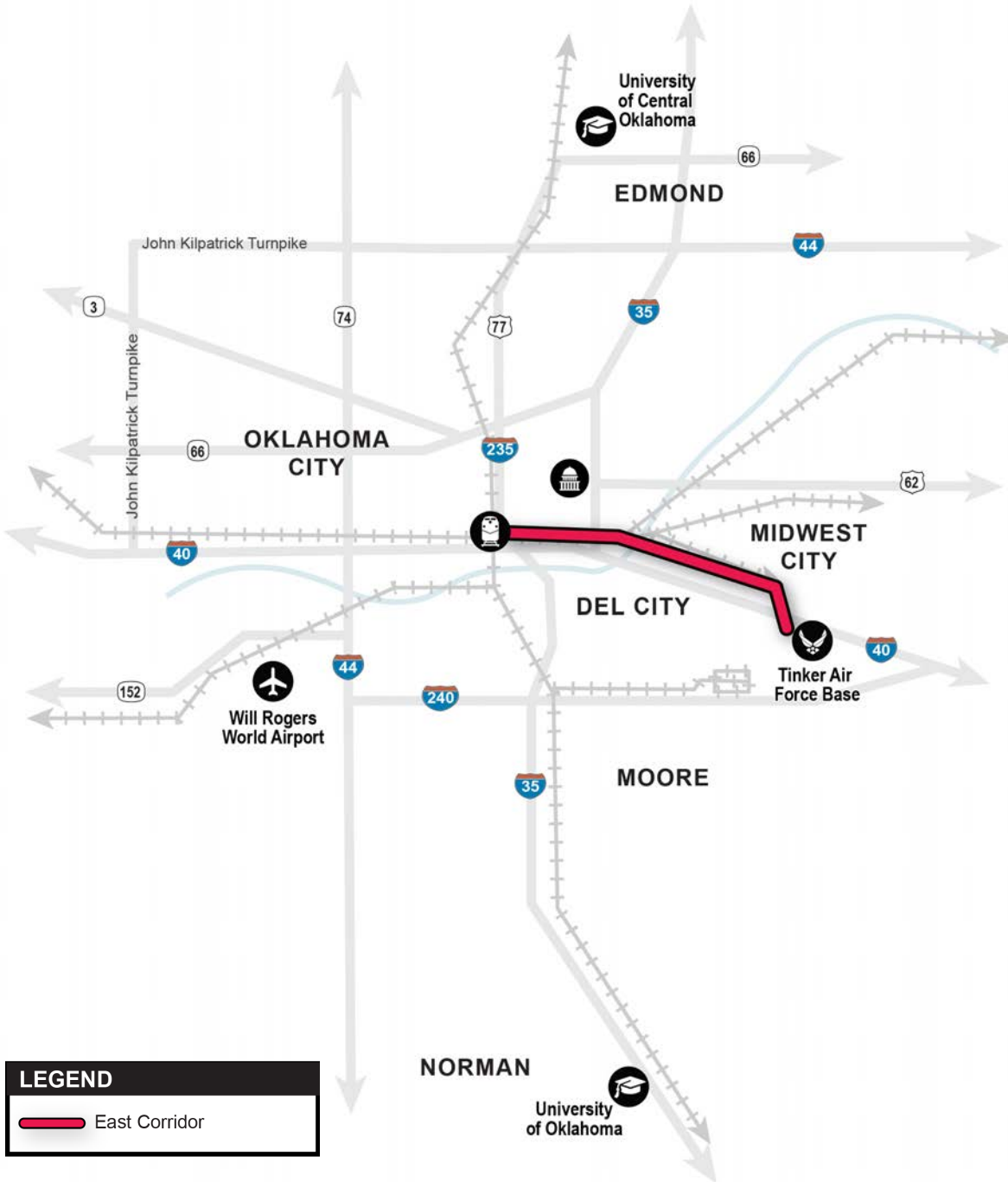
Options



Mode



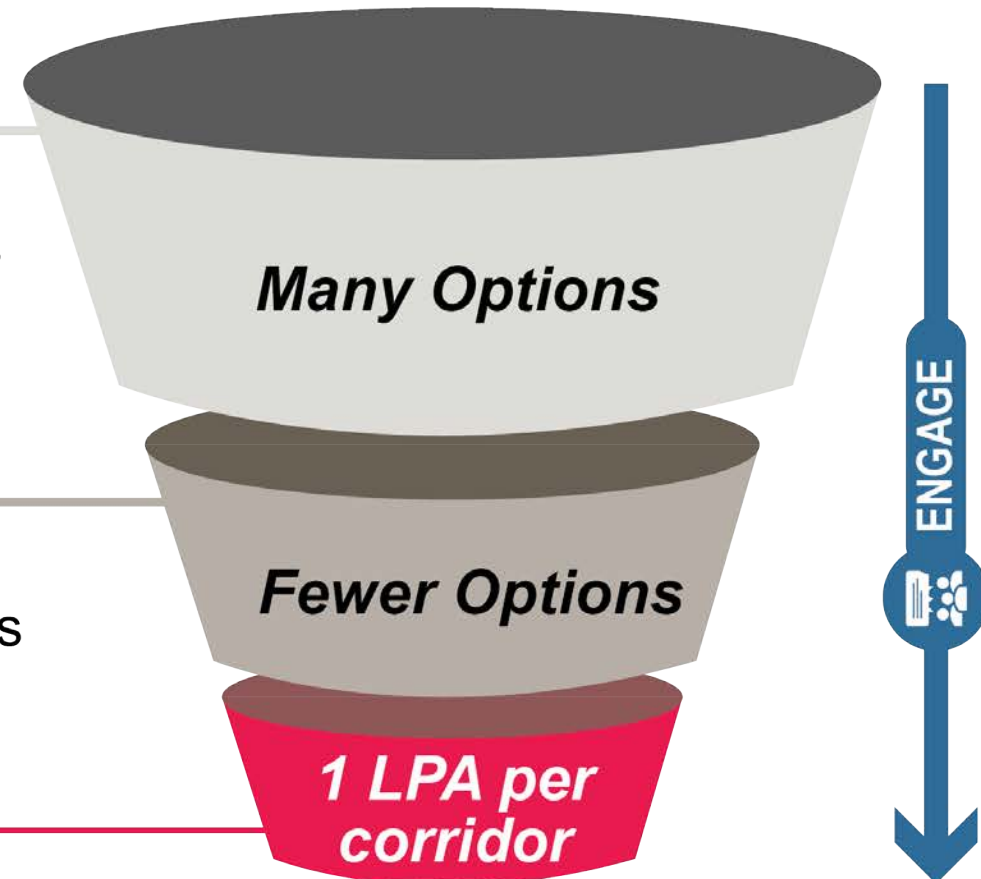
Alignment



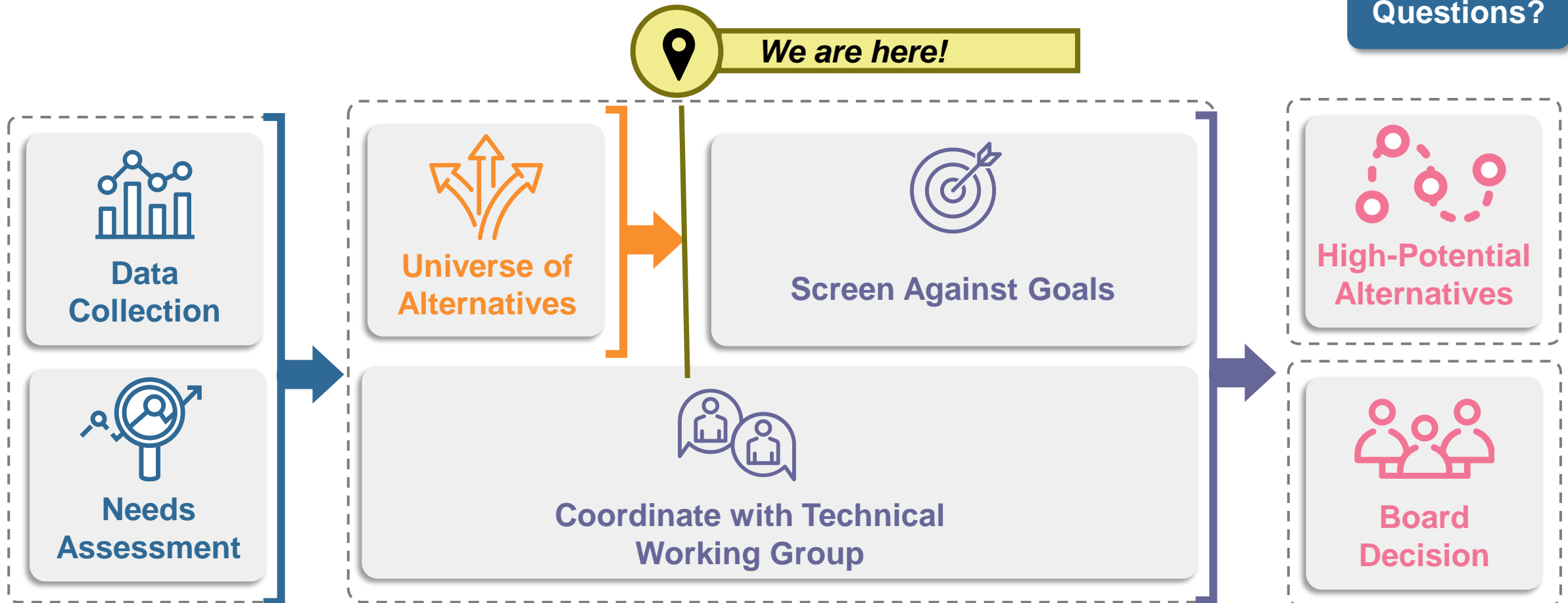
Alternative Analysis (AA) Process



- 1 DISCOVER**
 - Define all reasonable alternatives
 - Screen against goals & objectives
- 2 REFINE**
 - Advance remaining alternatives
 - Perform detailed technical analysis
- 3 SELECT**
 - Board consideration of LPA



Discover Phase Process





UNIVERSE OF ALTERNATIVES

What is a Universe of Alternatives?



A representation of feasible options



Potential permutations of modes and routes

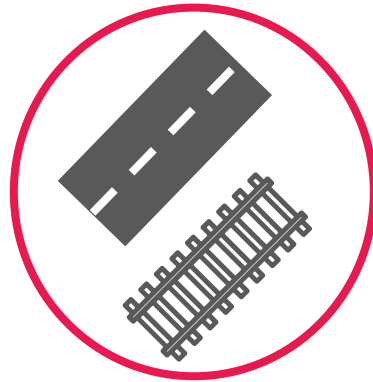


Basis for screening against Goals

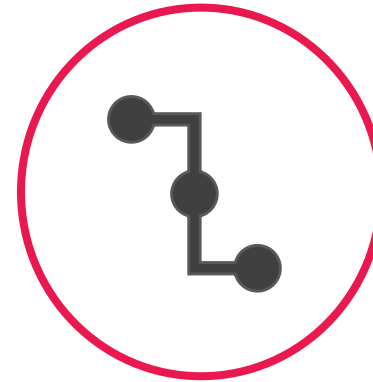
Preliminary Considerations



**Utilize Regional
High-Capacity
Transit Modes**



**Leverage Existing
Infrastructure**



**Connect Centers
of Activity**



**Serve Each
Community
Meaningfully**

Regional High-Capacity Transit Modes

Regional Transit



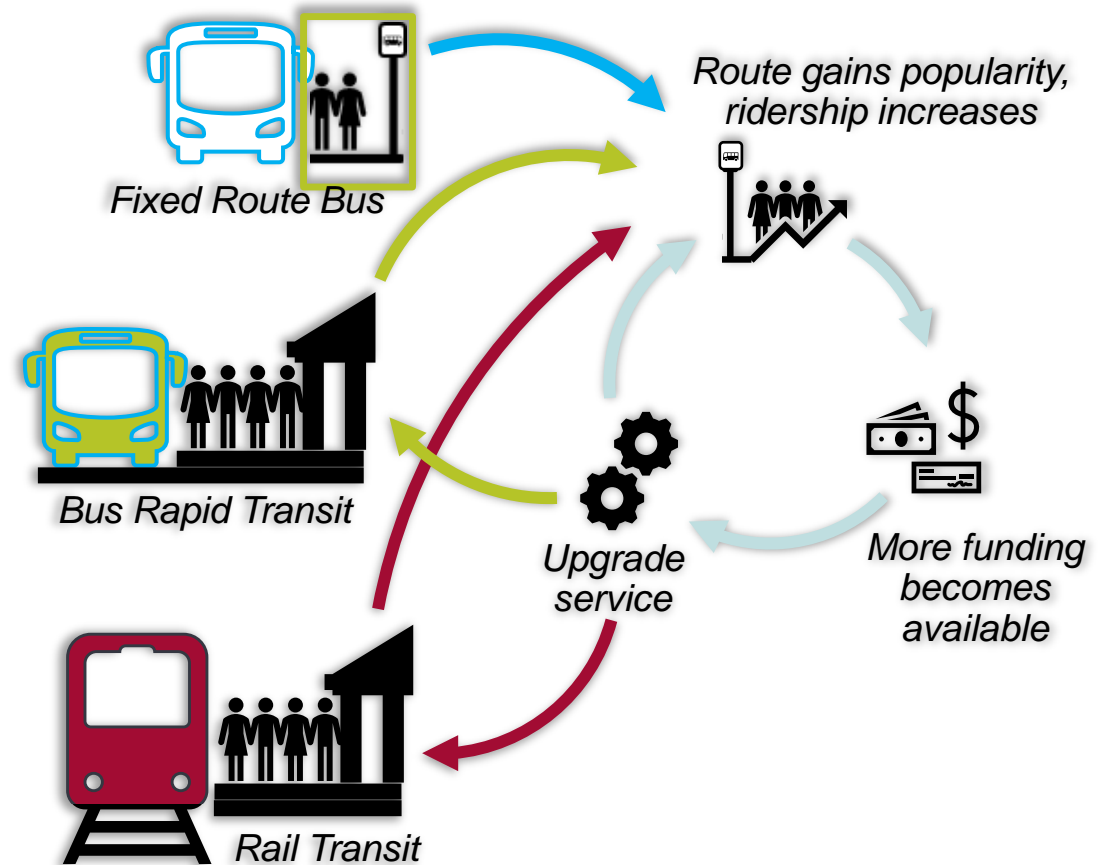
Questions?

Local Transit



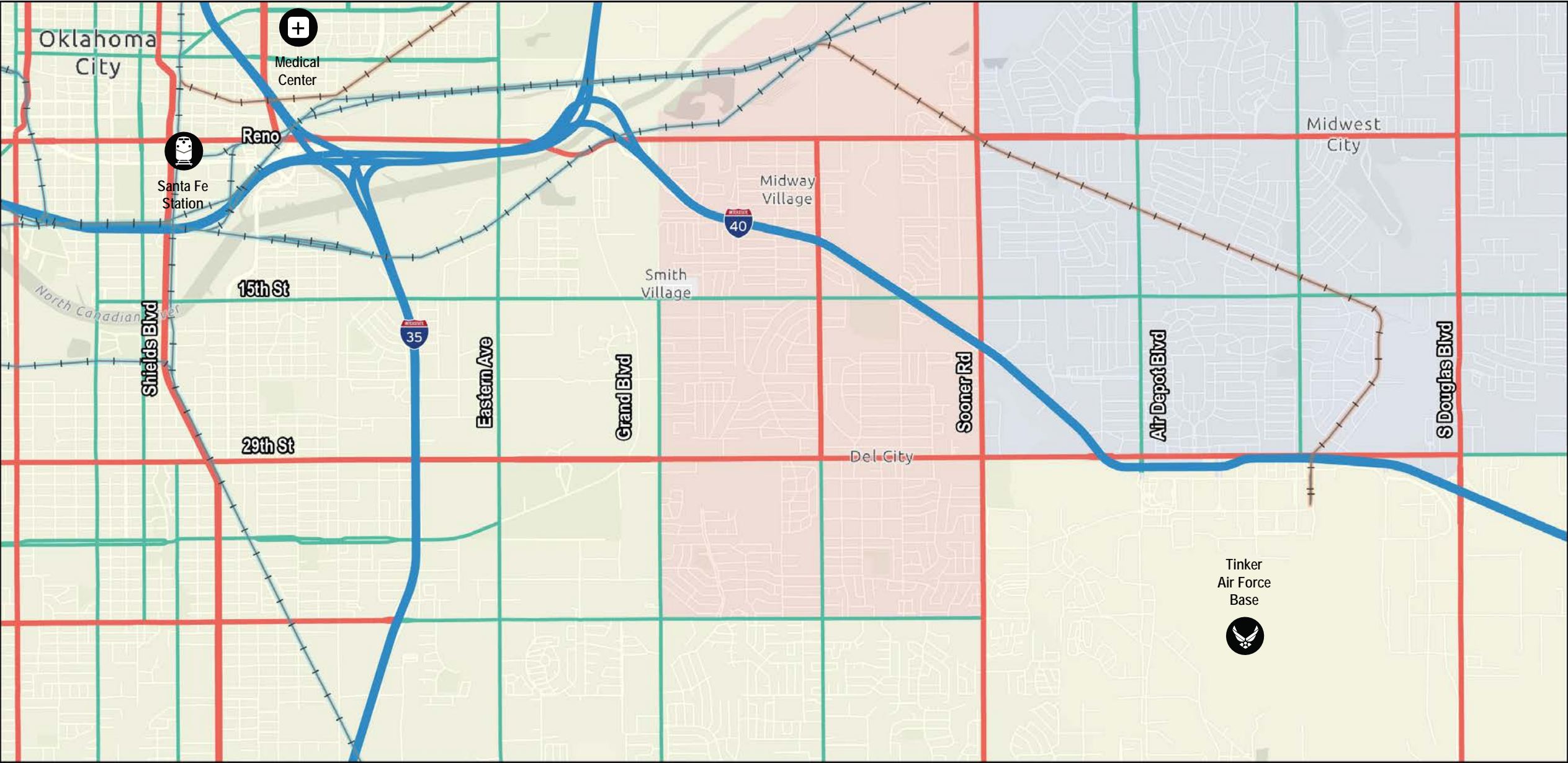
Transition from BRT to Rail Transit

- BRT Investment
 - Growth in ridership opportunity
 - Establish a transit culture
 - Spur economic growth along corridor
- Does Not Preclude Rail
 - As ridership grows and funding is available
 - Ability to leverage an existing RR corridor
- Land Use and Economic Development Opportunity
 - Investment in permanent transit features (e.g., stations) inspires station area growth



Existing Infrastructure

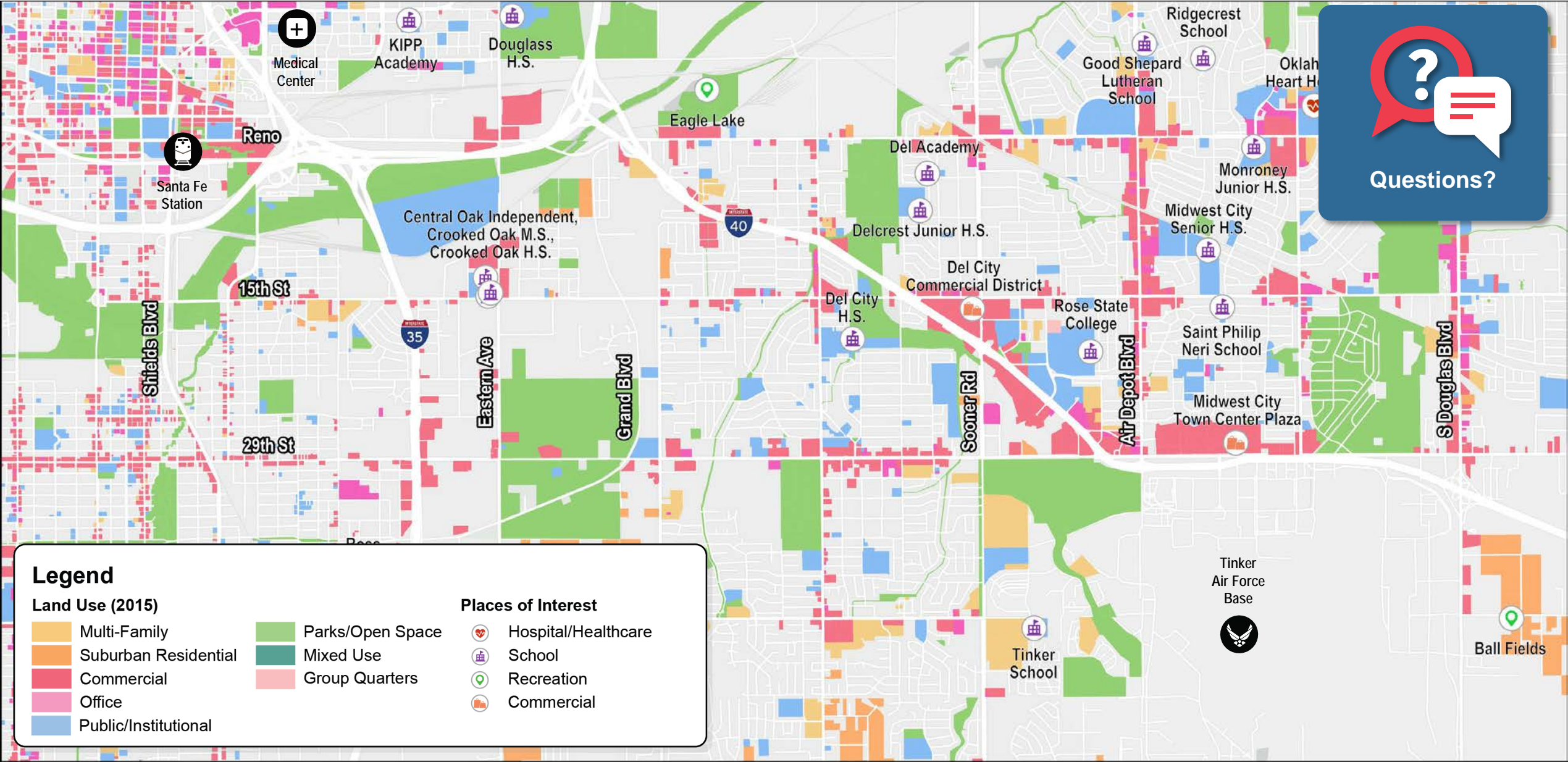
RTA



Centers of Activity



Questions?



Technical Working Group Feedback



- Streetcar is inconsistent mode for needs of the corridor
- Consider both current and future economic development potential of alignments
 - Underdeveloped parcels along Rail ROW
 - Town Center Plaza
 - Recreation district on 29th



- OKC MAPS4 anticipates to serve OUHSC via BRT



- Tinker AFB will require additional analysis
 - Gates served
 - First/Last-mile connections



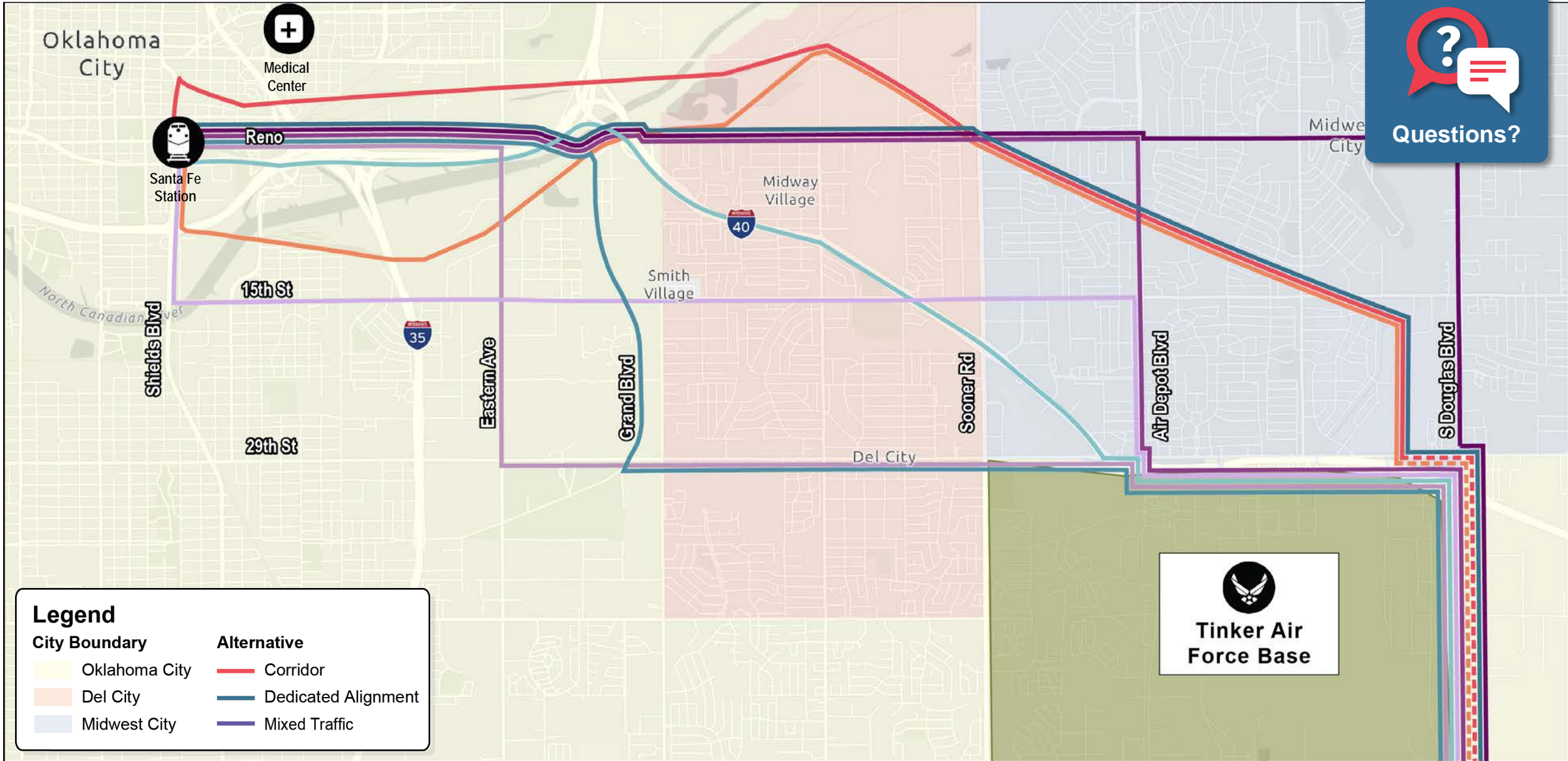
- 29th, Sooner, and Reno are desirable transit corridors
- Service downtown on weekends is important
 - Identified eastward expansion of Bricktown along Reno as potential for development
- Service to Tinker AFB 7 days a week is an identified need
- Fare affordability is an important factor for Del City population

DRAFT: Initial Alternative Options

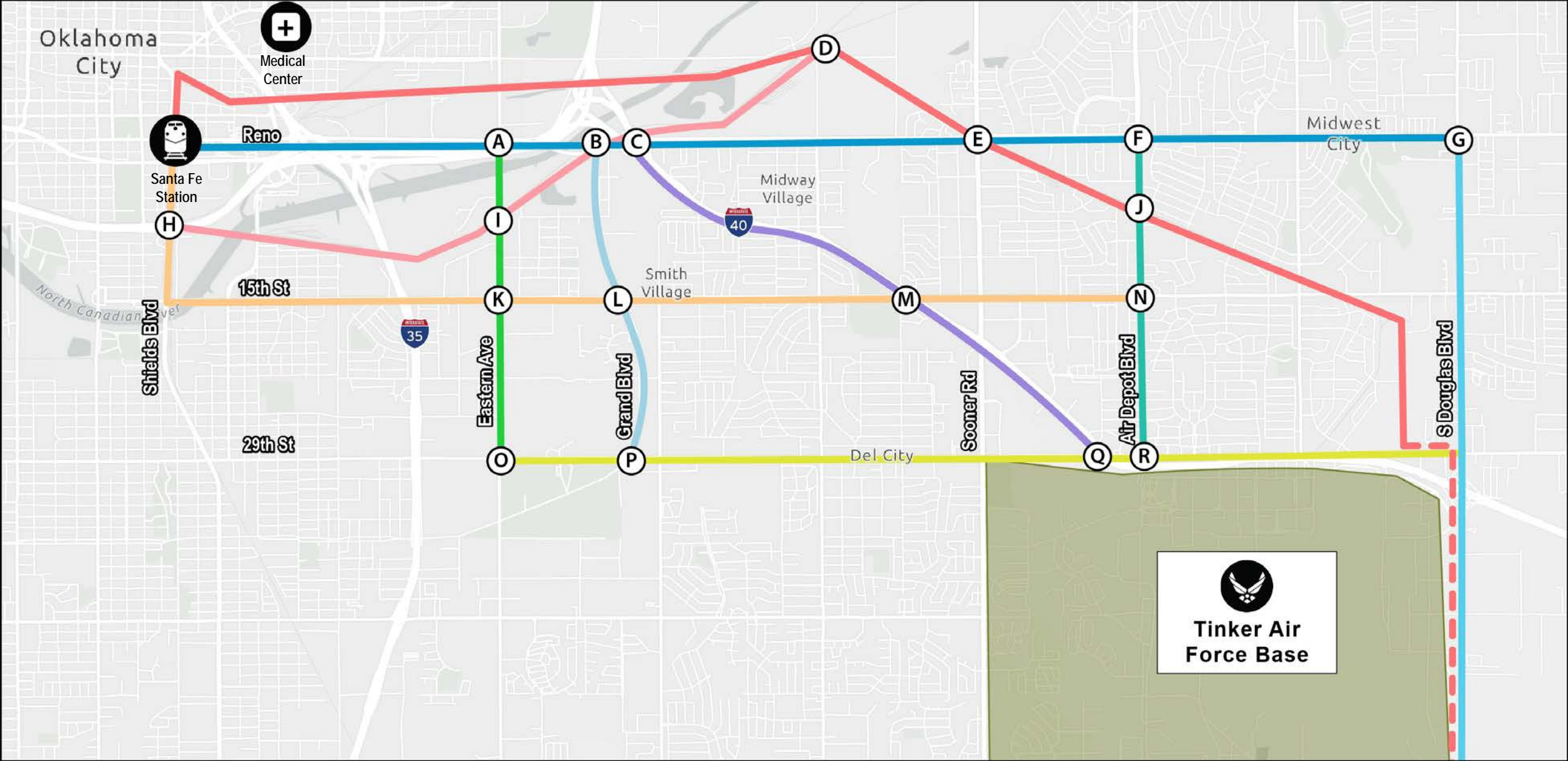
RTA



Questions?

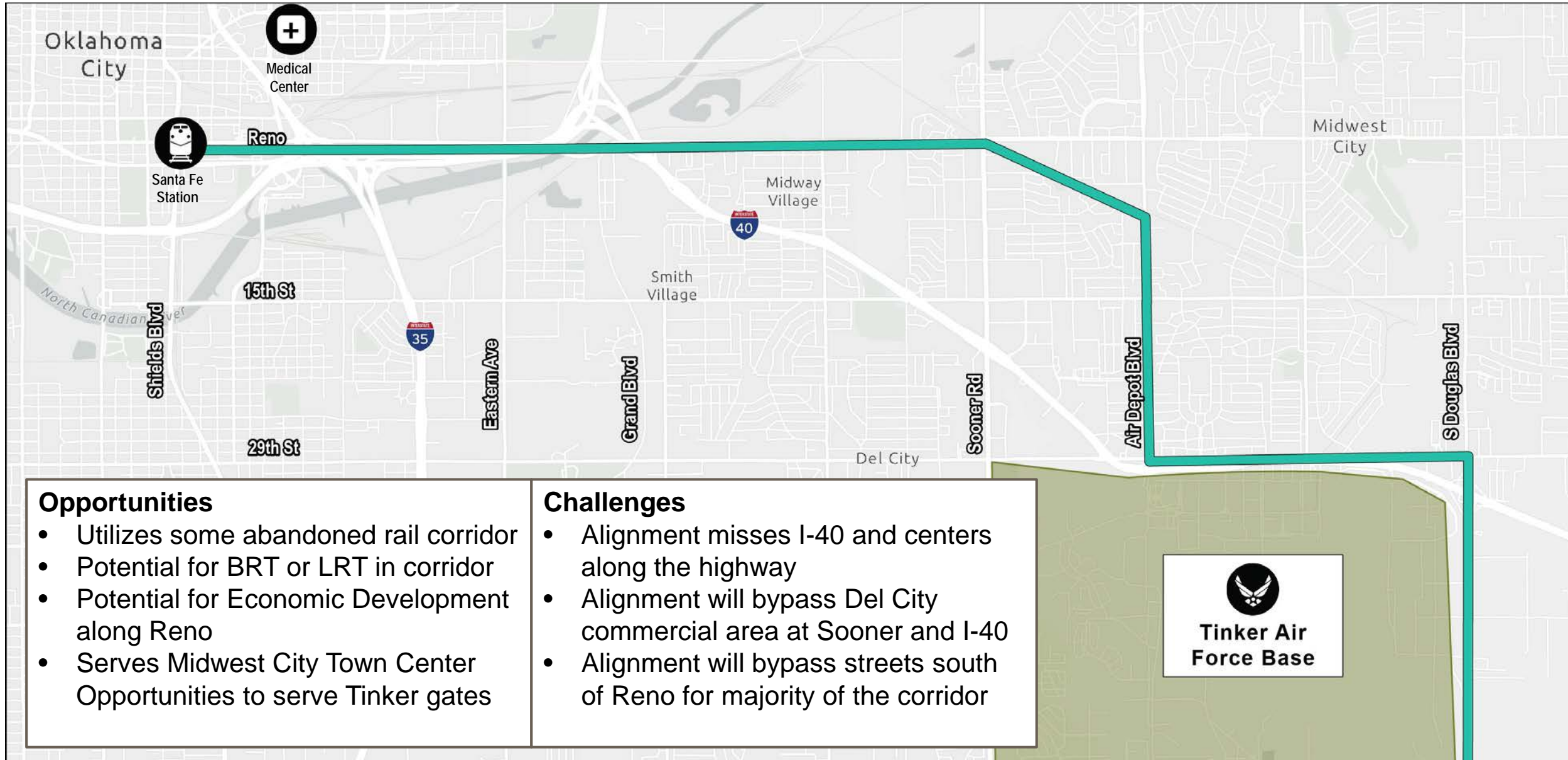


Potential Alignment Segments



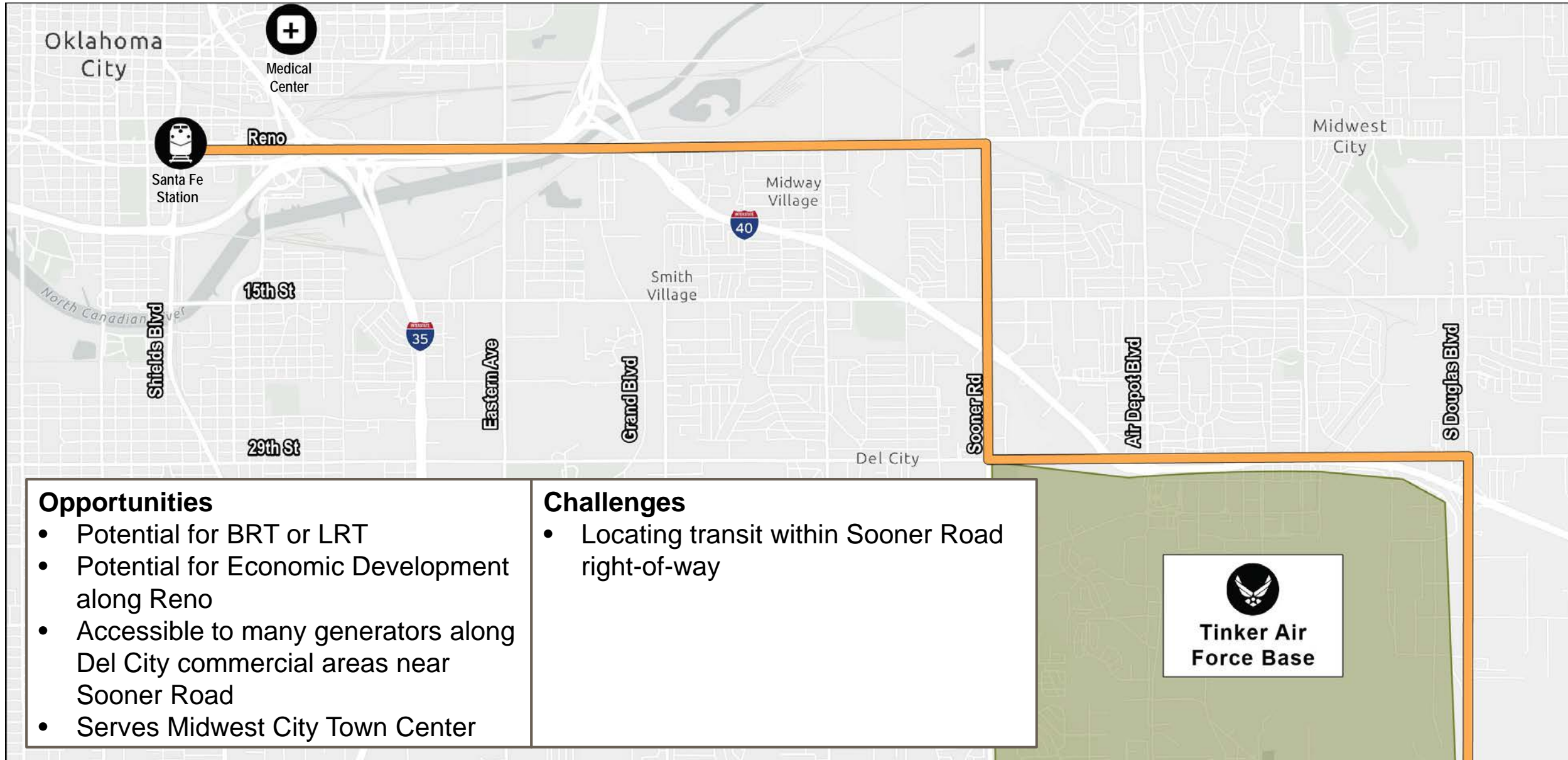
Possible Alignment 1

RTA



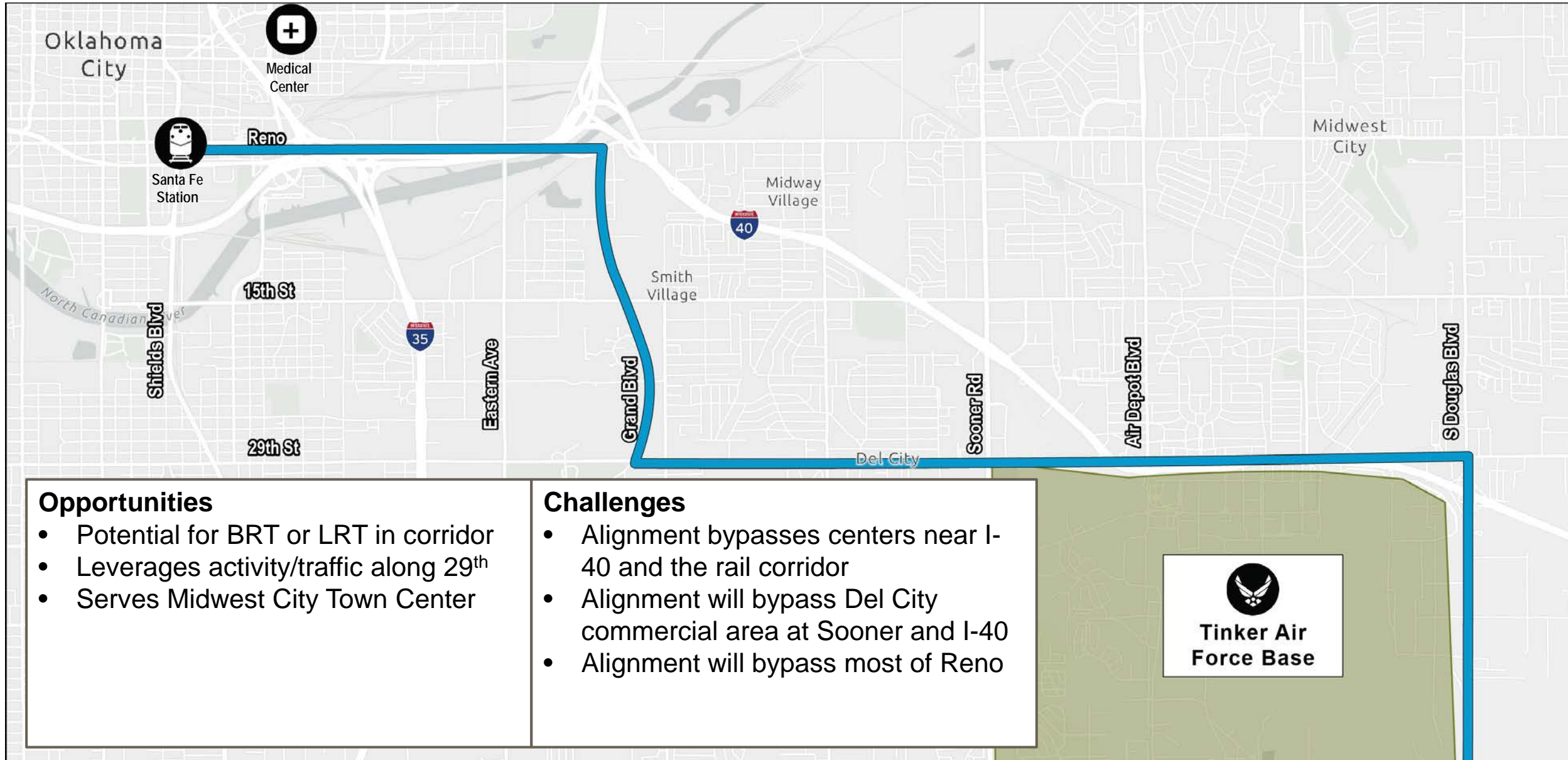
Proposed Alignment 2

RTA



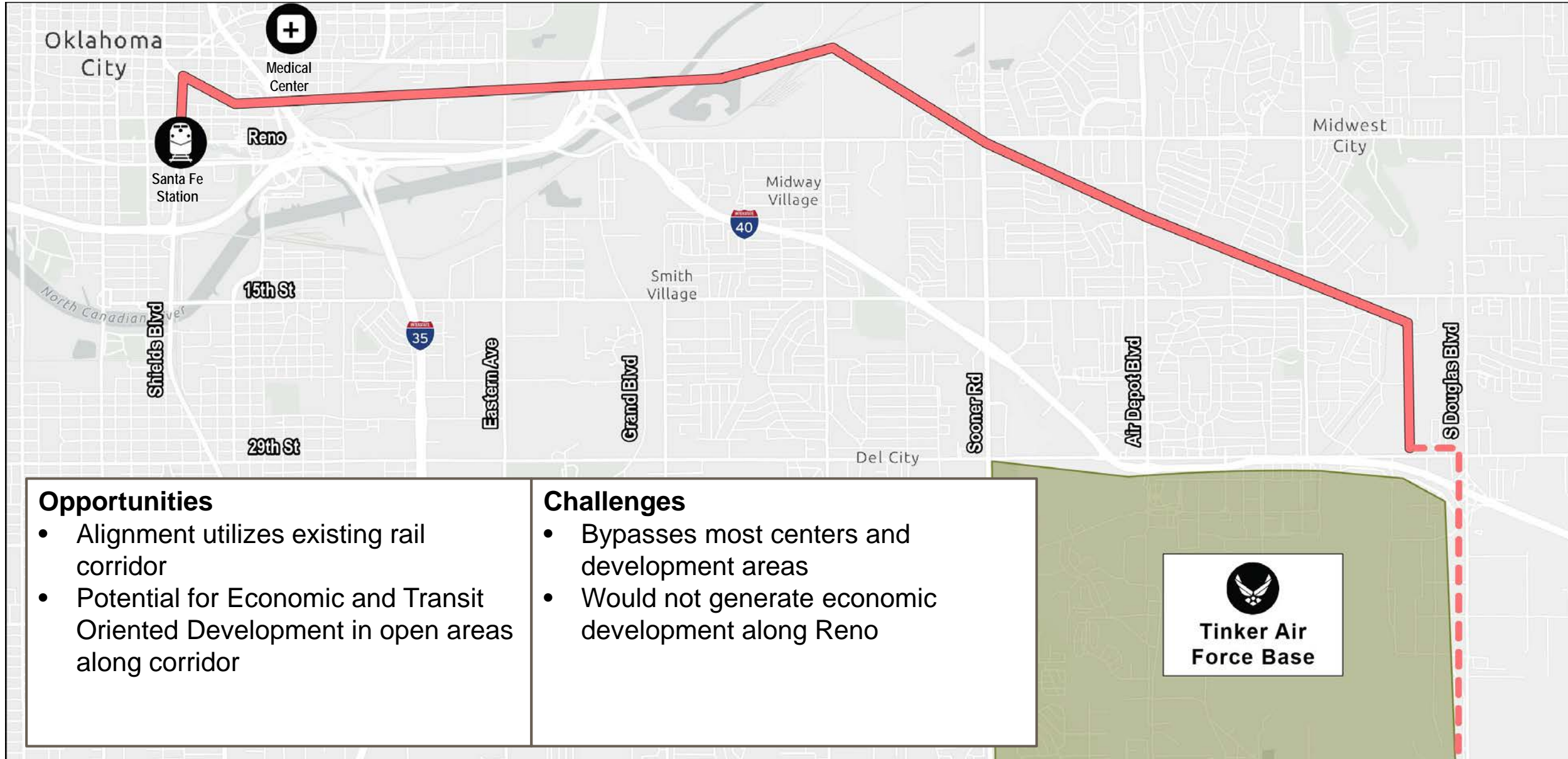
Proposed Alignment 3

RTA



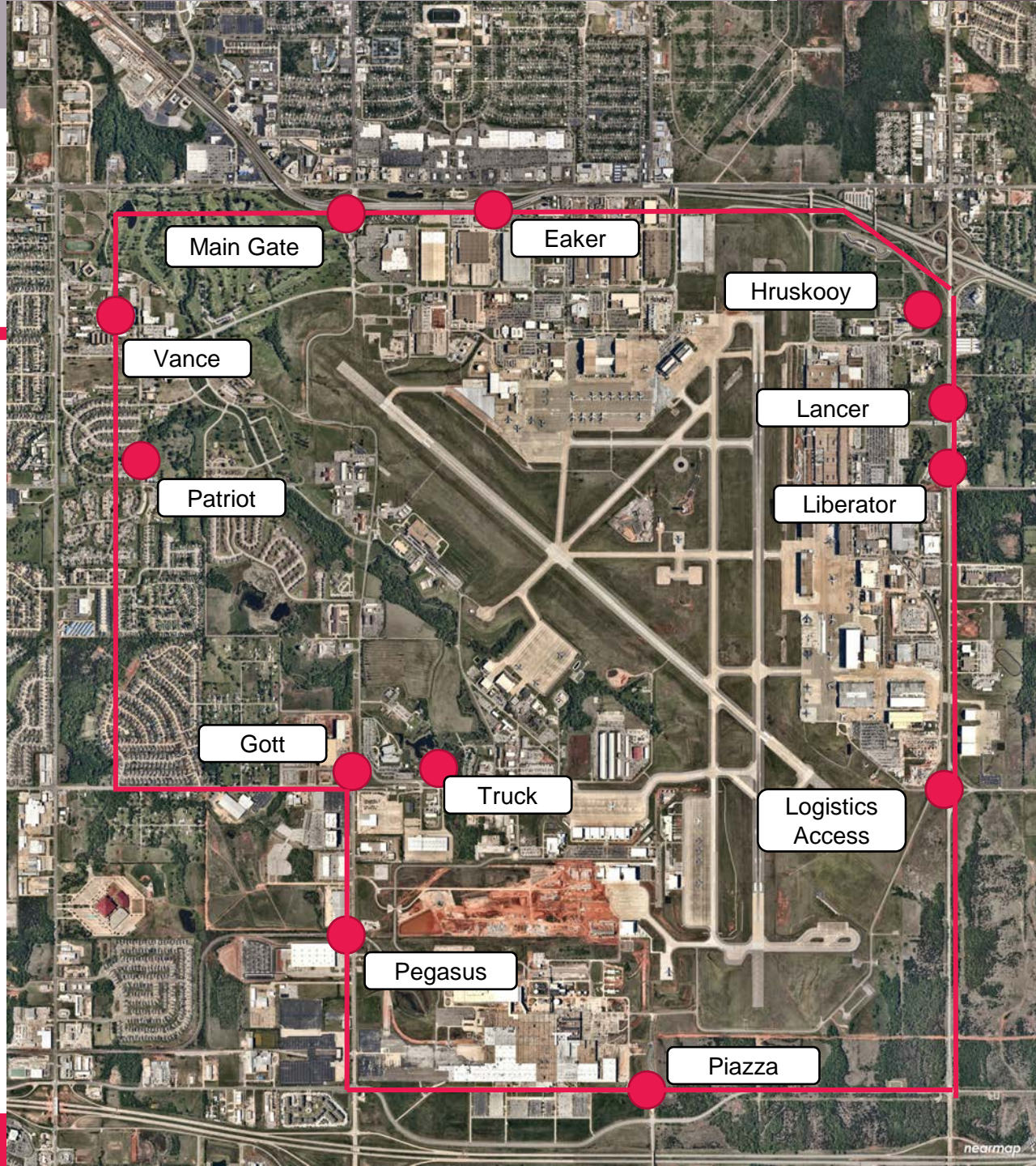
Proposed Alignment 4

RTA



Tinker AFB Considerations

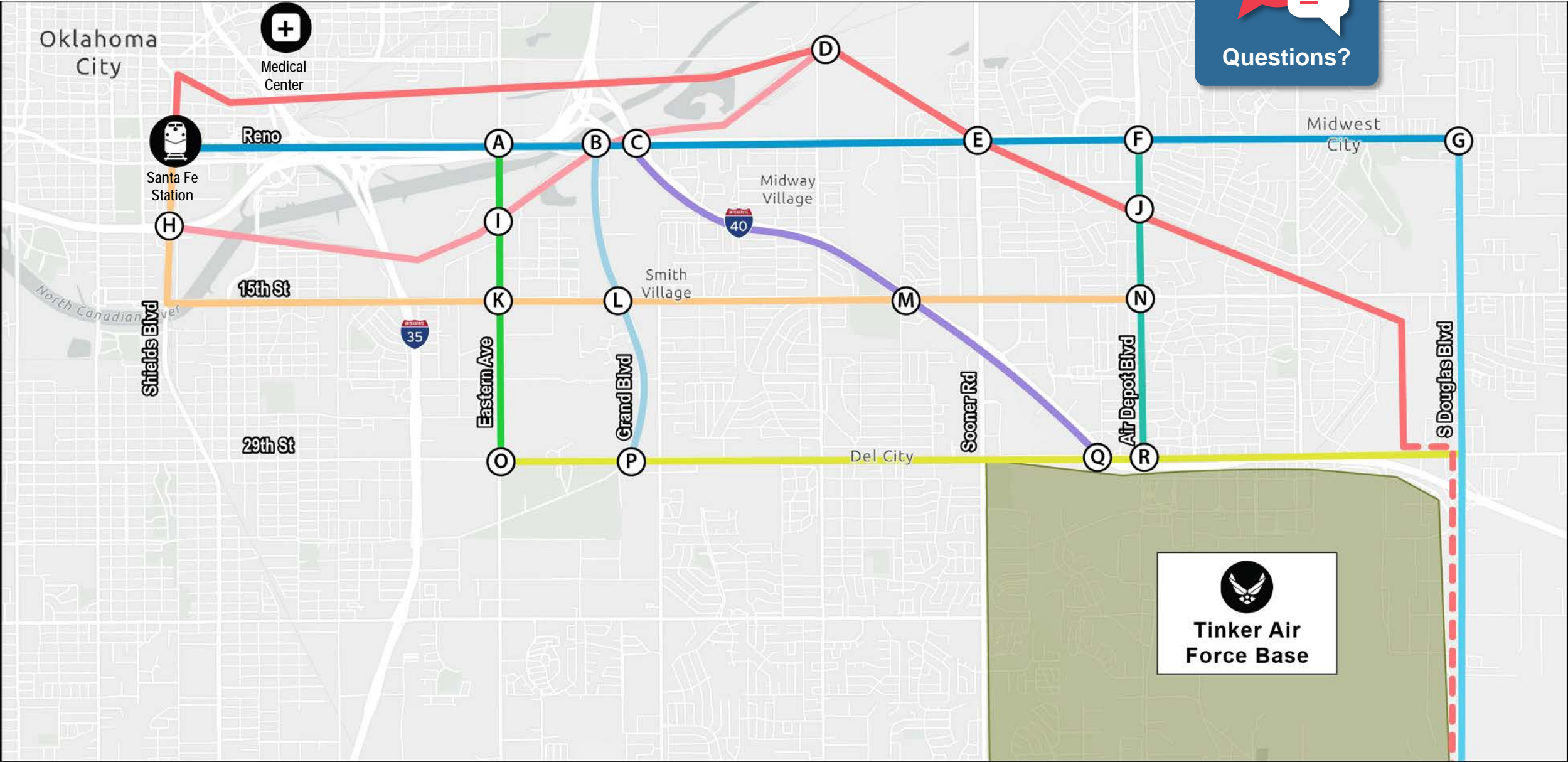
- Transportation Conditions
 - Commute patterns
 - Gate activity
 - User groups
 - Future needs
- Tinker AFB + RTA Coordination
 - Security
 - Operations
 - Maintenance



Segments Considered



RTA





SCREENING CRITERIA



Mobility & Connectivity



Economic & Workforce Development



Equity & Accessibility



Sustainability & Viability

Initial Screening Criteria



Improves Community Connections and Mobility, especially for limited mobility populations



Compatible with Local Land Use and Transportation Plans



Provides Appropriate Level of Transit Service



Financial Viability



Provides Economic Development Potential



Potential Property Impacts





Improves Community Connections and Mobility, especially for limited mobility populations

What is it?

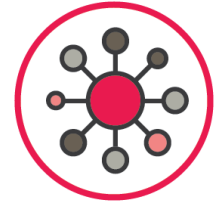
How well does the alternative connect nearby communities to opportunities like work, school, healthcare, and shopping

Why Screen for it?

Service that improves connections is more likely to be utilized by community members

How to Screen for it?

Proximity to community resources



Mobility & Connectivity



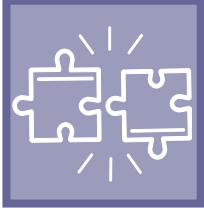
Economic & Workforce Development



Equity & Accessibility



Sustainability & Viability



Compatible with local land use and transportation Plans

What is it?

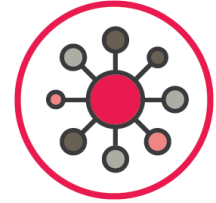
How well does the alternative align with existing and future local land use and transportation plans?

Why Screen for it?

Aligning land use and transportation has a direct impact on effectiveness of service.

How to Screen for it?

Professional assessment of consistency



Mobility & Connectivity



Economic & Workforce Development



Equity & Accessibility



Sustainability & Viability



Provides appropriate level of transit capacity

What is it?

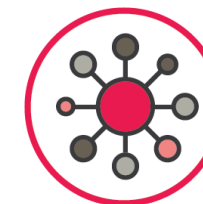
Do the mode and alignment alternatives provide the right amount of capacity for existing and future demand

Why Screen for it?

Unaligned capacity impacts service quality and public perception of service usefulness

How to Screen for it?

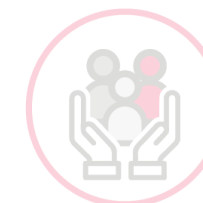
Is potential market and alignment length consistent with best practice for modes under consideration



**Mobility &
Connectivity**



**Economic & Workforce
Development**



**Equity &
Accessibility**



**Sustainability
& Viability**



Financial Viability

What is it?

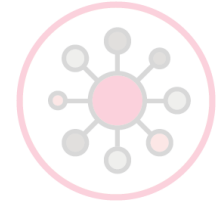
Does the alternative provide benefit to the community in a way that the cost is justified

Why Screen for it?

Financially viable service is more economically sustainable to build, operate, and maintain

How to Screen for it?

Per mile cost of service based on national averages



Mobility &
Connectivity



Economic & Workforce
Development



Equity &
Accessibility



Sustainability
& Viability



Provides Economic Development Potential

What is it?

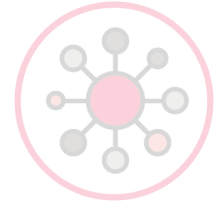
Do the mode and alignment support the economic development goals of the community

Why Screen for it?

Economic Development provides community access to new jobs and services

How to Screen for it?

Proximity to locations that can accommodate increased activity intensity



Mobility &
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& Viability



Potential Property Impacts

What is it?

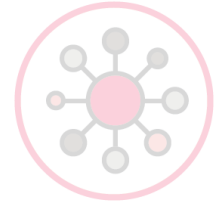
Does the alternative require property acquisition and what kind

Why Screen for it?

Property acquisition has a substantial direct impact on project cost and schedule

How to Screen for it?

Assessment of right-of-way width, alignment curves, and station space requirements



Mobility & Connectivity



Economic & Workforce Development



Equity & Accessibility



Sustainability & Viability

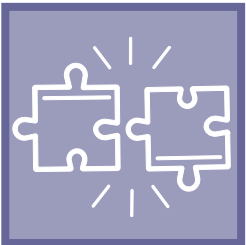
Alternatives Analysis Initial Screening Criteria



Improves Community Connections and Mobility, especially for limited mobility populations



Financial Viability



Compatible with Local Land Use and Transportation Plans



Provides Economic Development Potential



Provides Appropriate Level of Transit Service



Potential Property Impacts



NEXT STEPS

Work Plan



Sep
2021



BOARD: ALTERNATIVES ANALYSIS UPDATE & ENGAGEMENT RESULTS



TECHNICAL WORKING GROUP MEETING



Oct
2021



BOARD: ALTERNATIVES ANALYSIS UPDATE

Nov
2021



TECHNICAL WORKING GROUP MEETING



BOARD: ALTERNATIVES ANALYSIS UPDATE

Winter
21/22



TECHNICAL WORKING GROUP MEETING

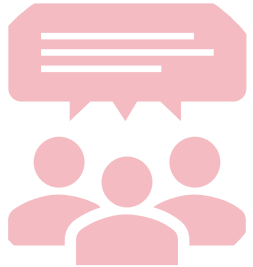
Spring
21/22



BOARD: ALTERNATIVES ANALYSIS UPDATE

RTAMoves.com

Visit the project website, www.rtamoves.com for the following:



Learn More!

Project summary information and FAQs are provided on the website.



We want to hear from you!

Share your feedback by participating in our survey and interactive map.

The background is a dark purple architectural line drawing of a building's interior. It features a long, narrow space with a series of rectangular columns or pillars on the right side. On the left, there is a circular feature, possibly a well or a small pool, and a window or opening. The drawing is rendered in a light, sketchy style.

OPEN DISCUSSION



THANK YOU!