

# Alternatives Analysis Update



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

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*February 16, 2022*

*Prepared by Kimley-Horn and Associates*



# Agenda

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- Engagement Status
- North/South Corridor Feasibility Study Update
  - Recap Draft Service Vision
  - Cost Estimates
  - Freight Service Coordination
- Next Steps

# Current Engagement

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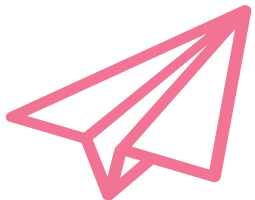
**4,500**  
Website Views



**30**  
Comments



**112**  
Survey Responses



**Local Media**



**Press Release**



**Social Media**



**Emails**





# N/S CORRIDOR UPDATE



# RECAP: DRAFT SERVICE VISION



# Draft Service Vision

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## Step 1

### **Starter Service:**

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

Phased Investment Plan

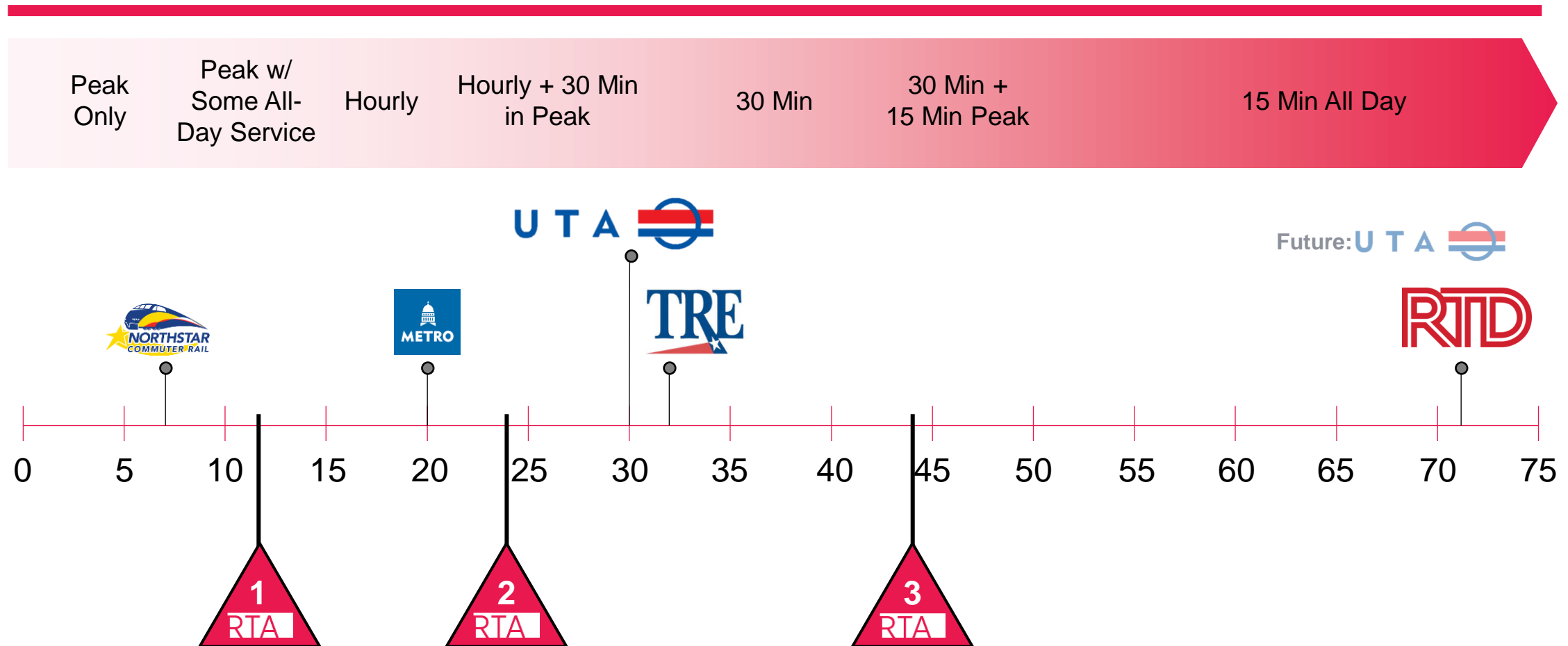


## Step 3

### **Maximum Service:**

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

# RTA Steps relative to Peers





The background features a detailed line drawing of a train at a station platform. The train is composed of several connected cars, and the platform has various structural elements like tracks and overhead lines. A semi-transparent purple rectangular overlay covers the right two-thirds of the image, serving as a backdrop for the text.

# COST ESTIMATING

# Cost Estimating Components

## CAPITAL COSTS, FINANCING, AND FEES



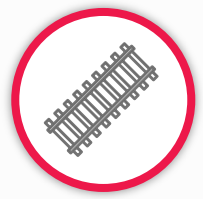
**Equipment and  
Facilities**



**Financing**



**Infrastructure**



**Access Fees**

## OPERATIONS AND MAINTENANCE COSTS



**Station  
Maintenance**



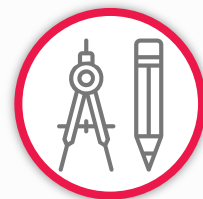
**Transportation  
Operations**




**Equipment  
Maintenance**



**Maintenance of  
Right-of-Way**



**General and  
Administrative**



# OPERATIONS AND MAINTENANCE COST

# RTA Operations & Maintenance Cost Model Project Plan

			Status
1	Develop cost inputs from comparable systems	» Identify relevant costs: fuel, maintenance, wages, etc... from peer systems	✓
2	Standardize Cost Units	» Convert comparable costs into scalable unit costs	✓
3	Develop Input Calculations	» Develop model calculations for inputs	Progress Check
4	Model Concept Costs	» Estimate operating concepts costs	Progress Check

# What are the major operations and maintenance cost elements?



## Transportation Operations

*General operation of trains (fuel, staff, etc.)*



## Maintenance of Right-of-Way

*Basic upkeep of track (repairs, inspection, cleaning)*



## Station Maintenance

*General maintenance (utilities, cleaning, security)*



## Equipment Maintenance

*Labor and materials to maintain the trains*








## General and Administrative

*Management and staff (planning, admin, HR, etc.)*

***Some costs have efficiencies from economy of scale.***



# Normalized Operations & Maintenance Cost Elements

Major Cost Element	Description of Elements	Normalized Unit Costs
 <b>Transportation (operations)</b>	<b>General operation of trains:</b> Fuel and direct operating costs and train personnel salaries and benefits	Vehicle revenue hours
 <b>Maintenance of Right-of-Way</b>	<b>Basic upkeep of the track:</b> Minor repairs, inspection, and brush clearing	Rail miles and usage
 <b>Station Maintenance</b>	<b>Basic Station Maintenance:</b> Utilities, cleaning, and security	Per platform
 <b>Equipment Maintenance</b>	<b>Labor and materials to maintain the trains:</b> Including repairs, parts, the maintenance shop building and its upkeep	Revenue train hours
 <b>General &amp; Administrative</b>	<b>Back of house management and staff:</b> Planning, admin, HR, etc. and their salaries and benefits along with office maintenance costs	Vehicle revenue hours

***Some costs have efficiencies from economy of scale.***

# Estimated Annual Operations & Maintenance Costs

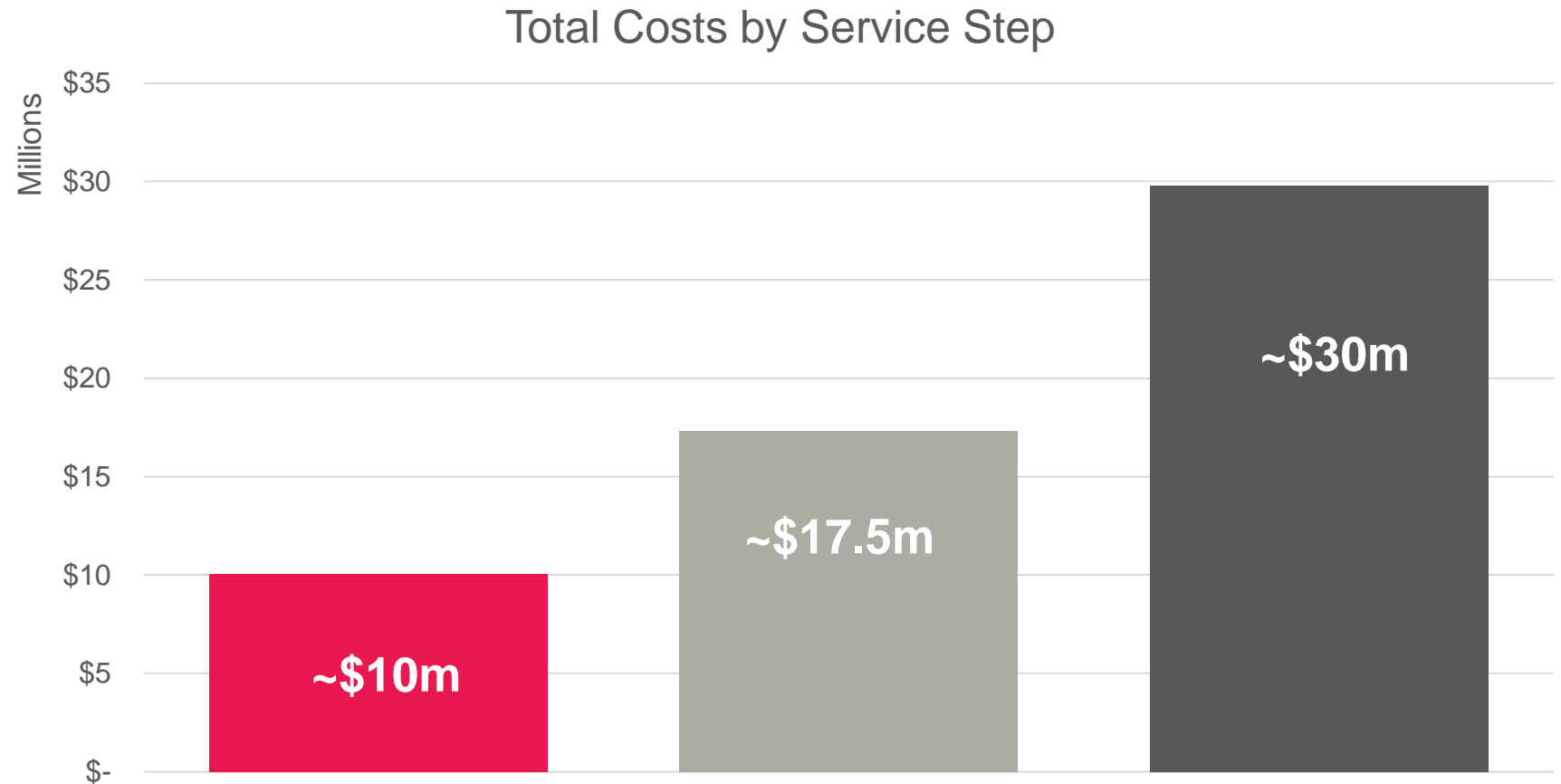
Step 1 Service  
(12 round trips)

Step 2 Service  
(24 round trips)

Step 3 Service  
(44 round trips)

## Conclusion

Annual operations  
and maintenance  
costs range from  
~\$10 to ~\$30 million



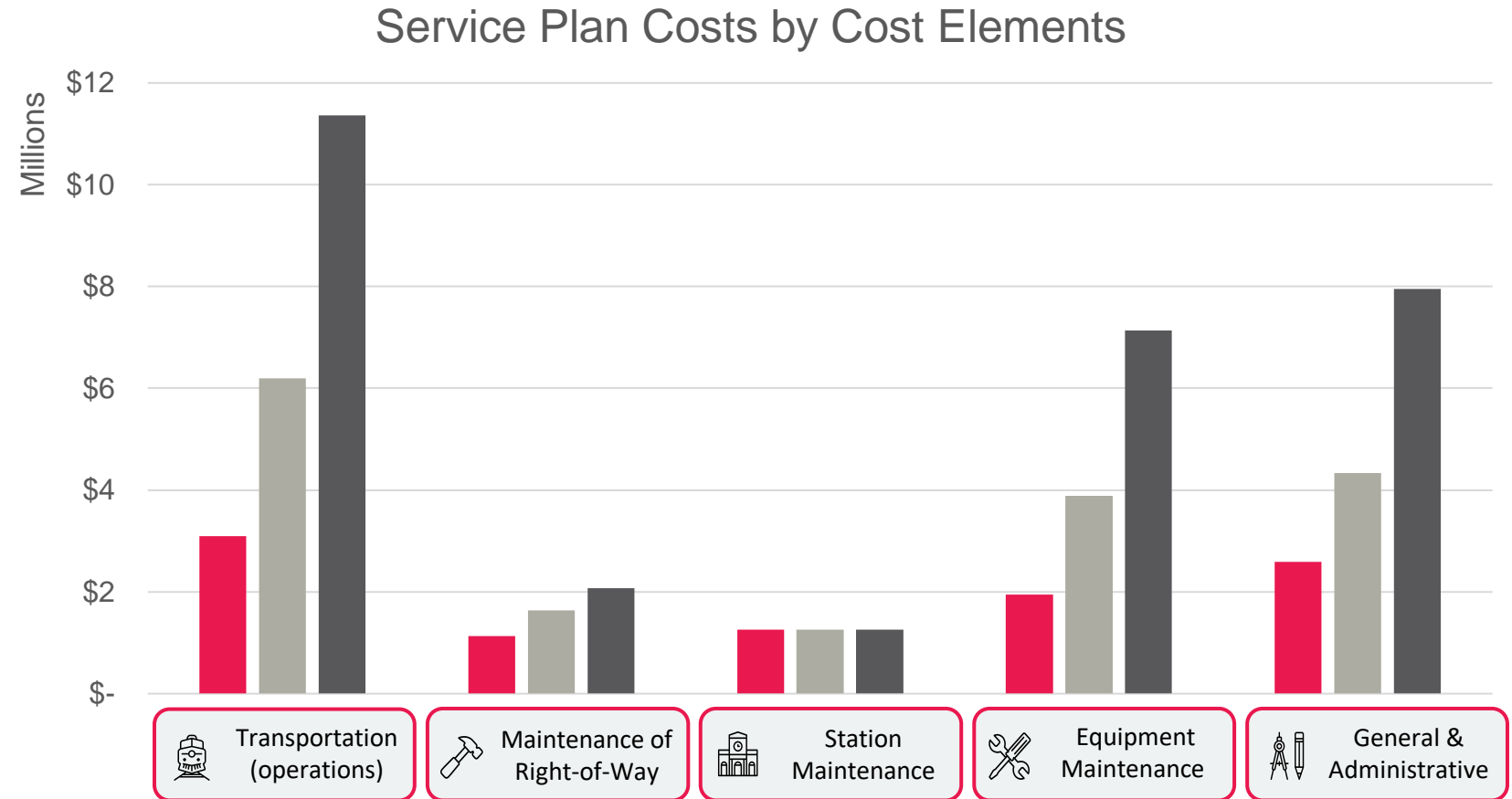
**All Operations and Maintenance Costs in 2021 Nominal Dollars**

# Estimated Annual Operations & Maintenance Costs

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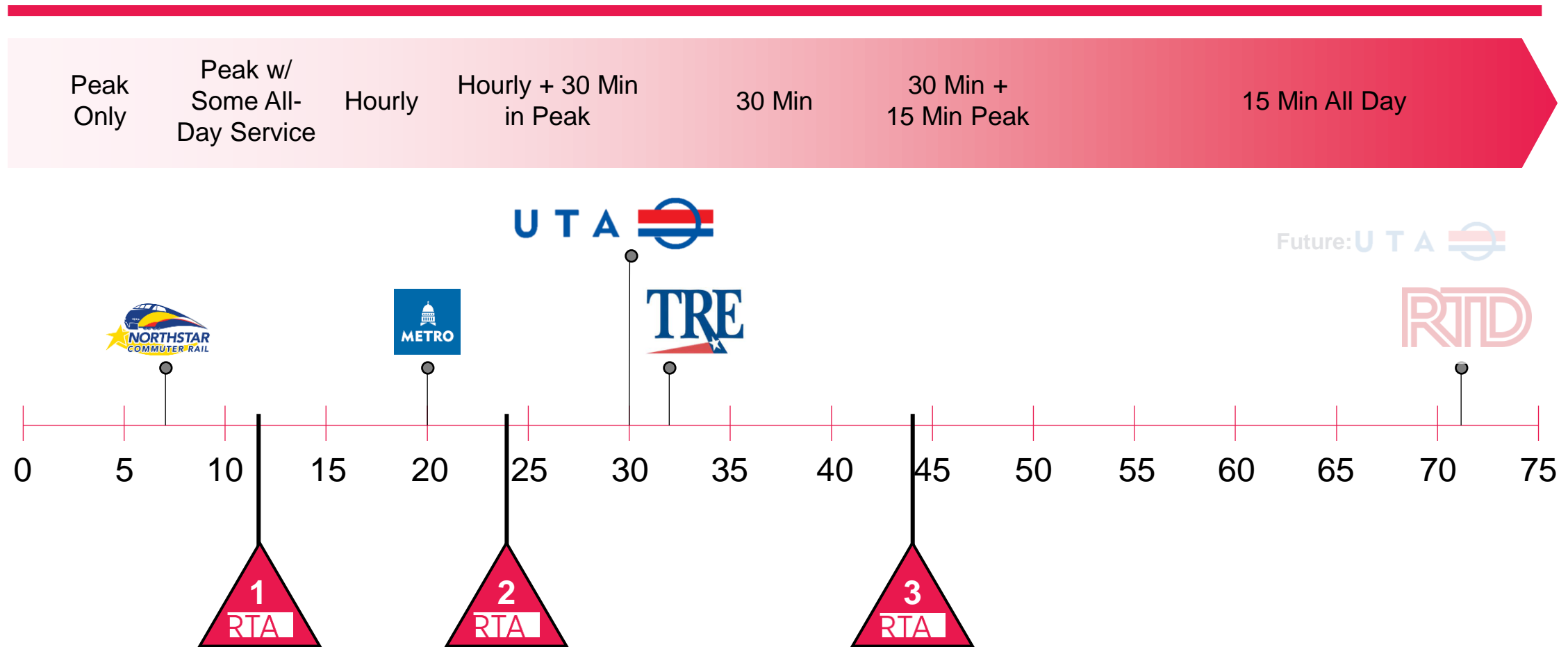
## Conclusion

Annual operations & maintenance costs are driven by transportation operations, equipment maintenance, and general & administrative



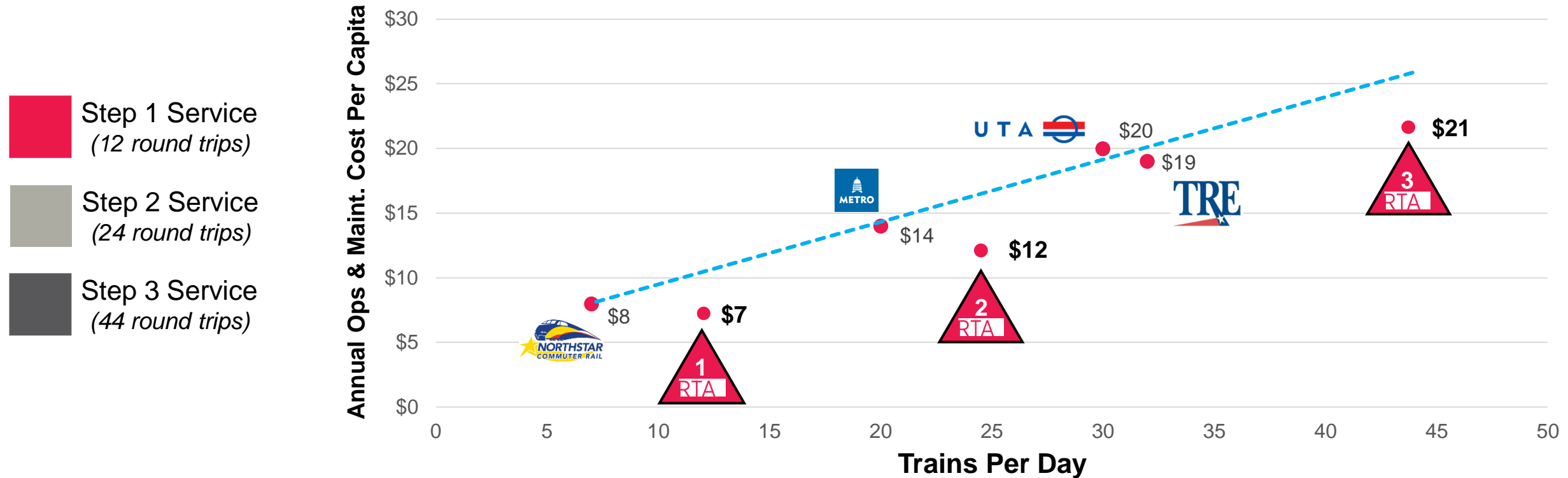
**All Operations and Maintenance Costs in 2021 Nominal Dollars**

# RTA Steps relative to Peers



# Peer Railroad Comparison – Per Capita Annual Operations and Maintenance Costs

Per Capita Annual Operations & Maintenance Cost by Trains Per Day




**Annual metropolitan area per capita operations and maintenance costs for each service step are \$7, \$12, and \$21, in line with peer and national rail spending**

**All Operations and Maintenance Costs in 2021 Nominal Dollars**




# Estimated Annual Operations and Maintenance Cost



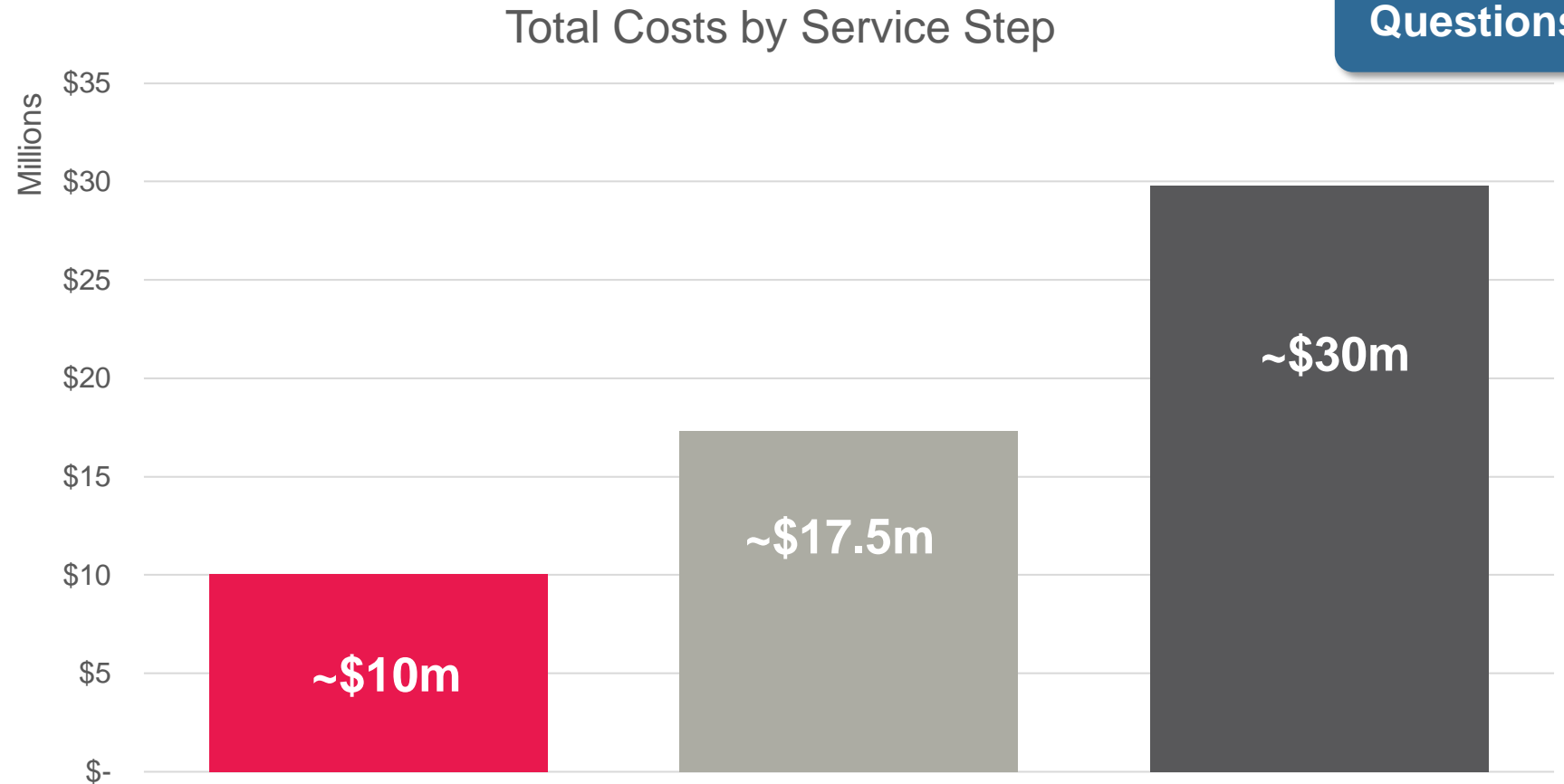
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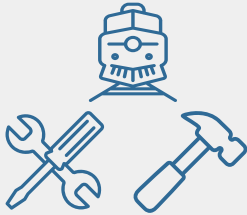
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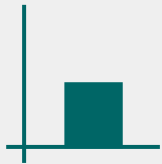
*All Operations and Maintenance Costs in 2021 Nominal Dollars*

# Conclusions



**Operations and Maintenance Costs are largely driven by:**

- Transportation Operations
- Equipment maintenance
- General and Administration



**Operations and Maintenance Costs for Service Step One are estimated to be ~10 million**



**Cost Efficiencies can be realized as the system scales**



**Capital Costs, Financing Costs, and Fees are *not* included in this estimate**

The background features a detailed line drawing of a train at a station platform. The train is positioned on tracks, and the platform has various structural elements like pillars and railings. A semi-transparent purple rectangular overlay covers the right two-thirds of the image, serving as a backdrop for the text. The left third of the image remains white, showing the continuation of the train and platform lines.

# CAPITAL COSTS, FINANCING AND FEES

# Cost Estimating Components

## CAPITAL COSTS, FINANCING, AND FEES



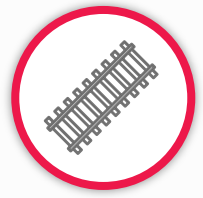
**Equipment and  
Facilities**



**Financing**



**Infrastructure**



**Access Fees**

## OPERATIONS AND MAINTENANCE COSTS



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Maintenance**



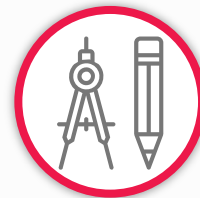
**Transportation  
Operations**



**Equipment  
Maintenance**



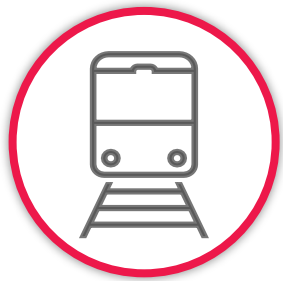
**Maintenance of  
Right-of-Way**



**General and  
Administrative**



# Capital Costs, Access Fees and Financing Costs



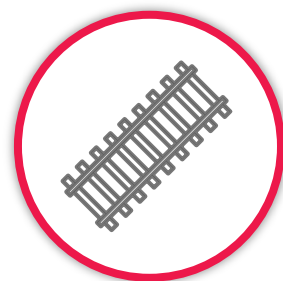
## Equipment and Facilities

- Vehicles
- Yards
- Maintenance shop



## Infrastructure

- Signals
- Sidings
- Stations
- Interlocking
- Grade crossings



## Access Fees

- BNSF access fee



## Financing Costs

- Annual costs associated with servicing debt to implement improvements



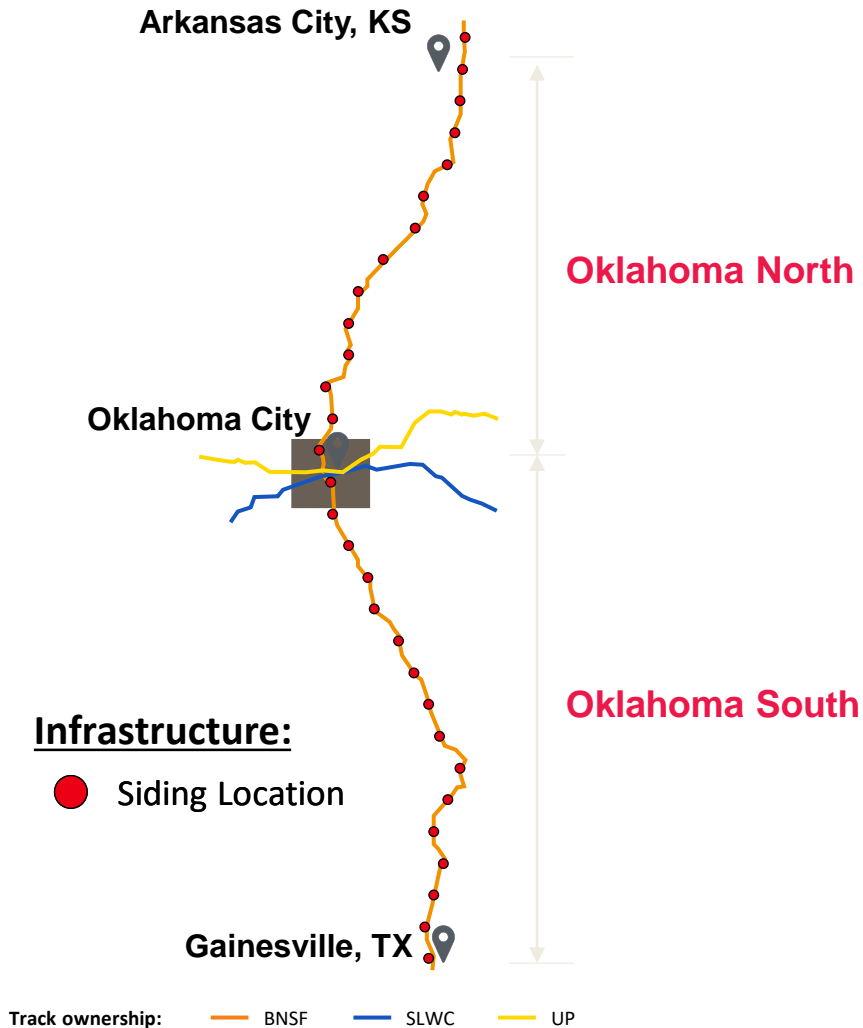
The background features a detailed line drawing of a freight train with multiple boxcars, moving along a set of tracks. To the right of the tracks, there are industrial structures, possibly loading docks or storage racks. The entire scene is rendered in a light purple or grey tone, serving as a backdrop for the white text.

# FREIGHT SERVICE COORDINATION

# Central Oklahoma Freight Service Coordination Project Plan

			Status
1	Build standard train	» Identify average Ton, Length, HPT, Locos, train types - by direction	✓
2	Signal System	» Calculate minimum headway and determine headways, including capacity consumption of the on/off ramp movements and the short-line railroads	✓
3	Bottleneck throughput	» Determine traffic throughput at bottleneck(s) & infrastructure limitations	✓
4	Slot allocation	» Identify existing capacity, including train counts, travel times, speeds, frequency	✓
5	Passenger slot availability	» Determine number of slots available for passenger service, times of day and locations	Work in Progress
6	Infrastructure needs	» Identify segments which need infrastructure improvements to meet operational plans, i.e., additional track.	Work in Progress

# Freight Service Coordination



## Key Findings

Entire Subdivision (Kansas – Texas) is considered during Freight Service Coordination analysis

Two bottlenecks are found in the subdivision, to the North and South of the Edmond – Norman Corridor

Freight capacity outside the Edmond-Norman Corridor may be the controlling bottleneck for passenger rail operations

# Freight Service Coordination



## Next Steps

Continued discussions with BNSF

Overlaying proposed passenger rail operations with Freight Service Coordination analysis will reveal conflict points

Conflicts will be addressed by new infrastructure and/or alterations to passenger rail operations

Arkansas City, KS

Oklahoma City

Gainesville, TX

Oklahoma North

Oklahoma South

### Infrastructure:

● Siding Location

Track ownership:    — BNSF    — SLWC    — UP

The background is a detailed line drawing of a train station. A train is stopped at the platform, with its doors open. The platform has a series of vertical poles and a set of stairs leading down. The text "NEXT STEPS" is overlaid in the center in a large, white, sans-serif font.

# NEXT STEPS



# Recap

## Discussed Today

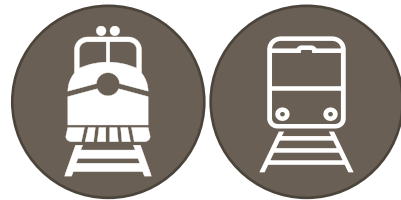


***Initial operations and maintenance costing analysis results***



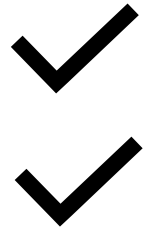
***Initial Results of Freight Service Coordination Analysis***

## Coming Up Next



***Continued Results of Freight Service Coordination and Passenger Service Plan***

# 2022 Work Plan



February



TECHNICAL WORKING GROUP MEETING: N-S CORRIDOR



BOARD: ALTERNATIVES ANALYSIS UPDATE

March



COORDINATION WITH TINKER AFB



BOARD: ALTERNATIVES ANALYSIS UPDATE: EAST CORRIDOR

April



BOARD: ALTERNATIVES ANALYSIS UPDATE



A stylized line drawing of a train on tracks, viewed from a low angle looking down the length of the train. The train is composed of several connected cars, each with windows and doors. The tracks run parallel to the train, leading towards the horizon. The entire image is overlaid with a semi-transparent purple layer. On the far left, there is a white vertical strip. The text 'THANK YOU!' is written in large, white, bold, sans-serif capital letters across the center of the image.

**THANK YOU!**