

Getting On Track:

Optimizing Rail for the
Austin-San Antonio Megaregion

Final Presentation

April 19, 2023

Special thanks to our guest speakers & advisors



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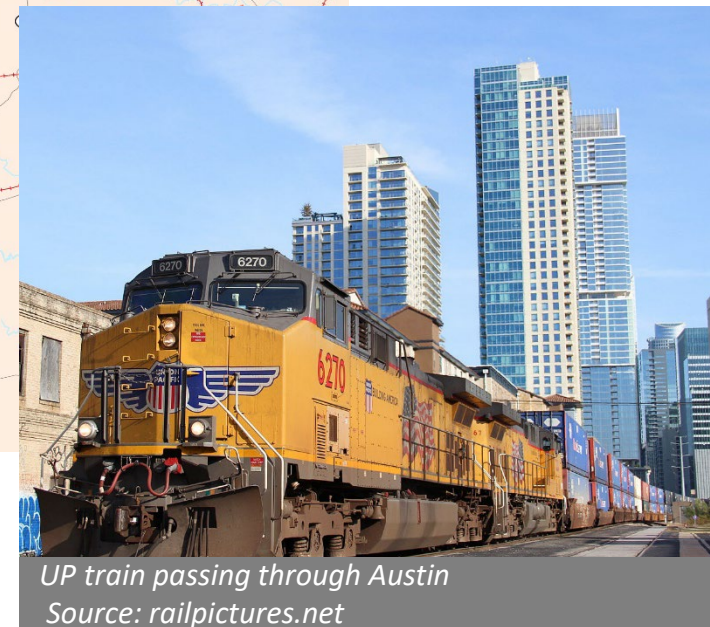
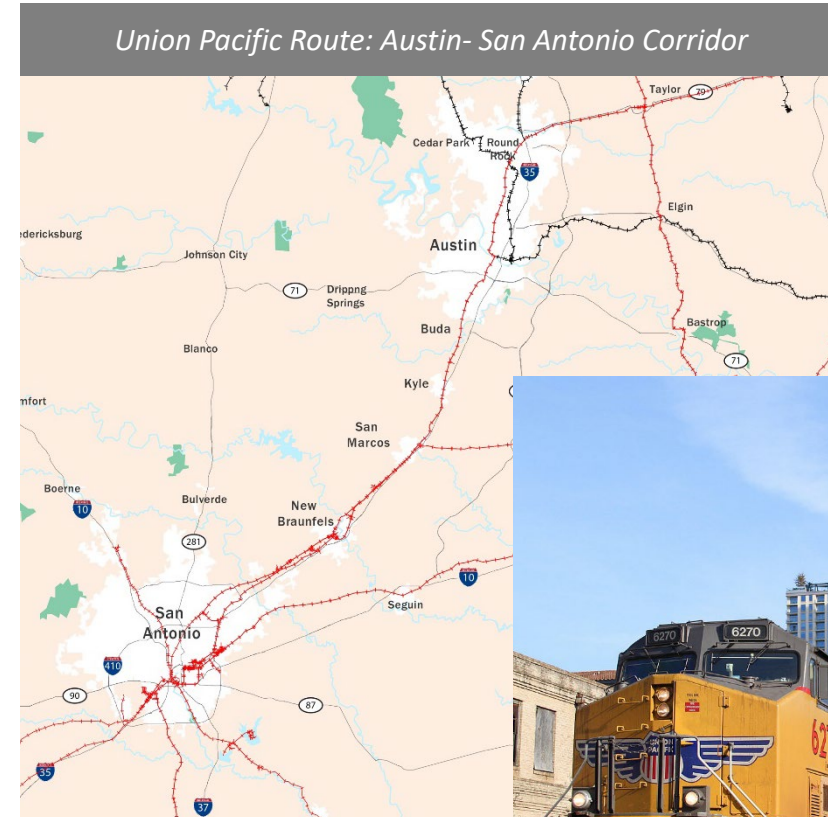
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Agenda

1. History
2. The Problem & The Opportunity
3. The Solution: A Tale of Two Projects
4. Freight Considerations
5. Passenger Considerations
6. Conclusion

Austin - San Antonio Rail Corridor Overview

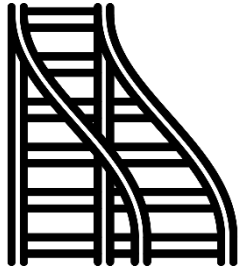
- Union Pacific owns right of way through Austin-San Antonio corridor
- Previous conversations to relocate have been unsuccessful
- Union Pacific has no current incentive to move
- **Operations:**
 - The right-of-way varies between 50 and 100 ft
 - Tracks designed for 70 mph but used at an average of 25 mph
 - Carries construction materials, coal, chemical products, and many NAFTA goods



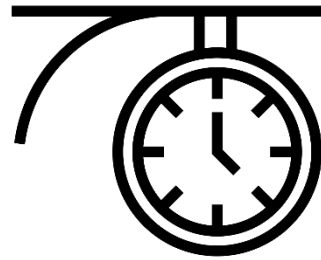
Guiding Questions

1. What is the ideal alignment and why?
2. Where is the opposition going to come from?
3. Where is the subsidy going to come from?
4. Who stands to make money?

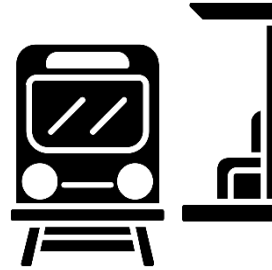
Outside of Report Scope



Detailed alignment
recommendations



Recommended
operating details
(for freight or
passenger rail)



Precise
station locations



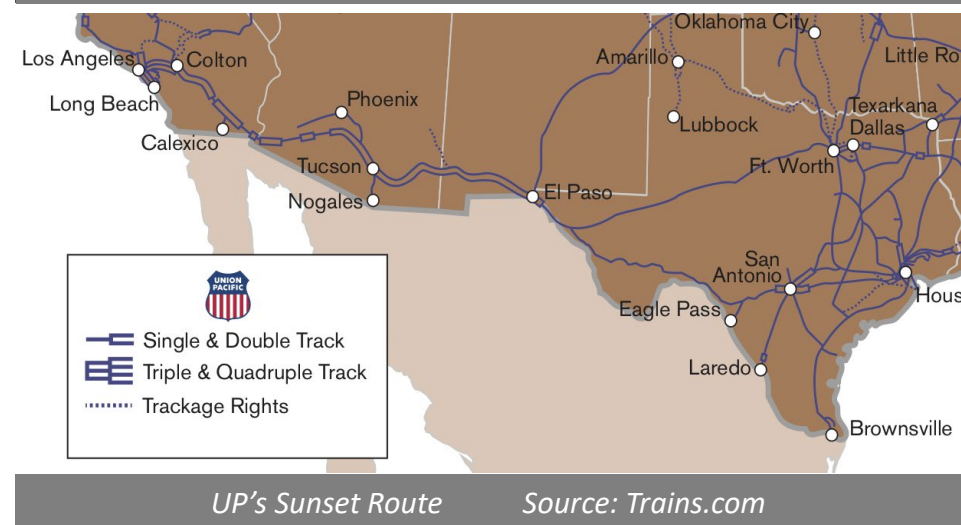
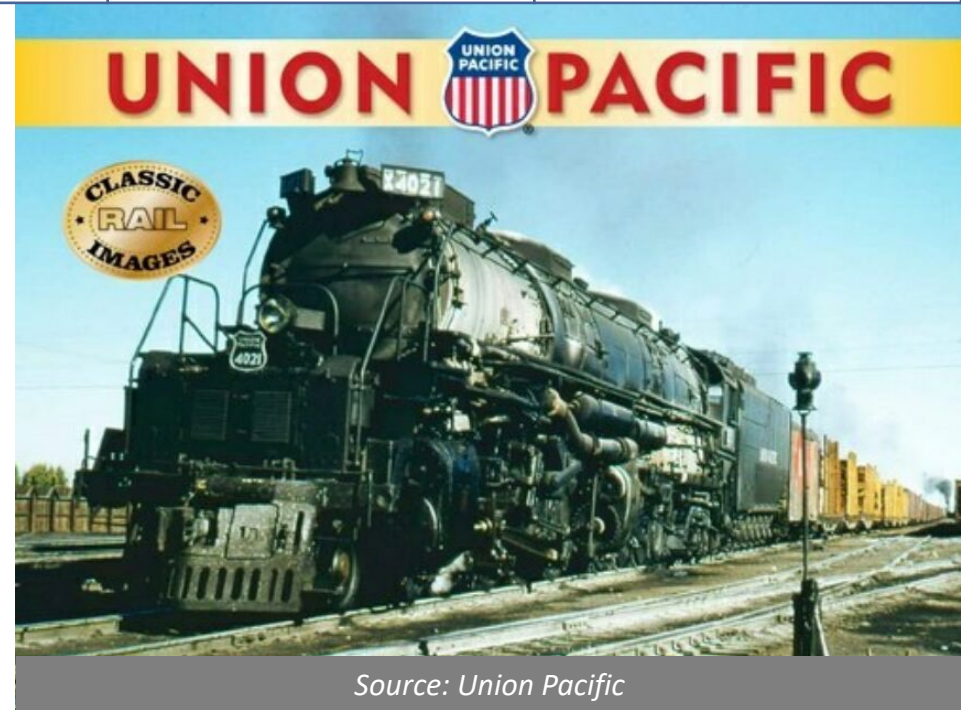
Image courtesy of Meg Merritt



History

Freight Line History

- Austin-San Antonio rail line originally established by International-Great Northern Railroad
- Missouri Pacific (MoPac) Railroad acquired line in 1920s and merged with Union Pacific in 1982
- This rail line has played an integral in the region's economic development, helping move goods across the region and country

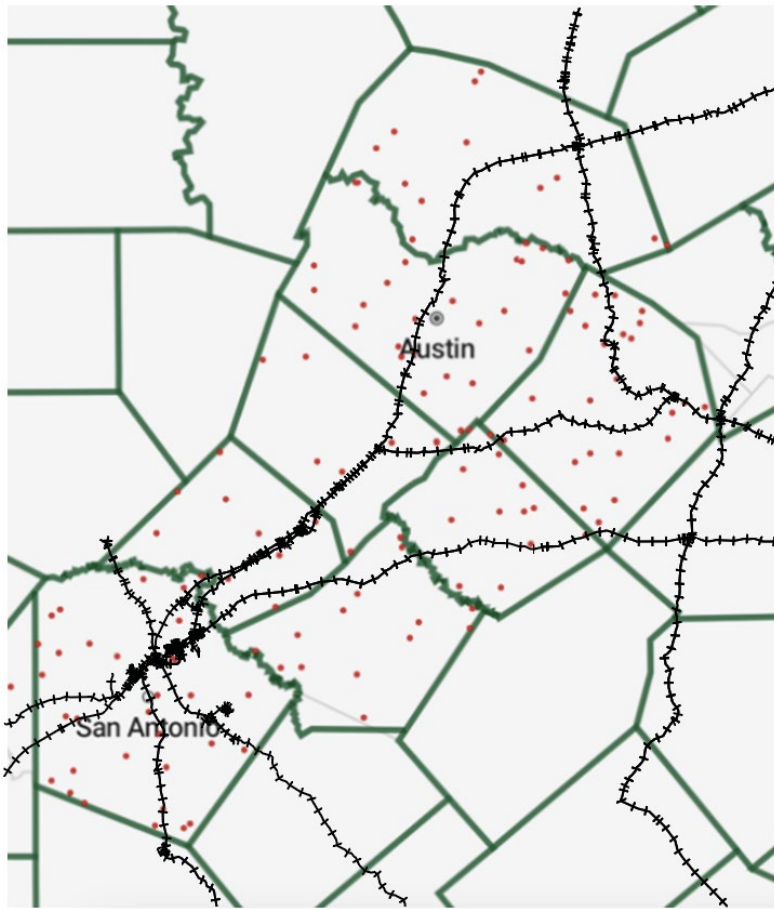


National Deregulation of Freight Safety Requirements

- Freight deregulation is highly contentious
- Critics argue deregulation has led to lower safety standards, higher risks for workers and the public
- Examples include:
 - Staggers Rail Act of 1980 (limited gov. ability to regulate rates)
 - 2016 withdraw of long-held rail industry safety rule requiring two-person crews

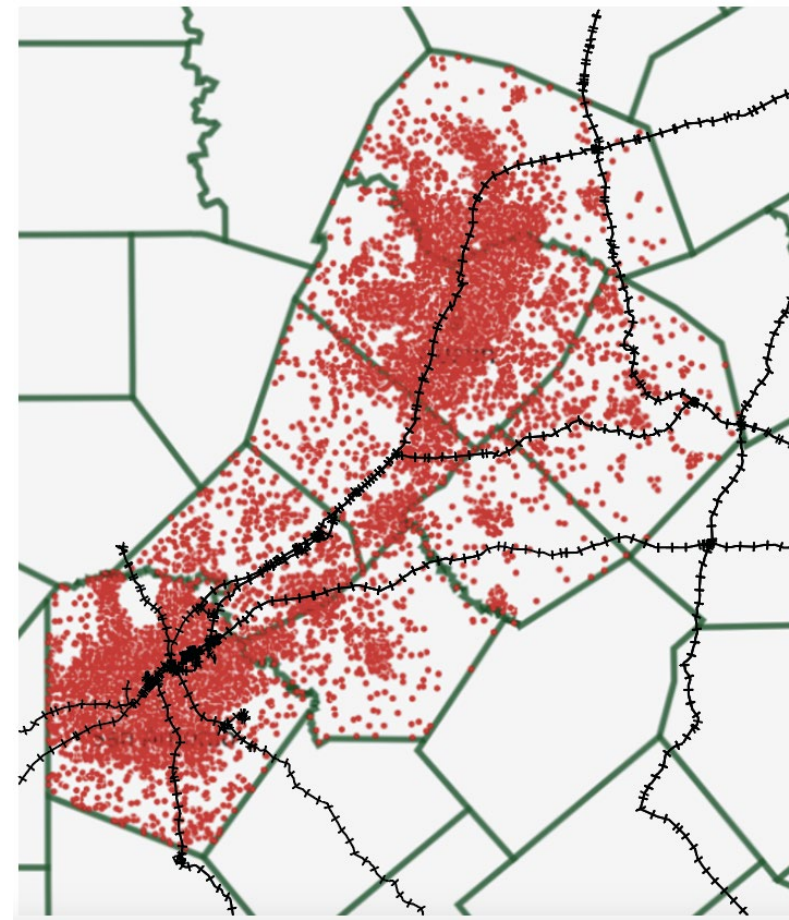


Central Texas Population



1870

• = 500 residents



2020

Texas Passenger Rail Context

- Texas trails other states in passenger rail development, forgoing economic opportunities
 - TxDOT builds roads
 - Lack of clear goals and initiatives
 - Limited pursuit of funding
- Austin-San Antonio regional growth
 - Population growth
 - Economic development
 - Infrastructure investments

American Recovery and Reinvestment Act High-Speed Intercity Passenger Rail Grantees (2009)



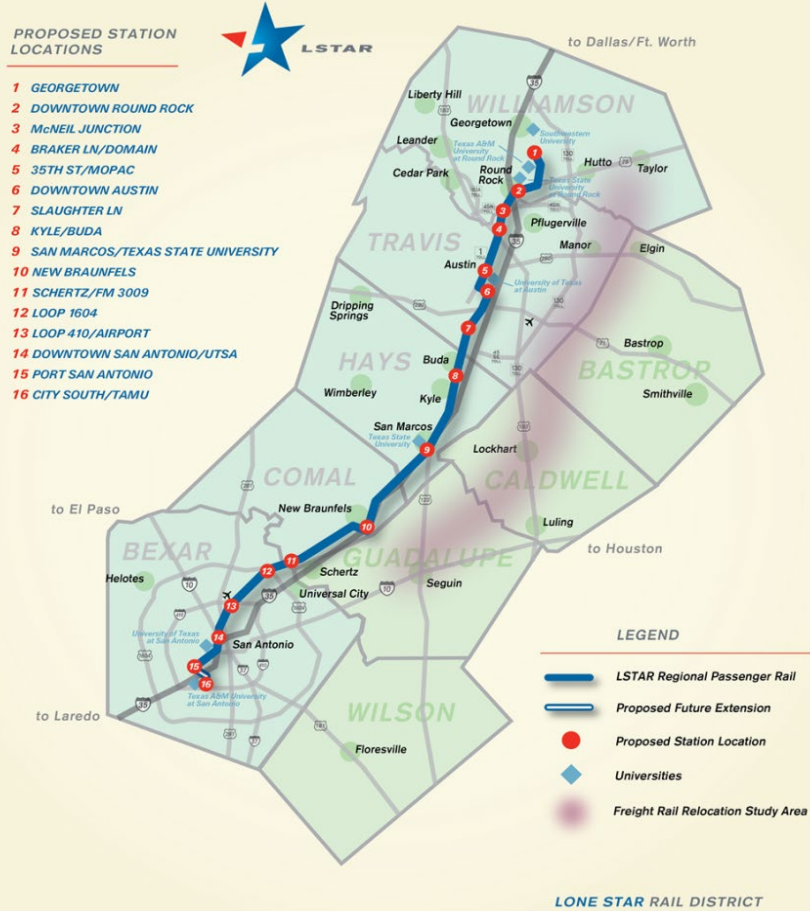
Source: Federal Railroad Administration

Lone Star Rail

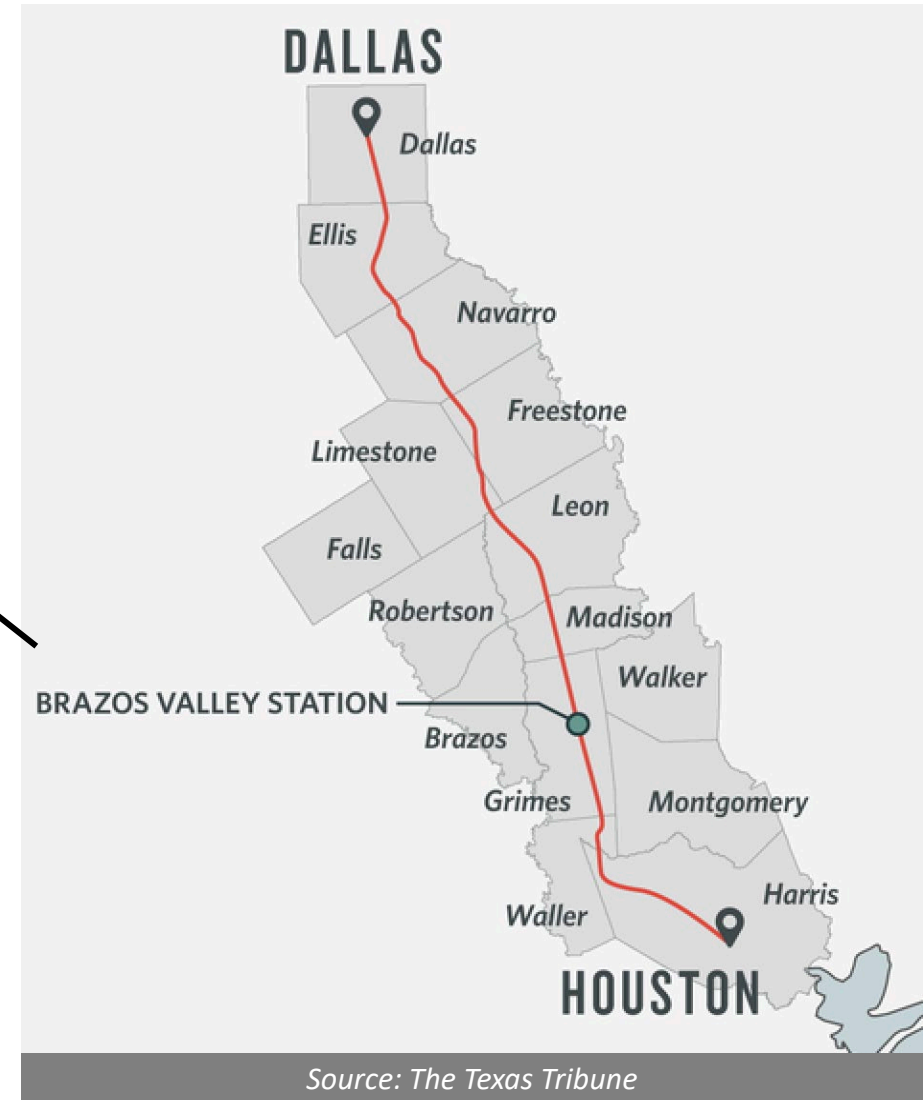
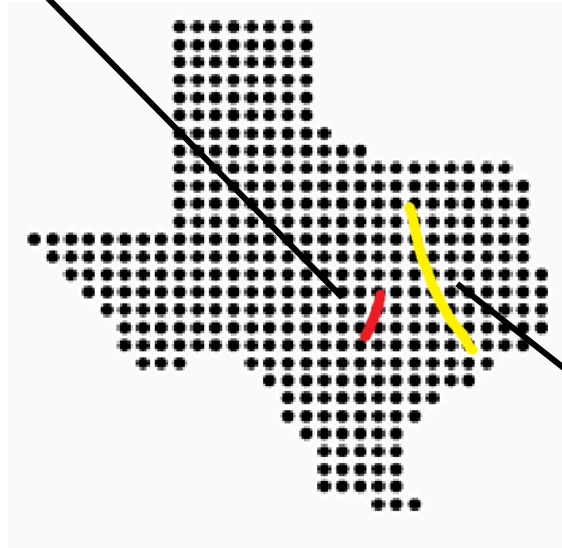
Past efforts

Texas Central

LONE STAR RAIL SYSTEM MAP



Source: City of Austin



Source: The Texas Tribune

What Has Changed Since These Projects?



Federal infrastructure bill increased passenger rail funding



TxDOT applied for federal passenger rail study funding for the first time



Recent freight derailments have mounted political and social pressure to improve safety



Public sentiment towards climate crisis has created interest in more sustainable transportation systems



Automobile costs have continued to rise, creating financial strain and stress on American households



The Problem & The Opportunity



East Palestine derailment controlled chemical burn Source: NPR

Clear and Present Environmental Dangers

- Relaxed safety standards = more derailments
- Approximately three trains derail each day in the US
- 5,000 HazMat spills or leaks in the last decade



East Palestine Derailment

Source: Pittsburgh Post Gazette

Unsustainable Growth

- The Austin-San Antonio corridor is home to 4.3M and expected to double by 2030
- Annual population growth is 3% year over year in the region
- Sprawl in outskirts of the cities incentivizes use of private vehicles

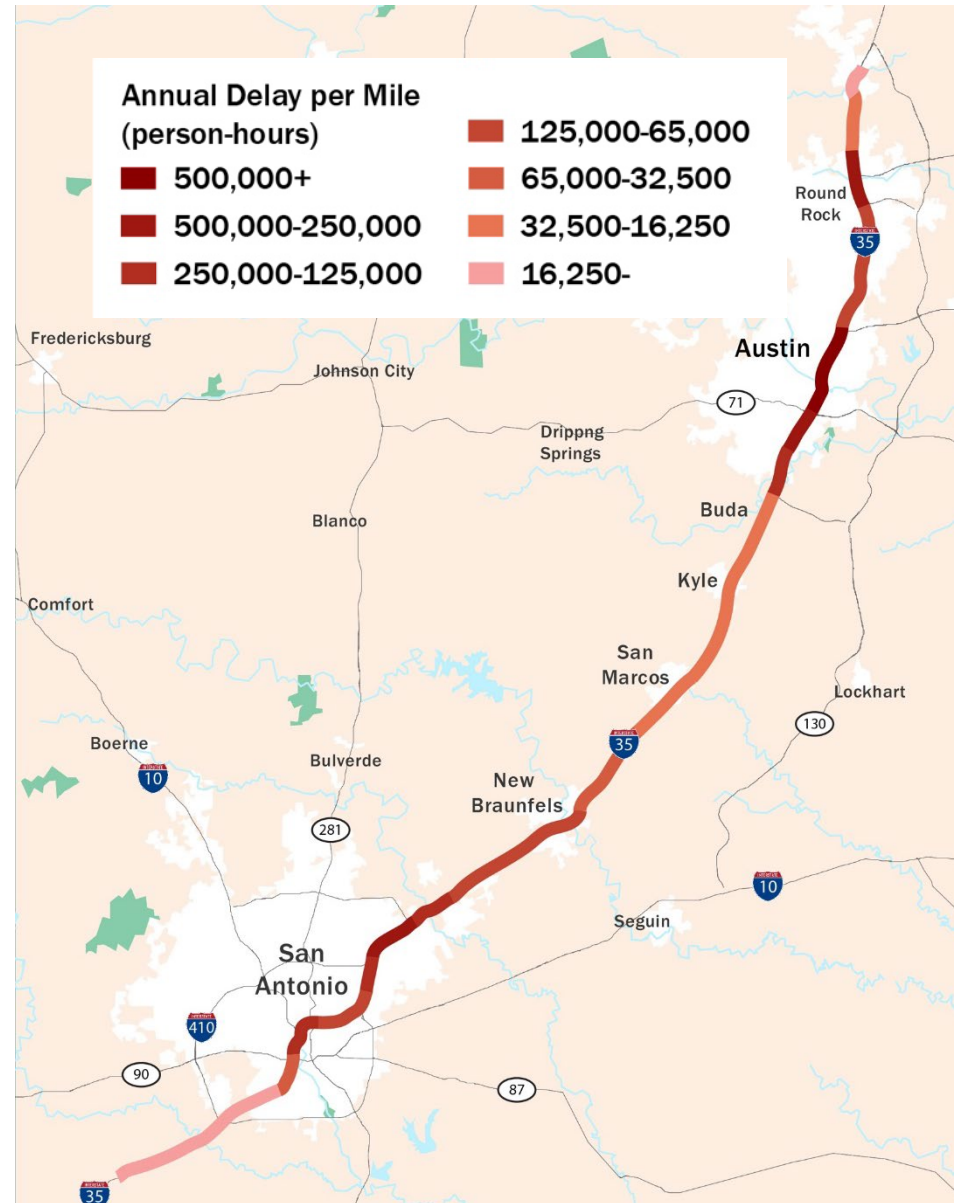


Subdivisions in Hill Country

Source: San-Antonio Express News

I-35 is Overburdened

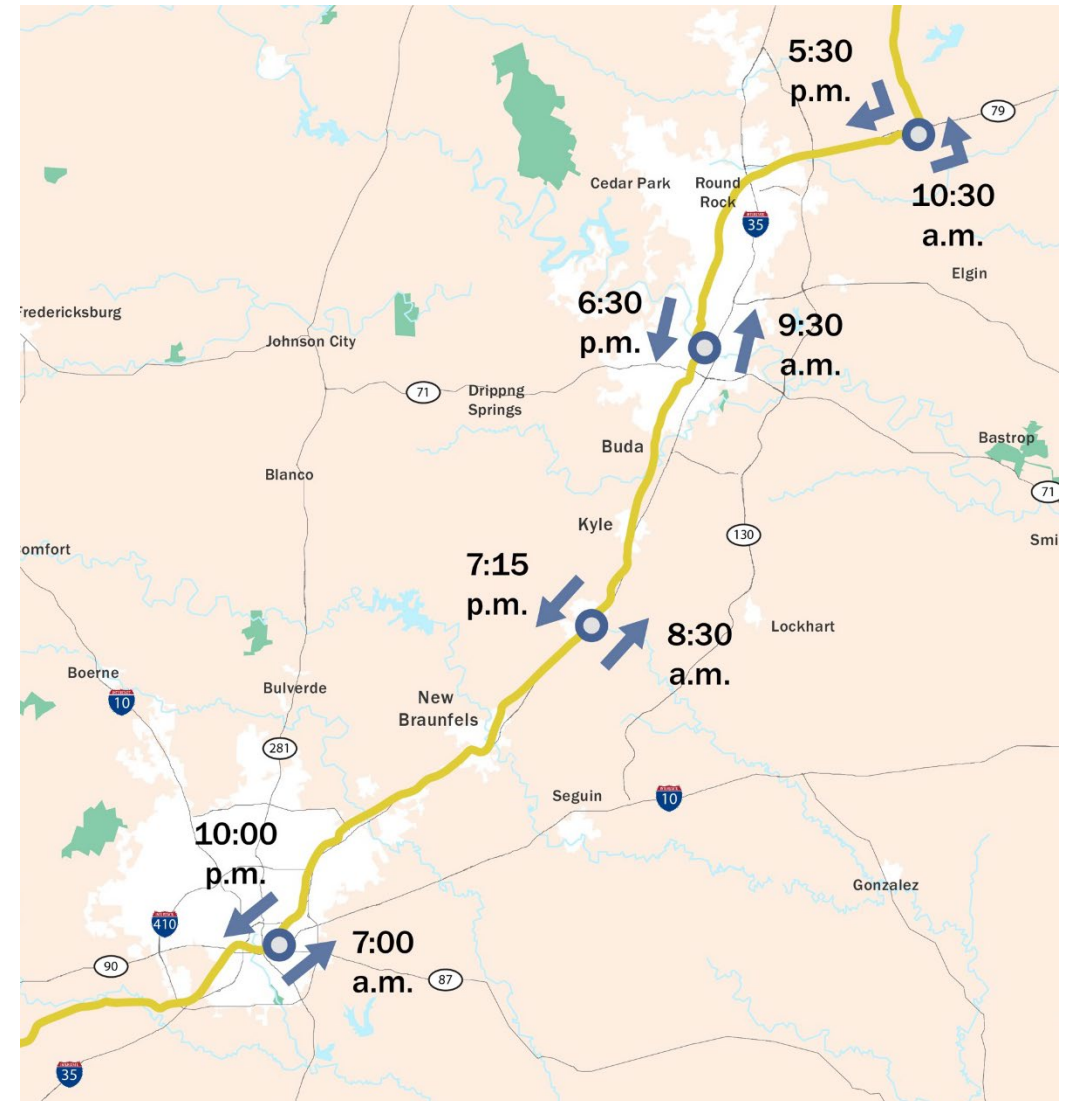
- For each 1% increase in population, there is a 3-4% increase in traffic on I-35
- Most congested road in Texas for truck causing mayor delays
- Annual congestion costs between Austin and San Antonio are \$500M



Existing Amtrak Service

Existing Amtrak service is slow and unreliable

- Track priority not enforced
- One train per day
- Long run times
- 1+ hour delayed ~70% of the time



Current Amtrak Stations

Station	Taylor	Austin	San Marcos	San Antonio
Centrally Located	✓	✓	✗	○
Multimodal Connectivity	✗	○	✓	○
Shelter/Building	Shelter	Building	Shelter	Building
Ticket Counter/ Kiosk	✗	✓	✗	✓
Bathroom	✗	✓	✓	✓
Wifi	✗	✗	✗	✗
Vending Machines	✗	✓	✓	✓
Cafe	✗	✗	✗	✗
Nearby Amenities	✓	✗	✗	○
✓ = present ✗ = absent ○ = present to a degree				

The Opportunity

- Re-domestication of production to North America (China → Mexico)
- Canadian Pacific-Kansas City Southern merger (now CPKC) is a strong NAFTA move
- 48% of U.S. NAFTA products are transported through Texas using the I-35 corridor
- Union Pacific is market leader in the corridor





Congestion on I-35 in Austin Source: KVUE



The Solution: A Tale of Two Projects

A Tale of Two Projects



MOVE PEOPLE

MOVE PRODUCTS

Address the two projects separately

1

Bluebonnet Bypass



Union Pacific Rolling Stock | Source: Associated Press

2

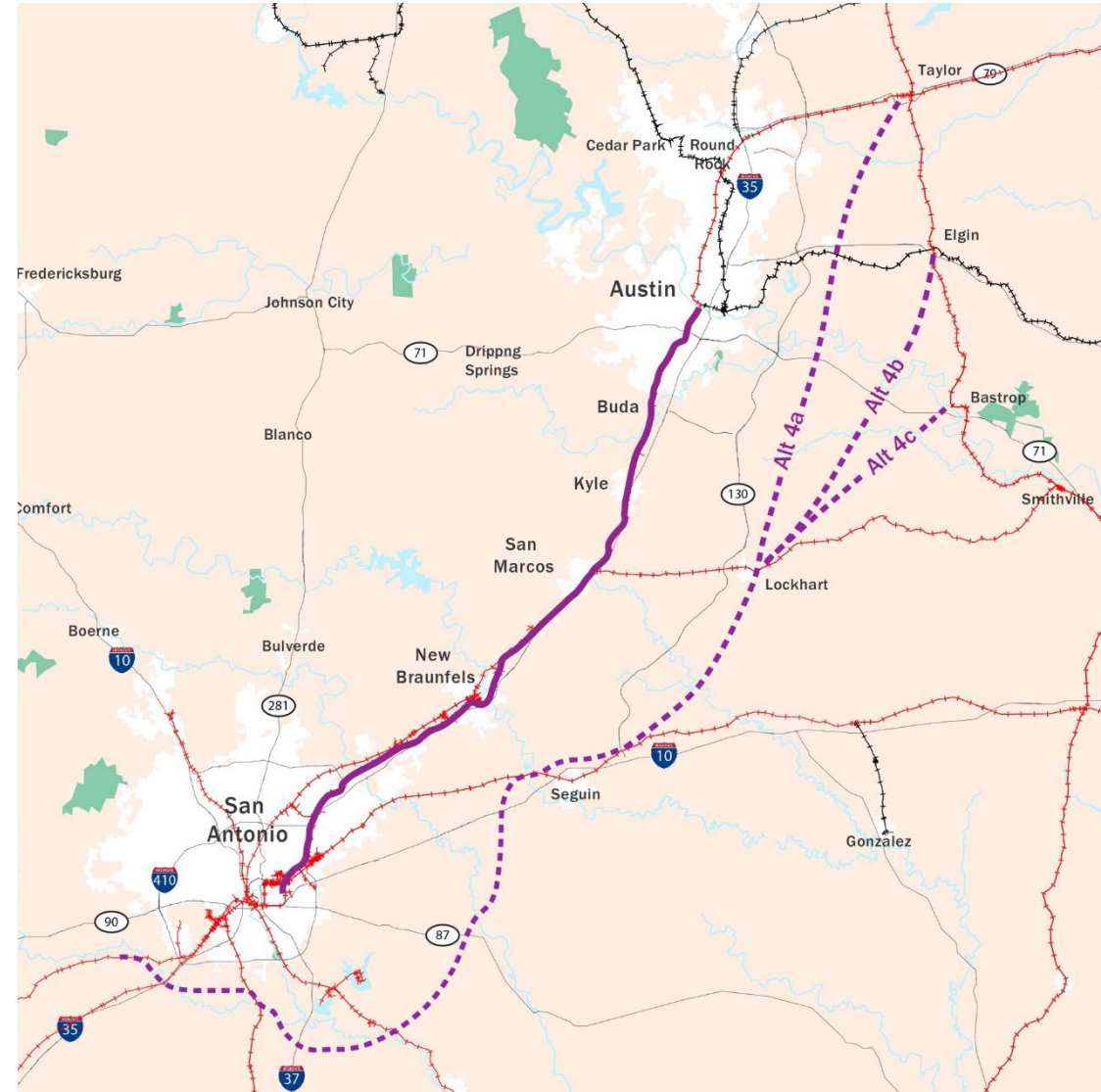
Bluebonnet Express



Texas Railway Express Train | Source: Dallas Morning News

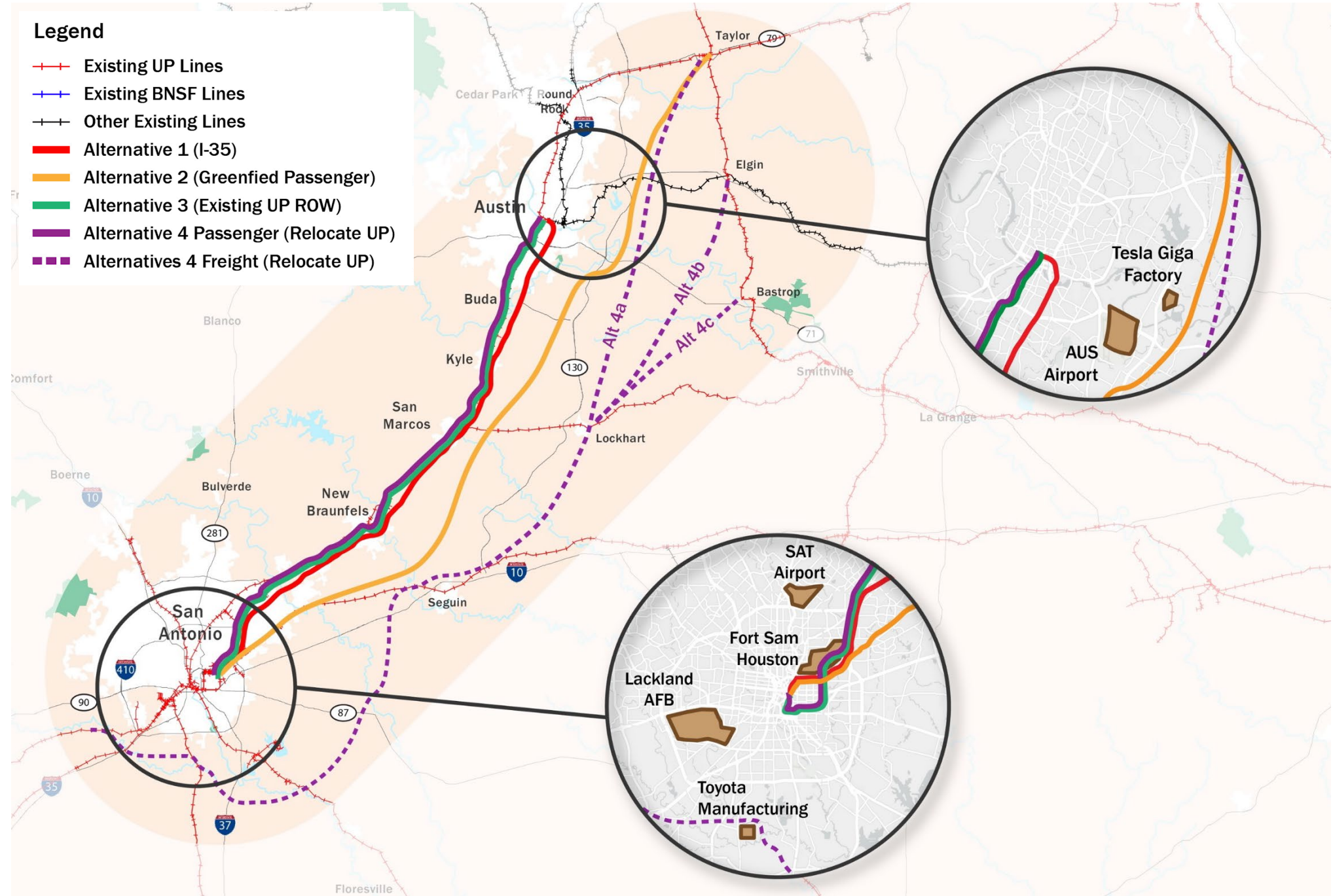
Alignment Alternatives

1. Along I-35
2. New greenfield passenger rail alignment
3. Expanded Union Pacific ROW
4. Union Pacific relocated to the east



Legend

- Existing UP Lines
- Existing BNSF Lines
- Other Existing Lines
- Alternative 1 (I-35)
- Alternative 2 (Greenfield Passenger)
- Alternative 3 (Existing UP ROW)
- Alternative 4 Passenger (Relocate UP)
- - - Alternatives 4 Freight (Relocate UP)



A Win-Win Situation

Union Pacific gets:

- Improved efficiency
- Opportunity for growth
- Tracks with cost-effective grade separation and safety features

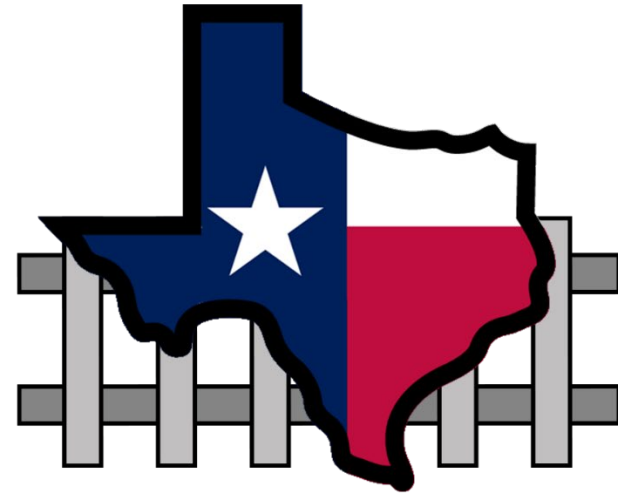
The public gets:

- High performance passenger rail service
- Separation from hazardous materials
- Economic development opportunities
- Traffic reduction

Texas Railroad Advancement Corporation

A re-brand of LSRD

- New project requires new identity
- TRAC will be the leading agency for both projects and their delivery
- A re-brand allows for the same powers as LSRD
 - Collect revenue
 - Issue debt
 - Solicit federal funds



**Texas Rail
Advancement Corporation**



Freight Rail Relocation Recommendation



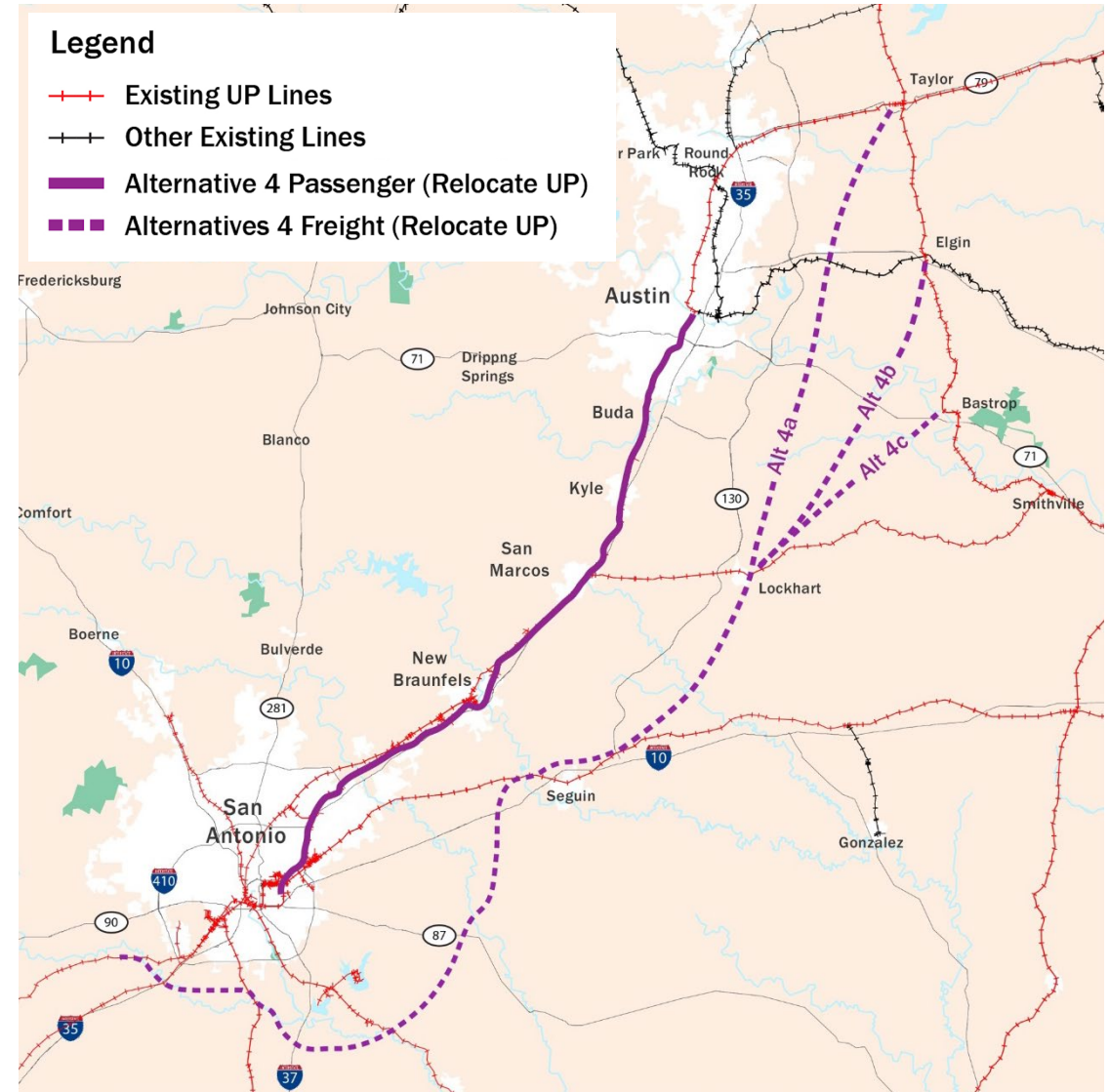
Bluebonnet Bypass



The Vision

Union Pacific

- With today's line...
- With the Bluebonnet Bypass...



Costs and Benefits

Costs

- Average: \$54 million per mile
- Total cost: \$14-16 billion

Benefits

- Increased speed + capacity
- Economies of scale
- Costs would be shared, so Union Pacific's net benefit will be greater

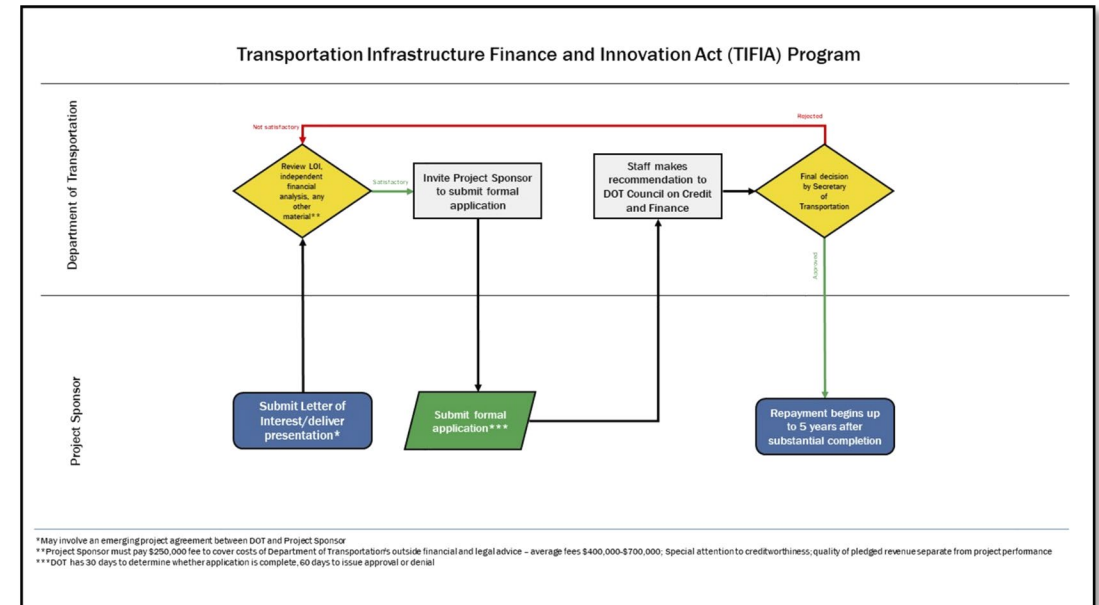
Capital Financing

Existing federal programs:

- **RRIF** (Railroad Rehabilitation and Improvement Financing)
- **TIFIA** (Transportation Infrastructure Finance and Innovation Act)

Proposed program:

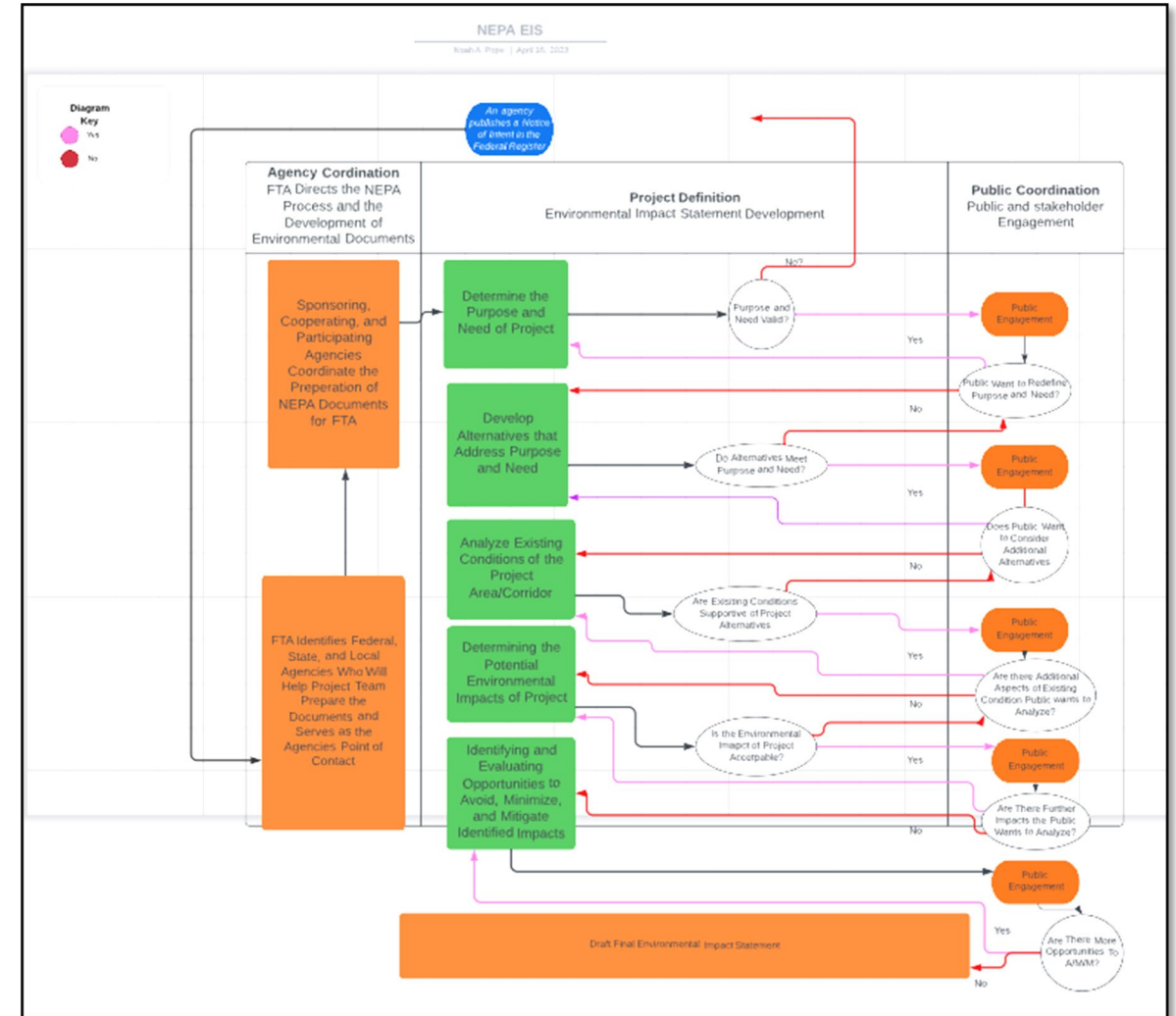
- Central Texas local freight development fund



NEPA

Complicated process requiring strong project definition

- Must prioritized and plan for NEPA throughout the entire process
- NEPA is where we humanize the project
 - Community engagement
 - Engineering and design of tangible objects
- Coordination with other entities





Passenger Corridor



Bluebonnet
Express



Stations

1. Downtown Austin
2. Kyle/Buda
3. San Marcos
4. New Braunfels
5. Downtown San Antonio



The Vision

Shireen

- Today...
- With the Bluebonnet Express...



Costs and Benefits

Costs

- Average: \$54 million per mile
- Total cost: \$3-5 billion

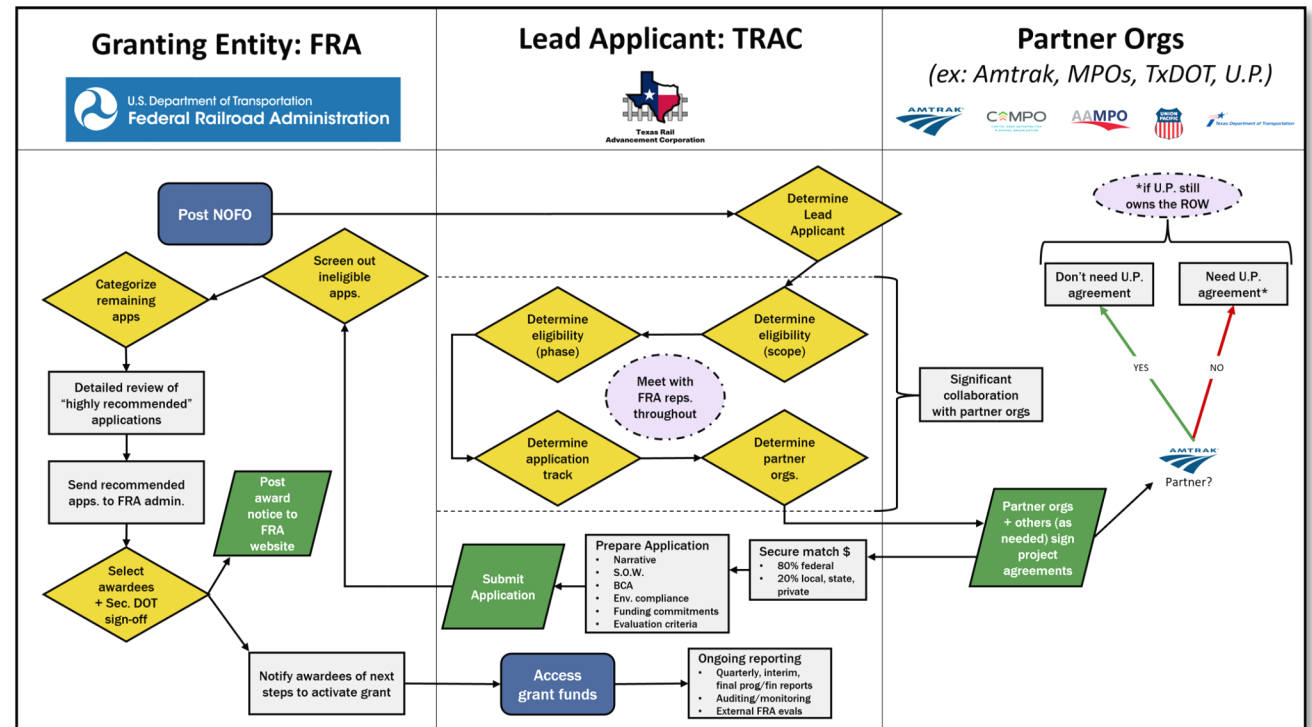
Benefits

- Connected communities, improved quality of life, better use of time
- \$639 million in annual tax revenue
- \$2 million in decreased annual toxic emissions
- 51,000 project jobs, 2,500 permanent jobs created
- \$600 million from extended life of highways

Capital Financing

Existing federal and state programs:

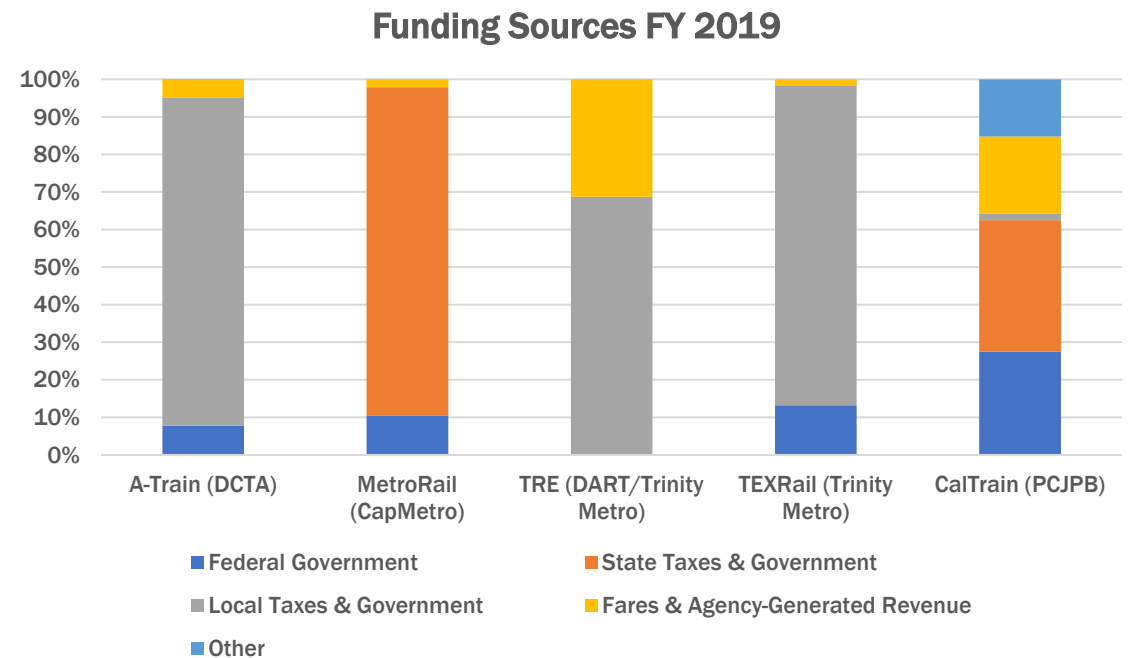
- **FSP** (Federal-State Partnership)
- **CRISI** (Consolidated Rail Infrastructure and Safety Improvements)
- **RRIF** (Railroad Rehabilitation and Improvement Financing)
- **TIFIA** (Transportation Infrastructure Finance and Innovation Act)
- **TIF** (Tax Increment Financing)



Operational Financing

Possible funding streams:

- Dedicated local taxes/specific fees
- State and local bonds
- Motor fuels tax
- State transportation fund
- State general fund



Legislative asks

- Local/state to help fund NEPA process
- Update safety regulations at federal and state level
- Use State Infrastructure Bank (SIB) to match federal financing
- Use State gas tax to be used for rail in addition to roads

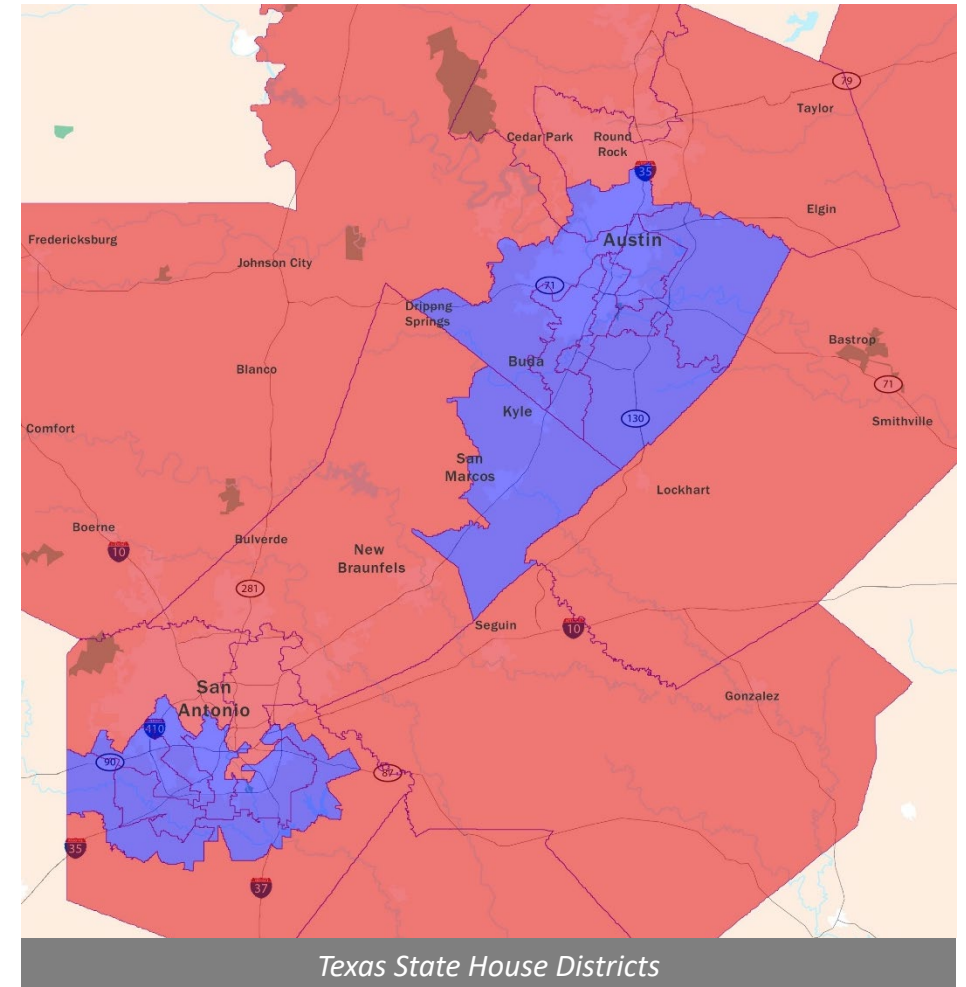


Broad Political Array

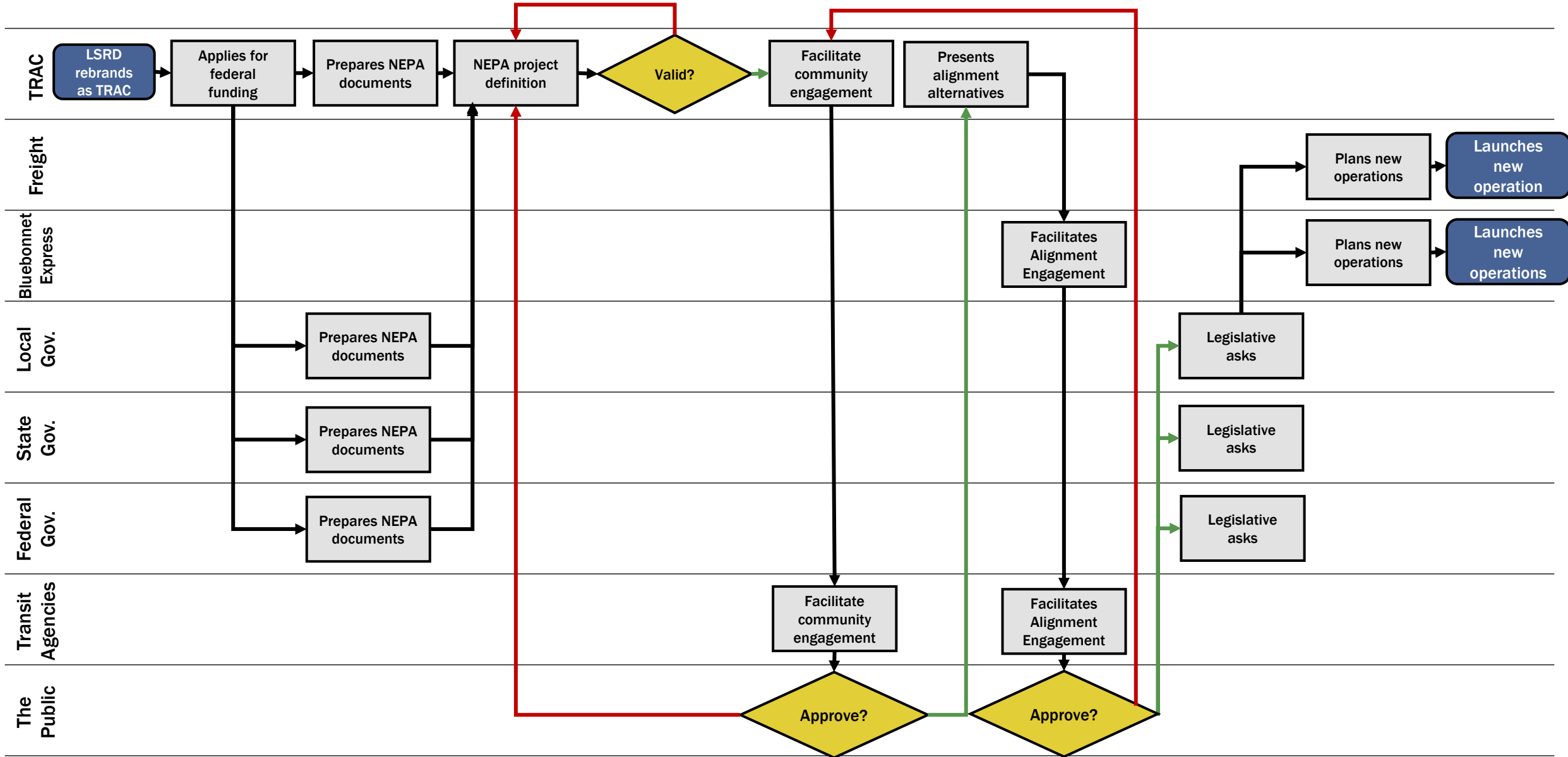
A line from ATX to SATX crosses a broad array of stakeholders

- Urban, suburban, and rural
- Residents, ranchers, renters, owners
- Varied political powers and priorities

We need a Republican champion in the state legislature.



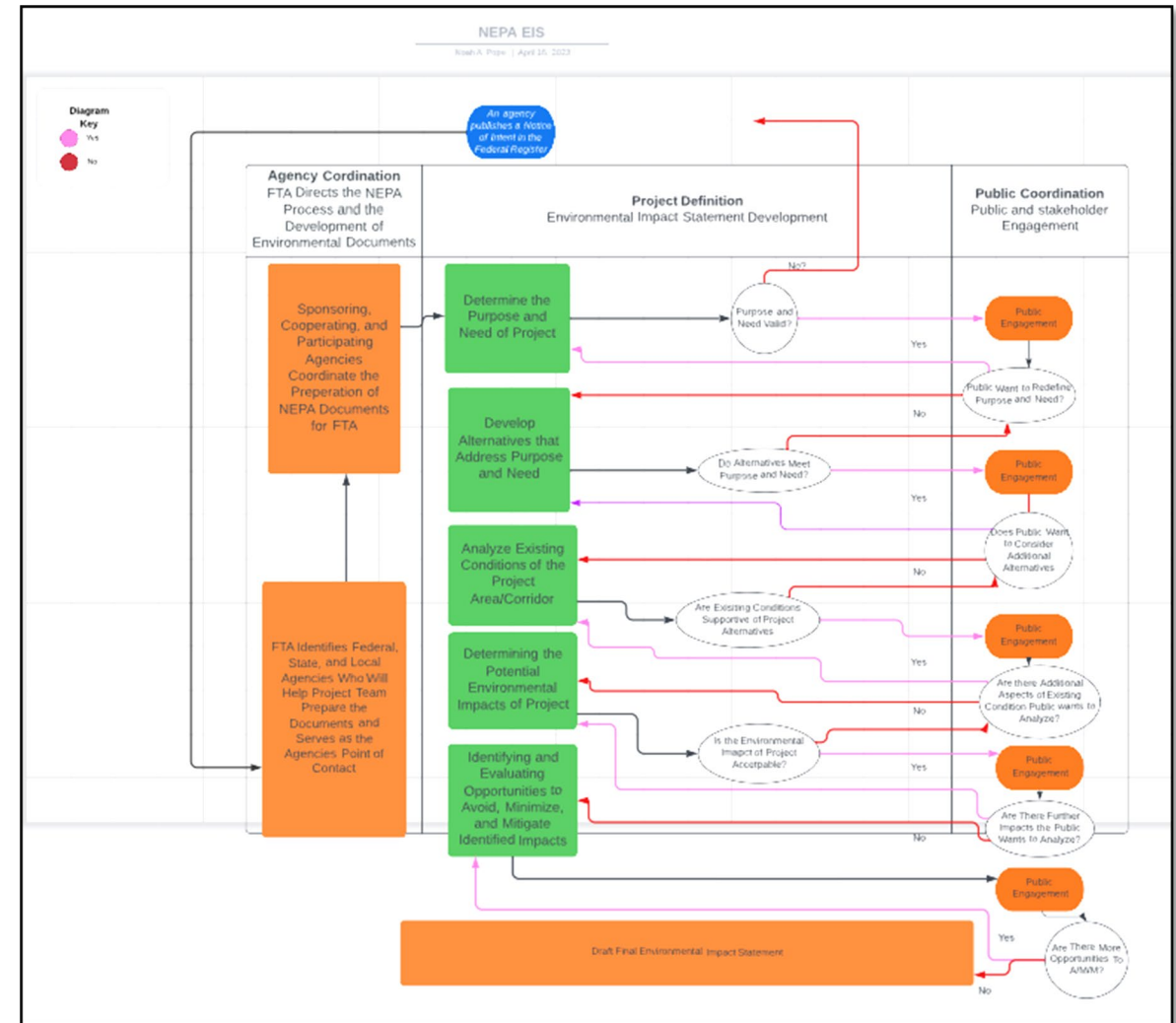
Bluebonnet Bypass and Bluebonnet Express Project Delivery



NEPA

Complicated process requiring strong project definition and strong relationship with community stakeholders

- NEPA is where we humanize the project
 - Community engagement
 - Engineering and design of tangible objects
- Coordination with other entities

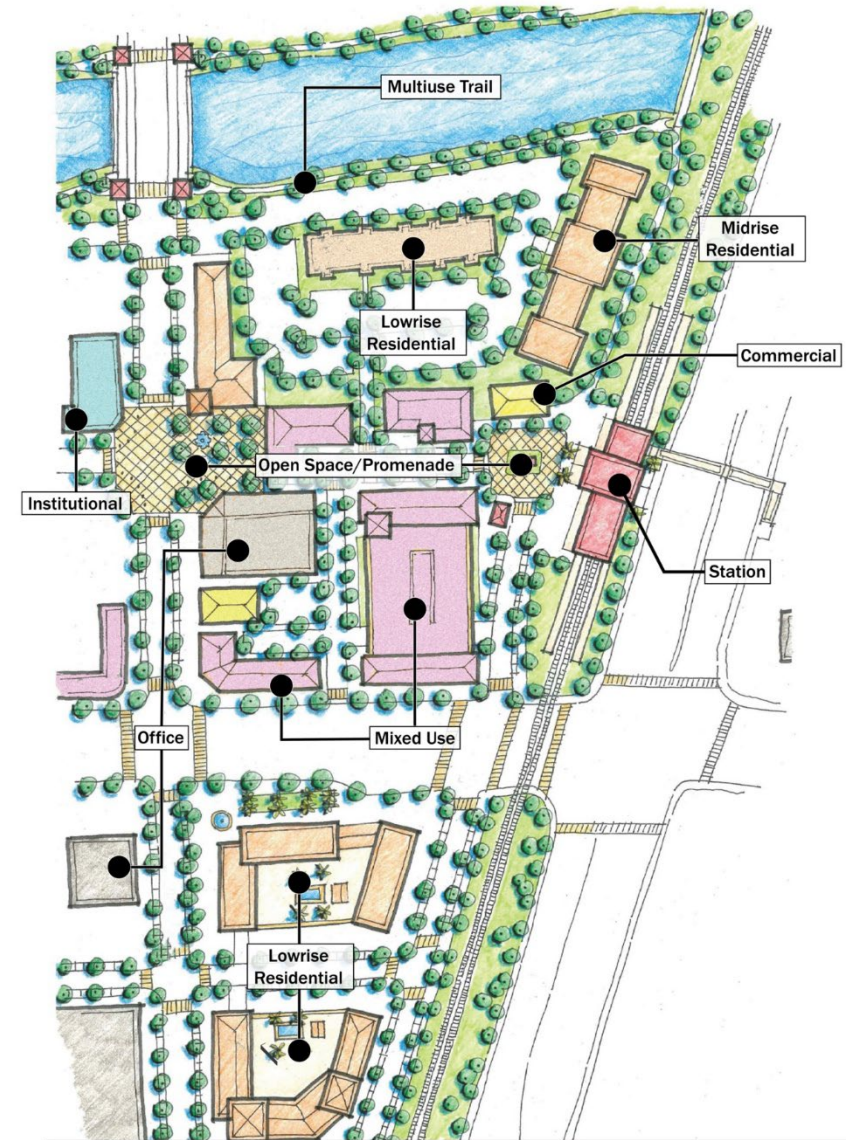


Land Use

Station development = opportunity to create a *destination*

Stations should:

- Improve citizen quality of life
- Maximize potential revenue
- Increase transit ridership



Source: North Miami Beach TOD Master Plan

Station Design and Multimodal Connections

Key to increasing ridership and improving quality of life

- Can help solve the first/last mile problem
- Some strategies include:
 - Timed transfers
 - Crosswalks and ped safety elements
 - Bike parking
 - Shared micro-mobility



Anaheim Regional Transportation Intermodal Center

Source: Rethinking The Future



Conclusion

Conclusion



Recommendations:

- Approach the project as two separate, but related efforts
- Reframe the Union Pacific relocation as a safety need with added economic opportunities
- Identify a political champion/s to shepherd the process
- Empower a leading organization who can manage the NEPA process
- Employ available funding and financing strategies to build the passenger and freight corridors
- Leverage the opportunity for transit-oriented development



Thank you



Appendix

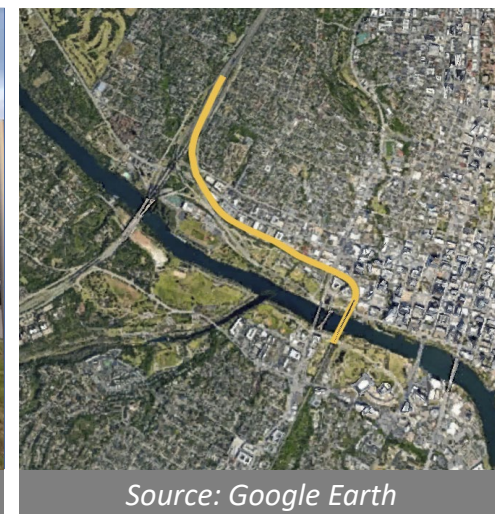
Problem/Opportunity	History	The Solution	Freight Corridor	Passenger Corridor	Conclusion
Alternative	Benefits for UP		Drawbacks for UP	Benefits for residents	Drawbacks for residents
1. I-35	<ul style="list-style-type: none"> None 		<ul style="list-style-type: none"> Hazardous chemicals remain in heavily populated areas 	<ul style="list-style-type: none"> Stations would be located near existing population centers Freight and passenger trains operate on separate ROWs Potentially little displacement along route 	<ul style="list-style-type: none"> Hazardous chemicals remain in heavily populated areas Curvature of highway would require trains to go slower Would require significant political capital to get TXDOT on board
2. New Greenfield Passenger Alignment	<ul style="list-style-type: none"> None 		<ul style="list-style-type: none"> Hazardous chemicals remain in heavily populated areas 	<ul style="list-style-type: none"> Freight and passenger trains operate on separate ROWs 	<ul style="list-style-type: none"> Hazardous chemicals remain in heavily populated areas Would require significant displacement at high cost or would be located far from existing population centers
3. Add additional tracks for passenger rail on existing Union Pacific ROW	<ul style="list-style-type: none"> Upgraded track Grade separated crossings 		<ul style="list-style-type: none"> Hazardous chemicals remain in heavily populated areas 	<ul style="list-style-type: none"> Stations would be located near existing population centers 	<ul style="list-style-type: none"> Hazardous chemicals remain in heavily populated areas Freight and passenger trains operate on the same ROW
4. Relocate freight rail to eastern alignment	<ul style="list-style-type: none"> Faster travel times between Taylor and San Antonio New track with the latest safety enhancements Grade separated crossings Removes hazardous chemicals from heavily populated areas New freight line is potentially located near emerging industries 		<ul style="list-style-type: none"> Some existing costumers, such as quarries, may no longer be served 	<ul style="list-style-type: none"> Removes hazardous chemicals from heavily populated areas Stations would be located near existing population centers Freight and passenger trains operate on separate ROWs Potentially little displacement along route 	<ul style="list-style-type: none"> Displacement of ranchers Hazardous chemicals still located near smaller population centers

UP = Union Pacific, PAX = passenger rail, ROW = right of way

A Tale of Two Projects

The Win-Win Situation

- **Union Pacific:** improved service, opportunity for growth, tracks with cost-effective grade separation and safety features
- **The public:** high performance passenger rail service, separation from hazmat, economic development opportunities, traffic reduction



Freight Relocation Benefits

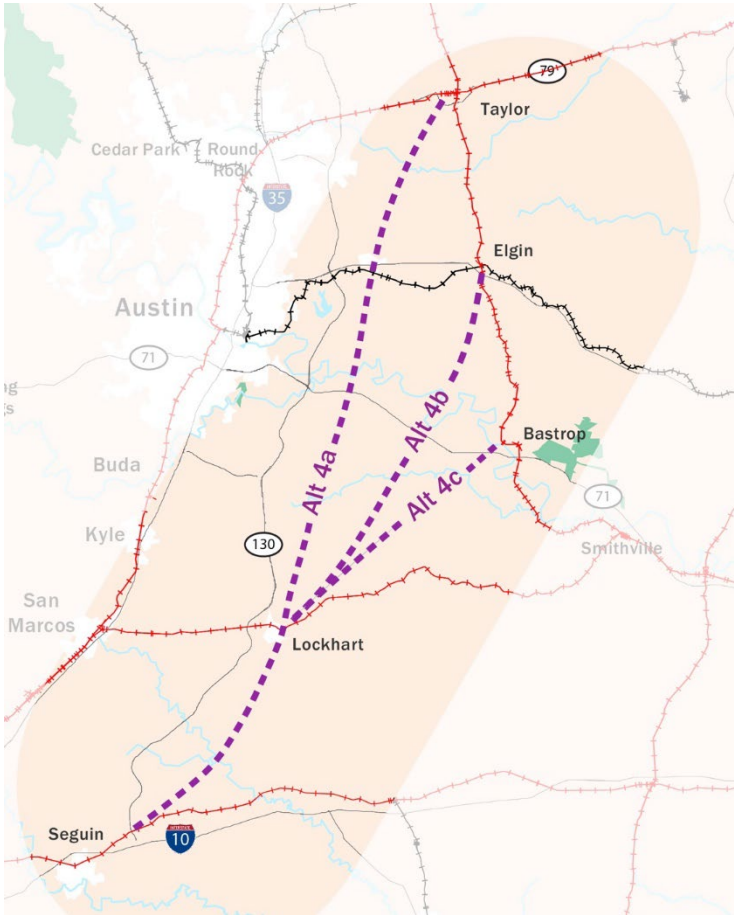
Additional benefits

- More expensive as development expands east
- Infrastructure improvement
- Regulatory compliance

New Alignment Speed Range Time Savings Estimate

***one hour saved = \$709 (2023 dollars); Base current speed: 25mph, 30 trainsets per day; 300 operational days per year (Austin-San Antonio Commuter Rail Project: Final Financial & Economic Benefits Report. March 2007)**

<i>Operational Speeds</i>	<i>Time & Cost Savings</i>	ALT 4A	ALT 4B	ALT 4C
Low (28 mph)	Time Saved (low)	0.45 hr	0.31 hr	0.10 hr
	One Year Cost Savings (low)	\$2.89 million	\$1.98 million	\$0.61 million
High (35.5 mph)	Time Saved	1.32	1.21	1.04
	One Year Cost Savings (low)	\$518.4 million	\$222.2 million	\$18.2 million



Costs

How much might this project cost?

- Weighted average: \$39M per mile
- Est. Project cost:
 - ALT 4a: \$7.7B to \$9.8B
 - ALT 4b: \$7.3B to \$9.3B
 - ALT 4c: \$7.2B to \$9.2B

	Cost per Mile
TRE	\$4.8M
CalTrain	\$47.8M
LSRD estimate	\$8.6M
TEXRail	\$39.8M
Silver Line	\$73.1M
Red Line	\$7.3M

Benefits

Benefits	Amount per year
Time savings	\$4.3 million - \$8.8 million
Driver cost savings	\$24,770 - \$41,551
Congestion mitigation	\$25.14 per person
Tax revenue generation	\$639 million
Extended highway life	Maintenance savings: \$15.3 million Construction savings: \$587 million
Job creation	2,327 - 2,821 sustained jobs 51,117 project-related jobs
Decreased toxic emissions	\$1.9 million - \$2.3 million
Cost avoidance of car crashes	\$78 million

Costs

How much might this project cost?

- Average: \$54M per mile
- Est. Project cost: \$7-10 billion

	Cost per Mile
TRE	\$4.8M
CalTrain	\$47.8M
LSRD estimate	\$8.6M
TEXRail	\$39.8M
Silver Line	\$73.1M
Red Line	\$7.3M