



SHARP-TINTIC RAILROAD CONNECTION PROJECT

2021 CONSOLIDATED RAIL
INFRASTRUCTURE AND SAFETY
IMPROVEMENTS GRANT
APPLICATION

*A project to optimize freight
operations while improving local
community accessibility and safety*

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I. Cover Page

	Project Description	Status
1	Project Title	Sharp-Tintic Railroad Connection Project
2	Applicant	Utah Transit Authority
3	Project Track(s)	Track 3 – FD/Construction
4	Was a Federal grant application previously submitted for this project? If yes, state the name of the Federal grant program and title of the project in the previous application.	<ul style="list-style-type: none"> CRISI 2020 Application, Title: Sharp-Tintic Railroad Connection Project (not-funded) Congestion Mitigation and Air Quality (CMAQ) and Railway-Highway Crossings Program, Project Title: Springville, Sharp-Tintic Railroad Connection (Funded, see III. Funding)
5	Is this a rural project? What percentage of the project cost is based in a Rural Area?	No. Percentage of total project cost: N/A.
6	Is this a project eligible under 49 U.S.C. 22907(c)(2) that supports the development of new intercity passenger rail service routes including alignments for existing routes?	No.
7	Is this for a Capital Project or engineering solution targeting trespassing?	No.
8	Is this for a safety program to reduce trespassing through targeted law Enforcement Activities?	No.
9	City(ies), State(s) where the project is located	<ul style="list-style-type: none"> City of Springville, State of Utah City of Spanish Fork, State of Utah
10	Urbanized Area where the project is located	<ul style="list-style-type: none"> Provo-Orem, State of Utah, Urbanized Area, UA Code: 72559
11	Population of Urbanized Area (2019)	Provo-Orem, Utah – Total Population, U.S. Census <ul style="list-style-type: none"> 648,252
12	Will this project contribute to the Restoration or Initiation of Intercity Passenger Rail Service?	No.
13	Is the project currently programmed in the: State Rail Plan, State Freight Plan, TIP, STIP, MPO Long Range Transportation Plan, State Long Range, Transportation Plan?	<ul style="list-style-type: none"> MAG TIP 2016 Page Pin Number 14988 UDOT STIP 2022-2027 MAG Long-Range Transportation Plan (TransPlan50) Utah’s Unified Transportation Plan(2019-2050)

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***Application and Appendices available for viewing at:
<https://rideuta.com/crisi2021sharp-tintic>***

II. Project Summary

The [Utah Transit Authority \(UTA\)](#) (as grant applicant) and [Utah Department of Transportation \(UDOT\)](#), in partnership with [Union Pacific Railroad \(UPRR\)](#), the [Mountainland Association of Governments \(MAG\)](#), and cities of Springville and Spanish Fork, Utah, are submitting this application for a Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program grant for the Sharp-Tintic Railroad Connection (Project).

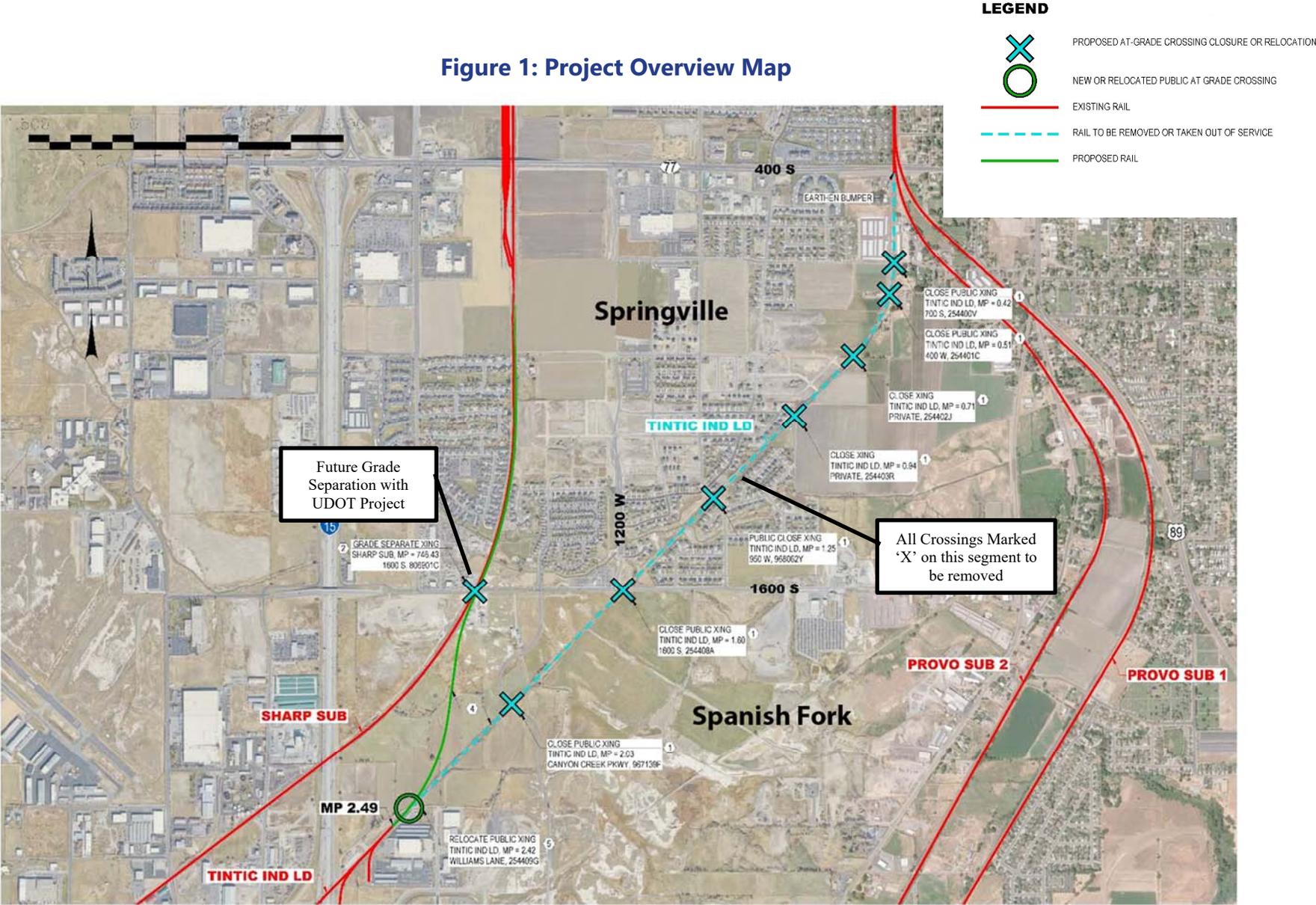
CRISI grant funding is being sought to refine design and construct 1.4 miles of new railroad tracks connecting the Sharp and Tintic Railroad corridors within the cities of Springville and Spanish Fork, while closing and future re-purposing of six active and one blocked (total 7) at-grade rail crossings. Completion of this Project will:

- Improve safety by closing grade-crossings that lack crossing gates, arms, lights, and other modern safety infrastructure;
- Re-route Union Pacific freight trains from the Tintic Railroad Line to the Sharp Railroad Line, bypassing and retiring the current route through Springville residential areas, resulting in:
 - The City of Springville’s ability to reclaim access to the land currently used for Tintic Railroad crossings.
 - The elimination of the rail barrier obstructing access to two existing and one future public school(s).
- Enable a future project for a grade-separated crossing to be constructed over the Sharp Railroad Line eliminating the at-grade crossing at the same location. The proximity of the existing Springville 1600 South Tintic railroad crossing to Sharp crossing makes it impractical to build a second grade-separated crossing over the Tintic line.
- Provide a route for future expansion of the UTA FrontRunner commuter rail service to southern Utah County. Through future southward expansion of FrontRunner, the Project will create the potential to introduce new mobility options in the County and decrease the amount of single occupancy vehicles on the surrounding road network.

Over a 30-year period of operation, the Project is projected to result in \$17.32 million in discounted benefits. The total Project cost is \$15.64 Million with a resulting benefit-cost ratio of 1.38. A detailed benefit-cost analysis is included in **Appendix D**.

The Project is presented on the next page in **Figure 1**.

Figure 1: Project Overview Map



III. Project Funding

UTA and UDOT, in cooperation with UPRR, MAG, and the cities of Spanish Fork and Springville, are seeking \$5.12 million in CRISI funding for Track 3 activities associated with the Sharp-Tintic Railroad Connection Project, or approximately one-third of total Project costs. The Project budget of \$15.64 million – which does NOT include \$343,656 of previous expenditures - is shown in **Table 1** below.

Table 1: Project Funding and Grant Request

Activity	Cost	% of Project Cost
Design	\$825,000	5.3
Environmental Permitting	\$200,000	1.3
Track, Roads, and Infrastructure	\$8,351,000	53.4
Right-of-Way	\$1,936,000	12.4
Construction Management	\$700,000	4.5
Agency Costs/UPRR Fees	\$500,000	3.2
Contingency	\$3,128,000	20.0
Total Project Cost	\$15,640,000	100.0
Funding Source	Amount	% of Project Cost
HB 433	\$4,000,000	25.6
UTA Sales Tax Revenue	\$300,000	1.9
Spanish Fork Local Government	\$235,970	1.5
Springville Local Government		
UDOT State Construction Region 3 Contingency	\$190,000	1.3
MAG State Fund Exchange	\$200,000	1.3
Total State and Local Funding	\$4,925,970	31.6
Rail/Highway Hazard Elimination	\$720,000	4.6
Congestion Mitigation and Air Quality Improvement	\$4,874,344	31.2
2021 CRISI Request	\$5,119,686	32.7
Total Federal Contribution	\$10,714,030	68.4

All non-CRISI funding is committed. [UTA currently has a Preliminary Engineering agreement with UPRR for the Project and engineering drawings are currently in the UPRR review process.](#)

Project partners originally programmed funding for this capital investment with local sources and federal funding passed through from MAG. The programmed funds did not account for the additional design and construction for closing grade-crossings which were added design elements based on extensive stakeholder and public engagement. The fully envisioned Project also includes modernized features that will improve operational efficiency and safety like new signs, road crossing warning devices, signals, and fences. Preliminary design drawings in **Appendix F**

highlight these elements. 2021 CRISI funding would fill the funding gap to construct the complete vision of the Spanish Fork and Springville communities, in partnership with agency and railroad technical specifications.

IV. Applicant Eligibility

UTA, a public agency defined under [Utah Code Part 17B-2a-8](#), is an eligible applicant as defined under 2021 CRISI NOFO Section C(1)(d) and [49 USC 24407](#). UTA is applying in partnership with the following public agencies: UDOT, MAG, and the cities of Spanish Fork and Springville. UPRR, a Class I railroad, is also a partner on this application and is working cooperatively with the public agencies to implement the Project.

While UTA will serve as the applicant for this 2021 CRISI grant, UDOT will construct the Project. UTA and UDOT have successfully delivered several projects in this way, including the recent Northern Utah County Double Track project.

Figure 2. Project Partners

UTA, UDOT, MAG, UPRR, the City of Spanish Fork, and the City of Springville are working collaboratively on this Project. See theirs and other stakeholder Letters of Support in Appendix B.



The DUNS number for UTA is 069816163. The contact for this application is:

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 Salt Lake City, Utah 84101-1015
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V. Project Eligibility

The Project is eligible under the 2021 CRISI NOFO and 49 U.S.C. 22907 as -

- **(vi)** A rail line relocation and improvement project.
- **(vii)** A capital project to improve short-line or regional railroad infrastructure.
- **(ix)** A project necessary to enhance multimodal connections or facilitate service integration between rail service and other modes, including between intercity rail passenger transportation and intercity bus service or commercial air service.

VI. Detailed Project Description

The Sharp-Tintic Railroad Connection Project will improve freight rail operations in Springville and Spanish Fork, Utah, by improving safety by reducing the number of at-grade crossings through a growing metropolitan corridor.

The Project is also necessary to support a potential future intermodal station in Spanish Fork that would link bus routes to UTA’s FrontRunner commuter rail system and improve land-development options in Springville and Spanish Fork, thereby strengthening the cities’ economic potential and improving their overall land use pattern.

The Project will close 1.6 miles of the Tintic track that currently runs northeast from Canyon Creek Parkway in Spanish Fork to 700 South in Springville, and will construct a new connection from the Tintic line near Interstate 15 (I-15) to the Sharp line at 1600 South (**Figure 1**).

According to the [2017 Utah Freight Plan](#), the value of freight moved by rail in Utah is predicted to increase from \$9.4 billion in 2015 to \$18.4 billion in 2045, nearly doubling in the next 30-years. The weight of freight moved by rail is expected to increase from 18.8 million tons in 2015 to 25.8 million tons in 2045, a 37% increase.

The Project will support freight rail operations by removing two private and five public at-grade rail crossings in a growing residential area of Springville. The Project will maintain freight connections between the Provo Rail Yard and Tintic customers located south of Spanish Fork, and includes a reduction of seven at-grade crossings. This new north-south connection will allow the potential expansion of UTA’s FrontRunner commuter rail, which currently stops in Provo north of the Project. Moreover, UDOT’s Springville/Spanish Fork Interchange Project will construct a new interchange on I-15 that will significantly increase traffic on the 1600 South corridor. The safety at the existing crossing will only worsen when the new interchange is opened to traffic. Consolidating the Sharp and Tintic railroad make it feasible for the Springville/Spanish Fork Interchange Project to construct a grade-separated crossing over the combined railroads.

The cities of Springville and Spanish Fork are centrally located with regard to rail infrastructure and I-15, a primary highway freight corridor, and both cities are projected to more than double in population in the next 30-years. Rerouting the rail infrastructure in Springville helps to mitigate future safety risks associated with increasing rail and vehicle interactions as the cities develop to accommodate population growth.

Daily weekday traffic volumes on 1600 South are expected to more than double from 6,000 vehicles per day to over 12,000 upon completion of the new interchange with I-15 in 2023. Thus, the consolidation of the Sharp/Tintic lines would reduce the number of vehicle RR crossings by 12,000 crossings/day.

[The future land use plan for Springville](#) shows the area surrounding the Tintic line as residential development with areas of commercial development on 400 South and 1600 South. Residents who choose to build homes and live in the area will use 1200 West as the main route to access commercial areas as well as Meadow Brook Elementary School, Cherry Creek Elementary School, and Spring Canyon Middle School. The Tintic line currently crosses 1200 West and serves as a safety barrier to these destinations.

The secondary benefits of the Project include an improved quality of life and economic vitality through improved connectivity to transit, improved connectivity between cities (Provo, Springville, and Spanish Fork), and the potential for a more cohesive land use pattern by closing a rail line that bisects a residential area. The existing alignment of the Tintic line disrupts access between community services and commercial destinations through Springville and Spanish Fork.

Preliminary project designs are complete ([Appendix F](#)). UDOT and UTA plan to start construction in mid-2023 and complete the Project in 2024 (see **Table 5 later in this application**). If awarded a CRISI grant, the Project can proceed on its intended schedule. However, the Project cannot be phased with the type of work required to both remove the existing Tintic line and add the rail connection with the Sharp line. Without the CRISI grant funds, the Project would be delayed and may not go forward until full funding is acquired.

An Infrastructure Investment with Wide Support

A number of stakeholders have come together to support the Utah Transit Authority's CRISI application. These supporters include --

NATIONAL

- Senator Mike Lee
- Senator Mitt Romney
- Union Pacific Railroad

STATE

- Governor Spender J. Cox
- Representative John Curtis
- Representative Burgess Owens
- Utah Department of Transportation

LOCAL

- City of Springville
- City of Spanish fork
- Mountainland Association of Governments
- Utah County
- Nebo School District
- Utah Clean Cities
- Utah Clean Air Partnership

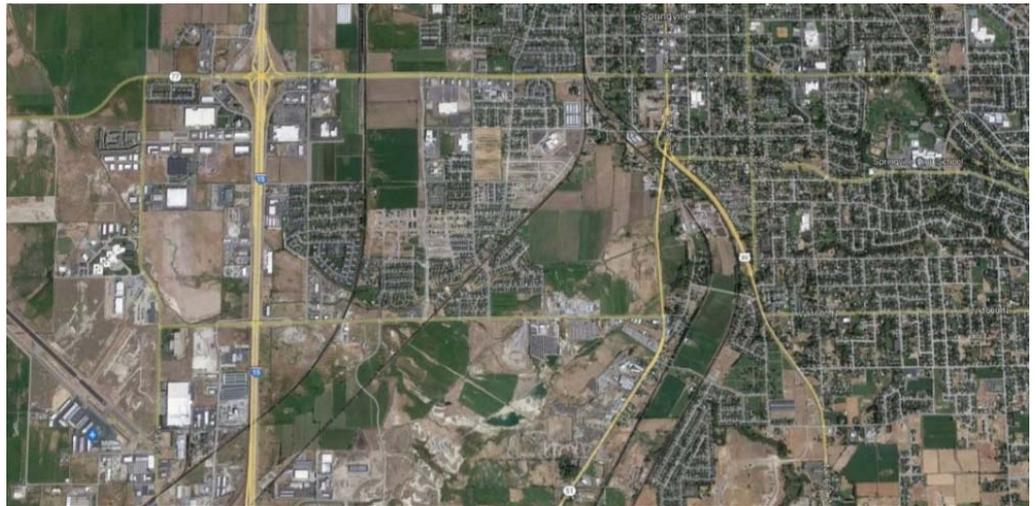
Project Benefits – Expected Users and Beneficiaries

- Optimizes travel from/to the primary highway, I-15, for current and future residents.
- Provides a long-term infrastructure investment to minimize State of Good Repair costs by focusing resources on consolidated track.
- Over a 30-year analysis period, \$5.89 million in reduced vehicle delay because of grade-crossing closures.
- Decrease of loss of life and \$729,807 in crash cost savings over a 30-year analysis period.
- Future land use plan for Springville City shows the area surrounding the Tintic as residential development with areas of commercial development on 400 South and 1600 South.
- Allows for the potential expansion of UTA's FrontRunner commuter rail which currently stops in Provo UT, located north of the Project.
- Continues to promote and maintain jobs with competitive wages at local industrial parks.
- Continues to promote the financial stability of local area residential investment resulting in \$9,344,066 in increased land property value due to the removal of a segment of the Tintic Line.

COMPREHENSIVE SOLUTION

Since 1994, open space along the Sharp and Tintic Lines has decreased. Businesses, residential units, schools, and activity centers have been constructed. It is anticipated that the once rural farmlands surrounding the cities of Spanish Fork and Springville will be connected with development.

Anticipating the need to continue to operate a multi-modal system (freight rail, highway, transit, bicycle, and pedestrian), UTA and its partners have developed a comprehensive plan to ensure the efficiency of movement of goods while promoting quality of life in this rapidly developing area.



2020



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VII. Proposed Performance Measures

UDOT and UTA are committed to performance management. UDOT and the cities of Springville and Spanish Fork will collect information and provide to UTA to report to USDOT on the Project's performance. If selected for a 2021 CRISI Grant, UTA suggests the performance measures shown in **Table 2** be considered for the Project. Upon award of the grant, UTA will comply with all FRA reporting requirements, as discussed in the 2021 CRISI NOFO Section F(3)(A, B, C) and 2 CFR 180.335 and 2 CFR 180.350, including progress reports, Federal financial reports, and interim and final performance reports, as well as all applicable auditing, monitoring, and close-out requirements. The following proposed performance measures are illustrated in **Table 2**.

Table 2: Proposed Performance Measures

Measure	Unit Measure	Temporal	Primary Strategic Goal	Secondary Strategic Goal	Description
Rail Track Grade Separation	Count	Annual	Economic Competitiveness	Safety	The number of annual automobile crossings that are eliminated at an at-grade-crossing as a result of a new grade separation.
Travel times	Time/Trip	Annual	Economic Competitiveness	Quality of Life	Point-to-point travel times between predetermined station stops in the project area. This measure demonstrates how track improvements and other upgrades improve operations on a rail line. It also helps ensure that the railroad is maintaining the line after project completion.

A) Grade-crossing Information

The Project will remove five public and two private at-grade rail crossings, summarized in **Table 3** on the next page. FRA crossing inventory forms are provided in **Appendix E**. In addition to the seven grade-crossings that would be closed on the Tintic, four grade-crossings would have altered rail traffic due to the rerouting of the trains on the Tintic. Three crossings on the Tintic between 400 South and the Provo Rail Yard, north of the Project, currently would operate two less trains per day, and one crossing on the Sharp Line in-between the Provo Rail Yard and the new rail connection will see an increase in rail traffic as a result of the Project.

Table 3: Public and Private At-Grade Rail Crossings

Inventory Number	Status	Road Crossed	Crossing Owner/Operator	To Be Removed with Project?
254400V	Public	700 S 400 W	UPRR	Yes
254401C	Public	800 S 400 W	UPRR	Yes
254402J	Private	Farm Access	UPRR	Yes
254403R	Private	Farm Access	UPRR	Yes
968062Y	Public	950 West	UPRR	Yes
254408A	Public	1600 S 1200 W	UPRR	Yes
967139F	Public	Canyon Creek	UPRR	Yes

B) Heavily Traveled Rail Corridor Information

The Sharp-Tintic Railroad Connection Project is not eligible under the eligibility category in Subsection C(3)(a)(iv).

C) PTC Information

Positive Train Control (PTC) systems are not included in this project, but will be implemented with future FrontRunner service. *UTA has a successful history of implementing PTC, and [PTC features are fully operational](#) on current FrontRunner service.*

D) Workforce Development

UTA, UDOT, and UPRR are committed to helping individuals grow their skills and develop the tools they need for their economic and personal success. Workforce development programs are discussed in the Evaluation Criteria section below.

E - G) Pedestrian and Trespasser, Railroad Trespassing Law, Railroad Trespassing Law, Railroad Trespassing Suicide

UPRR is a financial contributor and partner in [Operation Life Saver](#), a non-profit organization and nationally-recognized leader of rail safety education. Specific to the [Utah Operation Life Saver](#) division, representatives from [UPRR, UDOT, and UTA](#) are members of the Board of Directors and their respective agencies are [Safety Partners](#). Together, along with others from the community, they are actively engaging in delivering programming that aims to reduce loss of life and injury as a result of trespassing, suicide, and vehicles circumventing railroad law and not stopping at gates. As recent as September 2021, Utah Operation Life Saver participated in the BYU Safety Fair in [Provo](#).

The number of drivers going around gates at railroad crossings has spiked in recent years. In 2018, 99 people were killed because a driver went around a lowered gate, marking a 10-year high. In recognition of increased incidents and fatalities that had been on the decline for decades, UTA is dedicating resources to educate drivers, pedestrians, cyclists and scooterists about the importance of railroad crossing safety. 2021 CRISI funding would advance UTA’s, UDOT’s, and UPRR’s safety goals within a state with rising railroad incidents and fatalities.

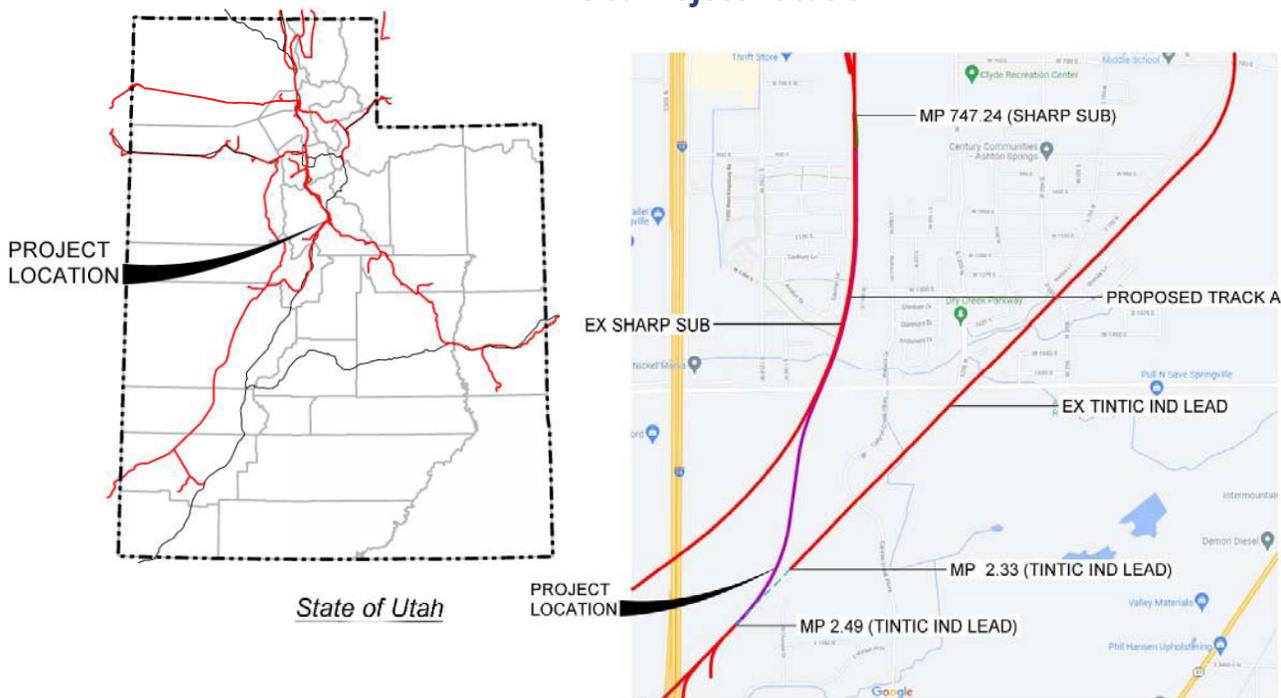
**STOP.
TRAINS CAN'T.**



VIII. Project Location

The Project is located in Springville and Spanish Fork, in the growing urbanized area of Provo-Orem, Utah County, in the State of Utah, US Congressional District 3. The Project will close the Tintic line from Canyon Creek Parkway in Spanish Fork to 700 South in Springville (mileposts 0.429 to 2.035; 40.140239, -111.637602 to 40.157267, -111.617965). The Project will construct a new rail line to connect the Tintic line from Williams Lane to the Sharp line near 1600 South. The Sharp rail line will start at 40.136018, -111.642931 and cross to meet the other rail at about 40.146217, -111.638543 and end at 40.159014, -11.637514. **Figure 3** illustrates the project location.

Figure 3. Project Location



IX. Evaluation and Selection Criteria

1. Criteria

a) ELIGIBILITY, COMPLETENESS AND APPLICANT RISK REVIEW

The applicant meets the eligibility criteria defined in the NOFO C(1)(a). The lead applicant for this grant is the Utah Transit Authority. The application is complete and follows the requirements specified in the August 31, 2021 CRISI program NOFO.

UTA and UDOT both have strong histories of successfully delivering federally funded projects. UTA has received positive evaluation results under previous competitive grant programs administered by USDOT.

b) EVALUATION CRITERIA

i. Project Benefits

The Project will result in \$17.32 million in benefits by reducing delays, fuel consumption, and emissions along with improving safety. The total Project cost is approximately \$15.64 million. With a discounted present value of the project cost of \$12.53 million, the resulting benefit-cost ratio is 1.38. A detailed benefit-cost spreadsheet is included in **Appendix D1**.

Table 4: Overall BCA Results in 2019 dollars

Project Evaluation Metric	7% Discount Rate	3% Discount Rate
Total discounted benefits	\$17.3 M	\$27.1 M
Total discounted costs	\$12.5 M	\$13.8 M
Net present value	\$4.8 M	\$13.3 M
Benefit/cost ratio	1.38	1.97
Internal rate of return (%)	13.1%	
Payback period (years)	5-Years	

Table 4 summarizes the BCA findings. The BCA annual costs and benefits are computed over the lifecycle of the Project at 30-years. Project construction is estimated to be completed by 2024, with 2025 being the assumed opening year for the BCA’s purpose. Benefits accrue during the full operation of the Project. Considering all monetized benefits and costs, the estimated internal rate of return of the Project is 12.0%. With a 7% real discount rate, the \$12.53 million (discounted) investment would result in \$4.79 million in net present value.

Estimates of O&M Cost Savings

O & M Cost Savings: \$247,914

Accident Cost Savings: \$729,807

Travel Time Savings: \$5,894,793

Emissions Cost Savings: \$54,756

Vehicle Operating Cost Savings: \$657,183

Land Value Increase: \$9,344,066

The BCA calculates the following associated monetary benefits expected from the Project.

(A) EFFECTS ON SYSTEM AND SERVICE PERFORMANCE

- **O&M Cost Savings – Shippers, Motorists, Local Business, & Residents:** By eliminating the six active at-grade-crossings and rail line, the Project is expected to generate O&M cost savings. This quantitative analysis considers avoided future maintenance once crossings are closed. Currently, cities of Springville and UPRR maintain infrastructure such as gates, roadway surface, testing, signage, and marking.
- **Emission Cost Savings – Local Residents and Residents Across Country:** The Project reduces emissions of idling vehicles delayed at the grade-crossings. The reduction in vehicle idling time will translate to lower net vehicle operating costs from reduced fuel and motor oil consumption from idling.

(B) EFFECTS ON SAFETY, COMPETITIVENESS, RELIABILITY, TRIP OR TRANSIT TIME, AND RESILIENCE

- **Accident Cost Savings – Shippers, Motorists, Local Business, & Residents:** The qualitative analysis estimates accident cost savings associated are through a net reduction in active crossings. Accident costs and impacts on life, limb, and property are a significant component of costs to both road and rail users. Quantitatively, the Project would also redirect some train traffic from the Tintic Line to the Sharp Line until the Provo Rail Yard. This would eliminate the potential for train/vehicle encounters at the specified grade crossings. Moreover, improving safety improves the quality of life of residents.
- **Travel Times Savings – Shippers, Motorists, Local Business, & Residents:** The estimates from travel time savings associated with removing the crossings are calculated using new leads that will be constructed and divert train traffic. The expected crossing time delay is derived by applying the probability of delay, which is a function of train frequency, speed, length, and lead and lag time.
- **Vehicle Operating Cost Savings: Shippers, Motorists & Local Business:** Because grade-crossings will be removed, costs associated with idling and delay results in cost savings for shippers. The reduction in vehicle idling time will translate to lower net vehicle operating costs from reduced fuel and motor oil consumption from idling.

(C) EFFICIENCIES FROM IMPROVED INTEGRATION WITH OTHER MODES

- **Land Value Increase – Local Businesses, Residents and Government:** Land values within 500 feet of the Tintic line tracks are estimated to experience a 5% property price appreciation resulting from the Project. This is a conservative estimate when compared to the average of existing property values in nearby Salem and Unincorporated Utah County, which are more than 30% higher. Due to the removal of the tracks on the Tintic line, this is treated as a one-time benefit realized once project construction is completed.

(D) ABILITY TO MEET EXISTING OR ANTICIPATED DEMAND

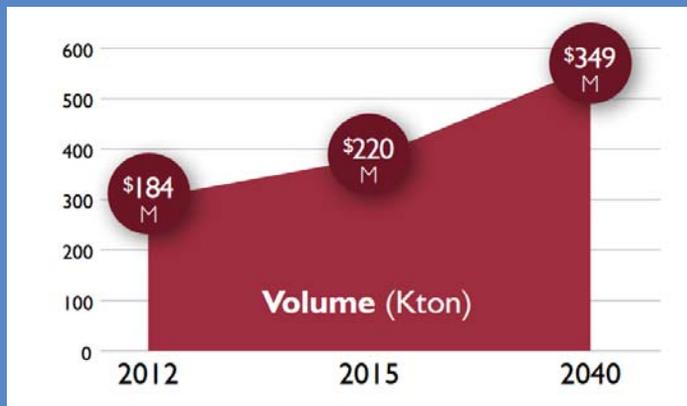
- **Residual Value – Local, State and Federal Government:** Purchasing this right-of-way is a benefit to the public because it is a one-time investment that continues to generate

benefits. The residual value for the new track was estimated assuming a 40-year useful asset service life with straight-line depreciation over the 30-years of operations. Because land values are not expected to depreciate with time, the residual value for the purchased right-of-way is the capital spent on acquiring the right-of-way for the Project.

Other non-quantified benefits that can improve mobility and quality of life may include:

- **Quality of Life – Local Residents:** Improving the quality of life by reducing noise levels and improving the air quality through reduced vehicle idling at the grade crossings. In addition, the redevelopment plans are expected to open up the area to alternative uses. The closing of the seven at-grade crossings will improve local community accessibility and safety in the neighborhood and its access to three public schools.

Figure 4: 1-15 Volume and Value



7 Freight Railroads

+

1 Intermodal Facility



600

Container/trailer lifts per day

I-15 Corridor

The I-15 Corridor is the spine of a transportation network extending more than 1,470 miles through the states of California, Nevada, Arizona, Utah, Idaho, and Montana. I-15 is a unique, diagonally oriented artery linking coastal ports to inland population centers and connecting with major east-west corridors that serve the entire U.S. ***Even with planned improvements along I-15, congestion in the greater Salt Lake City region will continue to grow – Of the 1,470 miles, the segment between Provo-Orem and Ogden (Salt Lake City), will be one of three of the most congested segments on I-15.***

~ I-15 Corridor System Master Plan, Update 2017

- **I-15 Network Redundancy - Shippers, Motorists, Local Business, & Residents:** UPRR and the State of Utah are continuing to look for opportunities to develop new business that supplements or augments the need for current freight-truck trips on local highways. To promote expansion of business, the lines need to be in a state of good repair and travel-times must be competitive with freight-truck. As forecast in the [I-15 Corridor System Master Plan](#), I-15, which parallels the Tintic and Sharp Line tracks, the volume and value of freight-truck operations will increase from \$94.7 million in 2015 to \$184.0 million in 2040 (Page 30).

Freight-rail is still one of the most efficient ways to transport goods. Currently, the railroad network in the [State of Utah is carrying about 600 containers a day](#), which equates to about 600,000 semi-trailer trucks a year not using the State’s roadway system. Cargo on the railroad system includes large load commodities manufactured in the U.S. like [soda ash](#) and [grain](#) that is better suited to be delivered via freight-rail rather than on local roadways. Using freight-truck would cause increased pavement damages to roadways and increased emissions. ([UDOT Freight Plan Summary, Spring 2017](#); BCA)

The rail corridor parallels I-15 which travels from “[Los Angeles to Salt Lake City—both critical hubs in UP’s network. Approximately 400,000 tons of goods, valued at \\$220 million, originated and terminated within the four Alliance states along the I-15 corridor](#) (I-15 Corridor System Master Plan, Page 32)”. As shown in **Figure 4**, it is forecast that the volume and value of I-15 by freight-rail will increase significantly along the I-15 corridor by 2040.

*Keep Utah Moving. That includes
improving our roads, freight,
public transit, public trails, and
safe routes to school.*

ii. Technical Merit

How the Project aligns with FRA’s technical merit criteria is described below.

A) STATEMENT OF WORK (SOW)

The Project statement of work is included in **Appendix C**. The proposed tasks are appropriate for construction projects of similar size and scope based on UTA’s, UDOT’s, and UPRR’s experiences on similar construction projects. The Project has and will continue to undergo thorough review of the design and construction by qualified engineers considering relevant design criteria and federal, state, and local regulations.

B) PROJECT READINESS

Preliminary designs are included in **Appendix F**. NEPA is underway and a Categorical Exclusion is anticipated by July 2022. Upon the award of a 2021 CRISI grant, the project is positioned for grant obligation and UDOT will immediately advance project design. Construction is expected to begin in August 2023.

C) APPLICANT’S TECHNICAL QUALIFICATIONS TO EXECUTE THE PROJECT

UTA is the project sponsor and grant applicant. UDOT will serve as the Project Manager and will assume responsibility for contracting arrangements, oversight, change orders, and risk management. UTA will provide reviews for Federal requirements and reporting on project progress.

D) PRIVATE SECTOR PARTICIPATION

The Project has the support and cooperation of UPRR.

E) APPLICANT’S LEGAL, FINANCIAL, AND TECHNICAL CAPACITY TO COMPLETE THE PROJECT

The Project will be constructed in cooperation with several public agencies and UPRR, all of whom have jurisdiction over the respective project areas. UPRR will be responsible for the future condition and repair of the new track segments once they are completed. There are no outstanding foreseeable or existing legal issues regarding the Project or proposed work. UDOT has contract capacity on an existing GEC services contract to manage the timely delivery of the Project. Also, when the Project is sent to Invitation for Bid, UDOT has a listing of contractors with the technical capability to perform the proposed work on railroad ROW. UDOT’s qualifications and approach is discussed further in **X. Project Implementation and Management**. In addition, the Sharp-Tintic Railroad Connection is a straight-forward, low-risk construction project. No innovations are necessary.

F) CONSISTENT WITH PLANNING DOCUMENTS:

The Project aligns with the [City of Springville’s General Plan](#) (2011) and supports future projects proposed in Utah’s Unified Transportation Plan. Additionally, UDOT and UPRR will use national resources and standards that ensure the long-term functionality of the rail track and improvements.

c) SELECTION CRITERIA

i. Preference

The FRA will give preference to projects for which the following apply.

A) FEDERAL SHARE

UTA’s financial plan overmatches the statutory non-federal match and assumes a roughly one-third split of project costs between state/local funds, other federal, and a CRISI grant.

B) NET BENEFITS

The Project’s net benefits are greater than 1.0, demonstrating a benefit cost ratio of 1.38.

C) DEVELOPMENT OF NEW INTERCITY PASSENGER RAIL SERVICE ROUTES

This Project is not considered an intercity rail project eligible under 49 U.S.C. 22907(c)(2). However, the Project would facilitate the future development of a new commuter rail station and extension of commuter rail service to southern Utah County.

D) PREVENT TRESPASSING

Trespassing is not a problem in the Project area.

E) ENFORCEMENT ACTIVITIES

The Project is not in one of the top 10 states with the highest incidences of rail trespass. Given that Utah is one of the states with the most rapid growth, it is anticipated that added population will continue to generate development. Therefore, it is anticipated because of growth near the rail lines, a higher chance of rail trespass incidents will occur.

National Resources / Planning Documents

- [UPRR Guidelines for Railroad Grade Separation Projects, 2016](#)
- [AREMA, Manual for Railway Engineering, 2019](#)
- [Standard Specifications for construction of Roads and Bridges On federal Highway Projects](#)
- [AASHTO Roadside Design Guide, 4th Edition](#)
- [AASHTO Guide for the Development of Bicycle Facilities, 4th Edition](#)
- [A Policy on Geometric Design of Highways and Streets, 7th Edition](#)
- [National Pollutant Discharge Elimination System \(NPDES\) Standards](#)

ii. Key Objectives

The FRA will give preference to projects for which the following apply:

A) SAFETY

The Project encourages the removal of truck traffic from roadways by providing reliable freight-rail service. Removing the prevalence of conflicts between single occupancy motorists traveling at high rates of speed on the roadway while heavy trucks are turning and/or accelerating/decelerating provides for a safer driving environment. As regional routes such as I-15 become more congested, highway expansion is not always an option. Avoided truck traffic through freight-rail provides shippers and the public many safety benefits.

B) EQUITABLE ECONOMIC STRENGTH AND IMPROVING CORE ASSETS

Good Jobs, Fair Wages, Labor Protections, & Unions

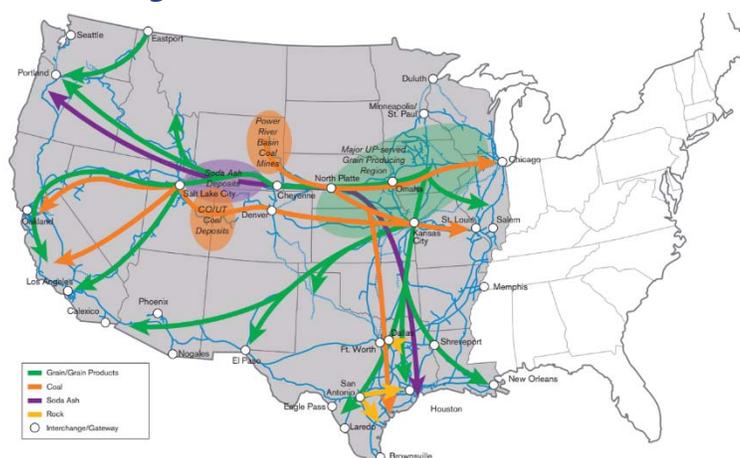
As supply chains across the U.S. lack the personnel to operate, investments in efficiency and worker safety will strengthen the ability of supply chain operators like UPRR to deliver goods in a timely manner while attracting and retaining employees for quality jobs with benefits.

Railroad operators like UPRR work with the “13 major rail unions, that represent 83% of the 31,000 full-time employees” (UPRR, 2020 Building America Report Page 34). The National Railway Labor Conference (NRLC), represents the most employees across the railroad industry. NRLC recognizes the most important benefit of modernization has been improved safety; as such, modernization has become a key mission for workers. Building a safer and vibrant workplace so that train crews can continue to deliver goods improves the quality of life of many Americans. As discussed in the **Appendix F: Statement of Work**, the Project will deploy modernized infrastructure – a key component of labor union and rail operator’s current mission, including signs, road crossing warning devices, signals, and fences.

Figure 5: COVID-19 Thank You for Railroad Workers



Figure 6: UPRR Unit Commodities



Connections Between American Markets: Farms, Factories, and Shippers

The Project aligns with the Federal Building resilient, Supply chains, Revitalizing American Manufacturing, and Fostering broad-based Growth initiative (June 2021) by carrying important commodities that foster manufacturing, needed for battery technology deployment/recycling. The main commodities that travel within the Sharp-Tintic rail corridor are grain and soda ash. Soda ash is a product used in American’s daily lives, including “containers, fiberglass insulation, or flat glass for the housing, commercial building, and automotive industries.” In addition, “Soda ash also is used to clean the air and soften water. As environmental concerns grow, demand increases for soda ash used in the removal of sulfur dioxide and hydrochloric acid from stack gases (Industrial Minerals Association - North America).” Additionally, as grain prices rise across the U.S. market, finding economical transport options like freight-rail will help to stabilize the price variances passed onto the U.S. consumer. Not only does grain feed Americans, but grain is also a top U.S. export to many countries – therefore, providing food and economic opportunities for many.

As shown in **Figure 6**, the rail corridor between Provo and Salt Lake City is the main line delivering soda ash and grain to the U.S. market. The rail corridor connects to one of the largest UPRR intermodal terminals operated in the U.S., located in Salt Lake City, a 24-hour operation. Additionally, as shown in **Figure 7**, the rail corridor from Provo to Salt Lake City is a segment railroad corridor for the State of Utah, leading to various railyards and multimodal centers in Salt Lake City. Currently, UPRR has granted trackage rights on the Provo Line to other railroad operators, and with agreement from UPRR, as the railroad market grows, these operators could use the Sharp-Tintic segment and benefit from the Project.

Figure 8: Providing Opportunities to All

AGING RAILROAD WORKFORCE

A significant concern across the U.S. rail industry is the aging workforce. The two best ways to address this concern are to 1) ensure that there is a pipeline of qualified talent ready to come in and assume those roles once retirements are realized and 2) ensure a transfer of institutional knowledge to the younger workforce before intellectual capital retires from the workforce.

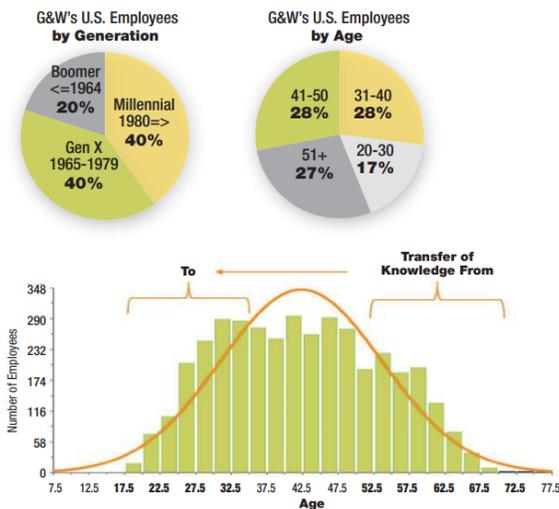


Figure 7: BNSF and UP Rail Lines, Provo Line Major Corridor



Economic Security: Rail Industry Employment

Overall, rail employment provides competitive wages, retirement, healthcare, and long-term advancement opportunities. The average annual salary of a rail employee is \$69,084 dollars annually. This is above the U.S. Bureau of Labor Statistics reported average U.S. salary of \$56,310. In addition, railroads continue to make advancements for an inclusionary workforce focused on the retention and economic advancement of employees. Example initiatives include the ‘We Are One’ Video Campaign (UPRR): Including commemorative train.

C) ENSURING INVESTMENTS MEET RACIAL EQUITY AND ECONOMIC INCLUSION GOALS

- *Improves or Expands Transportation Options:* As discussed in detail above, the Project facilitates safe and quality jobs for all people – individuals with/without advanced education. In addition, the Project would provide the opportunity to expand

Local & American Jobs

Businesses serviced by the Tintic Line south of the Project include Wasatch Truss, Sapa Extrusions, PDM Steel Service Centers, and those businesses accessed from the Leland Spur of the Tintic Line: Burningham Enterprise Warehouse, Christensen Brothers, Wasatch Pallet Utah, and Country Garbage.

There are no existing rail freight customers on the segment being closed. The Project will provide a shorter distance from freight customers on the Tintic line to the Provo Rail Yard.

Figure 9: We Are One



local transit with a future FrontRunner station and extension of service south. The proposed station would serve low-income individuals and those who choose not to own a vehicle. Like cities across the nation, even with [affordable housing initiatives](#), greater Salt Lake City housing is [becoming less affordable](#), dislocating some residents to less expensive areas further from the urban core. Public transit has been proven to [reduce commute time](#), [save money](#), and [improve health](#). A FrontRunner station and expansion of service would benefit existing low-income residents and those moving to the outlying suburban areas of Salt Lake City, like the cities of Springville and Spanish Fork, in pursuit of affordable housing.

- *Mitigates the Safety Risks and Detrimental Quality of Life:* As described above, modernizing the rail line would improve safety for residents and students crossing the tracks, and for operators.
- *Expands Workforce Development/Training:* Railroad operators in the region like UPRR have invested in STEM programs around greater Salt Lake City area like Junior Achievement, as shown in **Figure .**

Figure 10: Railroad and STEM Investment

Junior Achievement Of Utah



Students become safety inspectors through Union Pacific's interactive experience with JA City.

In this digital era, a skills gap is making it difficult for some students to enter the workforce. [Junior Achievement of Utah \(JA\)](#) and Union Pacific are working together to put youth on the right track, enhancing foundational skills in finance; science,

technology, engineering and math (STEM); life skills; and career awareness through gaming. JA City is an interactive, hands-on learning facility with the feel of an actual community, featuring 25 businesses – including an installation from Union Pacific.

D) RESILIENCE AND ADDRESSING CLIMATE CHANGE

The Project provides many benefits to customers of the railroad, to railroads, and to the adjacent community. Because the Project would result in reduced vehicle delay times, carbon dioxide (CO₂), nitrogen oxides (NO_x), fine particulate matter (PM_{2.5}), and sulfur dioxide (SO₂) emissions per hour would be reduced. Over the 30-year analysis period, it is estimated that CO₂ Emissions Avoided totals 1,613 tons because of construction of the Project.

E) TRANSFORMATION OF OUR NATION’S TRANSPORTATION INFRASTRUCTURE

- **Adds Capacity to Congested Corridors:** For almost the entirety of the alignment from Provo-Orem to the urban center of Salt Lake City, the Tintic and Sharp Lines parallel I-15. Closures along I-15 significantly impact movability around the greater Salt Lake area. A closure resulting from a truck carrying commodities like gravel can result in closures on the I-15 for over 2-hours, like the incident that occurred in [September 2021](#). Adding efficiency to the rail line will promote the delivery of heavy-loads, therefore removing trucks from I-15.

- **Builds New Connections:** As described above, the Project results in a direct and modernized connection along the Sharp line.
- **State of Good Repair:** Resulting improvements have a projected lifespan of 30-years and bring the assets up to modernized standards as described above.

iii. Allocation of Program Funds

UTA and its partners could complete basic improvements at grade-crossings to improve safety, but this would only satisfy short-term needs. The \$5.12 million of 2021 CRISI funding requested in this application will help realize the Project stakeholder and community objectives for improved safety and reliability of the transportation network, and quality of life for the surrounding neighborhoods.

X. Project Implementation and Management

UTA is the applicant for this 2021 CRISI grant. UDOT will serve as the Project Manager and will assume responsibility for contracting arrangements, oversight, change orders, and risk management. UTA will provide reviews for Federal requirements and reporting on project progress. UDOT and UTA have a long partnership in implementing major infrastructure projects, and will leverage this experience to execute the Sharp-Tintic Railroad Connection Project.

UDOT has assigned a project manager familiar with the type of work and requirements to manage the Project. The project manager is knowledgeable of railroads and federal requirements associated with them. Additionally, the project manager is familiar on how to coordinate with multiple parties to achieve on-time and on-budget project delivery. The project manager's role will be to:

- Manage partner communication, agreements, funding, and promote timely mutual concurrence;
- Oversee contractor and construction activities related to its contract;
- Oversee construction engineering and inspection services; and
- Manage and verify federal conformance and submittal/tracking of documentation.

Change orders are a part of nearly every construction project. As such, UDOT uses a detailed process to ensure a defined set of services at a reasonable price and achieve project goals. If changes are identified, the project manager will:

- Discuss and agree on a scope of services for the change order with applicable parties;
- Prepare a cost estimate using subject matter experts;
- Request a proposal or perform scope amendments from the contractor(s); and
- Award scope of work to qualified contract(s) under its procurement procedures (in compliance with FRA requirements).

XI. Planning Readiness

As shown in **Table 5**, upon receipt of 2021 CRISI funding, UDOT would begin construction in 2023 and complete the Project in 2024. If awarded a CRISI grant, the Project can proceed on its intended schedule.

Table 5: Project Schedule

TASK	2022				2023				2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Project Management												
Grant Award Notice	█											
Grant Obligation			█									
Proj. Management				█	█	█	█	█	█	█	█	█
Environmental and Public Engagement												
NEPA Clearance	█	█										
Community Engagement	█	█	█	█	█	█	█	█	█	█	█	█
UPRR/Agency Coordination	█	█	█	█	█	█	█	█	█	█	█	█
Design, Environmental & Construction												
Design (100% Plans)*	█	█	█	█								
ROW Acquisition & Permitting				█	█							
Procurement / Letting						█	█	█				
Construction							█	█	█	█		
Fully Operational										█		
Performance Monitoring**											█	→

*Utilities, Geotechnical, Signal Design, and Diagnostic & UPRR Coordination. **Performance monitoring to continue according to FRA Grant Agreement.

The [Utah Freight Plan](#) presents the predicted growth of freight transportation in Utah, and the [Utah Rail Plan](#) outlines the current and future state of rail in Utah. The Sharp-Tintic Railroad Connection Project is not in conflict with either plan.

Springville’s [General Plan](#) discusses the City’s plans to redevelop the land surrounding the Tintic line. There are plans outlined in Utah’s Unified Transportation Plan for a Frontrunner station in Springville. Additionally, an intermodal station is planned in Spanish Fork that connects to a future BRT line. MAG has also identified the future Springville Commuter Rail Station, a related project to Springville’s redevelopment, as a Phase 1 (2020-2030) project in *Utah’s Unified Transportation Plan*. This station could be built adjacent to the UTA track that runs parallel to the Sharp line and serve future FrontRunner commuter rail.

Preliminary designs are at 10% and included in **Appendix F**. Meetings and other opportunities are made available that will enable community members to actively contribute toward the final design of the Project. UDOT, UTA, and its partners anticipate continued broad public support. All non-CRISI funding is committed to the Project.

XII. Environmental Readiness (Risk)

UTA has already initiated work towards completing a Categorical Exclusion (CE) for the Project. UDOT has NEPA authorization from FHWA. UTA and UDOT are coordinating with FRA on expeditiously advancing completion of a CE document. NEPA clearance is anticipated in July 2022.

In addition to ensuring full environmental compliance and readiness, UTA and UDOT will work together to identify the risks associated with change orders as well as other project items early to begin successfully mitigating potential schedule and cost challenges. They also understand the types of risks based on similar projects and use that prior knowledge to inform risk assessment discussions and continued risk mitigation. Based on the current status of the Project, knowledge of the project area, and awareness of local, regional, and nationwide factors, the following risks and potential mitigation opportunities have been identified and are discussed in **Table 6** below.

Table 6: Proposed Risk Mitigation Measures

Right-of-Way & Utilities	
Mitigation	UTA and UDOT are experienced in ROW procurement. The two agencies are working on a plan to advance agreements with ROW owners, including UPRR, prior to grant obligation so as to maintain cost and schedule. Utilities are well defined and understood as the CE is underway and nearing completion. Staff and on-call consultants/contractors are well-versed in identifying and coordinating utility relocation.
Environmental & Environmental Justice	
Mitigation	Environmental risks are well defined and understood. Receipt of timely technical feedback from agency partners related to delivery of the Project is ongoing, and strong partnerships with them are in place locally. It reflects community priorities established as part of general plans and localized outreach to communities impacted by freight-rail operations. Additional future outreach is planned to ensure local needs are met and community preferences served.
Procurement, Contracting & Labor Agreements	
Mitigation	Area contractors are well experienced in construction techniques required to operate on live track. UDOT has a sophisticated process to ensure compliance with domestic preference laws, promote the hiring of local contractors, and facilitate participation by socially and economically disadvantaged businesses.