



*City of Arts & Innovation*

# Mobility & Infrastructure Committee Memorandum

**TO: MOBILITY & INFRASTRUCTURE COMMITTEE      DATE: FEBRUARY 8, 2024**

**FROM: PUBLIC WORKS DEPARTMENT      WARDS: 1, 3, 4, AND 5**

**SUBJECT: PRIORITIZATION OF RAILROAD GRADE SEPARATIONS ALONG THE  
BURLINGTON NORTHERN SANTA FE RAILROAD AT JACKSON STREET,  
MADISON STREET, MARY STREET, SPRUCE STREET, TYLER STREET, AND  
MISSION INN AVE**

## **ISSUE:**

Review and prioritize the potential grade separations at Jackson Street/BNSF, Madison Street/BNSF, Mary Street/BNSF, Spruce Street/BNSF, Tyler Street/BNSF and Mission Inn Avenue/BNSF.

## **RECOMMENDATIONS:**

That the Mobility & Infrastructure Committee review and provide recommendation to the City Council to:

1. Approve the proposed Grade Separation Priority Ranking as follows: (1) Madison Street, (2) Spruce Street, (3) Jackson Street, (4) Mary Street, (5) Tyler Street, and (6) Mission Inn Avenue at the BNSF at-grade railroad crossing; and
2. Direct the Public Works Department to explore funding opportunities to begin the Project Approval and Environmental Documents (PA&ED) phase of the Madison Street grade separation.

## **BACKGROUND:**

On June 12, 2014 the Transportation Committee (Committee) received a report on the prioritization of grade separation projects and unanimously recommended that the City Council prioritize the Madison Street/BNSF, Third Street/BNSF, Spruce Street/BNSF and Jackson Street/BNSF rail crossings for conceptual grade separation design and future funding opportunities including providing alternative options for Madison Street and noting the importance of gathering input from all Councilmembers.

On March 17, 2015, the City Council received a report on the prioritization of grade separation projects for conceptual design and future funding opportunities. Following discussion, the City Council continued discussion of the Madison Street/ Burlington Northern Santa Fe (BNSF), Third Street/BNSF, Spruce Street/BNSF and Jackson Street/BNSF rail crossings and requested

staff return with data on all locations including pedestrian, bicycle, and commercial traffic counts.

On May 5, 2015, the City Council received an updated report on the prioritization of grade separation projects for conceptual design and future funding opportunities including the results of the vehicle classification, pedestrian, and bicycle counts and approved the Mary Street, Third Street, Spruce Street and Jackson Street rail crossings for conceptual grade separation design and future funding opportunities. Following discussion by the City Council in response to community feedback, Madison Street was omitted from the priority ranking list.

On February 9, 2017, the Transportation Committee received a report on the review and prioritization of potential railroad grade separations along the Burlington Northern Santa Fe Railroad at Jackson Street, Mary Street, Spruce Street, and Third Street. The Committee unanimously voted to recommend that the City Council (1) approve Third Street along the BNSF line as the top priority railroad grade separation; (2) adopt a priority for the three remaining grade separations at Spruce Street, Mary Street, and Jackson Street; and (3) directed the Public Works Department to issue a Request for Proposals to complete the Project Approval and Environmental Document phase of the Third Street grade separation.

On April 11, 2017, the City Council approved the Transportation Committee recommendations to (1) approve the concept designs and prioritization along the Burlington Northern Santa Fe line at Jackson Street, Mary Street, Spruce Street, and Third Streets as the top priority railroad grade separations; and (2) directed the Public Works Department to issue a Request for Proposals to complete the Project Approval and Environmental Document phase of the Third Street grade separation.

On January 12, 2023, the Mobility & Infrastructure Committee received a report on conceptual improvements for Tyler Street between SR-91 Interchange and Burlington Northern Santa Fe railroad crossing. Following discussion and without formal motion the Committee received and ordered filed the update on conceptual improvements for Tyler Street between SR-91 Interchange and Burlington Northern Santa Fe railroad crossing.

## **DISCUSSION:**

The City's strategy of prioritizing grade separation projects and completing early design has proven very effective in securing Local, State, and Federal funds as demonstrated by the completion of six railroad grade separations since 2009. This strategy is most exemplified by the Third Street grade separation when in April 2017 the City Council directed the Public Works Department to begin preliminary engineering design of the project. The Third Street grade separation is currently in right-of-way acquisition and final engineering design. The total estimated cost of the project is \$86 million. In 2023, the Public Works Department was successful in securing three Local, State, and Federal grants, for a total of \$49 million, making the project fully funded. Construction of the project is anticipated to start in late 2025.

In September of 2023, the Public Works Department collected traffic counts (Table 1) and rail crossing data (Table 2) at each of the five crossings under consideration. Based on the traffic and rail crossing data including train accidents history, RCTC ranking, and freeway connectivity, the Public Works Department is recommending the Madison Street/BNSF crossing as the top ranked grade separation, and the Spruce Street/BNSF crossing as the second ranked grade separation. Both crossings are in 2017 RCTC Priority Group 1 and both have direct freeway connectivity. Spruce Street has a slightly higher vehicle count than Madison but there have been

two fatalities at the Madison Street at-grade railroad crossing in the past 10-years. Madison Street crossing has a significantly higher pedestrian count than Spruce Street crossing, by a factor of almost 12. Further, Madison Street crossing is on the Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF) Network making the project eligible for \$12.08 million in local TUMF funding. This enables the Public Works Department to request funding allocation from WRCOG to begin the PA&ED phase of the Madison Street grade separation. Finally, there are no grade separations between Monroe Street and Arlington Avenue, a distance of approximately 3-miles. A grade separation at Madison Street is approximately at the mid-point of the above two streets and will fill in the gap between two existing grade separation. A Madison Street grade separation is also anticipated to result in improved response time by emergency responders for the Casa Blanca and other adjacent neighborhoods.

Members of the Casa Blanca community have previously expressed concern with the potential for a grade separation to result in increased traffic volumes and vehicle speeds through the Casa Blanca neighborhood. The Public Works Department's recommendation for a grade separation at the Madison Street/BNSF at-grade crossing is in response to the demonstrated need for safety enhancement and congestion relief for this location. A grade separation would improve safety by separating pedestrian and bicycle traffic from the railroad tracks, including future students and parents traveling to/from the under-construction Casa Blanca Elementary School. Additionally, these pedestrians and bicyclists would benefit from improved air quality as vehicles would no longer idle at the train crossing. While Madison Street is an arterial roadway, it does run through the Casa Blanca community and staff understands the residents' desire to deter increases in vehicular volumes and speeds. To ensure that local and active transportation remain a priority along Madison Street, any future grade separation at this crossing would be designed in keeping with the principles of the Riverside PACT (Active Transportation Master Plan and Complete Streets Ordinance).

**Table 1 – Rail Crossing Traffic Data (Collected September 2023)**

Street/BNSF Rail Crossing	Average Daily Traffic Counts	Average Daily Pedestrian Counts	Average Daily Bicycle Counts	No. of School Buses**	No. of School Special Need Vans**	No. of Passenger Buses	TUMF Network
Jackson Street	7,884	218	31	-	8	2	No
Madison Street*	13,923	381	52	12	10	4	Yes
Mary Street	12,149	68	75	6	4	5	No
Spruce Street	16,255	32	56	4	4	16	No
Tyler Street	15,407	79	36	6	2	88	No

\*Madison St. crossing is on the TUMF Network making the project eligible for \$12.08M in local TUMF funding

\*\*No. of school buses and Vans (carrying students) were obtained from Riverside and Alvord Unified School Districts

Table 2 – Rail Crossing Data

Street/BNSF Rail Crossing	Average Daily Train Count	Gate Down Time (Minutes)	Train Accidents: Fatal/Non-Fatal (Past 10 Years)	2017 RCTC Priority Group	Railroad Quiet Zone	Freeway Connectivity	Estimated Cost (\$MM)
Jackson Street	90	156	0/0	3	Yes	No	60.0
Madison Street	90	184	2/0	1	Yes	Yes	60.0
Mary Street	90	180	0/0	3	Yes	No	60.0
Spruce Street	92	196	1/0	1	No*	Yes	75.0
Tyler Street	90	145	2/1	1	Yes	Yes	100.0+

\*Spruce Street and Mission Inn Ave Crossings are future Quiet Zones in Preliminary Design

Utilizing a weighted score, which factors in data from tables 1 and 2, and additional factors including proximity to schools and constructability, staff propose the following priority ranking of grade separation projects:

*Grade Separation Priority Ranking at the BNSF at-grade crossings:*

1. Madison Street
2. Spruce Street
3. Jackson Street
4. Mary Street
5. Tyler Street\*

\*Additional research is required to deem the Tyler Street project fully feasible, thus it will remain on the list until further review is conducted.

Tyler Street Construction Complexity:

On June 20, 2006, the City Council authorized the Public Works Department to complete the engineering studies necessary to determine the feasibility and cost effectiveness of mid- and long-term strategies to improve the Tyler Street/SR 91 interchange traffic congestion. Upon completion of the conceptual plans, the Public Works Department met with Caltrans representatives in December 2006 to review the alternatives and begin project development including assessment and selection of the alternatives and environmental work. After reviewing the site and conceptual alternatives, Caltrans staff expressed concern regarding the need for several design exceptions, the geometrics of the new rail crossing, and the freeway off ramp. Caltrans recommended that the project be evaluated through their Value Analysis (VA) process.

The Public Works Department retained Value Management Strategies to coordinate and facilitate the VA workshop. Seventeen Caltrans representatives and three City staff members with experience in highway design and traffic engineering attended the five-day workshop. Representatives from the Development Department and other stakeholders also attended the opening and closing sessions.

The VA team established congestion reduction as the overall goal for the study and grade separating the rail crossing as a secondary goal. During the data collection phase, the VA team noted that even without the impacts of the rail crossing, congestion is significant during off-peak hours. This emphasizes the need to concentrate on improving other geometric deficiencies.

The VA team analyzed lowering the BNSF tracks to achieve a grade separation, but considering the tracks are already close to a 1% grade, the railroad's maximum, this is not a viable solution. A more traditional grade separation, either by raising or lowering the road, was also determined to be difficult due to the close proximity of the tracks to the freeway. Consequently, the VA team was able to develop only one railroad grade separation alternative. Ultimately, the VA team recommended that improvements to the Tyler Street/State Route 91 Interchange would more effectively reduce congestion. Given ongoing developments along Tyler Street, a decision to advance alternatives for the Tyler Street Interchange would require additional analysis.

### **STRATEGIC PLAN ALIGNMENT:**

This item aligns with **Strategic Priority 6 – Infrastructure, Mobility, and Connectivity** by improving safety, circulation, and providing critical infrastructure for our community to thrive and is in accordance with **Goal 6.2** – Maintain, protect, and improve assets and infrastructure within the City's built environment to ensure and enhance reliability, resiliency, sustainability, and facilitate connectivity.

Furthermore, this project aligns with each of the four Cross-Cutting Threads as follows:

1. **Community Trust** – Riverside is transparent and makes decisions based on sound policy, inclusive community engagement, involvement of City Boards and Commissions, and timely and reliable information. Activities and actions by the City serve the public interest, benefit the City's diverse populations, and result in greater public good.
2. **Equity** – Grade separations provide a safe and reliable roadway network to schools, shopping centers and to various neighborhoods. They also improve the quality of life of nearby residents and the air quality by eliminating the train horn and vehicle idling at the railroad tracks.
3. **Fiscal Responsibility** – Pursuit of grant funding leverages City funds to secure State and Federal funding to construct large and complicated projects. Grant pursuit shows the City is responsive to community priorities by pursuing available funding opportunities to expedite critical infrastructure projects.
4. **Sustainability & Resiliency** – Grade separations make the street safer by eliminating the at-grade railroad crossings.

### **FISCAL IMPACT:**

There is no fiscal impact associated with this report.

Prepared by: Farshid Mohammadi, Engineering Manager  
Approved by: Gilbert Hernandez, Public Works Director  
Certified as to  
availability of funds: Kristie Thomas, Finance Director/Assistant Chief Financial Officer

Approved by: Kris Martinez, Assistant City Manager

Approved as to form: Phaedra A. Norton, City Attorney

Attachments:

1. City of Riverside Rail Crossings
2. Jackson Street/BNSF Rail Crossing
3. Madison Street/BNSF Rail Crossing
4. Mary Street/BNSF Rail Crossing
5. Spruce Street/BNSF Rail Crossing
6. Tyler Street/BNSF Rail Crossing
7. Presentation