# Project Description

## Project Overview

The Southern California Regional Rail Authority (SCRRA or Metrolink) is proposing the San Gabriel Subdivision Mile Post (MP) 28.28 Culvert Replacement Project (Project). The Project would include the in-kind replacement of the existing culvert, which is contained within SCRRA's existing right-of-way (ROW) in the City of San Dimas and the City of La Verne. The Project would include replacement of the existing corrugated metal pipe (CMP) culvert with a similar CMP culvert, including associated structural improvements to ensure embankment stability. In addition, based on Engineering Evaluation inlet and outlet erosion protection may be added, pending final engineering design.

### Project Goals and Objectives

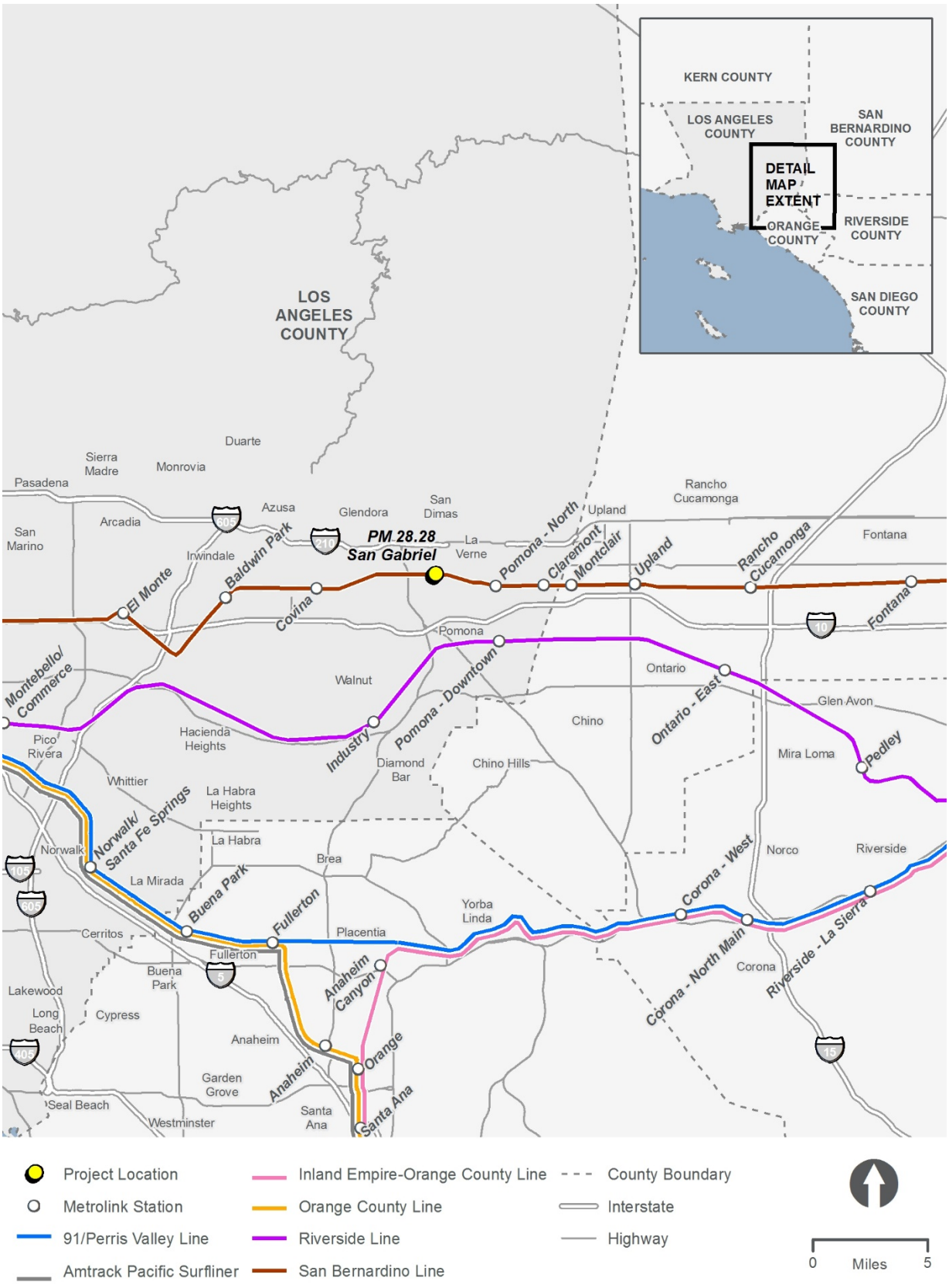
The Metrolink Rehabilitation Plan provides a thorough evaluation of the condition of SCRRA's key infrastructure, including bridges, culverts, and tunnels. The purpose of the plan is to present a combination of key findings associated with SCRRA's current infrastructure related to their age, deteriorating condition, and funding availability. The plan presents a complete review of SCRRA's existing structures and provides recommendations for the rehabilitation efforts required to maintain a safe and reliable operation over the next 25 years.

The Metrolink Rehabilitation Plan identifies the Project as a high priority project for the San Gabriel Subdivision. The replacement of the culvert would include headwall, wingwall, or culvert extensions in order to improve the slope stability issues associated with the culvert. The Project replacement would align with Metrolink's Rehabilitation Plan to maintain safety and reliability of the existing rail system and supporting infrastructure. This culvert was built in 1909, currently passed its service life.

## Project Location

The Project is on Metrolink's San Gabriel Subdivision at MP 28.28 within the southeastern portion of the City of San Dimas and the southwestern portion of the City of La Verne, within Los Angeles County, California. The existing CMP culvert is located approximately 100 feet north of the Sun Rose Street and Lupine Place intersection. Figure 1 shows the regional location of the Project, while Figure 2 shows the Project location and study area (Latitude: 34.101239 and Longitude: -117.798449 within the USGS San Dimas 7.5 minute quadrangle).

## Figure 1. Regional Location



## Figure 2. Project Study Area

# Project Components

The Project would involve the in-kind replacement of an existing CMP culvert located at MP 28.28. The existing 42 inch CMP culvert is approximately 70 feet long and supports one main line track for the Metrolink's San Gabriel Subdivision. The Project would be contained to the SCRRA ROW, including any associated inlet and outlet protection, if required. In addition, headwall, wingwall, or culvert extensions may be required for embankment stability based on Engineering Evaluation. The Project would also involve the protection-in-place of existing utilities.

## Physical Improvements

### Drainage

Existing drainage patterns would be maintained as part of the Project. Runoff from the adjacent industrial area to the north would flow downstream through the new culvert and the residential areas to the south.

### Structures

The existing 42 inch CMP was constructed in 1909. The pipe culvert was constructed without a headwall or wingwall. Rip-rap has been used as a means of protecting the embankment slope surrounding the pipe inlet and outlet. Based on the 2015 Inspection report, rip-rap and slurry was recommended to mitigate for slope erosion. The rip-rap was placed prior to the subsequent inspection in 2017. The typical useful life for a CMP pipe culvert is 75 years which has been expended. Due to its age and lack of headwall this culvert has been selected for replacement. In order to meet SCRRA standards, a headwall and wingwalls would be installed to prevent erosion surrounding the pipe openings and increase slope and pipe stability. The CMP replacement and supporting improvements would be required to comply with SCRRA Design Criteria Manual and standard specifications.

## Construction

Project construction is expected to begin in 2021 and would continue for up to 4 months. Phasing would occur in as few steps as possible to minimize disruption to Metrolink operations and the community. Construction equipment may include front-end loaders, rubber-tired dozers, , haul trucks, concrete setting pumps, and water trucks. Replacement of the culvert would require minimal material imports. Excavation activities may occur as a part of the project and a National Pollutant Discharge Elimination System Permit (NPDES) may be required to facilitate work in the channel bed.

Material imports, equipment, and construction personnel would access the study area via San Dimas Canyon Road. Potential construction staging areas include the area immediately adjacent to the project site (Figure 2) also accessed via San Dimas Canyon Road.

Construction activities would be scheduled during time frames that allow for exclusive track occupancy by construction crews to minimize effects on Metrolink operations. To the greatest extent possible, construction activities would be scheduled during the daytime, and nighttime work would be minimized. The Project would also include weekend work when Metrolink service is reduced.

## Operations

No expansion of the CMP culvert's existing hydraulic capacity is proposed. The Project may extend the culvert or supporting structures in order to improve slope and bank stability based on Engineering Evaluation. Metrolink operations would be unchanged from the existing conditions with implementation of the Project.

# Permits and Approvals

SCRRA is the lead agency for the purposes of complying with the California Environmental Quality Act (CEQA) and responsible for determining the Project's level of CEQA review and exemption status.

Other potential Project approvals and permits may include, but are not limited to, the following:

- Regional Water Quality Control Board (Region 4): NPDES and water quality certification, if required
- California Department of Fish and Wildlife (Region 5): Lake and Streambed Alteration Program, if required
- United States Army Corps of Engineers: Section 404 Nationwide Permit, if required
- City of San Dimas roadway encroachment, grading, etc.
- City of La Verne roadway encroachment, grading, etc.
- Potential National Environmental Policy Act (NEPA) compliance, if federal funding is pursued

# Project Description

## Project Overview

The Southern California Regional Rail Authority (SCRRA) is proposing the San Gabriel Subdivision Mile Post (MP) 29.62 Bridge Rehabilitation Project (Project). The Project would include the rehabilitation of the existing bridge structure, which is contained within SCRRA's existing right-of-way (ROW) in the City of La Verne, California. The Project would rehabilitate and retrofit the existing reinforced concrete box (RCB) bridge by repairing the concrete spalling and increasing the strength capacity or reducing the demand on the top slab of the RCB bridge. Other rehabilitation activities that may take place include channel cleaning and/or debris removal within the concrete-lined drainage underneath the bridge.

### Project Goals and Objectives

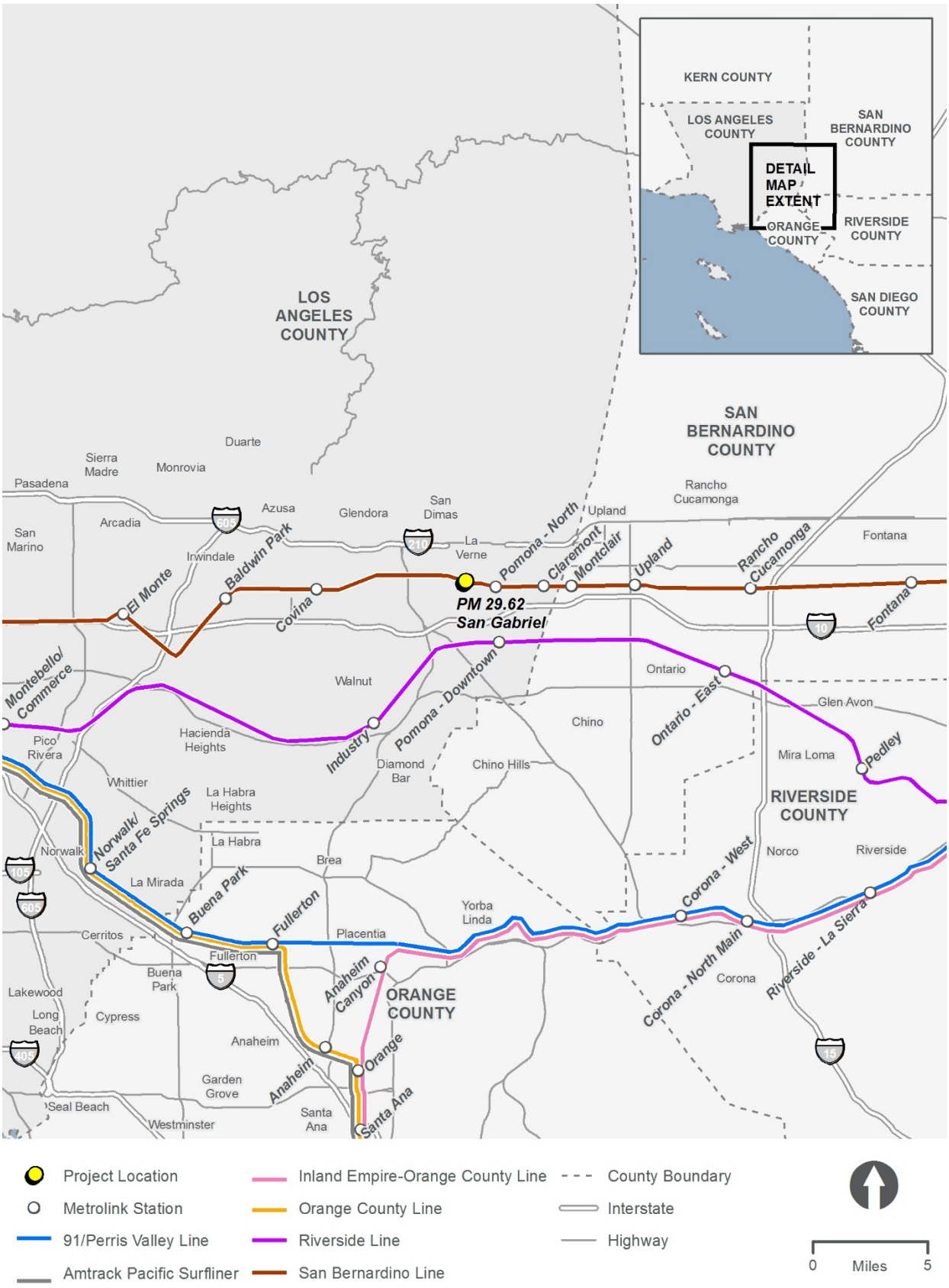
The Metrolink Rehabilitation Plan provides a thorough evaluation of the condition of SCRRA key infrastructure, including bridges, culverts, and tunnels. The purpose of the plan is to present a combination of key findings associated with SCRRA's current infrastructure related to age, deteriorating condition, and funding availability. The plan presents a complete review of SCRRA's existing structures and provides recommendations for the rehabilitation efforts required to maintain a safe and reliable operation over the next 25 years.

The Metrolink Rehabilitation Plan identifies the Project as a high priority project for the San Gabriel Subdivision. A bridge rating was performed for the RCB, dated June 30, 2014, indicating the normal strength capacity of the top slab was exceeded by both passenger and freight loading(s). Additionally, concrete surface deficiencies have been identified for this RCB. The Project repairs and strengthening would align with Metrolink's Rehabilitation Plan to maintain safety and reliability of the existing rail system and supporting infrastructure.

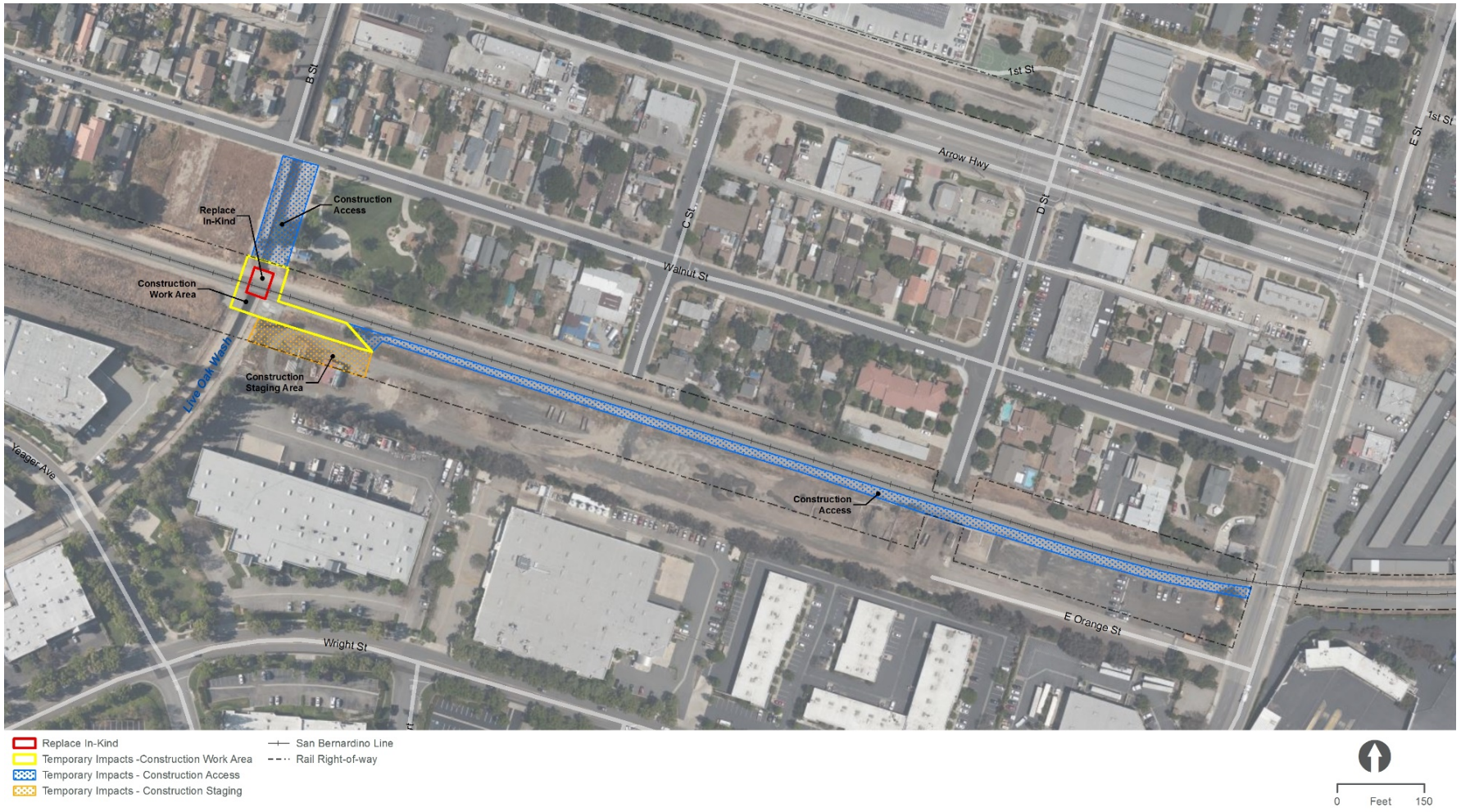
## Project Location

The Project is on Metrolink's San Gabriel Subdivision at MP 29.62 within the southern portion of the City of La Verne within Los Angeles County, California. The existing RCB is located approximately 240 feet south of the Walnut Street and B Street intersection, adjacent to the southwestern corner of Lordsburg Park. Figure 1 shows the regional location of the Project. Figure 2 shows the Project location and study area (Latitude: 34.097273 and Longitude: -117.775711within the United States Geological Survey (USGS) San Dimas 7.5-minute quadrangle).

## Figure 1. Regional Location



## Figure 2. Project Study Area



# Project Components

The Project would repair and retrofit the existing RCB bridge located at MP 29.62. The existing RCB bridge is approximately 21 feet wide and 43 feet long with a height of 11 feet and supports one main line track for the Metrolink rail system. The bridge also serves as a culvert with a concrete-lined drainage allowing runoff to flow underneath the track. The Project would maintain the bridge in place, repairing or recoating the walls of the concrete culvert. In addition, the bridge would be rehabilitated and retrofitted to increase capacity or reduce the demand on the top slab of the RCB bridge. The Project would also involve the protection-in-place of existing utilities including existing drainage structures.

## Physical Improvements

### Drainage

The existing drainage patterns would be maintained. The RCB bridge serves as a culvert, allowing runoff to flow underneath through the Live Oak Wash, an existing concrete–lined, United States Army Corps of Engineers (USACE)-constructed drainage facility. As a part of the Project, channel cleaning and/or debris removal from within the drainage channel would also be completed to facilitate a clean work area. No excavation or dredging is proposed; however, a National Pollutant Discharge Elimination System Permit (NPDES) may be required to be filed with the local Region 4 Regional Water Quality Control Board (RWQCB).

### Structures

The existing RCB bridge structure was constructed in 1950 and would be maintained and protected in-place as part of the Project. Repairs may include the removal of loose concrete around the spalled areas and repair with new concrete and/or grouting to match the existing condition. Retrofit strategies for the RCB bridge may entail addressing capacity deficiencies identified in the rating report and achieved through strengthening of the top slab, such as using bonded or anchored steel plate or fiber reinforced polymer (FRP) composites. Additionally, load demand reducing retrofit strategies could entail construction of a centered wall anchored to the existing top and bottom slab, thereby reducing the span length and subsequent load demands. All retrofit application would be required to comply with SCRRA Design Criteria Manual and standard specifications.

## Construction

Project construction is expected to begin in 2021 and would continue for 4 months. Phasing would occur in as few steps as possible to minimize disruption to Metrolink operations, the placement of equipment within the channel, and effects to the community. Construction equipment may include front-end loaders, rubber-tired dozers, cranes, haul trucks, and water trucks. Repairs and relining of the RCB surfaces would require minimal material imports.

It is assumed that all material, equipment, and construction personnel would access the Project area via the Fairplex Drive and East Orange Street crossroad or Walnut Street. Construction staging areas have been identified immediately southeast of the Project site (Figure 2) and accessed via the Fairplex Drive and East Orange Street crossroad.

Construction activities would be scheduled during time frames that allow for exclusive track occupancy by construction crews to minimize effects on Metrolink operations. To the greatest extent possible, construction activities would be scheduled during the daytime, and nighttime work would be minimized. The Project would also include weekend work when Metrolink service is reduced.

Construction would be coordinated with the Los Angeles County Flood Control District and implemented during periods when minimal or no flows are present.

### Operations

No expansion of the RCB's existing hydraulic capacity is proposed. Any retrofit strategy would result in a reduction in the opening size of the RCB. Metrolink operations would be unchanged from the existing conditions with implementation of the Project.

## Permits and Approvals

SCRRA is the lead agency for the purposes of complying with the California Environmental Quality Act (CEQA) and responsible for determining the Project's level of CEQA review and exemption status.

Other potential Project approvals and permits may include, but are not limited to, the following:

- RWQCB (Region 4): NPDES and water quality certification, if required
- California Department of Fish and Wildlife (CDFW) (Region 5): Lake and Streambed Alteration Program, if required
- USACE: Section 408 Permit and 404 Nationwide Permit, if required
- City of La Verne roadway encroachment, grading, etc.
- Potential National Environmental Policy Act (NEPA) compliance, if federal funding is pursued

# Project Description

## Project Overview

The Southern California Regional Rail Authority (SCRRA or Metrolink) is proposing the San Gabriel Subdivision Mile Post (MP) 35.90 Culvert Replacement Project (Project). The Project would include the replacement of an existing concrete arch culvert, which is contained within SCRRA's existing right-of-way (ROW) in the City of Upland. The Project would replace the concrete arch culvert with an equivalently sized corrugated metal pipe (CMP) or reinforced concrete box (RCB) culvert.

### Project Goals and Objectives

The Metrolink Rehabilitation Plan provides a thorough evaluation of the condition of SCRRA's key infrastructure, including bridges, culverts, and tunnels. The purpose of the plan is to present a combination of key findings associated with SCRRA's current infrastructure related to their age, deteriorating condition, and funding availability. The plan presents a complete review of SCRRA's existing structures and provides recommendations for the rehabilitation efforts required to maintain a safe and reliable operation over the next 25 years.

The Metrolink Rehabilitation Plan identifies the Project as a high priority project for the San Gabriel Subdivision. The concrete arch culvert would be replaced with a similar CMP or RCB culvert in compliance with the SCRRA Design Criteria Manual and standard specifications. The Project would align with Metrolink's Rehabilitation Plan thereby maintaining safety and reliability of the existing rail system and supporting infrastructure along Metrolink's San Gabriel Subdivision. This Culvert was built in 1902, currently passed its service life.

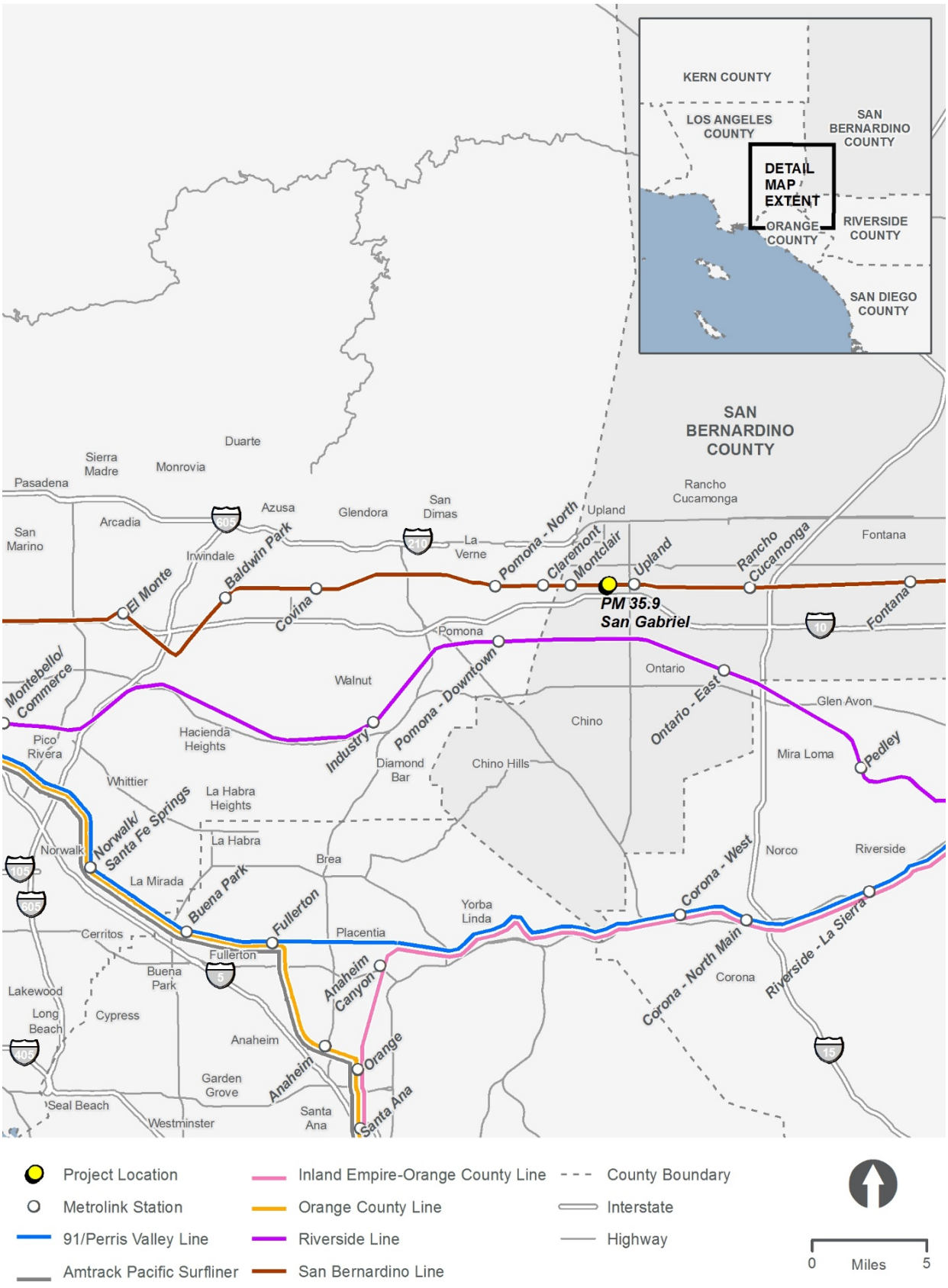
## Project Location

The Project is located on Metrolink's San Gabriel Subdivision at MP 35.90 within the southern portion of the City of Upland, within southwestern San Bernardino County, California. The concrete arch culvert is located approximately 724 feet north of the 8$^{th}$ street and Fulton Way intersection. Figure 1 shows the regional location of the Project, while Figure 2 shows the Project location and study area (Latitude: 34.094392 and Longitude: -117.666605 within the USGS Ontario 7.5 minute quadrangle).

## Project Components

The Project would replace the existing arch culvert located at MP 35.90 with a new CMP or RCB structure. The existing 48-inch concrete arch culvert is approximately 22 feet long and supports one main line track for the Metrolink rail system. The Project would be contained to the SCRRA ROW and include inlet and outlet protection, if necessary. The Project would also involve the protection-in-place of existing utilities including adjacent drainage structures.

## Figure 1. Regional Location



## Figure 2. Project Study Area

# Physical Improvements

## Drainage

Drainage patterns would be returned to existing conditions. Runoff flows from the industrial area to the north underneath the railway and downstream through the new culvert and the residential areas to the south. Runoff flows may accumulate within a small riparian corridor immediately after the industrial area before flowing downstream through the culvert.

## Structures

The existing 48 inch concrete arch culvert was constructed in 1902. Recent inspection reports for the culvert have noted degrading concrete in all concrete elements including the headwalls, wingwalls, the arch ceiling, walls and floors. The concrete degradation present at this location warrant its replacement. Aligned with current industry practice, the arch culvert will be replaced with a CMP or RCB structure that complies with SCRRA Design Criteria Manual and standard specifications.

# Construction

Project construction is expected to begin in 2021 and would continue for up to four months. Phasing would occur in as few steps as possible to minimize disruption to Metrolink operations and the community. Construction equipment may include front-end loaders, rubber-tired dozers, haul trucks, and water trucks. Replacement of the culvert would require minimal material imports. Excavation activities may be required for the Project and, if applicable, a National Pollutant Discharge Elimination System Permit (NPDES) would be required.

Access for material imports, equipment, and construction personnel would occur via Mountain Avenue and San Antonio Avenue. Due to the limited right-of-way width for a vehicle turnaround location, vehicles may enter through one of these access points and exit to the other to avoid the need for a turnaround. Potential construction staging areas include the areas immediately adjacent to the existing culvert (Figure 2).

Construction activities would be scheduled during time frames that allow for exclusive track occupancy by construction crews to minimize effects on Metrolink operations. To the greatest extent possible, construction activities would be scheduled during the daytime, and nighttime work would be minimized. The Project would also include weekend work when Metrolink service is reduced.

# Operations

No expansion of the concrete arch culvert’s existing hydraulic capacity is proposed. Metrolink operations on the San Bernardino Line would be unchanged from the existing conditions with implementation of the Project.

# Permits and Approvals

SCRRA is the lead agency for the purposes of complying with the California Environmental Quality Act (CEQA) and responsible for determining the Project's level of CEQA review and exemption status.

Other potential Project approvals and permits may include, but are not limited to, the following:

- Regional Water Quality Control Board (Region 8): National Pollutant Discharge Elimination System Permit and Water Quality Certification, if required
- California Department of Fish and Wildlife (Region 6): Lake and Streambed Alteration Program, if required
- United States Army Corps of Engineers: 404 Nationwide Permit, if required
- City of Upland roadway encroachment, grading, etc.
- Potential National Environmental Policy Act (NEPA) compliance, if federal funding is pursued