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*Final Report*

# Feasibility Study for I-710 Sound Wall Early Action Project

Prepared for

Gateway Cities Council of Governments  
Los Angeles County Metropolitan Transportation Authority

December 2012

**CH2MHILL®**

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# Executive Summary

This Feasibility Study examines the sound walls recommended in the *Noise Study Report* prepared by Caltrans (2012a), and also evaluates all existing sound walls and those currently planned. The work involves a feasibility/constructability analysis to identify locations where sound walls can be built in advance of the full I-710 Project (Initial List of Feasible Early Action Sound Walls); while remaining compatible (as constructed) with the future post-project condition and minimizing throwaway cost.

The project team developed the following guiding principles for evaluation of all sound walls in the study:

- Opportunities (walls feasible for Early Action Project)
  - Existing sound walls that can be improved and/or aesthetically treated
  - New sound walls that can be built with a refined design
  - New and existing sound walls that are consistent with environmental process
- Constraints (walls not feasible for Early Action Project)
  - Sound walls that conflict with proposed design
  - Sound walls that are located in the middle of existing streets or freeways
  - Sound walls that are located either significantly above or below current ground level or are on structures not yet constructed
  - Sound walls that cross existing right-of-way boundaries
  - Sound walls that destroy existing utilities or are in the way of future utilities
  - Sound walls that impact community viewsheds
  - Sound walls that do not meet standards for safe operation of all streets and freeways

Sound walls that are clearly in conflict with constraints listed above are eliminated from Early Action Project. The project team performed conceptual engineering of the remaining sound walls and conducted a fatal flaw review that consider issues concerning geometric layout, structural and geotechnical issues, constructability, drainage and utilities issues.

Appendix A presents the initial comprehensive evaluation matrix and an accompanying series of sound wall layout exhibits. These layout exhibits present the conceptual engineering review undertaken by the project team to determine the feasibility of each sound wall and provide noise abatement data, which resulted in the following list of Feasible Early Action Sound Walls.

TABLE ES-1  
Initial List of Feasible Early Action Sound Walls

City	Route/Location of SW	Existing <sup>a</sup> /New Sound Wall?	Length (feet)	Height (feet)	Sound Wall #
Long Beach	SB I-710/near Ocean	New	754	10	500/600
Long Beach	SB I-710/PCH to Willow	New	5,326	16	501/601 Segment 1, 2 & 3
	SB I-710/Willow to Wardlow	New	5,153	16	502/602 Segment 1 & 2
	SB I-710/Wardlow to 405	Existing <sup>a</sup>	1,323	10	502/602 Segment 3E
Long Beach	SB 405/I-710 to Pacific	Existing <sup>a</sup>	588	10	405B Segment 2E
	SB 405/UPRR to Wardlow	Existing <sup>a</sup>	1,741	10	405B Segment 3E
	NB 405/Wardlow to UPRR	Existing <sup>a</sup>	1,459	10-14	405C Segment 1E

TABLE ES-1  
Initial List of Feasible Early Action Sound Walls

City	Route/Location of SW	Existing <sup>a</sup> /New Sound Wall?	Length (feet)	Height (feet)	Sound Wall #
	NB 405/Los Cerritos Elementary to Cedar	New	2,660	TBD <sup>c</sup>	405C Segment 2
	NB 405/Long Beach to Atlantic	New	902	TBD <sup>c</sup>	405C Segment 3
Long Beach	SB I-710/Long Beach to Adams	New	2,083	16	503A/603A Segment 2 & 503B/603B Segment 1
	SB I-710/Adams to Artesia	Existing <sup>a</sup>	3,273	8-12	503B/603B Segment 2E
Long Beach	SB I-710/at WB 91 Connector Ramp	Existing <sup>a</sup>	1,813	10	504/608 Segment 1E
	SB I-710/at EB 91 Connector Ramp	Existing <sup>a</sup>	788	10	504/608 Segment 2E
Compton	SB I-710/91 to Atlantic	New	2,236	14	504/608 Segment 3
	SB I-710/Atlantic to Alondra	Existing <sup>a</sup>	774	12	505/610 Segment 2E
	SB I-710/at On-ramp from Alondra	Existing <sup>a</sup>	604	12	506/611 Segment 2E
	SB I-710/Lindsey to Myrrh	Existing <sup>a</sup>	650	10-12	507/612 Segment 1E
	SB I-710/Myrrh to Somerset	New	1,351	16	507/612 Segment 2
	SB I-710/Somerset to Rosecrans	Existing <sup>a</sup>	2,232	10-12	507/612 Segment 4E
Lynwood	SB I-710/at Proposed Rosecrans Exit	New	1,692	14	614 Segment 3 & 4
	SB I-710/Rosecrans to 105	Existing <sup>a</sup>	1,895	8-12	614 Segment 5E
South Gate	SB I-710/at Wright Exit	Future Existing <sup>b</sup>	1,953	Unknown <sup>d</sup>	509/616 Segment 4E
	SB I-710/Miller to Southern	New	2,151	16	509/616 Segment 2 & 3
Bell Gardens	NB I-710/Patata to Clara	New	2,634	16	510/617A Segment 1
	NB I-710/South of Patata	Existing <sup>a</sup>	386	8-12	510/617A Segment 2E
	NB I-710/Clara to Florence	Existing <sup>a</sup>	1,486	8-12	510/617A Segment 3E
	NB I-710/Florence to Loveland	Existing <sup>a</sup>	1,957	8-14	618 Segment 1E
	NB I-710/Loveland to Gage	New	1,111	18	618 Segment 2
	NB I-710/Gage to Randolph	New	1,240	18	619
Commerce	NB I-710/Washington to Rail Yard	Future Existing <sup>b</sup>	1,606	15	621A/B Segment 2E
	NB I-710/Rail Yard to I-5	Future Existing <sup>b</sup>	1,770	Unknown <sup>d</sup>	622 Segment 2E
	SB I-710/Washington to Rail Yard	Future Existing <sup>b</sup>	793	15	620B Segment 2E
	SB I-710/Rail Yard to I-5	Future Existing <sup>b</sup>	950	Unknown <sup>d</sup>	622A Segment 2E
East LA	NB I-710/North of Olympic	Future Existing <sup>b</sup>	534	Unknown <sup>d</sup>	515 Segment 2E
	NB I-710/Olympic to Humphreys	Future Existing <sup>b</sup>	2,537	Unknown <sup>d</sup>	516 Segment 2E
	NB I-710/South of Humphreys	Existing <sup>a</sup>	705	12	516 Segment 3E
	NB I-710/Humphreys to 4 <sup>th</sup>	Existing <sup>a</sup>	733	12	516 Segment 4E
	NB I-710/Betty to 4 <sup>th</sup>	Existing <sup>a</sup>	495	6-12	516 Segment 5E
	NB I-710/4 <sup>th</sup> to Ford	Existing <sup>a</sup>	252	12	516 Segment 6E

TABLE ES-1  
Initial List of Feasible Early Action Sound Walls

City	Route/Location of SW	Existing <sup>a</sup> /New Sound Wall?	Length (feet)	Height (feet)	Sound Wall #
	SB I-710/Whittier to Hubbard	Future Existing <sup>b</sup>	1,166	Unknown <sup>d</sup>	519 Segment 2E
	SB I-710/Hubbard to Humphreys	Existing <sup>a</sup>	2,007	10-12	519 Segment 3E
	SB I-710/South of 3 <sup>rd</sup> Street	Existing <sup>a</sup>	386	10	519 Segment 4E
	SB I-710/Humphreys to Gratian	Existing <sup>a</sup>	437	10	519 Segment 5E

<sup>a</sup>Potential improvements to existing sound walls will consist of aesthetic improvements and/or increased height (as structural properties allow).

<sup>b</sup>Future existing sound walls are currently planned for construction by Caltrans under other projects. Only potential improvement would consist of aesthetic treatment.

<sup>c</sup>Sound wall height pending results from ongoing noise analysis.

<sup>d</sup>Sound wall height unknown due to insufficient information about these sound walls.

Notes:

EB = eastbound

ID = identification number

LA = Los Angeles

NB = northbound

No. = number

PCH = Pacific Coast Highway

SB = southbound

UPRR = Union Pacific Railroad

WB = westbound



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# Acronyms and Abbreviations

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GCCOG	Gateway Cities Council of Governments
I	Interstate
Metro	Los Angeles County Metropolitan Transportation Authority
PCH	Pacific Coast Highway

# Introduction

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## 1.1 Background

Improvements to the Interstate (I) 710 corridor are important to the local community—especially those improvements associated with goods movements and, more importantly, mitigating congestion and improving air quality. The Los Angeles County Metropolitan Transportation Authority (Metro), the California State Department of Transportation (Caltrans), and five other project partners initiated an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to analyze the range of possible improvement strategies for I-710 between the Ports of Long Beach and Los Angeles, and State Route (SR) 60. With completion of the final I-710 EIR/EIS still several years away, Metro, in conjunction with the Gateway Cities Council of Governments (GCCOG), decided to use Measure R funding to implement Early Action Projects (EAP). One such project is the I-710 Sound Wall Feasibility Study. This effort is focused on evaluating the I-710 corridor and interchange areas at the I-405, I-105, I-5, and SR 60 for opportunities where sound walls that have been identified as necessary can be built in advance of the larger projects. The purpose is to improve the quality of life of local residents.

This effort examines the sound walls recommended in the *Noise Study Report* prepared by Caltrans (2012a), and also evaluates all existing sound walls and those currently planned. The work involves a feasibility/constructability analysis to identify locations where sound walls can be built in advance of the full I-710 Project (Initial List of Feasible Early Action Sound Walls); while remaining compatible (as constructed) with the future post-project condition and minimizing throwaway cost.

This technical memorandum summarizes the methodology used to identify the Initial List of Feasible Early Action Sound Walls, and the results for the sound wall locations that have initially been shown to be feasible and could be implemented “early.”

## 1.2 Scope of Study

The project kicked off with an extensive data gathering and review effort; the result was the creation of an aerial map of the corridor that included all planned or ongoing projects and all EIR/EIS alternatives to improve the I-710. All existing, planned, and proposed sound walls proposed in the Caltrans noise study were then incorporated onto the corridor map and evaluated for conflicts with any other projects, priorities, or future improvements. Proposed sound walls that conflicted with proposed improvements were eliminated along with any sound walls that could only be built with proposed improvements. Based on this review and extensive engineering evaluation, the project team identified approximately 5 miles of new sound walls that can be built in advance of the larger project and 7 miles of existing sound walls for potential aesthetic enhancement opportunities, as shown in Figure 1.

FIGURE 1-1  
**Summary of Initial List of Feasible Early Action Sound Walls**

Feature <sup>a</sup>	Proposed or Existing Sound Walls (Caltrans NADR) (Miles)	Feasible Proposed or Existing Sound Walls (Miles)
New Sound Wall	19.7 miles	5.6 miles
Existing Sound Walls – Improvements and Aesthetics	13.3 miles	4.1 miles <sup>a</sup>
Existing Sound Walls – Aesthetics Only	See above	2.9 miles <sup>a</sup>

<sup>a</sup>Final length of existing sound walls feasible for improvement and/or aesthetic treatment is pending further noise studies and a corridorwide aesthetics program.

Note:

NADR = Noise Abatement Decision Report

The project team developed a comprehensive list of feasibility measures for evaluation of all sound walls in the study. This list includes opportunities, as well as constraints resulting in sound walls not being feasible for EAP and is presented in Section 2. It should be noted that all sound walls in the Caltrans NADR (Caltrans, 2012b), discussed in more detail below, will be constructed as part of the I-710 EIR/EIS project. This study is merely looking for sound walls included in the NADR that could be constructed in advance of the I-710 improvement project.

Once the list of feasibility measures was developed, the project team conducted a comprehensive review of the feasibility of three types of sound walls within the project limits:

1. Proposed new sound walls identified in the I-710 Corridor Improvements Project: These sound walls have been analyzed in the *Noise Study Report* (Caltrans, 2012a) and NADR (Caltrans, 2012b). The objective is to construct as many of these sound walls as possible, without incurring throwaway costs, while avoiding conflicts. In addition, the team developed potential design refinements to the sound walls in conflict with existing freeways or streets so that they can be constructed early.
2. Existing sound walls in the corridor: The objective is to aesthetically enhance existing walls. Additional noise studies are also being conducted at selected locations to explore opportunities for sound wall height increases or changes that would further enhance noise reduction.
3. New sound walls that are being constructed or planned to be constructed: These include two new sound walls at the I-710/Washington Boulevard interchange (EA 002344), and several future sound walls at various locations on I-710 (EA 202114). The objective is to enhance the aesthetics of the existing sound walls whenever possible.

Figure 1-2 presents a comprehensive corridor map indicating the locations of the sound walls evaluated during this review and includes the locations of all sound walls mentioned in Items 1 to 3 above. Figure 1-3 presents the locations of the sound walls included in the Initial List of Feasible Early Action Sound Walls.



FIGURE 1-3  
Initial List of Feasible Early Action Sound Walls



## 1.3 Gateway Cities Council of Governments Consultation Process

The process is a collaborative effort between Metro, GCCOG, and Caltrans, and includes extensive stakeholder coordination through the existing I-710 EIR/EIS outreach framework. The coordination process began with monthly joint Project Development Team meetings, during which the project process is discussed and feedback and direction are received and incorporated. The process included I-710 Technical Adversary Committee (TAC), I-710 Corridor Advisory Committee (CAC), and I-710 Project Committee (PC) presentations, along with question and answer sessions. Through this iterative process, the objective has been to respect the community, incorporate community feedback, and seek out opportunities for meaningful investments along the I-710 corridor that provide lasting value. The remainder of this report presents the finding of this feasibility review and the Initial List of Feasible Early Action Sound Walls that was developed as a result of the review process.

## 1.4 Coordination with Other Studies

The project team has been in close coordination with other consultants and agencies involved on other concurrent studies and projects listed below:

- I-710 EIR/EIS
- I-710 Utility and Freight Corridor Studies (South, Middle and North Segments)
- I-710 Corridor Aesthetics Study
- Ongoing and/or planned construction between Los Angeles River and SR-60 led by Caltrans

## SECTION 2

# Criteria (Guiding Principles)

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The list of opportunities and constraints that were the basis of determining the classification of the sound walls is presented below.

- Opportunities
  - Existing sound walls that can be improved and/or aesthetically treated
  - New sound walls that can be built with a refined design
  - New and existing sound walls that are consistent with environmental process
- Constraints
  - Sound walls that conflict with proposed design
  - Sound walls that are located in the middle of existing streets or freeways
  - Sound walls that are located either significantly above or below current ground level or are on structures not yet constructed
  - Sound walls that cross existing right-of-way boundaries
  - Sound walls that destroy existing utilities or are in the way of future utilities
  - Sound walls that impact community viewsheds
  - Sound walls that do not meet standards for safe operation of all streets and freeways

# Wall Siting Analysis

## 3.1 Overview

## 3.2 Wall Discussion

The sound walls analyzed are discussed from south to north starting in Long Beach and ending in East Los Angeles.

### 3.2.1 Sound Wall No. 500/600 (Feasible)

#### 3.2.1.1 Overall View (Long Beach)

This proposed sound wall is near the southwest corner of the Shoreline Drive and Golden Shore Street intersection, east of the Los Angeles River. The sound wall will follow the edge of shoulder along the off-ramp from Shoreline Drive to Golden Shore Street.

#### 3.2.1.2 Analysis

The proposed sound wall is intended to provide noise reduction for the Golden Shore RV Park. The length will be approximately 754 feet and the sound wall will be new construction (no existing sound wall at this location). The proposed height is 10 feet. No future improvements have been identified for this off-ramp and therefore the proposed sound wall will be constructed to match existing grades and significant grading will not be required.

**Structural and Geotechnical.** The sound wall will be constructed on a concrete barrier and a footing comprised of small-diameter Cast-in-Drilled-Holes (CIDH) piles, in accordance with Caltrans Standard Plans.

The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design. The proposed CIDH piles will extend through cohesionless sands. The cohesionless soils have significant potential to slough and cave during CIDH pile installation. Additional considerations, such as using steel casing or placing concrete under slurry, may be required.

**Constructability.** The existing embankment slope between the ramp and the RV Park reaches 20' in height near the intersection at Golden Shore Street. This existing slope will restrict vehicular access and therefore construction area will be along the ramp where the steep slope exists. If shoulder does not provide sufficient space for construction, short-term lane and/or ramp closures may be required. It is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic.

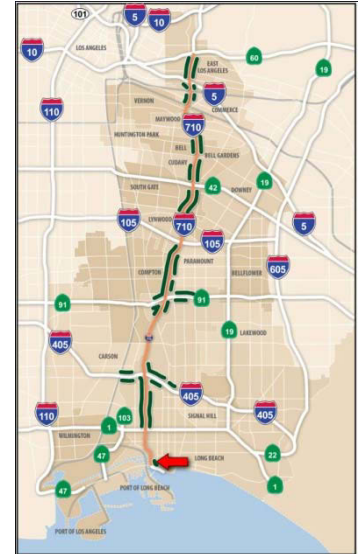
**Drainage and Utilities.** The existing drainage system will not be impacted.

Several street light poles are located within close proximity to the proposed sound wall and therefore relocation may be required upon further review. The existing cell phone tower and the associated equipment room located near the end of the proposed sound wall are not expected to be impacted by construction.

**Right of Way.** Temporary construction easement from the Golden Shore RV Park will be required for construction access and staging.

#### 3.2.1.3 Reference to Exhibits

See Row No. 1 and Exhibit No. EX-1 of the Evaluation Matrix and Exhibits, respectively.



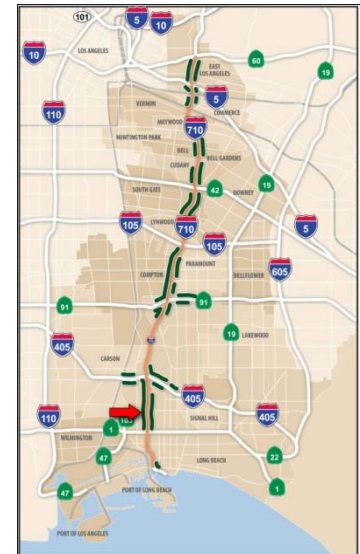
## 3.2.2 Sound Wall No. 501/601 Segments 1, 2 and 3 (Feasible)

### 3.2.2.1 Overall View (Long Beach)

This sound wall is proposed along SB I-710 between the Pacific Coast Highway and Willow Street interchanges. Segment 1 will begin near PCH at the SB I-710 off-ramp, and continue along the existing off-ramp and the west side right of way until south of 21<sup>st</sup> Street. Segment 2 will follow the future edge of shoulder of the ultimate I-710 freeway until south of 24<sup>th</sup> Street. Segment 3 will continue along the existing SB I-710 on-ramp from Willow Street and eventually terminate near Willow Street.

### 3.2.2.2 Analysis

The feasibility analysis concludes that this sound wall is feasible for early action. The sound wall will provide noise reduction for the residences located on the west side of the freeway. The sound wall length will be approximately 5,326 feet and it will replace the existing 10 to 12-foot-high sound wall located along the right of way within the same limits. The proposed height is 16 feet. Since the proposed sound wall is located adjacent to the future widening of I-710, it will be constructed to match the future designed elevations, which can be higher or lower than the existing grade depending on the location.



**Structural and Geotechnical.** The majority of the sound wall will be constructed on a concrete barrier and a footing comprised of small-diameter CIDH piles, in accordance with Caltrans Standard Plans. In areas where the freeway is planned to be lowered in the ultimate condition, the difference between the existing and future designed elevations may be large enough to require a retaining wall. Prior to construction, the existing sound wall along with the foundation will be demolished and removed.

The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design. The proposed CIDH piles will extend through cohesionless sands. The cohesionless soils have significant potential to slough and cave during CIDH pile installation. Additional considerations, such as using steel casing or placing concrete under slurry, may be required.

**Constructability.** Many private residences share their property boundaries with Caltrans so in most cases the existing sound wall also serves as a privacy wall. Demolition of the existing sound wall and construction of the new sound wall would require temporary access from the private owners. It is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic and the freeway shoulder will be closed during construction. If shoulder does not provide sufficient space for construction, short-term lane and/or ramp closures may be required.

**Drainage and Utilities.** There is a drainage swale between the roadway and the existing sound wall which starts at PCH in the south and ends just south of the Willow Street on-ramp. This swale will be maintained and reestablished if it is affected by construction.

The existing Southern California Edison (SCE) poles carrying overhead power and communication lines are in close proximity to the existing Caltrans right of way and the existing sound wall. Many of these poles would be in direct conflict with the proposed sound wall and therefore would need to be relocated. In addition, an existing sanitary sewer line between Hill Street and 23<sup>rd</sup> Street is located inside Caltrans right of way, and would be in conflict with the proposed sound wall. Relocation of this sewer line may be needed if it is an active utility. Lastly, multiple underground oil pipelines are located within the street right of way of Burnett Street and they cross underneath I-710. The foundation for the proposed sound wall will be designed to avoid any impact including additional surcharge.

**Right of Way.** Since the proposed sound wall is often placed at or very close to the Caltrans right of way, temporary construction easements will be needed from many private owners. The private improvements could obstruct construction and therefore may need to be removed and reconstructed if necessary.

### 3.2.2.3 Reference to Exhibits

See Row No. 2 to 4 and Exhibit No. EX-2 and EX-3 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.3 Sound Wall No. 501/601 Segments 4 and 5 (Not Feasible)

### 3.2.3.1 Overall View (Long Beach)

Segment 4 follows the future SB I-710 off-ramp to PCH and segment 5 follows the SB I-710 on-ramp from Willow Street.

### 3.2.3.2 Analysis

Both sound wall segments are not feasible for early action because they would be located in the middle of existing on and off-ramps at the PCH and Willow Avenue interchanges, which will be completely reconfigured in the ultimate condition, or the mainline I-710 freeway.

### 3.2.3.3 Reference to Exhibits

See Row No. 5 and 6 and Exhibit No. EX-2 and EX-3 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.4 Sound Wall No. 601FC (Not Feasible)

### 3.2.4.1 Overall View (Long Beach)

This proposed sound wall follows the western edge of the future freight corridor elevated structure between PCH and Willow Street.

### 3.2.4.2 Analysis

This sound wall is not feasible for early action because it would be located on structures not yet constructed.

### 3.2.4.3 Reference to Exhibits

See Row No. 7 and Exhibit No. EX-2 and EX-3 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.5 Sound Wall No. 502/602 Segments 1, 2 and 3E (Feasible)

### 3.2.5.1 Overall View (Long Beach)

This sound wall is proposed along SB I-710 between Willow Street and just north of Wardlow Road. Segment 1 will begin near Willow Street at the SB I-710 off-ramp, and continue along the existing off-ramp and the west side right of way until north of 27<sup>th</sup> Street. Segment 2 will follow the future edge of shoulder of the ultimate I-710 freeway until 34<sup>th</sup> Street. Wall segment 3E is the existing sound wall between 34<sup>th</sup> Street and Baker Street.

### 3.2.5.2 Analysis

The feasibility analysis concludes that this sound wall is feasible for early action. The proposed sound wall will provide noise reduction for the residences located on the west side of the freeway. The total sound wall length (all three segments) will be approximately 6,476 feet and sound wall segments 1 and 2 will replace the existing 10-foot-high sound wall within the same limits. The proposed height is 16 feet. Since the proposed sound wall will be located adjacent to the future widening of I-710, it will be constructed to match the future designed elevations, which can be higher or lower than the existing grade depending on the location. Segment 3E, an existing 10-foot-high sound wall, will be aesthetically treated to match other new sound walls in the corridor.



**Structural and Geotechnical.** The majority of the sound wall will be constructed on a concrete barrier and a footing comprised of small-diameter CIDH piles, in accordance with Caltrans Standard Plans. In areas where the freeway is planned to be lowered in the ultimate condition, the difference between the existing and future designed elevations may be large enough to require a retaining wall. Prior to construction of the new sound wall, the existing sound wall along with the foundation will be demolished and removed.

The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design. The proposed CIDH piles will extend through cohesionless sands. The cohesionless soils have significant potential to slough and cave during CIDH pile installation. Additional considerations, such as using steel casing or placing concrete under slurry, may be required.

**Constructability.** Many private residences share their property boundaries with Caltrans so in most cases the existing sound wall also serves as a privacy wall. Demolition of the existing sound wall and construction of the new sound wall would require acquisition of temporary construction easement from the private owners. It is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic and the freeway shoulder will be closed during construction. If shoulder does not provide sufficient space for construction, short-term lane and/or ramp closures may be required.

**Drainage and Utilities.** There is a drainage swale between the roadway and the existing sound wall which runs from Willow Street to just south of the I-405 on-ramp. This swale will be maintained and reestablished if it is affected by construction. The existing Southern California Edison (SCE) poles carrying overhead power and communication lines are in close proximity to the existing Caltrans right of way and the existing sound wall. Many of these poles would be in direct conflict with the proposed sound wall and therefore would need to be relocated. Lastly, multiple underground oil pipelines are located within the street right of way of 28<sup>th</sup> Street and they cross underneath I-710. The foundation for the proposed sound wall will be designed to avoid any impact including additional surcharge.

**Right of Way.** Since the proposed sound wall will be placed at or very close to the Caltrans right of way, temporary construction easements will be needed from many private owners. The private improvements could obstruct construction and therefore may need to be removed and reconstructed if necessary. In addition, a minor right of way acquisition (“sliver” take) will be needed from two private parcels just south of 28<sup>th</sup> Street to place the sound wall at the ultimate location.

### 3.2.5.3 Reference to Exhibits

See Row No. 8 to 10 and Exhibit No. EX-3 to EX-6 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.6 Sound Wall No. 502/602 Segments 4 and 5 (Not Feasible)

### 3.2.6.1 Overall View (Long Beach)

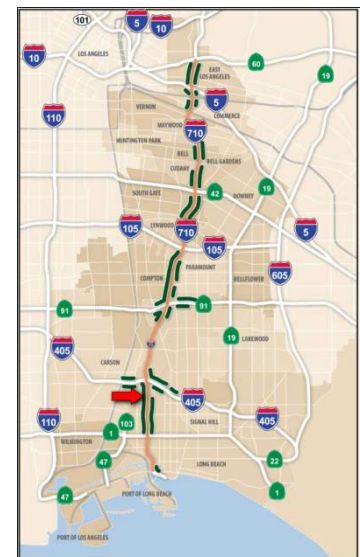
Segment 4 will be located along the edge of shoulder of the future SB I-710 off-ramp to Willow Street and segment 5 will be located along the edge of shoulder of the future NB I-405 to SB I-710 connector ramp.

### 3.2.6.2 Analysis

Segment 4 is not feasible for early action because it would be located in the middle of the existing on and off-ramps at the Willow Avenue interchange, which will be completely reconfigured in the ultimate condition. Segment 5 is not feasible for early action because the future connector ramp would impact a number of residences and constructing this sound wall early would require significant right of way acquisition. Under Alternative 5 which does not include the dedicated freight corridor, the future connector ramp would avoid the residential impacts and therefore a portion of segment 5 would become feasible for early action.

### 3.2.6.3 Reference to Exhibits

See Row No. 11 and 12 and Exhibit No. EX-3 to EX-6 of the Evaluation Matrix and Exhibits, respectively.



### 3.2.7 Sound Wall No. 602FC (Not Feasible)

#### 3.2.7.1 Overall View (Long Beach)

This proposed sound wall will be located along the western edge of the future freight corridor elevated structure between Willow Street and 31<sup>st</sup> Street.

#### 3.2.7.2 Analysis

This sound wall is not feasible for early action because it would be located on structures not yet constructed.

#### 3.2.7.3 Reference to Exhibits

See Row No. 13 and Exhibit No. EX-3 and EX-4 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.8 Sound Wall No. 503/603 (Not Feasible)

#### 3.2.8.1 Overall View (Long Beach)

The proposed sound wall will be placed at the edge of shoulder along the future SB I-405 to SB I-710 connector ramp within the I-405/I-710 interchange.

#### 3.2.8.2 Analysis

This sound wall is not feasible for early action because it would be located in the middle of existing ramps within the I-405/I-710 interchange.

#### 3.2.8.3 Reference to Exhibits

See Row No. 11 and 12 and Exhibit No. EX-3 to EX-6 of the Evaluation Matrix and Exhibits, respectively.

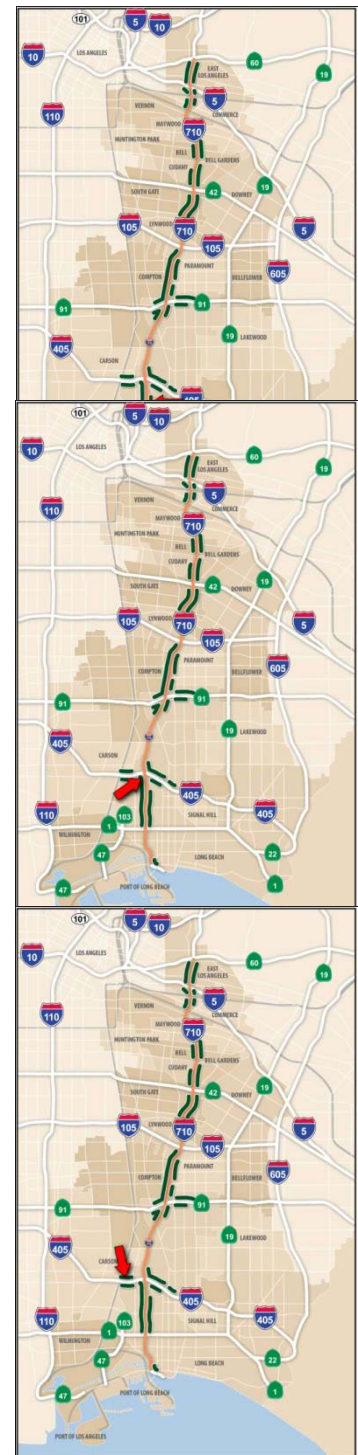
### 3.2.9 Sound Wall No. 405A Segments 1E & 2 (Not Feasible)

#### 3.2.9.1 Overall View (Long Beach)

This sound wall is proposed along NB I-405 between Santa Fe Avenue and Alameda Street. Segment 1E is an existing sound wall at the edge of shoulder along the off-ramp to Alameda Street. Segment 2 is a proposed sound wall located along the future edge of shoulder of the ultimate NB I-405, replacing the existing sound wall within the same limits.

#### 3.2.9.2 Analysis

Both sound wall segments are not feasible for early action because the sound wall location would be in conflict with other projects along the I-405 corridor.



### 3.2.9.3 Reference to Exhibits

See Row No. 15 and 16 and Exhibit No. EX-7 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.10 Sound Wall No. 405B Segment 1 (Not Feasible)

### 3.2.10.1 Overall View (Long Beach)

This sound wall is proposed to be placed at the edge of shoulder along the NB I-710 to SB I-405 connector ramp, ending just southeast of the UPRR overhead structure to join with the existing 10-foot-high sound wall.

### 3.2.10.2 Analysis

This sound wall is not feasible for early action because the majority of it would be located on structures not yet constructed.

### 3.2.10.3 Reference to Exhibits

See Row No. 17 and Exhibit No. EX-8 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.11 Sound Wall No. 405B Segments 2E and 3E (Feasible)

### 3.2.11.1 Overall View (Long Beach)

Segments 2E and 3E are existing sound walls located along the edge of shoulder of the existing NB I-710 to SB I-405 connector ramp and continuing onto the SB I-405 mainline and the off-ramp to Wardlow Road.

### 3.2.11.2 Analysis

Both existing 10-foot-high sound walls will be aesthetically treated to be consistent with other new sound walls in the corridor. It should be noted that both of these sound walls would be entirely or partially in conflict with the proposed design and will be replaced by SW-405B segment 1 in the ultimate condition. The total sound wall length (both segments) will be approximately 2,329 feet.

### 3.2.11.3 Reference to Exhibits

See Row No. 18 and 19 and Exhibit No. EX-8 of the Evaluation Matrix and Exhibits, respectively.

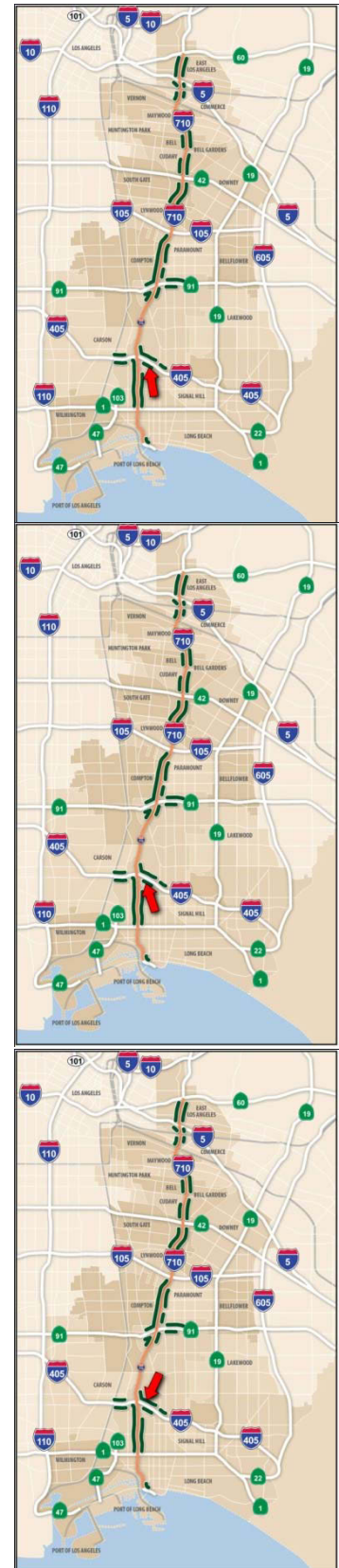
## 3.2.12 Sound Wall No. 405C Segments 1E, 2 and 3 (Feasible)

### 3.2.12.1 Overall View (Long Beach)

Segment 1E is an existing sound wall located along the existing NB I-710 between the on-ramp from Wardlow Road to the connector ramp to NB I-405. Segment 2 is a proposed new sound wall that will start at the terminus of segment 1E near Cedar Avenue, follow the existing right of way along NB I-405, veer north and follow the easterly railroad right of way to the Los Cerritos Elementary School. Segment 3 is a proposed new sound wall at the Caltrans right of way along the NB Collector/Distribution road between Atlantic Avenue and Long Beach Blvd.

### 3.2.12.2 Analysis

The feasibility analysis concludes that these sound walls are feasible for early action. Collectively they will provide noise reduction for the residential area northeast of the I-405/I-710 interchange as well as the Los Cerritos



Elementary School and Los Cerritos Park located east of the Metro Blue line along Del Mar Avenue. The total sound wall length (all three segments) will be approximately 5,021 feet.

Segment 1E, an existing sound wall with heights varying from 10' to 14', will be aesthetically treated to match other new sound walls in the corridor.

The southern portion of segment 2 will replace the existing private wall between Country Club Drive and NB I-405. The northern portion of segment 2 will be located within the Metro right of way with at a sufficient setback from the railroad tracks. No future improvements have been identified in this area and therefore the proposed sound wall will be constructed to match existing grades and significant grading will not be required. The proposed height is XX feet.

Segment 3 will be located within Caltrans right of way and match existing grades. The proposed height is XX feet.

**Structural/Geotechnical.** Portions of sound wall 405C are located within an Alquist-Priolo Earthquake Fault Zone. Therefore, the site should be evaluated during final design for potential ground surface rupture.

**Constructability.** Demolition of the existing private wall along Country Club Drive, a private road, would require acquisition of temporary construction easement from the private owners. In addition, it is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic and the freeway shoulder will be closed during construction. If shoulder does not provide sufficient space for construction, short-term lane and/or ramp closures may be required.

### 3.2.12.3 Reference to Exhibits

See Row No. 20 to 22 and Exhibit No. EX-8 and EX-9 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.13 Sound Wall No. 503A/603A Segment 1 (Not Feasible)

### 3.2.13.1 Overall View (Long Beach)

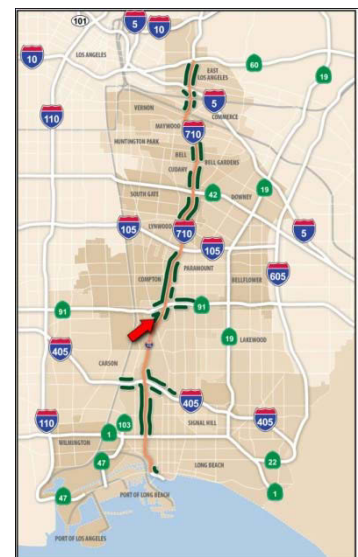
This sound wall segment is proposed at the edge of shoulder along the future SB I-710 off-ramp to Long Beach Boulevard.

### 3.2.13.2 Analysis

This sound wall segment is not feasible for early action because it would be located in the middle of the existing off-ramp to Long Beach Boulevard.

### 3.2.13.3 Reference to Exhibits

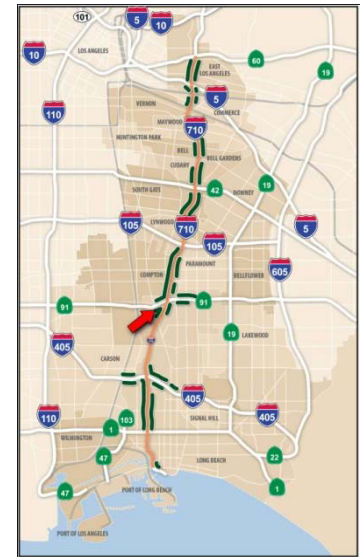
See Row No. 23 and Exhibit No. EX-10 of the Evaluation Matrix and Exhibits, respectively.



### 3.2.14 Sound Wall No. 503A/603A Segment 2 and 503B/603B Segments 1 and 2E (Feasible)

#### 3.2.14.1 Overall View (Long Beach)

Sound wall No. SW-503A/603A segment 2 is proposed at the edge of shoulder along the future SB I-710 between Gordon Street and Barclay Street. This sound wall then joins sound wall No. 503B/603B Segment 1, which will be located at the right of way between Barclay Street and Adams Street. Sound wall No. 503B/603B Segment 2E is an existing sound wall located in between Coolidge Park and the freeway ramps, and it follows the on-ramp from Artesia Boulevard.



#### 3.2.14.2 Analysis

The feasibility analysis concludes that all three sound wall segments are feasible for early action. Collectively they will provide noise reduction for the residential area bound by I-710 freeway, SR-91 freeway and Long Beach Boulevard, as well as Collidge Park. The total sound wall length (all three segments) will be approximately 5,356 feet.

Within the limits of sound wall No. 503A/603A segment 2, the future I-710 freeway will be widened in the ultimate condition and therefore the proposed sound wall, located at the future edge of shoulder, will be constructed to match the future design elevations. The proposed sound wall will conflict with the existing 8'-high sound wall which is situated on an 8'-high embankment, both of which will need to be removed.

Sound wall No. 503B/603B segment 1 is at the same location as the existing 8'-high sound wall and it is proposed to be 16' high. Since the future edge of shoulder is planned to be east of the existing (further away from the existing sound wall), the existing sound wall location will be compatible with the ultimate condition.

Sound wall No. 503B/603B segment 2E, an existing sound wall with heights varying from 8' to 12', will be aesthetically treated to match other new sound walls in the corridor.

**Structural and Geotechnical.** The existing sound wall within the limits of Sound wall No. 503B/603B segment 1 will likely need to be replaced with a new and taller wall due to structural limitations, as opposed to maintaining the existing wall and adding height.

The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design.

**Constructability.** It is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic and the freeway shoulder will be closed during construction. White Avenue, a frontage road, will be used to access the construction area and temporary traffic control devices will be installed to delineate work area. A portion of the connector ramp from EB SR-91 to SB I-710 may need to be temporarily restriped to provide a wider right shoulder which will be closed during construction. If the existing shoulder does not provide sufficient space for construction, short-term lane and/or ramp closures may be required. To avoid impacts to the natural environment of Coolidge Park, construction should occur from within the Caltrans right of way to the maximum extent possible.

**Drainage and Utilities.** Since the area between the I-710 freeway and White Avenue will be largely re-graded, a new drainage system will be needed to properly collect runoffs. The feasibility of installing a portion of the ultimate drainage system will be evaluated.

#### 3.2.14.3 Reference to Exhibits

See Row No. 24 to 26 and Exhibit No. EX-10, EX-11 and EX-13 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.15 Sound Wall No. 604 (Not Feasible)

#### 3.2.15.1 Overall View (Long Beach)

This sound wall is proposed at the edge of dike on the east side of Los Angeles River just south of Artesia Boulevard.

#### 3.2.15.2 Analysis

This sound wall segment is not feasible for early action because it would significantly impact viewsheds of the mobile home park on the east side of the Los Angeles River.

#### 3.2.15.3 Reference to Exhibits

See Row No. 27 and Exhibit No. EX-12 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.16 Sound Wall No. 605A Segments 1E and 2E and Sound Wall No. 605B Segments 1E and 2E (Not Feasible)

#### 3.2.16.1 Overall View (Long Beach)

SW-605A segments 1E and 2E are two existing sound walls on WB SR-91 between Atlantic Avenue and Orange Avenue. Similarly, SW-605B segments 1E and 2E are existing sound walls on EB SR-91 within the same limits.

#### 3.2.16.2 Analysis

Both sound walls are not feasible for early action (specifically aesthetics treatment) because they would be in conflict with the proposed design of the future I-710 freight corridor.

#### 3.2.16.3 Reference to Exhibits

See Row No. 28 to 31 and Exhibit No. EX-14 and EX-15 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.17 Sound Wall No. 606 and No. 607 (Not Feasible)

#### 3.2.17.1 Overall View (Long Beach)

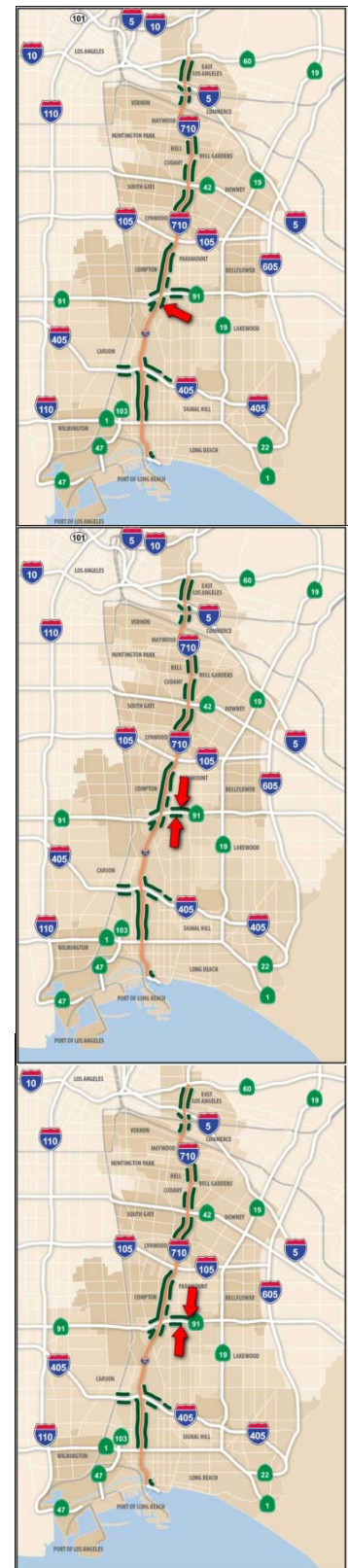
Sound wall No. 606 is proposed at the edge of shoulder along the future elevated connector from NB freight corridor to EB SR-91 between Atlantic Avenue and Orange Avenue. Sound wall No. 607 is proposed at the edge of shoulder along the future elevated connector from WB SR-91 to SB freight corridor between Atlantic Avenue and Cherry Avenue.

#### 3.2.17.2 Analysis

This sound wall is not feasible for early action because it would be located on structures not yet constructed.

#### 3.2.17.3 Reference to Exhibits

See Row No. 32 to 33 and Exhibit No. EX-14 and EX-15 of the Evaluation Matrix and Exhibits, respectively.



## 3.2.18 Sound Wall No. 504/608 Segments 1E, 2E and 3 (Feasible)

### 3.2.18.1 Overall View (Compton)

Segment 1E is an existing 10' high sound wall along the SB I-710 to WB SR-91 connector ramp structure, starting at 68th Way and ending at the centerline of I-710. Segment 2E is an existing 10' high sound wall along the SB I-710 to EB SR-91 connector ramp between 68th Way and Artesia Boulevard. Segment 3 is a new sound wall proposed at the future edge of shoulder along the SB I-710 to eastbound SR-91 connector between 68th Way and Atlantic Avenue, replacing the existing sound wall within the same limits.

### 3.2.18.2 Analysis

The feasibility analysis concludes that these sound walls are feasible for early action. Collectively they will provide noise reduction for the residential area west of I-710 freeway and north of SR-91 freeway in Compton and Long Beach. The total sound wall length will be approximately 4,837 feet.

Segments 1E and 2E, existing sound walls at a height of 10', will be aesthetically treated to match other new sound walls in the corridor. It should be noted that both of these sound walls would be in conflict with the proposed design in the ultimate condition.

Within the limits of segment 3, the future connector ramp will be shifted to the west from its current location by several feet, and therefore the existing 8' to 12' high sound wall would be in conflict with the proposed design. The proposed sound wall, designed to replace this existing sound wall, will be located at the future edge of shoulder and designed to match the elevations of the future ramp, which are several feet higher than existing. The proposed sound wall height is 14'.

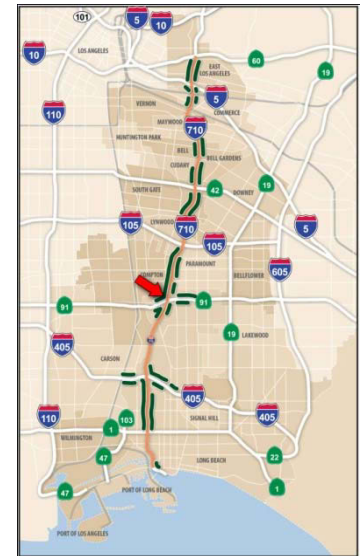
**Structural and Geotechnical.** The first 350' of the sound wall segment 3 north of the ramp structure will be in parallel to an existing retaining wall along the east side of Cochella Avenue. The height of the retaining wall varies from 6' to 10' and it supports the embankment of the SB I-710 to WB SR-91 connector ramp. To protect this existing retaining wall in place, the proposed sound wall and the associated ramp work should be designed and constructed to not impose any significant surcharge onto the existing retaining wall.

As sound wall segment 3 approaches Atlantic Avenue, the existing Caltrans right of way expands to the west and appears to provide sufficient room for an embankment slope to accommodate the future widening and sound wall construction. The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design.

**Constructability.** It is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic and the freeway shoulder will be closed during construction. Cochella Avenue, a frontage road, will be used to access the construction area and temporary traffic control devices will be installed to delineate work area. The right lane along the two-lane connector ramp from SB I-710 to EB SR-91 may need to be temporarily closed during construction if the existing shoulder does not provide sufficient space for construction.

**Drainage and Utilities.** There are several existing drainage inlets along the shoulder of the SB I-710 to WB SR-91 connector ramp which should be protected in place to collect runoffs from the existing paved areas. A temporary drainage system will be needed to collect runoffs from the new unpaved areas between the proposed sound wall and the existing shoulder.

A utility corridor including SCE overhead transmission lines, underground telecommunication lines, natural gas lines, and water lines crosses segment 3 of sound wall No. 504/608. Foundation of the proposed sound wall and retaining wall will be designed to avoid impacts to any underground pipeline crossings.



### 3.2.18.3 Reference to Exhibits

See Row No. 34 to 36 and Exhibit No. EX-11, EX-13 and EX-16 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.19 Sound Wall No. 609A and No. 609B (Not Feasible)

### 3.2.19.1 Overall View (Long Beach)

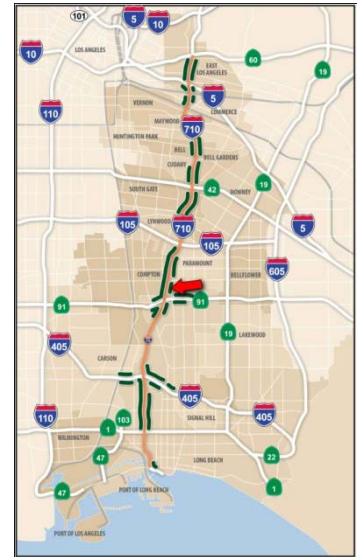
Both sound walls are proposed at the edge of dike on the east side of Los Angeles River between Atlantic Boulevard and Alondra Boulevard.

### 3.2.19.2 Analysis

This sound wall segment is not feasible for early action because it would significantly impact viewsheds of the residential area on the east side of the Los Angeles River.

### 3.2.19.3 Reference to Exhibits

See Row No. 37 and 38 and Exhibit No. EX-16 and EX-17 of the Evaluation Matrix and Exhibits, respectively.



## 3.2.20 Sound Wall No. 505/610 Segment 1 and Sound Wall No. 506/611 Segment 1 (Not Feasible)

### 3.2.20.1 Overall View (Long Beach)

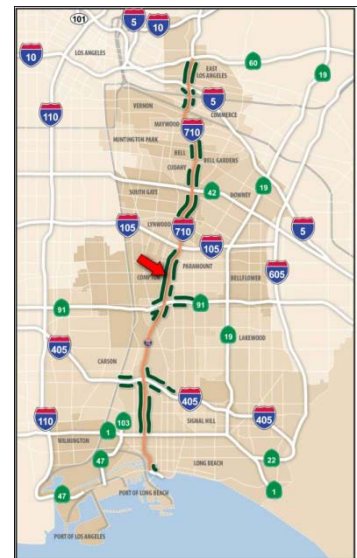
Sound Wall No. 505/610 is proposed at the edge of shoulder along the on-ramp from Alondra Boulevard to SB I-710. Sound Wall No. 506/611 is proposed at the edge of shoulder along the SB I-710 to EB SR-91 connector ramp near Alondra Boulevard.

### 3.2.20.2 Analysis

Sound Wall No. 505/610 is not feasible for early action because it would be located mostly on a ramp structure not yet constructed. Sound Wall No. 506/611 is not feasible for early action because it would be located in the middle of the two ramps in the I-710/Alondra Boulevard interchange.

### 3.2.20.3 Reference to Exhibits

See Row No. 39 and 41 and Exhibit No. EX-17 of the Evaluation Matrix and Exhibits, respectively.



## 3.2.21 Sound Wall No. 505/610 Segment 2E and Sound Wall No. 506/611 Segment 2E (Feasible)

### 3.2.21.1 Overall View (Long Beach)

SW-505/610 segment 2E and SW-506/611 segment 2E together is an existing sound wall located along the on-ramp from Alondra Boulevard to SB I-710 and the SB I-710 mainline.

### 3.2.21.2 Analysis

Both existing 12' high sound walls will be aesthetically treated to be consistent with other new sound walls in the corridor. It should be noted that both of these sound walls would be in conflict with the proposed design and will be replaced by SW-505/610 segment 1 and SW-506/611 segment 2 in the ultimate condition.



### 3.2.21.3 Reference to Exhibits

See Row No. 40 and 42 and Exhibit No. EX-17 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.22 Sound Wall No. 507/612 Segment 3 (Not Feasible)

#### 3.2.22.1 Overall View (Long Beach)

This sound wall is proposed at the future edge of shoulder along SB I-710 from the future off-ramp to Alondra Boulevard to the Somerset Boulevard.

#### 3.2.22.2 Analysis

The sound wall is not feasible for early action because it would require acquisition of several residences along Gibson Avenue and a senior housing facility in the northeastern quadrant of the I-710/Alondra Boulevard interchange. The portion of the sound wall north of Myrrh Street originally proposed at the future edge of shoulder of I-710 will be replaced by sound wall No. 507/612 segment 2, as discussed in Section 3.2.23.

#### 3.2.22.3 Reference to Exhibits

See Row No. 45 and Exhibit No. EX-17 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.23 Sound Wall No. 507/612 Segments 1E, 2 and 4E (Feasible)

#### 3.2.23.1 Overall View (Compton)

Sound wall No. 507/612 segment 1E is an existing sound wall at the right of way line along the SB I-710 between Linsley Street and Myrrh Street, just north of the I-710/Alondra Boulevard interchange. Segment 2, replacing the northern portion of segment 3 as discussed in Section 3.2.22, is proposed at the right of way line between Myrrh Street and Somerset Boulevard. Segment 4E is an existing sound wall at the right of way line between Somerset Boulevard and Rosecrans Avenue.

#### 3.2.23.2 Analysis

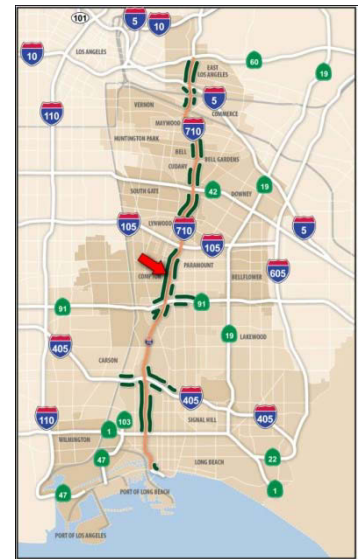
The feasibility analysis concludes that these sound walls are feasible for early action. Collectively they will provide noise reduction for the residential area west of I-710 freeway between Somerset Boulevard and Rosecrans Avenue. The total sound wall length will be approximately 4,233 feet.

Segments 1E and 4E, existing sound walls at heights of 10' to 12', will be aesthetically treated to match other new sound walls in the corridor. It should be noted that segment 1E would be in conflict with the proposed design of the future off-ramp to Alondra Boulevard in the ultimate condition.

Unlike segment 3, segment 2 will be placed at the right of way line to allow for maximum flexibility for the ultimate condition. This sound wall would only need to be designed to match the existing grades near the existing right of way line. The proposed sound wall height is 16'.

**Structural and Geotechnical.** The cut slope behind the shoulder area along SB I-710 will be evaluated for stability. The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design.

**Constructability.** It is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic and the freeway shoulder will be closed during construction. Gibson Avenue, a frontage road, will be used to access the construction area and temporary traffic control devices will be installed to delineate work area. Lastly, the existing private wall around the property at the southeast corner of the Somerset Boulevard and Gibson Avenue intersection will need to be protected and remain in place even though the proposed sound wall will be constructed only several feet away.



**Drainage and Utilities.** The existing billboard sign located just outside of Caltrans right of way near Myrrh Street will be protected in place.

**Right of Way.** A temporary construction easement from the vacant triangular parcel bound by Gibson Avenue, I-710 freeway and Somerset Boulevard may be needed if the existing cut slope behind the shoulder area is difficult to access.

### 3.2.23.3 Reference to Exhibits

See Row No. 43, 44 & 46 and Exhibit No. EX-17 to EX-19 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.24 Sound Wall No. 613 (Not Feasible)

### 3.2.24.1 Overall View (Long Beach)

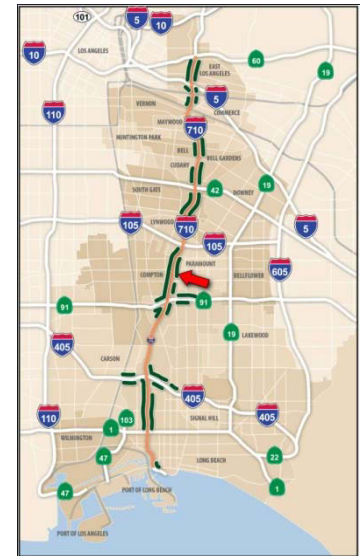
This sound wall is proposed at the edge of dike on the east side of Los Angeles River south of Somerset Boulevard adjacent to City of Compton Golf Course.

### 3.2.24.2 Analysis

This sound wall is not feasible for early action it is outside the current right of way on the east side of the Los Angeles River.

### 3.2.24.3 Reference to Exhibits

See Row No. 48 and Exhibit No. EX-17 and EX-18 of the Evaluation Matrix and Exhibits, respectively.



## 3.2.25 Sound Wall No. 614 Segments 1 and 2 (Not Feasible)

### 3.2.25.1 Overall View (Lynwood)

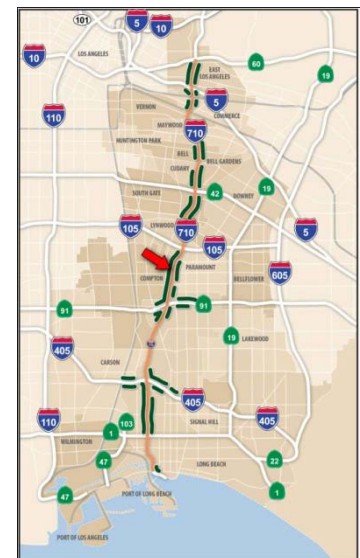
Both sound wall segments are proposed at the future edge of shoulder along the future off-ramp to Rosecrans Avenue from SB I-710.

### 3.2.25.2 Analysis

Segment 1 is not feasible for early action because the future off-ramp would be significantly higher than the existing grade (as much as 15') and both existing and future projected noise levels are low (the highest projected noise level is expected to be 57 dBA). Segment 2 is not feasible because it would be located in the middle of the existing off-ramp. Segment 3, designed to replace segment 2, is discussed in Section 3.2.26.

### 3.2.25.3 Reference to Exhibits

See Row No. 49 & 50 and Exhibit No. EX-19 of the Evaluation Matrix and Exhibits, respectively.



## 3.2.26 Sound Wall No. 614 Segments 3, 4 and 5E (Feasible)

### 3.2.26.1 Overall View (Lynwood)

Segment 3 is proposed in the area behind the existing shoulder along the Rosecrans Avenue off-ramp between McMillan Street and Fertile Street. Segment 4 continues to the north until Rayborn Street and is proposed at the edge of shoulder along the existing off-ramp. Segment 5E is an existing sound wall located at the right of way line adjacent to the connector ramp from EB I-105 to SB I-710 between Olanda Street and Lavinia Avenue.

### 3.2.26.2 Analysis

The feasibility analysis concludes that these sound walls are feasible for early action. Collectively they will provide noise reduction for the residential area west of I-710 freeway between Rosecrans Avenue and I-105. The total sound wall length will be approximately 3,611 feet.

Segment 3 will be proposed in the area between the existing ramp and the right of way line, as a replacement to segment 2 discussed in Section 3.2.25. The base of this proposed sound wall will be designed to be compatible with the elevations of the future ramp, which is as much as 12' below the existing ramp. The proposed sound wall height is 14'.

The northern portion of segment 4 will be located on an existing ramp structure along the edge of shoulder. The southern portion of segment 4 will be proposed along the off-ramp which is supported by an existing retaining wall. However, this retaining wall will not be compatible with the ultimate condition because the future ramp is designed to be between 0' and 10' lower than the existing ramp, while both the future and existing ramps share the same horizontal location. To avoid throw-away cost the proposed sound wall cannot be built on top of the existing retaining wall; rather it will need to be placed on a new retaining wall west of the existing wall and at a lower elevation. The proposed sound wall height is 14'.

Segment 5E, an existing sound wall with heights of 8' to 12', will be aesthetically treated to match other new sound walls in the corridor.

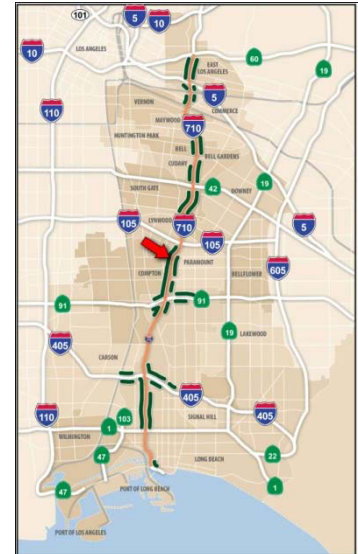
**Structural and Geotechnical.** It is anticipated that construction of sound wall segment 4 will involve reconstruction of the existing bridge barrier and a portion of the overhang. The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design.

**Constructability.** It is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic and the freeway shoulder will be closed during construction. The existing off-ramp to Rosecrans Avenue may need to be temporarily closed during construction if the existing shoulder does not provide sufficient space for construction, especially on the ramp structure which is 24' wide between barriers. The connector ramp from WB I-105 to SB I-710 crossing underneath the Rosecrans Avenue off-ramp structure may need to be temporarily closed for the installation of netting for construction debris capture.

**Drainage and Utilities.** The existing concrete drainage ditch along the right of way line is not expected to be impacted by sound wall construction. The oil pipeline runs along McMillan Street and crosses underneath sound wall segment 3. The sound wall foundation will be designed to avoid impacts to this underground pipeline crossing.

### 3.2.26.3 Reference to Exhibits

See Row No. 51 to 53 and Exhibit No. EX-19 & EX-20 of the Evaluation Matrix and Exhibits, respectively.



### 3.2.27 Sound Wall No. 615 (Not Feasible)

#### 3.2.27.1 Overall View (Paramount)

This sound wall is proposed at the edge of dike on the east side of Los Angeles River between Somerset Boulevard and Rosecrans Avenue adjacent to Dills Park.

#### 3.2.27.2 Analysis

This sound wall is not feasible for early action because it would significantly impact viewsheds of Dills Park on the east side of the Los Angeles River.

#### 3.2.27.3 Reference to Exhibits

See Row No. 54 and Exhibit No. EX-18 and EX-19 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.28 Sound Wall No. 509/616 Segment 1 (Not Feasible)

#### 3.2.28.1 Overall View (South Gate)

This sound wall segment is proposed at the edge of shoulder along the future SB I-710 between Imperial Highway and Miller Way.

#### 3.2.28.2 Analysis

This sound wall segment is not feasible for early action because it would be located in the middle of existing I-710 freeway.

#### 3.2.28.3 Reference to Exhibits

See Row No. 55 and Exhibit No. EX-21 & EX-22 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.29 Sound Wall No. 509/616 Segments 2, 3 and 4E (Feasible)

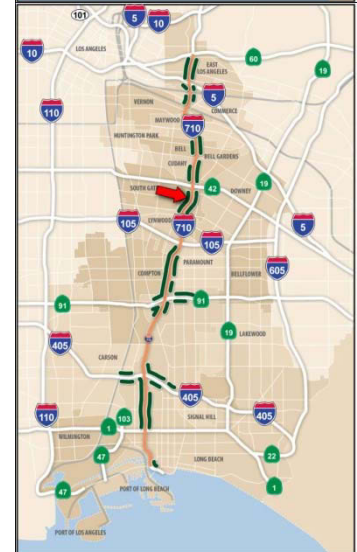
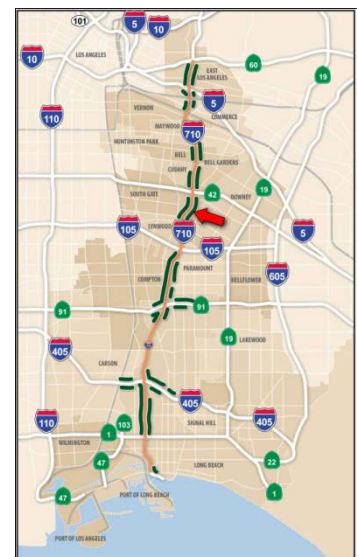
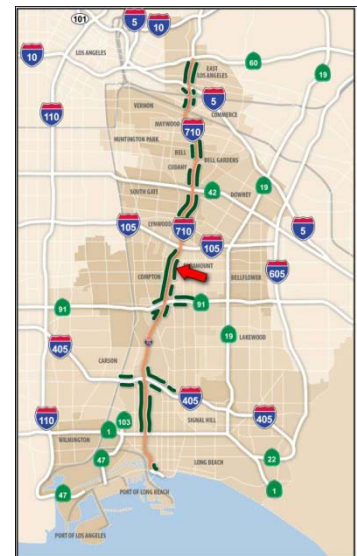
#### 3.2.29.1 Overall View (South Gate)

Sound wall segment 2 is proposed 8' to 20' beyond the edge of shoulder along the future SB I-710 just north of Miller Way. Continuing to the north, segment 3 is proposed at the future edge of shoulder between the end of segment 2 and the future Southern Avenue extension across I-710. Segment 4E is a future sound wall that Caltrans will construct at the edge of shoulder along the SB I-710 from the Los Angeles River bridge to the off-ramp to Imperial Highway (West).

#### 3.2.29.2 Analysis

The feasibility analysis concludes that these sound walls are feasible for early action. Collectively they will provide noise reduction for the Thunderbird Villa Mobile Home Park and the residential area west of I-710 freeway north of Imperial Highway. The total sound wall length will be approximately 4,104 feet.

Segment 2 will be proposed in the area between the existing mainline and the right of way line, as a replacement to sound wall segment 1 discussed in Section 3.2.28. The base of this proposed sound wall will be designed to be compatible with the future mainline, which is proposed to be between 10' and 18' higher than the existing mainline. Due to this significant profile change, the proposed sound wall will need to be constructed on top of a new retaining wall, which is required to minimize right of way impact and preserve the existing frontage road on the west side of the freeway. The proposed sound wall height is 16', and the retaining wall height is approximately 30'.



Similar to segment 2, segment 3 will be located on a new retaining wall with heights ranging from 30' to 0', as the profile of the future mainline declines to match existing. The proposed sound wall height is also 16'.

Segment 4E, once constructed by Caltrans, will be aesthetically treated to match other new sound walls in the corridor.

**Structural and Geotechnical.** A mechanically stabilized embankment (MSE) wall generally becomes more economical than conventional cantilever retaining wall when the wall height exceeds 16'. However, construction of MSE walls requires a significant horizontal clearance (for installation of soil reinforcement, i.e. steel straps) that may not be available given the space constraint. A conventional retaining wall option will be pursued instead if MSE wall is not feasible option. It should be noted that, regardless of wall type, either a significant embankment slope or a vertical wall will be visible to the traveling public once this sound wall is included in the Early Action Project. The retaining wall will transition to a concrete barrier on CIDH piles as the sound wall approaches Southern Avenue.

The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design.

**Constructability.** It is anticipated that construction will be behind the existing concrete barrier that is at the existing edge of shoulder, and a portion of the frontage road will be closed during construction. The frontage road will be used to access the construction area and temporary traffic control devices will be installed to delineate work area.

**Drainage and Utilities.** The existing drainage swale (the southern portion is lined) will be impacted by the proposed sound wall and will need to be relocated. It is expected that a new storm drain truck line will be installed to replace the swale, which currently collects and conveys runoffs from the freeway as well as the frontage road. The new truck line will be located underneath the proposed embankment near the bottom of the proposed retaining wall and will be sized for the ultimate condition.

An existing sanitary sewer line crosses sound wall segment 3, which will be designed to have a footing that spans over this line to avoid impact.

**Right of Way.** Permits from the City of South Gate will be required to close a portion of the frontage road and conduct temporary traffic control.

### 3.2.29.3 Reference to Exhibits

See Row No. 56 to 58 and Exhibit No. EX-21 to EX-23 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.30 Sound Wall No. 616FC (Not Feasible)

### 3.2.30.1 Overall View (Long Beach)

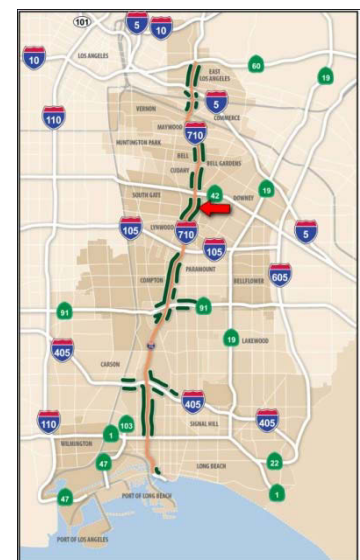
This proposed sound wall will be located along the western edge of the future freight corridor elevated structure between Imperial Highway and Firestone Boulevard.

### 3.2.30.2 Analysis

This sound wall is not feasible for early action because it would be located on structures not yet constructed.

### 3.2.30.3 Reference to Exhibits

See Row No. 59 and Exhibit No. EX-21 to EX-23 of the Evaluation Matrix and Exhibits, respectively.



### 3.2.31 Sound Wall No. 510/617A Segments 1, 2E and 3E (Feasible)

#### 3.2.31.1 Overall View (Bell Gardens)

Segment 1 is proposed near the right of way line along NB I-710 between Shull Street and Clara Street. Segments 2E and 3E continues to the north from Clara Street to Florence Avenue.

#### 3.2.31.2 Analysis

The feasibility analysis concludes that these sound walls are feasible for early action. Collectively they will provide noise reduction for the Bell Gardens Elementary School, Julia Russ Asmus Park and the residential area east of I-710 freeway between Shull Street and Clara Street. The total sound wall length will be approximately 4,506 feet.

Segment 1 will replace the existing 10-foot-high sound wall at the right of way starting north of the flood control canal. The first 300' of the proposed sound wall (measured from the south) will be designed to match existing grade. Further to the north the proposed sound wall will need to be placed on top of a retaining wall because the ultimate freeway will be lower than the existing by 0 to 6' in this area. The proposed sound wall height is 16'.

Segments 2E and 3E, existing sound walls with heights of 8' to 12', are compatible with the ultimate condition and will be aesthetically treated to match other new sound walls in the corridor.

**Structural and Geotechnical.** Construction of the retaining wall between Quinn Street and Clara Street may require reconstructing of the sidewalk along Bell Gardens Avenue, as well as a temporary shoring system to protect the existing freeway and maintain traffic on NB I-710.

The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design.

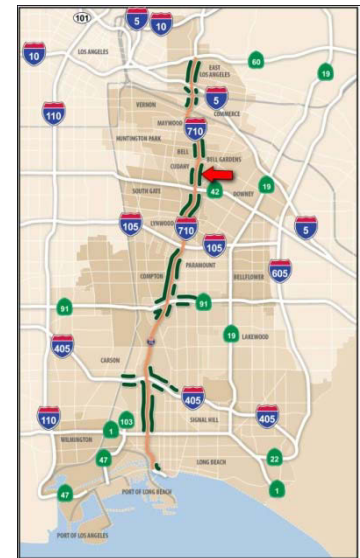
**Constructability.** It is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic and the freeway shoulder will be closed during construction. If shoulder does not provide sufficient space for construction, short-term lane closures may be required.

**Drainage and Utilities.** The existing gas line crossing underneath I-710 near Quinn Street can be protected in place with a special footing design. The existing billboard sign south of Quinn Street outside the right of way should not be in conflict with construction and therefore can remain in place. Once the sound wall and/or retaining wall is constructed, the area between the wall and the freeway shoulder should be back-filled so that the pre-construction drainage pattern can be re-established.

**Right of Way.** Permits from the City of Bell Gardens will be required to close a portion of Bell Gardens Avenue and conduct temporary traffic control. Any reconstruction of the city roadway will need to meet City standards.

#### 3.2.31.3 Reference to Exhibits

See Row No. 60 to 62 and Exhibit No. EX-24 & EX-25 of the Evaluation Matrix and Exhibits, respectively.



### 3.2.32 Sound Wall No. 617FCN and No. 617FCS (Not Feasible)

#### 3.2.32.1 Overall View (Bell Gardens)

The proposed sound walls No. 617FCN and No. 617 FCS will be located along the eastern edge of the future NB and SB freight corridor elevated structure between Patata Street and Clara Street, respectively.

#### 3.2.32.2 Analysis

Both sound walls are not feasible for early action because they would be located on structures not yet constructed.

#### 3.2.32.3 Reference to Exhibits

See Row No. 63 & 64 and Exhibit No. EX-24 & EX-25 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.33 Sound Wall No. 618 Segments 1E and 2, and No. 619 (Feasible)

#### 3.2.33.1 Overall View (Bell Gardens)

The proposed sound walls No. 618 segments 1E and 2, and 619 will be located near the right of way between Florence Avenue and Randolph Street along NB I-710.

#### 3.2.33.2 Analysis

The feasibility analysis concludes that these sound walls are feasible for early action. Collectively they will provide noise reduction for the residential area east of I-710 freeway between Florence Avenue and Randolph Street. The total sound wall length will be approximately 4,308 feet.

Sound wall No. 618 segments 1E, an existing sound wall with heights of 8' to 14', is compatible with the ultimate condition and will be aesthetically treated to match other new sound walls in the corridor.

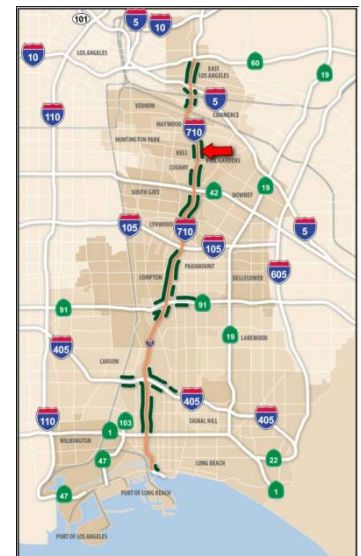
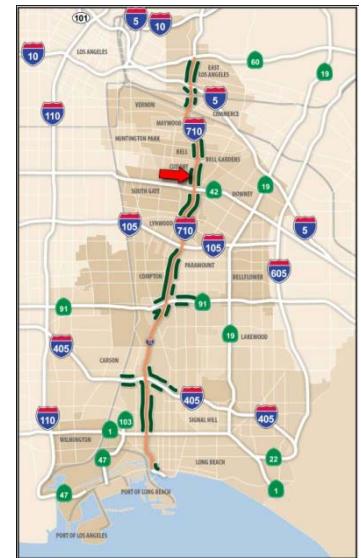
Sound wall No. 618 segment 2 and 619 will replace the existing sound wall that will be in conflict with the proposed freeway in the ultimate condition. The proposed sound wall will need to be placed on top of a retaining wall because the ultimate freeway will be widened and lower than the existing by 0 to 5' in this area. The proposed sound wall height is 18'.

**Structural and Geotechnical.** Due to the close proximity between the proposed retaining wall and the existing residential buildings, the retaining wall will need to be designed to minimize the potential for any movements during and after construction. In particular, one feasible type of retaining wall that involves large-diameter drilled holes and shaft construction would not require excavating the slope between the existing shoulder and the existing sound wall.

The proposed sound wall is located in an area identified by the State of California as a liquefaction hazard zone and should be further evaluated during final design.

**Constructability.** It is expected that temporary concrete railings will be placed along the entire construction area to protect construction workers from traffic and the freeway shoulder will be closed during construction. If shoulder does not provide sufficient space for construction, short-term lane closures may be required. The existing on-ramp from Florence Avenue may need to be restriped to allow for more space for constructing improvements along the existing sound wall No. 618 segment 1E.

**Drainage and Utilities.** Once the sound wall and/or retaining wall is constructed, the area between the sound wall and the freeway shoulder should be backfill so that the pre-construction drainage pattern can be re-established.



A number of utility poles are located directly adjacent to the existing sound wall. Demolition of the existing sound wall may require modification or relocation of these poles.

**Right of Way.** A temporary construction easement will be required from the properties abutting the Caltrans right of way for construction.

### 3.2.33.3 Reference to Exhibits

See Row No. 65 to 67 and Exhibit No. EX-26 and EX-27 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.34 Sound Wall No. 618FCN and No. 618FCS (Not Feasible)

### 3.2.34.1 Overall View (Bell Gardens)

The proposed sound walls 618FCN and 618FCS will be located along the eastern edge of the future NB and SB freight corridor elevated structure between Florence Avenue and Randolph Street, respectively.

### 3.2.34.2 Analysis

Both sound walls are not feasible for early action because they would be located on structures not yet constructed.

### 3.2.34.3 Reference to Exhibits

See Row No. 68 & 69 and Exhibit No. EX-26 & EX-27 of the Evaluation Matrix and Exhibits, respectively.

## 3.2.35 Sound Wall No. 511, No. 512, No. 513 and No. 514 (Not Feasible)

### 3.2.35.1 Overall View (Commerce)

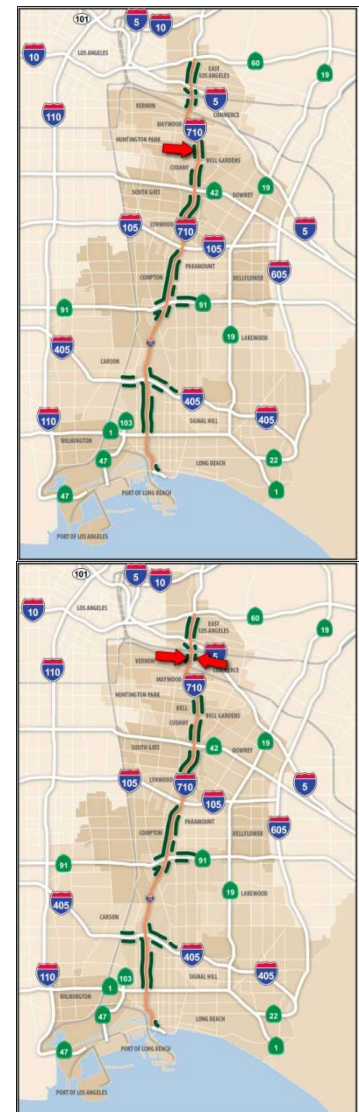
Sound wall No. 511 is proposed at the edge of shoulder along NB I-710 mainline between the two NB hook ramps at Washington Boulevard. Sound wall No. 512 is proposed at the edge of shoulder along the NB on-ramp from Washington Boulevard. Sound wall No. 513 is proposed at the edge of shoulder along SB I-710 mainline between the two NB hook ramps at Washington Boulevard. Sound wall No. 514 is proposed at the edge of shoulder along the SB off-ramp to Washington Boulevard.

### 3.2.35.2 Analysis

These sound walls are not feasible for early action because they would either be located in the middle of existing I-710 mainline or in areas where sound walls are currently being constructed by Caltrans.

### 3.2.35.3 Reference to Exhibits

See Row No. 70 to 75 of the Evaluation Matrix. See Exhibit EX-28 for other similar sound walls in the area.



### 3.2.36 Sound Wall No. 620, No. 621A/B Segment 1, No. 620A, No. 620B Segment 1 (Not Feasible)

#### 3.2.36.1 Overall View (Commerce)

Sound wall No. 620 is proposed at the future edge of shoulder along the ultimate NB I-710 mainline north of Washington Boulevard terminating before the future structure over the UPRR railyard. Sound wall No. 621A (or 621B) segment 1 is proposed at the future edge of shoulder along the ultimate on-ramp from Washington Boulevard ending just north of Bandini Park. Sound wall No. 620A is proposed at the future edge of shoulder along the ultimate SB I-710 mainline between Washington Boulevard and Sheila Street. Sound wall No. 620B segment 1 is proposed at the future edge of shoulder on the ultimate SB off-ramp to Washington Boulevard.

#### 3.2.36.2 Analysis

These sound walls are not feasible for early action because they would either be located in the middle of existing I-710 mainline, require significant right of way acquisition, or in areas where sound walls are currently being constructed by Caltrans.

#### 3.2.36.3 Reference to Exhibits

See Row No. 76, 77, 79, & 80 and Exhibit No. EX-28 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.37 Sound Wall No. 621A/B Segment 2E and No. 620B Segment 2E (Feasible)

#### 3.2.37.1 Overall View (Commerce)

Sound wall No. 621A (or 621B) is a future sound wall currently being constructed by Caltrans at the edge of shoulder along the NB on-ramp from Washington Boulevard. Sound wall No. 620B is a future sound wall currently being constructed by Caltrans at the edge of shoulder along the SB on-ramp to Washington Boulevard.

#### 3.2.37.2 Analysis

These future sound walls, once constructed by Caltrans, will be aesthetically treated to match other new sound walls in the corridor. According to information provided by Caltrans the total sound wall length will be approximately 2,399 feet and the proposed sound wall height is 15'.

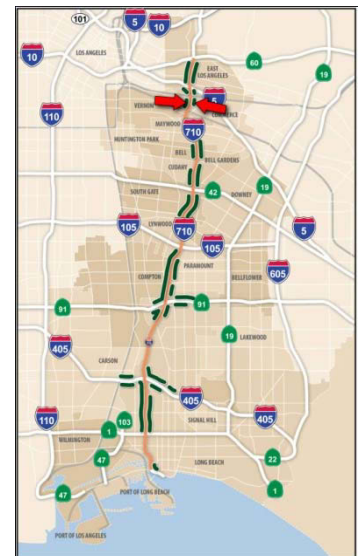
#### 3.2.37.3 Reference to Exhibits

See Row No. 78 & 81 and Exhibit No. EX-28 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.38 Sound Wall No. 622 Segment 1, No. 622A Segment 1, and No. 622B Segment 1 and 2E (Not Feasible)

#### 3.2.38.1 Overall View (Commerce)

Sound wall No. 622 segment 1 is proposed at the future edge of shoulder along the realigned NB I-710 mainline between Noakes Street and I-5. Sound wall No. 622A segment 1 is proposed at the future edge of shoulder along the realigned SB I-710 between Noakes Street and I-5. Sound wall No. 622B segment 1 is proposed at the future edge of shoulder along the ultimate SB off-ramp to Washington Boulevard, and segment 2 is an existing sound wall at the southwest quadrant of the I-5/I-710 interchange.



### 3.2.38.2 Analysis

These sound walls are not feasible for early action because they would either be located in the middle of existing I-710 mainline, require significant right of way acquisition, in conflict with the future I-5/I-710 interchange plan, or in areas where sound walls are currently being constructed by Caltrans.

### 3.2.38.3 Reference to Exhibits

See Row No. 13 and Exhibit No. EX-28 and EX-29 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.39 Sound Wall No. 622 Segment 2E and No. 622A Segment 2E (Feasible)

#### 3.2.39.1 Overall View (Commerce)

Sound wall No. 622 segment 2E is a future sound wall by Caltrans at the existing edge of shoulder along the NB I-710 mainline between Noakes Street and I-5. Sound wall No. 622A segment 2E is a future sound wall by Caltrans at the existing edge of shoulder along the SB I-710 mainline between Noakes Street and I-5.

#### 3.2.39.2 Analysis

These future sound walls, once constructed by Caltrans, will be aesthetically treated to match other new sound walls in the corridor. The total sound wall length will be approximately 2,720 feet.

#### 3.2.39.3 Reference to Exhibits

See Row No. 83 & 85 and Exhibit No. EX-28 and EX-29 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.40 Sound Wall No. 515 Segment 1 and No. 516 Segment 1 (Not Feasible)

#### 3.2.40.1 Overall View (East Los Angeles)

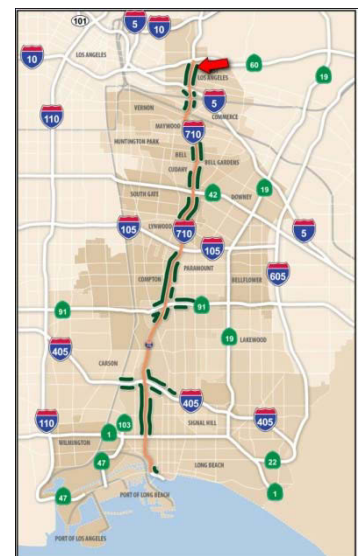
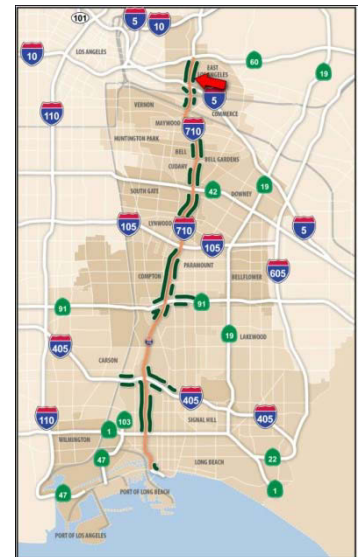
Sound wall No. 515 segment 1 is proposed at the future edge of shoulder along the ultimate NB I-710 mainline between Olympic Boulevard and the ultimate on-ramp from Olympic Boulevard. Sound wall No. 516 segment 1 is proposed at the future edge of shoulder along the ultimate NB I-710 mainline between Olympic Boulevard and Humphreys Avenue.

#### 3.2.40.2 Analysis

These sound walls are not feasible for early action because they are in areas where future sound walls would be constructed by Caltrans.

#### 3.2.40.3 Reference to Exhibits

See Row No. 88 & 90 and Exhibit No. EX-29 & EX-30 of the Evaluation Matrix and Exhibits, respectively.



### 3.2.41 Sound Wall No. 515 Segment 2E and No. 516 Segments 2E (Feasible)

#### 3.2.41.1 Overall View (East Los Angeles)

Sound wall No. 515 segment 2E is a future sound wall by Caltrans at the existing edge of shoulder along the NB I-710 mainline between Olympic Boulevard and the on-ramp from Olympic Boulevard. Sound wall No. 516 segment 2E is a future sound wall by Caltrans at the existing edge of shoulder along the NB I-710 mainline between Olympic Boulevard and Humphreys Avenue.

#### 3.2.41.2 Analysis

These future sound walls, once constructed by Caltrans, will be aesthetically treated to match other new sound walls in the corridor. Collectively they will provide noise reduction for the residential area east of I-710 freeway between Olympic Boulevard and Humphreys Avenue. The total sound wall length will be approximately 3,071 feet.

#### 3.2.41.3 Reference to Exhibits

See Row No. 89 & 91 and Exhibit No. EX-29 & EX-30 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.42 Sound Wall No. 516 Segments 3E, 4E, 5E and 6E (Feasible)

#### 3.2.42.1 Overall View (East Los Angeles)

These are existing sound walls located at the right of way along NB I-710 between Humphreys Avenue and 3<sup>rd</sup> Street.

#### 3.2.42.2 Analysis

These existing sound walls, varying in heights from 6' to 12', will be aesthetically treated to match other new sound walls in the corridor. Collectively they will provide noise reduction for the residential area east of I-710 freeway between Humphreys Avenue and 3<sup>rd</sup> Street. The total sound wall length will be approximately 2,185 feet.

#### 3.2.42.3 Reference to Exhibits

See Row No. 92 to 95 and Exhibit No. EX-29 to EX-31 of the Evaluation Matrix and Exhibits, respectively.

### 3.2.43 Sound Wall No. 517/623 and No. 519 Segment 1 (Not Feasible)

#### 3.2.43.1 Overall View (East Los Angeles)

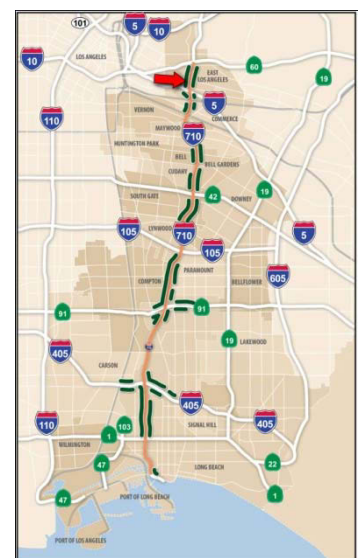
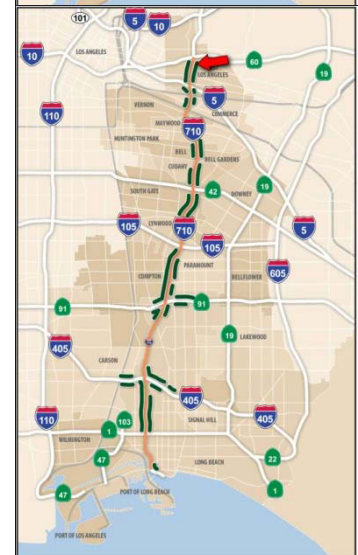
Sound wall No. 517/623 is proposed at the future edge of shoulder along the on-ramp from Eastern Avenue to SB I-710. Sound wall No. 519 segment 1 is proposed at the future edge of shoulder along SB I-710 and the off-ramp to Eastern Avenue.

#### 3.2.43.2 Analysis

These sound walls are not feasible for early action because they would be in conflict with the future I-5/I-710 interchange plan.

#### 3.2.43.3 Reference to Exhibits

See Row No. 96 & 97 and Exhibit No. EX-29 & EX-30 of the Evaluation Matrix and Exhibits, respectively.



### 3.2.44 Sound Wall No. 519 Segments 2E, 3E, 4E and 5E (Feasible)

#### 3.2.44.1 Overall View (East Los Angeles)

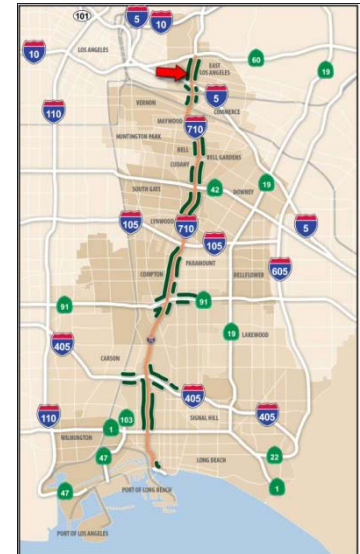
Sound wall No. 519 segment 2E is a future sound wall by Caltrans at the existing edge of shoulder along the SB I-710 off-ramp to Eastern Avenue. The other sound wall segments are existing sound walls located at the right of way along SB I-710 between Whittier Boulevard and 3<sup>rd</sup> Street.

#### 3.2.44.2 Analysis

These future sound walls will be aesthetically treated to match other new sound walls in the corridor. Collectively they will provide noise reduction for the residential area west of I-710 freeway between Whittier Boulevard and 3<sup>rd</sup> Street. The total sound wall length will be approximately 3,996 feet.

#### 3.2.44.3 Reference to Exhibits

See Row No. 98 to 101 and Exhibit No. EX-30 & EX-31 of the Evaluation Matrix and Exhibits, respectively.



### 3.2.45 Sound Wall No. 520/627 (Not Feasible)

#### 3.2.45.1 Overall View (East Los Angeles)

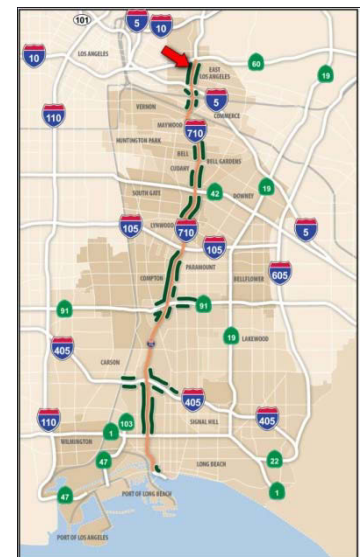
This sound wall is proposed at the right of way at the southwest quadrant of the I-710 and SR-60 Interchange near the Serbian Cemetery.

#### 3.2.45.2 Analysis

This sound wall is not feasible for early action because it is not recommended by the Noise Abatement Decision Report.

#### 3.2.45.3 Reference to Exhibits

See Row No. 102 and Exhibit No. EX-31 of the Evaluation Matrix and Exhibits, respectively.



## 3.3 Matrix and Exhibits

Appendix A presents the initial comprehensive evaluation matrix and an accompanying series of sound wall layout exhibits. These layout exhibits present the detailed engineering review undertaken by the project team to determine the feasibility of each sound wall and provide solid empirical data, which resulted in the Initial List of Feasible Early Action Sound Walls.

# Conclusion

## 4.1 Summary Table of Feasible Sound Walls

Table 1 below summarizes the new and existing sound walls determined to be feasible to include in the early action project:

TABLE 4-1  
Initial List of Feasible Early Action Sound Walls

City	Route/Location of SW	Existing <sup>a</sup> /New Sound Wall?	Length (feet)	Height (feet)	Sound Wall #
Long Beach	SB I-710/near Ocean	New	754	10	500/600
Long Beach	SB I-710/PCH to Willow	New	5,326	16	501/601 Segment 1, 2 & 3
	SB I-710/Willow to Wardlow	New	5,153	16	502/602 Segment 1 & 2
	SB I-710/Wardlow to 405	Existing <sup>a</sup>	1,323	10	502/602 Segment 3E
Long Beach	SB 405/I-710 to Pacific	Existing <sup>a</sup>	588	10	405B Segment 2E
	SB 405/UPRR to Wardlow	Existing <sup>a</sup>	1,741	10	405B Segment 3E
	NB 405/Wardlow to UPRR	Existing <sup>a</sup>	1,459	10-14	405C Segment 1E
	NB 405/Los Cerritos Elementary to Cedar	New	2,660	TBD <sup>c</sup>	405C Segment 2
	NB 405/Long Beach to Atlantic	New	902	TBD <sup>c</sup>	405C Segment 3
Long Beach	SB I-710/Long Beach to Adams	New	2,083	16	503A/603A Segment 2 & 503B/603B Segment 1
	SB I-710/Adams to Artesia	Existing <sup>a</sup>	3,273	8-12	503B/603B Segment 2E
Long Beach	SB I-710/at WB 91 Connector Ramp	Existing <sup>a</sup>	1,813	10	504/608 Segment 1E
	SB I-710/at EB 91 Connector Ramp	Existing <sup>a</sup>	788	10	504/608 Segment 2E
Compton	SB I-710/91 to Atlantic	New	2,236	14	504/608 Segment 3
	SB I-710/Atlantic to Alondra	Existing <sup>a</sup>	774	12	505/610 Segment 2E
	SB I-710/at On-ramp from Alondra	Existing <sup>a</sup>	604	12	506/611 Segment 2E
	SB I-710/Lindsey to Myrrh	Existing <sup>a</sup>	650	10-12	507/612 Segment 1E
	SB I-710/Myrrh to Somerset	New	1,351	16	507/612 Segment 2
	SB I-710/Somerset to Rosecrans	Existing <sup>a</sup>	2,232	10-12	507/612 Segment 4E
Lynwood	SB I-710/at Proposed Rosecrans Exit	New	1,692	14	614 Segment 3 & 4
	SB I-710/Rosecrans to 105	Existing <sup>a</sup>	1,895	8-12	614 Segment 5E
South Gate	SB I-710/at Wright Exit	Future Existing <sup>b</sup>	1,953	Unknown <sup>d</sup>	509/616 Segment 4E
	SB I-710/Miller to Southern	New	2,151	16	509/616 Segment 2 & 3
Bell Gardens	NB I-710/Patata to Clara	New	2,634	16	510/617A Segment 1
	NB I-710/South of Patata	Existing <sup>a</sup>	386	8-12	510/617A Segment 2E
	NB I-710/Clara to Florence	Existing <sup>a</sup>	1,486	8-12	510/617A Segment 3E

TABLE 4-1  
Initial List of Feasible Early Action Sound Walls

City	Route/Location of SW	Existing <sup>a</sup> /New Sound Wall?	Length (feet)	Height (feet)	Sound Wall #
	NB I-710/Florence to Loveland	Existing <sup>a</sup>	1,957	8-14	618 Segment 1E
	NB I-710/Loveland to Gage	New	1,111	18	618 Segment 2
	NB I-710/Gage to Randolph	New	1,240	18	619
Commerce	NB I-710/Washington to Rail Yard	Future Existing <sup>b</sup>	1,606	15	621A/B Segment 2E
	NB I-710/Rail Yard to I-5	Future Existing <sup>b</sup>	1,770	Unknown <sup>d</sup>	622 Segment 2E
	SB I-710/Washington to Rail Yard	Future Existing <sup>b</sup>	793	15	620B Segment 2E
	SB I-710/Rail Yard to I-5	Future Existing <sup>b</sup>	950	Unknown <sup>d</sup>	622A Segment 2E
East LA	NB I-710/North of Olympic	Future Existing <sup>b</sup>	534	Unknown <sup>d</sup>	515 Segment 2E
	NB I-710/Olympic to Humphreys	Future Existing <sup>b</sup>	2,537	Unknown <sup>d</sup>	516 Segment 2E
	NB I-710/South of Humphreys	Existing <sup>a</sup>	705	12	516 Segment 3E
	NB I-710/Humphreys to 4 <sup>th</sup>	Existing <sup>a</sup>	733	12	516 Segment 4E
	NB I-710/Betty to 4 <sup>th</sup>	Existing <sup>a</sup>	495	6-12	516 Segment 5E
	NB I-710/4 <sup>th</sup> to Ford	Existing <sup>a</sup>	252	12	516 Segment 6E
	SB I-710/Whittier to Hubbard	Future Existing <sup>b</sup>	1,166	Unknown <sup>d</sup>	519 Segment 2E
	SB I-710/Hubbard to Humphreys	Existing <sup>a</sup>	2,007	10-12	519 Segment 3E
	SB I-710/South of 3 <sup>rd</sup> Street	Existing <sup>a</sup>	386	10	519 Segment 4E
	SB I-710/Humphreys to Gratian	Existing <sup>a</sup>	437	10	519 Segment 5E

<sup>a</sup>Potential improvements to existing sound walls will consist of aesthetic improvements and/or increased height (as structural properties allow).

<sup>b</sup>Future existing sound walls are currently planned for construction by Caltrans under other projects. Only potential improvement would consist of aesthetic treatment.

<sup>c</sup>Sound wall height pending results from ongoing noise analysis.

<sup>d</sup>Sound wall height unknown due to insufficient information about these sound walls.

Notes:

EB = eastbound

ID = identification number

LA = Los Angeles

NB = northbound

No. = number

PCH = Pacific Coast Highway

SB = southbound

UPRR = Union Pacific Railroad

WB = westbound

## 4.2 Preliminary Cost Estimate

A preliminary construction cost estimate is presented in Table 2 and was prepared for each sound wall feasible for early action based on the available information. Due to the preliminary nature of the design and the uncertainty

with the scope of work involved with each wall, the following contingencies and allowances are included with the construction cost estimate:

5% - Aesthetic Treatment

10% - Minor Items

10% - Mobilization

10% - Supplemental Work

30% - Contingency

Costs for aesthetic treatment to the existing sound walls have not yet been estimated, due to the developing nature of the details for these improvements. The proposed aesthetics are currently under discussion for both the new and existing sound walls, and costs will be updated appropriately once more details are determined.

TABLE 4-2

**Preliminary Cost Estimate of Feasible Early Action Sound Walls (New Construction)**

Sound Wall #	Segment #	Route/Location of SW	Construction Cost (\$)	Right of Way and Utility Cost (\$)	Notes
500/600	-	SB I-710/near Ocean	\$ 510,000	-	
501/601	1, 2 & 3	SB I-710/PCH to Willow	\$ 4,620,000	TBD	16 SCE poles would be impacted
502/602	1 & 2	SB I-710/Willow to Wardlow	\$ 5,400,000	TBD	25 SCE poles would be impacted
405C	2 & 3	NB 405/Los Cerritos Elementary to Cedar; Long Beach to Atlantic	\$ 1,720,000	-	
503A/603A	2	SB I-710/Long Beach to Adams	\$ 1,140,000	-	
503B/603B	1	SB I-710/Long Beach to Adams	\$ 710,000	-	
504/608	3	SB I-710/91 to Atlantic	\$ 3,710,000	-	
507/612	2	SB I-710/Myrrh to Somerset	\$ 690,000	-	
614	3 & 4	SB I-710/at Proposed Rosecrans Exit	\$ 3,430,000	-	
509/616	2 & 3	SB I-710/Miller to Southern	\$ 7,130,000	TBD	Right of way along W. Frontage Road would be impacted
510/617A	1	NB I-710/Patata to Clara	\$ 4,170,000	TBD	2 SCE poles would be impacted
618	2	NB I-710/Loveland to Gage	\$ 3,330,000	TBD	2 SCE poles would be impacted
619	-	NB I-710/Gage to Randolph	\$ 4,540,000	TBD	7 SCE poles would be impacted
<b>Total</b>			\$ 41,100,000		

TABLE 4-3  
**Preliminary Cost Estimate of Feasible Early Action Sound Walls (Existing Sound Walls)**

Sound Wall #	Segment #	Route / Location of SW	Scope of Work (AT / AT & IH)	Construction Cost (\$)	Notes
502/602	3E	SB I-710/Wardlow to 405	AT & IH	TBD	
405B	2E	SB 405/I-710 to Pacific	AT & IH	TBD	
405B	3E	SB 405/UPRR to Wardlow	AT & IH	TBD	
405C	1E	NB 405/Wardlow to UPRR	AT & IH	TBD	
503B/603B	2E	SB I-710/Adams to Artesia	AT & IH	TBD	
504/608	1E	SB I-710/at WB 91 Connector Ramp	AT & IH	TBD	
504/608	2E	SB I-710/at EB 91 Connector Ramp	AT & IH	TBD	
505/610	2E	SB I-710/Atlantic to Alondra	AT & IH	TBD	
506/611	2E	SB I-710/at On-ramp from Alondra	AT & IH	TBD	
507/612	1E	SB I-710/Lindsey to Myrrh	AT & IH	TBD	
507/612	4E	SB I-710/Somerset to Rosecrans	AT & IH	TBD	
614	5E	SB I-710/Rosecrans to 105	AT & IH	TBD	
509/616	4E	SB I-710/at Wright Exit	AT	TBD	A future sound wall to be constructed by Caltrans
510/617A	2E	NB I-710/South of Patata	AT & IH	TBD	
510/617A	3E	NB I-710/Clara to Florence	AT	TBD	A future sound wall to be constructed by Caltrans
618	1E	NB I-710/Florence to Loveland	AT & IH	TBD	
621A/B	2E	NB I-710/Washington to Rail Yard	AT	TBD	A future sound wall to be constructed by Caltrans
622	2E	NB I-710/Rail Yard to I-5	AT	TBD	A future sound wall to be constructed by Caltrans
620B	2E	SB I-710/Washington to Rail Yard	AT	TBD	A future sound wall to be constructed by Caltrans
622A	2E	SB I-710/Rail Yard to I-5	AT	TBD	A future sound wall to be constructed by Caltrans
515	2E	NB I-710/North of Olympic	AT	TBD	A future sound wall to be constructed by Caltrans
516	2E	NB I-710/Olympic to Humphreys	AT	TBD	A future sound wall to be constructed by Caltrans
516	3E	NB I-710/South of Humphreys	AT & IH	TBD	
516	4E	NB I-710/Humphreys to 4 <sup>th</sup>	AT & IH	TBD	
516	5E	NB I-710/Betty to 4 <sup>th</sup>	AT & IH	TBD	
516	6E	NB I-710/4 <sup>th</sup> to Ford	AT & IH	TBD	
519	2E	SB I-710/Whittier to Hubbard	AT & IH	TBD	

TABLE 4-3  
**Preliminary Cost Estimate of Feasible Early Action Sound Walls (Existing Sound Walls)**

Sound Wall #	Segment #	Route / Location of SW	Scope of Work (AT / AT & IH)	Construction Cost (\$)	Notes
519	3E	SB I-710/Hubbard to Humphreys	AT & IH	TBD	
519	4E	SB I-710/South of 3 <sup>rd</sup> Street	AT & IH	TBD	
519	5E	SB I-710/Humphreys to Gratian	AT & IH	TBD	

Note: AT = Aesthetic Treatment; IH = Increase Height

## Next Steps

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### 5.1 Environmental

As mentioned in previous sections, one of the criteria for the early action sound walls is to have all proposed work remain within the footprint of the current I-710 EIR/EIS document, and any recommendations put forth in that document pertaining to the sound walls. Once the sound walls are further defined, coordination will be continued with the ongoing review and completion of the EIR/EIS. It will be determined at that time if any supplemental environmental documentation is required as a result of the Early Implementation Study. Supplemental reports for the approved Noise Study Report and Noise Abatement Decision Report would also be determined and developed as needed.

### 5.2 Noise Barrier Scope Summary Report (NBSSR)

Design plans will be developed for the sound walls identified in this report as feasible for early action, and with further design detail will come the determination whether or not there are any issues with any of the sound walls that would deem them non-feasible for final design. As part of this next phase of analysis, a Noise Barrier Scope Study Report (or equivalent document) will be developed to program the sound walls for construction. Along with the updated design plans, the NBSSR will also include a discussion on public involvement, funding, sound wall foundation investigations, information on any non-standard features, and updated cost estimates.

SECTION 6

# References

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California Department of Transportation (Caltrans). 2012a. *Noise Study Report – I-710 Corridor Project*. January.

California Department of Transportation (Caltrans). 2012b. *Noise Abatement Study Report – I-710 Corridor Project*. April.

**Appendix A**  
**Comprehensive Evaluation Matrix and Detailed**  
**Location Exhibits**

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