

**Project Title: US 101 Willow Road Interchange Reconstruction**  
**Project Summary for Air Quality Conformity Task Force Meeting: March 2013**

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### **Description**

The project proposes to reconstruct the existing US 101/Willow Road (Route 114) Interchange on its existing alignment to a partial cloverleaf interchange. The proposed project is located in the cities of Menlo Park and East Palo Alto in San Mateo County PM 1.7/2.1. The project will replace the Willow road Overcrossing to meet the vertical clearance requirements. In addition to the reconstruction of the interchange, other major components of the project include:

- Widen the overcrossing to provide eight lanes and sidewalks.
- Construct dedicated bike lanes in both directions.
- Realign and widen the diagonal on ramps to provide HOV bypass lane(s), in conjunction with the modification of the existing ramp metering system.
- Realign and widen the diagonal off ramps to provide additional storage and construct signalized intersections at the realigned diagonal off ramp terminals.
- Modify and realign frontage roads adjacent to the overcrossing.
- Construct new soundwalls and reconstruct portion of the existing soundwalls
- Construct retaining walls between the diagonal off-ramps and loop on-ramps

### **Background**

- This project is exempt from regional conformity under 40 CFR 93.127, however a hot-spot analysis is required for CO and PM<sub>2.5</sub> (Table 3-Interchange Reconfiguration Project)

### **Not a Project of Air Quality Concern (40 CFR 93.123(b)(1))**

*(i) New or expanded highway projects with significant number/increase in diesel vehicles?*

- Not a new or expanded highway project

*(ii) Affects intersections at LOS D, E, or F with a significant number of diesel vehicles?*

The percentage of total trucks is much lower than 8% and less than 10,000 AADT for both opening year and design year.

*(iii) New bus and rail terminals and transfer points?—Not Applicable*

*(iv) Expanded bus and rail terminals and transfer points?—Not Applicable*

*(v) Affects areas identified in PM<sub>10</sub> or PM<sub>2.5</sub> implementation plan as site of violation?*

- No state implementation plan for PM<sub>2.5</sub>
- Therefore, not identified in plan as an area of potential violation.

**Project Assessment Form for PM<sub>2.5</sub> Interagency Consultation**

<b>RTIP ID# 21606</b>					
<b>TIP ID# SM 010047</b>					
<b>Air Quality Conformity Task Force Consideration Date</b> March 2013					
<b>Project Description</b> The project proposes to reconstruct the existing US 101/Willow Road (Route 114) Interchange on its existing alignment to a partial cloverleaf interchange. The proposed project is located in the cities of Menlo Park and East Palo Alto in San Mateo County PM 1.7/2.1. The project will replace the Willow road Overcrossing to meet the vertical clearance requirements. In addition to the reconstruction of the interchange, other major components of the project include: <ul style="list-style-type: none"> <li>• Widen the overcrossing to provide eight lanes and sidewalks.</li> <li>• Construct dedicated bike lanes in both directions.</li> <li>• Realign and widen the diagonal on ramps to provide HOV bypass lane(s), in conjunction with the modification of the existing ramp metering system.</li> <li>• Realign and widen the diagonal off ramps to provide additional storage and construct signalized intersections at the realigned diagonal off ramp terminals.</li> <li>• Modify and realign frontage roads adjacent to the overcrossing.</li> <li>• Construct new soundwalls and reconstruct portion of the existing soundwalls</li> <li>• Construct retaining walls between the diagonal off-ramps and loop on-ramps</li> </ul>					
<b>Type of Project:</b> Interchange Reconfiguration Project					
<b>County</b> San Mateo	<b>Narrative Location/Route &amp; Postmiles SM US 101 PM 1.7/2.1</b>  Caltrans Projects – EA# 235650				
<b>Lead Agency:</b> Caltrans					
<b>Contact Person</b> Mohammad Suleiman	<b>Phone#</b> 510-622-5943	<b>Fax#</b>	<b>Email</b> mohammad_suleiman@dot.ca.gov		
<b>Federal Action for which Project-Level PM Conformity is Needed</b>					
<input checked="" type="checkbox"/>	<b>Categorical Exclusion (NEPA)</b>	<b>EA or Draft EIS</b>	<b>FONSI or Final EIS</b>	<b>PS&amp;E or Construction</b>	<b>Other</b>
<b>Scheduled Date of Federal Action:</b> 11/13					
<b>NEPA Delegation – Project Type</b>					
<b>Exempt</b>	<input checked="" type="checkbox"/>	<b>Section 6004 – Categorical Exemption</b>		<b>Section 6005 – Non-Categorical Exemption</b>	
<b>Current Programming Dates</b>					
	<b>PE/Environmental</b>	<b>ENG</b>	<b>ROW</b>	<b>CON</b>	
<b>Start</b>	2/11	11/13	11/13	1/16	
<b>End</b>	11/13	5/15	5/15	1/18	

## PM<sub>2.5</sub> Project Assessment Form for Interagency Consultation

### **Project Purpose and Need (Summary):**

The short weaving segments between the loop ramps along US 101 create weaving conflicts between traffic entering and exiting the highway. This reduces mainline traffic speeds and creates upstream queuing in the number four lane of US 101.

The short weaving lengths between the loop ramps within the Willow Road Interchange are constrained due to weaving conflicts between traffic entering and exiting the Willow Road overcrossing. This weaving conflict causes back-ups along both eastbound and westbound Willow Road and on both the northbound and southbound US 101 loop off-ramps.

The congestion along eastbound Willow Road, which originates downstream and outside of project limits at intersections adjacent to the overcrossing, results in excessive queuing on the northbound US 101 diagonal off-ramp to eastbound Willow Road. The constrained operation results in back-ups along the diagonal off-ramp and upstream queuing in the number four lane of NB US 101, thereby impacting mainline through traffic.

### **Surrounding Land Use/Traffic Generators**

The existing Willow Road interchange provides an integral connection from the southern part of the East Bay to the Peninsula, Silicon Valley and vice versa via the Dumbarton Bridge. The interchange also serves traffic from local streets heading north to San Francisco and to the south towards San Jose via US 101.

**Brief summary of assumptions and methodology used for conducting analysis** Truck percentages were taken from [2010 Annual Average Daily Truck Traffic on the California State Highway System](#) . Association of Bay Area Governments land use forecasts show no change in land use for the project area, so truck percentages are predicted to remain constant. Total volumes are based on a regional transportation demand model for San Mateo county.

**Opening Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility**

N/A

**RTP Horizon Year / Design Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility**

N/A

**Project Assessment Form for PM<sub>2.5</sub> Interagency Consultation**

**Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT** Truck percents are the same for build and no-build and are not predicted to change in the future.

2020 No-Build				
Segment	Direction	AADT total traffic	AADT 2-Axle	% 2-Axle
101 mainline–South of Willow Ave. I/C	NB	131,802	3387	2.57
101 mainline–South of Willow Ave. I/C	SB	130,667	3358	2.57
101 mainline–North of Willow Ave. I/C	NB	118,210	3038	2.57
101 mainline–North of Willow Ave. I/C	SB	124,304	3195	2.57
NB Off ramp to EB Willow Ave.	NB	7,886	327	4.15
NB Off ramp to WB Willow Ave.	NB	14,291	263	1.84
NB On ramp from EB Willow Ave.	NB	6,606	274	4.15
NB On ramp from WB Willow Ave.	NB	6,218	114	1.84
SB Off ramp to EB Willow Ave.	SB	8,582	356	4.15
SB Off ramp to WB Willow Ave.	SB	5,510	101	1.84
SB On ramp from EB Willow Ave.	SB	11,836	491	4.15
SB On ramp from WB Willow Ave.	SB	8,812	162	1.84
Willow Ave. west of R101 I/C	WB	25,272	1048	4.15
Willow Ave. west of R101 I/C	EB	29,089	1207	4.15
Willow Ave. east of R101 I/C	WB	17,557	323	1.84
Willow Ave. east of R101 I/C	EB	28716	528	1.84

2020 No-Build				
Segment	Direction	AADT total traffic	AADT 3-Axle and Above	% 3-Axle and Above
101 mainline—South of Willow Ave. I/C	NB	131,802	2188	1.66
101 mainline—South of Willow Ave. I/C	SB	130,667	2169	1.66
101 mainline—North of Willow Ave. I/C	NB	118,210	1962	1.66
101 mainline—North of Willow Ave. I/C	SB	124,304	2063	1.66
NB Off ramp to EB Willow Ave.	NB	7,886	138	1.75
NB Off ramp to WB Willow Ave.	NB	14,291	329	2.30
NB On ramp from EB Willow Ave.	NB	6,606	116	1.75
NB On ramp from WB Willow Ave.	NB	6,218	143	2.30
SB Off ramp to EB Willow Ave.	SB	8,582	150	1.75
SB Off ramp to WB Willow Ave.	SB	5,510	127	2.30
SB On ramp from EB Willow Ave.	SB	11,836	207	1.75
SB On ramp from WB Willow Ave.	SB	8,812	203	2.30
Willow Ave. west of R101 I/C	WB	25,272	442	1.75
Willow Ave. west of R101 I/C	EB	29,089	509	1.75
Willow Ave. east of R101 I/C	WB	17,557	404	2.30
Willow Ave. east of R101 I/C	EB	28,716	660	2.30

2020 Build				
Segment	Direction	AADT total traffic	AADT 2-Axle	% 2-Axle
101 mainline–South of Willow Ave. I/C	NB	131,802	3387	2.57
101 mainline–South of Willow Ave. I/C	SB	130,667	3358	2.57
101 mainline–North of Willow Ave. I/C	NB	118,210	3038	2.57
101 mainline–North of Willow Ave. I/C	SB	124,304	3195	2.57
NB Off ramp to EB Willow Ave.	NB	22,177	590	4.15
NB Off ramp to WB Willow Ave.	NB			1.84
NB On ramp from EB Willow Ave.	NB	6,606	274	4.15
NB On ramp from WB Willow Ave.	NB	6,218	114	1.84
SB Off ramp to EB Willow Ave.	SB	14,093	457	4.15
SB Off ramp to WB Willow Ave.	SB			1.84
SB On ramp from EB Willow Ave.	SB	11,836	491	4.15
SB On ramp from WB Willow Ave.	SB	8,812	162	1.84
Willow Ave. west of 101 I/C	WB	25,272	1048	4.15
Willow Ave. west of 101 I/C	EB	29,089	1207	4.15
Willow Ave. east of 101 I/C	WB	17,557	323	1.84
Willow Ave. east of 101 I/C	EB	28,716	528	1.84

2020 Build				
Segment	Direction	AADT total traffic	AADT 3-Axle and Above	% 3-Axle and Above
101 mainline—South of Willow Ave. I/C	NB	131,802	2188	1.66
101 mainline—South of Willow Ave. I/C	SB	130,667	2169	1.66
101 mainline—North of Willow Ave. I/C	NB	118,210	1962	1.66
101 mainline—North of Willow Ave. I/C	SB	124,304	2063	1.66
NB Off ramp to EB Willow Ave.	NB	22,177	467	1.75
NB Off ramp to WB Willow Ave.	NB			2.30
NB On ramp from EB Willow Ave.	NB	6,606	116	1.75
NB On ramp from WB Willow Ave.	NB	6,218	143	2.30
SB Off ramp to EB Willow Ave.	SB	14,093	277	1.75
SB Off ramp to WB Willow Ave.	SB			2.30
SB On ramp from EB Willow Ave.	SB	11,836	207	1.75
SB On ramp from WB Willow Ave.	SB	8,812	203	2.30
Willow Ave. west of 101 I/C	WB	25,272	442	1.75
Willow Ave. west of 101 I/C	EB	29,089	509	1.75
Willow Ave. east of 101 I/C	WB	17,557	404	2.30
Willow Ave. east of 101 I/C	EB	28,716	660	2.30

**PM<sub>2.5</sub> Project Assessment Form for Interagency Consultation**

**RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT**

Truck percents are the same for build and no-build and are not predicted to change in the future.

2040 No-Build				
Segment	Direction	AADT total traffic	AADT 2-Axle	% 2-Axle
101 mainline–South of Willow Ave. I/C	NB	152,578	3921	2.57
101 mainline–South of Willow Ave. I/C	SB	153,411	3943	2.57
101 mainline–North of Willow Ave. I/C	NB	137,881	3544	2.57
101 mainline–North of Willow Ave. I/C	SB	147,022	3778	2.57
NB Off ramp to EB Willow Ave.	NB	9,302	386	4.15
NB Off ramp to WB Willow Ave.	NB	16,857	318	1.84
NB On ramp from EB Willow Ave.	NB	8,130	337	4.15
NB On ramp from WB Willow Ave.	NB	7,652	141	1.84
SB Off ramp to EB Willow Ave.	SB	11,727	487	4.15
SB Off ramp to WB Willow Ave.	SB	6,381	117	1.84
SB On ramp from EB Willow Ave.	SB	16,219	673	4.15
SB On ramp from WB Willow Ave.	SB	8,812	162	1.84
Willow Ave. west of R101 I/C	WB	29,323	1217	4.15
Willow Ave. west of R101 I/C	EB	35,367	1468	4.15
Willow Ave. east of R101 I/C	WB	20,396	375	1.84
Willow Ave. east of R101 I/C	EB	35,196	648	1.84

2040 No-Build				
Segment	Direction	AADT total traffic	AADT 3-Axle and Above	% 3-Axle and Above
101 mainline–South of Willow Ave. I/C	NB	152,578	2533	1.66
101 mainline–South of Willow Ave. I/C	SB	153,411	2547	1.66
101 mainline–North of Willow Ave. I/C	NB	137,881	2289	1.66
101 mainline–North of Willow Ave. I/C	SB	147,022	2441	1.66
NB Off ramp to EB Willow Ave.	NB	9,302	163	1.75
NB Off ramp to WB Willow Ave.	NB	16,857	388	2.30
NB On ramp from EB Willow Ave.	NB	8,130	142	1.75
NB On ramp from WB Willow Ave.	NB	7,652	176	2.30
SB Off ramp to EB Willow Ave.	SB	11,727	205	1.75
SB Off ramp to WB Willow Ave.	SB	6,381	147	2.30
SB On ramp from EB Willow Ave.	SB	16,219	284	1.75
SB On ramp from WB Willow Ave.	SB	8,812	203	2.30
Willow Ave. west of R101 I/C	WB	29,323	513	1.75
Willow Ave. west of R101 I/C	EB	35,367	619	1.75
Willow Ave. east of R101 I/C	WB	20,396	469	2.30
Willow Ave. east of R101 I/C	EB	35,196	810	2.30

2040 Build				
Segment	Direction	AADT total traffic	AADT 2-Axle	% 2-Axle
101 mainline–South of Willow Ave. I/C	NB	152,578	3921	2.57
101 mainline–South of Willow Ave. I/C	SB	153,411	3943	2.57
101 mainline–North of Willow Ave. I/C	NB	137,881	3544	2.57
101 mainline–North of Willow Ave. I/C	SB	147,022	3778	2.57
NB Off ramp to EB Willow Ave.	NB	26,158	704	4.15
NB Off ramp to WB Willow Ave.	NB			1.84
NB On ramp from EB Willow Ave.	NB	8,130	337	4.15
NB On ramp from WB Willow Ave.	NB	7,652	141	1.84
SB Off ramp to EB Willow Ave.	SB	18,108	604	4.15
SB Off ramp to WB Willow Ave.	SB			1.84
SB On ramp from EB Willow Ave.	SB	16,219	673	4.15
SB On ramp from WB Willow Ave.	SB	8,812	162	1.84
Willow Ave. west of 101 I/C	WB	29,323	1217	4.15
Willow Ave. west of 101 I/C	EB	35,367	1468	4.15
Willow Ave. east of 101 I/C	WB	20,396	375	1.84
Willow Ave. east of 101 I/C	EB	35,196	648	1.84

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101 mainline—North of Willow Ave. I/C	NB	137,881	2289	1.66
101 mainline—North of Willow Ave. I/C	SB	147,022	2441	1.66
NB Off ramp to EB Willow Ave.	NB	26,158	551	1.75
NB Off ramp to WB Willow Ave.	NB			2.30
NB On ramp from EB Willow Ave.	NB	8,130	142	1.75
NB On ramp from WB Willow Ave.	NB	7,652	176	2.30
SB Off ramp to EB Willow Ave.	SB	18,108	352	1.75
SB Off ramp to WB Willow Ave.	SB			2.30
SB On ramp from EB Willow Ave.	SB	16,219	284	1.75
SB On ramp from WB Willow Ave.	SB	8,812	203	2.30
Willow Ave. west of 101 I/C	WB	29,323	513	1.75
Willow Ave. west of 101 I/C	EB	35,367	619	1.75
Willow Ave. east of 101 I/C	WB	20,396	469	2.30
Willow Ave. east of 101 I/C	EB	35,196	810	2.30

## Project Assessment Form for PM<sub>2.5</sub> Interagency Consultation

**Opening Year:** If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses

N/A

**RTP Horizon Year / Design Year:** If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses

N/A

### **Describe potential traffic redistribution effects of congestion relief**

The project does not add capacity and is not expected to impact other facilities.

### **Comments/Explanation/Details**

This is not a project of air quality concern as defined in 40 CFR 93.123(b)(1) because:

*(i) New or expanded highway projects with significant number/increase in diesel vehicles?*

- Not a new or expanded highway project

*(ii) Affects intersections at LOS D, E, or F with a significant number of diesel vehicles?*

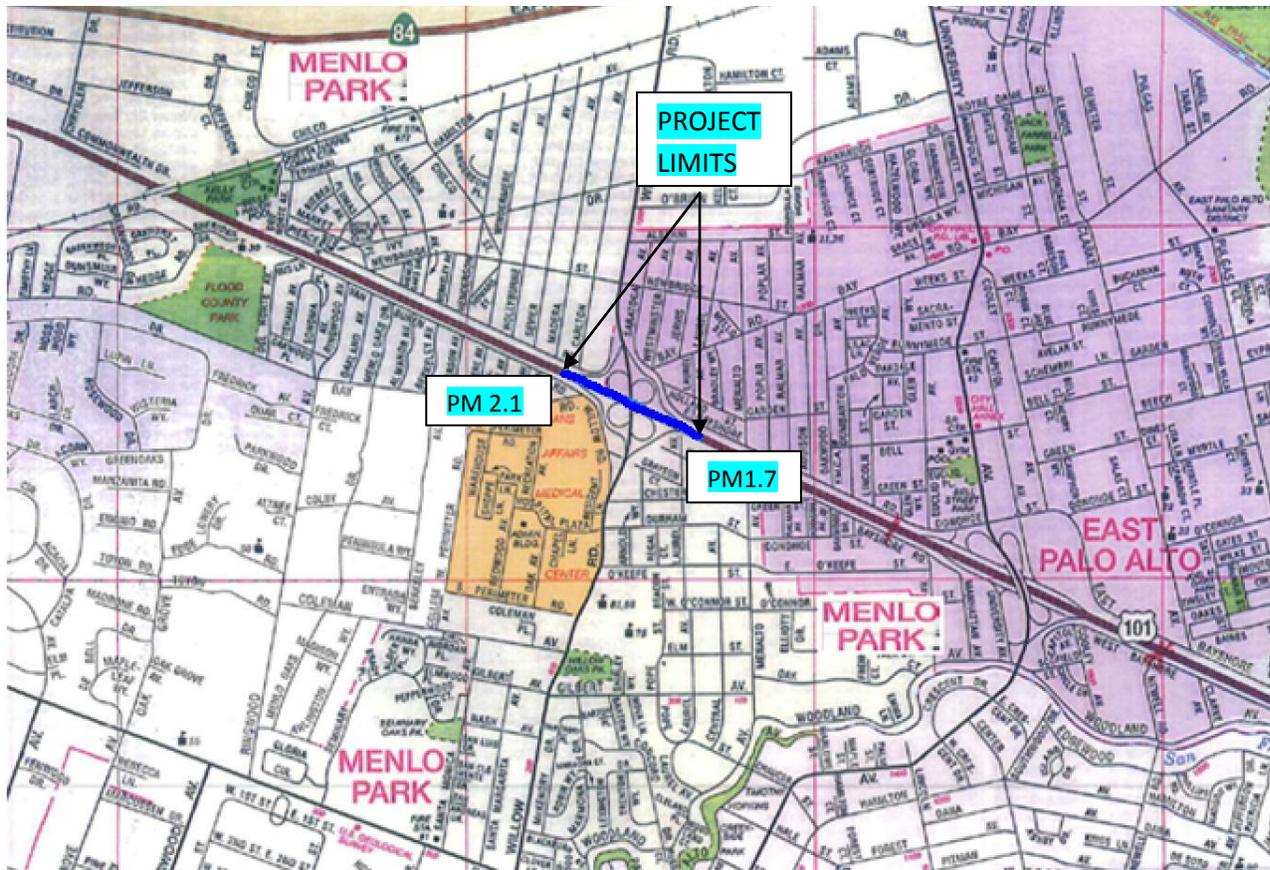
The percentage of total trucks is much lower than 8% and less than 10,000 AADT for both opening year and design year.

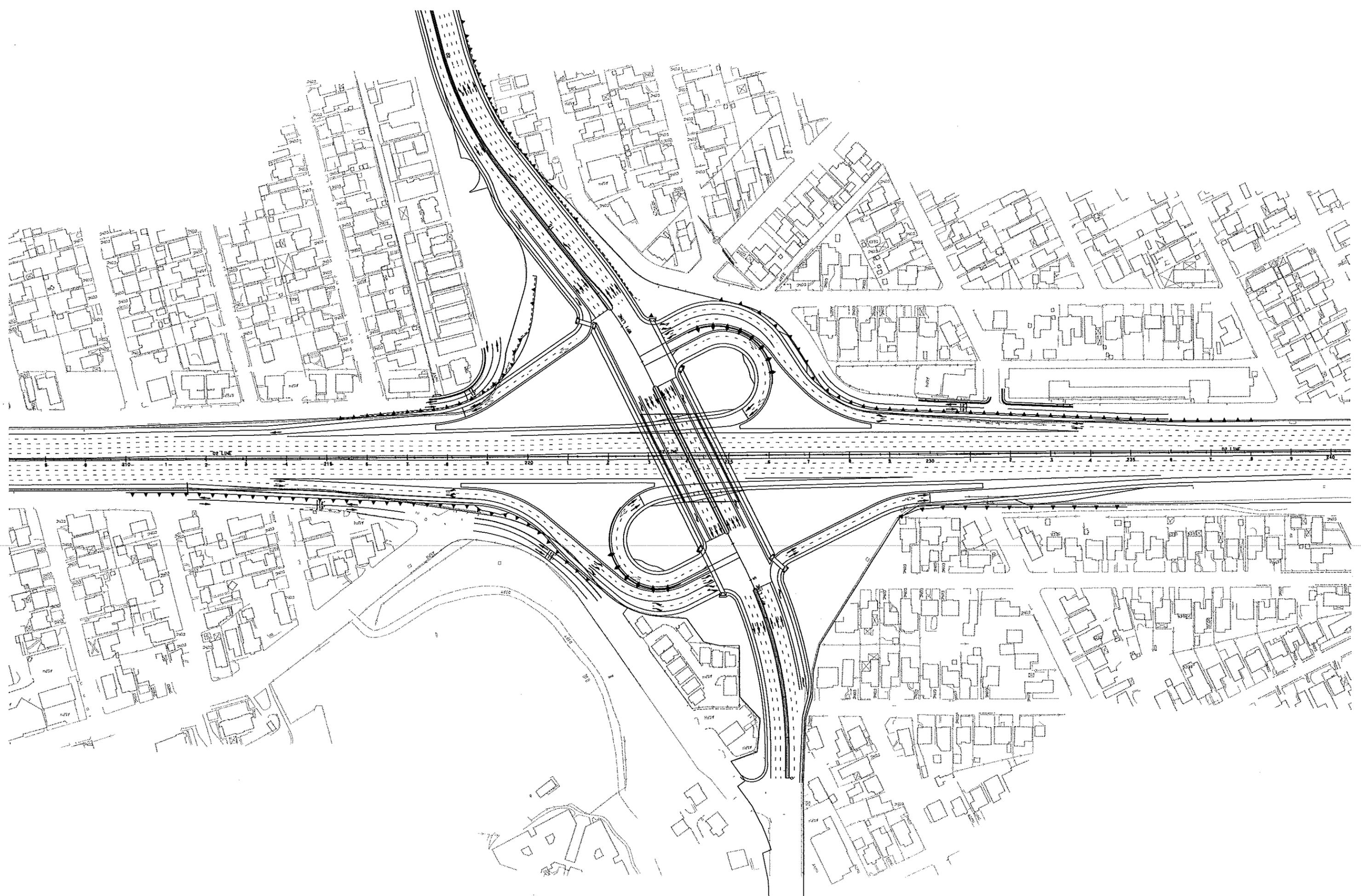
*(iii) New bus and rail terminals and transfer points?—Not Applicable*

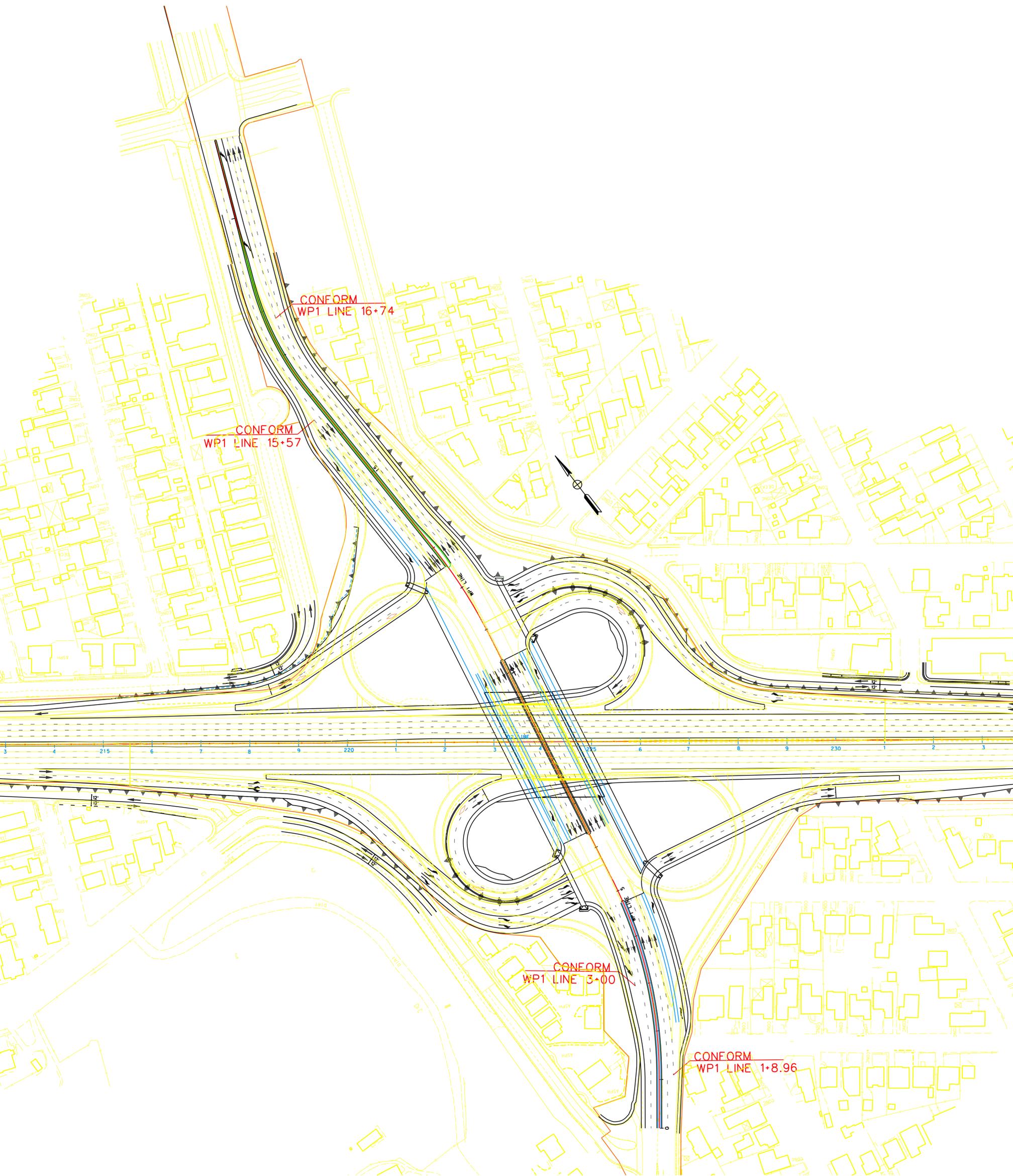
*(iv) Expanded bus and rail terminals and transfer points?—Not Applicable*

*(v) Affects areas identified in PM<sub>10</sub> or PM<sub>2.5</sub> implementation plan as site of violation?*

- No state implementation plan for PM<sub>2.5</sub>
- Therefore, not identified in plan as an area of potential violation.







# Land Uses

