Air Quality Impact Assessment
Draft Technical Report

Interstate 10
LA 415 to Essen Lane (I-10/I-12)
East and West Baton Rouge Parishes, Louisiana

State Project No. H.004100

Submitted to:
Louisiana Department of Transportation and Development

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July 2019

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1.0 INTRODUCTION

This report documents the results of an air quality assessment as part of the environmental process for the I-10 widening project in East and West Baton Rouge Parishes. Figure 1 shows the project area, which extends from LA 415 to Essen Lane (I-10/I-12). The Louisiana Department of Transportation (DOTD) is evaluating the No-Build and Build Alternatives. The Build Alternative involves widening I-10 to add one travel lane in each direction; modifying the I-10 interchanges at LA1, Washington Street, Dalrymple Drive, Perkins Road and Acadian Throughway; constructing a flyover ramp from westbound I-10 to College Drive; and replacing the Nairn Drive overpass bridge. A dedicated right exit is also proposed off the College Drive westbound exit ramp to allow traffic to flow directly to Corporate Boulevard via Trust Drive. Generally, the interchange modifications involve:

- LA 1 - ramp modifications to accommodate shoulder widening and an auxiliary lane to LA 415
- Washington Street/Dalrymple Drive (Washington/Dalrymple) - one consolidated interchange
- Perkins Road - removal of the Perkins Road ramps
- Acadian Throughway – ramp lengthening and widening of the existing diamond interchange along with at-grade improvements along Acadian Thruway between Perkins Road and I-10

2.0 AIR QUALITY IMPACT ASSESSMENT

The Build Alternative will increase the capacity of I-10 and several interchanges and could affect air quality in the project area. This Air Quality Impact Assessment (AQIA) evaluates those potential air quality effects. The AQIA addresses current federal regulations and guidance and has been prepared in accordance with current DOTD guidance, the air quality assessment scope of work, and the air quality analysis protocol developed by Bowlby & Associates (B&A) and approved by DOTD.

The AQIA addresses transportation conformity, the potential for the project to violate current carbon monoxide (CO) air quality standards, Mobile Source Air Toxics (MSATs), the relationship of the project to global climate change, construction air quality, and indirect and cumulative effects.

2.1 National Ambient Air Quality Standards (NAAQS)

The United States Environmental Protection Agency (EPA) has established allowable concentrations and exposure limits called the National Ambient Air Quality Standards (NAAQS) for various "criteria" pollutants. These pollutants include carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), sulfur oxides (SO_x), and lead (Pb).

EPA identifies areas that do not meet the NAAQS for the criteria pollutants and designates them as "nonattainment" areas in accordance with the Clean Air Act Amendments of 1990 (CAAA of 1990). When a nonattainment area meets the NAAQS, EPA redesignates it as a "maintenance" area.

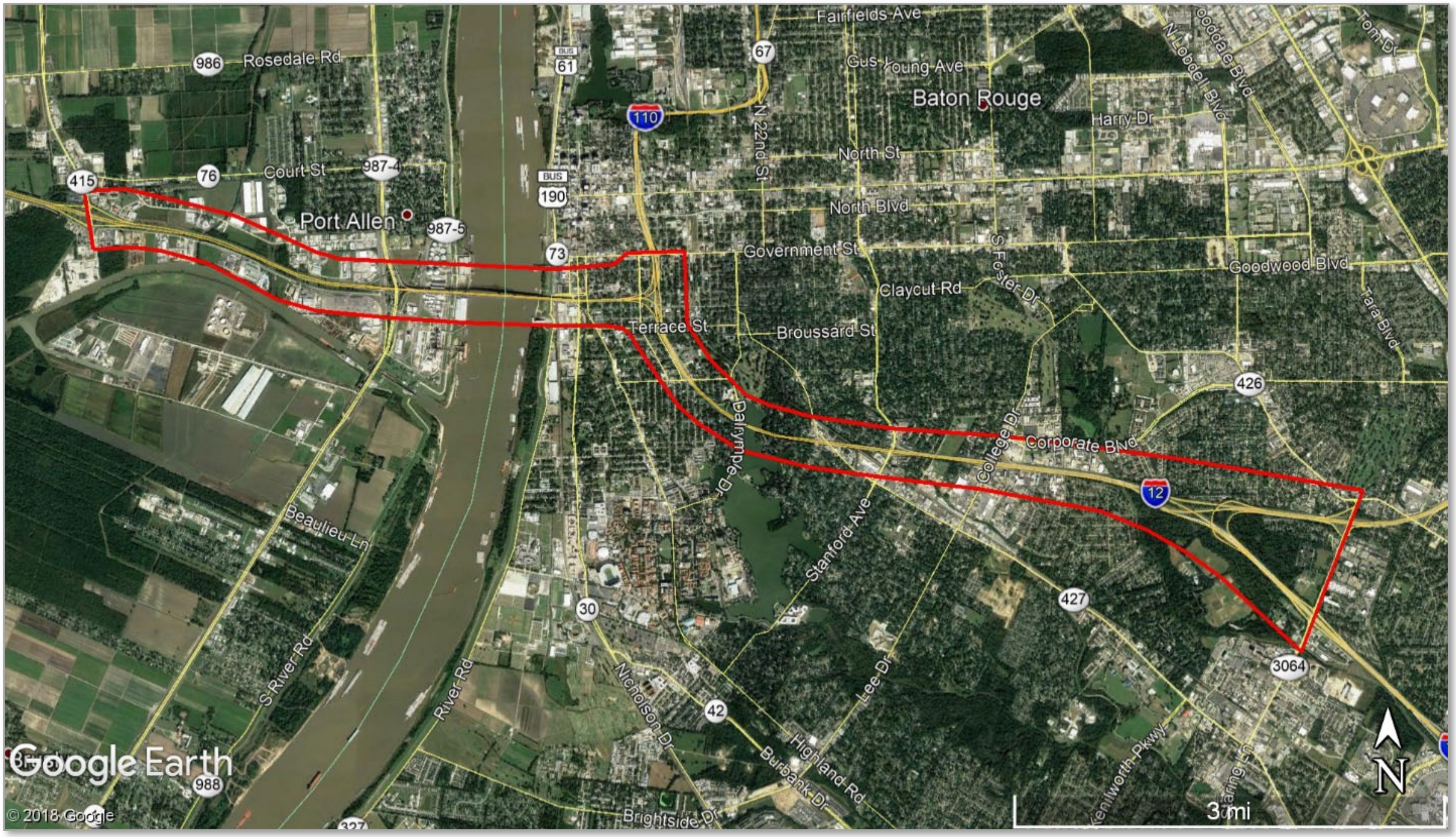

Figure 1. Project Area

2.2 Transportation Conformity

Transportation conformity is a process required of Metropolitan Planning Organizations (MPOs) pursuant to the CAAA of 1990. The CAAA require that transportation plans, programs, and projects in nonattainment or maintenance areas that are funded or approved by the FHWA be in conformity with the State Implementation Plan (SIP) that represents the state's plan to either achieve or maintain the NAAQS for a particular pollutant. Projects conform to the SIP if they are included in a fiscally constrained and conforming Metropolitan Transportation Plan (MTP) or Transportation Improvement Program (TIP).

East and West Baton Rouge Parishes are in the Baton Rouge maintenance area for the 2008 ozone NAAQS; therefore, transportation conformity applies to the project. East and West Baton Rouge Parishes were previously maintenance areas for the 1997 ozone NAAQS. A February 16, 2018 ruling by a DC Circuit Court on a case brought by environmental group petitioners against the EPA has affected the conformity process for some areas. However, EPA's November 2018 *"Transportation Conformity Guidance for the South Coast II Court Decision"* guidance indicates that the 2008 ozone NAAQS nonattainment and maintenance areas will continue to fulfill transportation conformity requirements for ozone by demonstrating conformity for the 2008 ozone NAAQS. Transportation conformity for the 1997 ozone NAAQS does not need to be demonstrated.

Table 1 summarizes the project inclusion in the current Baton Rouge Urbanized Area Capital Region Metropolitan Planning Organization *"Transportation Improvement Program 2019-2022"* (adopted January 30, 2018; amended March 20, 2019; and modified May 20, 2019) and "*Metropolitan Transportation Plan MOVE 2042"* (adopted January 30, 2018). As shown, the TIP project H.004100 includes the Environmental Phase, Engineering Phase, and the Feasibility/Environmental Study for I-10 from LA 415 to Essen Lane on I-10 and I-12. The MTP includes segments of the project from the Mississippi River Bridge to I-10/I-12, LA 1 to I-110 (Mississippi River Bridge), and the Study Area Boundary to LA 1. However, these projects are on the unfunded project list (Table 7-9 of MTP). The west section is also identified for Stage II implementation (Table 7-7 of MTP) although both projects are described as widening to six lanes. Since the MTP does not include the project as currently proposed, the project does not conform to the SIP. Appendix A includes the current MTP and TIP project sheets.

After the MPO adopted the current TIP and MTP, DOTD developed a detailed phasing plan for 16 separate project segments as shown in Figure 2 and Table 2. DOTD provided the phasing to the MPO for incorporation into the amended TIP and MTP. The schedule indicates that the preliminary engineering (PE), right-of-way (ROW), and utility phases for all segments will be authorized in FY 2019-2020. The construction authorization dates will vary. Ten of the 16 segments are proposed for authorization in FY 2019-2020: 3A, 3B, 3C, 4C, 6A, 6B, 6C, 7, 8A, and 8B. The planned construction authorization date for Segments 1 and 2 is FY 2021-2022, while the date for Segments 4A and 4B is FY 2024-2025. Finally, the construction authorization dates for Segments 5A and 5B are FY 2025-2026 and FY 2021-2022, respectively.

Once the TIP and MTP are amended and the project segments, limits and descriptions are consistent with the proposed project, the project will conform to the SIP.

Table 1: Project Inclusion in Current TIP and MTP

Termini		Project #	Description
From	To		
Transportation Improvement Program 2018-2022			
LA 415	Essen Lane on I-10 and I-12	H.004100	Environmental Phase
			Engineering Phase
			Feasibility/Environmental Study
MOVE 2042			
Study Area Boundary	LA 1	n/a	Widen to 6 Lanes
LA 1	I-110 (Mississippi River Bridge)	n/a	Widen to 8 Lanes
I-110 (Mississippi River Bridge)	I-10/I-12 Split	n/a	Widen to 8 Lanes

2.3 Carbon Monoxide

CO is a colorless, odorless gas that interferes with the delivery of oxygen to a person's organs and tissues. The health effects of CO exposure depend on the duration and intensity of exposure as well as a person's health. CO concentrations are usually higher during the winter months because vehicles emit higher CO emissions in cold weather due to the characteristics of internal combustion engines. The NAAQS for CO include a 1-hour standard of 35 parts per million (ppm) and an 8-hour standard of 9 ppm. East and West Baton Rouge Parishes have always been in attainment of the CO NAAQS.

EPA's *Guideline for Modeling Carbon Monoxide from Roadway Intersections* (hereafter referred to as the EPA Guideline) (USEPA, 1992) provides guidance for evaluating potential CO NAAQS violations. The EPA Guideline indicates that signalized intersections that operate at Level of Service (LOS) A, B, or C do not require further analysis because the delay and congestion would not likely cause or contribute to an exceedance of the CO NAAQS. As a result, CO modeling is only required at signalized intersections that operate at LOS D or worse during any hour. The guidance includes a screening and ranking process to identify those intersections.

2.3.1 Analysis Intersections

The project will affect the signalized intersections listed in Table 3. Detailed intersection capacity analyses for Design Year 2040 for the No-Build Alternative were available for each intersection for both the AM (morning) and PM (afternoon) peak hours. The analysis results did not include the LOS but did include the predicted intersection delay that can be used as a proxy for LOS. Delays greater than 35 seconds represent LOS D or worse operations.

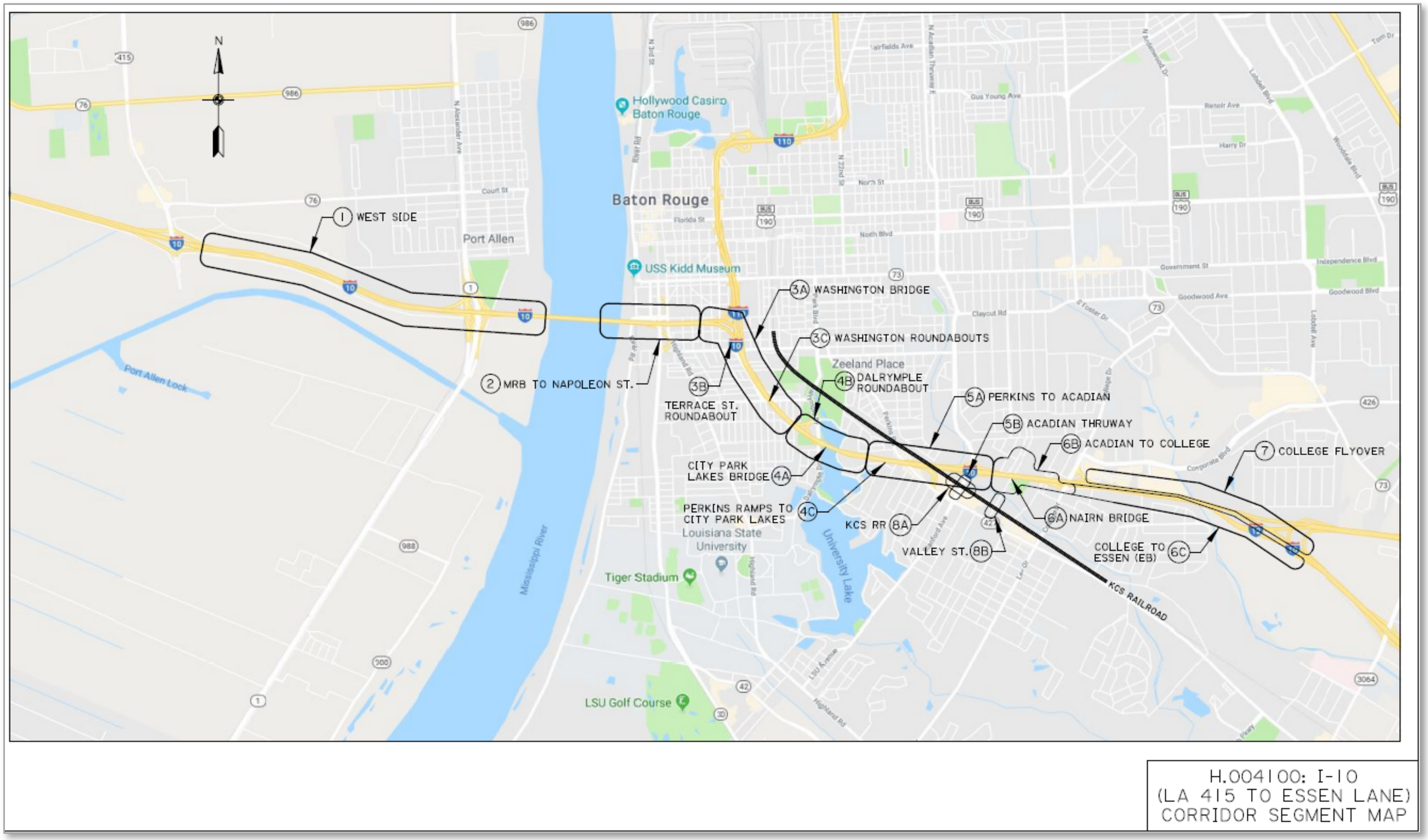

Figure 2. Planned Project Segments for Future Amended TIP and MTP

Table 2: Planned Project Inclusion in Future Amended TIP and MTP

Segment		Limits	Description	Phase Authorization Date (Fiscal Year)			
Number	**Name**			**PE**	**ROW**	**Utility**	**Construc-tion**
1	West Side	LA 415 to MRB	Widening	FY 19-20			FY 32-33
2	MRB to Napoleon St	MRB to Nicholson (LA 30)	Shoulder widening and ramp gores on structure	FY 19-20			FY 32-33
3A	Washington Bridge	I-110 Interchange to Grade Section West of Dalrymple	Bridge Replacement and roundabouts	FY 19-20			
3B	Terrace St Roundabout						
3C	Washington Roundabouts						
4A	City Park Lakes Bridge	Grade Section West of Dalrymple to Grade Section East of City Park Lake Bridge	Bridge replacement and ramps to Dalrymple	FY 19-20			FY 24-25
4B	Dalrymple Roundabout		Roundabout and approach pavement	FY 19-20			FY 24-25
4C	All ROW & Utility Relocation, Soundwalls, Drainage	Washington to College/City Park Lake to Perkins	All ROW & Utility Rel/Soundwall & Drainage between CPL & Perkins	FY 19-20			
5A	Perkins to Acadian	Grade Section west of Perkins and Acadian Bridge to Grade Section East of College Bridge	Bridge Replacement; removal of Perkins ramps and construction of Acadian interchange; interim bridge widening of College Bridge	FY 19-20			FY 25-26
5B	Acadian Thruway	Perkins Rd to I-10 EB ramps	Reconstruct Acadian Thruway	FY 19-20			FY 21-22
6A	Nairn Bridge	Acadian to I-10/I-12 Split EB Roadway, Replace Nairn Dr Overpass and Sound Walls	College Drive eastbound bridge widening, mainline widening, new Nairn Bridge overpass with sound wall replacement	FY 19-20			
6B	Acadian to College						
6C	College to Essen (EB)						
7	College Dr Flyover	I-10 WB exit ramp at I-10/I-12 split to college	Includes I-10 WB roadway work, College Dr flyover bridge, frontage roads, soundwalls, and Trust Dr Alternative	FY 19-20			
8A	KCS RR	KCS RR: I-10 Overpass to East of Valley St	Includes KCS RR bridge and improvements to the RR tracks at the Valley St crossing	FY 19-20			
8B	Valley St	Valley St North and South of KCS RR crossing	Includes roadway work on Valley St related to a raising of the RR track	FY 19-20			

Table 3: Intersection Screening and Ranking Results, Design Year, No-Build Alternative

Intersection	*Peak Hour*	*Delay (seconds)*	*Total Traffic Volume (vph)*	*Traffic Volume Ranking*	*Delay Ranking*	*Analyze?*
Acadian Thruway at I-10 Westbound Ramps	AM	41.4	3,047	6	4	No (1)
	PM	92.7	3,242	4	***1***	***Yes***
Acadian Thruway at I-10 Eastbound Ramps	AM	64.4	3,099	5	2	No
	PM	63.8	3,319	3	3	No
Acadian Thruway at Acadian Centre	AM	6.7	2,442	9	14	No
	PM	8.6	2,749	7	13	No
Perkins Road at I-10 Ramps	AM	20.3	2,394	10	6	No
	PM	11.2	2,501	9	11	No
College Drive at I-10 Westbound Ramps	AM	18.4	3,789	2	7	No
	PM	25.5	4,269	***1***	15	No
I-10 Westbound Ramps at Dalrymple Drive	AM	13.9	1,274	14	8	No
	PM	11.1	1,306	11	12	No
I-10 Eastbound Off-Ramp at Dalrymple Drive	AM	6.4	1,275	13	15	No
	PM	3.6	1,306	11	17	No
I-10 Westbound On-Ramp at Washington Street	AM	3.1	572	18	18	No
	PM	3.8	703	17	16	No
I-10 Eastbound Off-Ramp at Washington Street	AM	12.6	885	16	10	No
	PM	13.1	892	15	9	No

(1) PM conditions represent the “worst-case” and were evaluated. Delays during the AM peak are significantly lower.

Analyses were not conducted for the Build Alternative; however, the project will add capacity and improve operations, so the intersections would operate at higher LOS with lower delay under the Build Alternative.

Table 3 summarizes the screening and ranking analysis results for the signalized intersections for the Design Year for the No-Build Alternative. As indicated, the only intersections with delays greater than 35 seconds (LOS D) are Acadian Thruway at the I-10 Eastbound and Westbound Ramps in the AM and PM peaks. The highest delay occurs at the Westbound Ramps during the PM peak when the predicted delay is 92.7 seconds per vehicle, which represents LOS F operations. This intersection also has the fourth-highest volume (3,242 vehicles per hour (vph)). The predicted total vehicle delay at the intersection is nearly 5,010 minutes (83 hours) during the PM peak.

By comparison, the highest volume intersection is College Drive at I-10 Westbound Ramps, which is predicted to service 4,269 vehicles during the PM Peak and approximately 1,000 vehicles more than the intersection of Acadian Thruway at I-10 Westbound Ramps. However, the predicted total vehicle delay is 1,815 minutes (30 hours) during the PM peak and substantially lower than the total delay at the intersection of Acadian Thruway at I-10 Westbound Ramps. These results indicated that Design Year 2040 PM peak operations at the intersection of Acadian Thruway and the I-10 Westbound Ramps for the No-Build Alternative represent a “worst-case” analysis for CO and should be evaluated. CO concentrations at other signalized intersections would be much lower.

2.3.2 Dispersion Modeling

Dispersion modeling was conducted using the CAL3QHC computer model recommended by EPA for predicting CO concentrations near roadway intersections. The CAL3QHC model is used to represent the roadway network, traffic operations, and nearby receptors and also models the effects of vehicle queuing at traffic signals. A coordinate-geometry system is used to represent the location of the receptors and roadways.

Receptors should be located outside the “mixing zone” of the free flow links and in areas where human activity is expected to occur. The mixing zone is considered to be the area of uniform emissions in which no dispersion is assumed. Receptor points were modeled approximately 15 feet outside of the mixing zone of the intersection (of Acadian Thruway and the I-10 Westbound Ramps) at increments every 50 feet back from the stop bar of each intersection approach to adequately capture the effects of anticipated queuing activity. Locating the receptors just outside the mixing zone at 50-foot increments provides a “worst-case” analysis since concentrations will decrease with increased distances from the intersection and at locations where human activity is more likely.

Based on the traffic analysis, average speeds of 35 miles per hour (mph) were modeled on Acadian Thruway, the I-10 WB off ramp, and the I-10 WB on ramp. A number of worst-case meteorological assumptions (e.g., low wind speeds, low vertical mixing height) were applied. Wind directions were evaluated from 0º to 360º in 10º increments. The Louisiana Department of Environmental Quality provided a first maximum CO value of 3.1 ppm from 2018 that was used as the local background concentration for the analysis.

Emission factors were computed using EPA’s MOVES2014a emissions model and the MOVES model runs provided by the Capital Region Planning Commission (CRPC) for the Baton Rouge region.

MOVES models several factors, including those related to controls on the vehicles, such as Inspection and Maintenance and Anti-Tampering Programs. Some factors relate to characteristics of the on-road vehicle fleet, including average speeds, age distribution, mix of diesel and gasoline-fueled vehicles, and low-emitting vehicles. Other factors are related to fuels, including volatility and oxygenation. Finally, meteorological factors such as temperature and humidity are modeled.

Emission factors will be higher under existing conditions than for Design Year 2040 and would represent a “worst-case” scenario, so the analysis used emissions factors for the previous calendar year of 2018.

Modeling emissions using various "worst-case" factors should provide DOTD with an adequate baseline for future projects. Appendix B includes the CAL3QHC and MOVES files for the CO analysis.

2.3.3 Results

Table 4 shows the highest predicted 1-hour and 8-hour average CO concentrations at the modeled receptors, including background. As shown, the worst-case predicted 1-hour concentration of 4.6 ppm is substantially lower than the 1-hour NAAQS of 35 ppm. Per the EPA Guideline, a persistence factor of 0.70 was applied to the predicted CAL3QHC 1-hour CO concentration (less background) and added to the background concentration of 3.1 ppm to obtain the predicted eight-hour average concentration. As shown, the predicted 8-hour concentration of 4.3 ppm is also much lower than the 8-hour NAAQS of 9 ppm. In conclusion, the No-Build and Build Alternatives are not predicted to cause new violations or contribute to existing violations of the NAAQS.

Table 4: Maximum 1-hour and 8-hour CO Concentrations

Intersection	*Alternative*	*Year (Peak Hour)*	*1-hour Concentration (ppm)*	*8-hour Concentration (ppm)*
Acadian Thruway at I-10 Westbound Ramps	No-Build	2040 (PM)	4.6	4.3

2.4 Mobile Source Air Toxics

On February 3, 2006, the FHWA released "*Interim Guidance on Air Toxic Analysis in NEPA Documents.*" This guidance was superseded on September 30, 2009, December 6, 2012 and most recently on October 18, 2016 by FHWA's "*Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents" (FHWA MSATs Guidance)* (FHWA 2016). The purpose of FHWA's MSATs Guidance is to advise on when and how to analyze MSATs in the NEPA process for highways. Appendix C provides additional MSATs information.

The FHWA MSATs Guidance groups projects into the following categories:

- Exempt Projects and Projects with no Meaningful Potential MSAT Effects;
- Projects with Low Potential MSAT Effects; and
- Projects with Higher Potential MSAT Effects.

The Guidance states that "Projects with Higher Potential MSAT Effects" should:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location, involving a significant number of diesel vehicles for new projects or accommodating with a significant increase in the number of diesel vehicles for expansion projects; or

- Create new capacity or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 or greater by the design year;

And also

- Be proposed to be located in proximity to populated areas.

The Build Alternative includes the widening and reconstruction of I-10 through heavily populated Baton Rouge. The segments of I-10 between LA 1 and Essen Lane are projected to carry between 136,000 and 234,000 vehicles per day (vpd) in Design Year 2040 with the project. Therefore, the project meets the criteria for a "Project with Higher Potential MSAT Effects."

2.4.1 Analysis Methodology

FHWA's MSATs Guidance indicates that a "Project with Higher Potential MSAT Effects" should be more rigorously assessed for impacts and states that the Office of Natural Environment (HEPN) and the Office of Project Development and Environmental Review (HEPE) in FHWA Headquarters should be contacted for assistance in developing a specific approach for assessing impacts.

The project team developed a MSATs analysis methodology that was reviewed and approved by the FHWA Louisiana Division Office. Appendix D includes the approved MSATs analysis methodology. The analysis items are summarized below.

2.4.1.1 Pollutants

FHWA's MSATs Guidance states that *"for projects warranting MSAT analysis, all nine priority MSAT should be considered."* Therefore, the analysis included those nine priority MSATs: 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter (polycyclic aromatic hydrocarbons (PAH)).

2.4.1.2 Analysis Years

The MSATs evaluation was conducted for the Base Year 2017 and Design Year 2040 for both the No-Build and Build Alternatives.

2.4.1.3 Affected Roadway Network

The Stage 0 Feasibility Study for the project identified the affected environment for the environmental process, which includes I-10 from LA 415 to I-12 and numerous interchanges. The MSATs evaluation includes the roadway segments within the established affected environment as well as: I-12 between I-10 and Essen Lane, I-110 between I-10 and Government Street, and LA 415 between Rosedale Road and I-10, as shown in Figure 3. Table 5 summarizes the roadway segments included in the MSATs evaluation.

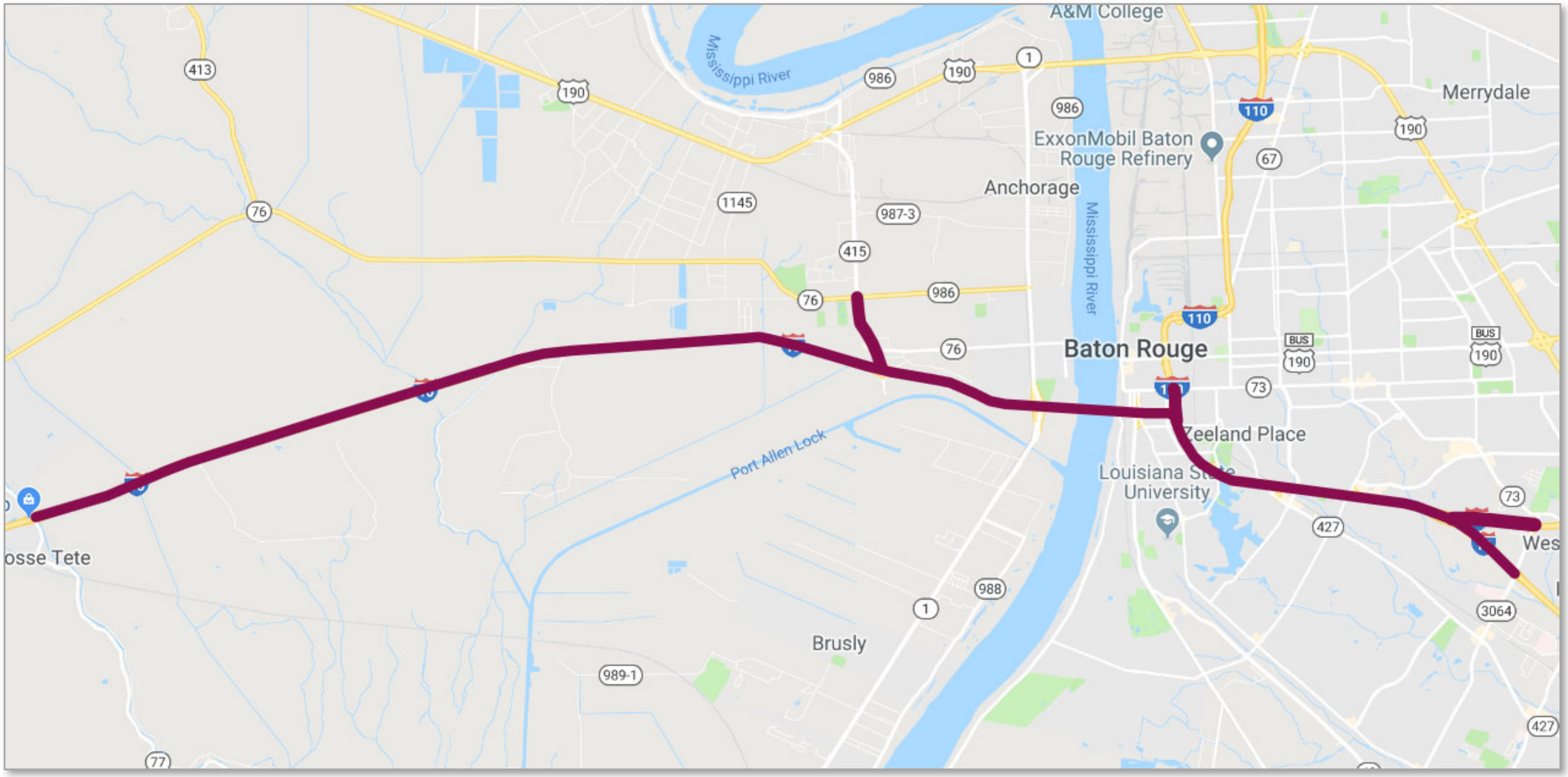

Figure 3. Affected Roadway Network

2.4.1.3 Traffic Data

The AADT projections for the Base Year 2017 and Design Year 2040 for each roadway segment were used to develop the projected vehicle miles of travel (VMT) for both analysis years for the No-Build and Build Alternatives. Table 5 summarizes the traffic volumes and VMTs for each segment.

Urban Systems conducted 24-hour and 48-hour traffic counts at numerous locations on I-10 and I-12 as part of the project. These traffic counts were used to develop hourly VMT fractions for the roadway segments. The fractions were applied to the AADTs in Table 5 to arrive at hourly traffic volumes for Base Year 2017 and Design Year 2040 for both the No-Build and Build Alternatives.

The MSATs evaluation also requires hourly speeds since speed is an important factor in emissions production. The procedure outlined in *"A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives"* (Claggett, 2006) was used to calculate congested speeds for each hour of the day for all road segments for Base Year 2017 and Design Year 2040 for both the No-Build and Build Alternatives. Appendix E includes charts showing the projected speeds. As shown, travel speeds on many segments will be increased under the Build Alternative during peak travel periods. These segments include I-10 from LA 415 to LA 1 and from Washington Street to Perkins Road, and westbound I-10 from I-12 to Essen Lane. Speeds are also projected to increase during the mid-day and in the early morning and early evening hours on many segments. Smaller increases in travel speed are projected on I-10 from I-110 to Washington Street, I-10 from Perkins Road to Acadian Thruway, and eastbound I-12 from I-10 to Essen Lane. No change in travel speed is projected on I-10 from LA 77 to LA 415, eastbound I-10 from I-12 to Essen Lane, and westbound I-12 from I-10 to Essen Lane. Decreases in travel speed are projected for westbound I-10 from College Drive to I-12. The project is not projected to affect speeds during nighttime hours.

2.4.1.2 Emission Factors

Emission factors for each roadway facility type were computed using EPA's MOVES2014b emissions model and the MOVES model runs provided by the CRPC. These files were modified by changing the speed and VMT distributions to reflect the speed and VMT distributions of the affected roadway network for the No-Build and Build Alternatives for Base Year 2017 and Design Year 2040. MOVES was then run using the County Domain/Scale for each month of the year and the results averaged to account for seasonal variation. Appendix F includes the MOVES files for the MSATs analysis.

2.4.2 Results

MSAT emissions for each roadway segment were calculated by multiplying emission factors (in grams per mile) by directional hourly VMT. Hourly MSAT emissions were then summed across all segments for both the No-Build and Build Alternatives for Base Year 2017 and Design Year 2040 and converted to tons per year. Tables 6 and 7 and Figures 4 through 12 summarize the results. Appendix G provides the segment by segment results.

Table 5: Roadway Segments for MSATs Evaluation

Road	From	To	Length (miles)	Base Year 2017		Design Year 2040 No-Build Alternative		Design Year 2040 Build Alternative	
				AADT	VMT	AADT	VMT	AADT	VMT
I-10	LA 77	LA 415	11.77	52,924	622,916	64,444	758,511	64,444	758,511
	LA 415	LA 1	2.2	89,060	195,932	108,448	238,585	111,128	244,473
	LA 1	I-110	1.93	153,802	296,838	187,349	361,583	190,919	368,474
	I-110	Washington Street	0.41	162,340	66,599	197,680	81,048	198,009	81,184
	Washington Street	Dalrymple Drive	0.46	152,121	69,976	185,236	85,208	190,053	87,424
	Dalrymple Drive	Perkins Road	0.63	152,151	95,855	185,570	116,909	203,441	130,168
	Perkins Road	Acadian Thruway	0.45	137,467	61,680	170,084	76,538	203,441	91,638
	Acadian Thruway	College Drive	0.69	165,521	114,210	204,795	141,309	227,588	157,036
	College Drive	I-12	1.44	182,097	262,219	239,039	344,215	233,505	336,247
	I-12	Essen Lane	1.09	105,879	115,408	138,988	151,497	136,256	148,519
LA 415	Rosedale Road	I-10	1.03	37,788	38,992	46,014	47,395	48,508	49,964
I-110	I-10	Government Street	0.13	93,784	12,192	114,119	14,846	117,766	15,309
I-12	I-10	Essen Lane	0.93	111,289	103,499	120,600	112,159	117,543	109,315

Table 6: Predicted MSAT Emissions, No-Build Versus Build Alternative

Pollutant	*Emissions (tons/year)*					
	Base Year 2017			*Design Year 2040*		
	No-Build	*Build*	*Change*	*No-Build*	*Build*	*Change*
Acetaldehyde	1.21907	1.22113	0.17%	0.05381	0.05431	0.92%
Acrolein	0.22236	0.22186	-0.22%	0.00698	0.00705	1.01%
Benzene	0.65502	0.65596	0.14%	0.08024	0.08117	1.16%
1,3-Butadiene	0.13538	0.13559	0.16%	0.00047	0.00047	0.98%
Diesel Particulate Matter (DPM)	89.44680	89.01465	-0.48%	6.65382	6.72781	1.11%
Formaldehyde	2.85497	2.85979	0.17%	0.15326	0.15475	0.97%
Ethyl Benzene	0.26374	0.26410	0.14%	0.02801	0.02834	1.15%
Napthalene	0.31343	0.31397	0.17%	0.01259	0.01268	0.68%
Polycyclic Aromatic Hydrocarbons (PAH)	0.82520	0.82368	-0.18%	0.01482	0.01487	0.31%

Table 7: Predicted MSAT Emissions, Base Year 2017 Versus Design Year 2040

Pollutant	*Emissions (tons/year)*					
	No-Build Alternative			*Build Alternative*		
	Base Year 2017	*Design Year 2040*	*Change*	*Base Year 2017*	*Design Year 2040*	*Change*
Acetaldehyde	1.21907	0.05381	-95.59%	1.22113	0.05431	-95.55%
Acrolein	0.22236	0.00698	-96.86%	0.22186	0.00705	-96.82%
Benzene	0.65502	0.08024	-87.75%	0.65596	0.08117	-87.63%
1,3-Butadiene	0.13538	0.00047	-99.65%	0.13559	0.00047	-99.65%
Diesel Particulate Matter (DPM)	89.44680	6.65382	-92.56%	89.01465	6.72781	-92.44%
Formaldehyde	2.85497	0.15326	-94.63%	2.85979	0.15475	-94.59%
Ethyl Benzene	0.26374	0.02801	-89.38%	0.26410	0.02834	-89.27%
Napthalene	0.31343	0.01259	-95.98%	0.31397	0.01268	-95.96%
Polycyclic Aromatic Hydrocarbons (PAH)	0.82520	0.01482	-98.20%	0.82368	0.01487	-98.20%

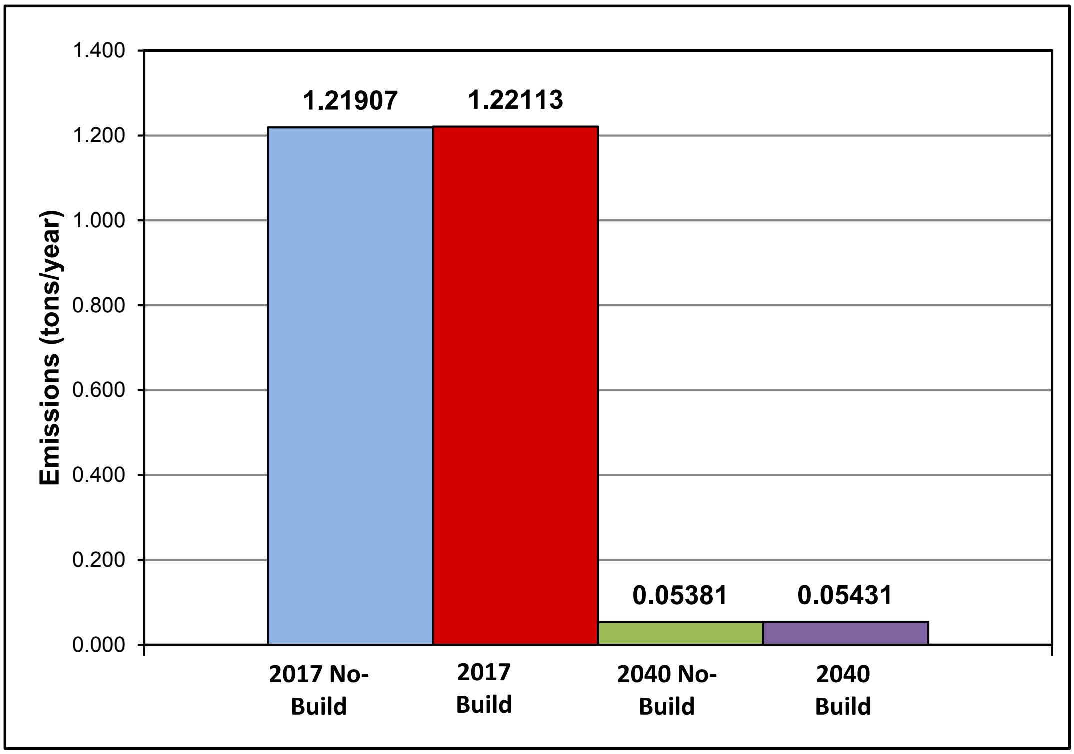

Figure 4: Predicted Acetaldehyde Emissions

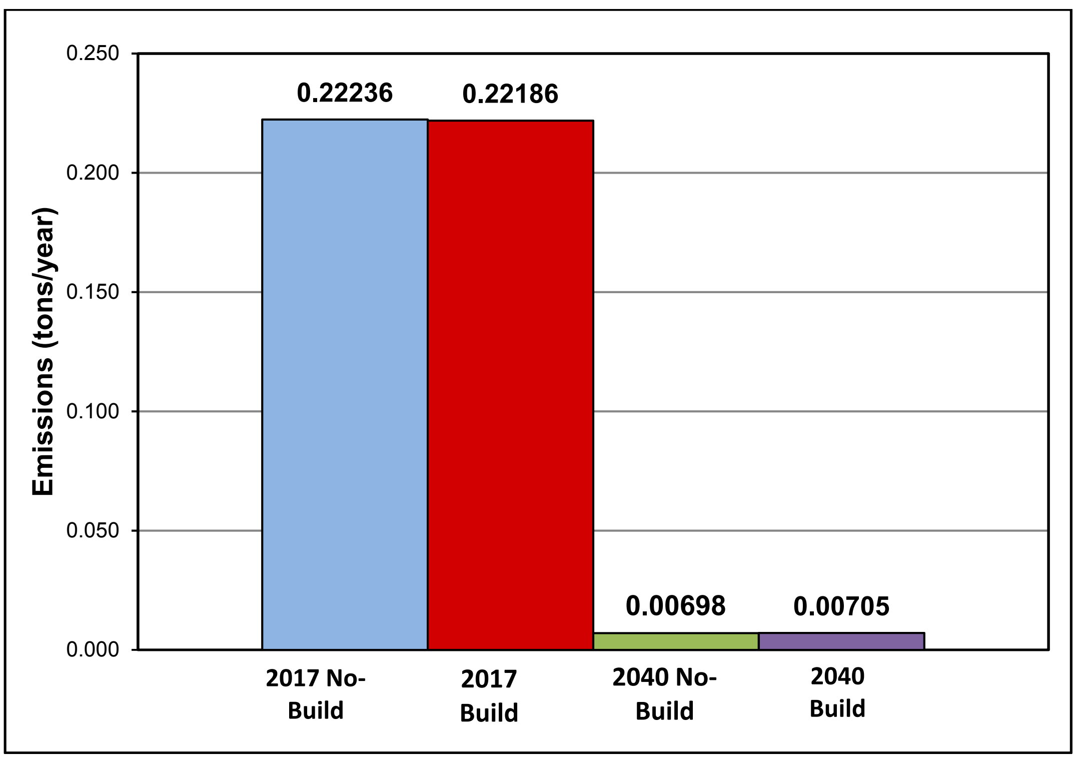

Figure 5: Predicted Acrolein Emissions

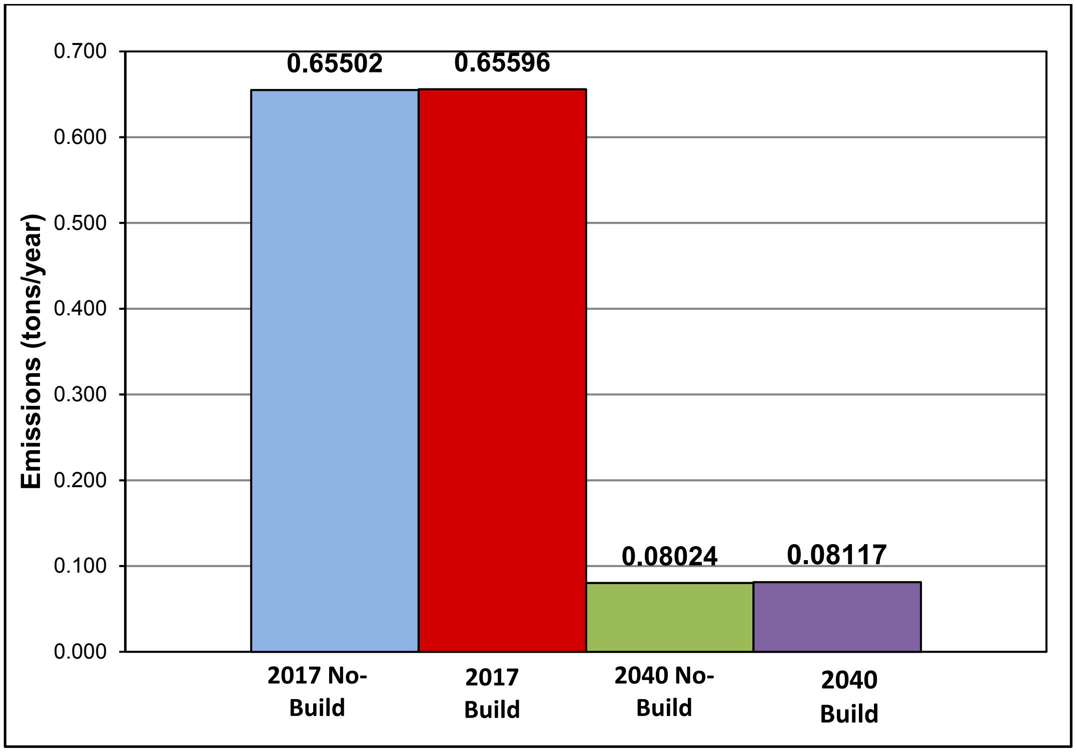

Figure 6: Predicted Benzene Emissions

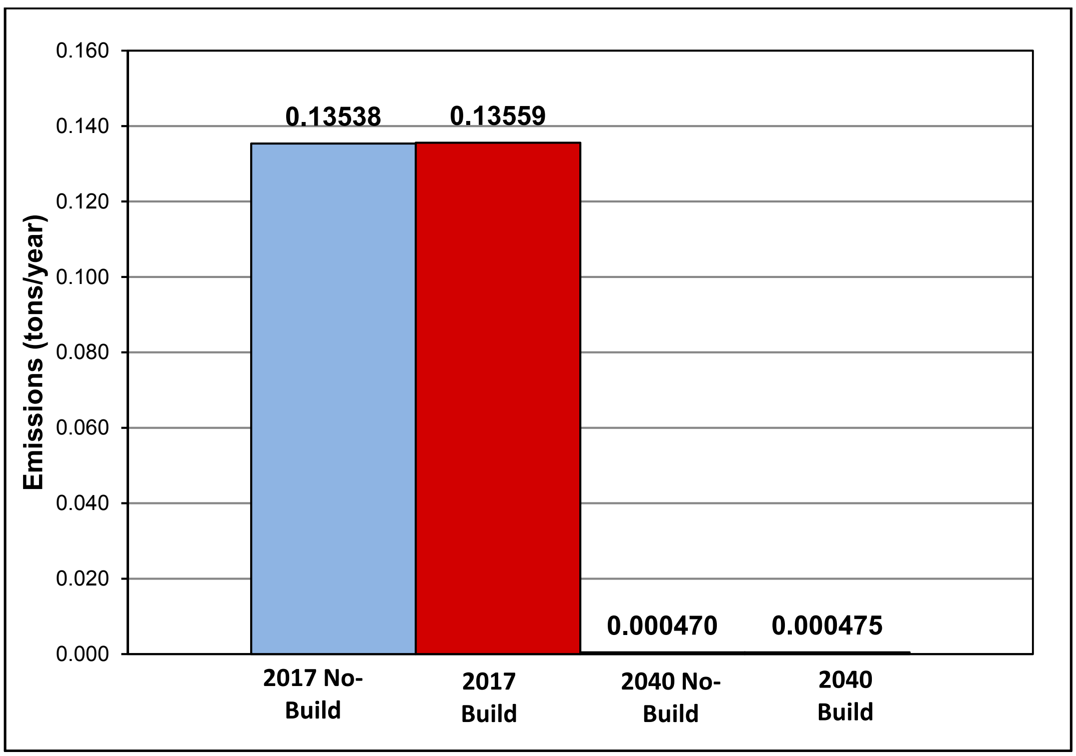

Figure 7: Predicted 1,3-Butadiene Emissions

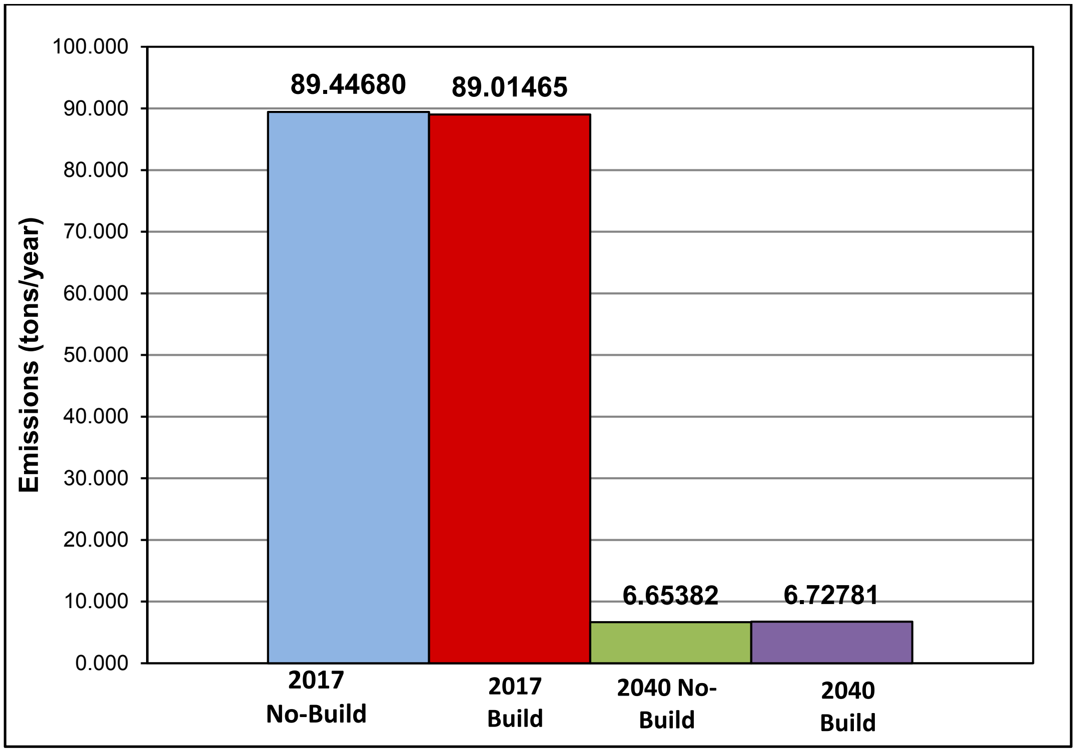

Figure 8: Predicted Diesel Particulate Matter (DPM) Emissions

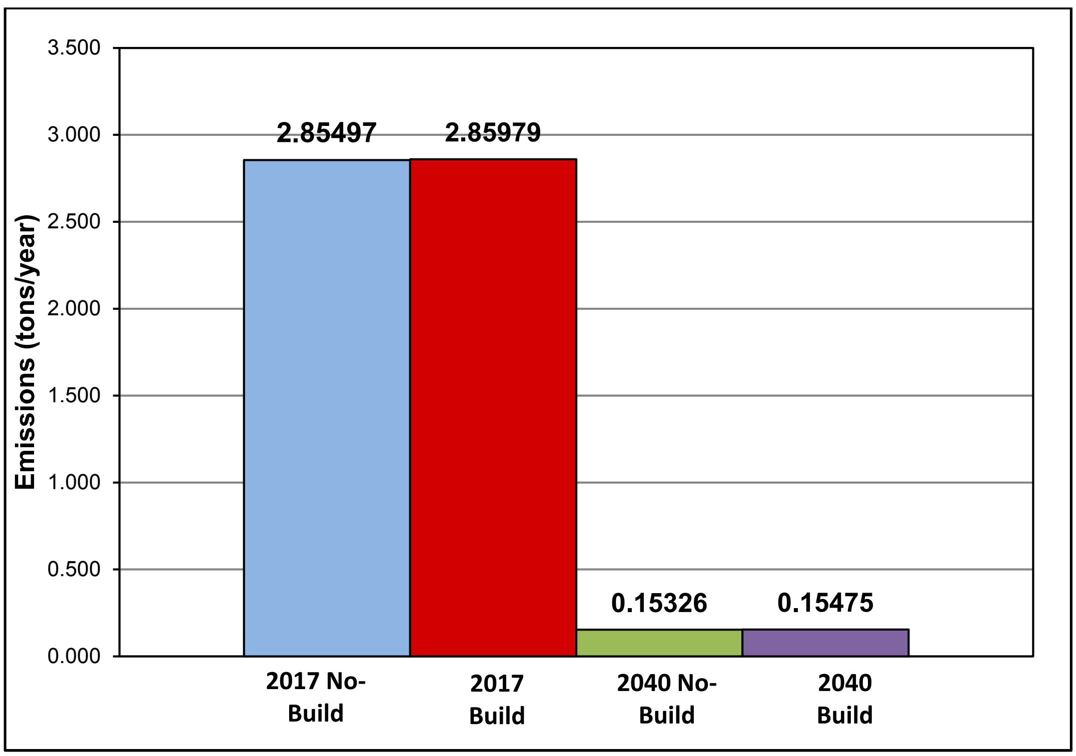

Figure 9: Predicted Formaldehyde Emissions

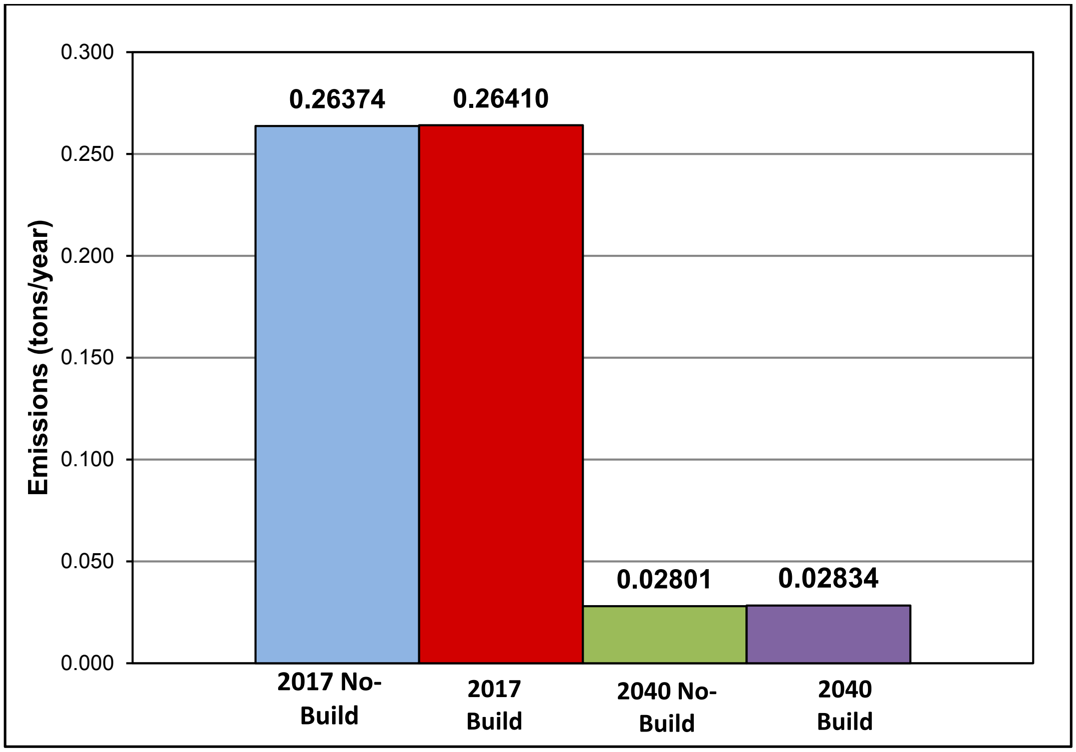

Figure 10: Predicted Ethyl Benzene Emissions

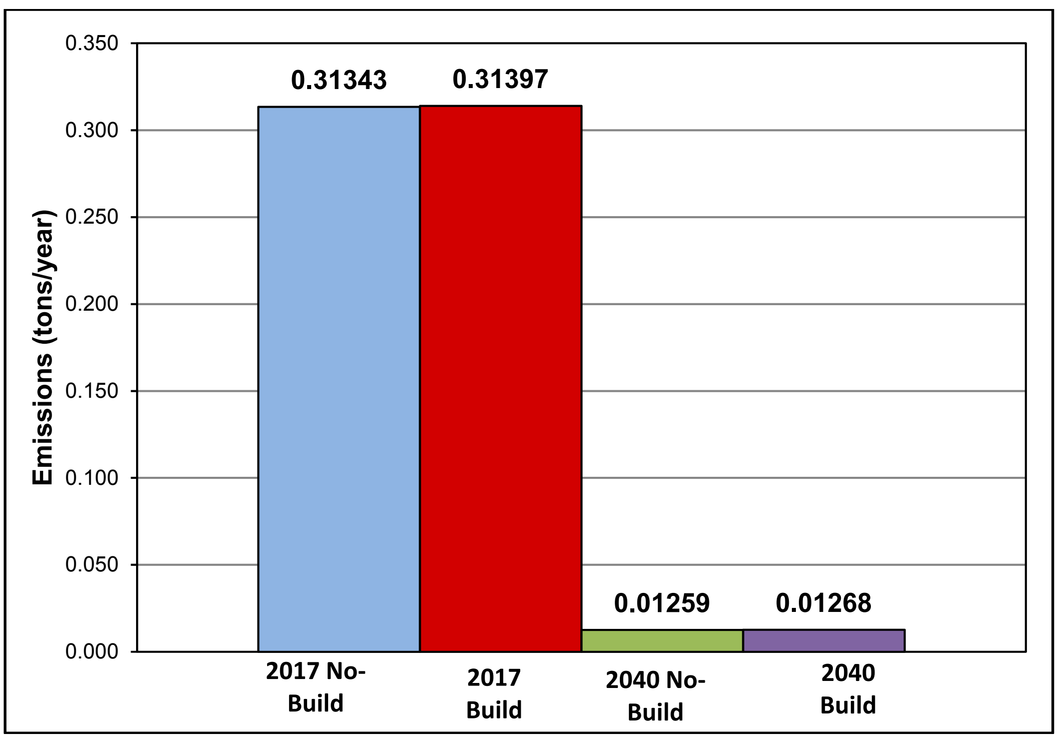

Figure 11: Predicted Napthalene Emissions

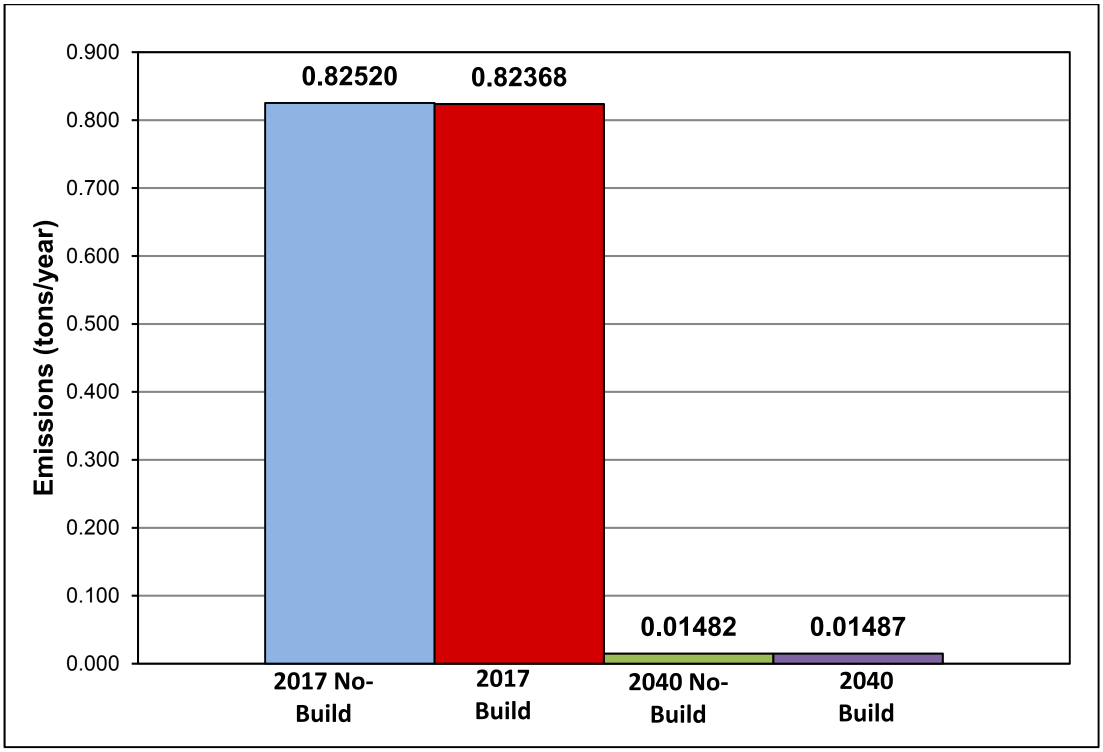

Figure 12: Predicted Polycyclic Aromatic Hydrocarbons (PAH) Emissions

Two important factors that affect emissions are speed and VMT. According to EPA's MOVES2014 model, emissions of all of the priority MSAT decrease as speed increases. Travel speeds for the Build Alternative are expected to be higher than for the No-Build Alternative. However, the VMT for the Build Alternative is higher due to increased capacity, and the VMT in Design Year 2040 is higher due to traffic growth. The analysis includes the effects of both the speed and VMT changes.

As shown in Table 6, MSAT emissions are comparable (less than 0.5% difference) for the No-Build and Build Alternatives in Base Year 2017 with Build Alternative emissions being slightly lower for three pollutants, and slightly higher for six pollutants. These results indicate that the increased speeds under the Build Alternative generally offset the effects of the higher VMT. MSAT emissions are slightly higher under the Build Alternatives in Design Year 2040 for all nine pollutants with increases ranging from approximately 0.3% to 1.2%. These results indicate that the increased speeds under the Build Alternative are not completely offsetting the effects of the higher VMT.

While the evaluation indicates that the emissions from the Build Alternative would be slightly higher than for the No-Build Alternative, FHWA's MSATs Guidance states that regardless of the alternative chosen, emissions are virtually certain to be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. As shown in Table 7, MSAT emissions under the No-Build Alternative are projected to decline by 87.8% to 99.7% between Base Year 2017 and Design Year

2040. Under the Build Alternative, MSAT emissions are projected to decline by 87.6% to 99.7% between Base Year 2017 and Design Year 2040. The results demonstrate that the reductions from EPA's national control programs is so great that even with the project and associated traffic growth, MSAT emissions are predicted to be substantially lower in Design Year 2040 than Base Year 2017 regardless of the alternative.

The additional travel lanes that would be constructed for Build Alternative will move some traffic closer to nearby sensitive land uses and may cause localized areas where ambient concentrations of MSAT would be higher. The magnitude and duration of these potential increases cannot be reliably quantified due to incomplete or unavailable information in forecasting project specific MSAT health impacts.

To summarize, slightly higher MSAT emissions are predicted under the Build Alternative in the Design Year 2040 than for the No-Build Alternative due to increased VMT. Higher MSAT concentrations could occur in a few localized areas. However, MSAT emissions and concentrations in the project area will be significantly lower in Design Year 2040 than for Base Year 2017 because of EPA's vehicle and fuel regulations. As a result, the Build Alternative is not expected to create any adverse MSAT effects.

Substantial construction related MSAT emissions are not anticipated as construction for any individual segment is not planned to occur over an extended building period. However, construction activity may generate temporary increases in MSAT emissions in the project area.

2.5 Greenhouse Gas Emissions (Climate Change)

Climate change is an important national and global concern. While the earth has gone through many natural climate changes in its history, there is general agreement that the earth's climate is currently changing at an accelerated rate and will continue to do so for the foreseeable future. Anthropogenic (human-caused) greenhouse gas (GHG) emissions contribute to this rapid change. Carbon dioxide (CO_2) makes up the largest component of these GHG emissions. Other prominent transportation GHGs include methane (CH_4) and nitrous oxide (N_2O).

Many GHGs occur naturally. Water vapor is the most abundant GHG and makes up approximately two-thirds of the natural greenhouse effect. However, the burning of fossil fuels and other human activities are adding to the concentration of GHGs in the atmosphere. Many GHGs remain in the atmosphere for time periods ranging from decades to centuries. GHGs trap heat in the earth's atmosphere. Because atmospheric concentration of GHGs continues to climb, our planet will continue to experience climate-related phenomena. For example, warmer global temperatures can cause changes in precipitation and sea levels.

To date, no national standards have been established regarding GHGs, nor has EPA established criteria or thresholds for ambient GHG emissions pursuant to its authority to establish motor vehicle emission standards for CO_2 under the CAA. However, there is a considerable body of scientific literature addressing the sources of GHG emissions and their adverse effects on climate, including reports from the Intergovernmental Panel on Climate Change, the US National Academy of Sciences, and EPA and other Federal agencies. GHGs are different from other air pollutants evaluated in Federal environmental reviews because their impacts are not localized or regional due to their rapid dispersion into the global atmosphere, which is characteristic of these gases: The *affected environment* for CO_2 and other GHG emissions is the entire planet. In addition, from a quantitative perspective, global climate change is the cumulative result of numerous and varied emissions sources (in terms of both absolute numbers and types), each of which makes a relatively small addition to global atmospheric GHG concentrations. In contrast to broad scale actions such as actions involving an entire industry sector or very large geographic areas, it is difficult to isolate and understand the GHG emissions impacts for a particular transportation project. Furthermore, there is currently no scientific methodology for attributing specific climatological changes to a particular transportation project's emissions.

Under NEPA, detailed environmental analysis should be focused on issues that are significant and meaningful to decision-making (40 CFR 1500, 1978). Based on the nature of GHG emissions and the exceedingly small potential GHG impacts of the proposed action, GHG emissions from the proposed action will not result in "reasonably foreseeable significant adverse impacts on the human environment" (40 CFR 1502.22(b)). GHG emissions will be insignificant and will not play a meaningful role in a determination of the of the preferred alternative. More detailed information on GHG emissions "is not essential to a reasoned choice among reasonable alternatives" (40 CFR 1502.22(a)) or to make a decision in the best overall public interest based on a balanced consideration of transportation, economic, social, and environmental needs and impacts (23 CFR 771.105(b)). For these reasons, no alternatives-level GHG analysis has been performed for this project.

The context in which the emissions from the proposed project will occur, together with the expected GHG emissions contribution from the project, illustrate why the project's GHG emissions will not be significant and will not be a substantial factor in the decision-making. As of 2017, the transportation sector is the largest source of total GHG emissions in the U.S., slightly surpassing electricity generation. The transportation sector was responsible for approximately 28.9 percent of all anthropogenic GHG emissions in the U.S. in 2017 (EPA, 2019). Most of the transportation GHG emissions are the result of fossil fuel combustion. CO_2 makes up the largest component of these GHG emissions. U.S. CO_2 emissions from the consumption of energy accounted for about 15 percent of worldwide energy consumption CO_2 emissions in 2016 (U.S. Energy Information Administration, 2018). U.S. transportation CO_2 emissions accounted for about 5 percent of worldwide CO_2 emissions in 2016.

While the contribution of GHGs from transportation in the U.S. as a whole is a large component of U.S. GHG emissions, as the scale of analysis is reduced, the GHG contributions become quite small.

2.5.1 Mitigation for Global GHG Emissions

To help address the global issue of climate change, USDOT is committed to reducing GHG emissions from vehicles traveling on our nation's highways. USDOT and EPA are working together to reduce these emissions by substantially improving vehicle efficiency and shifting toward lower carbon intensive fuels. The agencies have jointly established new, more stringent fuel economy and first-ever GHG emissions standards for model year 2012-2025 cars and light trucks, with an ultimate fuel economy standard of 54.5 miles per gallon for cars and light trucks by model year 2025. Further, on September 15, 2011, the agencies jointly published the first ever fuel economy and GHG emissions standards for heavy-duty trucks and buses (National Highway Traffic Safety Administration, 2018). Increasing use of technological innovations that can improve fuel economy, such as gasoline- and diesel-electric hybrid vehicles, will improve air quality and reduce CO_2 emissions in future years.

Consistent with its view that broad-scale efforts hold the greatest promise for meaningfully addressing the global climate change problem, FHWA is engaged in developing strategies to reduce transportation's contribution to GHGs—particularly CO_2 emissions—and to assess the risks to transportation systems and services from climate change. In an effort to assist States and MPOs in performing GHG analyses, FHWA has developed a *Handbook for Estimating Transportation GHG Emissions for Integration into the Planning Process.* The Handbook presents methodologies reflecting good practices for the evaluation of GHG emissions at the transportation program level and will demonstrate how such evaluation may be integrated into the transportation planning process. FHWA has also developed a tool for use at the statewide level to model a large number of GHG reduction scenarios and alternatives for use in transportation planning, climate action plans, scenario planning exercises, and in meeting state GHG reduction targets and goals. To assist states and MPOs in assessing climate change vulnerabilities to their transportation networks, FHWA has developed a draft vulnerability and risk assessment conceptual model and has piloted it in several locations.

2.5.2 Summary

This document does not incorporate an analysis of the GHG emissions or climate change effects of the alternatives because the potential change in GHG emissions is very small in the context of the affected environment. Because of the insignificance of the GHG impacts, those impacts will not be meaningful to choosing a preferred alternative. FHWA is working to develop strategies to reduce transportation's contribution to GHGs—particularly CO_2 emissions—and to assess the risks to transportation systems and services from climate change.

2.6 Construction Air Quality

Construction activities will generate intermittent and temporary construction-related pollutant emissions and dust. Construction procedures will be governed by the *Louisiana Standard Specifications for Roads and Bridges* (DOTD, 2016) or most recent applicable supplements. Construction equipment shall be maintained to keep it in full satisfactory condition.

2.7 Indirect and Cumulative Effects

Forecasted traffic volumes typically account for any redistribution of traffic caused by the project. Therefore, the air quality analysis addresses any indirect traffic-related air quality effects that might occur. Additionally, the forecasted traffic volumes include traffic growth and other planned and programmed projects in the area. As a result, the air quality analysis addresses the traffic-related cumulative air quality effects of the project.

3.0 CONCLUSIONS

The Build Alternative will increase the capacity of I-10 by adding one travel lane in each direction and modifying several interchanges. The air quality assessment concluded that the project is in the Baton Rouge ozone maintenance area. Therefore, the project is subject to transportation conformity. The Environmental Phase, Engineering Phase, and Feasibility/Environmental Study of the project are included in the current Baton Rouge Urbanized Area Capital Region Metropolitan Planning Organization *"Transportation Improvement Program 2019-2022."* However, "*Metropolitan Transportation Plan MOVE 2042"* does not include the project as currently proposed. Therefore, the project does not currently conform to the SIP. After the MPO adopted the current TIP and MTP, DOTD developed a detailed phasing plan for 16 separate project segments. Once the TIP and MTP are amended and the project segments, limits and descriptions are consistent with the proposed project, the project will conform to the SIP.

The CO hot-spot analysis for the project represented worst-case conditions and concluded that the project will not cause violations of the CO NAAQS.

The Build Alternative meets the criteria for a "Project with Higher Potential MSAT Effects" per FHWA's MSATs Guidance. The quantitative MSATs analysis concluded that MSAT emissions are comparable (less than 0.5% difference) between the No-Build and Build Alternatives in Base Year 2017. MSAT emissions for all nine pollutants are slightly higher for the Build Alternative compared to the No-Build in Design Year 2040 with increases ranging from approximately 0.3% to 1.2%. However, EPA's national control programs are projected to reduce annual MSAT emissions by over 90 percent from 2010 to 2050. The magnitude of these reductions is so great that even with the project and associated traffic growth, MSAT emissions are predicted to be substantially lower in Design Year 2040 than Base Year 2017 regardless of the alternative. As a result, the Build Alternative is not expected to create any adverse MSAT effects.

The qualitative climate change (greenhouse gas) evaluation concluded that the potential change in GHG emissions due to the project is very small in the context of the affected environment. Because of the insignificance of the GHG impacts, those impacts will not be meaningful to choosing a preferred alternative.

The project may cause a temporary generation of construction-related pollutant emissions and dust that could result in short-term air quality effects that will be minimized by compliance with the procedures in the *Louisiana Standard Specifications for Roads and Bridges.*

Finally, the project is not anticipated to have any adverse indirect or cumulative effects.

4.0 REFERENCES

Claggett, M., et. al., "*A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives,"* Federal Highway Administration Resource Center, May 4, 2006.

Federal Highway Administration (FHWA), *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*, October 18, 2016.

Louisiana Department of Transportation and Development (DOTD), *Louisiana Standard Specifications for Roads and Bridges,* 2016.

National Highway Traffic Safety Administration, Corporate Average Fuel Economy, 2018. http://www.nhtsa.gov/fuel-economy/.

EPA Inventory of US Greenhouse Gas Emissions and Sinks, 1990-2017, https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

U.S. Energy Information Administration, International Energy Outlook 2018, 2018. https://www.eia.gov/outlooks/ieo/

Appendix A – MTP and TIP Project Sheets

January 2018

METROPOLITAN TRANSPORTATION PLAN

PLAN → BUILD → GROW

MOVE 2042

Baton Rouge Metropolitan Planning Organization

Capital Region Planning Commission
333 N. 19th Street Baton Rouge, LA 70802

Table 7-9: continued

Project Name	Project Description	Project Location
Highland Rd	Widen to 4 Lanes	Seigen Ln to Staring Ln
Highland Rd	Widen to 4 Lanes	Staring Ln to Lee Ave
Highland Rd	Widen to 4 Lanes	Lee Ave to Chimes St
Hoo Shoo Too Rd	Capacity Improvements	Jefferson to Montrachet Dr
I - 10 and I-12 Connector	New roadway	Pecue to Juban Via Tiger Bend Ext
I-10	Widen to 8 Lanes	Mississippi River Bridge to I-10 / I-12 Split
I-10	Widen to 8 Lanes	LA 1 to I-110 (Mississippi River Bridge)
I-10	Widen to 6 Lanes	Study Area Boundary to LA 1
I-10 - LA 70 Connector	New 2 Ln Roadway W/Interchange	LA 70 10 I-10
I-10 Frontage Roads	New Frontage Rd along I-10`	LA 73 to LA 22
I-10 to US 190 (WBR)	New 4 Lane Roadway and Interchange	I-10 to US 190
I-12	Widen to 6 Lanes	Satsuma to LA 63
I-12 Frontage Rd (LIV)	New 2 Lane Roadway	Juban Rd to Walker South Rd
Industrial Access Corridor	New 4 Lane Roadway	LA 30 to LA 942
Joe Sevario Rd	Widening	LA 42 - LA 30
Juban Rd Ext	New 4 Lane Roadway	Florida Ave to Lockhart Rd
Kenilworth Pkwy Ext North	New 2 Lane with RR underpass	Perkins Rd to Hennessy Blvd
LA 1	Widen to 6 Lanes	Lukeville Ln to I-10
LA 1	Widen to 6 Lanes	Lukeville Ln to Study Area Boundary
LA 1	Widening to 4 Lanes	US 190 - I-10
LA 1	Widening to 4 Lanes	White Castle - Donaldsonvile
LA 1	Widening to 4 Lanes	IBER P/L - LA 69
LA 1024 - LA 1019 Connector	New 2 Ln Roadway	LA 1024 to LA 19
LA 1025	Widening to 4 Lanes	N Range - Walker Rd N
LA 1026 (Lockhart Rd)	Widen to 4 Lanes	Range Ave to Burgess Ave
LA 1032 (4-H Club Rd)	New Interchange	I-12
LA 1032 (4-H Club Rd)	Widen to 4 Lanes	I-12 to Hillon Hood Rd

Transportation Improvement Program 2019-2022

Baton Rouge Urbanized Area

Capital Region Metropolitan Planning Organization

Adopted 01/20/2018

Amended 3/20/19

Modified 5/20/19

Proj No.	Parish	Route	Proj Limits	Proj Description	Phase	Total Cost (000) (W/Contingency)	Federal Share (000)	Fund
H.010640	ASC	LA 3038 (Cornerview)	LA 3038 (Cornerview): Rehab & Turn Lane	Rehab & Turn Lane	UTIL	56	-	LOCAL
H.010642	ASC	LA 30	IBERVILLE PL TO 0.3M WEST OF I-10	Cold Plane & Overlay	C	2,970	2,376	STP>200K
H.010642	ASC	LA 30	IBERVILLE PL TO 0.3M WEST OF I-10	Cold Plane & Overlay	ENIV	2	2	LOCAL
H.010642	ASC	LA 30	IBERVILLE PL TO 0.3M WEST OF I-10	Cold Plane & Overlay	PE	115	115	LOCAL
H.010657	ASC	Parishwide	Ascension Parish Pavement management	Parishwide Pavement Management Software	PE	50	40	STP>200K
H.010657	ASC	Parishwide	Ascension Parish Pavement management	Parishwide Pavement Management Software	PE	50	40	STP>200K
H.010657	ASC	Parishwide	Ascension Parish Pavement management	Parishwide Pavement Management Software	PE	50	40	STP>200K
H.011450	ASC	LA 70	LA 70 Rehabilitation (LA 22 - St. James Parish Line)	Rehabilitation	C	1,650	1,320	STPFLEX
H.011450	ASC	LA 70	LA 70 Rehabilitation (LA 22 - St. James Parish Line)	Rehabilitation	C	2,750	2,200	STP>200K
H.011450	ASC	LA 70	LA 70 Rehabilitation (LA 22 - St. James Parish Line)	Rehabilitation	ENIV	1	-	LOCAL
H.011450	ASC	LA 70	LA 70 Rehabilitation (LA 22 - St. James Parish Line)	Rehabilitation	PE	62	-	LOCAL
H.011451	ASC	LA 22	LA 22 Rehabilitation (I 10 - LA 429)	Rehabilitation	ENIV	2	-	LOCAL
H.011451	ASC	LA 22	LA 22 Rehabilitation (I 10 - LA 429)	Rehabilitation	PE	74	-	LOCAL
H.011452	ASC	LA 942	LA 942 Rehabilitation (LA 22 - 0.5mi W of St. Elmo St)	Rehabilitation	C	793	634	STP>200K
H.011452	ASC	LA 942	LA 942 Rehabilitation (LA 22 - 0.5mi W of St. Elmo St)	Rehabilitation	ENIV	1	-	LOCAL
H.011452	ASC	LA 942	LA 942 Rehabilitation (LA 22 - 0.5mi W of St. Elmo St)	Rehabilitation	PE	40	-	LOCAL
H.011840	ASC	LA 44	LA 44 Pavement Preservation (Cornerview St - US 61)	Pavement Preservation	C	669	535	STP>200K
H.011840	ASC	LA 44	LA 44 Pavement Preservation (Cornerview St - US 61)	Pavement Preservation	UTIL	375	300	STP>200K
02-CS-HC-0004	EBR	O'Neal Ln	S. Harrell's Ferry Rd - George O'Neal	Widen to 4 Lanes	C	17,911	-	LOCAL
03-CS-CI-0020	EBR	Sullivan Rd	Central Thruway - Wax Rd	Widen to 4 lanes	C	25,776	-	LOCAL
06-CS-HC-0033	EBR	Essen Ln	Essen Ln @ I 10	Intersection Improvements	C	4,221	-	LOCAL
H.002301	EBR	N. Sherwood Forest Blvd	Choctaw Dr - Greenwell Springs Rd	Widen to 5 Lanes	ROW	1,500	1,200	STP>200K
H.002301	EBR	N. Sherwood Forest Blvd	Choctaw Dr - Greenwell Springs Rd	Widen to 5 Lanes	UTIL	350	280	STP>200K
H.002344	EBR	LA 427	Perkins Rd (Siegen - Highland)	Widening	ENIV	445	356	NHPP
H.002344	EBR	LA 427	Perkins Rd (Siegen - Highland)	Widening	ENIV	130	-	STGEN
H.002344	EBR	LA 427	Perkins Rd (Siegen - Highland)	Widening	PE	800	640	NHPP
H.002344	EBR	LA 427	Perkins Rd (Siegen - Highland)	Widening	PE	20	-	STGEN
H.002344	EBR	LA 427	Perkins Rd (Siegen - Highland)	Increase Capacity (Stage 0 Study)	STUDY	100	-	STCASH
H.002822	EBR	LA 30	Nicholson Dr @ Brightside Ln	Intersection Improvement	C	7,128	5,702	CMAQ
H.002822	EBR	LA 30	Nicholson Dr @ Brightside Ln	Intersection Improvement	ROW	2,100	1,680	CMAQ
H.002822	EBR	LA 30	Nicholson Dr @ Brightside Ln	Intersection Improvement	UTIL	1,200	960	CMAQ
H.004100	EBR	I-10	LA 415 to Essen Ln on I-10 and I-12	Environmental Phase	ENIV	3,000	2,400	NHPP
H.004100	EBR	I-10	LA 415 to Essen Ln on I-10 and I-12	Engineering Phase	PE	6,600	5,280	NHPP
H.004100	EBR	I-10	LA 415 to Essen Ln on I-10 and I-12	Feasibility/Environmental Study	STUDY	3,500	-	STCASH
H.005403	EBR	LA 408	LA 408 (Hooper Rd Ext) LA 37 - LA 16	Extension of Hooper Rd Feasibility Study	ENIV	677	-	STBONDS
H.007137	EBR	Jones Creek Rd	Tigerbend Rd - Coursey Blvd	Widen to 5 Lanes	C	773	-	LOCAL
H.007137	EBR	Jones Creek Rd	Tigerbend Rd - Coursey Blvd	Widen to 5 Lanes	C	14,034	11,227	STP>200K
H.007157	EBR	Jones Creek Rd	Tigerbend Rd - Coursey Blvd	Widen to 5 Lanes (Clearing & Grubbing)	C	328	262	STP>200K
H.007441	EBR	Florida Blvd	Florida Blvd Bus Shelters and Benches	Flex to Transit	C	691	553	TAP>200K
H.007442	EBR	Harding Blvd	Harding Blvd Bus Shelters and Benches	Flex to Transit	C	71	57	TAP>200K
H.007443	EBR	LA 19	Scotlandville Route Bus Shelters and Benches	Flex to Transit	C	369	295	TAP>200K
H.009141	EBR	LA 3246	LA 3246: Access Mgt. Improvements	Median & Signal Improvements	C	469	375	NHS
H.009144	EBR	LA 42	LA 42: Corridor Improvements	Signal Relocations, Turn Lanes and Adding N	C	946	757	STPFLEX
H.009250	EBR	I-10	Highland Rd - LA 73	Capacity Improvements	AC	17,050	13,640	DEMO

Appendix B – CAL3QHC and MOVES Files for CO Analysis

MOVES Input and Output

Output Database Server Name: [using default]

Output Database Name: lsuoutput

Time Spans:

Aggregate By: Hour

Years:

2018

Months:

January

Days:

Weekdays

Hours:

Begin Hour: 17:00 - 17:59

End Hour: 17:00 - 17:59

Geographic Bounds:

LINK geography

Selection: LOUISIANA - East Baton Rouge Parish

On Road Vehicle Equipment:

Compressed Natural Gas (CNG) - Transit Bus

Diesel Fuel - Combination Long-haul Truck

Diesel Fuel - Combination Short-haul Truck

Diesel Fuel - Intercity Bus

Diesel Fuel - Light Commercial Truck

Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car

Diesel Fuel - Passenger Truck

Diesel Fuel - Refuse Truck

Diesel Fuel - School Bus

Diesel Fuel - Single Unit Long-haul Truck

Diesel Fuel - Single Unit Short-haul Truck

Diesel Fuel - Transit Bus

Electricity - Light Commercial Truck

Electricity - Passenger Car

Electricity - Passenger Truck

Ethanol (E-85) - Light Commercial Truck

Ethanol (E-85) - Passenger Car

Ethanol (E-85) - Passenger Truck

Gasoline - Combination Short-haul Truck

Gasoline - Light Commercial Truck

Gasoline - Motor Home

Gasoline - Motorcycle

Gasoline - Passenger Car

Gasoline - Passenger Truck

Gasoline - Refuse Truck

Gasoline - School Bus

Gasoline - Single Unit Long-haul Truck

Gasoline - Single Unit Short-haul Truck

Gasoline - Transit Bus

Road Types:

- Off-Network
- Urban Restricted Access
- Urban Unrestricted Access

Separate ramp rates: false

Pollutants And Processes:

- Running Exhaust Carbon Monoxide (CO)
- Start Exhaust Carbon Monoxide (CO)
- Crankcase Running Exhaust Carbon Monoxide (CO)
- Crankcase Start Exhaust Carbon Monoxide (CO)
- Crankcase Extended Idle Exhaust Carbon Monoxide (CO)
- Extended Idle Exhaust Carbon Monoxide (CO)
- Auxiliary Power Exhaust Carbon Monoxide (CO)

Rate of Progress:

- Rate of Progress calculations are disabled

Manage Input Data Sets:

movesRunId	yearId	monthId	dayId	hourId	linkId	pollutant	msPerVehl	GramsPerVehHour	linkDescription
1	2018	1	5	18	1	CO	0	9.419655296	NB-S Acadian 0 mph
1	2018	1	5	18	2	CO	5.969038	0	NB-S Acadian 5 mph
1	2018	1	5	18	3	CO	4.230437	0	NB-S Acadian 10 mph
1	2018	1	5	18	4	CO	3.64938	0	NB-S Acadian 15 mph
1	2018	1	5	18	5	CO	3.235727	0	NB-S Acadian 20 mph
1	2018	1	5	18	6	CO	2.715216	0	NB-S Acadian 25 mph
1	2018	1	5	18	7	CO	2.559687	0	NB-S Acadian 30 mph
1	2018	1	5	18	8	CO	2.313776	0	NB-S Acadian 35 mph
1	2018	1	5	18	9	CO	0	9.419649842	NB-N Acadian 0 mph
1	2018	1	5	18	10	CO	5.969031	0	NB-N Acadian 5 mph
1	2018	1	5	18	11	CO	4.230415	0	NB-N Acadian 10 mph
1	2018	1	5	18	12	CO	3.649393	0	NB-N Acadian 15 mph
1	2018	1	5	18	13	CO	3.235725	0	NB-N Acadian 20 mph
1	2018	1	5	18	14	CO	2.715217	0	NB-N Acadian 25 mph
1	2018	1	5	18	15	CO	2.559694	0	NB-N Acadian 30 mph
1	2018	1	5	18	16	CO	2.313779	0	NB-N Acadian 35 mph
1	2018	1	5	18	17	CO	0	9.842507118	SB-N Acadian 0 mph
1	2018	1	5	18	18	CO	6.153152	0	SB-N Acadian 5 mph
1	2018	1	5	18	19	CO	4.355769	0	SB-N Acadian 10 mph
1	2018	1	5	18	20	CO	3.760714	0	SB-N Acadian 15 mph
1	2018	1	5	18	21	CO	3.333619	0	SB-N Acadian 20 mph
1	2018	1	5	18	22	CO	2.79929	0	SB-N Acadian 25 mph
1	2018	1	5	18	23	CO	2.638751	0	SB-N Acadian 30 mph
1	2018	1	5	18	24	CO	2.387368	0	SB-N Acadian 35 mph
1	2018	1	5	18	25	CO	0	9.842435533	SB-S Acadian 0 mph
1	2018	1	5	18	26	CO	6.153168	0	SB-S Acadian 5 mph
1	2018	1	5	18	27	CO	4.355771	0	SB-S Acadian 10 mph
1	2018	1	5	18	28	CO	3.76072	0	SB-S Acadian 15 mph
1	2018	1	5	18	29	CO	3.333611	0	SB-N Acadian 20 mph
1	2018	1	5	18	30	CO	2.799297	0	SB-N Acadian 25 mph
1	2018	1	5	18	31	CO	2.638753	0	SB-N Acadian 30 mph
1	2018	1	5	18	32	CO	2.387373	0	SB-N Acadian 35 mph
1	2018	1	5	18	33	CO	0	10.73719184	Off Ramp, Through 0 mph
1	2018	1	5	18	34	CO	6.1277	0	Off Ramp, Through 5 mph
1	2018	1	5	18	35	CO	3.989455	0	Off Ramp, Through 10 mph
1	2018	1	5	18	36	CO	3.274889	0	Off Ramp, Through 15 mph
1	2018	1	5	18	37	CO	2.891991	0	Off Ramp, Through 20 mph
1	2018	1	5	18	38	CO	2.636128	0	Off Ramp, Through 25 mph
1	2018	1	5	18	39	CO	2.480076	0	Off Ramp, Through 30 mph
1	2018	1	5	18	40	CO	2.328911	0	Off Ramp, Through 35 mph
1	2018	1	5	18	41	CO	0	10.73719876	Off Ramp, Right 0 mph
1	2018	1	5	18	42	CO	6.127724	0	Off Ramp, Right 5 mph
1	2018	1	5	18	43	CO	3.989455	0	Off Ramp, Right 10 mph
1	2018	1	5	18	44	CO	3.274905	0	Off Ramp, Right 15 mph
1	2018	1	5	18	45	CO	2.891986	0	Off Ramp, Right 20 mph
1	2018	1	5	18	46	CO	2.636128	0	Off Ramp, Right 25 mph
1	2018	1	5	18	47	CO	2.480081	0	Off Ramp, Right 30 mph
1	2018	1	5	18	48	CO	2.32891	0	Off Ramp, Right 35 mph
1	2018	1	5	18	49	CO	0	9.27872964	On Ramp 0 mph
1	2018	1	5	18	50	CO	5.493864	0	On Ramp 5 mph
1	2018	1	5	18	51	CO	3.578347	0	Off Ramp 10 mph
1	2018	1	5	18	52	CO	2.935882	0	On Ramp 15 mph
1	2018	1	5	18	53	CO	2.593738	0	On Ramp 20 mph
1	2018	1	5	18	54	CO	2.365909	0	On Ramp 25 mph
1	2018	1	5	18	55	CO	2.21814	0	On Ramp 30 mph
1	2018	1	5	18	56	CO	2.085526	0	On Ramp 35 mph
1	2018	1	5	18	57	CO	1.990022	0	On Ramp 40 mph
1	2018	1	5	18	58	CO	1.91566	0	On Ramp 45 mph
1	2018	1	5	18	59	CO	1.861707	0	On Ramp 50 mph

CAL3WHC Input and Output

```
'I-10 Baton Rouge',60,175,0.0,0.0,36,0.3048,1,0
'1',3338502.697,700147.236,5
'2',3338532.403,700107.017,5
'3',3338562.107,700066.797,5
'4',3338591.812,700026.578,5
'5',3338621.918,699986.657,5
'6',3338667.445,699965.985,5
'7',3338469.316,700015.779,5
'8',3338517.012,700000.777,5
'9',3338548.585,699990.846,5
'10',3338452.963,699953.831,5
'11',3338500.659,699938.829,5
'12',3338548.355,699923.826,5
'13',3338585.387,699912.179,5
'14',3338434.2,699907.485,5
'15',3338415.437,699861.139,5
'16',3338396.674,699814.793,5
'17',3338377.906,699768.433,5
'18',3338481.622,700064.241,5
'19',3338515.004,700195.698,5
'20',3338527.309,700244.16,5
'21',3338344.377,700038.136,5
'22',3338351.363,700063.314,5
'23',3338381.727,700172.748,5
'24',3338395.095,700220.927,5
'25',3338408.464,700269.107,5
'26',3338346.34,700137.424,5
'27',3338310.953,700102.101,5
'28',3338275.565,700066.778,5
'29',3338228.41,700050.154,5
'30',3338325.462,699989.503,5
'31',3338276.604,700000.127,5
'32',3338227.079,699993.251,5
'33',3338307.139,699942.98,5
'34',338288.815,699896.46,5
'35',3338270.492,699849.938,5
'36',3338252.169,699803.417,5
'Acadian Thruway at I-10 WB Ramps',13,1,1,'C'
1
'Off Ramp
Right','AG',3338595.07,699975.0381,3338479.347,700131.7219,5000,3.989455005,0,36
1
'Off Ramp
TH-LT','AG',3338594.989,699942.7046,3338453.242,699987.2901,5000,3.274905282,0,44
1
'Off
Ramp','AG',3338861.572,699842.6934,3338592.804,699964.7338,5000,2.328910203,0,44
1
'On Ramp
RT','AG',3338401.003,700152.4258,3338278.867,700030.5106,5000,3.578347224,0,36
1
'On Ramp
LT','AG',3338354.038,700011.9441,3338279.585,700028.1338,5000,3.578347224,0,44
1
'On Ramp','AG',3338276.182,700029.35,3337971.881,699981.3085,5000,2.085525932,0,36
1
'NB Acadian
Approach','AG',3338291.003,699639.051,3338422.142,699962.9739,5000,2.313776401,0,44
1
'NB Acadian
Departure','AG',3338425.292,699972.426,3338517.127,700334.0743,5000,2.313778656,0,44
1
'SB Acadian
```

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Approach','AG',3338463.501,700347.7758,3338375.213,700029.5803,5000,2.387367816,0,44
1
'SB Acadian
Departure','AG',3338374.396,700026.4212,3338219.163,699632.2969,5000,2.387373456,0,4
4
2
'Q Off Ramp','AG',3338452.155,699984.6968,3338498.079,699970.5712,0,44,2
60,30,3,5000,10.73719184,1600,1,1
2
'Q NB Acadian','AG',3338422.91,699961.8901,3338400.055,699906.413,0,44,2
60,30,3,5000,9.419655296,1600,1,1
2
'Q SB Acadian','AG',3338374.333,700029.9557,3338387.045,700076.487,0,44,2
60,30,3,5000,9.842507118,1600,1,1
1.0,0.0,4,1000,0,'Y',10,0,36
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♀                          CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated
95221                           PAGE  1

      JOB: I-10 Baton Rouge                                        RUN: Acadian Thruway
at I-10 WB Ramps

      DATE :  1/14/19
      TIME : 16:41: 7

         The MODE flag has been set to C for calculating CO averages.

       SITE & METEOROLOGICAL VARIABLES
       -------------------------------
       VS =   0.0 CM/S       VD =   0.0 CM/S       Z0 = 175. CM
        U =  1.0 M/S         CLAS =   4  (D)     ATIM =  60. MINUTES     MIXH =
1000. M   AMB =  0.0 PPM

       LINK VARIABLES
       --------------
         LINK DESCRIPTION     *         LINK COORDINATES (FT)          *    LENGTH
BRG TYPE   VPH    EF      H   W    V/C QUEUE
                              *   X1        Y1        X2        Y2     *     (FT)
(DEG)            (G/MI)  (FT) (FT)       (VEH)

------------------------*-----------------------------------------*-----------------
-----------------------------------------
       1. Off Ramp Right      * ********  699975.1  ********  700131.8 *     195.
324. AG   5000.   4.0   0.0 36.0
       2. Off Ramp TH-LT      * ********  699942.7  ********  699987.3 *     149.
287. AG   5000.   3.3   0.0 44.0
       3. Off Ramp            * ********  699842.7  ********  699964.8 *     295.
294. AG   5000.   2.3   0.0 44.0
       4. On Ramp RT          * ********  700152.5  ********  700030.5 *     173.
225. AG   5000.   3.6   0.0 36.0
       5. On Ramp LT          * ********  700011.9  ********  700028.1 *      76.
282. AG   5000.   3.6   0.0 44.0
       6. On Ramp             * ********  700029.4  ********  699981.3 *     308.
261. AG   5000.   2.1   0.0 36.0
       7. NB Acadian Approach * ********  699639.1  ********  699963.0 *     350.
22. AG   5000.   2.3   0.0 44.0
       8. NB Acadian Departure* ********  699972.5  ********  700334.1 *     373.
14. AG   5000.   2.3   0.0 44.0
       9. SB Acadian Approach * ********  700347.8  ********  700029.6 *     330.
195. AG   5000.   2.4   0.0 44.0
      10. SB Acadian Departure* ********  700026.5  ********  699632.3 *     424.
201. AG   5000.   2.4   0.0 44.0
      11. Q Off Ramp          * ********  699984.7  ********  694326.0 *    *****
107. AG     29. 100.0   0.0 44.0 3.75 975.7
      12. Q NB Acadian        * ********  699961.9  ********  682218.3 *    *****
203. AG     25. 100.0   0.0 44.0 3.75 975.7
      13. Q SB Acadian        * ********  700029.9  ********  718558.3 *    *****
15. AG     26. 100.0   0.0 44.0 3.75 975.7
♀
                              PAGE  2
      JOB: I-10 Baton Rouge                                        RUN: Acadian Thruway
at I-10 WB Ramps

      DATE :  1/14/19
      TIME : 16:41: 7

       ADDITIONAL QUEUE LINK PARAMETERS
       --------------------------------
         LINK DESCRIPTION     *    CYCLE    RED     CLEARANCE   APPROACH  SATURATION
```

IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE	*	LENGTH (SEC)	TIME (SEC)	LOST TIME (SEC)	VOL (VPH)	FLOW RATE (VPH)
11. Q Off Ramp 10.74	1	1	*	60	30	3.0	5000	1600
12. Q NB Acadian 9.42	1	1	*	60	30	3.0	5000	1600
13. Q SB Acadian 9.84	1	1	*	60	30	3.0	5000	1600

RECEPTOR LOCATIONS

RECEPTOR	*	X	Y	Z	*
1. 1	*	********	700147.3	5.0	*
2. 2	*	********	700107.0	5.0	*
3. 3	*	********	700066.8	5.0	*
4. 4	*	********	700026.6	5.0	*
5. 5	*	********	699986.7	5.0	*
6. 6	*	********	699966.0	5.0	*
7. 7	*	********	700015.7	5.0	*
8. 8	*	********	700000.8	5.0	*
9. 9	*	********	699990.9	5.0	*
10. 10	*	********	699953.8	5.0	*
11. 11	*	********	699938.8	5.0	*
12. 12	*	********	699923.8	5.0	*
13. 13	*	********	699912.2	5.0	*
14. 14	*	********	699907.5	5.0	*
15. 15	*	********	699861.1	5.0	*
16. 16	*	********	699814.8	5.0	*
17. 17	*	********	699768.4	5.0	*
18. 18	*	********	700064.3	5.0	*
19. 19	*	********	700195.7	5.0	*
20. 20	*	********	700244.2	5.0	*
21. 21	*	********	700038.1	5.0	*
22. 22	*	********	700063.3	5.0	*
23. 23	*	********	700172.8	5.0	*
24. 24	*	********	700220.9	5.0	*
25. 25	*	********	700269.1	5.0	*
26. 26	*	********	700137.4	5.0	*
27. 27	*	********	700102.1	5.0	*
28. 28	*	********	700066.7	5.0	*
29. 29	*	********	700050.1	5.0	*
30. 30	*	********	699989.5	5.0	*
31. 31	*	********	700000.2	5.0	*
32. 32	*	********	699993.2	5.0	*
33. 33	*	********	699943.0	5.0	*
34. 34	*	338288.8	699896.5	5.0	*
35. 35	*	********	699850.0	5.0	*
36. 36	*	********	699803.5	5.0	*

♀

PAGE 3

JOB: I-10 Baton Rouge RUN: Acadian Thruway at I-10 WB Ramps

MODEL RESULTS

```
       REMARKS : In search of the angle corresponding to
                 the maximum concentration, only the first
                 angle, of the angles with same maximum
                 concentrations, is indicated as maximum.

 WIND ANGLE RANGE:   0.-360.

 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20

------*------------------------------------------------------------------------------
-------------------------------------------
   0.  *   0.6   0.1   0.0   0.0   0.0   0.0   0.8   0.5   0.8   1.0   1.1   1.1
0.9   0.9   0.9   0.9   0.9   1.0   0.4   0.3
  10.  *   0.4   0.1   0.0   0.0   0.0   0.0   0.7   0.6   0.7   1.1   1.0   1.0
0.7   0.8   0.9   0.9   0.9   0.8   0.3   0.2
  20.  *   0.1   0.0   0.0   0.0   0.0   0.0   0.5   0.4   0.6   0.9   0.9   0.9
0.6   0.6   0.5   0.5   0.5   0.7   0.1   0.1
  30.  *   0.0   0.0   0.0   0.0   0.0   0.0   0.4   0.4   0.6   0.8   0.9   0.9
0.4   0.5   0.5   0.4   0.4   0.6   0.0   0.0
  40.  *   0.0   0.0   0.0   0.0   0.0   0.0   0.3   0.4   0.6   0.8   0.9   0.8
0.5   0.5   0.3   0.2   0.2   0.5   0.0   0.0
  50.  *   0.0   0.0   0.0   0.0   0.0   0.0   0.3   0.4   0.6   0.8   0.8   0.7
0.4   0.5   0.3   0.2   0.1   0.5   0.0   0.0
  60.  *   0.0   0.0   0.0   0.0   0.0   0.0   0.3   0.4   0.6   0.8   0.8   0.7
0.4   0.5   0.3   0.2   0.1   0.5   0.0   0.0
  70.  *   0.0   0.0   0.0   0.0   0.0   0.0   0.3   0.4   0.6   0.9   0.8   0.6
0.4   0.5   0.2   0.1   0.1   0.5   0.0   0.0
  80.  *   0.0   0.0   0.0   0.0   0.0   0.0   0.3   0.4   0.6   0.9   0.9   0.6
0.4   0.4   0.1   0.1   0.1   0.5   0.0   0.0
  90.  *   0.0   0.0   0.0   0.0   0.0   0.0   0.3   0.5   0.6   0.8   0.7   0.6
0.4   0.3   0.1   0.0   0.0   0.5   0.0   0.0
 100.  *   0.0   0.0   0.0   0.0   0.1   0.2   0.6   0.8   0.8   0.8   0.7   0.5
0.4   0.2   0.1   0.0   0.0   0.6   0.0   0.0
 110.  *   0.0   0.0   0.1   0.2   0.3   0.3   0.8   0.8   0.9   0.4   0.3   0.2
0.3   0.0   0.0   0.0   0.0   0.8   0.0   0.0
 120.  *   0.0   0.1   0.2   0.3   0.4   0.4   0.9   0.7   1.0   0.1   0.1   0.1
0.1   0.0   0.0   0.0   0.0   0.7   0.0   0.0
 130.  *   0.2   0.2   0.2   0.3   0.6   0.5   0.8   0.9   0.9   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.7   0.0   0.0
 140.  *   0.4   0.3   0.3   0.4   0.6   0.5   0.7   0.7   0.7   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.6   0.1   0.1
 150.  *   0.7   0.7   0.5   0.5   0.5   0.5   0.6   0.6   0.7   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.4   0.2   0.1
 160.  *   0.8   0.9   0.7   0.5   0.5   0.5   0.6   0.6   0.6   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.3   0.4   0.2
 170.  *   0.9   0.8   0.8   0.7   0.5   0.5   0.6   0.6   0.6   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.3   0.4   0.3
 180.  *   0.8   0.9   0.9   0.8   0.4   0.4   0.5   0.6   0.6   0.0   0.0   0.0
0.0   0.0   0.0   0.0   0.0   0.2   0.6   0.4
 190.  *   1.0   0.9   0.9   0.8   0.4   0.4   0.6   0.6   0.6   0.1   0.0   0.0
0.0   0.1   0.1   0.1   0.1   0.4   0.7   0.6
 200.  *   1.3   1.0   0.8   0.9   0.5   0.4   0.8   0.7   0.6   0.3   0.0   0.0
0.0   0.3   0.3   0.3   0.2   0.7   0.9   0.7
 210.  *   1.1   1.1   1.0   1.0   0.6   0.4   0.9   0.8   0.8   0.6   0.2   0.0
0.0   0.6   0.6   0.4   0.4   0.8   0.9   1.0
 220.  *   1.3   1.0   1.0   1.1   0.8   0.4   0.9   1.0   0.8   0.7   0.4   0.1
0.0   0.7   0.7   0.6   0.6   0.7   0.9   0.9
 230.  *   1.2   1.0   1.0   1.1   0.9   0.5   0.8   0.9   0.9   0.7   0.4   0.2
0.1   0.7   0.7   0.6   0.6   0.7   1.0   0.8
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 240.  *   1.3   1.1   1.0   1.0   1.0   0.8   0.7   0.9   0.9   0.7   0.3   0.2
0.2   0.7   0.7   0.7   0.7   0.7   0.9   0.8
 250.  *   1.0   1.3   0.9   1.1   1.1   0.9   0.6   0.8   0.8   0.6   0.3   0.2
0.2   0.7   0.7   0.7   0.7   0.9   0.9   0.7
 260.  *   0.9   1.3   1.2   1.0   1.2   1.0   0.7   0.9   0.9   0.6   0.3   0.2
0.2   0.7   0.7   0.7   0.7   0.8   0.6   0.5
 270.  *   0.7   1.1   1.2   1.2   1.1   0.9   0.8   0.8   0.9   0.7   0.4   0.2
0.2   0.6   0.6   0.6   0.6   0.9   0.5   0.5
 280.  *   0.6   1.0   1.1   1.0   1.0   0.8   0.8   0.9   0.8   0.6   0.4   0.4
0.4   0.7   0.6   0.6   0.6   0.7   0.5   0.5
 290.  *   0.5   0.9   1.1   1.0   1.1   0.8   0.7   0.6   0.5   0.7   0.7   0.9
0.8   0.7   0.7   0.6   0.6   0.7   0.5   0.5
 300.  *   0.5   0.7   1.0   1.0   1.0   0.7   0.7   0.4   0.3   0.5   0.7   0.9
0.8   0.8   0.7   0.7   0.6   0.7   0.5   0.5
 310.  *   0.5   0.6   0.8   0.8   0.9   0.5   0.7   0.4   0.4   0.6   0.9   0.9
1.0   0.8   0.7   0.7   0.7   0.6   0.5   0.5
 320.  *   0.6   0.4   0.6   0.6   0.7   0.4   0.8   0.4   0.6   0.7   0.9   0.9
1.1   0.7   0.8   0.7   0.7   0.7   0.6   0.5
 330.  *   0.6   0.3   0.4   0.4   0.4   0.2   0.7   0.4   0.8   0.7   1.0   1.0
1.1   0.9   0.9   0.9   0.8   0.6   0.6   0.5
 340.  *   0.6   0.3   0.2   0.3   0.2   0.0   0.7   0.5   1.0   0.8   1.0   1.0
1.2   0.8   0.9   0.9   0.9   0.7   0.5   0.4
 350.  *   0.6   0.3   0.1   0.1   0.0   0.0   0.8   0.7   0.9   0.9   1.0   1.1
1.0   0.8   0.9   0.9   1.0   0.9   0.6   0.4
 360.  *   0.6   0.1   0.0   0.0   0.0   0.0   0.8   0.5   0.8   1.0   1.1   1.1
0.9   0.9   0.9   0.9   0.9   1.0   0.4   0.3

------*--------------------------------------------------------------------------
-------------------------------------------
 MAX   *   1.3   1.3   1.2   1.2   1.2   1.0   0.9   1.0   1.0   1.1   1.1   1.1
1.2   0.9   0.9   0.9   1.0   1.0   1.0   1.0
 DEGR. *  200   250   260   270   260   260   120   220   120    10     0     0
340   330     0     0   350     0   230   210

♀
                             PAGE   4
     JOB: I-10 Baton Rouge                                     RUN: Acadian Thruway
at I-10 WB Ramps

       MODEL RESULTS
       -------------

       REMARKS : In search of the angle corresponding to
                 the maximum concentration, only the first
                 angle, of the angles with same maximum
                 concentrations, is indicated as maximum.

 WIND ANGLE RANGE:   0.-360.

 WIND  * CONCENTRATION
 ANGLE *      (PPM)
 (DEGR)* REC21 REC22 REC23 REC24 REC25 REC26 REC27 REC28 REC29 REC30 REC31 REC32
REC33 REC34 REC35 REC36

------*--------------------------------------------------------------------------
-------------------
   0.  *   0.6   0.7   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.8   0.7   0.3
0.5   0.0   0.3   0.2
  10.  *   0.7   0.9   0.2   0.2   0.2   0.0   0.0   0.0   0.0   1.1   0.8   0.3
0.8   0.0   0.4   0.4
  20.  *   1.0   1.0   0.4   0.3   0.3   0.2   0.2   0.1   0.0   1.4   1.2   0.4
0.9   0.0   0.7   0.7
  30.  *   1.0   1.2   0.6   0.5   0.4   0.3   0.2   0.3   0.0   1.3   1.4   0.6
```

```
0.9   0.0   0.7   0.8
  40.  *    0.9   1.1   0.6   0.6   0.4   0.5   0.5   0.4   0.2   1.3   1.5   0.9
0.8   0.0   0.7   0.8
  50.  *    0.8   0.8   0.7   0.6   0.6   0.6   0.7   0.7   0.4   1.1   1.3   1.0
0.9   0.0   0.8   0.9
  60.  *    0.8   0.8   0.7   0.7   0.6   0.7   0.8   0.9   0.5   1.0   1.2   1.0
0.6   0.0   0.7   0.8
  70.  *    0.9   0.8   0.7   0.7   0.6   1.0   0.9   1.1   0.7   0.8   1.1   0.9
0.7   0.0   0.8   0.8
  80.  *    0.8   0.8   0.6   0.6   0.6   1.1   1.0   1.0   0.8   0.8   1.0   0.9
0.8   0.0   0.8   0.7
  90.  *    0.9   0.8   0.6   0.6   0.6   1.0   1.0   0.9   0.9   1.0   0.9   0.6
0.7   0.0   0.6   0.5
 100.  *    1.0   1.0   0.7   0.6   0.6   1.1   1.1   1.2   1.5   1.0   1.0   0.6
0.8   0.0   0.5   0.5
 110.  *    1.1   1.0   0.8   0.6   0.6   1.1   1.2   1.4   1.2   0.7   0.7   0.4
0.5   0.0   0.5   0.5
 120.  *    1.0   1.1   1.1   0.7   0.6   1.4   1.2   1.1   1.0   0.4   0.3   0.2
0.5   0.0   0.5   0.5
 130.  *    0.8   0.7   1.3   0.9   0.7   1.2   0.8   1.1   0.8   0.5   0.3   0.2
0.5   0.0   0.5   0.5
 140.  *    0.6   0.7   1.4   1.2   1.0   1.1   1.1   1.2   0.6   0.6   0.3   0.2
0.6   0.0   0.6   0.6
 150.  *    0.8   0.6   1.3   1.0   1.0   1.0   0.9   1.2   0.5   0.6   0.3   0.3
0.6   0.0   0.6   0.6
 160.  *    0.9   0.6   1.2   1.0   1.0   1.0   1.0   1.1   0.5   0.6   0.3   0.3
0.6   0.0   0.6   0.5
 170.  *    1.1   0.7   1.3   0.9   1.1   1.1   1.2   1.0   0.5   0.7   0.3   0.2
0.6   0.0   0.5   0.5
 180.  *    1.2   0.9   1.3   1.0   0.9   1.1   1.2   0.9   0.4   0.6   0.3   0.1
0.6   0.0   0.6   0.4
 190.  *    1.3   0.9   1.3   1.0   0.8   1.1   1.0   0.6   0.3   0.7   0.1   0.0
0.6   0.0   0.5   0.5
 200.  *    0.9   0.7   1.1   0.6   0.6   0.9   0.9   0.3   0.3   0.3   0.1   0.0
0.3   0.0   0.2   0.2
 210.  *    0.8   0.5   0.8   0.5   0.3   0.7   0.6   0.4   0.3   0.1   0.0   0.0
0.1   0.0   0.1   0.1
 220.  *    0.6   0.5   0.6   0.3   0.2   0.5   0.4   0.3   0.4   0.0   0.0   0.0
0.0   0.0   0.0   0.0
 230.  *    0.6   0.7   0.3   0.2   0.1   0.3   0.3   0.3   0.4   0.0   0.0   0.0
0.0   0.0   0.0   0.0
 240.  *    0.8   0.9   0.2   0.1   0.0   0.2   0.2   0.3   0.4   0.0   0.0   0.0
0.0   0.0   0.0   0.0
 250.  *    0.9   0.9   0.1   0.0   0.0   0.1   0.1   0.3   0.4   0.0   0.1   0.1
0.0   0.0   0.0   0.0
 260.  *    1.1   0.9   0.0   0.0   0.0   0.0   0.1   0.2   0.2   0.1   0.2   0.2
0.0   0.0   0.0   0.0
 270.  *    1.0   0.7   0.0   0.0   0.0   0.0   0.0   0.1   0.1   0.3   0.4   0.3
0.1   0.0   0.0   0.0
 280.  *    0.9   0.6   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.4   0.4   0.4
0.1   0.0   0.0   0.0
 290.  *    0.6   0.5   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.5   0.4   0.4
0.2   0.0   0.0   0.0
 300.  *    0.5   0.5   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.7   0.4   0.4
0.2   0.0   0.1   0.0
 310.  *    0.5   0.5   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.8   0.3   0.3
0.2   0.0   0.1   0.1
 320.  *    0.5   0.5   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.8   0.3   0.3
0.1   0.0   0.1   0.1
 330.  *    0.5   0.5   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.8   0.4   0.3
0.3   0.0   0.1   0.1
 340.  *    0.4   0.5   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.9   0.5   0.3
0.4   0.0   0.1   0.1
```

```
 350.  *   0.4   0.6   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.8   0.5   0.3
0.4   0.0   0.1   0.1
 360.  *   0.6   0.7   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.8   0.7   0.3
0.5   0.0   0.3   0.2

------*-------------------------------------------------------------------------
-------------------
 MAX   *   1.3   1.2   1.4   1.2   1.1   1.4   1.2   1.4   1.5   1.4   1.5   1.0
0.9   0.0   0.8   0.9
 DEGR. *  190    30   140   140   170   120   110   110   100    20    40    50
20     0    50    50

 THE HIGHEST CONCENTRATION OF    1.50 PPM OCCURRED AT RECEPTOR REC31.
♀
                            PAGE  5
      JOB: I-10 Baton Rouge                                     RUN: Acadian Thruway
at I-10 WB Ramps

      DATE :  1/14/19
      TIME : 16:41: 7


      RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
      THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

          *    CO/LINK  (PPM)
          *    ANGLE (DEGREES)
          *  REC1  REC2  REC3  REC4  REC5  REC6  REC7  REC8  REC9  REC10 REC11 REC12
REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
   LINK # *   200   250   260   270   260   260   120   220   120    10     0     0
 340   330     0     0   350     0   230   210

-------*------------------------------------------------------------------------
-------------------------------------------
       1  *   0.6   0.6   0.6   0.6   0.4   0.1   0.1   0.0   0.3   0.1   0.2   0.4
 0.4   0.0   0.0   0.0   0.0   0.4   0.0   0.1
       2  *   0.1   0.0   0.0   0.1   0.4   0.3   0.5   0.5   0.2   0.3   0.5   0.5
 0.5   0.0   0.0   0.0   0.0   0.0   0.0   0.0
       3  *   0.0   0.0   0.0   0.0   0.1   0.3   0.2   0.0   0.4   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
       4  *   0.0   0.1   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.1   0.1   0.1   0.1   0.0   0.2   0.1
       5  *   0.0   0.1   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.1   0.0   0.0   0.1   0.0   0.1   0.0
       6  *   0.0   0.1   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
 0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
       7  *   0.1   0.0   0.0   0.0   0.1   0.1   0.0   0.2   0.0   0.0   0.0   0.0
 0.0   0.3   0.3   0.4   0.4   0.0   0.0   0.1
       8  *   0.3   0.2   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.4   0.2   0.1
 0.1   0.1   0.2   0.1   0.0   0.4   0.4   0.5
       9  *   0.0   0.1   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.1   0.0
 0.1   0.1   0.1   0.1   0.1   0.1   0.2   0.1
      10  *   0.1   0.1   0.1   0.1   0.1   0.1   0.0   0.1   0.0   0.0   0.0   0.0
 0.0   0.1   0.0   0.1   0.2   0.0   0.1   0.1
      11  *   0.0   0.0   0.0   0.0   0.1   0.1   0.1   0.1   0.1   0.1   0.1   0.1
 0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.0
      12  *   0.1   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0   0.0   0.0
 0.0   0.1   0.1   0.1   0.1   0.0   0.0   0.0
      13  *   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.1   0.0   0.0
 0.0   0.0   0.1   0.0   0.0   0.1   0.0   0.0
♀
                            PAGE  6
      JOB: I-10 Baton Rouge                                     RUN: Acadian Thruway
```

at I-10 WB Ramps

DATE : 1/14/19
TIME : 16:41: 7

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

* CO/LINK (PPM)
* ANGLE (DEGREES)

LINK # *	REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36
ANGLE	190	30	140	140	170	120	110	110	100	20	40	50	20	0	50	50
1 *	0.0	0.0	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
2 *	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
3 *	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 *	0.0	0.5	0.3	0.0	0.1	0.5	0.5	0.5	0.3	0.3	0.6	0.4	0.2	0.0	0.0	0.0
5 *	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.5	0.1	0.2	0.0	0.0	0.0
6 *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0
7 *	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
8 *	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
9 *	0.0	0.5	0.4	0.4	0.5	0.2	0.2	0.1	0.1	0.3	0.2	0.1	0.2	0.0	0.0	0.0
10 *	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.4	0.5
11 *	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 *	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 *	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0

Appendix C – MSATs Background Information

MOBILE SOURCE AIR TOXICS (MSATS)

Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA assessed this expansive list in its rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are part of EPA's Integrated Risk Information System (IRIS).[1] In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA).[2] These are *1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter.* While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

Motor Vehicle Emissions Simulator (MOVES)

According to EPA, MOVES2014 is a major revision to MOVES2010 and improves upon it in many respects. MOVES2014 includes new data, new emissions standards, and new functional improvements and features. It incorporates substantial new data for emissions, fleet, and activity developed since the release of MOVES2010. These new emissions data are for light- and heavy-duty vehicles, exhaust and evaporative emissions, and fuel effects. MOVES2014 also adds updated vehicle sales, population, age distribution, and vehicle miles travelled (VMT) data. MOVES2014 incorporates the effects of three new Federal emissions standard rules not included in MOVES2010. These new standards are all expected to impact MSAT emissions and include Tier 3 emissions and fuel standards starting in 2017 (79 FR 60344), heavy-duty greenhouse gas regulations that phase in during model years 2014-2018 (79 FR 60344), and the second phase of light duty greenhouse gas regulations that phase in during model years 2017-2025 (79 FR 60344). Since the release of MOVES2014, EPA has released MOVES2014a. In the November 2015 MOVES2014a Questions and Answers Guide,[3] EPA states that for on-road emissions, MOVES2014a adds new options requested by users for the input of local VMT, includes minor updates to the default fuel tables, and corrects an error in MOVES2014 brake wear emissions. The change in brake wear emissions results in small decreases in PM emissions, while emissions for other criteria pollutants remain essentially the same as MOVES2014.

Using EPA's MOVES2014a model, as shown in Figure 1, FHWA estimates that even if VMT increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Diesel PM is the dominant component of MSAT emissions, making up 50 to 70 percent of all priority MSAT pollutants by mass, depending on calendar year. Users of MOVES2014a will notice some differences in emissions compared with MOVES2010b. MOVES2014a is based on updated data on some emissions and pollutant processes compared to MOVES2010b, and also reflects the latest Federal emissions standards in place at the time of its release. In addition, MOVES2014a emissions forecasts are based on lower VMT projections than MOVES2010b, consistent with recent trends suggesting reduced nationwide VMT growth compared to historical trends.

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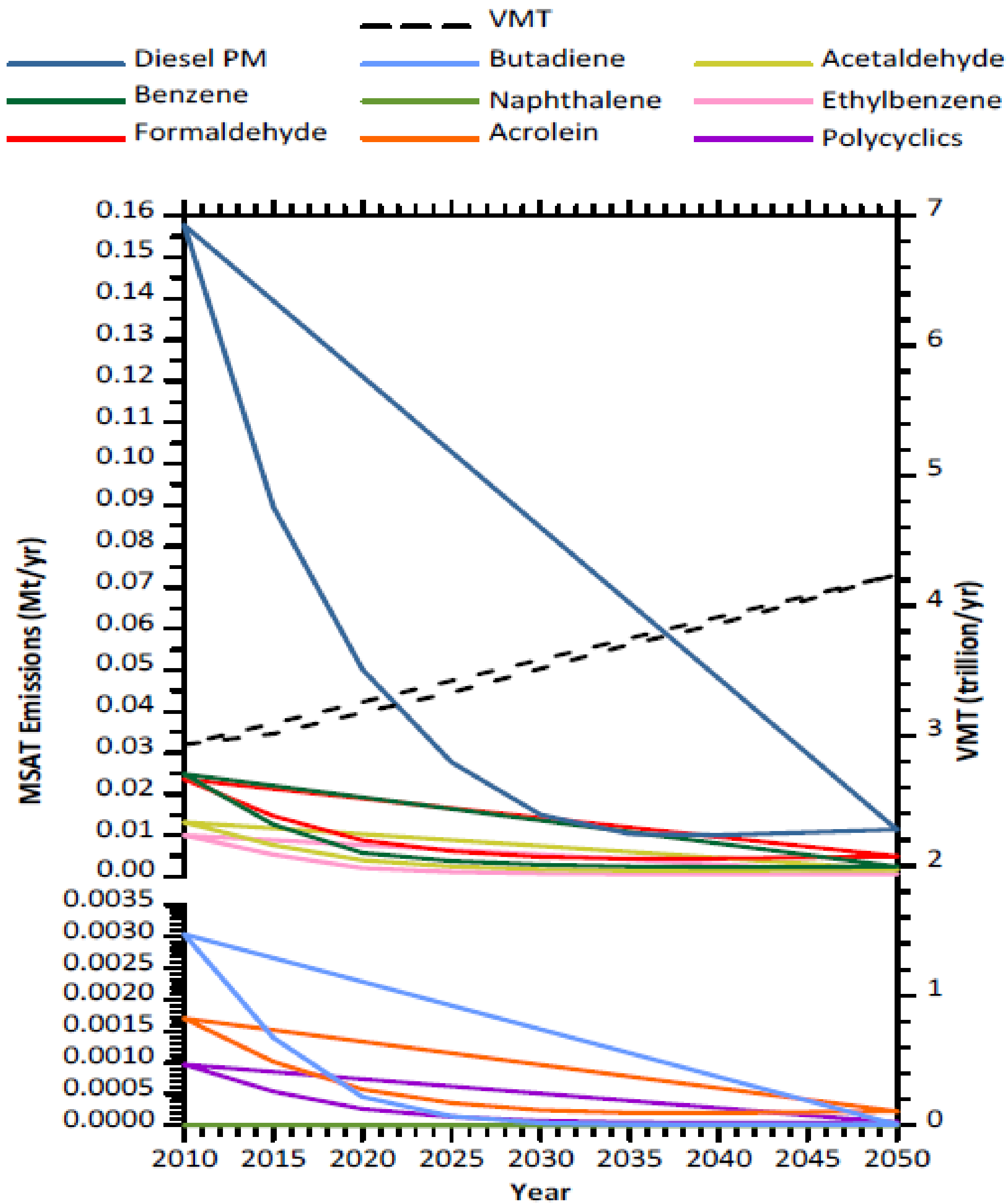
[1] https://www.epa.gov/iris

[2] https://www.epa.gov/national-air-toxics-assessment

[3] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NNR0.txt

Figure 1
FHWA PROJECTED NATIONAL MSAT EMISSION TRENDS 2010 - 2050
FOR VEHICLES OPERATING ON ROADWAYS
USING EPA's MOVES2014a MODEL



Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: EPA MOVES2014a model runs conducted by FHWA, September 2016.

MSAT Research

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

Nonetheless, air toxics concerns continue to arise on highway projects during the NEPA process. Even as the science emerges, the public and other agencies expect FHWA to address MSAT impacts in its environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

NEPA Context

The NEPA requires, to the fullest extent possible, that the policies, regulations, and laws of the Federal Government be interpreted and administered in accordance with its environmental protection goals, and that Federal agencies use an interdisciplinary approach in planning and decision-making for any action that adversely impacts the environment (42 U.S.C. 4332). In addition to evaluating the potential environmental effects, FHWA must also take into account the need for safe and efficient transportation in reaching a decision that is in the best overall public interest (23 U.S.C. 109(h)). The FHWA policies and procedures for implementing NEPA are contained in regulation at 23 CFR Part 771.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in mobile source air toxic (MSAT) emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, https://www.epa.gov/iris/). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are: cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI Special Report

16, https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects) or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxics-criticalreview-literature-exposure-and-health-effects). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk (https://www.epa.gov/iris)."

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable (https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf).

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Due to the limitations cited, a discussion such as the example provided in this Appendix (reflecting any local and project-specific circumstances), should be included regarding incomplete or unavailable information in accordance with Council on Environmental Quality (CEQ) regulations [40 CFR 1502.22(b)]. The FHWA Headquarters and Resource Center staff, Victoria Martinez (787) 771-2524, James Gavin (202) 366-1473, and Michael Claggett (505) 820-2047, are available to provide guidance and technical assistance and support.

Appendix D – MSATs Analysis Methodology

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MEMORANDUM

To: Noel Ardoin, Louisiana Department of Transportation and Development (DOTD)

From: Bowlby & Associates, Inc.

Date: February 6, 2019, Updated March 26, 2019 Per FHWA Comments

Re: Proposed Mobile Source Air Toxics Analysis Methodology
I-10 (LA 415 to Essen Lane on I-10 and I-12)
East Baton Rouge Parish, LA

Bowlby & Associates' (B&A) approved air quality scope for the NEPA document for the I-10 project includes a quantitative Mobile Source Air Toxics (MSATs) analysis. This document summarizes B&A's proposed analysis methodology for review and approval by DOTD and FHWA.

BACKGROUND

On February 3, 2006, the FHWA released "*Interim Guidance on Air Toxic Analysis in NEPA Documents."* This guidance was superseded on September 30, 2009, December 6, 2012 and most recently on October 18, 2016 by FHWA's "*Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents" (FHWA's MSATs Guidance).* The purpose of FHWA's MSATs Guidance is to advise on when and how to analyze MSATs in the NEPA process for highways.

FHWA's MSATs Guidance groups projects into the following categories:

- Exempt Projects and Projects with no Meaningful Potential MSAT Effects;
- Projects with Low Potential MSAT Effects; and
- Projects with Higher Potential MSAT Effects.

The Guidance states that "Projects with Higher Potential MSAT Effects" should:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location, involving a significant number of diesel vehicles for new projects or accommodating with a significant increase in the number of diesel vehicles for expansion projects; or
- Create new capacity or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 or greater by the design year;

And also

- Be proposed to be located in proximity to populated areas.

The Build Alternative includes the widening and reconstruction of I-10 through heavily-populated Baton Rouge. The traffic projections in the *"I-10 Corridor Improvements Stage 0 Feasibility Study"* indicate that I-10 will carry more than 170,000 vehicles per day (vpd) in year 2032 without the project. Therefore, the project meets the criteria for a "Project with Higher Potential MSAT Effects."

FHWA's MSATs Guidance indicates that these projects should be more rigorously assessed for impacts:

"If a project falls within this category, you should contact the Office of Natural Environment (HEPN) and the Office of Project Development and Environmental Review (HEPE) in FHWA Headquarters for assistance in developing a specific approach for assessing impacts. This approach would include a quantitative analysis to forecast local-specific emission trends of the priority MSAT for each alternative, to use as a basis of comparison. This analysis also may address the potential for cumulative impacts, where appropriate, based on local conditions. How and when cumulative impacts should be considered would be addressed as part of the assistance outlined above. The NEPA document for this project should also include relevant language on unavailable information… If the analysis for a project in this category indicates meaningful differences in levels of MSAT emissions among alternatives, mitigation options should be identified and considered."

METHODOLOGY

FHWA's MSAT's guidance does not specify a procedure for quantitative MSAT analyses. However, the guidance was partially derived from FHWA's 2006 study *"A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives"* by Michael Claggett that outlines a quantitative MSAT analysis procedure. Attachment A includes the study. B&A has used this procedure to conduct quantitative MSATs analyses for projects in Tennessee. We propose to use this procedure for I-10 in conjunction with FHWA's document *"Frequently Asked Questions (FAQ) Conducting Quantitative MSAT Analysis for FHWA NEPA Documents"* (FHWA FAQs). FHWA's 2006 study used MOBILE; however, we will use MOVES as discussed below. The FHWA FAQs provide guidance for using MOVES for quantitative MSAT analyses including: a) defining the scope of MOVES work; b) gathering input data; and c) post processing results.

The resulting MSATs analysis will provide annual MSAT emissions for both the No-Build and Build Alternatives to provide the data needed to evaluate the effects of the project. The results will be summarized in the Air Quality Impact Assessment (AQIA) report including appropriate tables and graphics. The proposed parameters and input data for the MSATs analysis are summarized briefly below.

Affected Environment

FHWA's FAQs state the following regarding the affected environment to be studied:

"FHWA recommends analyzing all segments associated with the project, plus those segments expecting meaningful changes in emissions as a result of the project (e.g., ± 10% or more). Define the affected network based on available project-specific information such as the environmental document traffic analysis considering changes in such metrics as:

- *± 5% or more in annual average daily traffic (AADT) on congested highway links of level of service (LOS) D or worse;*
- *± 10% or more in AADT on uncongested highway links of LOS C or better;*
- *± 10% or more in travel time; and*
- *± 10% or more in intersection delay."*

The FAQs also state that these recommendations are not a substitute for project-specific knowledge and consideration of local circumstances.

The Stage 0 Feasibility Study identified the affected environment for the NEPA process which includes I-10 from LA 415 to I-12 including numerous interchanges. We will evaluate all roadway links within the established affected environment as summarized in Table 1 and Figure 1

Pollutants

FHWA's MSATs guidance states that *"for projects warranting MSAT analysis, all nine priority MSAT should be considered."* As a result, the analysis will address all nine priority MSATs:1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter (polycyclic aromatic hydrocarbons (PAH)).

Analysis Years

We will conduct the MSATs analysis for base year 2017 and design year 2040.

Traffic Data

The Average Annual Daily Traffic (AADT) projections for the project will be used to develop the projected vehicle miles of travel (VMT) for both analysis years for the No-Build and Build Alternatives.

Completion of the MSATs analysis will require estimates of average hourly speeds for the No-Build and Build Alternatives for both analysis years. Urban Systems conducted 48-hour counts at the following locations during the noise measurements:

- I-10 EB at I-110 SB merge

- I-10 EB between College Drive and Essen Lane
- I-10 EB between Washington Street and Dalrymple Drive
- I-10 WB at the I-110 NB split
- I-10 WB between College Drive and Essen Lane
- I-10 WB between Washington Street and Dalrymple Drive
- I-12 EB between I-10 and Essen Lane
- I-12 WB between I-10 and Essen Lane

Urban Systems conducted 24-hour counts at the following locations during the noise measurements:

- I-10 EB between Acadian Thruway and College Drive
- I-10 EB between Acadian Thruway and Darlymple Drive
- I-10 EB between LA 415 and LA 1
- I-10 WB between Acadian Thruway and College Drive
- I-10 WB between Acadian Thruway and Dalrymple Drive
- I-10 WB between LA 415 and LA 1

These hourly traffic counts will be used to develop the hourly splits needed for the MSATs analysis.

We will follow the procedure outlined in *"A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives"* to calculate congested speeds for each hour of the day for all road segments for years 2017 and 2040 for both the No-Build and Build Alternative. The AQIA will include charts showing the projected speeds.

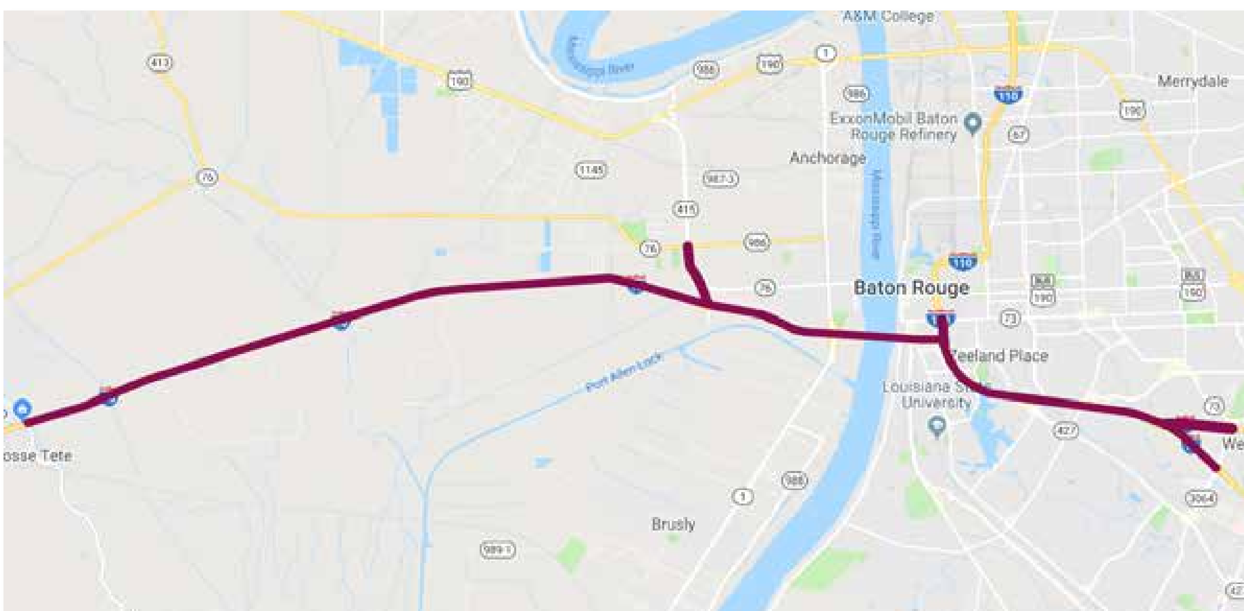
MOVES Data

We requested and received the MOVES input files from the Capital Region Planning Commission. We will run MOVES for years 2017 and 2040. We will coordinate with staff at the Capital Region Planning Commission if any additional MOVES data is needed. MOVES will be run using the County Domain/Scale for each of the 12 months and the results averaged to account for seasonal variation.

Table 1
Roadway Links for MSATs Analysis

Road	From	To
I-10	LA 77	LA 415
	LA 415	LA 1
	LA 1	I-110
	I-110	Washington Street
	Washington Street	Dalrymple Drive
	Dalrymple Drive	Perkins Road
	Perkins Road	Acadian Thruway
	Acadian Thruway	College Drive
	College Drive	I-12
	I-12	Essen Lane
LA 415	Rosedale Road	I-10
I-110	I-10	Government Street
I-12	I-10	Essen Lane

Figure 1
Affected Roadway Network



MSATS ANALYSIS METHODOLOGY
I-10 (LA 415 TO ESSEN LANE ON I-10 AND I-12)

ATTACHMENT A

A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives

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ABSTRACT

With the final update to its on-road mobile source emission factor model, MOBILE6.2, the U.S. Environmental Protection Agency (EPA) added capabilities of predicting emission factors for a select number of mobile source air toxics (MSAT), commonly referred to as the six priority MSATs. These are acetaldehyde, acrolein, benzene, 1,3-butadiene, diesel particulate matter, and formaldehyde. This presentation describes a methodology for computing and evaluating emissions of MSATs among a group of transportation project alternatives. The suggested scale of analysis is the affected transportation network, defined as those links where the annual average daily traffic is expected to change by ±5% or more as a result of the project. This analysis scale is considered reasonably representative of the regional scale emission factors predicted by MOBILE6.2. To gauge how emissions could change over an affected transportation network, provided are calculation ranges of MSAT emission factors produced by the model due to changes in a variety of input parameters. These include calendar year, ambient temperature, fuel Reid vapor pressure, and vehicle speed. Finally, a technique is presented for assessing MSAT emissions from the affected transportation network considering their relative toxicities. The technique allows a way to gauge the importance of increases and decreases in individual MSAT species amid proposed transportation alternatives and/or mitigation measures.

INTRODUCTION

This paper provides the results of an analysis of air toxic emissions due to mobile sources for a hypothetical transportation project designed to mitigate traffic congestion. The example project involves the expansion of an existing urban freeway, plus upgraded arterial/collectors and freeway ramps to improve vehicular access. It is assumed that the freeway corridor extends 10 miles and that arterials cross the freeway every 2 miles with freeway/arterial access provided by freeway ramps. A No-Action Alternate was evaluated for the calendar year 2005 (present); the No-Action and two Build alternates were evaluated for calendar years 2010 (estimated time of completion) and 2030 (design year). The following notation/description is used in referring to the alternatives:

- 6-lane No-Action Alternate -- no upgrades to the existing 6-lane freeway and 4-lane crossing arterials;
- 6- to 8-lane Build Alternate -- upgrade the existing 6-lane freeway and 4-lane crossing arterials by adding 2 travel lanes; and
- 6- to 10-lane Build Alternate -- upgrade the existing 6-lane freeway by adding 4 travel lanes and upgrade the 4-lane crossing arterials by adding 2 travel lanes.

The underlying purpose of this effort is to provide a practical example of how a mobile source air toxics analysis may be applied to a planned project. This exercise offers additional insight into the technical challenges involved, including the formulation of analysis techniques; the types and sources of data required to complete such an analysis; the assumptions that may need to be made; the data forecasting routines and issues involved; and the comparative results likely to be obtained.

ANALYSIS METHODOLOGY

Fundamentals

The basic procedure for conducting an emissions analysis or emissions inventory for on-road mobile sources is to calculate emission factors using the Environmental Protection Agency's (EPA) MOBILE model (EPA, 2003), then multiply by the vehicle-miles of travel (VMT) for each affected roadway link. The EPA's current version of the model, MOBILE6.2 (dated November 2003), is capable of predicting composite emission factors of the six priority mobile source air toxics (acetaldehyde, acrolein, benzene, butadiene, diesel particulate matter, and formaldehyde) in units of g/VMT. Most MOBILE6.2 emission factors are sensitive to changes in vehicle activity parameters so that the appropriate emission factors for a link are matched to the corresponding VMT/day. The sum product (g/VMT x VMT/day) for all affected links is obtained to provide emissions by pollutant on a ton per day or ton per year basis.

The mobile source emission factors predicted by the MOBILE6.2 model are applicable to a regional scale not an individual project corridor. Consequently, an emissions analysis for a project should include links beyond the project corridor and evaluated with respect to its effect on the transportation system. The affected transportation network can be defined as those links where the annual average daily (AADT) traffic is expected to change by more than ±5% as a result of a project.

Key Assumptions

The core assumption made in developing the traffic data for the emissions analysis is that the existing freeway and crossing arterials are operating at capacity (e.g., the volume-to-capacity ratio, V/C = 1) during the peak hour. Lanes are added to relieve the traffic congestion anticipated in future years. A growth rate of 1.5% per year in hourly traffic volumes on the freeway and crossing arterials was assumed for the No-Action Alternates based on Bureau of Transportation Statistics data (BTS, 2003) for the most recent 5-year record available (1998 through 2002). A higher growth rate (i.e., 1.75% per year) in hourly volumes was assumed for the upgraded projects to account for redirected trips from the surrounding area that may be diverted to a new, more efficient facility. The maximum hour-by-hour V-to-C ratios allowed on the facilities were 1.25 for the freeway and 1.15 for the crossing arterials. These are the major assumptions used to establish traffic volumes and speeds for the hypothetical upgrading projects.

In practice, a systems-level analysis would be required to adequately account for the redistribution of traffic on the upgraded project and on other parts of the affected transportation network as previously recommended. Or for projects located in relatively undeveloped areas, there is the potential for changes in surrounding land use and associated implications with respect to affected growth rates in traffic volumes. An actual systems-level analysis would need to account for this as well.

Traffic Data

Traffic activity data were developed based on methodology formulated by the Texas Transportation Institute (TTI) as provided in the National Highway Institute (NHI) course "Estimating Regional Mobile Source Emissions" and national data built into the MOBILE6.2 model. The capacity of the urban freeway is assumed to be 2100 vehicles per hour per lane (vphpl) (NHI, 2003; TRB, 2000) and the capacity of the urban crossing arterials is assumed to be 673 vphpl (NHI, 2003). Traffic volumes are assumed to vary hourly according to EPA's (2003) VMT fraction by hour of the day. For the 2005 existing condition, the roadways (i.e., freeway and crossing arterials) are assumed to be operating at capacity during the peak-hour traffic condition of 4 to 5 pm. Traffic volumes for the remaining hours are distributed based on the assumed capacity multiplied by a ratio of the VMT fraction for each hour divided by the VMT fraction for the peak hour. Total hourly volumes were determined considering the number of lanes associated with the existing condition, i.e., 6-lane freeway with 4-lane crossing arterials. A 50/50 directional split was employed. No distinction for weekend travel was made.

Traffic volumes for future years were determined by applying the assumed annual growth rate of 1.5% per year for the No-Action Alternate and 1.75% per year for the Build Alternates, limited to 1.25 x V/C for the freeway and 1.15 x V/C for the crossing arterials during any one hour. Capacity-limited volumes were only applicable for the 2030 No-Action Alternate. The resulting hourly traffic volumes are provided in Figure 1.

One reason for computing hourly traffic volumes is to determine hourly travel speeds, which vary according to the V-to-C ratio. The TTI method (NHI, 2003) for predicting congested speeds was applied. The basis for the methodology is calculating a congested speed (in mph) accounting for the effects of delay (min/mi) on the free-flow speed (in mph):

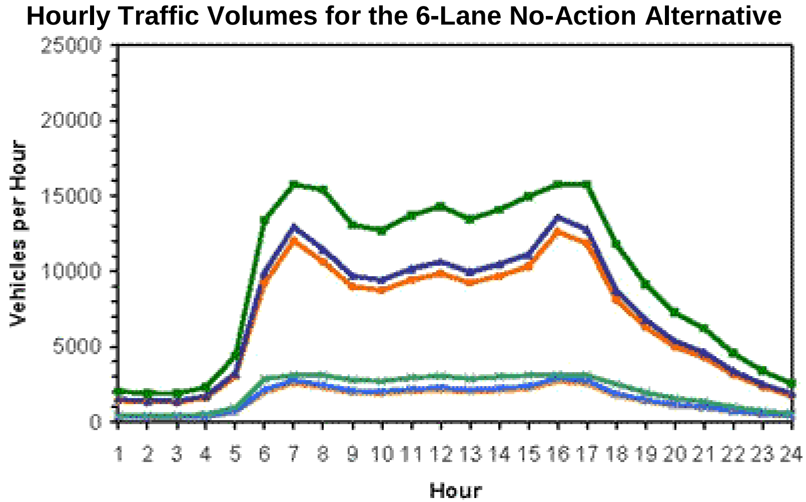
$$\text{Congested Speed} = \frac{60}{\frac{60}{\text{Freeflow Speed}} + \text{Delay}}$$

Default free-flow speeds are provided as a function of area type and roadway functional classification defined in the FHWA Highway Performance Monitoring System (HPMS). The default free-flow speeds for urban freeways and urban other principal arterials are 65 mph and 40 mph, respectively. The formula for calculating delay is:

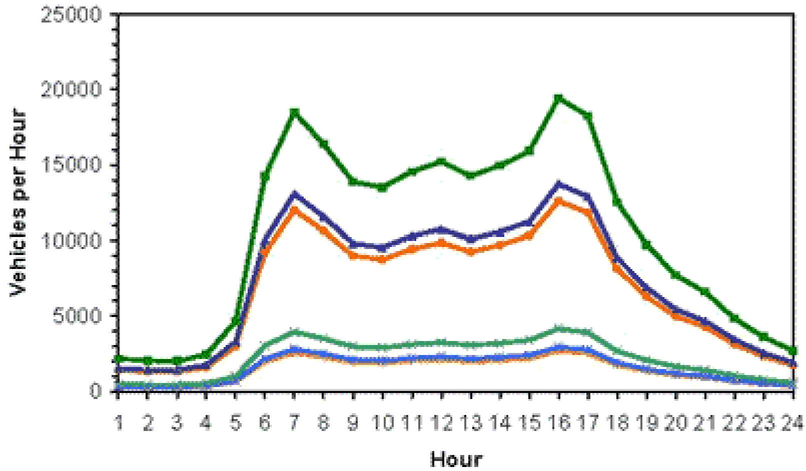
$$\text{Delay} = \text{Minimum}\left[A \times e^{B\left(\frac{V}{C}\right)}, M \right]$$

where A and B are volume/delay equation coefficients and M is the maximum minutes of delay per mile. Default values are provided: A = 0.015, B = 3.5, and M = 5 for high-capacity facilities; A = 0.05, B = 3, and M = 10 for low-capacity facilities. Default capacities are also provided as a function of area type and roadway functional classification: C = 2100 vphpl for urban freeways and C = 673 vphpl for urban other principal arterials. Locale-specific parameters should be derived and used in calculating congested speeds for most applications.

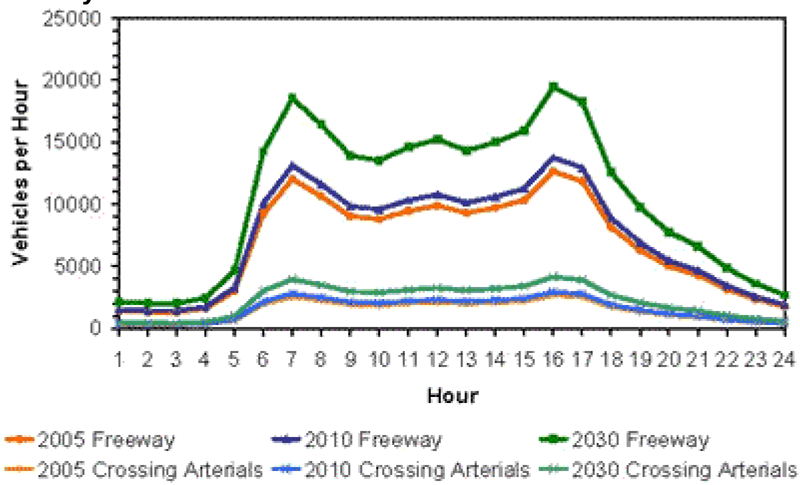
Figure 1. Hourly Traffic Volumes and Congested Speeds.



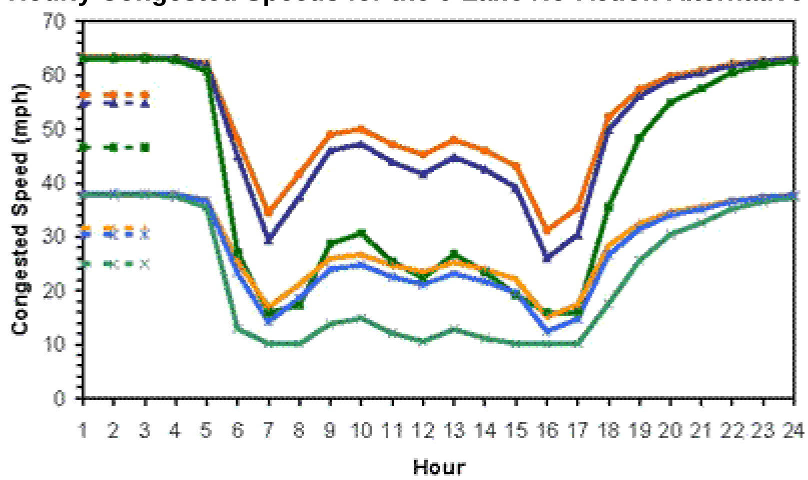
Hourly Traffic Volumes for the 6- to 8-Lane Build Alternative



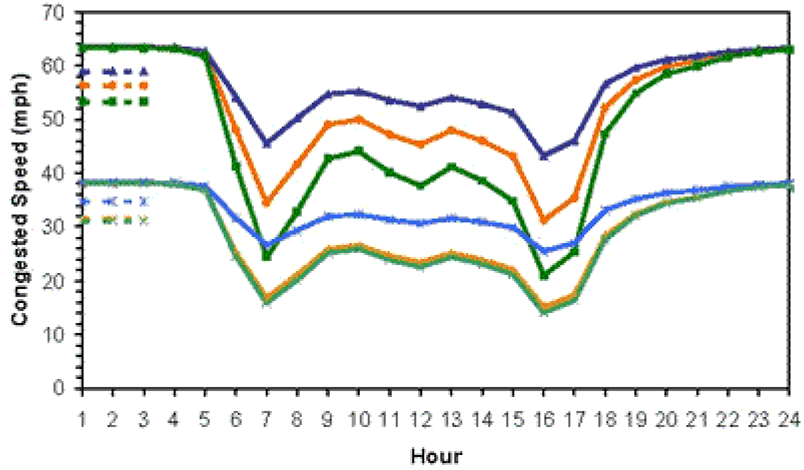
Hourly Traffic Volumes for the 6- to 10-Lane Build Alternative



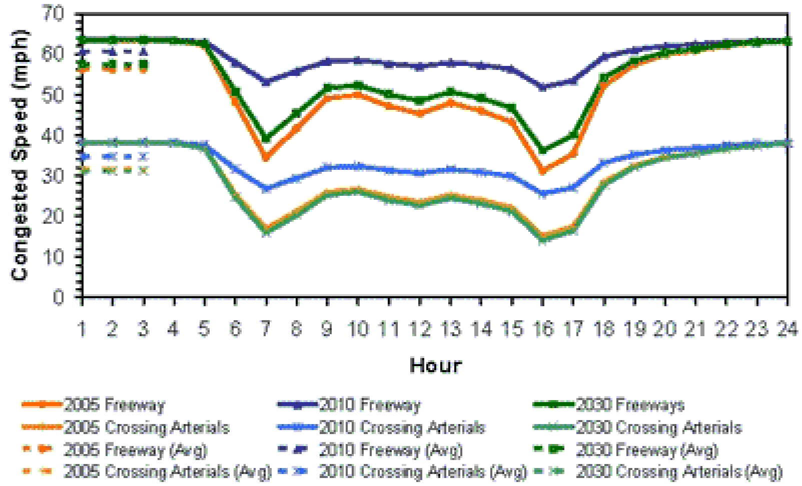
Hourly Congested Speeds for the 6-Lane No-Action Alternative



Hourly Congested Speeds for the 6- to 8-Lane Build Alternative



Hourly Congested Speeds for the 6- to 10-Lane Build Alternative



The resulting travel speeds are given in Figure 1 as previously referenced. An average hourly congested speed for the day was also computed to determine if it may be used as a surrogate for an hour-by-hour variation in speeds. The average hourly congested speeds illustrated in the figure are applicable to all hours of the day, but only a portion of each series is presented so that the hourly congested speeds can be more clearly shown. The hourly congested speeds predicted encompass the average speeds of the test cycles used in developing the speed correction factors in MOBILE6.2, i.e.:

- For freeways, low speed -- 13.1 mph; level of service (LOS) F -- 18.6 mph; LOS E -- 30.5 mph; LOS D -- 52.9 mph; LOS A-C -- 59.7 mph; and high speed -- 63.2 mph, as well as
- For arterial/collectors, LOS E-F -- 11.6 mph; LOS C-D -- 19.2 mph; and LOS A-B -- 24.8 mph.

The daily VMT is the product of the Annual Average Daily Traffic (AADT) and the facility length. The hourly volumes by facility type were summed to obtain the AADT as provided in Table 1 by alternate. The facility lengths assumed are 10 miles for the freeway and 6 miles for the crossing arterials (i.e., 6 arterials of 1 mile in length each). The resulting daily VMT for each alternate are also presented in Table 1.

Identical hourly traffic volumes, AADT, and daily VMT are realized for the 6- to 8-Lane and 6- to 10-Lane Build Alternates. Even so, there are differences in the capacities and predicted congested speeds for the build alternates that may affect the respective MSAT emission totals. In contrasting the No-Action and Build Alternates, differences in hourly traffic volumes, AADT, and daily VMT are observed due to the AADT growth rates and V-to-C ratio limits implemented.

MOBILE6.2 Inputs

The MOBILE6.2 model was run using EPA's national default data built into the program with the following exceptions. Parameters for which there are no default values include calendar year; minimum and maximum temperature; gasoline fuel Reid vapor pressure (RVP); average diesel fuel sulfur level and maximum particle size cutoff (for diesel particulate matter); and specifications of the gasoline fuel used (for acetaldehyde, acrolein, benzene, 1,3-butadiene, and formaldehyde). Parameters for which national defaults were not used include month of evaluation and average speeds. Emission reductions that may be realized from a local inspection/maintenance program were not taken into account.

The calendar years evaluated include 2005 as the baseline year; 2010 as the estimated time of completion; and 2030 as the design year. When conducting annual emissions inventories, EPA recommends that monthly emission factors be developed via mathematical interpolation between January and July and summing the monthly emissions results. To simplify this analysis, the parameters that would vary by month are represented by a single value as the basis for the annual emissions inventory. An evaluation of the variability of MOBILE6.2 emission factors is provided to gauge how changes in certain assumptions would affect emission factors representative of freeway and arterial operation.

The MOBILE6.2 model was run assuming no temperature variation over the day simulated (i.e., minimum temperature = maximum temperature) using a temperature of 55 ºF to represent an annual average. The median of the annual average daily minimum and maximum temperatures measured in the U.S. are 43.3 ºF and 63.6 ºF, respectively; 55 ºF is about midway

Table 1. Travel Characteristics of Each Alternate.

Annual Average Daily Traffic (vpd)									
Alternate	Year								
	2005			2010			2030		
	Freeway	Arterials	Total	Freeway	Arterials	Total	Freeway	Arterials	Total
6-Lane No-Action	162162	34646	196808	174695	37324	212018	229669	47963	277632
6- to 8-Lane Build				176857	37786	214642	250213	53458	303671
6- to 10-Lane Build				176857	37786	214642	250213	53458	303671

Daily Vehicle-Miles of Travel (VMT per day)									
Alternate	Year								
	2005			2010			2030		
	Freeway	Arterials	Total	Freeway	Arterials	Total	Freeway	Arterials	Total
6-Lane No-Action	1621622	207876	1829498	1746947	223942	1970889	2296691	287779	2584470
6- to 8-Lane Build				1768567	226713	1995281	2502131	320749	2822880

6- to 10-Lane Build				1768567	226713	1995281	2502131	320749	2822880

between these values. The median of the normal daily minimum temperatures measured in the U.S. during the coldest month of the year (January) is 23.5 ºF and the median of the normal daily maximum temperatures measured in the U.S. during the warmest month of the year (July) is 86.1 ºF. The fuel RVP would change over the course of a year from the switching of winter fuel blends to summer fuel blends and back again. The range of fuel RVP in some locales can be expected to encompass the volatility of class AA (7.8 psi) through class E (15.0 psi) fuels prescribed by the American Society of Testing Materials (ASTM). A fuel RVP of 12.5 psi (Class C/D) was assumed for this analysis. The evaluation month selected was July.

Emission factors of diesel particulate matter include the organic carbon, elemental carbon, and sulfate portions of diesel exhausts for a maximum particle size cutoff of 10 µm. The diesel fuel sulfur levels used are consistent with the 49-state average values reflecting more stringent federal controls (i.e., 11 ppm for 2010 and 2030). For the baseline year of 2005, an average diesel fuel sulfur level of 350 ppm was assumed. Emission factors for the hydrocarbon MSATs were based on the 2007/2020 30 ppm fuel specifications for the northeastern states during summer and no reformulated fuel program (RFP).

The emissions analysis was conducted by accounting for the vehicle emission types specific to the operation of the facility, e.g., exhaust running and evaporative running loss emissions for vehicles operating on the freeway and crossing arterials. The national defaults for start and soak emissions built into the MOBILE6.2 model are not applicable to a project-level analysis as most of the starts and ends of vehicle trips would not occur on the upgraded project or on the affected transportation network. Start and soak emissions need to be accounted for if a project would significantly increase the number of trips above the No-Action Alternate, not just a redistribution of existing trips.

PRESENTATION OF RESULTS

Project-Level Emissions

Traffic data representative of a congestion-mitigation highway project was formulated; the most-recent official version of the MOBILE6.2 model (dated November 2003) was run; and the resulting emission inventory for the six priority mobile source air toxics was compiled as summarized in Table 2. The relative amount of total MSAT emissions attributable to the freeway and the crossing arterials and the emissions of each individual MSAT are also provided in Table 2.

Variability of MOBILE6.2 Emission Factors

MSAT emission factor predictions produced by the MOBILE6.2 model vary substantially over the typical evaluation period of a transportation project. The MSAT emission levels attributable to a group of transportation alternatives will be governed by project-specific and locale-specific circumstances such as external conditions, vehicle fleet characteristics, vehicle activity, and vehicle fuel specifications. Recognizing the importance of these factors, the EPA (2004) recommends which MOBILE6.2 input parameters should be based on locally-derived data in preparing emission inventories. Tianjia Tang (2003) of the FHWA Resource Center conducted an in-depth trend and sensitivity analysis of the air toxic function of the MOBILE6.2 model.

Table 2. Project-Level MSAT Emissions (tons per year).

Total MSAT Emissions

Alternate	Year		
	2005	2010	2030
6-Lane No-Action	63.3	41.9	27.7
6- to 8-Lane Build		40.3	27.1
6- to 10-Lane Build		40.0	26.0

MSAT Emissions by Facility Type

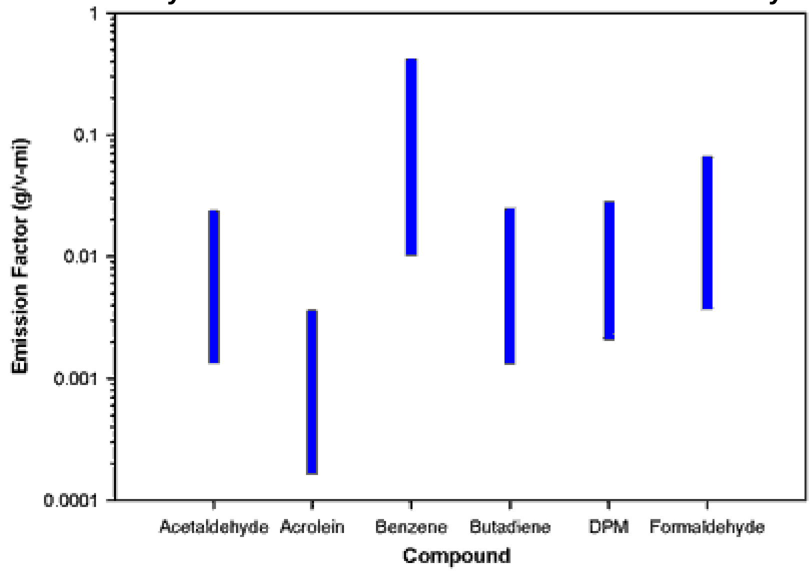
Alternate	Year / Facility Type					
	2005		2010		2030	
	Freeway	Arterials	Freeway	Arterials	Freeway	Arterials
6-Lane No-Action	55.1	8.16	36.3	5.53	23.7	4.00
6- to 8-Lane Build			35.4	4.94	23.6	3.50
6- to 10-Lane Build			35.0	4.94	22.5	3.50

MSAT Emissions by Alternate

Compound	Year / Alternate						
	2005	2010			2030		
	6-Lane No-Action	6-Lane No-Action	6- to 8-Lane Build	6- to 10-Lane Build	6-Lane No-Action	6- to 8-Lane Build	6- to 10-Lane Build
Acetaldehyde	3.4	2.5	2.3	2.3	2.3	2.1	2.0
Acrolein	0.5	0.3	0.3	0.3	0.3	0.3	0.3
Benzene	25.6	18.6	17.7	17.5	15.0	14.7	14.2
Butadiene	3.3	2.4	2.3	2.3	1.9	1.9	1.8
Diesel Particulate Matter	21.0	11.4	11.5	11.5	2.4	2.6	2.6
Formaldehyde	9.5	6.6	6.1	6.1	5.9	5.5	5.1

Offered as a supplement is an evaluation of the range of MSAT emission factors obtained from the MOBILE6.2 model by varying the key parameters identified by Tang -- calendar year, temperature, fuel Reid vapor pressure, and vehicle speed. Calendar years ranging from 2005 to 2050 in 5 year increments were considered. No temperature variation over the day simulated was assumed; however, various temperatures were assessed where the minimum was set to the maximum to gauge the effects of discrete temperatures, ranging from 35 ºF to 95 ºF in 10 ºF increments. The effects of fuel RVP were calculated for four selected values: 7.8 psi (Class AA), 10.0 psi (Class B), 12.5 psi (Class C/D), and 15.0 psi (Class E). The effects of vehicle speeds for the freeway and arterial/collector roadway scenarios were evaluated in increments defined by the 14 speed bins established in MOBILE6.2 (i.e., 2.5 mph, 5 mph, and in 5 mph increments thereafter to 65 mph). This represents over 47,000 emission factor values calculated for the 6 priority MSAT compounds. The results are shown in Figure 2.

Figure 2. Variability of MOBILE6.2 Emission Factors for the Priority MSATs

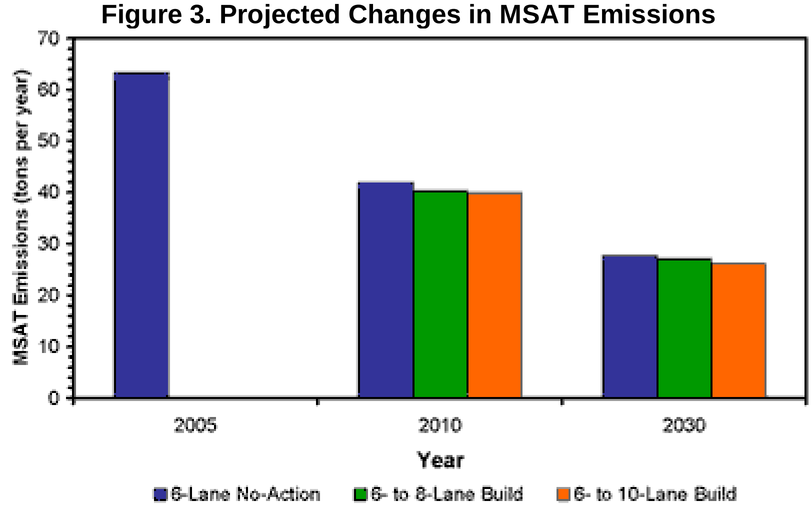


DISCUSSION OF RESULTS

Project-Level Emissions

The analysis indicates that a significant decrease in MSAT emissions can be expected for a planned congestion-mitigation transportation project from current (e.g., 2005) levels through future (e.g., 2030 design year) levels. The emission trends obtained in this analysis are illustrated in Figure 3. Emissions of total MSATs are predicted to decrease by more than 56% in 2030 compared with 2005 levels. Differences in total MSAT emissions between the Build and No-Action alternates were found. The No-Action Alternate is expected to carry less traffic than the Build Alternates, but this is offset by an over-capacity traffic condition and breakdown of travel speeds during an extended peak period. As a result, less total MSAT emissions are associated with the Build Alternates compared to the No-Action Alternate (i.e., 2.2 to 6.2% less).

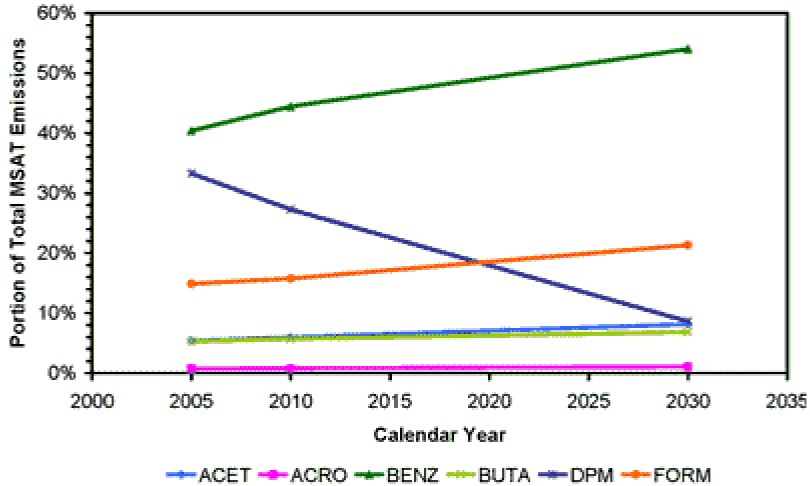
Figure 3. Projected Changes in MSAT Emissions



Most of the MSAT emissions are attributable to the freeway compared with the crossing arterials. But although the arterials account for only 11.1 to 11.4% of the total daily VMT; they contribute a disparate amount of the total MSAT emissions -- 12.3 to 14.4%. While this may not seem significant, arterial travel accounts for 7.9 to 29.6% more MSAT emissions than indicated by its portion of the total VMT. This is attributable to the congestion reflected for the arterial facilities represented in the analysis. Since emissions are directly proportional to the assumed daily VMT, the results by facility type presented in Table may be adjusted to reflect different assumptions with respect to the length of the freeway corridor or crossing arterials and to a lesser extent, the AADT on the two facility types. Changing traffic volume assumptions would affect traffic speeds and emission factors that would not be reflected in a simple proportional adjustment of facility VMT.

Of the six priority MSAT compounds, benzene contributes the most to the emissions total. The amount of diesel particulate matter emitted in 2005 is comparable to the amount of benzene emitted -- 21.0 versus 25.6 tpy for the 6-lane No-Action Alternate. But for future years, a substantial decline in benzene is anticipated (more than a 41% decrease from 2005 to 2030); and an even larger reduction in diesel particulate matter emissions is predicted (about an 88% decrease from 2005 to 2030). In 2005, the largest portion of the total MSAT emissions is due to benzene (40%) followed by diesel particulate matter (33%), formaldehyde (15%), acetaldehyde (5%), butadiene (5%), and acrolein (1%). By 2030, the rank order and proportions change as follows: benzene (54%), formaldehyde (21%), diesel particulate matter (9%), acetaldehyde (8%), butadiene (7%), and acrolein (1%). This is displayed graphically in Figure 4.

Figure 4. Changes in the Proportional Mix of MSAT Emissions



Associated with each MSAT compound is its inherent toxicity. While huge uncertainties and inconsistencies exist in assigning absolute toxicity values, considering their relative toxicities may be an effective technique to gauge the relative importance of the magnitudes or increases and decreases in emissions among individual MSAT species, transportation alternatives, and/or mitigation measures. A sampling of acute and chronic toxicities associated with the six priority MSATs are provided in Table 3. Included in this table are short-term worker exposures provided by the National Institute for Occupational Safety and Health (NIOSH) and the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA); and short-term and long-term air quality exposures provided by the U.S. EPA and the states of New York and California. The range of variability in toxicities from the short-term to the long-term is six to eight orders of magnitude. No National Ambient Air Quality Standards (NAAQS) have been set for any of the priority MSATs. California is the only entity included in this sampling to adopt a level for diesel particulate matter.

Table 3. Air Exposure Criteria (µg/m³).

MSAT Compound	NIOSH	U.S. DoL	U.S. EPA			New York Air Guide		California		
	IDLH	OSHA	NAAQS	RAC	RsD	SGC	AG	Acute	Chronic	RsD

		PEL			10^{-5} Risk		C	Inhalation	Inhalation	10^{-5} Risk
Acetaldehyde	3,610,000	360,000	None	10	None	4,500	4.5E-01	None	9.0E+00	3.7E+00
Acrolein	4,590	250	None	20	None	1.9E-01	2.0E-02	1.9E-01	6.0E-02	None
Benzene	1,600,000	3,200	None	None	1.2E+00	1,300	1.3E-01	1.3E+03	6.0E+01	3.4E-01
1,3-Butadiene	4,430,000	2,220	None	None	3.6E-02	None	3.6E-03	None	2.0E+01	5.9E-02
Diesel Particulate Matter	None	None	15 (annual) [A] 65 (24-hr)[A]	None	None	None	None	None	5.0E+00	3.3E-02
Diesel Organic Gases	None	None	None	None	None	None	None	None	None	None
Formaldehyde	24,600	921	None	None	7.7E-01	30	6.0E-02	9.4E+01	3.0E+00	1.7E+00

Notes: All Concentrations in µg/m^3.

NIOSH IDLH -- National Institute for Occupational Safety and Health, Immediately Dangerous to Life or Health, 15-minute average.

OSHA PEL -- U.S. Deparment of Labor, Occupational Safety and Health Administration Permissible Exposure Limits, 8-hour Time Weighted Average.

NAAQS -- National Ambient Air Quality Standard.

RAC -- U.S. EPA Reference Air Concentration (annual average), 40 CFR 266, Appendix IV.

RsD -- Risk Specific Dose of a 10^{-5} increased cancer risk due to a lifetime exposure (70-year average) via the inhalation pathway, 40 CFR 266, App. IV.

New York State Air Guide values: SGC -- Short-term Guideline Concentration (1-hour average); AGC - Annual Guideline Concentration.

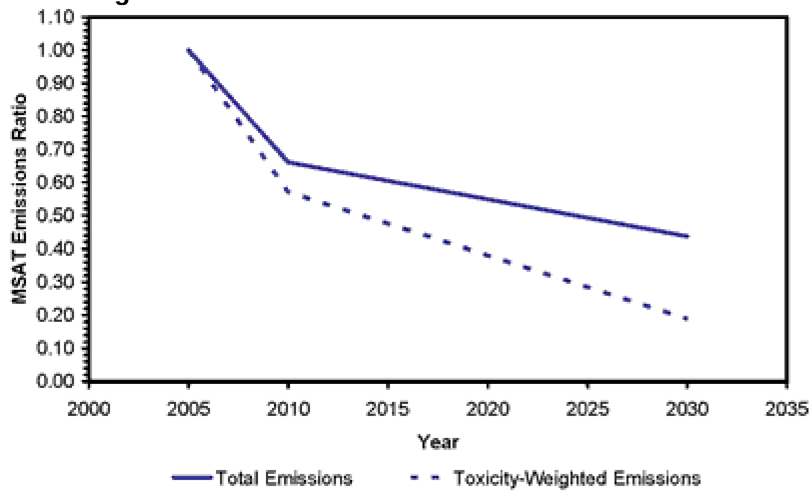
California: Acute Inhalation -- 1-hour average Reference Exposure Limits (except for arsenic, 4-hour average and benzene, 6-hour average);

Chronic Inhalation -- Annual average Refererence Exposure Limits; Inhalation Risk Specific Dose = 1 / Inhalation Unit Risk * 10^{-5}.

[A] As PM-2.5.

While the apparent decrease in MSAT emissions projected in 2030 compared to 2005 levels is more than 56%, the effective decrease in MSAT emissions is greater on a toxicity-weighted basis. Employing the appropriate EPA air exposure criteria (e.g., RAC or RsD) and California's RsD for diesel particulate matter, emissions can be expressed on a common basis -- as diesel particulate matter or benzene or any of the other priority MSATs. On a toxicity-weighted basis, the effective decrease in MSAT emissions is 81% from current to design year levels. Figure 5 provides a comparison of these emissions decreases on an un-weighted versus toxicity-weighted basis.

Figure 5. Predicted Decreases in MSAT Emissions



Several of the findings have alluded to the significant effect that traffic congestion has on predicted MSAT emission levels. Consequently, as a practical consideration, comes a question of the required level of detail of vehicle activity data to accurately characterize the amount of congestion on an affected transportation network. One aspect of this question was examined by determining if an average hourly congested speed for the day may be used as an adequate surrogate for the hour-by-hour variation in congested speeds. For facilities operating close to and above capacity, an average hourly congested speed is a marginal to poor indicator of congestion as it relates to the prediction of emissions for all priority MSAT compounds except DPM, which is insensitive to changes in speed. Use of an average hourly congested speed results in an underestimation of MSAT emissions minus DPM for the No-Action Alternate by 6 to 7% for 2005 and 2010 to as much as 16% for 2030. In contrast, for the 2010 Build Alternates where the freeway V-to-C ratios are less than 0.82, a closer match (within 2%) is obtained. The 2030 Build Alternates operate with peak V-to-C ratios ranging from 0.93 to 1.16. Under-estimations of MSAT emissions minus DPM in the range of 3 to 7% are obtained using an average hourly congested speed as a surrogate for the hourly variation.

The level of detail of the vehicle activity data employed in a project-level MSAT emission analysis extends to other factors that may either mitigate or adversely affect congestion. Factors such as variations in vehicle activity by weekday/weekend, month or season, and directional split should be considered.

Emission Factor Variability

The variability of MSAT emission factors projected for the variety of conditions that may be representative of transportation projects and locales throughout the U.S. is huge, ranging by an order of magnitude for each individual compound:

- Acetaldehyde -- 0.00133 to 0.0238 g/VMT;
- Acrolein -- 0.000165 to 0.00365 g/VMT;
- Benzene -- 0.0102 to 0.422 g/VMT;
- Butadiene -- 0.00131 to 0.0249 g/VMT;
- Diesel Particulate Matter -- 0.00207 to 0.0285 g/VMT; and

- Formaldehyde -- 0.00371 to 0.0665 g/VMT.

The highest emission factors are associated with the current year (2005), the minimum speed (2.5 mph), the maximum temperature (95 ºF), and the top end fuel RVP (12.5 or 15.0 psi). The lowest emission factors are associated with years extending into the future (2035 to 2050), higher speeds (55 to 65 mph), moderate temperature (75 ºF), and minimum fuel RVP (7.8 psi).

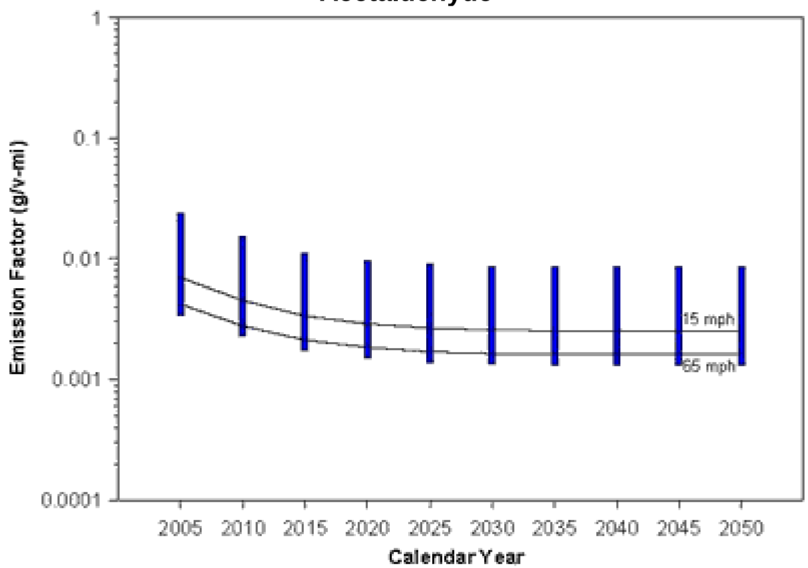
Some conditions are unlikely to occur concurrently -- such as high temperatures and high volatility gasoline, low temperatures and low volatility gasoline, high vehicle speeds on arterial facilities, or minimal vehicle speeds on freeways and arterials for extended periods of time. A series of graphs were prepared to identify practical ranges of MSAT emission factors by calendar year considering the common operating speeds of vehicles on freeways and arterials and a combination of temperatures with relatively high volatility gasoline.

The vehicle operating speeds selected were 15 to 65 mph on freeways and 10 to 40 mph on arterials. These speeds were chosen considering the congested speeds calculated in the project-level emissions analysis and the average speeds of the test cycles used in developing the speed correction factors in MOBILE6.2. Temperature/fuel RVP combinations were selected considering that automotive gasoline is adjusted seasonally by manufacturers to meet EPA's volatility regulation and ASTM fuel volatility specification D-4814. Suppliers generally publish specification schedules for their gasoline shipments. Typically, high volatility gasoline is supplied during the winter months when high temperatures are unlikely to occur and low volatility gasoline is supplied during the summer months when low temperatures are unlikely to occur. The spring and fall months may be more representative of the minimum/maximum temperature range for periods when relatively high volatility gasoline (Class C or D) is in use. A temperature range of 35 to 95 ºF in combination with a fuel RVP of 12.5 psi was evaluated, as well as a fuel RVP range of 7.8 to 15.0 psi in combination with a temperature of 55 ºF.

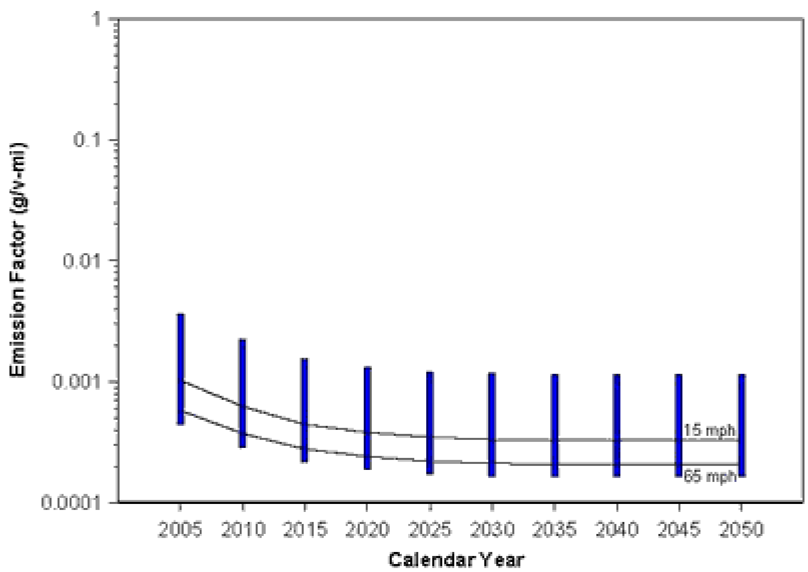
Figures 6 though 9 show the variability of emission factors predicted by the MOBILE6.2 model as a function of calendar year for acetaldehyde, acrolein, benzene, butadiene, diesel particulate matter, and formaldehyde. What's represented by the floating bar graphs in each figure is the full extent of projected emission factors by calendar year considering vehicle speeds from 2.5 to 65 mph, temperatures from 35 to 95 ºF, and fuel RVP from 7.8 to 15.0 psi. Superimposed are line graphs illustrating the range of results expected considering practical assumptions of vehicle speed, temperature, and fuel RVP. Each figure consists of six panels, one for each MSAT, delineated by line graphs representing:

- The freeway operating speed range of 15 to 65 mph for a temperature of 55 ºF and fuel RVP of 12.5 psi in Figure 5;
- The arterial operating speed range of 10 to 40 mph for a temperature of 55 ºF and fuel RVP of 12.5 psi in Figure 6;
- The temperature range of 35 to 95 ºF for a fuel RVP of 12.5 psi and freeway operating speed of 55 mph in Figure 7; and
- The fuel RVP range of 7.8 to 15.0 psi for a temperature of 55 ºF and freeway speed operating of 55 mph in Figure 8.
    - **Figure 6: Variability of MOBILE6.2 Emission Factors for MSATs in the 15 to 65 mph Freeway Operating Speed Range (Temperature = 55 ºF, RVP = 12.5 psi).**

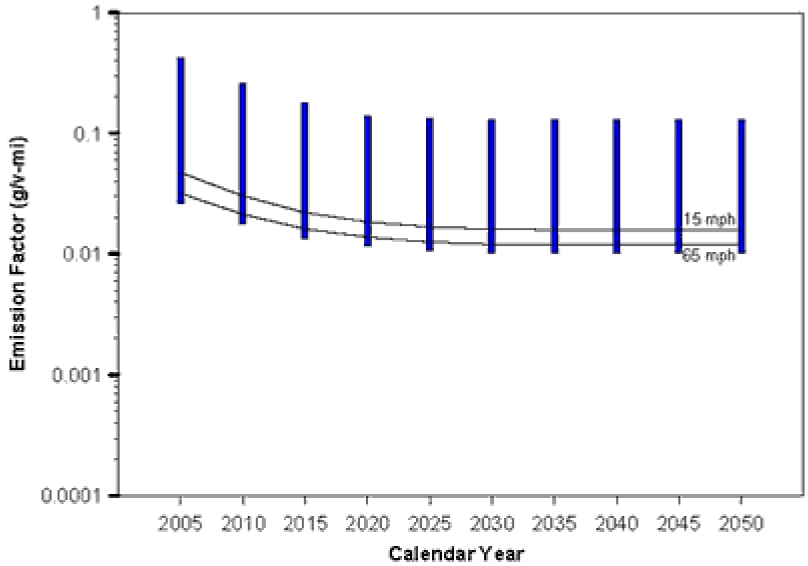
·   **Acetaldehyde**



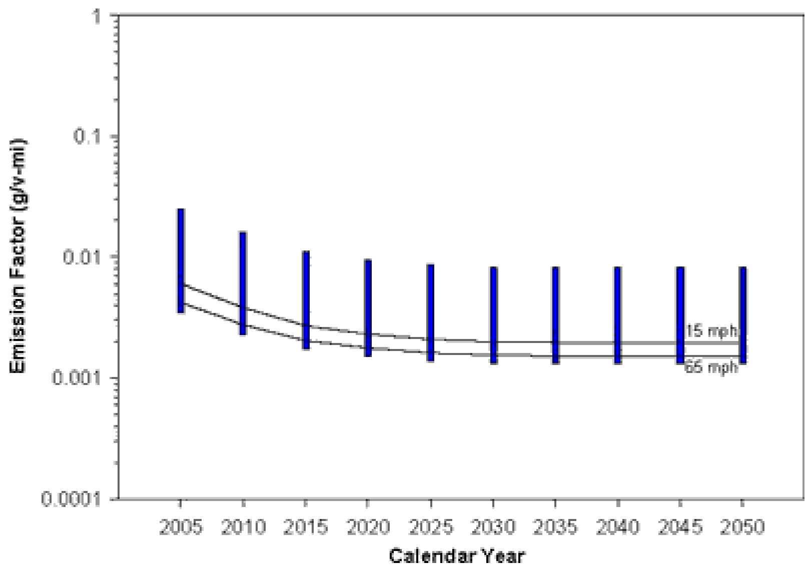
Acrolein



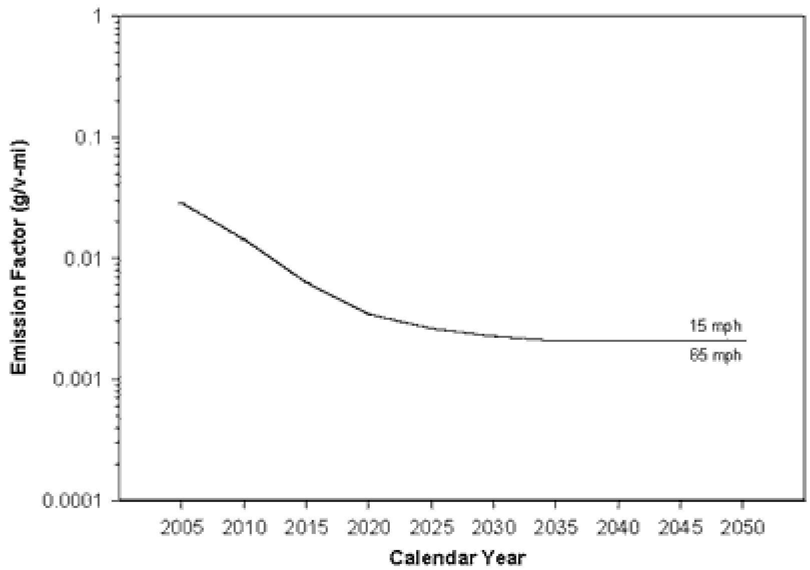
Benzene



Butadiene



Diesel PM



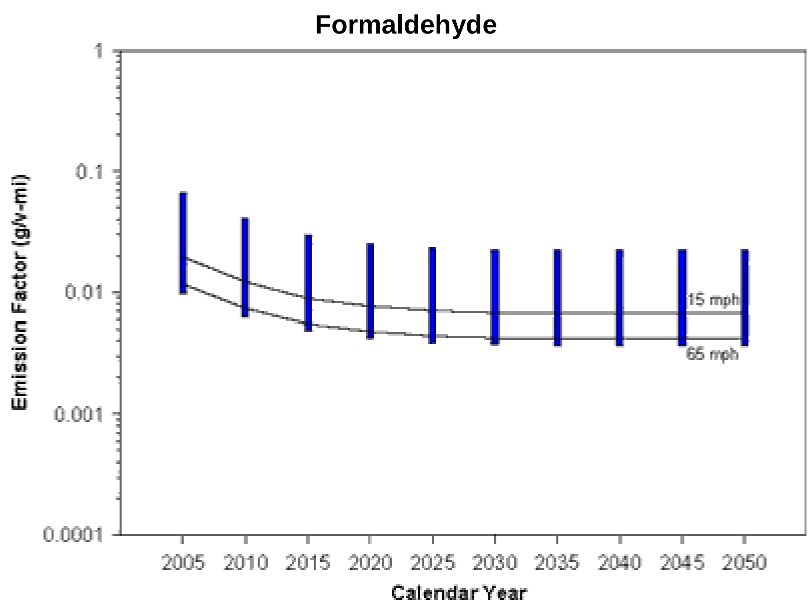
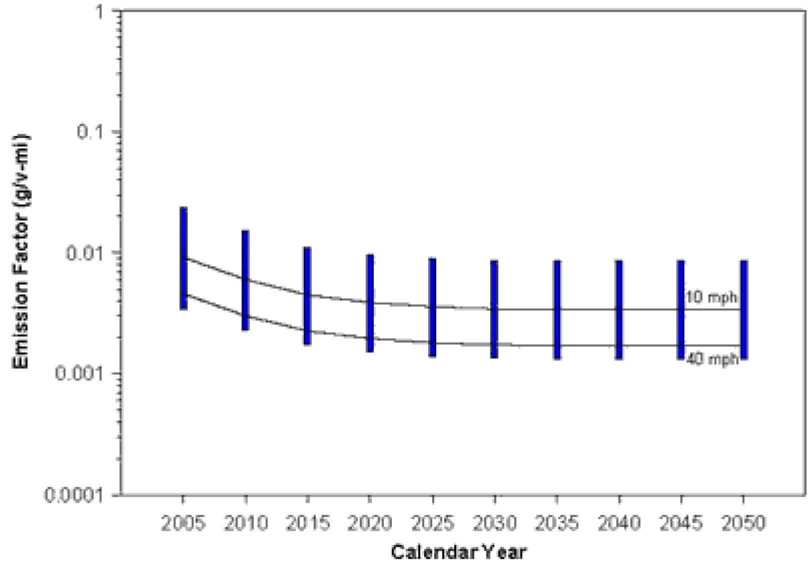
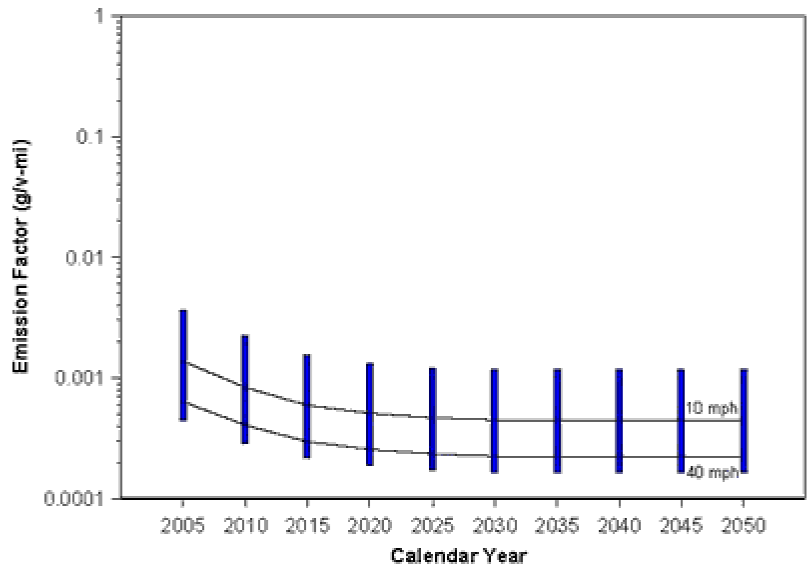


Figure 7: Variability of MOBILE6.2 Emission Factors for MSATs in the 10 to 40 mph Arterial Operating Speed Range (Temperature = 55 ºF, RVP = 12.5 psi).

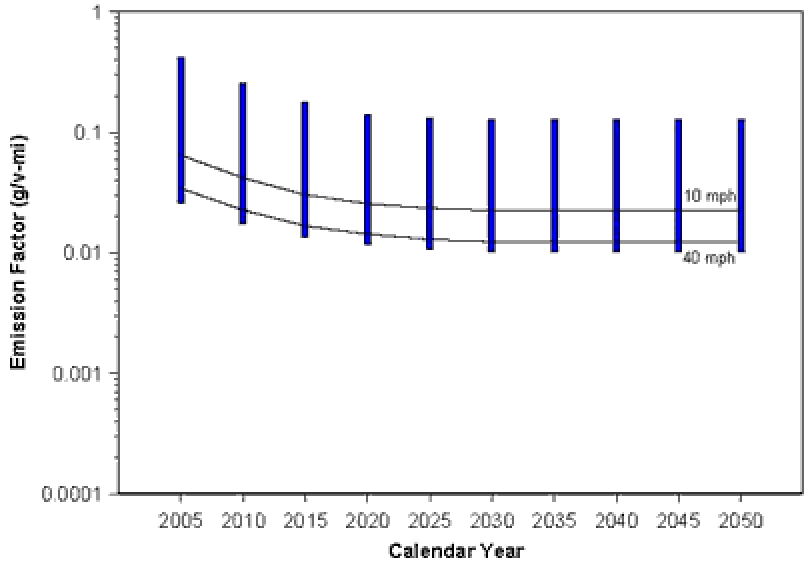
Acetaldehyde



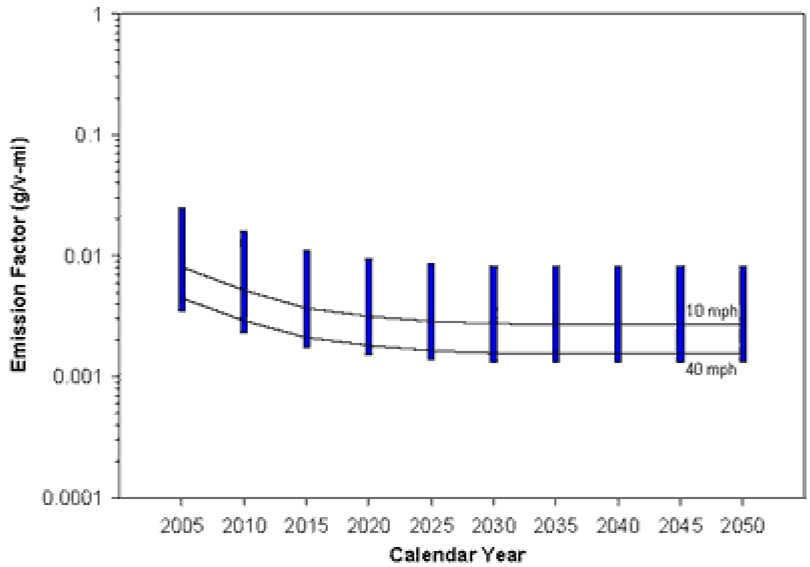
Acrolein



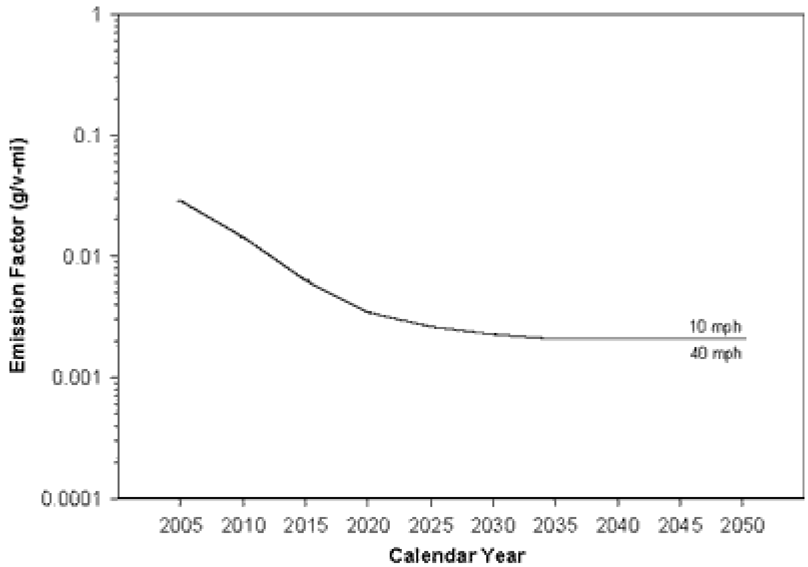
Benzene



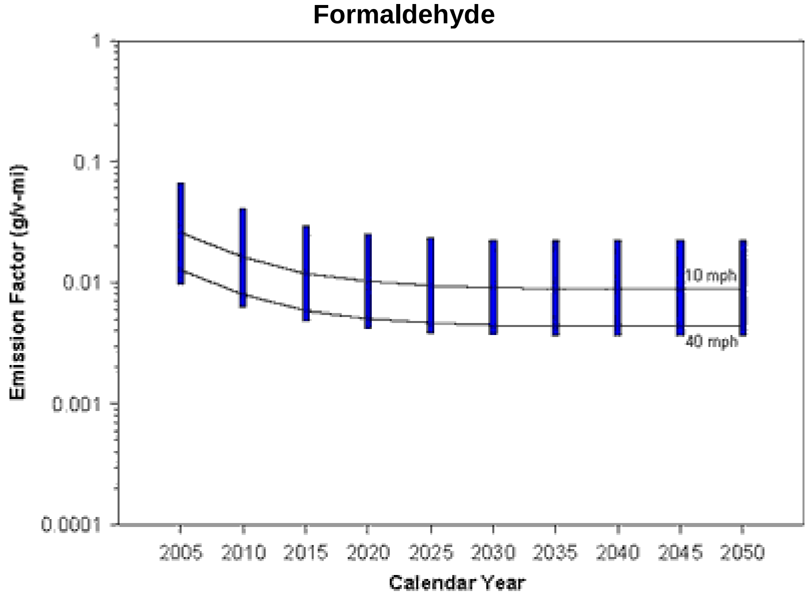
Butadiene



Diesel PM

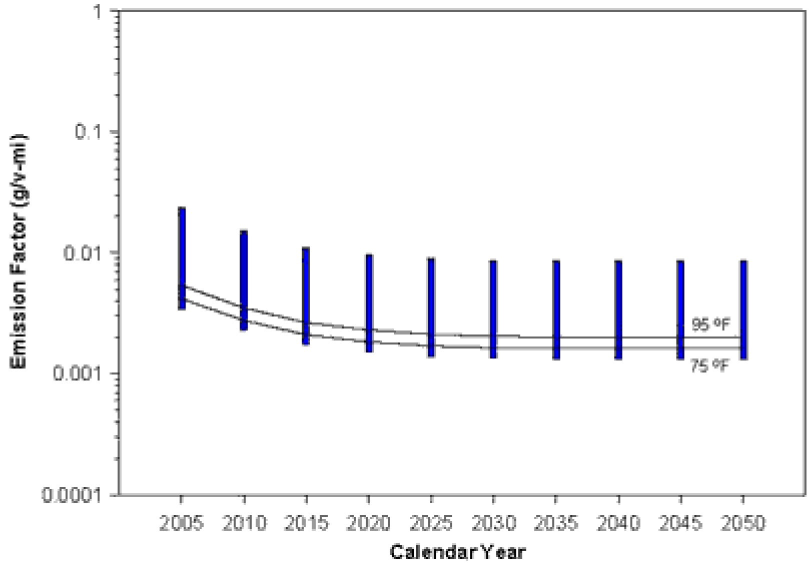


Formaldehyde

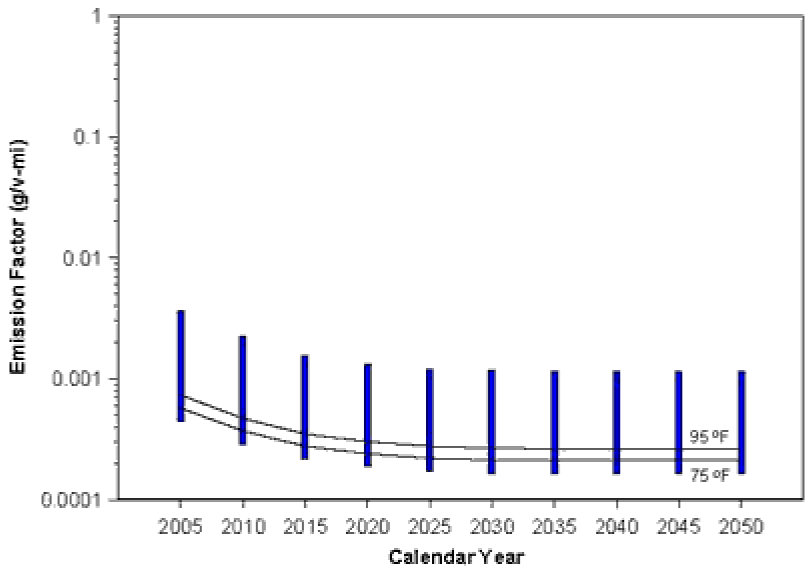


· **Figure 8: Variability of MOBILE6.2 Emission Factors for MSATs in the 35 to 95 ºF Temperature Range (55 mph Freeway Speed, RVP = 12.5 psi).**

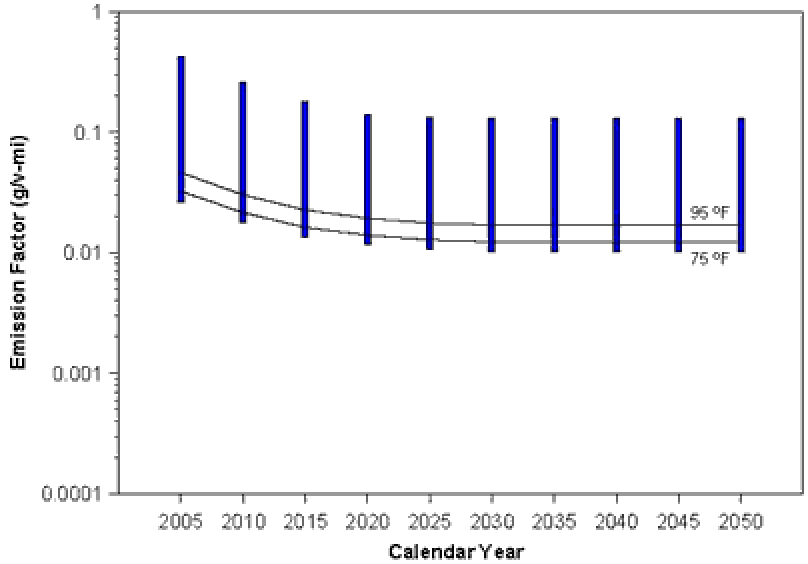
Acetaldehyde



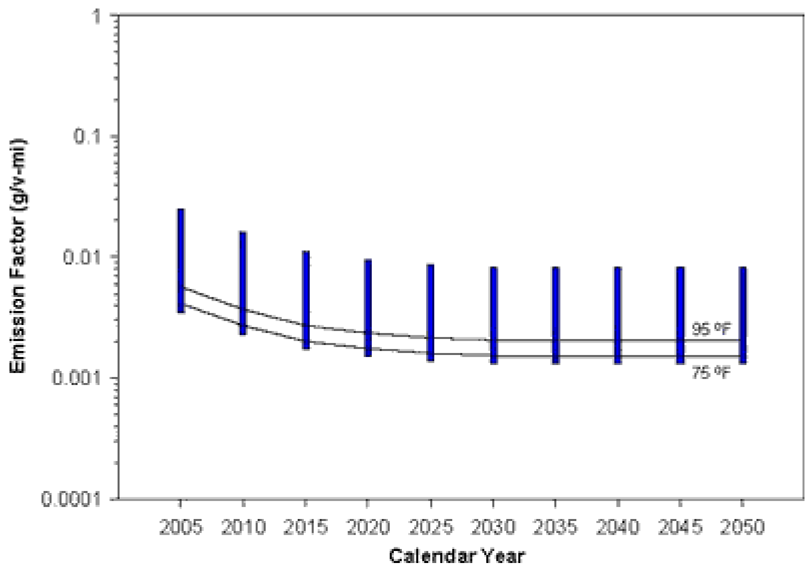
Acrolein



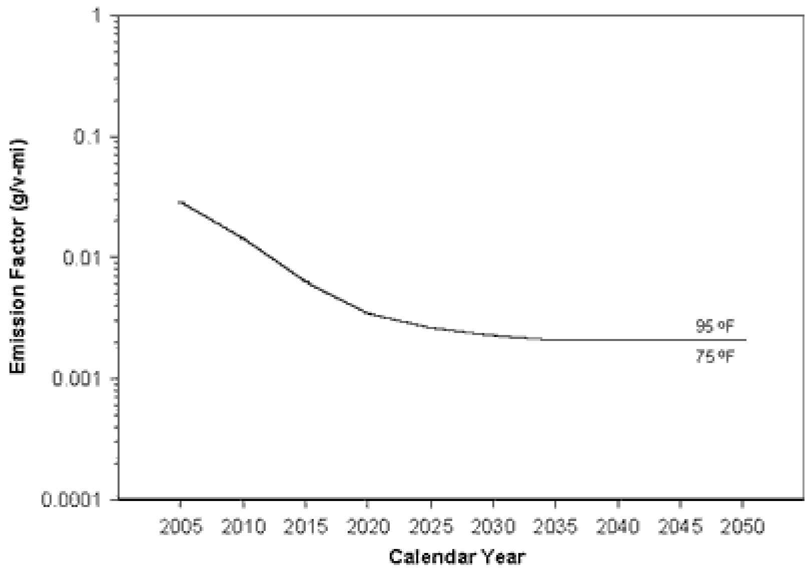
Benzene



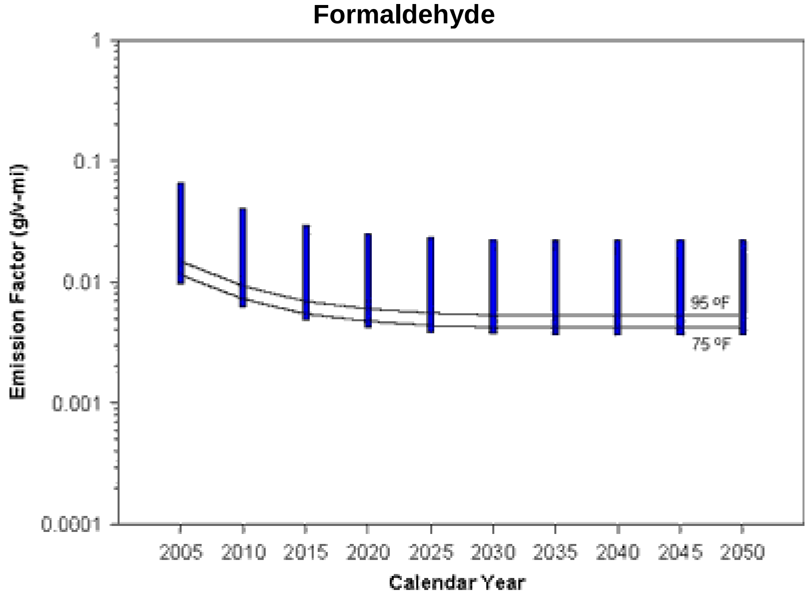
Butadiene



Diesel PM

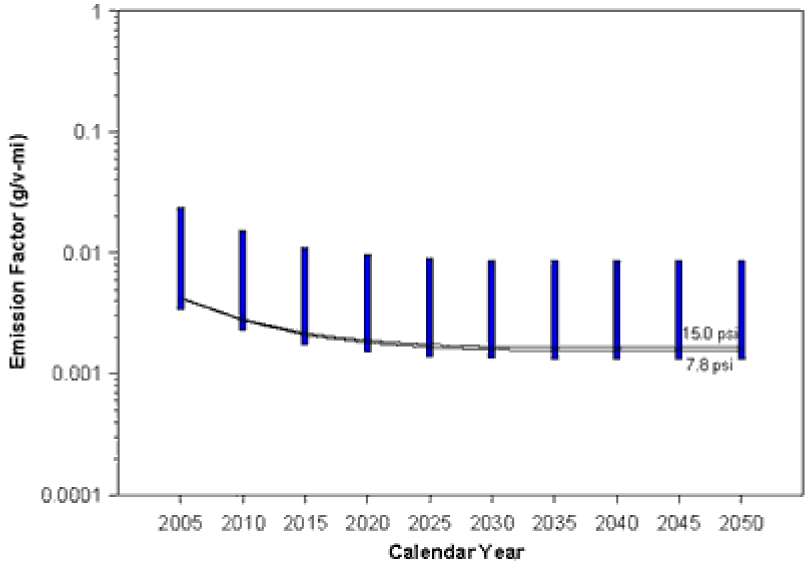


Formaldehyde

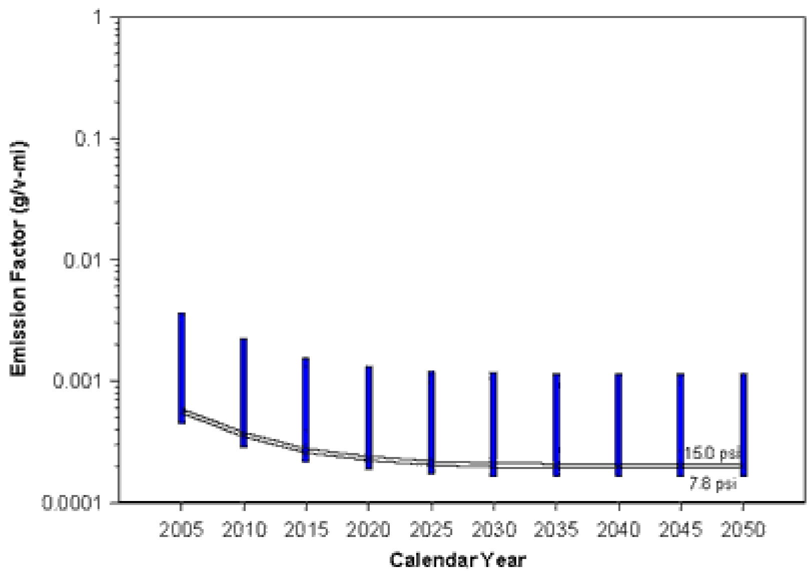


· **Figure 9: Variability of MOBILE6.2 Emission Factor for MSATs in the 7.8 to 15.0 psi Fuel RVP Range (55 mph Freeway Speed, Temperature = 55 ºF).**

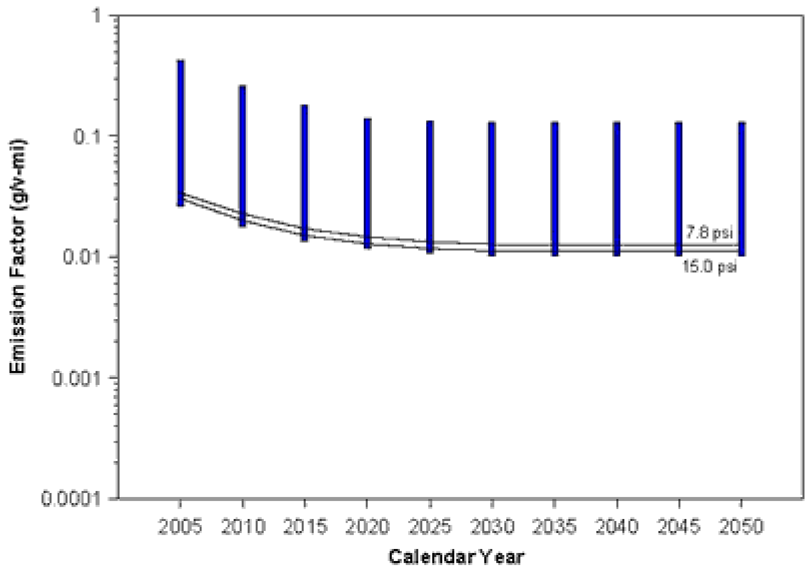
Acetaldehyde



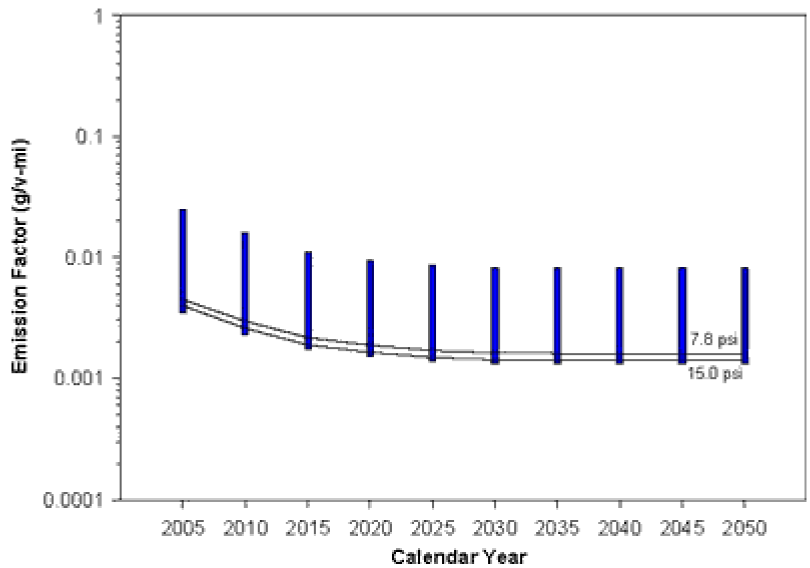
Acrolein



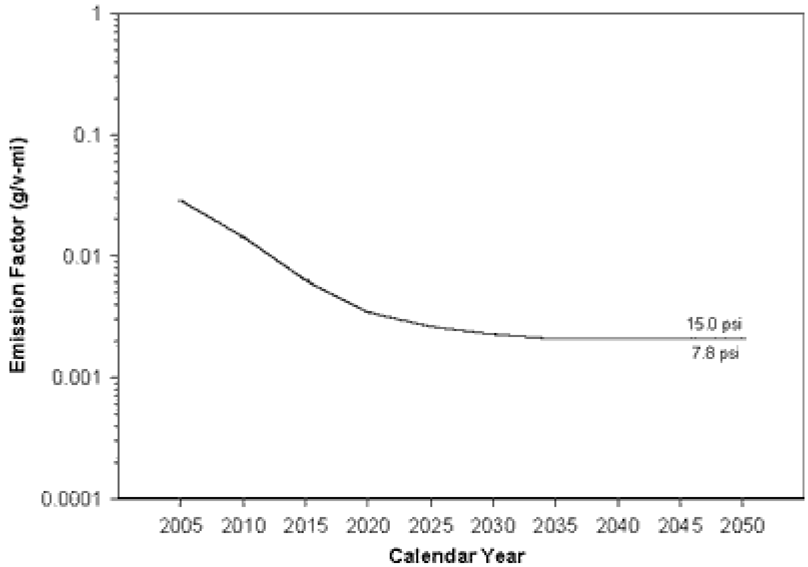
Benzene

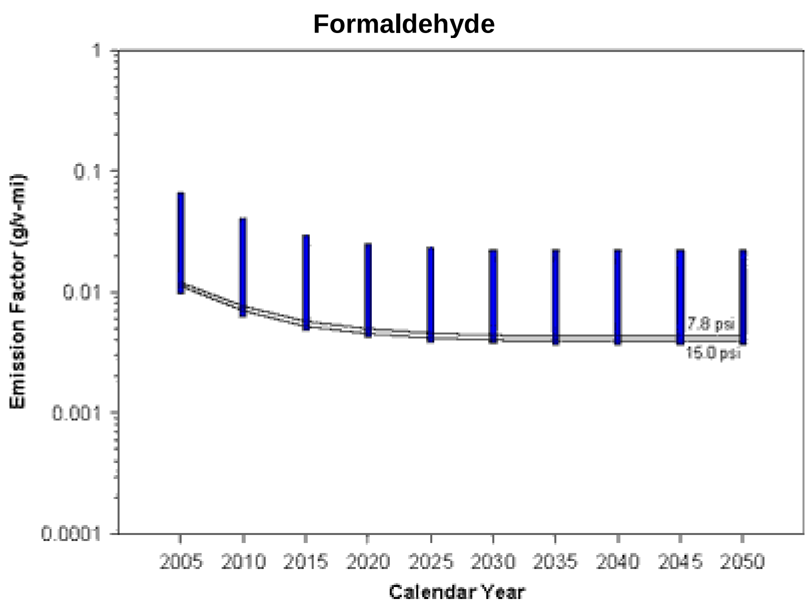


Butadiene



Diesel PM





Using parameters that reflect realistic conditions versus rare or unlikely events results in emission factors in the bottom half of the predictive range of MOBILE6.2. For the most part, these emission factors are nevertheless sensitive to changes in calendar year, congested speed, temperature, and fuel RVP. MSAT emission factors decrease with increasing calendar year, reaching their minimum during 2035 and remaining flat through 2050.

The results obtained for diesel particulate matter are not characteristic of those obtained for the HC-based MSATs (i.e., acetaldehyde, acrolein, benzene, butadiene, and formaldehyde). As illustrated in each of the figures, emission factors for diesel particulate matter are insensitive to changes in vehicle speed, temperature, and not surprisingly, fuel (gasoline) RVP. Emission factors for diesel particulate matter will only change as a function of the VMT of diesel-fueled vehicles and the diesel-fuel sulfur content, which will be set for future years by EPA regulation.

For the HC-based MSATs, higher emission factors are associated with lower operating speeds. Because a higher frequency of lower speeds is linked with traffic on arterials, higher emission factors are generally obtained for arterial versus freeway travel. The differences in drive cycles for the arterial versus freeway roadway scenarios have little to no effect. Higher emission factors are obtained for higher and lower temperatures with 75 ºF being the inflection point. Temperature and fuel-RVP effects are inter-related. Changes in fuel RVP for moderate temperatures have a minor effect on emission factors. However, the misapplication of fuels for high or low temperatures will have an effect on predicted emission factors for the HC-based MSATs. Use of high volatility gasoline with high temperatures results in higher emission factors compared with the proper match of low volatility gasoline with high temperatures. The same is true for the use of low volatility gasoline with low temperatures compared with the appropriate match of high volatility gasoline with low temperatures.

CONCLUSIONS

This study provides some insight into what may be expected when conducting an in-depth project-level mobile source air toxics emissions analysis. First, the main analytical tool for predicting emissions from on-road motor vehicles is the EPA's MOBILE6.2 model. The MOBILE6.2 model is regional in scope and has limited applicability to a project corridor. However, the effects of a major transportation project extend beyond its corridor and an evaluation within the context of an affected transportation network can be accomplished.

When evaluating the future options for upgrading a transportation corridor, the major mitigating factor in reducing mobile source air toxic emissions is the implementation EPA's new motor vehicle emission control standards. Substantial decreases in MSAT emissions will be realized from a current base-year through an estimated time of completion for a planned upgrading project and its design year some 25 years in the future. Even accounting for anticipated increases in vehicle-miles of travel and varying degrees of efficiency of vehicle operation, total MSAT emissions were predicted to decline more than 56% from 2005 to 2030. While benzene emissions were predicted to decline more than 41%, emissions of diesel particulate matter were predicted to decline more than twice this rate (i.e., 88%). On a toxicity-weighted basis, the effective decrease in total MSAT emissions is 81% from current to design year levels.

The ability to discern remarkable differences in MSAT emissions among transportation alternatives is difficult given the uncertainties associated forecasting travel activity and air emissions 25 years or more into the future. In this hypothetical congestion-mitigation project, differences in MSAT emissions between the Build and No-Action Alternates ranged from 2 to 6%. While factors such as ambient temperature, implementation of an inspection maintenance program, use of reformulated gasoline, etc., can affect the magnitude of MSAT emissions specific to a locale; these factors would be common to all project alternatives under review.

The most important factors affecting emission differences among the available options are vehicle-miles of travel and levels of traffic congestion. When evaluating transportation network alternatives operating significantly under-capacity, the difference in vehicle-miles of travel is more important than the difference in congested vehicle speeds. The excess capacity would accommodate an increase in traffic volumes without adversely affecting travel speeds and related MOBILE6.2 emission factors. At the other extreme, where one transportation network alternative is operating significantly over its capacity, then the difference in congested vehicle speeds may be more influential than the difference in vehicle-miles of travel. MOBILE6.2 emission factors are very sensitive to vehicle speeds in the slow, congested speed range. Mitigating this congestion may have more of an effect on reducing emissions than the offset due to a potential increase in vehicle-miles of travel. For transportation network alternatives operating slightly under- or over-capacity, then differences in vehicle-miles of travel and differences in congested speeds are equally significant. The level of detail required in formulating vehicle activity data is greater for congestion-mitigation projects. Factors that may mitigate or adversely affect congestion need to be accounted for and it is preferable to represent congestion by an hour-by-hour variation in traffic speeds versus an average for the day.

Applicability to Real-World Analyses

The approach used in this analysis could be applied for project-level analysis of proposed projects in the National Environmental Policy Act (NEPA) process, or for other purposes. However, the analysis needs to be tailored to reflect local conditions.

The geographic area of analysis should reflect, at a minimum, all roadways where traffic volumes are affected by the proposed project. The affected transportation network can be defined as those links where the AADT is expected to change by more than ±5% as a result of a project. Also, to better reflect total emissions of the six priority MSATs, the analysis could include not only emissions associated with the transportation facilities in question, but also emissions from the local street network, non-road mobile sources, area and point (industrial) sources. Including these other emissions sources provides a more accurate representation of the relative impact of the proposed project.

This analysis is based on assumptions regarding traffic volumes and V-to-C ratios. An actual analysis would use volumes and capacity information specific to the project. Rather than using arbitrary growth rates, future volumes should be projected using a travel demand model or other technique normally used to forecast future travel in the area. Speeds from the travel demand model can also be used, but they should be post-processed using the TTI methodology, Bureau of Public Roads (BPR) formula, or other methodology. An enhancement would be to account for the effects of lower levels of weekend travel.

This analysis is based largely on national defaults in the MOBILE6.2 model. An actual analysis would use MOBILE inputs that are appropriate to the area. To a large extent, these inputs should be consistent with those used for other modeling purposes in the area (e.g., State Implementation Plan inventories, conformity analyses). However, given the limitations of the accuracy of the MOBILE6.2 model, use of annual average inputs is probably appropriate for most analyses. Also, rather than modeling each individual speed calculated for project links, it may be more expedient to generate a speed look-up table, in 5 mph increments, and select emissions rates by rounding to the closest modeled speed. Also note previous comments regarding use of hourly speeds versus daily average speeds. In many cases, daily average speeds would be appropriate.

DISCLAIMER

The content of this paper solely represents the work of the authors and does not reflect the policy, guidance, or procedures adopted or recommended by the U.S. Department of Transportation and the Federal Highway Administration. This document is disseminated in the interest of information exchange and the U.S. Government assumes no liability for use of the information. This paper does not constitute a standard specification or regulation.

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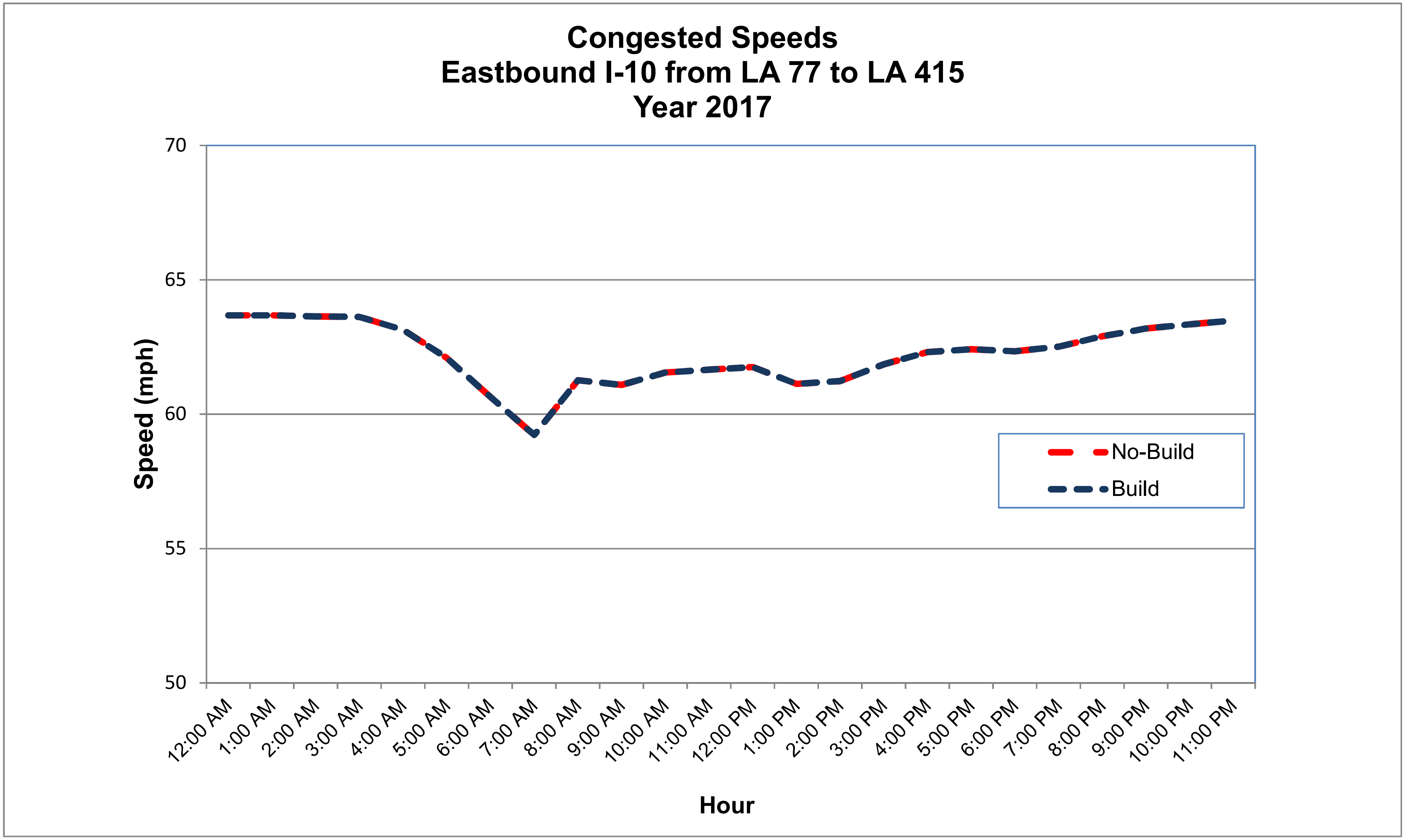
6. TRB, 2000, Highway Capacity Manual 2000, Committee on Highway Capacity and Quality of Service.

Appendix E – Projected Speeds on Affected Roadway Network



Congested Speeds
Eastbound I-10 from LA 77 to LA 415
Year 2017
Speed (mph)
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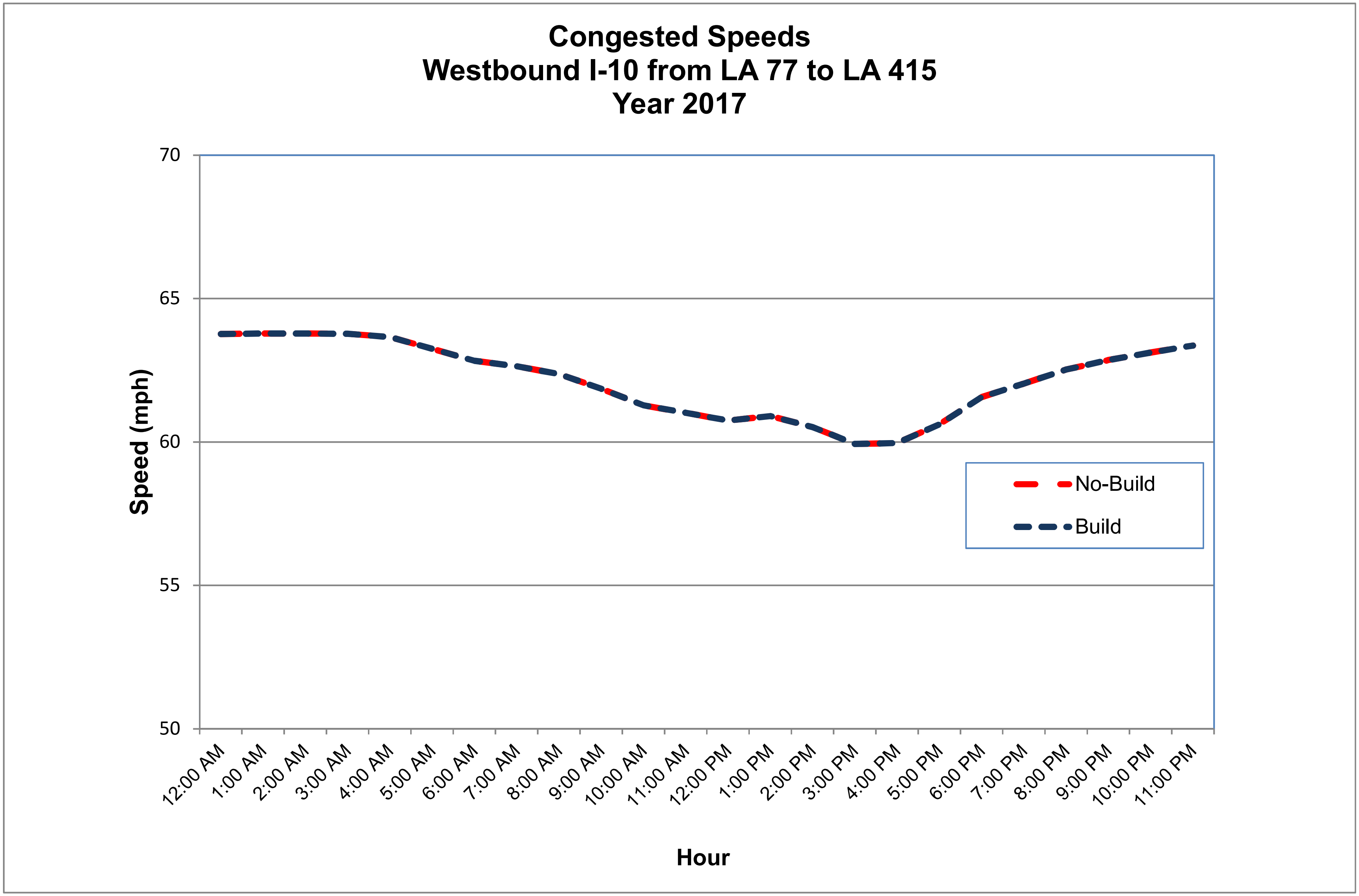
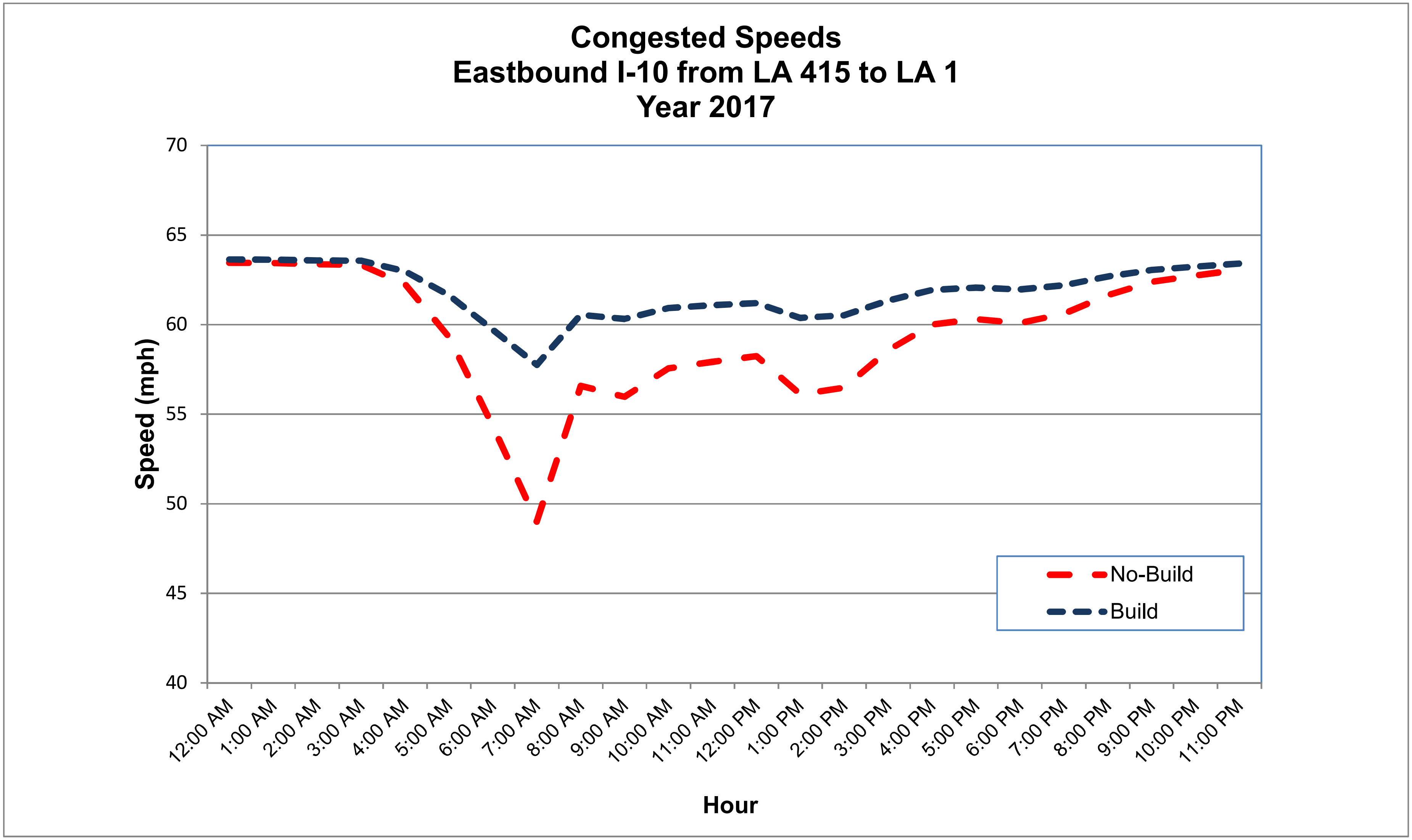
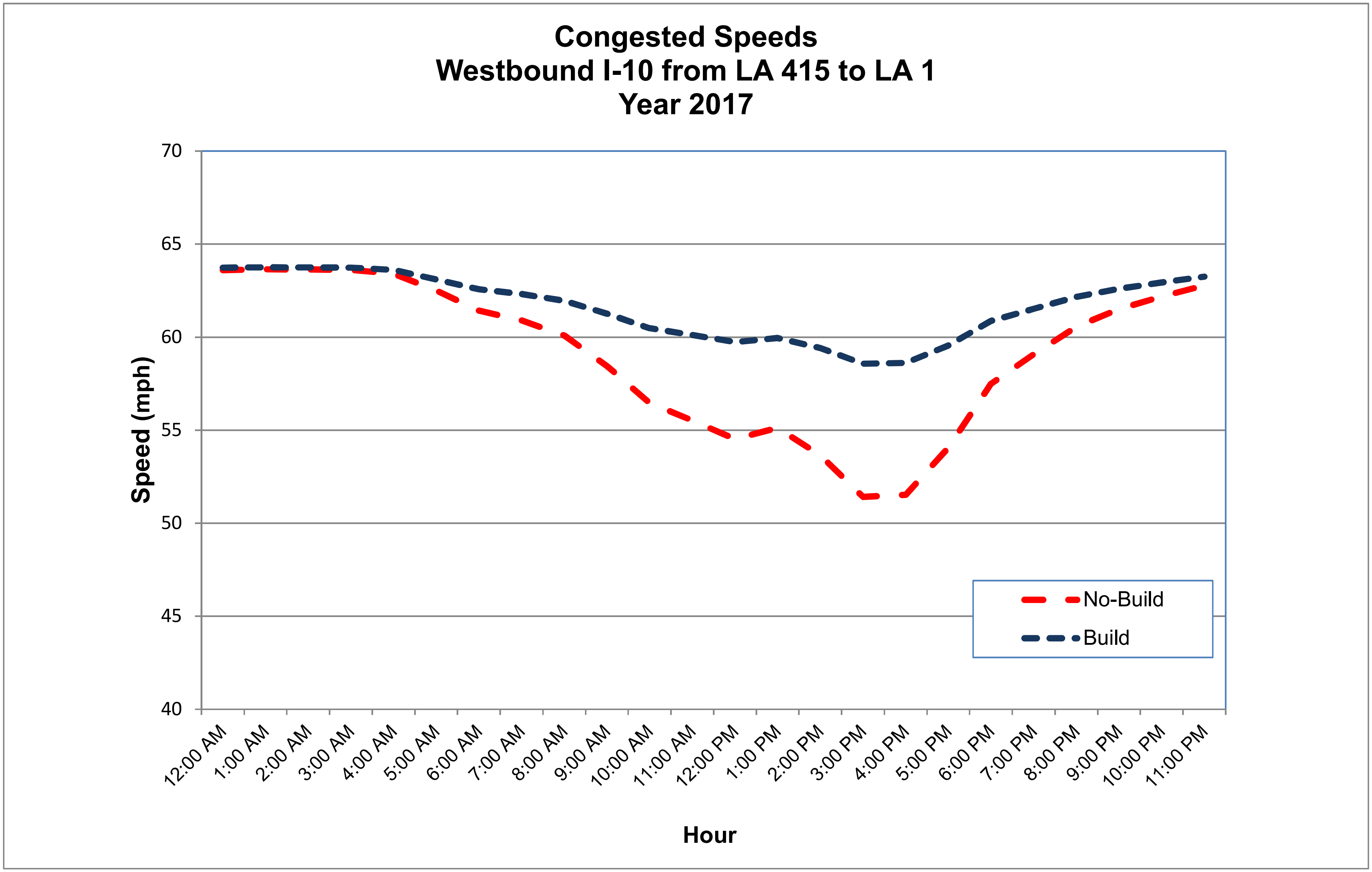
65
60
55
50
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour



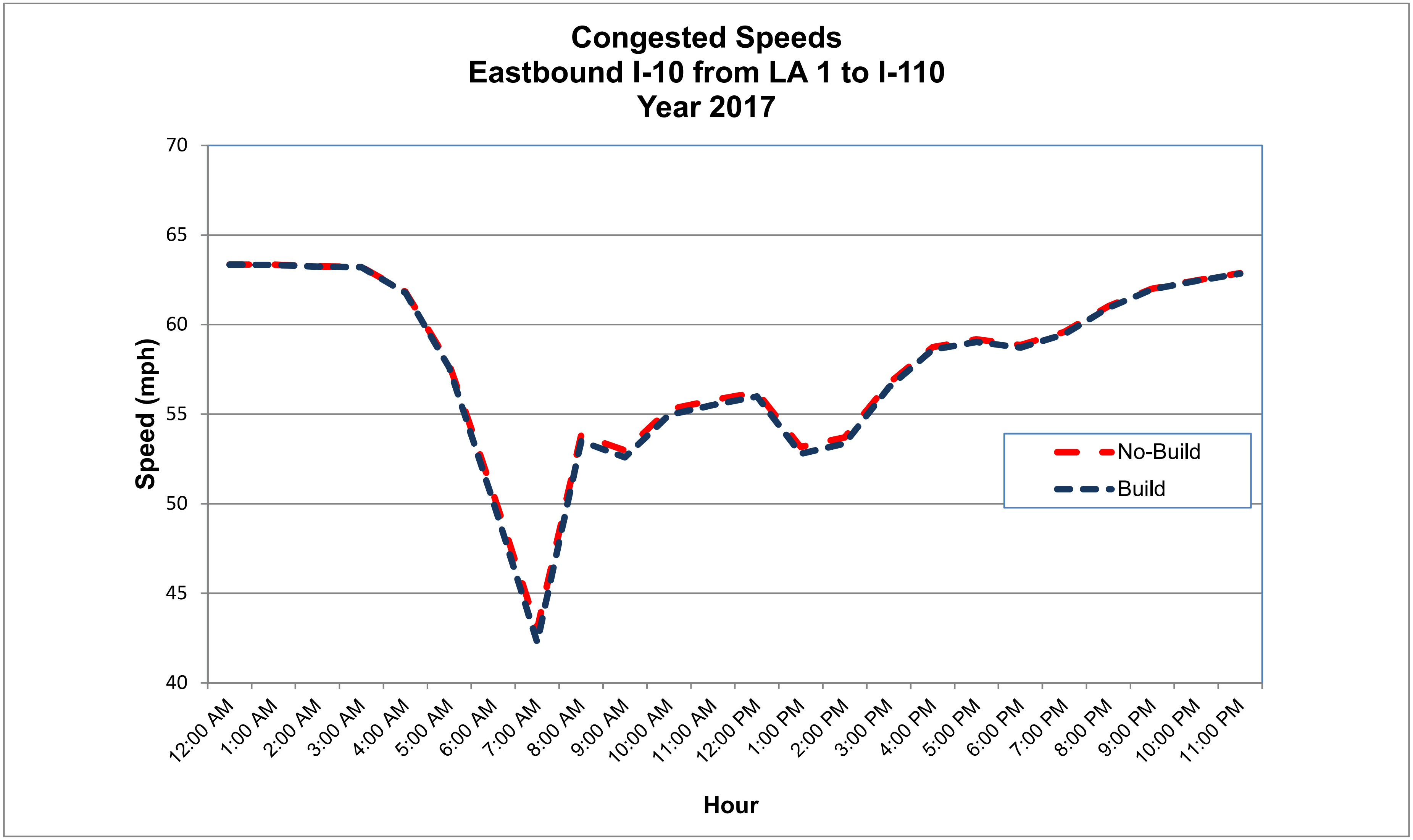
Congested Speeds
Westbound I-10 from LA 77 to LA 415
Year 2017
70
65
60
55
50
Speed (mph)
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



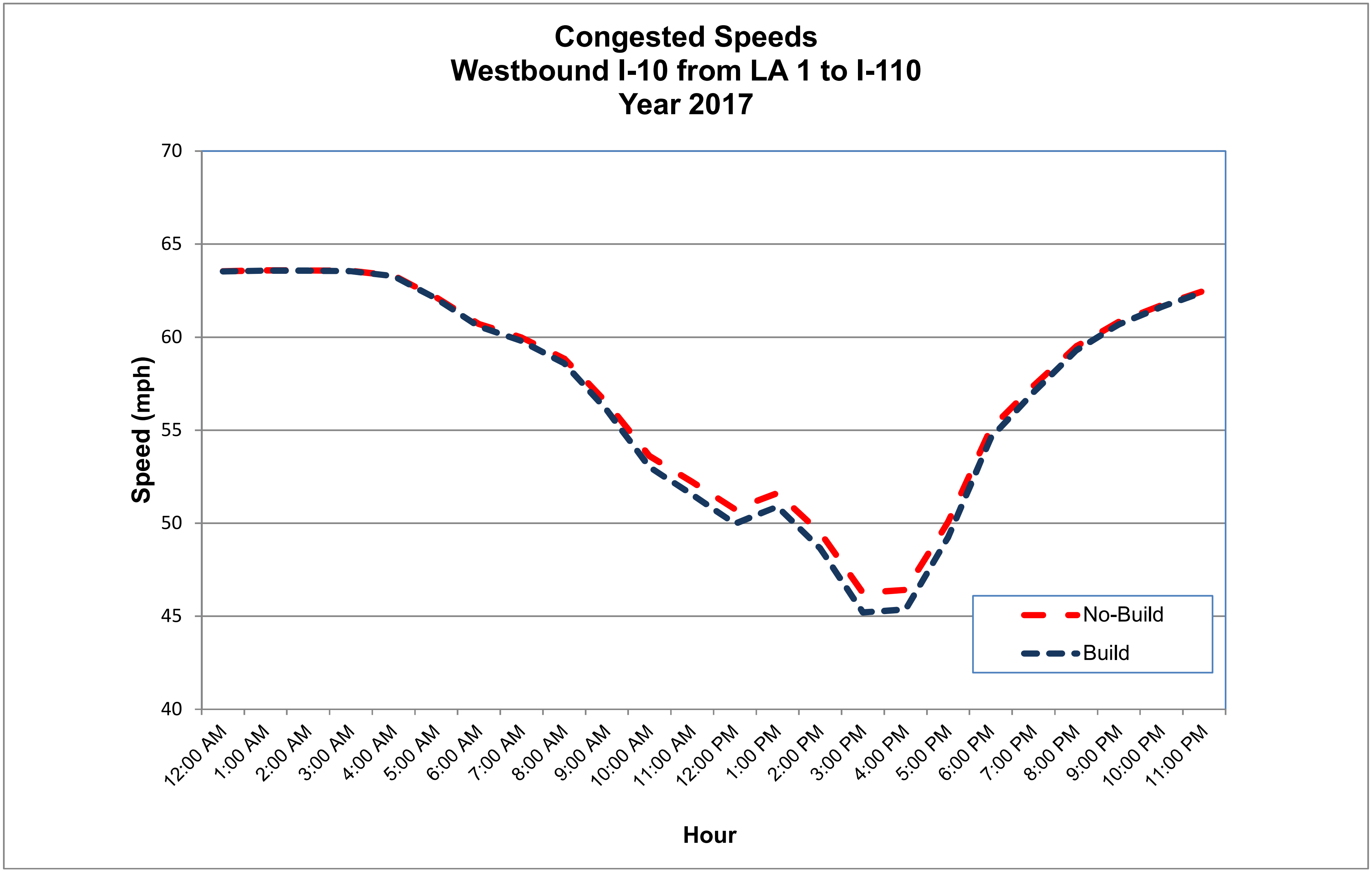
Congested Speeds
Eastbound I-10 from LA 415 to LA 1
Year 2017
Speed (mph)
70
65
60
55
50
45
40
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



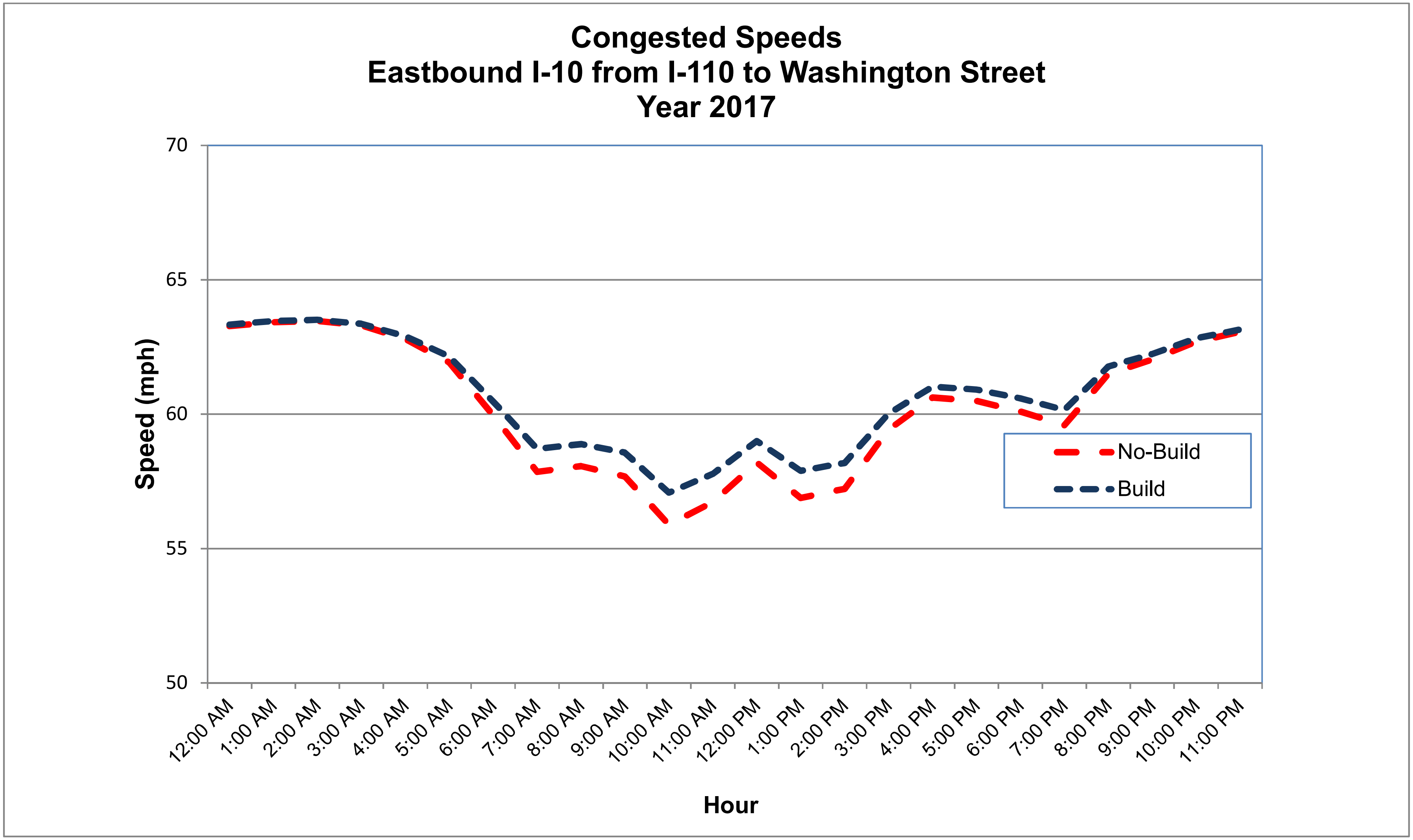
Congested Speeds
Westbound I-10 from LA 415 to LA 1
Year 2017
Speed (mph)
70
65
60
55
50
45
40
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour



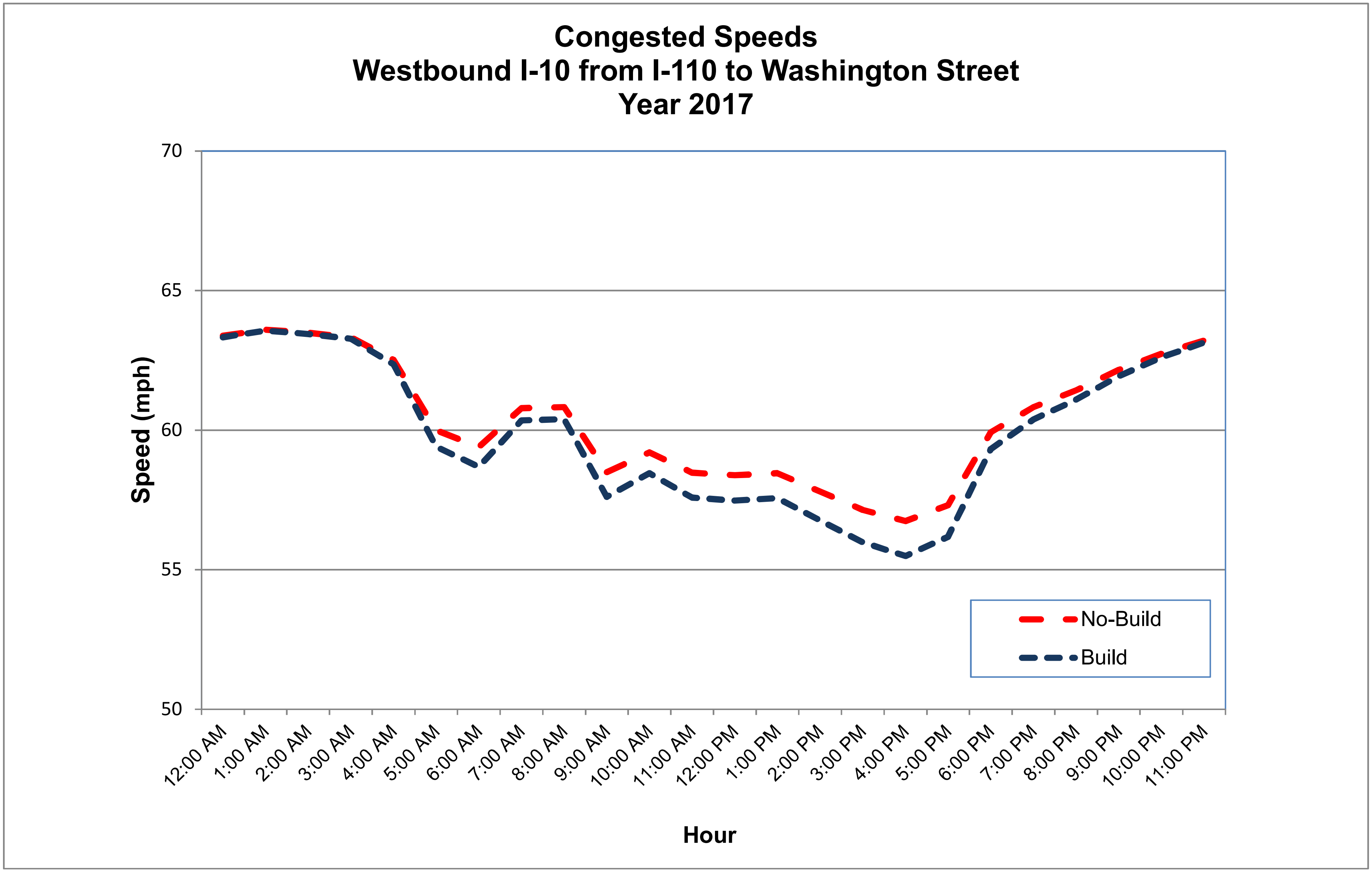
Congested Speeds
Eastbound I-10 from LA 1 to I-110
Year 2017
70
65
60
55
50
45
40
Speed (mph)
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



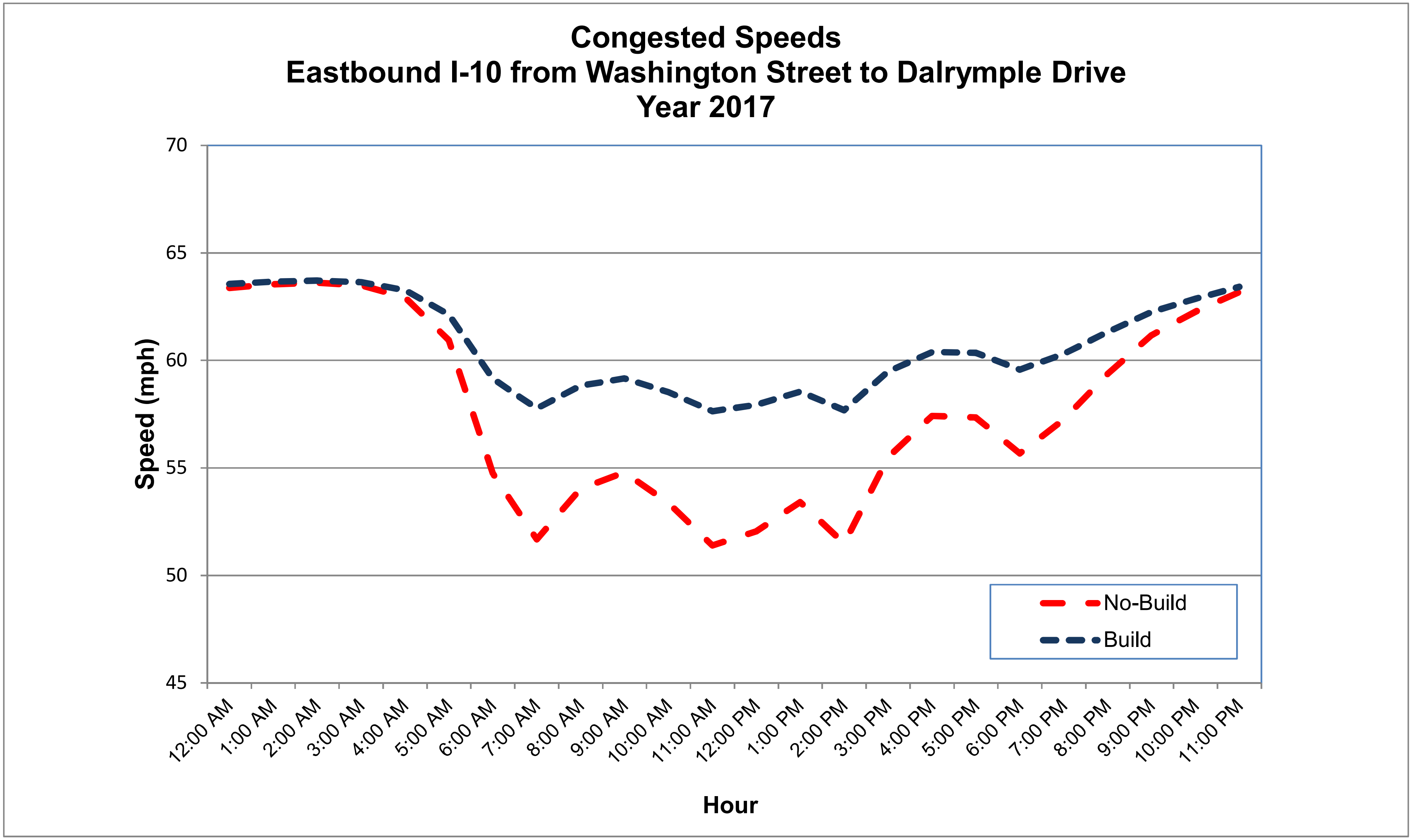
Congested Speeds
Westbound I-10 from LA 1 to I-110
Year 2017
Speed (mph)
70
65
60
55
50
45
40
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



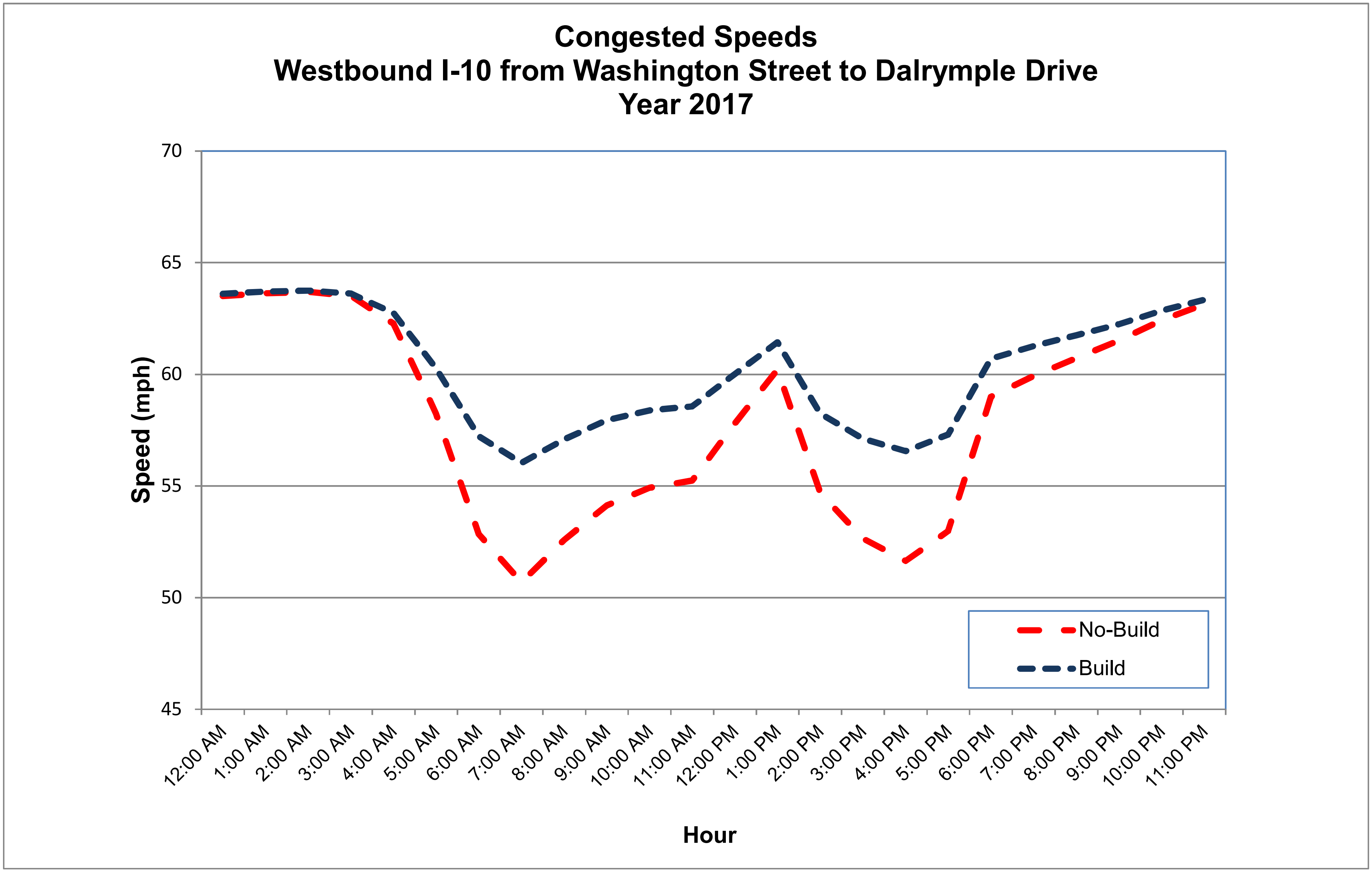
Congested Speeds
Eastbound I-10 from I-110 to Washington Street
Year 2017
70
65
60
55
50
Speed (mph)
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build

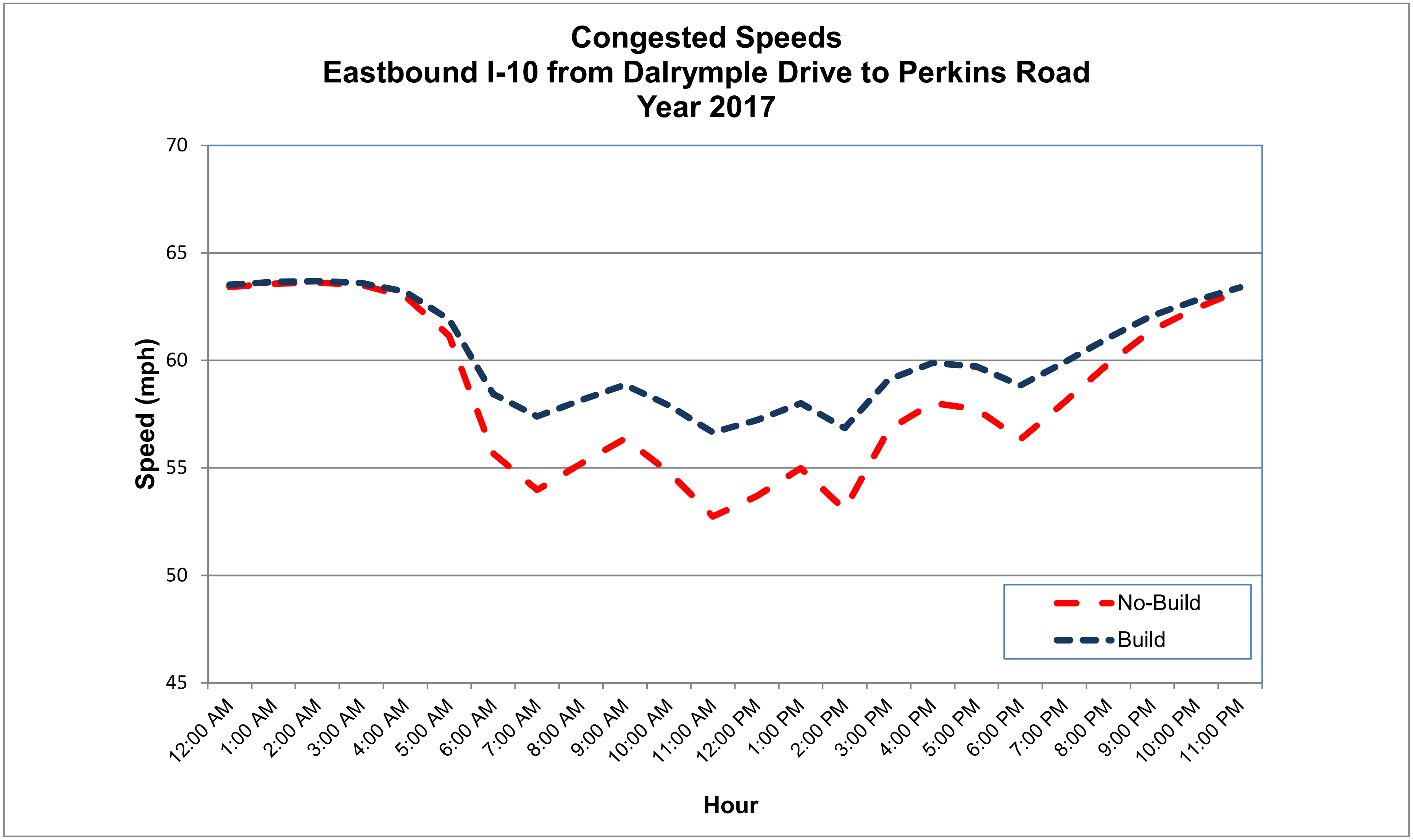


Congested Speeds
Westbound I-10 from I-110 to Washington Street
Year 2017
70
65
60
55
50
Speed (mph)
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build

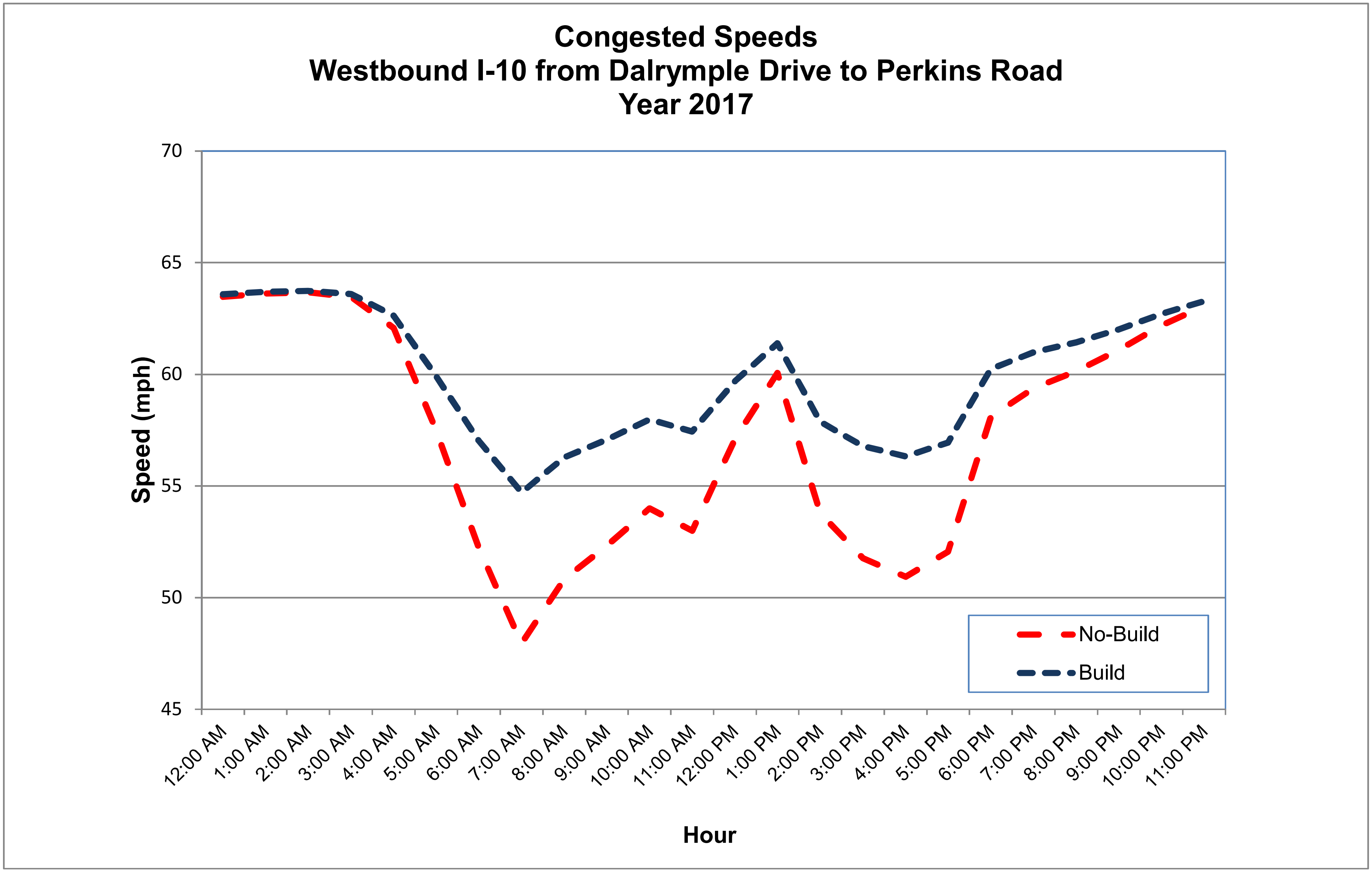


Congested Speeds
Eastbound I-10 from Washington Street to Dalrymple Drive
Year 2017
Speed (mph)
70
65
60
55
50
45
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build


Congested Speeds
Westbound I-10 from Washington Street to Dalrymple Drive
Year 2017
70
65
60
55
50
45
Speed (mph)
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



Congested Speeds
Eastbound I-10 from Dalrymple Drive to Perkins Road
Year 2017
70
65
60
55
50
45
Speed (mph)
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



Congested Speeds
Westbound I-10 from Dalrymple Drive to Perkins Road
Year 2017
Speed (mph)
70
65
60
55
50
45
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
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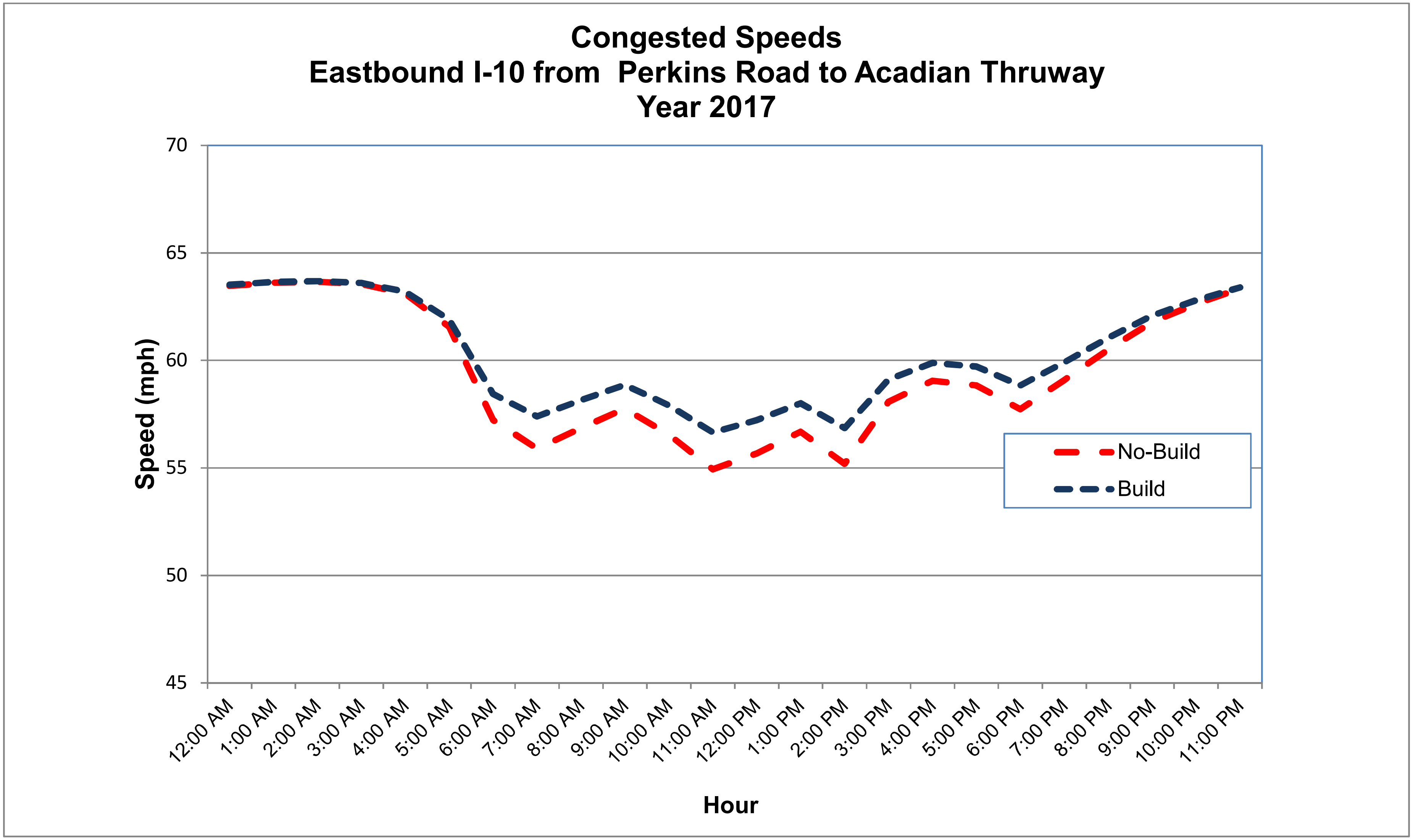
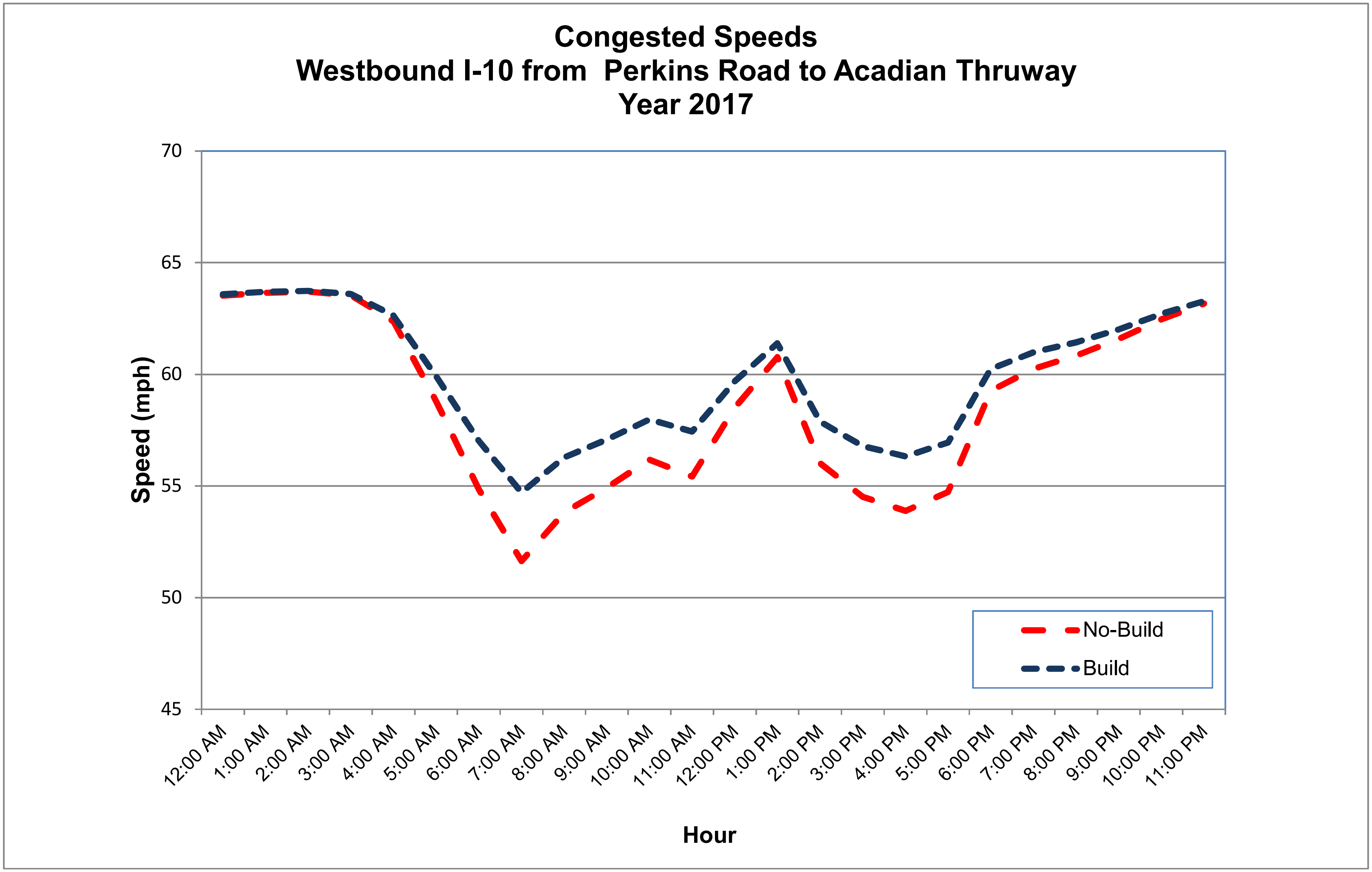
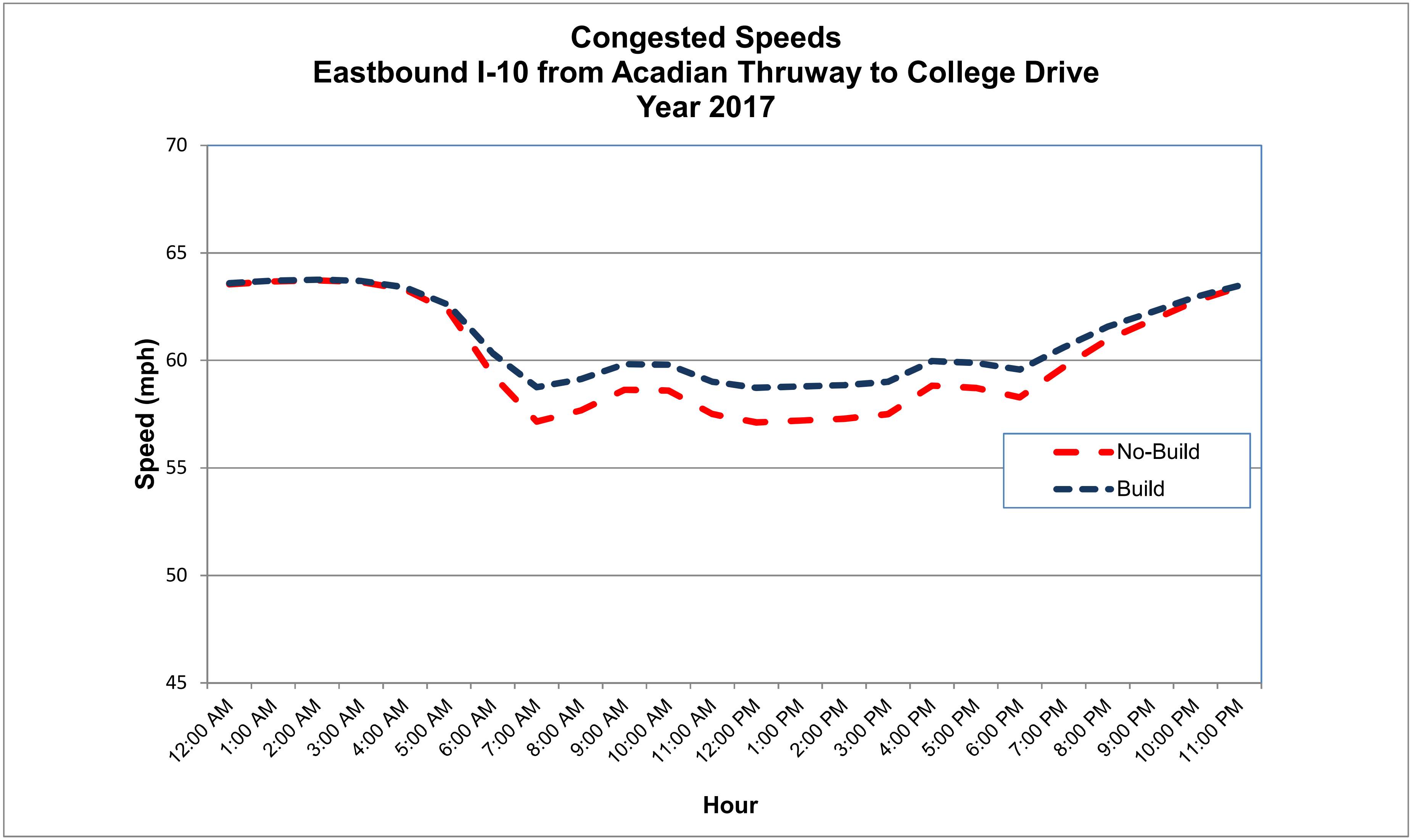
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour



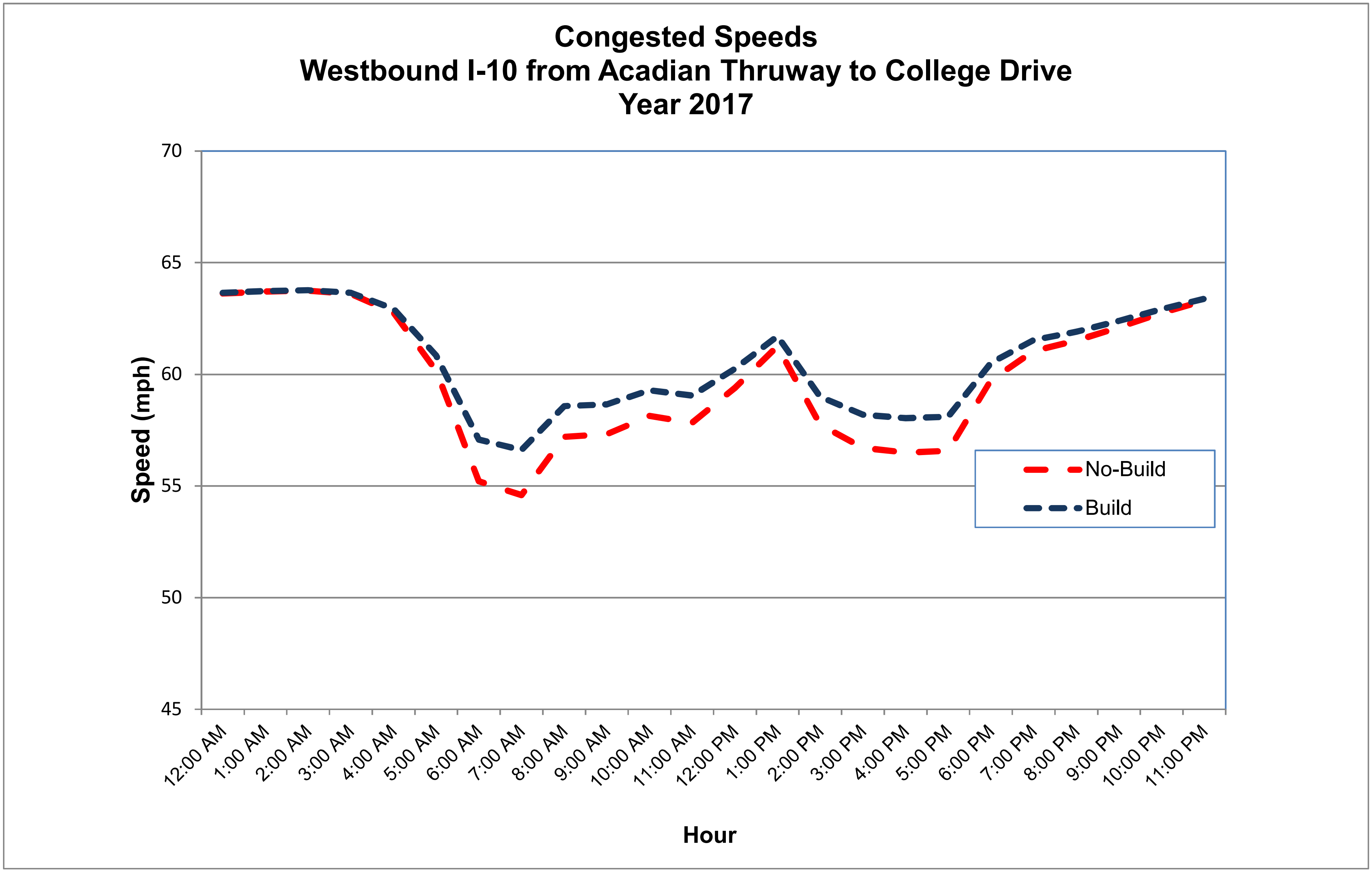
Congested Speeds
Eastbound I-10 from Perkins Road to Acadian Thruway
Year 2017
70
65
60
55
50
45
Speed (mph)
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



Congested Speeds
Westbound I-10 from Perkins Road to Acadian Thruway
Year 2017
Speed (mph)
70
65
60
55
50
45
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



Congested Speeds
Eastbound I-10 from Acadian Thruway to College Drive
Year 2017
70
65
60
55
50
45
Speed (mph)
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour


Congested Speeds
Westbound I-10 from Acadian Thruway to College Drive
Year 2017
Speed (mph)
70
65
60
55
50
45
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
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9:00 AM
10:00 AM
11:00 AM
12:00 PM
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7:00 PM
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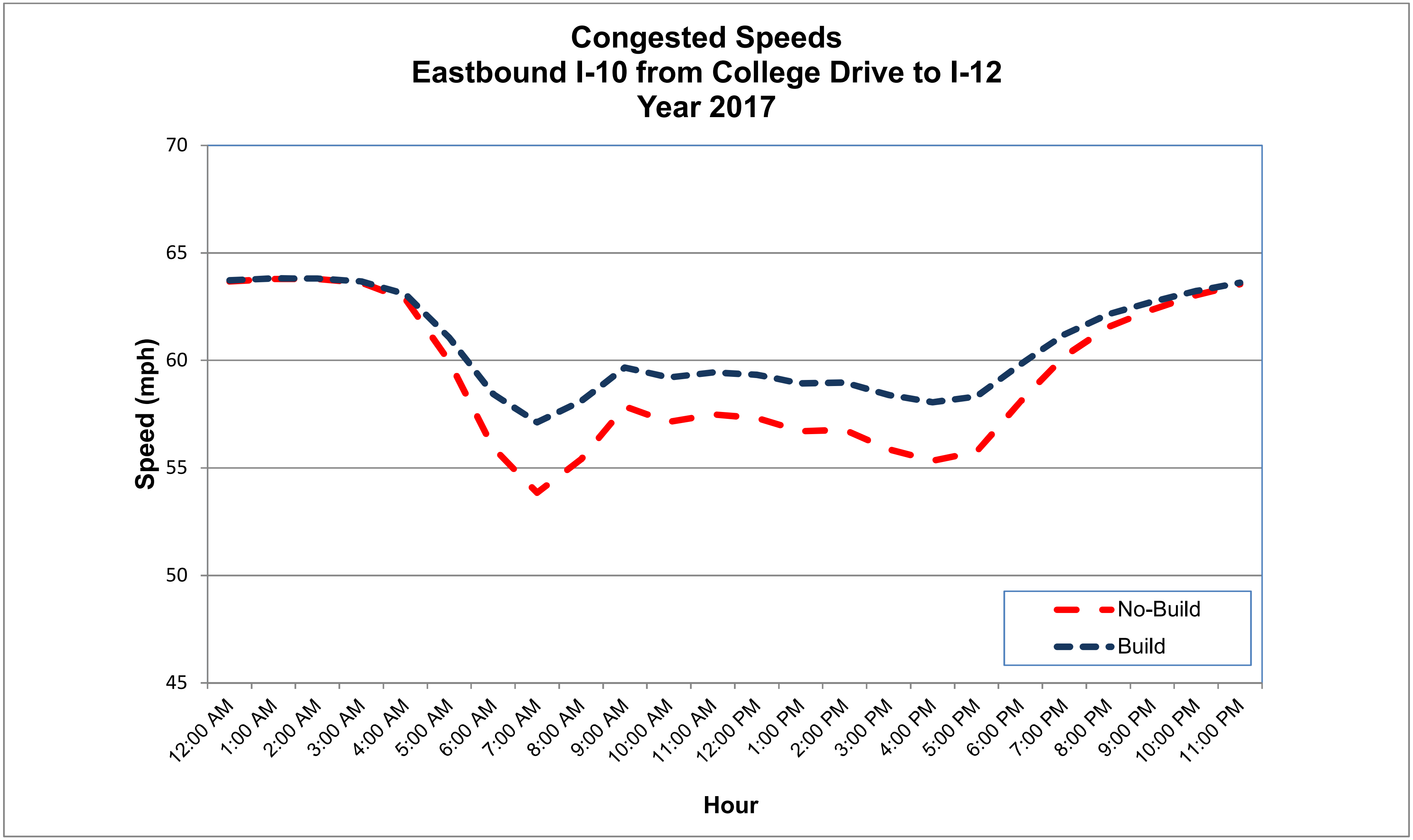
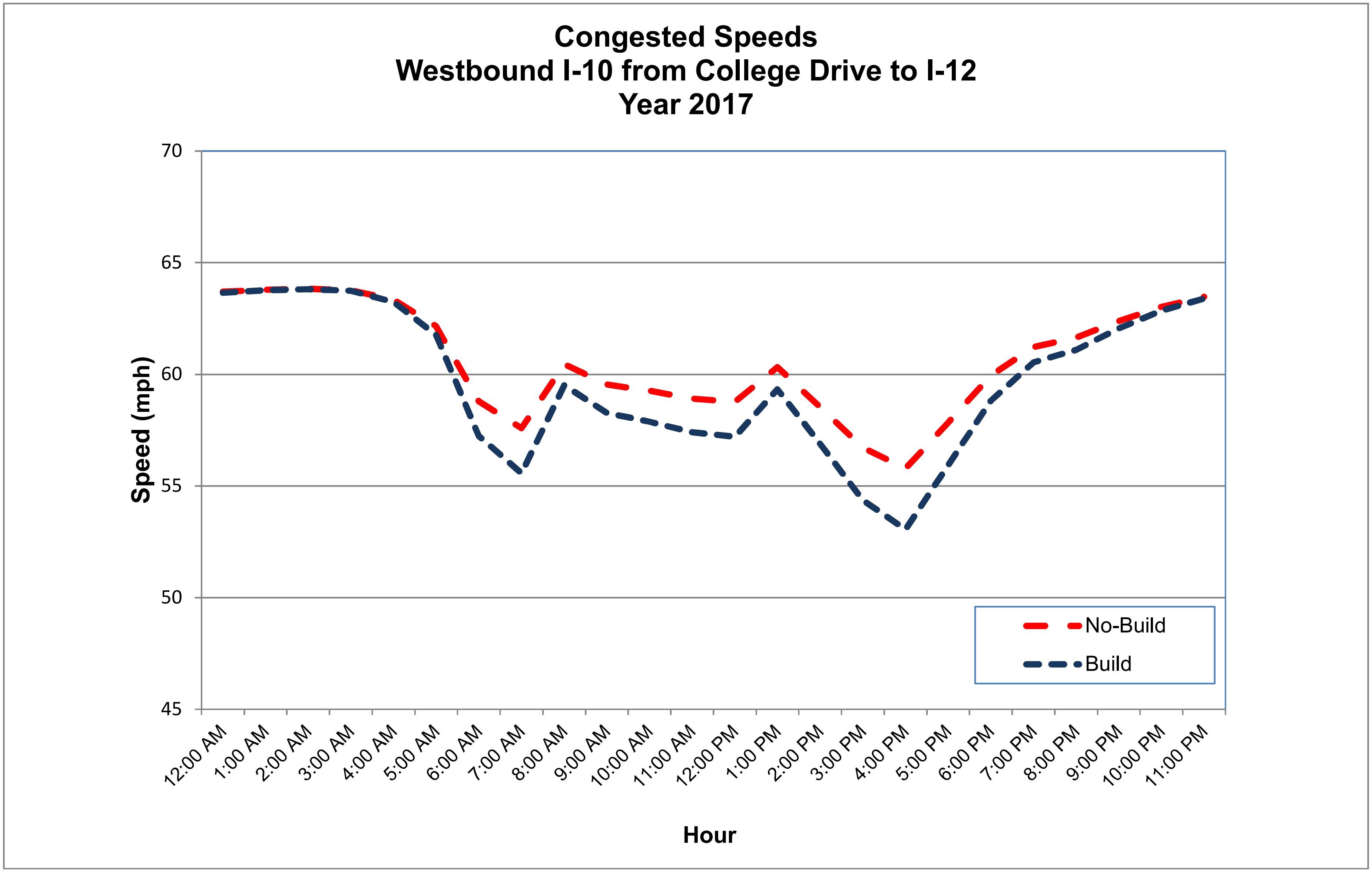
9:00 PM
10:00 PM
11:00 PM
Hour



Congested Speeds
Eastbound I-10 from College Drive to I-12
Year 2017
Speed (mph)
70
65
60
55
50
45
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



Congested Speeds
Westbound I-10 from College Drive to I-12
Year 2017
70
65
60
55
50
45
Speed (mph)
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
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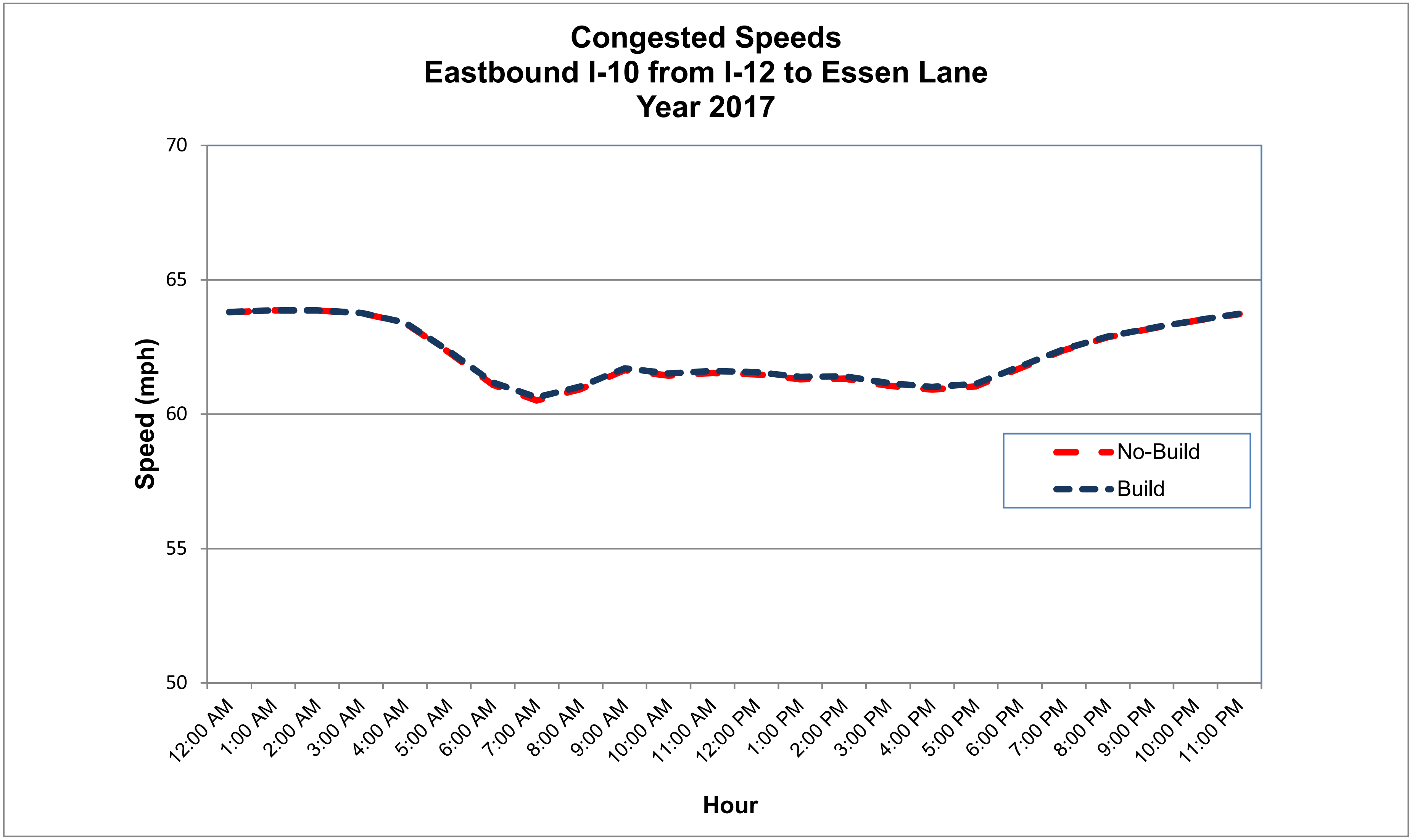
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour


Congested Speeds
Eastbound I-10 from I-12 to Essen Lane
Year 2017
Speed (mph)
70
65
60
55
50
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
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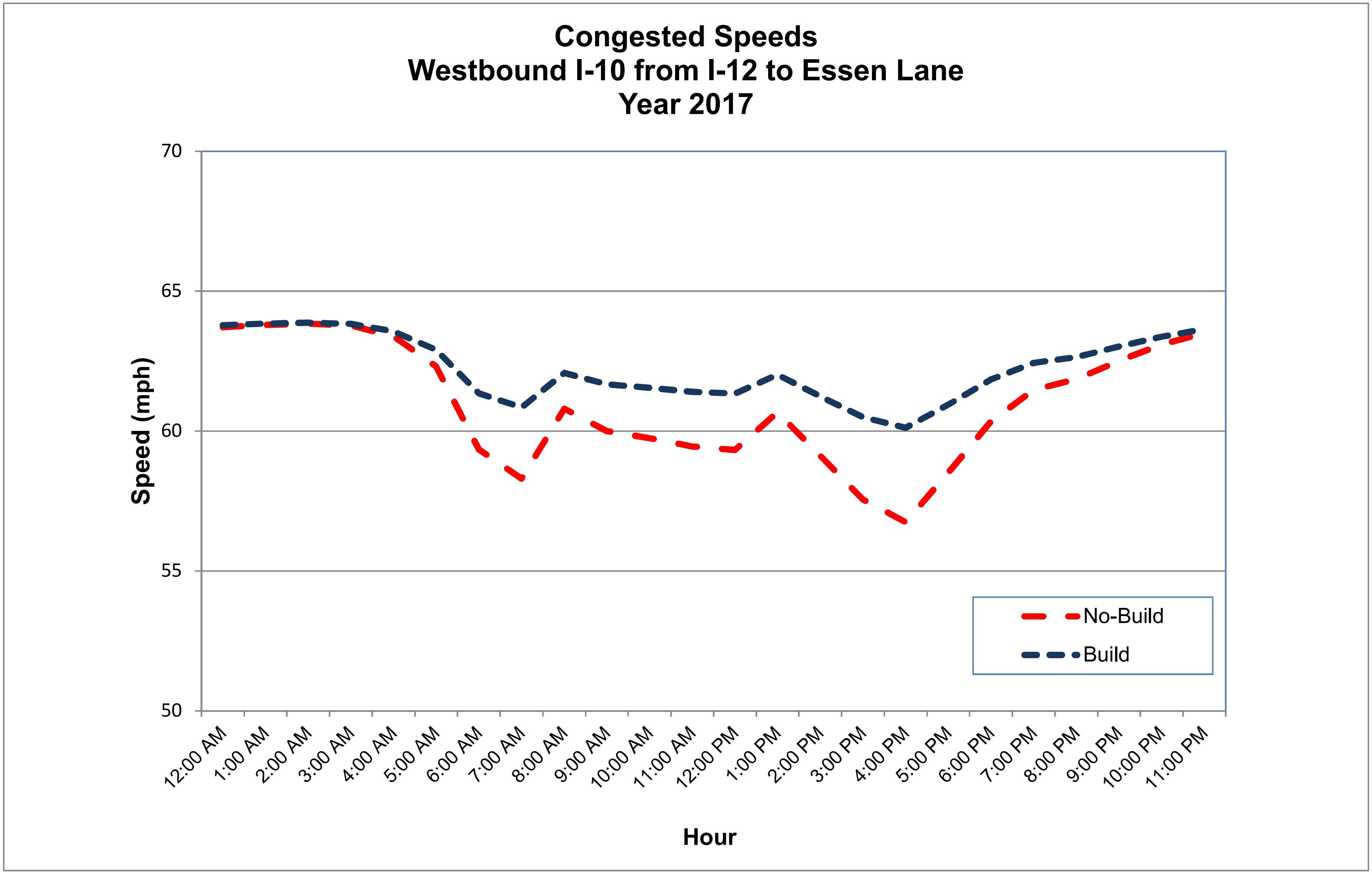
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour


Congested Speeds
Westbound I-10 from I-12 to Essen Lane
Year 2017
Speed (mph)
70
65
60
55
50
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
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3:00 PM
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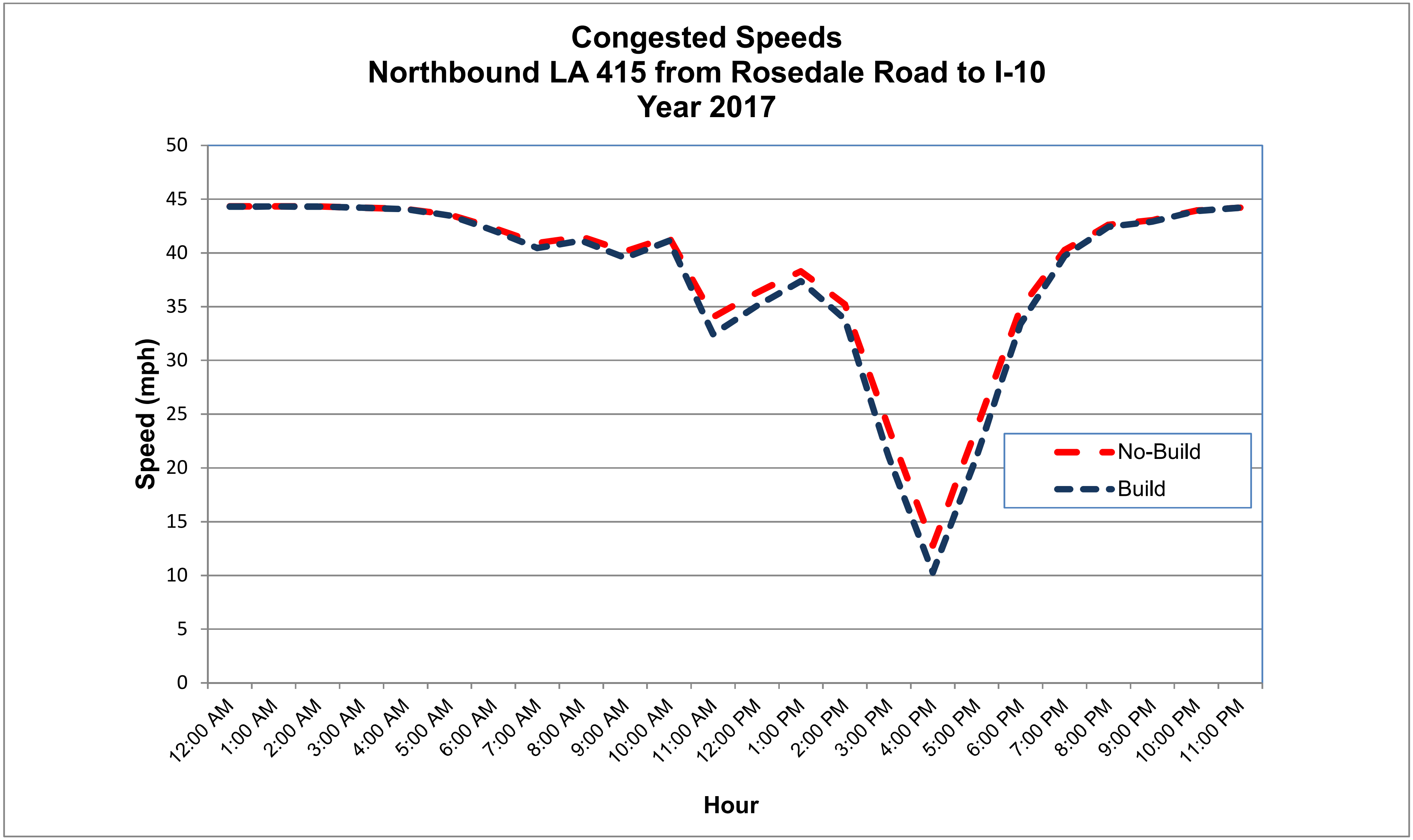
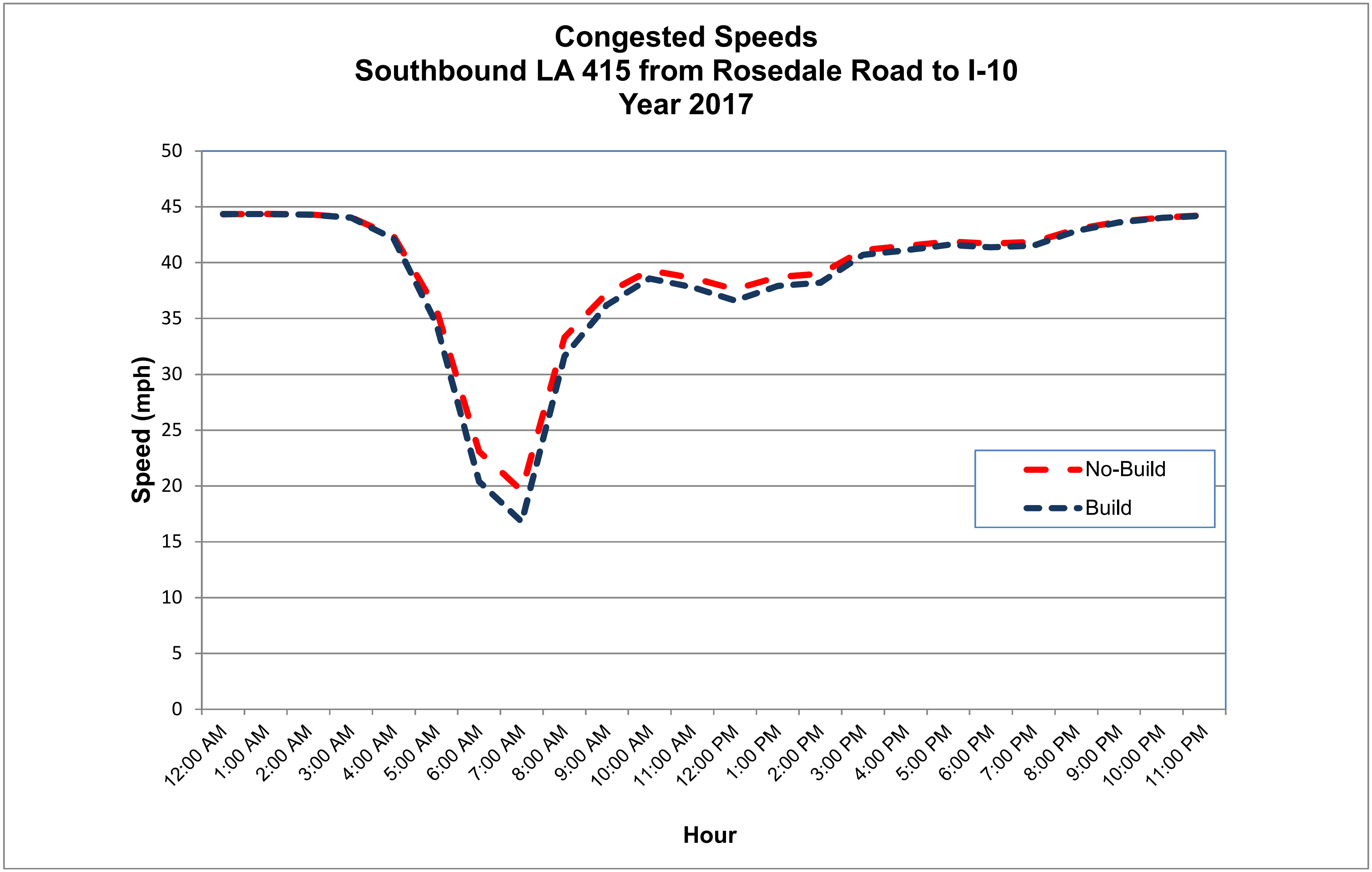
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



Congested Speeds
Northbound LA 415 from Rosedale Road to I-10
Year 2017
Speed (mph)
50
45
40
35
30
25
20
15
10
5
0
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



Congested Speeds
Southbound LA 415 from Rosedale Road to I-10
Year 2017
Speed (mph)
50
45
40
35
30
25
20
15
10
5
0
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
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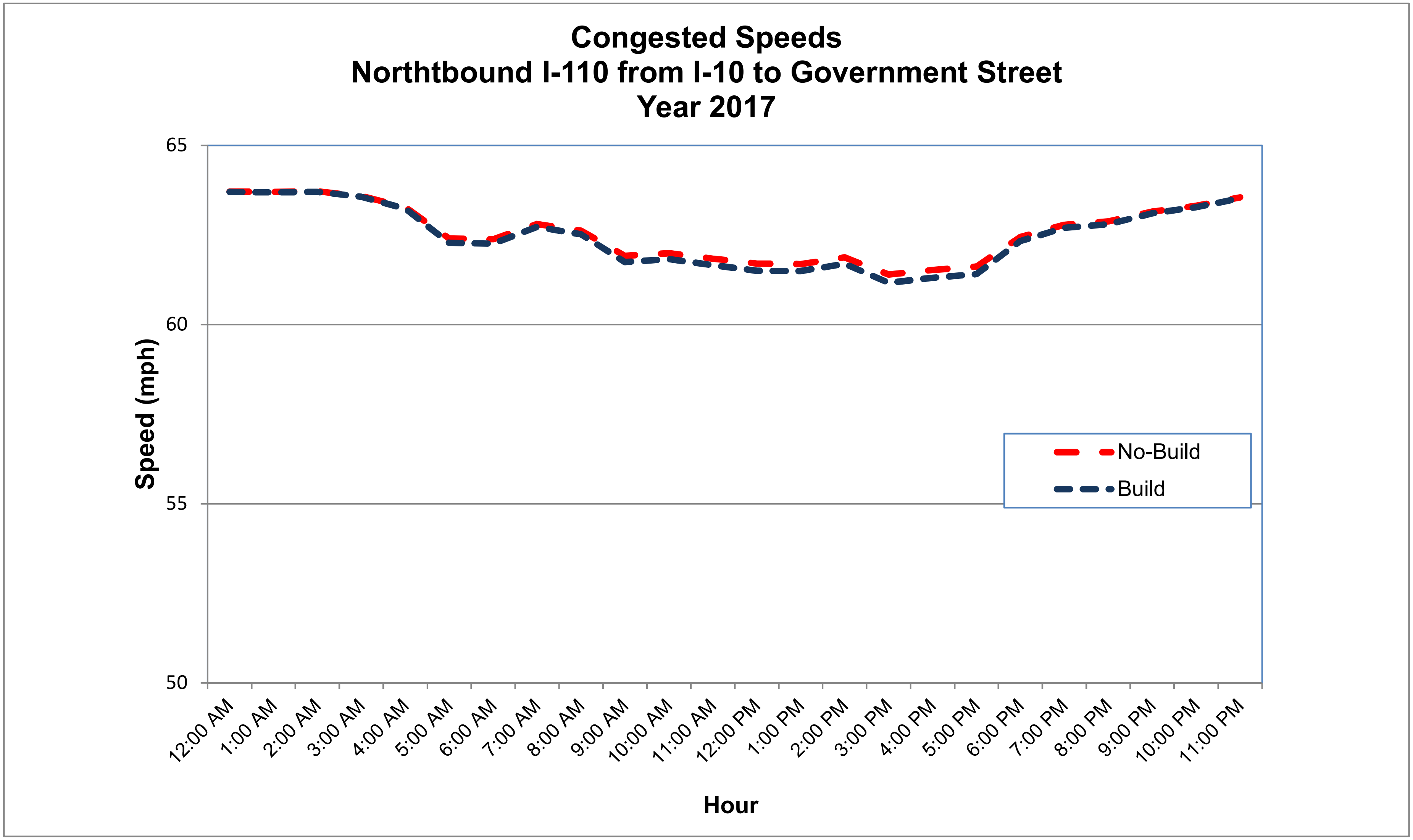
9:00 PM
10:00 PM
11:00 PM
Hour
No-Build
Build



Congested Speeds
Norththbound I-110 from I-10 to Government Street
Year 2017
Speed (mph)
65
60
55
50
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
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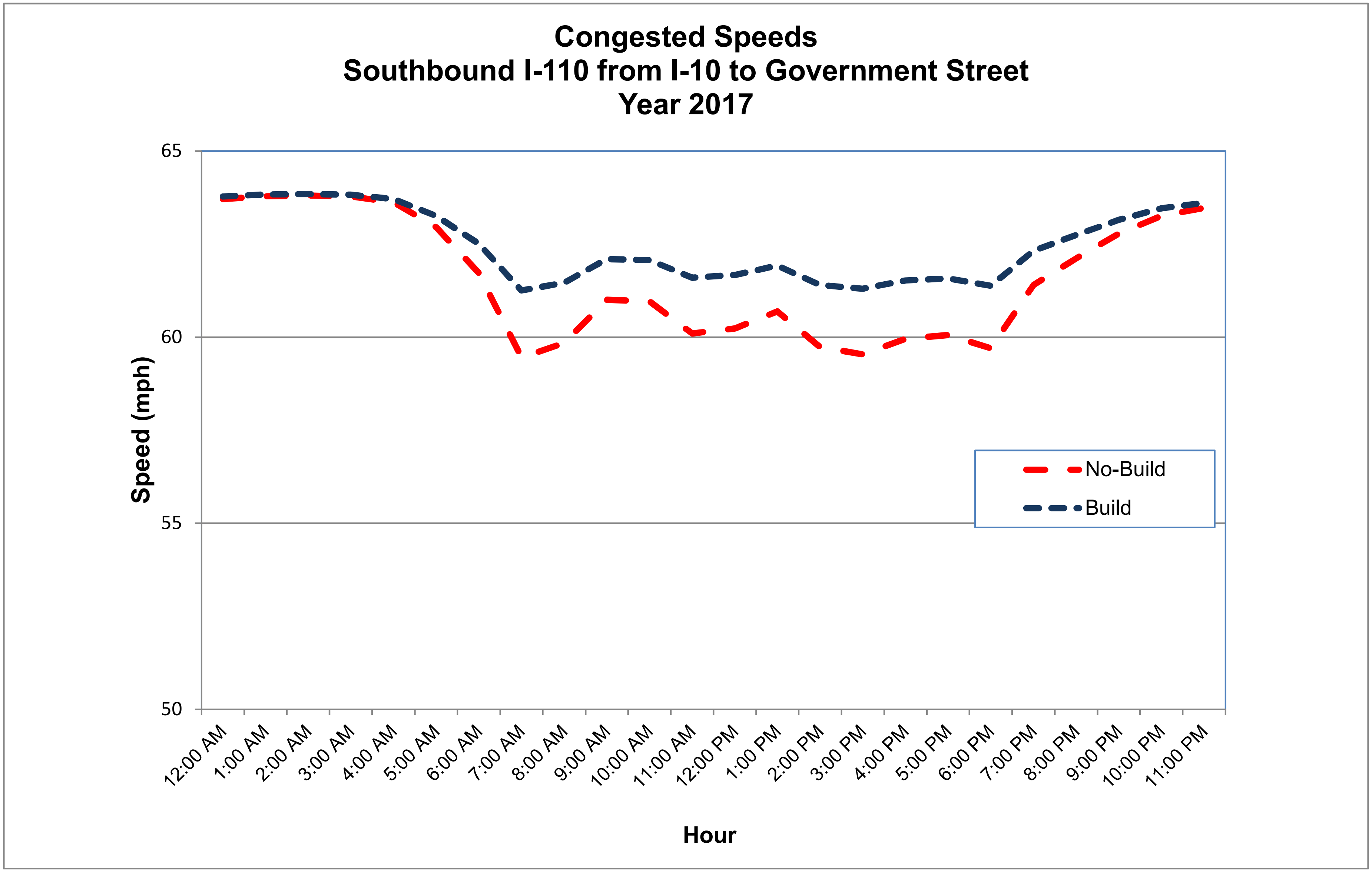
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
Hour



Congested Speeds
Southbound I-110 from I-10 to Government Street
Year 2017
65
60
55
50
Speed (mph)
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
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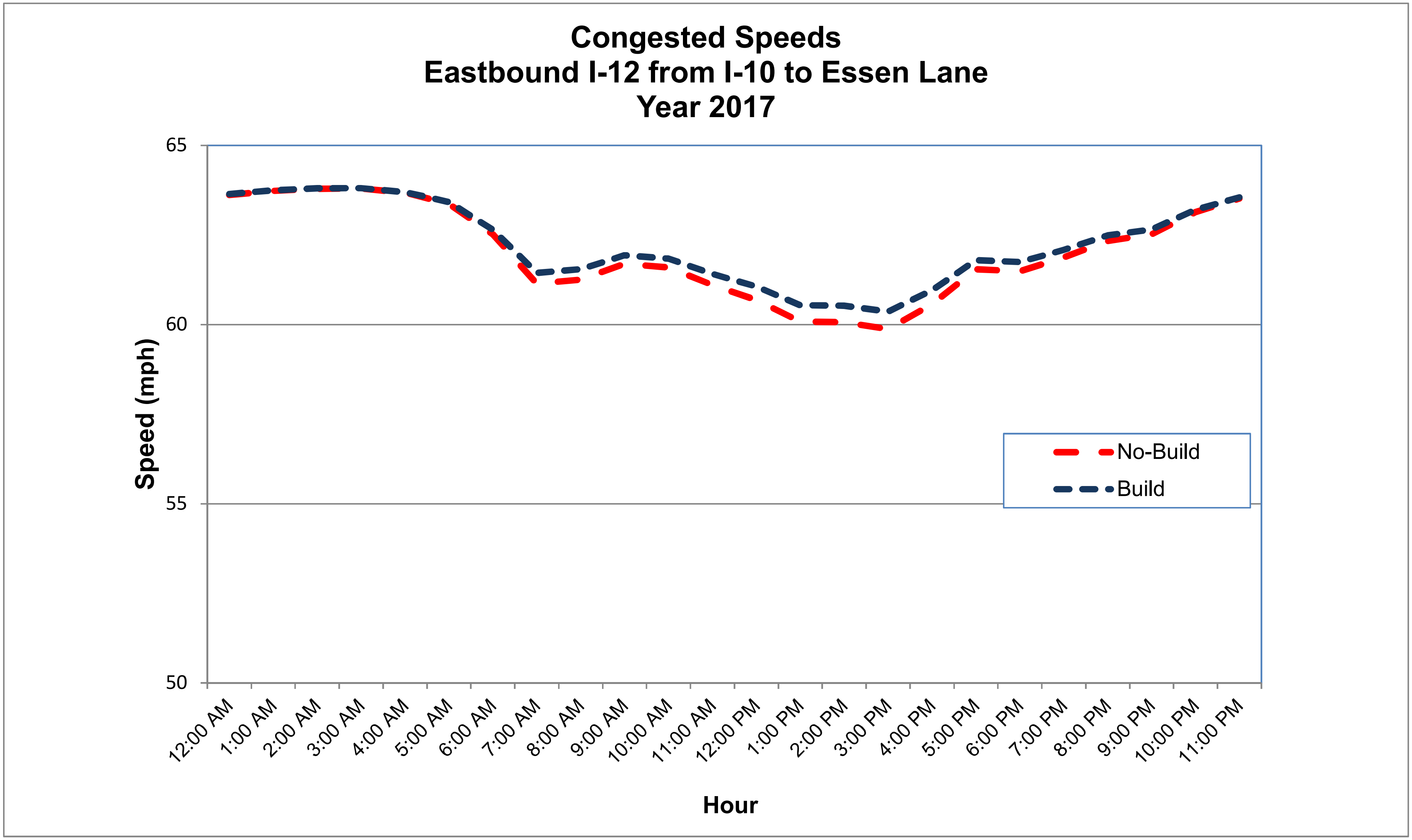
10:00 PM
11:00 PM
Hour



Congested Speeds
Eastbound I-12 from I-10 to Essen Lane
Year 2017
65
60
55
50
Speed (mph)
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
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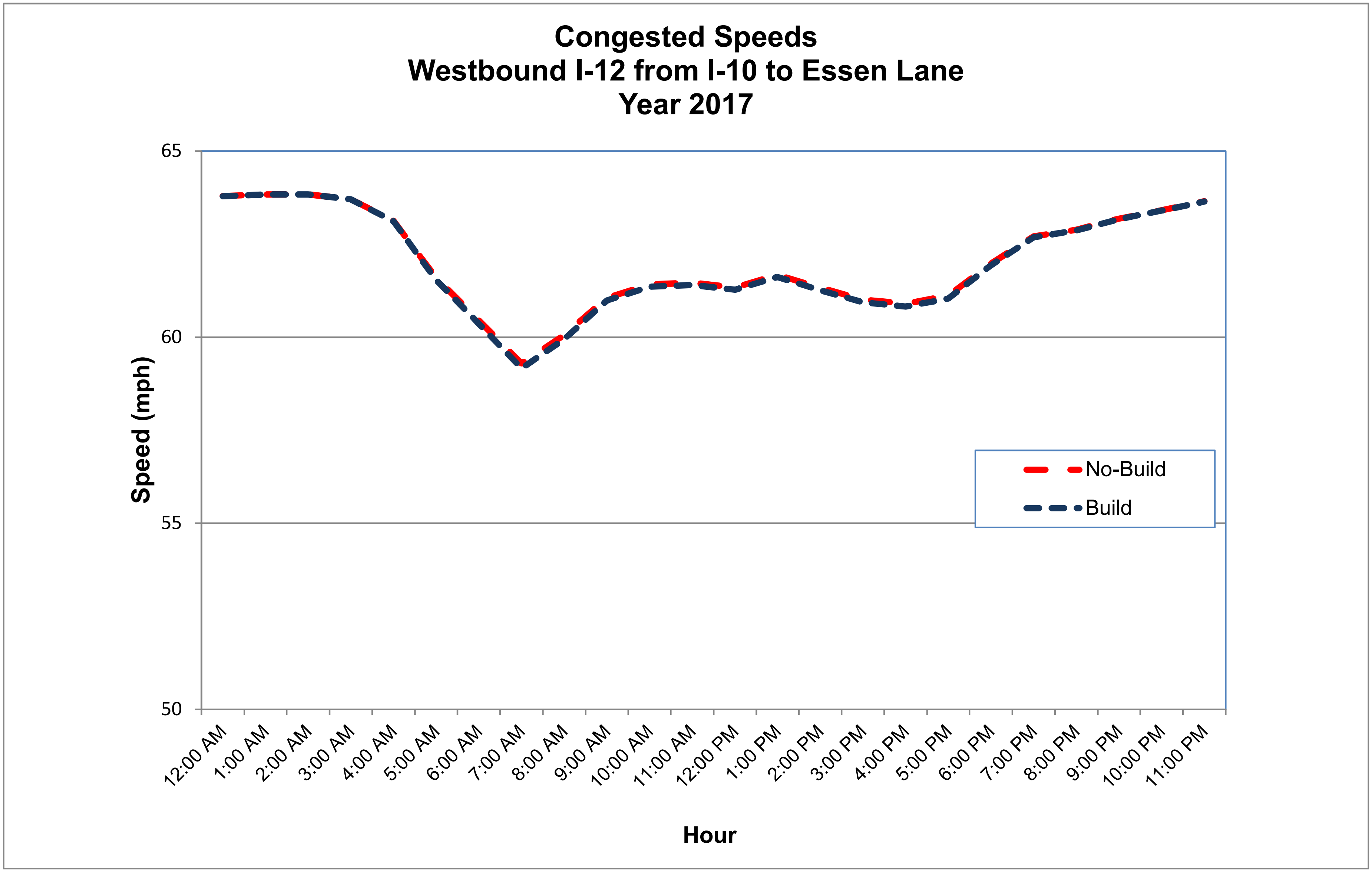
10:00 PM
11:00 PM
Hour



Congested Speeds
Westbound I-12 from I-10 to Essen Lane
Year 2017
65
60
55
50
Speed (mph)
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
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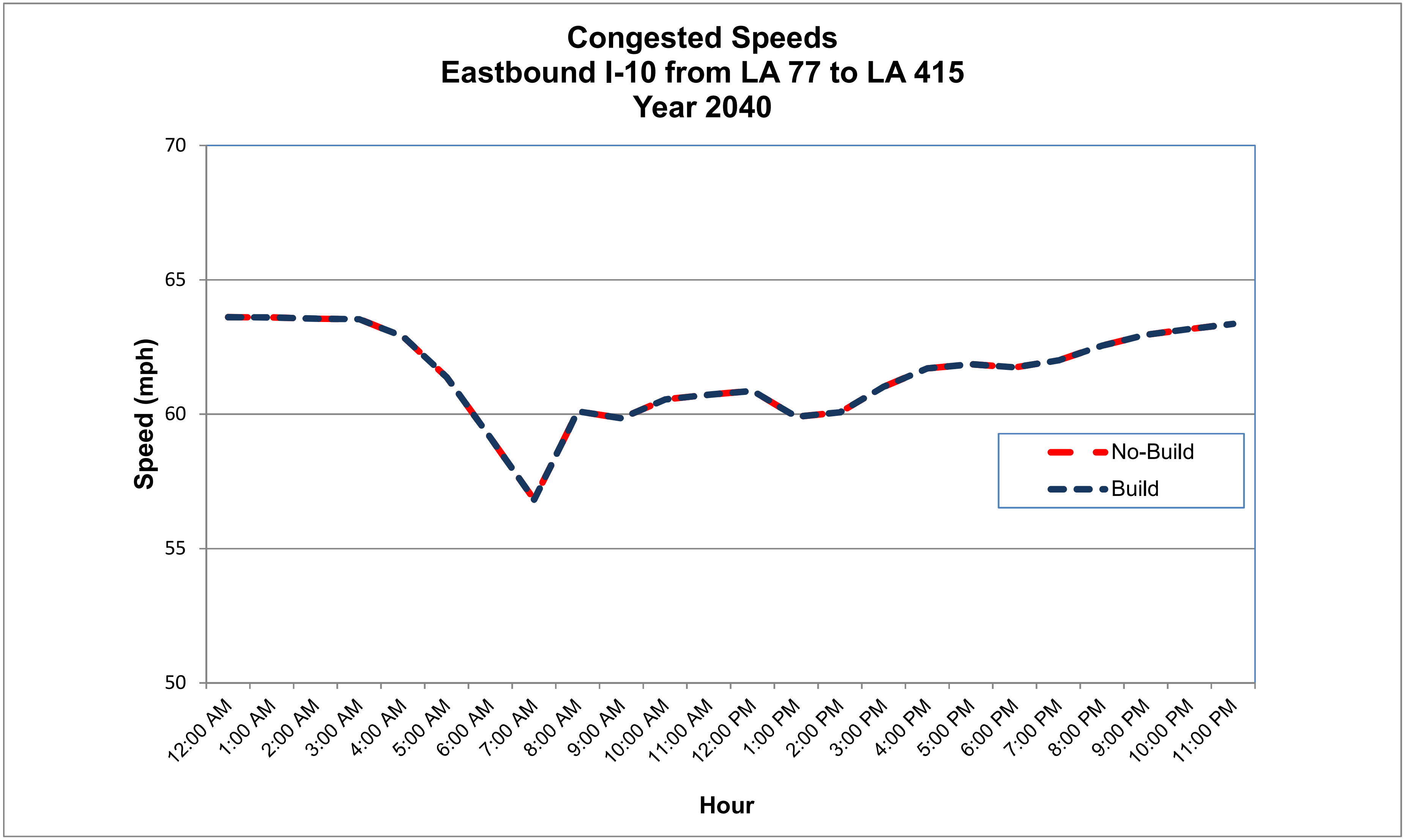
10:00 PM
11:00 PM
Hour



Congested Speeds
Eastbound I-10 from LA 77 to LA 415
Year 2040
Speed (mph)
70
65
60
55
50
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
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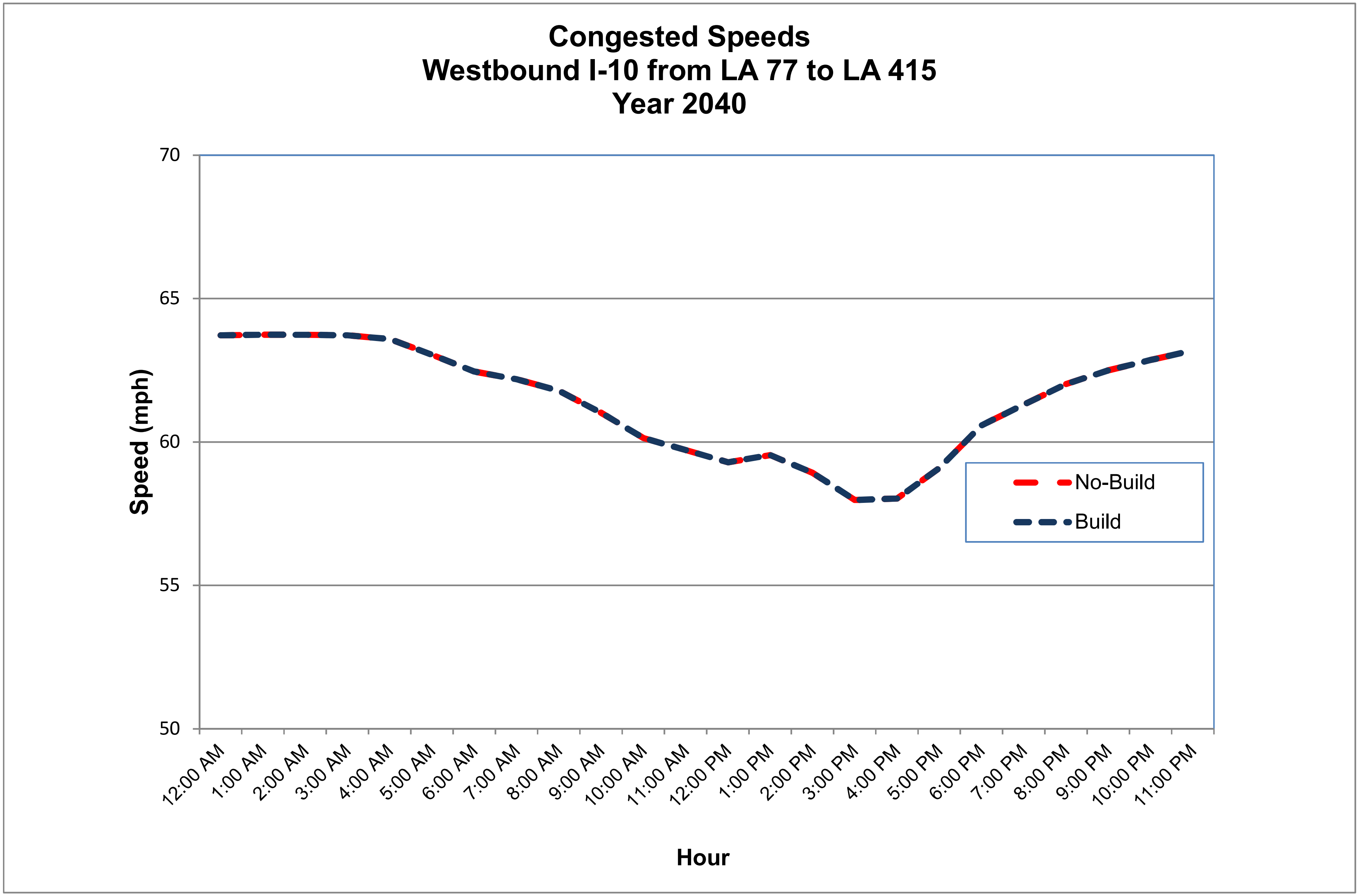
10:00 PM
11:00 PM
Hour
No-Build
Build



Congested Speeds
Westbound I-10 from LA 77 to LA 415
Year 2040
Speed (mph)
70
65
60
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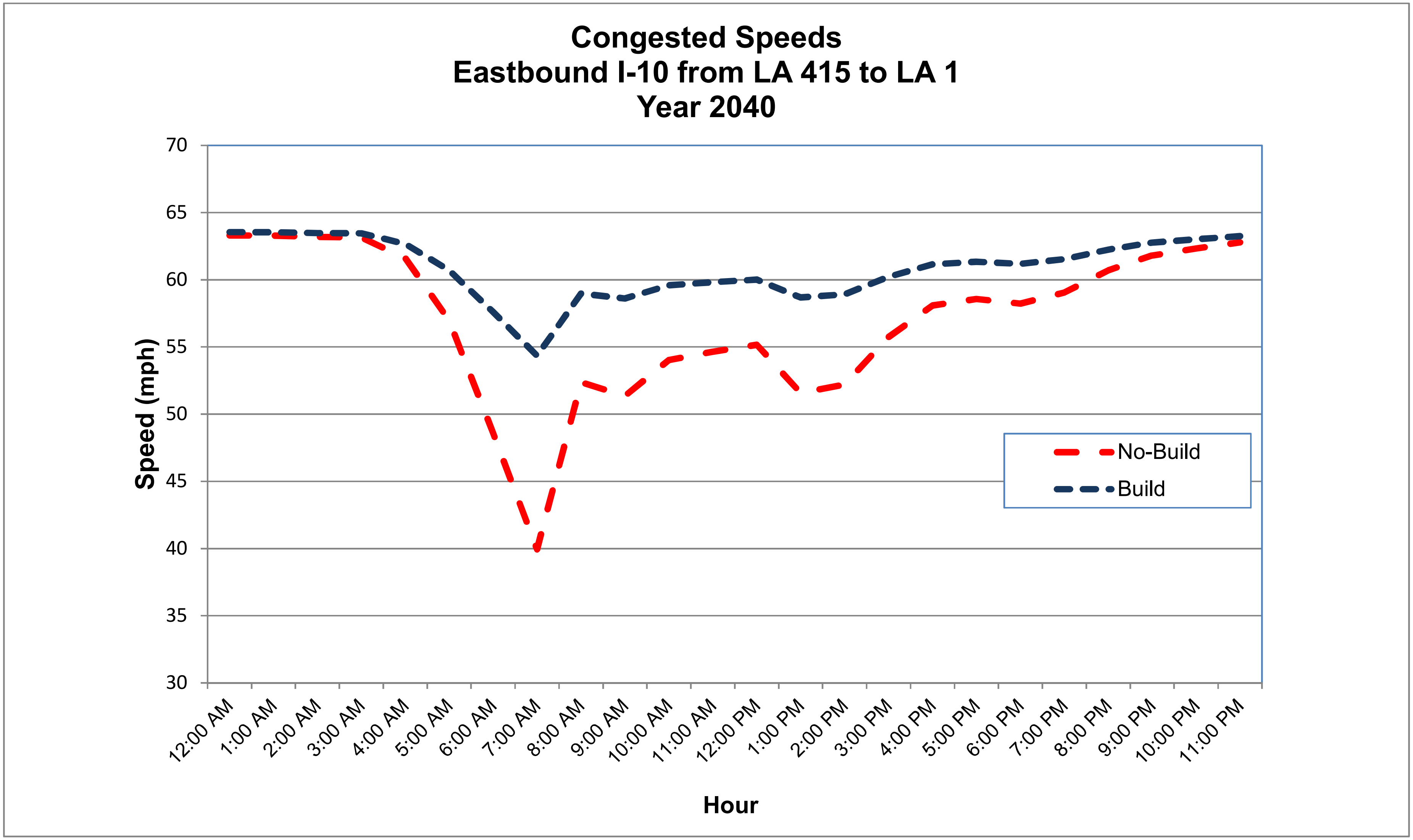

Congested Speeds
Eastbound I-10 from LA 415 to LA 1
Year 2040
Speed (mph)
70
65
60
55
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No-Build
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12:00 AM
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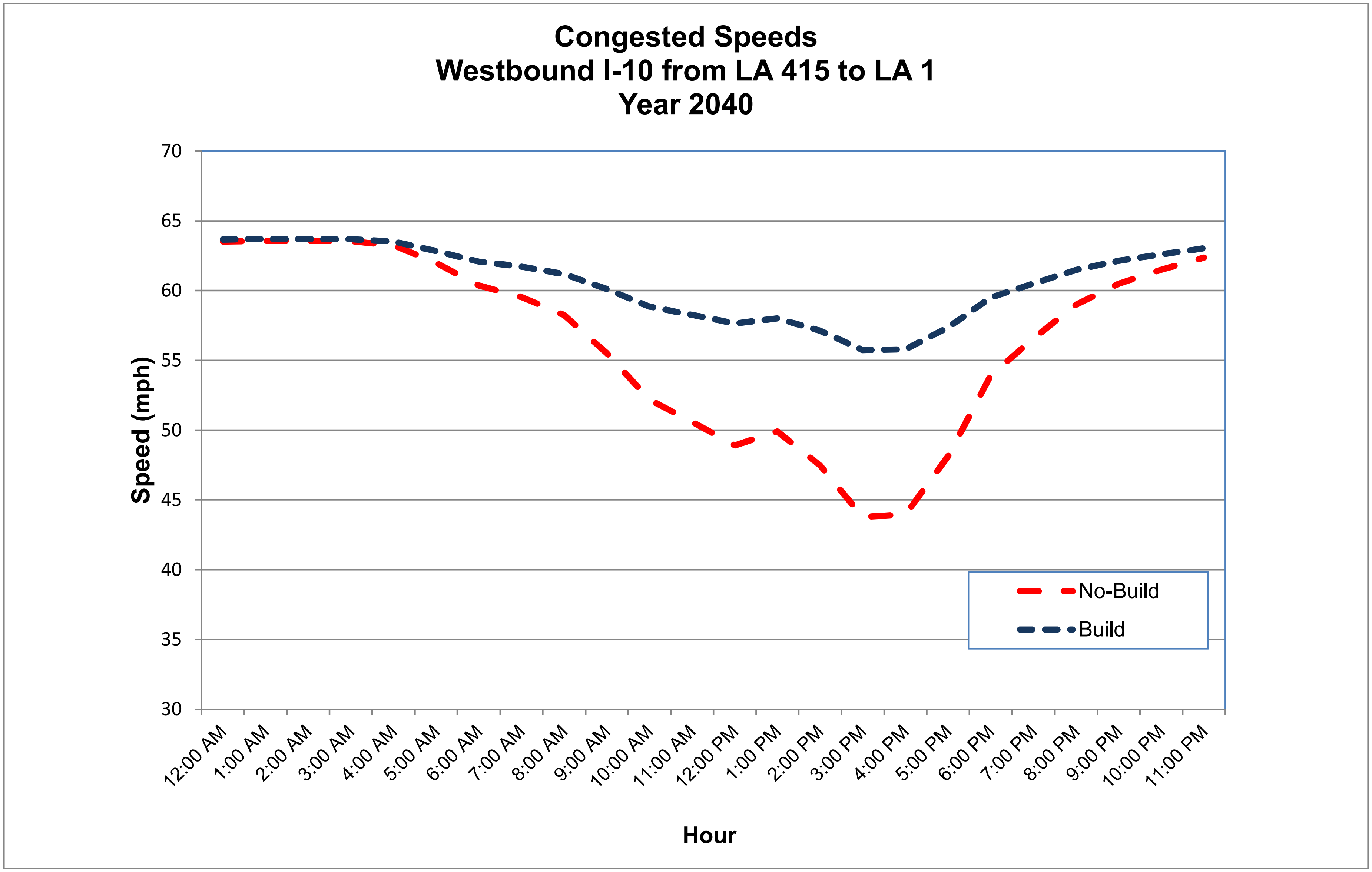
Congested Speeds
Westbound I-10 from LA 415 to LA 1
Year 2040
Speed (mph)
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No-Build
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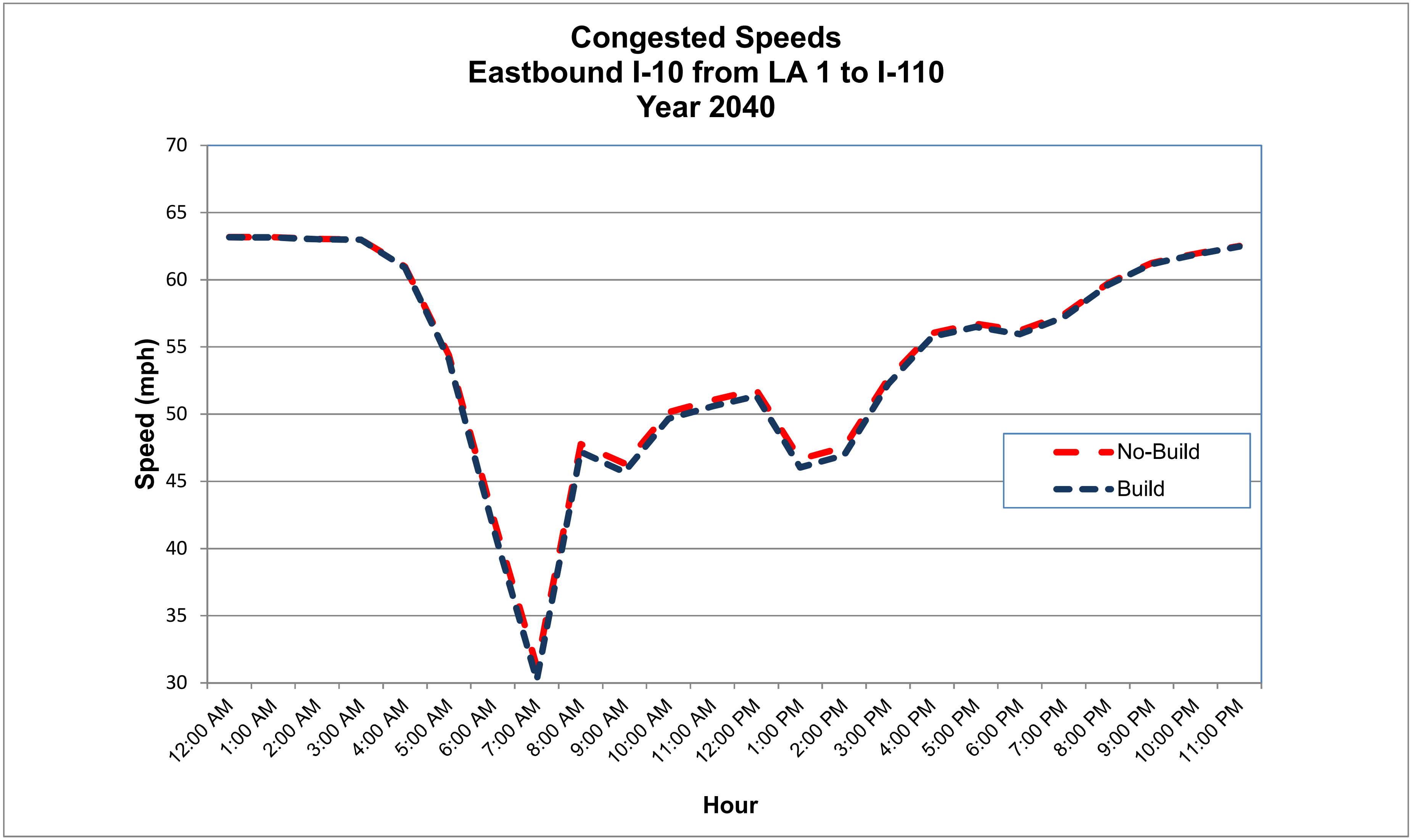

Congested Speeds
Eastbound I-10 from LA 1 to I-110
Year 2040
Speed (mph)
70
65
60
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12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
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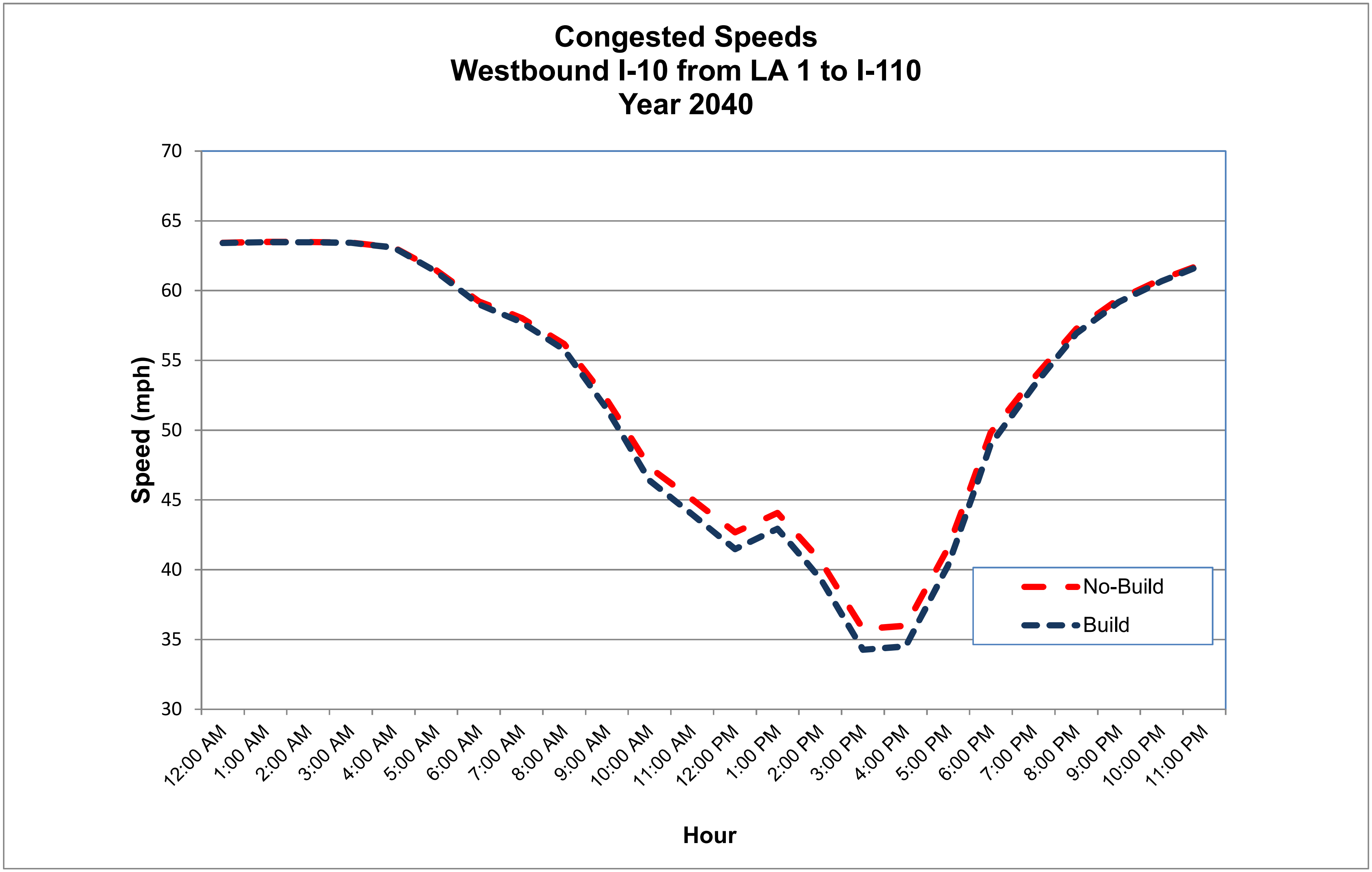

Congested Speeds
Westbound I-10 from LA 1 to I-110
Year 2040
Speed (mph)
70
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12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
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11:00 AM
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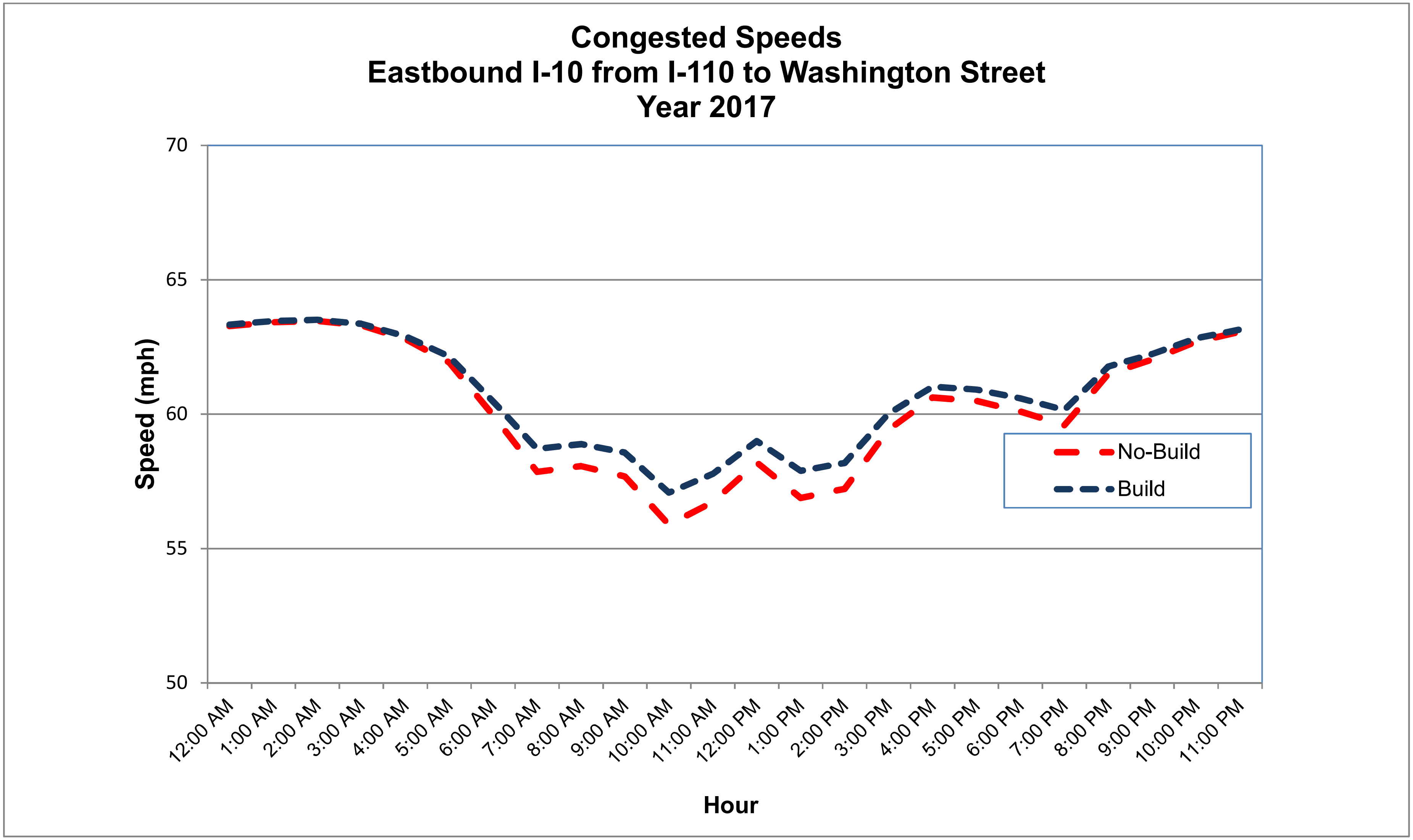
Hour



Congested Speeds
Eastbound I-10 from I-110 to Washington Street
Year 2017
Speed (mph)
70
65
60
55
50
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
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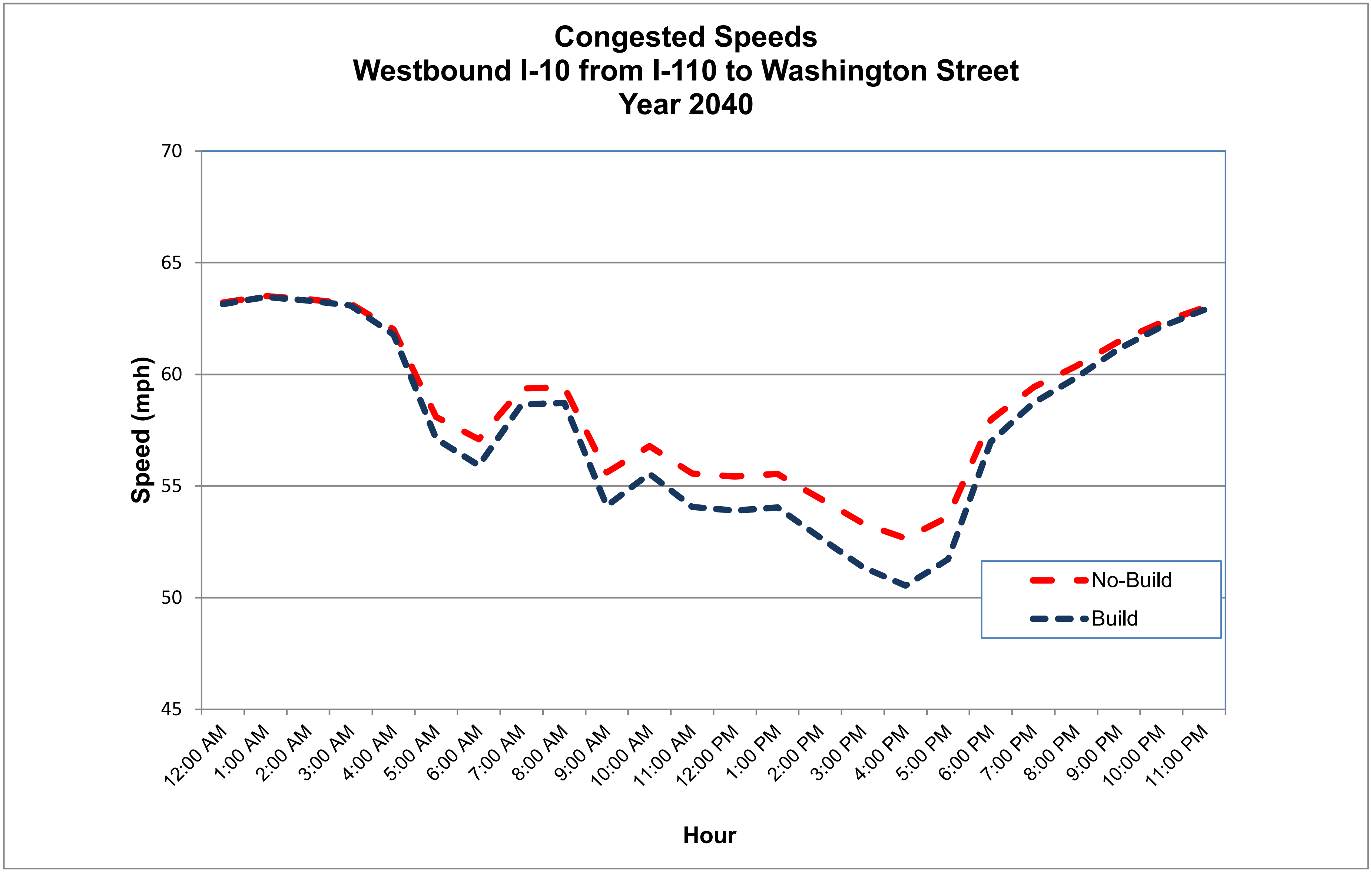
Congested Speeds
Westbound I-10 from I-110 to Washington Street
Year 2040
70
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Speed (mph)
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
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7:00 AM
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9:00 AM
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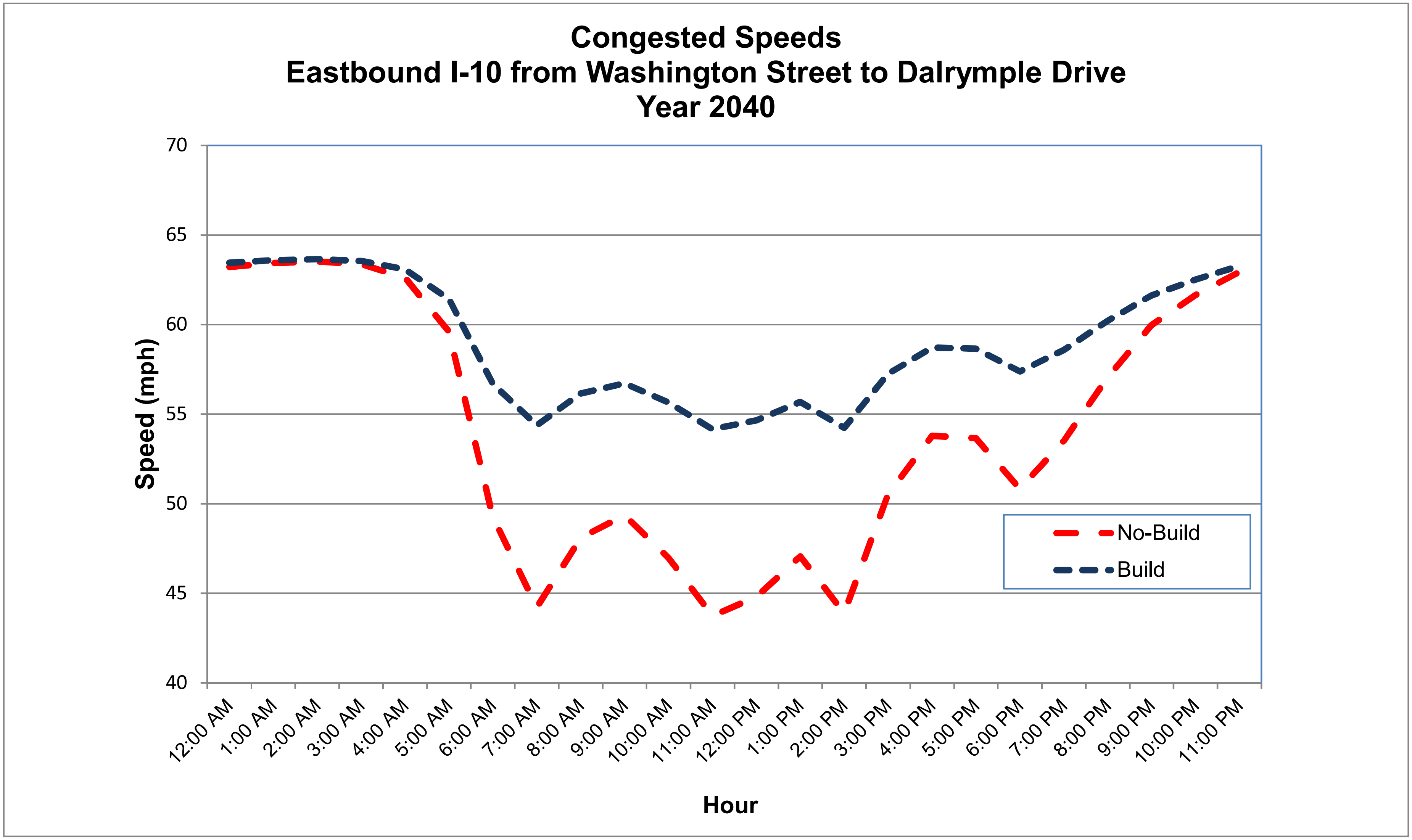
Congested Speeds
Eastbound I-10 from Washington Street to Dalrymple Drive
Year 2040
Speed (mph)
70
65
60
55
50
45
40
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
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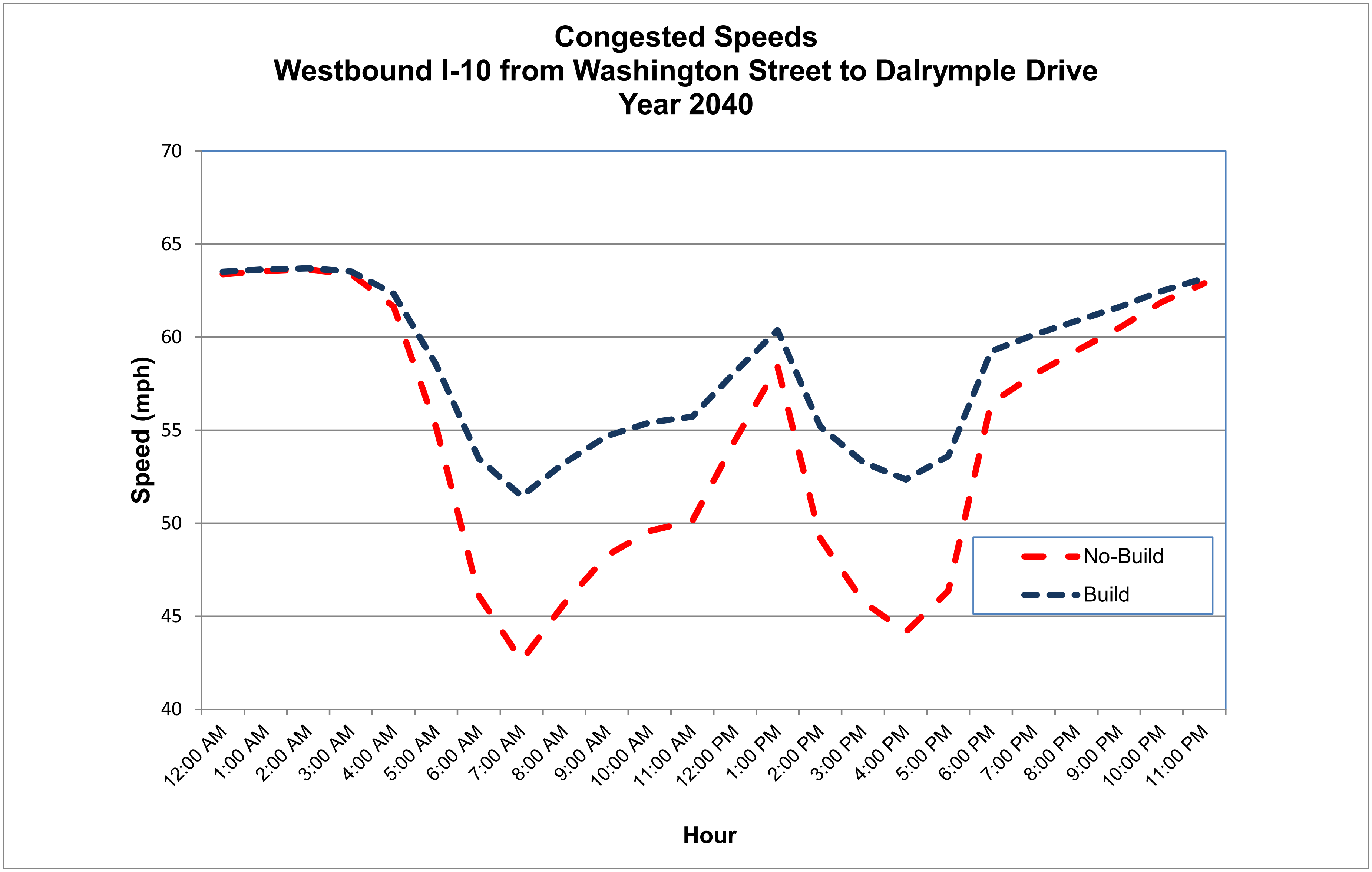
Congested Speeds
Westbound I-10 from Washington Street to Dalrymple Drive
Year 2040
Speed (mph)
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12:00 AM
1:00 AM
2:00 AM
3:00 AM
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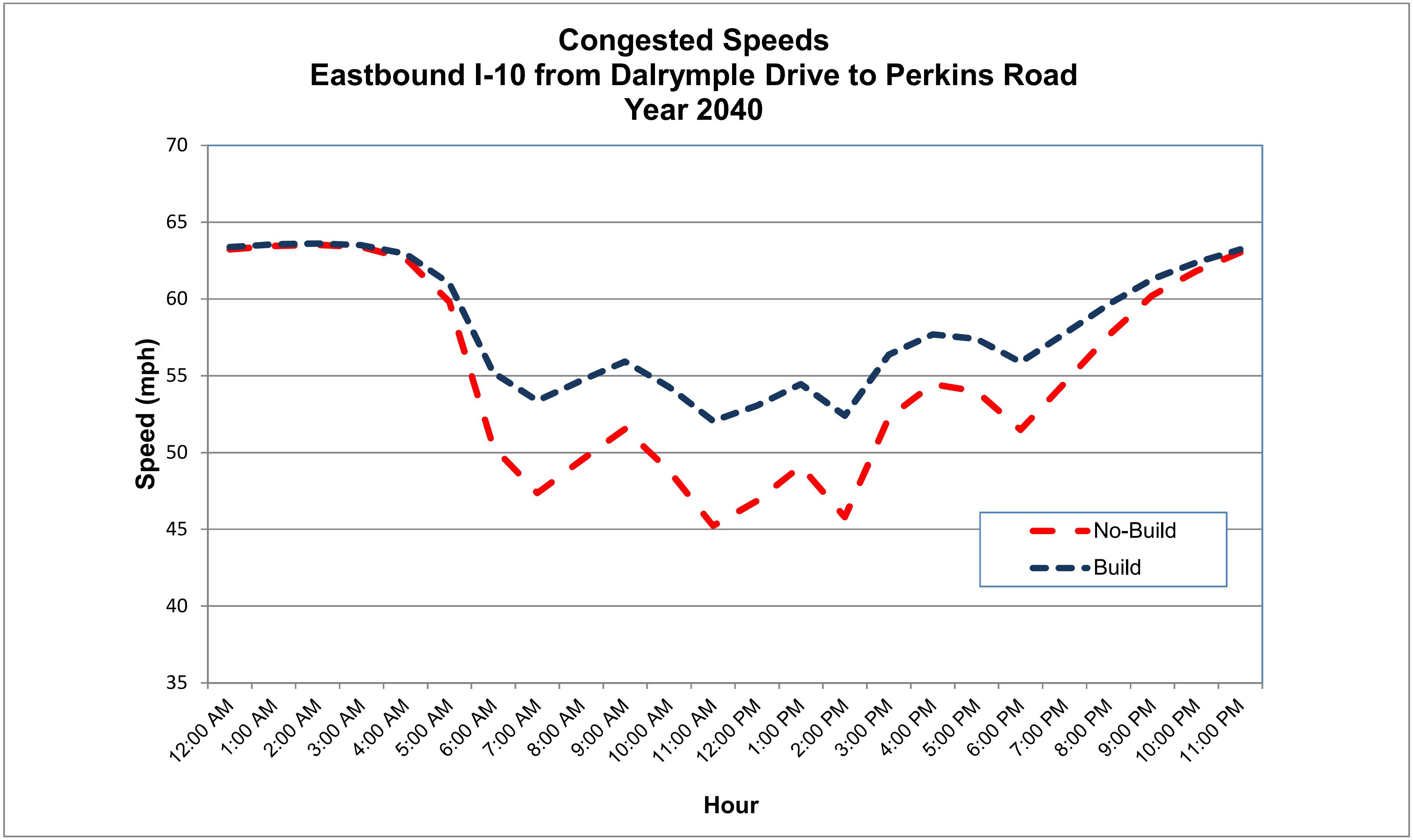

Congested Speeds
Eastbound I-10 from Dalrymple Drive to Perkins Road
Year 2040
Speed (mph)
70
65
60
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50
45
40
35
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
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No-Build
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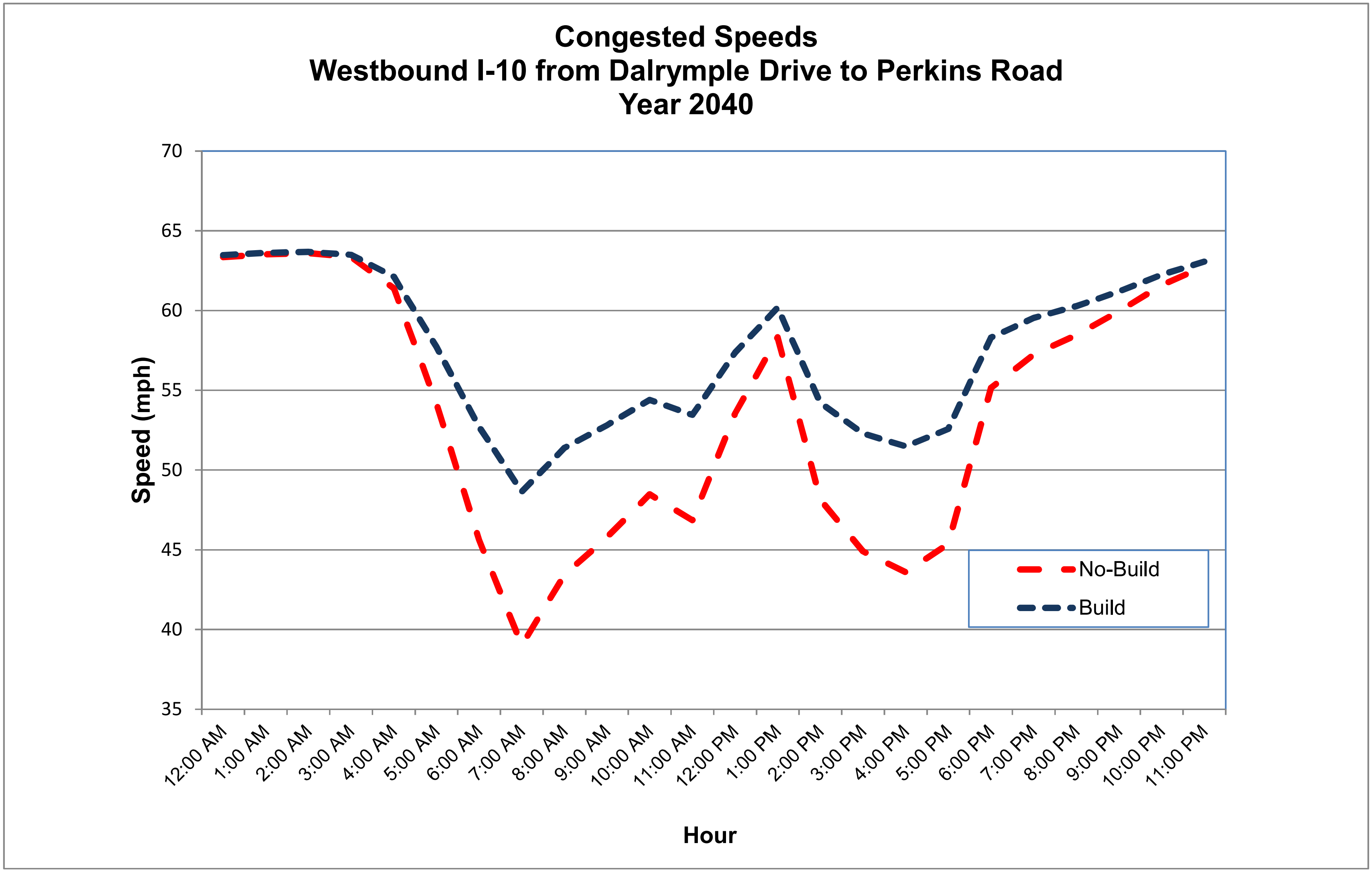

Congested Speeds
Westbound I-10 from Dalrymple Drive to Perkins Road
Year 2040
Speed (mph)
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12:00 AM
1:00 AM
2:00 AM
3:00 AM
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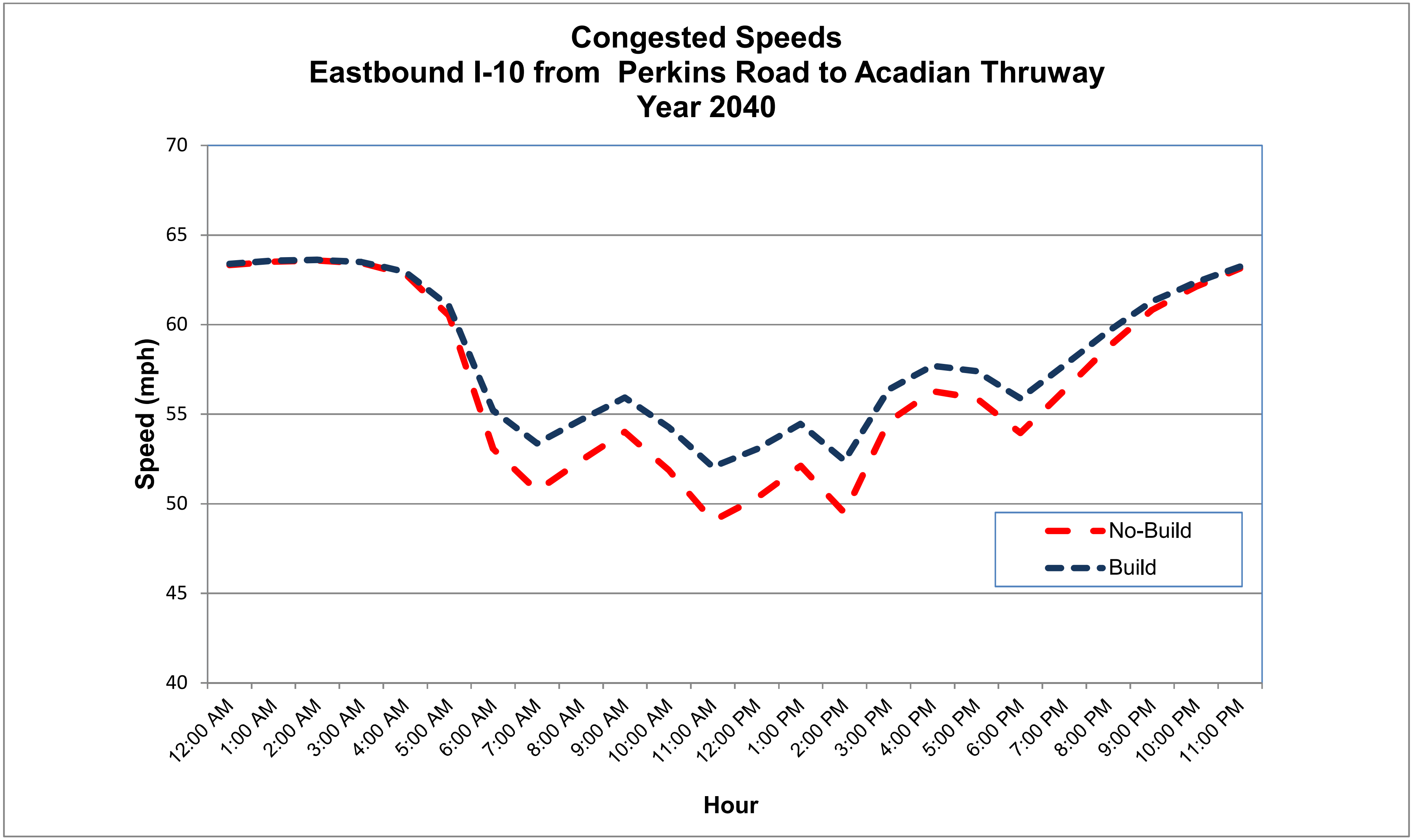

Congested Speeds
Eastbound I-10 from Perkins Road to Acadian Thruway
Year 2040
Speed (mph)
70
65
60
55
50
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No-Build
Build
12:00 AM
1:00 AM
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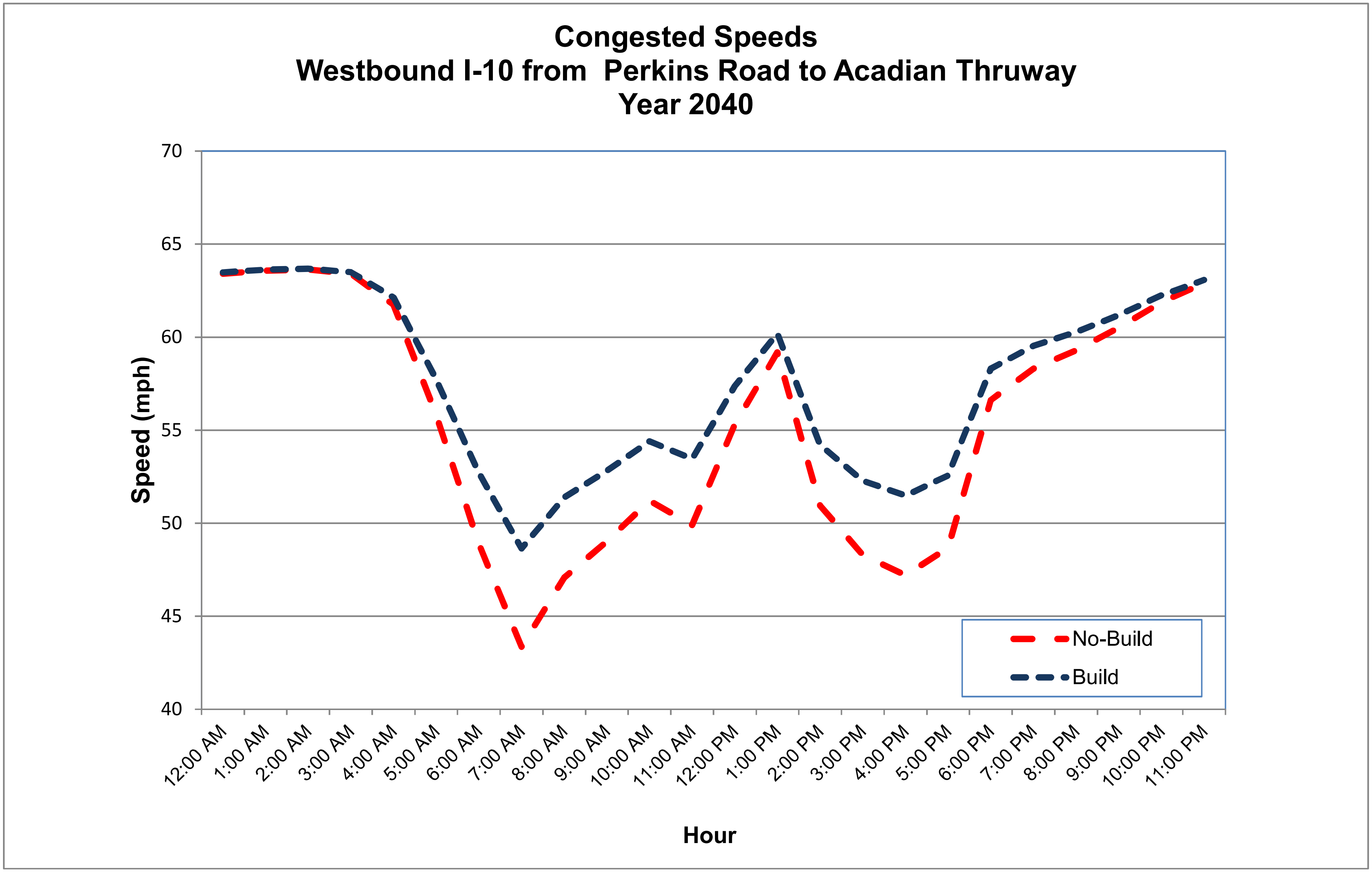

Congested Speeds
Westbound I-10 from Perkins Road to Acadian Thruway
Year 2040
Speed (mph)
70
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45
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12:00 AM
1:00 AM
2:00 AM
3:00 AM
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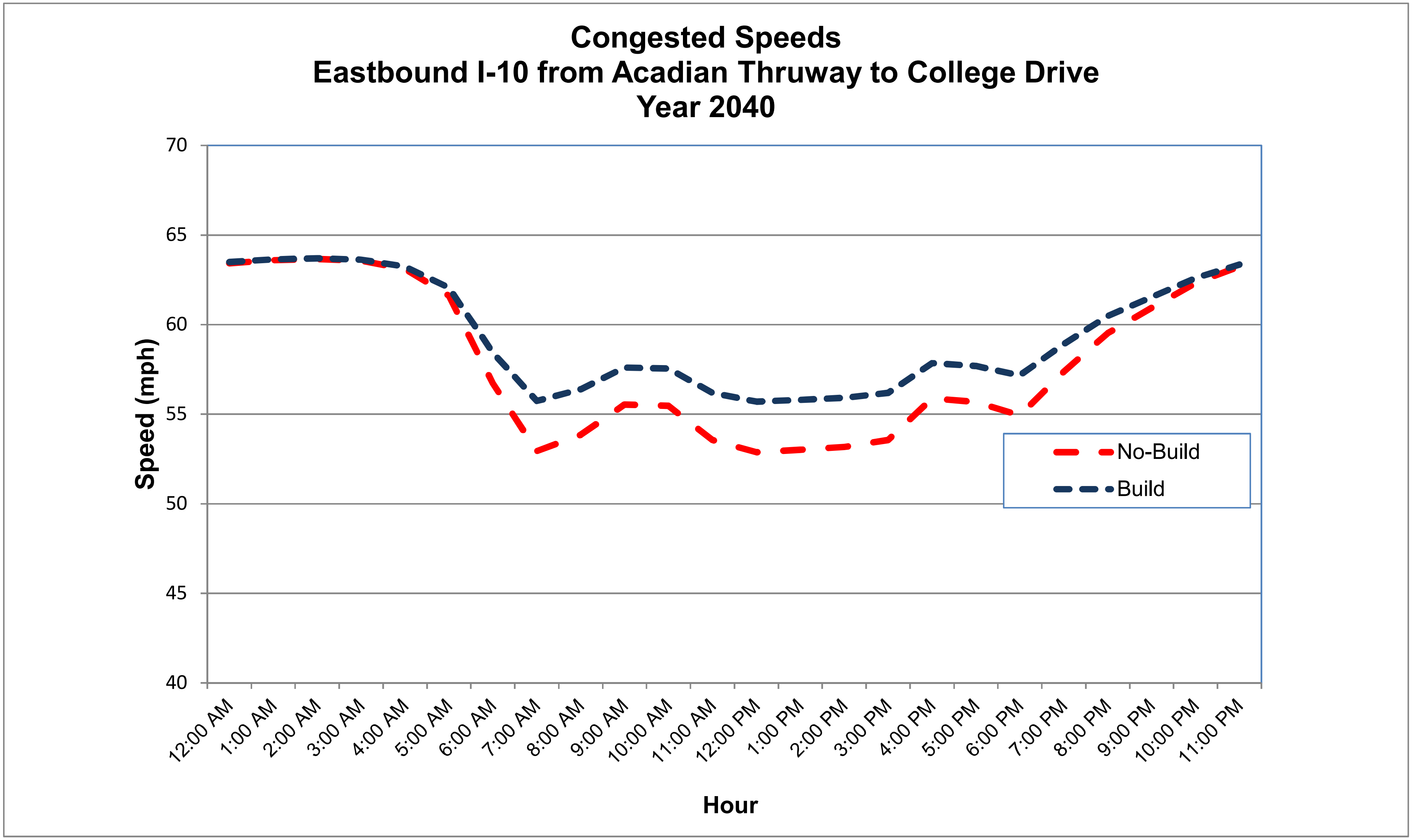
Congested Speeds
Eastbound I-10 from Acadian Thruway to College Drive
Year 2040
Speed (mph)
70
65
60
55
50
45
40
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
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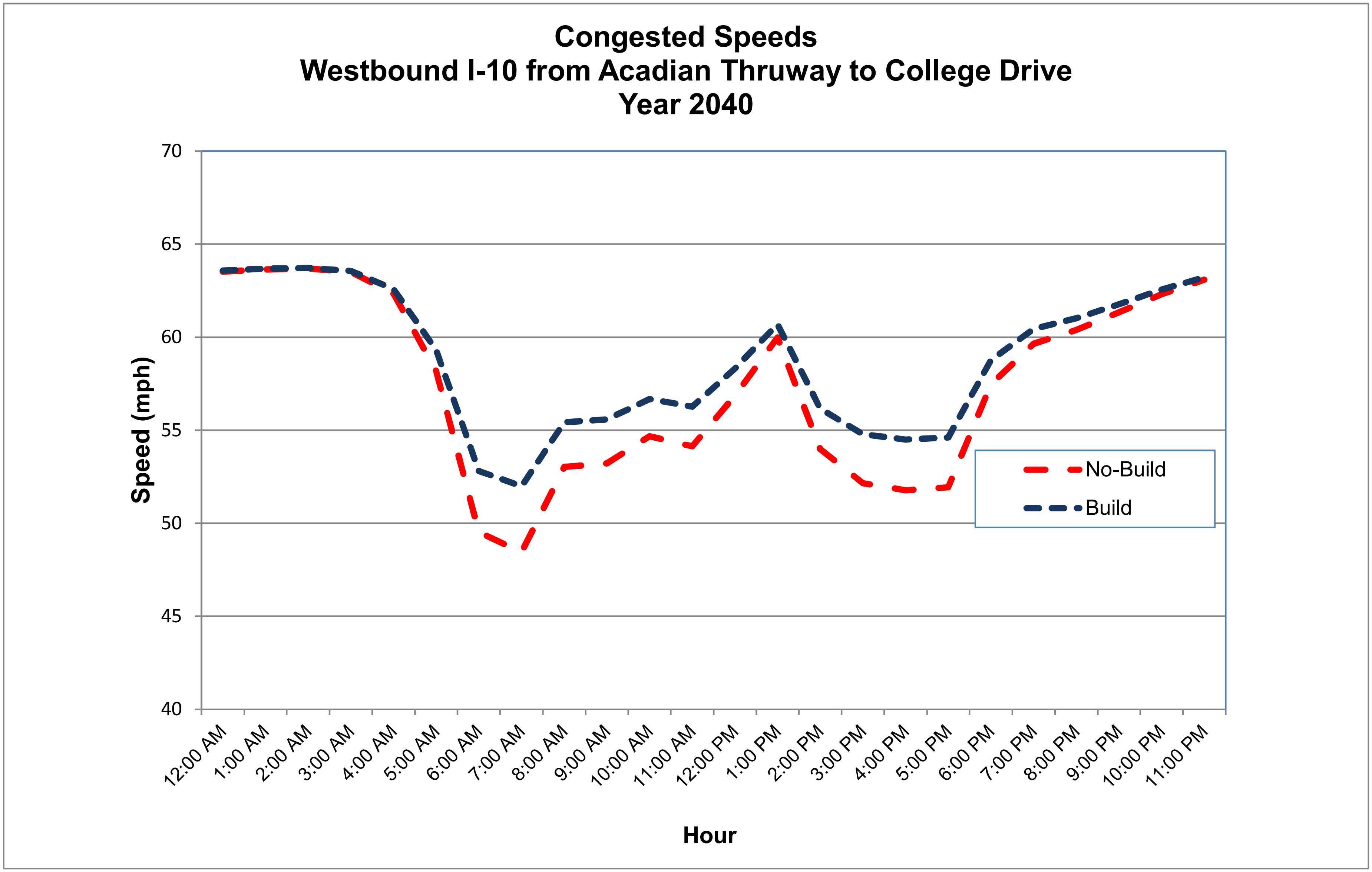

Congested Speeds
Westbound I-10 from Acadian Thruway to College Drive
Year 2040
Speed (mph)
70
65
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12:00 AM
1:00 AM
2:00 AM
3:00 AM
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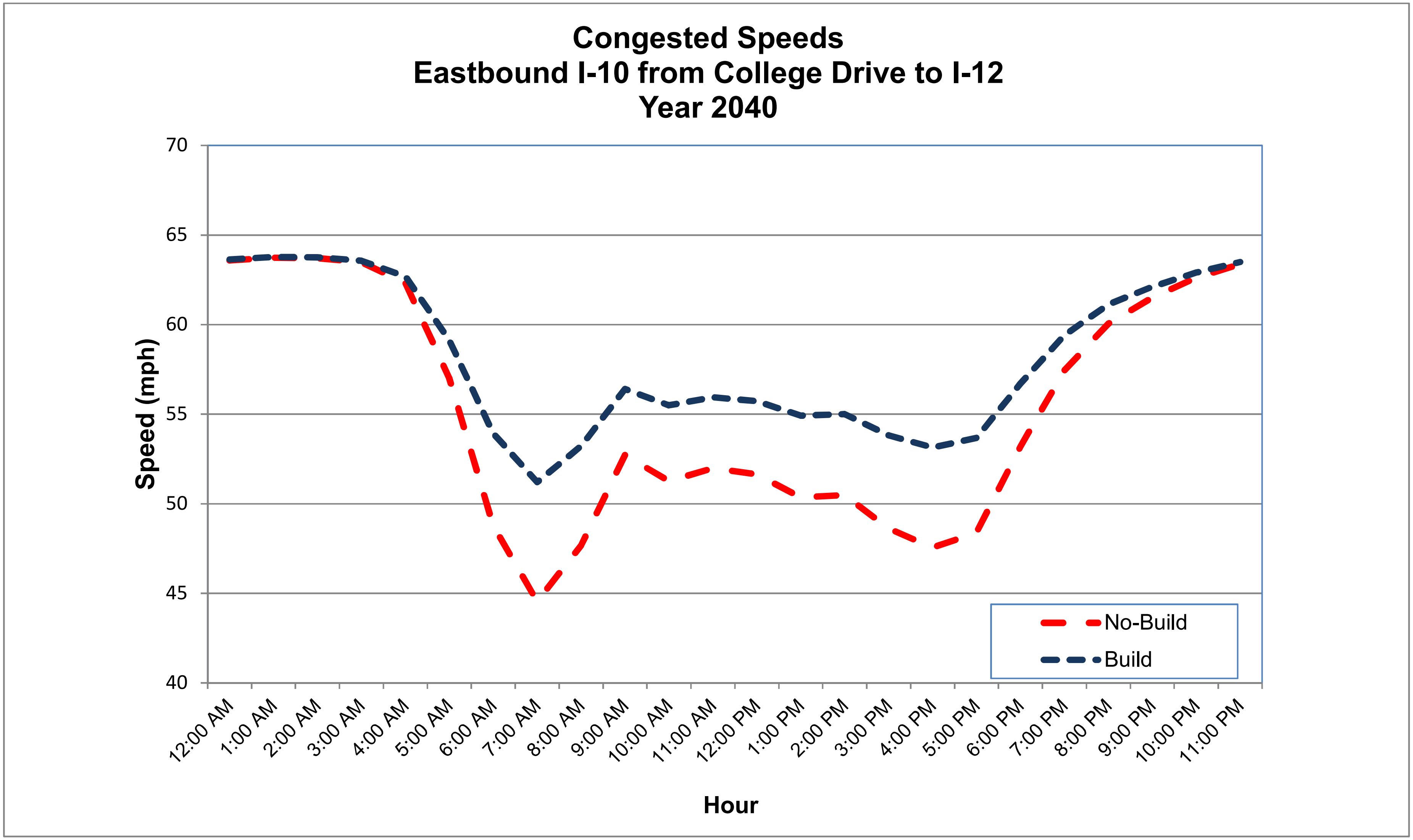

Congested Speeds
Eastbound I-10 from College Drive to I-12
Year 2040
Speed (mph)
70
65
60
55
50
45
40
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
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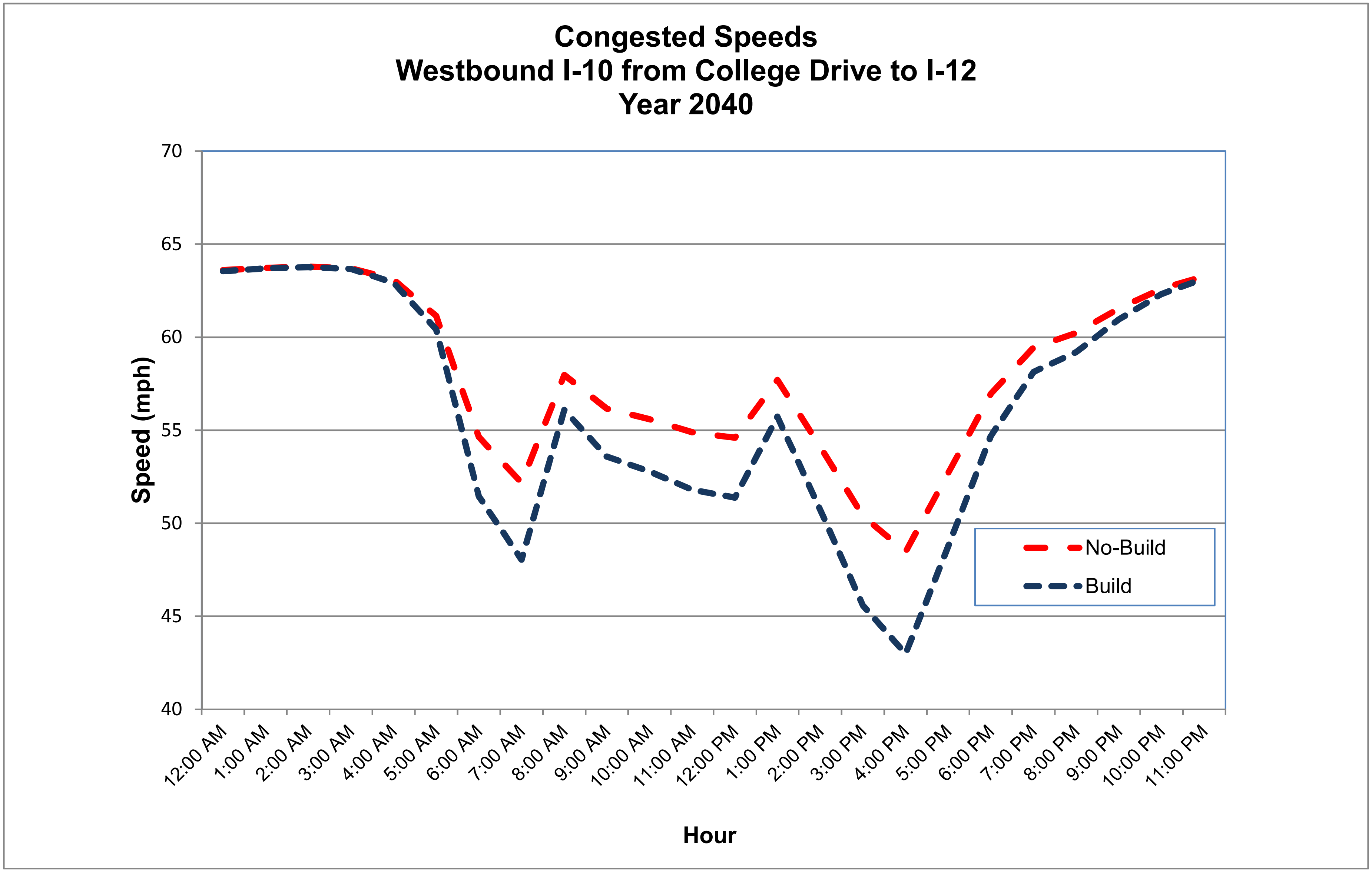

Congested Speeds
Westbound I-10 from College Drive to I-12
Year 2040
Speed (mph)
70
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45
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12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
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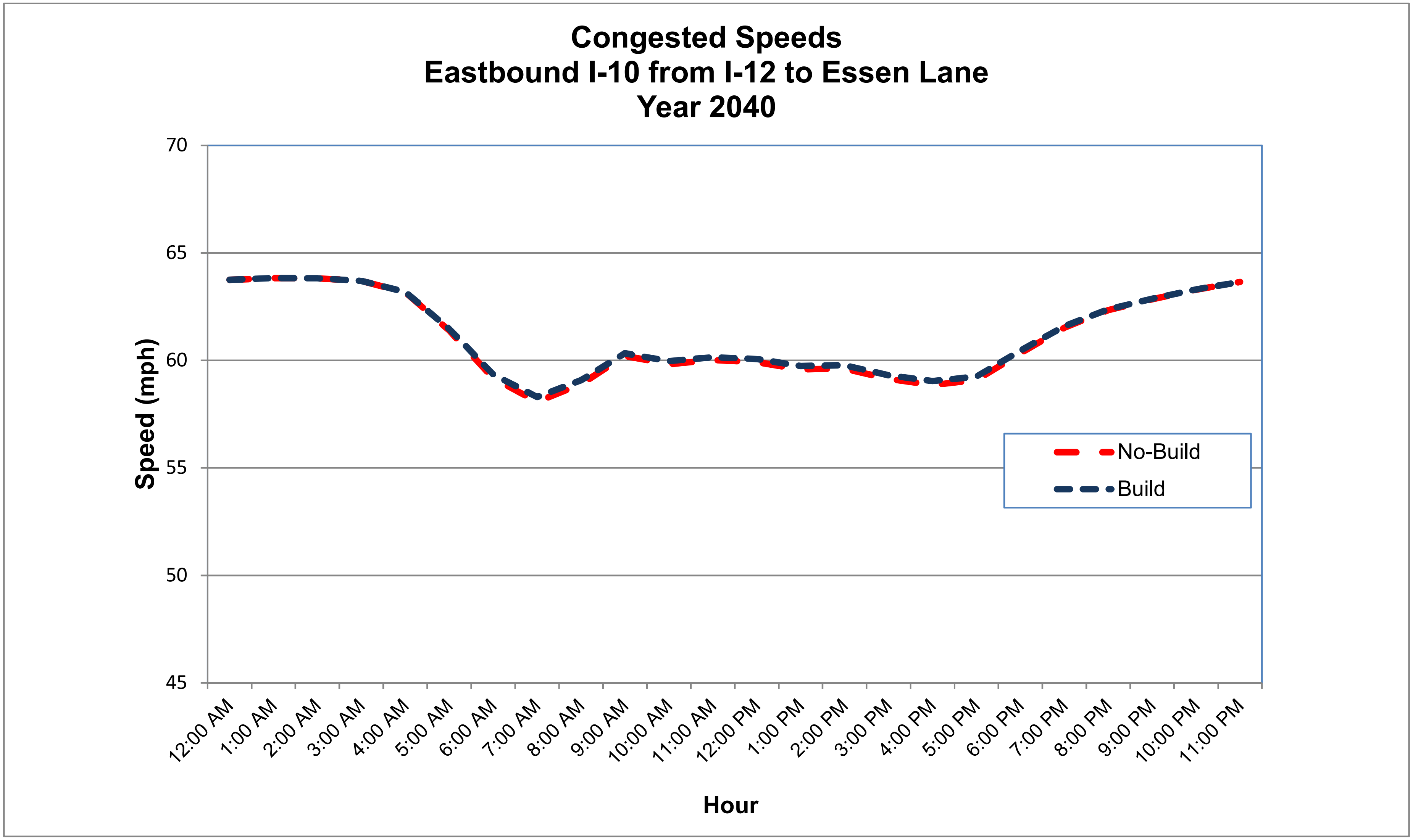
Build



Congested Speeds
Eastbound I-10 from I-12 to Essen Lane
Year 2040
Speed (mph)
70
65
60
55
50
45
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
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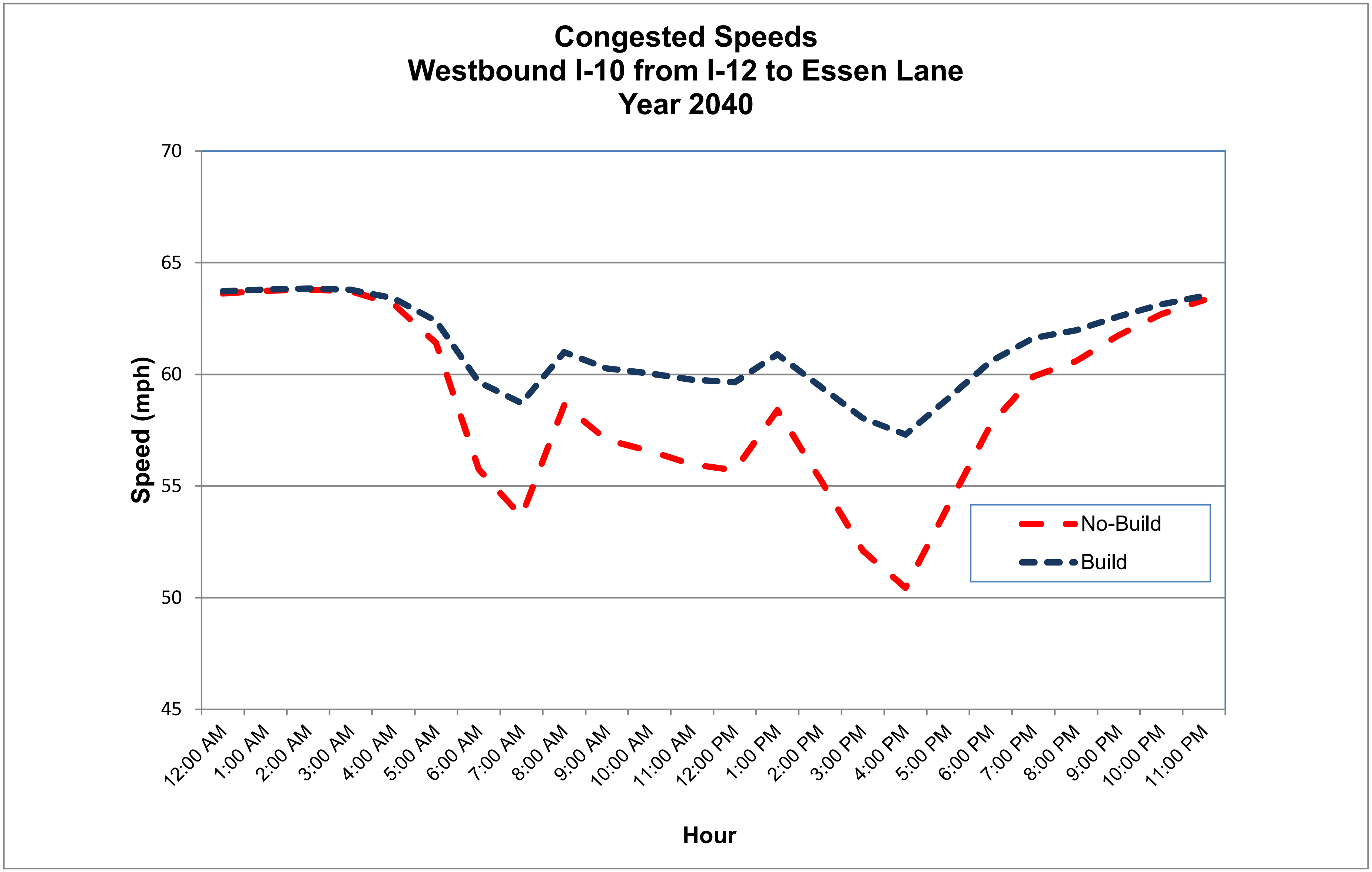
Congested Speeds
Westbound I-10 from I-12 to Essen Lane
Year 2040
Speed (mph)
70
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50
45
12:00 AM
1:00 AM
2:00 AM
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4:00 AM
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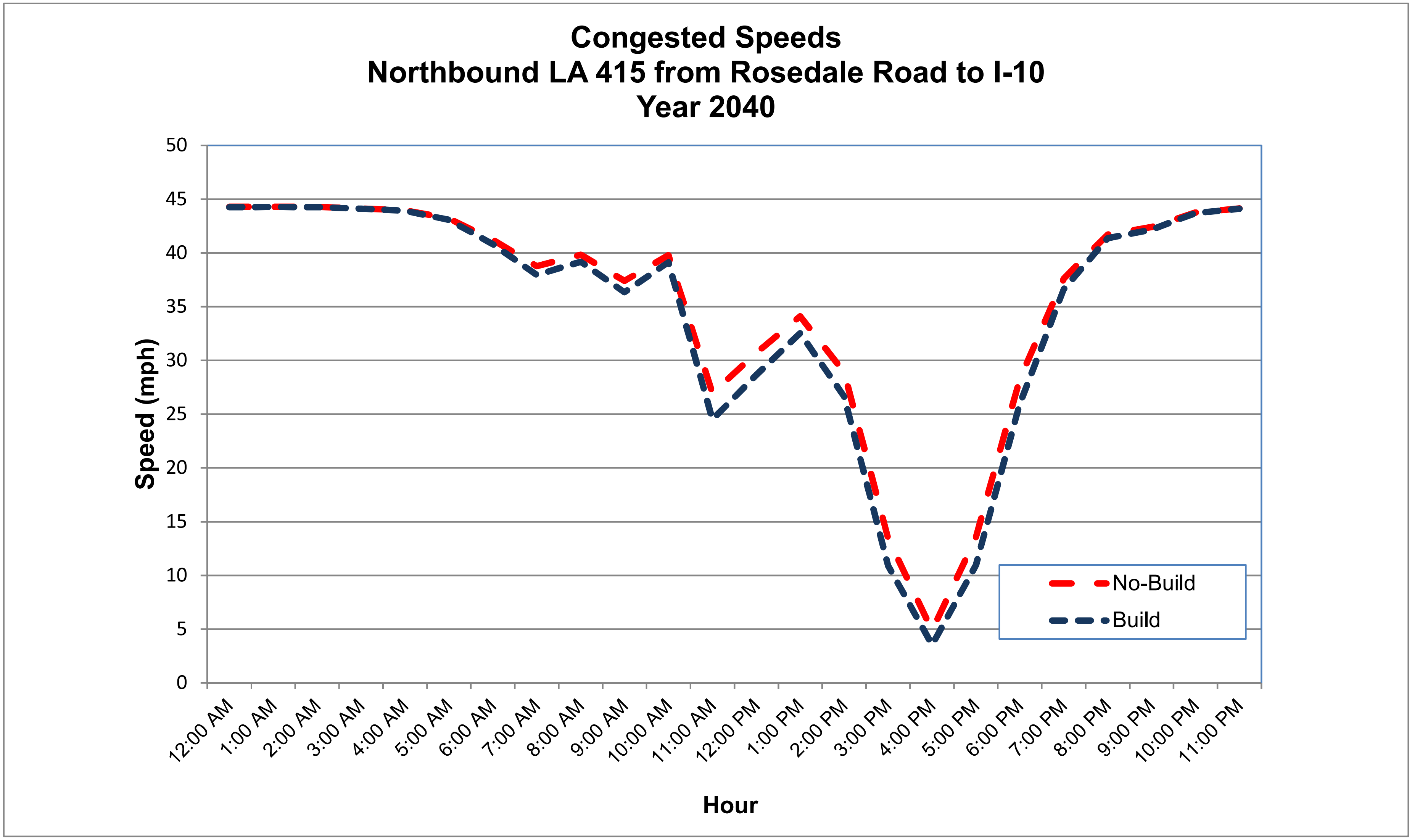

Congested Speeds
Northbound LA 415 from Rosedale Road to I-10
Year 2040
Speed (mph)
50
45
40
35
30
25
20
15
10
5
0
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
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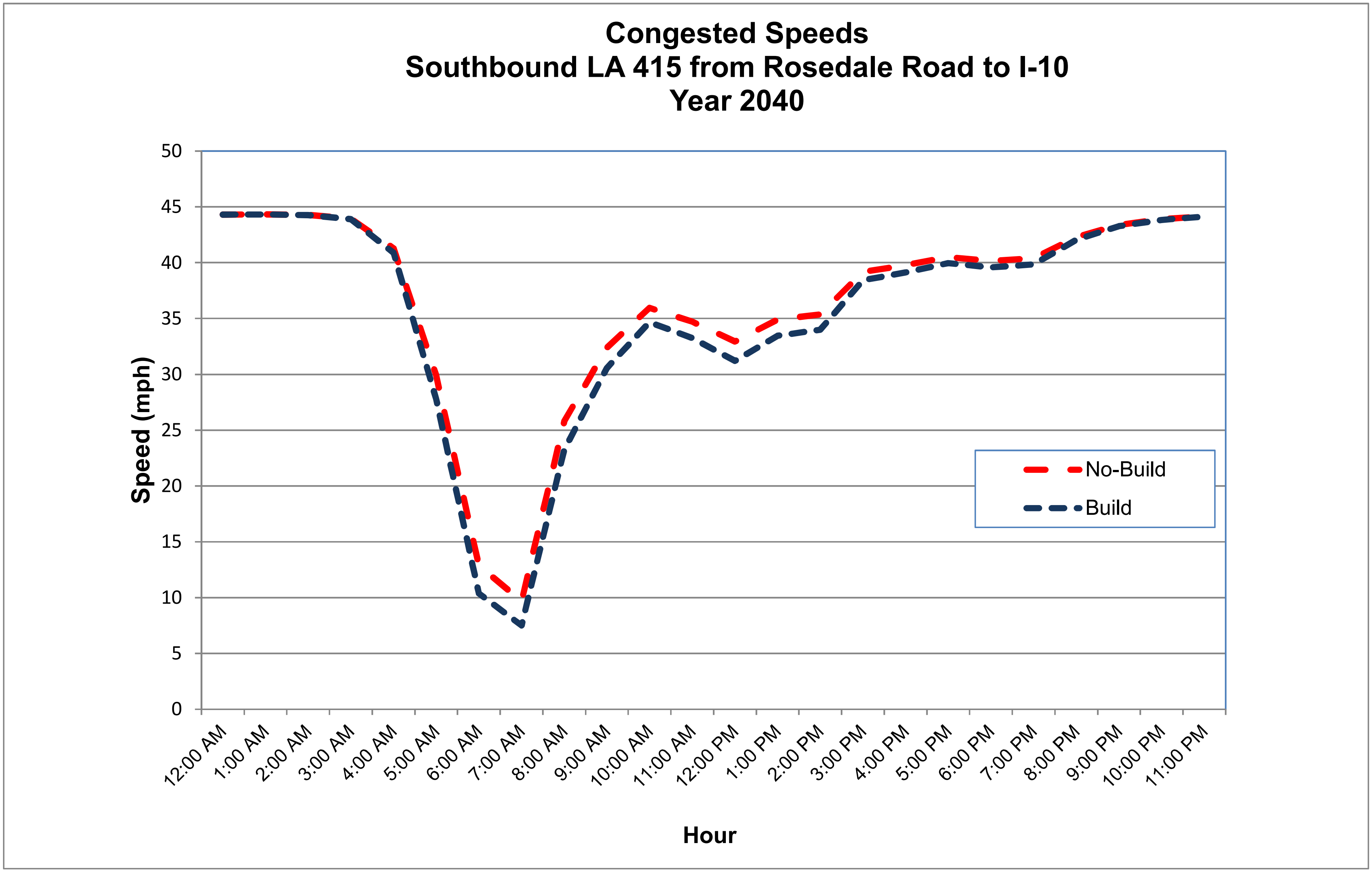
Hour
No-Build
Build


Congested Speeds
Southbound LA 415 from Rosedale Road to I-10
Year 2040
Speed (mph)
50
45
40
35
30
25
20
15
10
5
0
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
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9:00 AM
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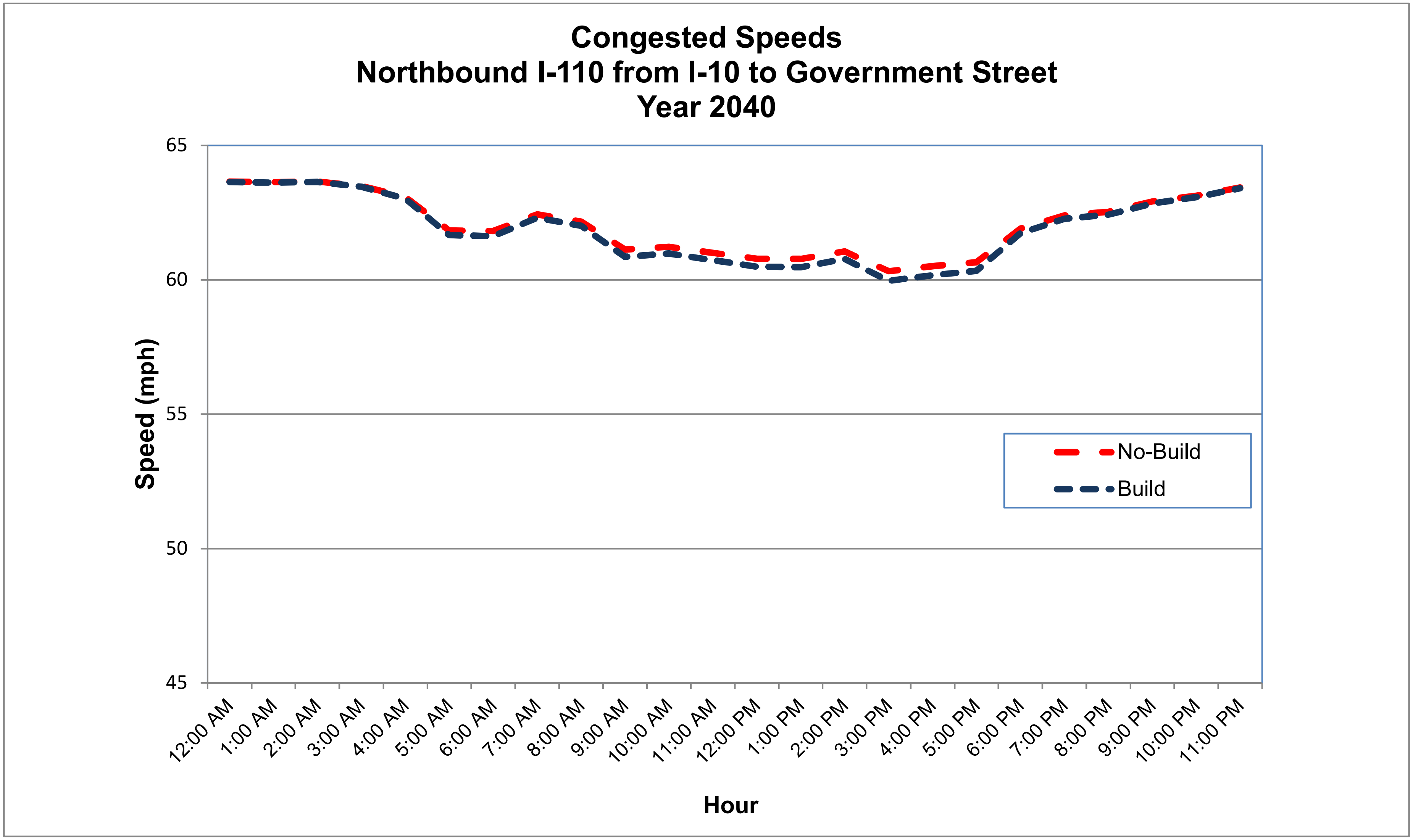
Hour
No-Build
Build



Congested Speeds
Northbound I-110 from I-10 to Government Street
Year 2040
65
60
55
50
45
Speed (mph)
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
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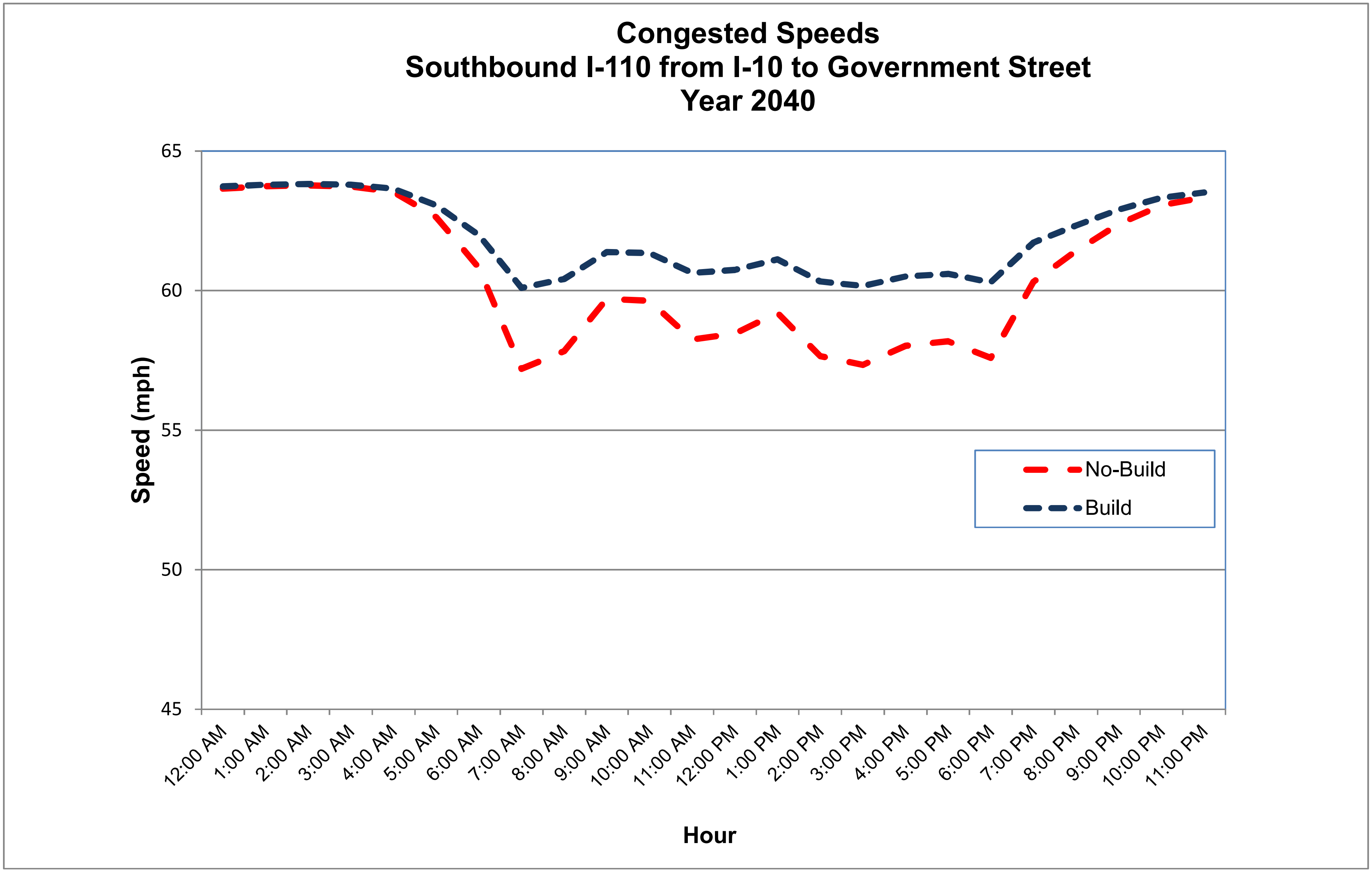

Congested Speeds
Southbound I-110 from I-10 to Government Street
Year 2040
65
60
55
50
45
Speed (mph)
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
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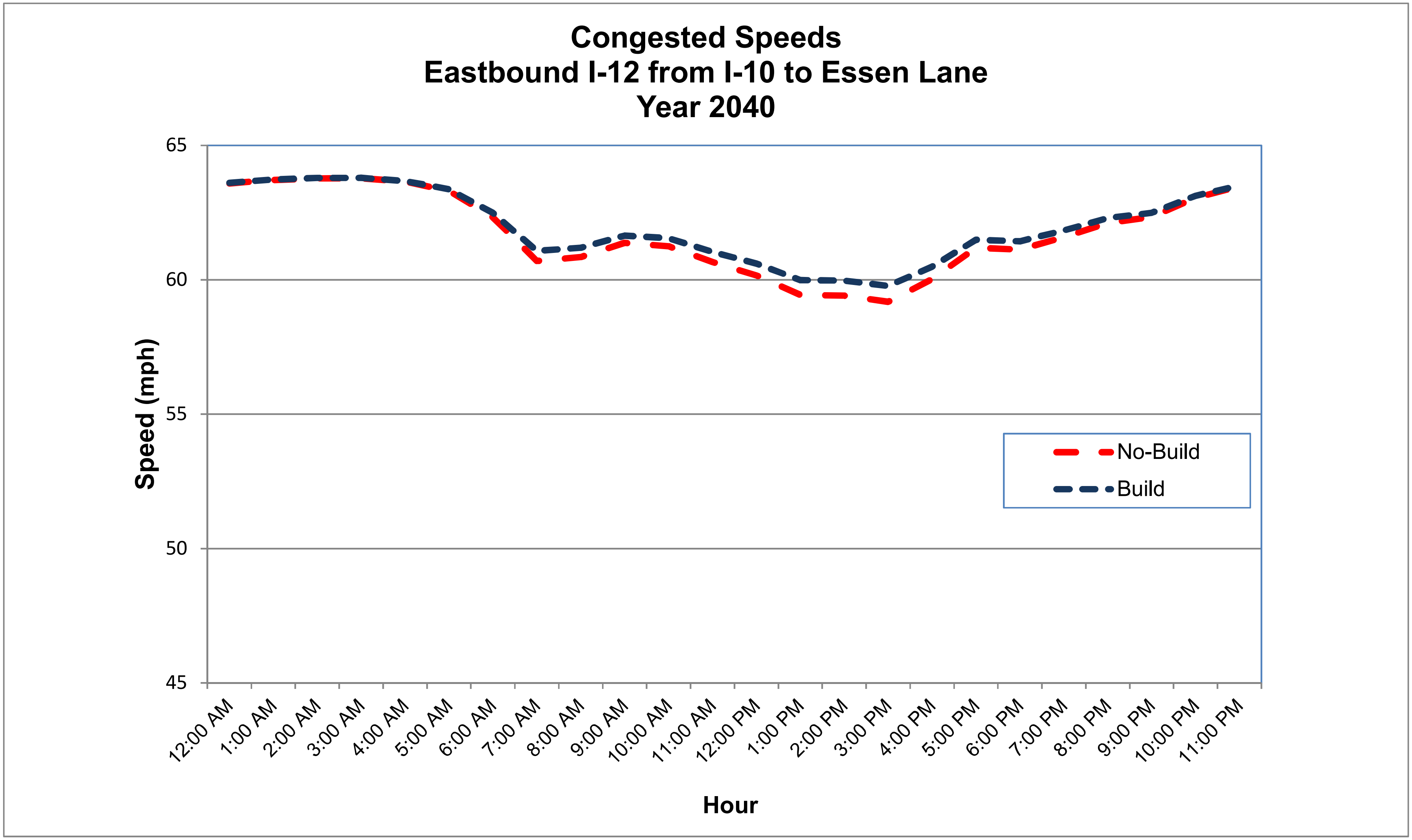

Congested Speeds
Eastbound I-12 from I-10 to Essen Lane
Year 2040
65
60
55
50
45
Speed (mph)
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
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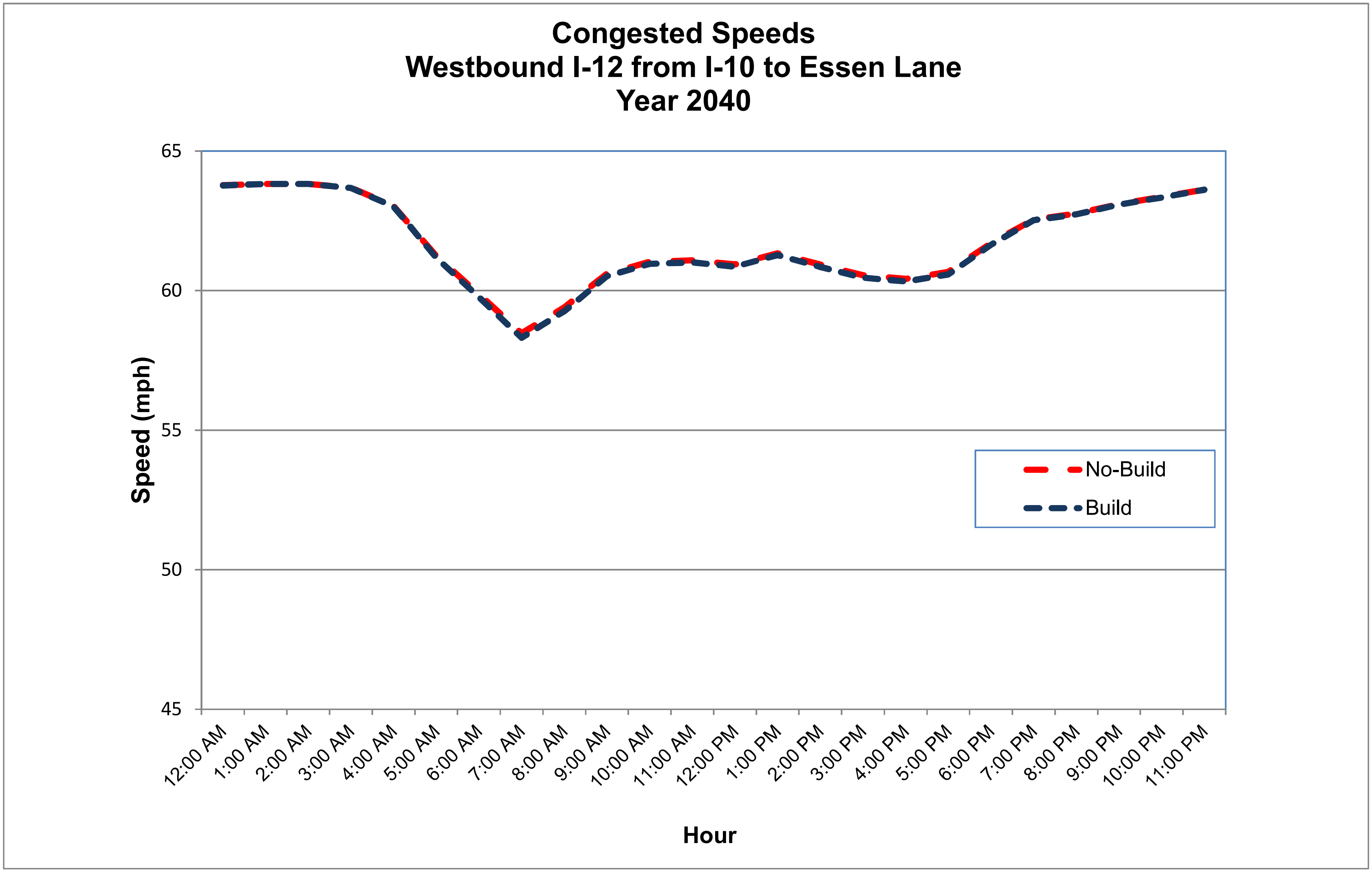

Congested Speeds
Westbound I-12 from I-10 to Essen Lane
Year 2040
Speed (mph)
65
60
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45
No-Build
Build
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
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6:00 AM
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Appendix F –MOVES Files for MSATs Analysis

2017 No-Build West Baton Rouge Parish MOVES Input

2017 No Build WBR

Output Database Server Name: [using default]

Output Database Name: msat_nobuild_2017_wbr_o1

Time Spans:

Aggregate By: Hour

Years:

2017

Months:

January

February

March

April

May

June

July

August

September

October

November

December

Days:

Weekend

Weekdays

Hours:

Begin Hour: 00:00 - 00:59

End Hour: 23:00 - 23:59

Geographic Bounds:

COUNTY geography

Selection: LOUISIANA - West Baton Rouge Parish

On Road Vehicle Equipment:

Compressed Natural Gas (CNG) - Transit Bus

Diesel Fuel - Combination Long-haul Truck

Diesel Fuel - Combination Short-haul Truck

Diesel Fuel - Intercity Bus

Diesel Fuel - Light Commercial Truck

Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car

Diesel Fuel - Passenger Truck

Diesel Fuel - Refuse Truck

Diesel Fuel - School Bus

Diesel Fuel - Single Unit Long-haul Truck

Diesel Fuel - Single Unit Short-haul Truck

Diesel Fuel - Transit Bus

Electricity - Light Commercial Truck

Electricity - Passenger Car

Electricity - Passenger Truck

Ethanol (E-85) - Light Commercial Truck

Ethanol (E-85) - Passenger Car

Ethanol (E-85) - Passenger Truck

Gasoline - Combination Short-haul Truck

Gasoline - Light Commercial Truck

Gasoline - Motor Home

Gasoline - Motorcycle

Gasoline - Passenger Car

Gasoline - Passenger Truck

Gasoline - Refuse Truck

Gasoline - School Bus

Gasoline - Single Unit Long-haul Truck

Gasoline - Single Unit Short-haul Truck

Gasoline - Transit Bus

Road Types:

Rural Restricted Access

Urban Restricted Access

Urban Unrestricted Access

Separate ramp rates: false

Pollutants And Processes:

Running Exhaust 1,3-Butadiene

Crankcase Running Exhaust 1,3-Butadiene

Running Exhaust Acenaphthene gas

Crankcase Running Exhaust Acenaphthene gas

Running Exhaust Acenaphthene particle

Crankcase Running Exhaust Acenaphthene particle

Running Exhaust Acenaphthylene gas

Crankcase Running Exhaust Acenaphthylene gas

Running Exhaust Acenaphthylene particle

Crankcase Running Exhaust Acenaphthylene particle

Running Exhaust Acetaldehyde

Crankcase Running Exhaust Acetaldehyde

Running Exhaust Acrolein

Crankcase Running Exhaust Acrolein

Crankcase Running Exhaust Aluminum

Crankcase Running Exhaust Ammonium (NH4)

Running Exhaust Anthracene gas

Crankcase Running Exhaust Anthracene gas

Running Exhaust Anthracene particle

Crankcase Running Exhaust Anthracene particle

Running Exhaust Benz(a)anthracene gas

Crankcase Running Exhaust Benz(a)anthracene gas

Running Exhaust Benz(a)anthracene particle

Crankcase Running Exhaust Benz(a)anthracene particle

Running Exhaust Benzene

Evap Permeation Benzene

Evap Fuel Leaks Benzene

Crankcase Running Exhaust Benzene

Running Exhaust Benzo(a)pyrene gas

Crankcase Running Exhaust Benzo(a)pyrene gas

Running Exhaust Benzo(a)pyrene particle

Crankcase Running Exhaust Benzo(a)pyrene particle

Running Exhaust Benzo(b)fluoranthene gas

Crankcase Running Exhaust Benzo(b)fluoranthene gas

Running Exhaust Benzo(b)fluoranthene particle

Crankcase Running Exhaust Benzo(b)fluoranthene particle

Running Exhaust Benzo(g,h,i)perylene gas

Crankcase Running Exhaust Benzo(g,h,i)perylene gas

Running Exhaust Benzo(g,h,i)perylene particle

Crankcase Running Exhaust Benzo(g,h,i)perylene particle

Running Exhaust Benzo(k)fluoranthene gas

Crankcase Running Exhaust Benzo(k)fluoranthene gas

Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust CMAQ5.0 Unspeciated (PMOTHR)

Crankcase Running Exhaust Calcium

Crankcase Running Exhaust Chloride

Running Exhaust Chrysene gas

Crankcase Running Exhaust Chrysene gas

Running Exhaust Chrysene particle

Crankcase Running Exhaust Chrysene particle

Running Exhaust Composite - NonECPM

Crankcase Running Exhaust Composite - NonECPM

Running Exhaust Dibenzo(a,h)anthracene gas

Crankcase Running Exhaust Dibenzo(a,h)anthracene gas

Running Exhaust Dibenzo(a,h)anthracene particle

Crankcase Running Exhaust Dibenzo(a,h)anthracene particle

Running Exhaust Elemental Carbon

Crankcase Running Exhaust Elemental Carbon

Running Exhaust Ethyl Benzene

Evap Permeation Ethyl Benzene

Evap Fuel Leaks Ethyl Benzene

Crankcase Running Exhaust Ethyl Benzene

Running Exhaust Fluoranthene gas

Crankcase Running Exhaust Fluoranthene gas

Running Exhaust Fluoranthene particle

Crankcase Running Exhaust Fluoranthene particle

Running Exhaust Fluorene gas

Crankcase Running Exhaust Fluorene gas

Running Exhaust Fluorene particle

Crankcase Running Exhaust Fluorene particle

Running Exhaust Formaldehyde

Crankcase Running Exhaust Formaldehyde

Running Exhaust H2O (aerosol)

Crankcase Running Exhaust H2O (aerosol)

Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Iron

Crankcase Running Exhaust Magnesium

Running Exhaust Naphthalene gas

Evap Permeation Naphthalene gas

Evap Fuel Leaks Naphthalene gas

Crankcase Running Exhaust Naphthalene gas

Running Exhaust Naphthalene particle

Crankcase Running Exhaust Naphthalene particle

Crankcase Running Exhaust Nitrate (NO3)

Running Exhaust Non-Methane Hydrocarbons

Evap Permeation Non-Methane Hydrocarbons

Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-carbon Organic Matter (NCOM)

Running Exhaust Organic Carbon

Crankcase Running Exhaust Organic Carbon

Running Exhaust Phenanthrene gas

Crankcase Running Exhaust Phenanthrene gas

Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Potassium

Running Exhaust Primary Exhaust PM10 - Total

Crankcase Running Exhaust Primary Exhaust PM10 - Total

Running Exhaust Primary Exhaust PM2.5 - Total

Crankcase Running Exhaust Primary Exhaust PM2.5 - Total

Running Exhaust Pyrene gas

Crankcase Running Exhaust Pyrene gas

Running Exhaust Pyrene particle

Crankcase Running Exhaust Pyrene particle

Crankcase Running Exhaust Silicon

Crankcase Running Exhaust Sodium

Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Titanium

Running Exhaust Total Gaseous Hydrocarbons

Evap Permeation Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons

Crankcase Running Exhaust Total Gaseous Hydrocarbons

Running Exhaust Volatile Organic Compounds

Evap Permeation Volatile Organic Compounds

Evap Fuel Leaks Volatile Organic Compounds

Crankcase Running Exhaust Volatile Organic Compounds

Rate of Progress:

Rate of Progress calculations are disabled

Manage Input Data Sets:

2017 No-Build West Baton Rouge Emissions Factors

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	26	Acetaldehyde	1	2017	16916.31524
1	1	2	26	Acetaldehyde	15	2017	560.659467
1	1	4	26	Acetaldehyde	1	2017	16493.27431
1	1	4	26	Acetaldehyde	15	2017	546.182858
1	1	5	26	Acetaldehyde	1	2017	13090.55294
1	1	5	26	Acetaldehyde	15	2017	425.5677591
1	1	2	27	Acrolein	1	2017	3024.18626
1	1	2	27	Acrolein	15	2017	103.4155032
1	1	4	27	Acrolein	1	2017	2946.725255
1	1	4	27	Acrolein	15	2017	100.7201402
1	1	5	27	Acrolein	1	2017	2310.153088
1	1	5	27	Acrolein	15	2017	78.10754185
1	1	2	20	Benzene	1	2017	14193.64088
1	1	2	20	Benzene	15	2017	208.5182926
1	1	4	20	Benzene	1	2017	13801.72993
1	1	4	20	Benzene	15	2017	204.2485729
1	1	5	20	Benzene	1	2017	12302.91445
1	1	5	20	Benzene	15	2017	180.218231
1	1	2	24	1,3-Butadiene	1	2017	2277.483569
1	1	2	24	1,3-Butadiene	15	2017	54.99544336
1	1	4	24	1,3-Butadiene	1	2017	2217.371891
1	1	4	24	1,3-Butadiene	15	2017	53.65168737
1	1	5	24	1,3-Butadiene	1	2017	1881.768642
1	1	5	24	1,3-Butadiene	15	2017	43.72479371
1	1	2	100	Primary Exhaust PM10 - Total	1	2017	274242.0456
1	1	2	100	Primary Exhaust PM10 - Total	15	2017	55535.3894
1	1	4	100	Primary Exhaust PM10 - Total	1	2017	265829.0408
1	1	4	100	Primary Exhaust PM10 - Total	15	2017	58466.02696
1	1	5	100	Primary Exhaust PM10 - Total	1	2017	228378.9233
1	1	5	100	Primary Exhaust PM10 - Total	15	2017	60648.72262
1	1	2	25	Formaldehyde	1	2017	41539.12107
1	1	2	25	Formaldehyde	15	2017	1279.197636
1	1	4	25	Formaldehyde	1	2017	40472.34392
1	1	4	25	Formaldehyde	15	2017	1245.733116
1	1	5	25	Formaldehyde	1	2017	32312.08527
1	1	5	25	Formaldehyde	15	2017	973.1400278
1	1	2	41	Ethyl Benzene	1	2017	5901.204029
1	1	2	41	Ethyl Benzene	15	2017	80.54188768
1	1	4	41	Ethyl Benzene	1	2017	5739.543307
1	1	4	41	Ethyl Benzene	15	2017	78.94370542
1	1	5	41	Ethyl Benzene	1	2017	5163.201033
1	1	5	41	Ethyl Benzene	15	2017	70.92327625
1	1	2	185	Naphthalene gas	1	2017	4401.576
1	1	2	185	Naphthalene gas	15	2017	143.2167069
1	1	4	185	Naphthalene gas	1	2017	4288.994381
1	1	4	185	Naphthalene gas	15	2017	139.5148923
1	1	5	185	Naphthalene gas	1	2017	3401.411681
1	1	5	185	Naphthalene gas	15	2017	108.7258813
1	1	2	23	Naphthalene particle	1	2017	1.04400099
1	1	2	23	Naphthalene particle	15	2017	0.006615869
1	1	4	23	Naphthalene particle	1	2017	0.94155283
1	1	4	23	Naphthalene particle	15	2017	0.005953308
1	1	5	23	Naphthalene particle	1	2017	0.591965571
1	1	5	23	Naphthalene particle	15	2017	0.003732301

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	170	Acenaphthene gas	1	2017	133.7587558
1	1	2	170	Acenaphthene gas	15	2017	4.662347129
1	1	4	170	Acenaphthene gas	1	2017	130.2458388
1	1	4	170	Acenaphthene gas	15	2017	4.541155538
1	1	5	170	Acenaphthene gas	1	2017	102.0276439
1	1	5	170	Acenaphthene gas	15	2017	3.525998025
1	1	2	70	Acenaphthene particle	1	2017	0.00767053
1	1	2	70	Acenaphthene particle	15	2017	6.13642E-05
1	1	4	70	Acenaphthene particle	1	2017	0.00706334
1	1	4	70	Acenaphthene particle	15	2017	5.65067E-05
1	1	5	70	Acenaphthene particle	1	2017	0.00183385
1	1	5	70	Acenaphthene particle	15	2017	1.46708E-05
1	1	2	171	Acenaphthylene gas	1	2017	250.8106348
1	1	2	171	Acenaphthylene gas	15	2017	8.053780104
1	1	4	171	Acenaphthylene gas	1	2017	244.1716159
1	1	4	171	Acenaphthylene gas	15	2017	7.847221386
1	1	5	171	Acenaphthylene gas	1	2017	194.9069256
1	1	5	171	Acenaphthylene gas	15	2017	6.14612779
1	1	2	71	Acenaphthylene particle	1	2017	0.308173221
1	1	2	71	Acenaphthylene particle	15	2017	0.001948663
1	1	4	71	Acenaphthylene particle	1	2017	0.277883679
1	1	4	71	Acenaphthylene particle	15	2017	0.001753085
1	1	5	71	Acenaphthylene particle	1	2017	0.175574935
1	1	5	71	Acenaphthylene particle	15	2017	0.001105954
1	1	2	172	Anthracene gas	1	2017	105.8939608
1	1	2	172	Anthracene gas	15	2017	3.682810507
1	1	4	172	Anthracene gas	1	2017	103.1093674
1	1	4	172	Anthracene gas	15	2017	3.587128346
1	1	5	172	Anthracene gas	1	2017	80.82315491
1	1	5	172	Anthracene gas	15	2017	2.786169701
1	1	2	72	Anthracene particle	1	2017	18.40805644
1	1	2	72	Anthracene particle	15	2017	17.21558796
1	1	4	72	Anthracene particle	1	2017	19.40574543
1	1	4	72	Anthracene particle	15	2017	18.19442946
1	1	5	72	Anthracene particle	1	2017	20.17358888
1	1	5	72	Anthracene particle	15	2017	19.01727436
1	1	2	173	Benz(a)anthracene gas	1	2017	19.3980543
1	1	2	173	Benz(a)anthracene gas	15	2017	0.681281586
1	1	4	173	Benz(a)anthracene gas	1	2017	18.88708752
1	1	4	173	Benz(a)anthracene gas	15	2017	0.66356207
1	1	5	173	Benz(a)anthracene gas	1	2017	14.77414358
1	1	5	173	Benz(a)anthracene gas	15	2017	0.515024305
1	1	2	73	Benz(a)anthracene particle	1	2017	38.75856782
1	1	2	73	Benz(a)anthracene particle	15	2017	34.14239532
1	1	4	73	Benz(a)anthracene particle	1	2017	40.51576056
1	1	4	73	Benz(a)anthracene particle	15	2017	36.08602911
1	1	5	73	Benz(a)anthracene particle	1	2017	41.2863423
1	1	5	73	Benz(a)anthracene particle	15	2017	37.72150828
1	1	2	174	Benzo(a)pyrene gas	1	2017	0.06672459
1	1	2	174	Benzo(a)pyrene gas	15	2017	0.000547517
1	1	4	174	Benzo(a)pyrene gas	1	2017	0.064840062
1	1	4	174	Benzo(a)pyrene gas	15	2017	0.000540485
1	1	5	174	Benzo(a)pyrene gas	1	2017	0.060175035
1	1	5	174	Benzo(a)pyrene gas	15	2017	0.000556609
1	1	2	74	Benzo(a)pyrene particle	1	2017	20.82829434
1	1	2	74	Benzo(a)pyrene particle	15	2017	12.88547811

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	74	Benzo(a)pyrene particle	1	2017	20.87543995
1	1	4	74	Benzo(a)pyrene particle	15	2017	13.61254587
1	1	5	74	Benzo(a)pyrene particle	1	2017	19.09238165
1	1	5	74	Benzo(a)pyrene particle	15	2017	14.21423346
1	1	2	175	Benzo(b)fluoranthene gas	1	2017	0.909316167
1	1	2	175	Benzo(b)fluoranthene gas	15	2017	0.007461495
1	1	4	175	Benzo(b)fluoranthene gas	1	2017	0.883632493
1	1	4	175	Benzo(b)fluoranthene gas	15	2017	0.007365661
1	1	5	175	Benzo(b)fluoranthene gas	1	2017	0.820059362
1	1	5	175	Benzo(b)fluoranthene gas	15	2017	0.007585408
1	1	2	75	Benzo(b)fluoranthene particle	1	2017	7.599100173
1	1	2	75	Benzo(b)fluoranthene particle	15	2017	3.850458521
1	1	4	75	Benzo(b)fluoranthene particle	1	2017	7.476579033
1	1	4	75	Benzo(b)fluoranthene particle	15	2017	4.066303367
1	1	5	75	Benzo(b)fluoranthene particle	1	2017	6.483715393
1	1	5	75	Benzo(b)fluoranthene particle	15	2017	4.242707272
1	1	2	176	Benzo(g,h,i)perylene gas	1	2017	0.347642027
1	1	2	176	Benzo(g,h,i)perylene gas	15	2017	0.012771448
1	1	4	176	Benzo(g,h,i)perylene gas	1	2017	0.33857434
1	1	4	176	Benzo(g,h,i)perylene gas	15	2017	0.012436743
1	1	5	176	Benzo(g,h,i)perylene gas	1	2017	0.26172529
1	1	5	176	Benzo(g,h,i)perylene gas	15	2017	0.009604789
1	1	2	76	Benzo(g,h,i)perylene particle	1	2017	20.54316258
1	1	2	76	Benzo(g,h,i)perylene particle	15	2017	0.752083165
1	1	4	76	Benzo(g,h,i)perylene particle	1	2017	18.62622121
1	1	4	76	Benzo(g,h,i)perylene particle	15	2017	0.775155142
1	1	5	76	Benzo(g,h,i)perylene particle	1	2017	12.0557956
1	1	5	76	Benzo(g,h,i)perylene particle	15	2017	0.763490186
1	1	2	177	Benzo(k)fluoranthene gas	1	2017	0.909316167
1	1	2	177	Benzo(k)fluoranthene gas	15	2017	0.007461495
1	1	4	177	Benzo(k)fluoranthene gas	1	2017	0.883632493
1	1	4	177	Benzo(k)fluoranthene gas	15	2017	0.007365661
1	1	5	177	Benzo(k)fluoranthene gas	1	2017	0.820059362
1	1	5	177	Benzo(k)fluoranthene gas	15	2017	0.007585408
1	1	2	77	Benzo(k)fluoranthene particle	1	2017	4.130219214
1	1	2	77	Benzo(k)fluoranthene particle	15	2017	0.545997314
1	1	4	77	Benzo(k)fluoranthene particle	1	2017	3.80958722
1	1	4	77	Benzo(k)fluoranthene particle	15	2017	0.573439188
1	1	5	77	Benzo(k)fluoranthene particle	1	2017	2.647556584
1	1	5	77	Benzo(k)fluoranthene particle	15	2017	0.590855169
1	1	2	178	Chrysene gas	1	2017	8.45887654
1	1	2	178	Chrysene gas	15	2017	0.272858467
1	1	4	178	Chrysene gas	1	2017	8.234447153
1	1	4	178	Chrysene gas	15	2017	0.265858349
1	1	5	178	Chrysene gas	1	2017	6.568533069
1	1	5	178	Chrysene gas	15	2017	0.208185988
1	1	2	78	Chrysene particle	1	2017	25.13016539
1	1	2	78	Chrysene particle	15	2017	21.58456307
1	1	4	78	Chrysene particle	1	2017	26.17875351
1	1	4	78	Chrysene particle	15	2017	22.8124835
1	1	5	78	Chrysene particle	1	2017	26.45412562
1	1	5	78	Chrysene particle	15	2017	23.84454955
1	1	2	168	Dibenzo(a,h)anthracene gas	1	2017	0
1	1	2	168	Dibenzo(a,h)anthracene gas	15	2017	0
1	1	4	168	Dibenzo(a,h)anthracene gas	1	2017	0
1	1	4	168	Dibenzo(a,h)anthracene gas	15	2017	0

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	5	168	Dibenzo(a,h)anthracene gas	1	2017	0
1	1	5	168	Dibenzo(a,h)anthracene gas	15	2017	0
1	1	2	68	Dibenzo(a,h)anthracene particle	1	2017	0.720984052
1	1	2	68	Dibenzo(a,h)anthracene particle	15	2017	0.523986611
1	1	4	68	Dibenzo(a,h)anthracene particle	1	2017	0.735379107
1	1	4	68	Dibenzo(a,h)anthracene particle	15	2017	0.553601332
1	1	5	68	Dibenzo(a,h)anthracene particle	1	2017	0.704991401
1	1	5	68	Dibenzo(a,h)anthracene particle	15	2017	0.578223165
1	1	2	169	Fluoranthene gas	1	2017	161.3481617
1	1	2	169	Fluoranthene gas	15	2017	5.579209394
1	1	4	169	Fluoranthene gas	1	2017	157.103058
1	1	4	169	Fluoranthene gas	15	2017	5.434387164
1	1	5	169	Fluoranthene gas	1	2017	123.3166693
1	1	5	169	Fluoranthene gas	15	2017	4.2234524
1	1	2	69	Fluoranthene particle	1	2017	70.46439302
1	1	2	69	Fluoranthene particle	15	2017	66.0131563
1	1	4	69	Fluoranthene particle	1	2017	74.30429365
1	1	4	69	Fluoranthene particle	15	2017	69.77132843
1	1	5	69	Fluoranthene particle	1	2017	77.28770996
1	1	5	69	Fluoranthene particle	15	2017	72.93605879
1	1	2	181	Fluorene gas	1	2017	222.480015
1	1	2	181	Fluorene gas	15	2017	7.621070529
1	1	4	181	Fluorene gas	1	2017	216.6554191
1	1	4	181	Fluorene gas	15	2017	7.423362551
1	1	5	181	Fluorene gas	1	2017	170.3304946
1	1	5	181	Fluorene gas	15	2017	5.771293787
1	1	2	81	Fluorene particle	1	2017	31.11529414
1	1	2	81	Fluorene particle	15	2017	29.59317823
1	1	4	81	Fluorene particle	1	2017	32.88257775
1	1	4	81	Fluorene particle	15	2017	31.27559105
1	1	5	81	Fluorene particle	1	2017	34.37446269
1	1	5	81	Fluorene particle	15	2017	32.68982723
1	1	2	182	Indeno(1,2,3,c,d)pyrene gas	1	2017	0
1	1	2	182	Indeno(1,2,3,c,d)pyrene gas	15	2017	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	1	2017	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	15	2017	0
1	1	5	182	Indeno(1,2,3,c,d)pyrene gas	1	2017	0
1	1	5	182	Indeno(1,2,3,c,d)pyrene gas	15	2017	0
1	1	2	82	Indeno(1,2,3,c,d)pyrene particle	1	2017	8.493739808
1	1	2	82	Indeno(1,2,3,c,d)pyrene particle	15	2017	1.021756745
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	1	2017	7.81786753
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	15	2017	1.072533056
1	1	5	82	Indeno(1,2,3,c,d)pyrene particle	1	2017	5.387573734
1	1	5	82	Indeno(1,2,3,c,d)pyrene particle	15	2017	1.103643962
1	1	2	185	Naphthalene gas	1	2017	4401.576
1	1	2	185	Naphthalene gas	15	2017	143.2167069
1	1	4	185	Naphthalene gas	1	2017	4288.994381
1	1	4	185	Naphthalene gas	15	2017	139.5148923
1	1	5	185	Naphthalene gas	1	2017	3401.411681
1	1	5	185	Naphthalene gas	15	2017	108.7258813
1	1	2	23	Naphthalene particle	1	2017	1.04400099
1	1	2	23	Naphthalene particle	15	2017	0.006615869
1	1	4	23	Naphthalene particle	1	2017	0.94155283
1	1	4	23	Naphthalene particle	15	2017	0.005953308
1	1	5	23	Naphthalene particle	1	2017	0.591965571
1	1	5	23	Naphthalene particle	15	2017	0.003732301

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	183	Phenanthrene gas	1	2017	352.4387615
1	1	2	183	Phenanthrene gas	15	2017	11.31343641
1	1	4	183	Phenanthrene gas	1	2017	343.2965319
1	1	4	183	Phenanthrene gas	15	2017	11.02228938
1	1	5	183	Phenanthrene gas	1	2017	273.4450011
1	1	5	183	Phenanthrene gas	15	2017	8.614053155
1	1	2	83	Phenanthrene particle	1	2017	73.35220638
1	1	2	83	Phenanthrene particle	15	2017	68.53505033
1	1	4	83	Phenanthrene particle	1	2017	77.30366194
1	1	4	83	Phenanthrene particle	15	2017	72.40300186
1	1	5	83	Phenanthrene particle	1	2017	80.32433112
1	1	5	83	Phenanthrene particle	15	2017	75.62200017
1	1	2	184	Pyrene gas	1	2017	193.096534
1	1	2	184	Pyrene gas	15	2017	6.70234103
1	1	4	184	Pyrene gas	1	2017	188.0135156
1	1	4	184	Pyrene gas	15	2017	6.528286011
1	1	5	184	Pyrene gas	1	2017	147.4603916
1	1	5	184	Pyrene gas	15	2017	5.072085358
1	1	2	84	Pyrene particle	1	2017	101.3817097
1	1	2	84	Pyrene particle	15	2017	95.3690548
1	1	4	84	Pyrene particle	1	2017	106.9719457
1	1	4	84	Pyrene particle	15	2017	100.8010475
1	1	5	84	Pyrene particle	1	2017	111.4210832
1	1	5	84	Pyrene particle	15	2017	105.3781243

2017 No-Build East Baton Rouge Parish MOVES Input

2017 No Build EBR

Output Database Server Name: [using default]

Output Database Name: msat_nobuild_2017_ebr_o

Time Spans:

- Aggregate By: Hour
- Years:
  - 2017
- Months:
  - January
  - February
  - March
  - April
  - May
  - June
  - July
  - August
  - September
  - October
  - November
  - December
- Days:
  - Weekend
  - Weekdays
- Hours:
  - Begin Hour: 00:00 - 00:59
  - End Hour: 23:00 - 23:59

Geographic Bounds:

COUNTY geography

Selection: LOUISIANA - East Baton Rouge Parish

On Road Vehicle Equipment:

Compressed Natural Gas (CNG) - Transit Bus

Diesel Fuel - Combination Long-haul Truck

Diesel Fuel - Combination Short-haul Truck

Diesel Fuel - Intercity Bus

Diesel Fuel - Light Commercial Truck

Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car

Diesel Fuel - Passenger Truck

Diesel Fuel - Refuse Truck

Diesel Fuel - School Bus

Diesel Fuel - Single Unit Long-haul Truck

Diesel Fuel - Single Unit Short-haul Truck

Diesel Fuel - Transit Bus

Electricity - Light Commercial Truck

Electricity - Passenger Car

Electricity - Passenger Truck

Ethanol (E-85) - Light Commercial Truck

Ethanol (E-85) - Passenger Car

Ethanol (E-85) - Passenger Truck

Gasoline - Combination Short-haul Truck

Gasoline - Light Commercial Truck

Gasoline - Motor Home

Gasoline - Motorcycle

Gasoline - Passenger Car

Gasoline - Passenger Truck

Gasoline - Refuse Truck

Gasoline - School Bus

Gasoline - Single Unit Long-haul Truck

Gasoline - Single Unit Short-haul Truck

Gasoline - Transit Bus

Road Types:

Urban Restricted Access

Separate ramp rates: false

Pollutants And Processes:

Running Exhaust 1,3-Butadiene

Crankcase Running Exhaust 1,3-Butadiene

Running Exhaust Acenaphthene gas

Crankcase Running Exhaust Acenaphthene gas

Running Exhaust Acenaphthene particle

Crankcase Running Exhaust Acenaphthene particle

Running Exhaust Acenaphthylene gas

Crankcase Running Exhaust Acenaphthylene gas

Running Exhaust Acenaphthylene particle

Crankcase Running Exhaust Acenaphthylene particle

Running Exhaust Acetaldehyde

Crankcase Running Exhaust Acetaldehyde

Running Exhaust Acrolein

Crankcase Running Exhaust Acrolein

Crankcase Running Exhaust Aluminum

Crankcase Running Exhaust Ammonium (NH4)

Running Exhaust Anthracene gas

Crankcase Running Exhaust Anthracene gas

Running Exhaust Anthracene particle

Crankcase Running Exhaust Anthracene particle

Running Exhaust Benz(a)anthracene gas

Crankcase Running Exhaust Benz(a)anthracene gas

Running Exhaust Benz(a)anthracene particle

Crankcase Running Exhaust Benz(a)anthracene particle

Running Exhaust Benzene

Evap Permeation Benzene

Evap Fuel Leaks Benzene

Crankcase Running Exhaust Benzene

Running Exhaust Benzo(a)pyrene gas

Crankcase Running Exhaust Benzo(a)pyrene gas

Running Exhaust Benzo(a)pyrene particle

Crankcase Running Exhaust Benzo(a)pyrene particle

Running Exhaust Benzo(b)fluoranthene gas

Crankcase Running Exhaust Benzo(b)fluoranthene gas

Running Exhaust Benzo(b)fluoranthene particle

Crankcase Running Exhaust Benzo(b)fluoranthene particle

Running Exhaust Benzo(g,h,i)perylene gas

Crankcase Running Exhaust Benzo(g,h,i)perylene gas

Running Exhaust Benzo(g,h,i)perylene particle

Crankcase Running Exhaust Benzo(g,h,i)perylene particle

Running Exhaust Benzo(k)fluoranthene gas

Crankcase Running Exhaust Benzo(k)fluoranthene gas

Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust CMAQ5.0 Unspeciated (PMOTHR)

Crankcase Running Exhaust Calcium

Crankcase Running Exhaust Chloride

Running Exhaust Chrysene gas

Crankcase Running Exhaust Chrysene gas

Running Exhaust Chrysene particle

Crankcase Running Exhaust Chrysene particle

Running Exhaust Composite - NonECPM

Crankcase Running Exhaust Composite - NonECPM

Running Exhaust Dibenzo(a,h)anthracene gas

Crankcase Running Exhaust Dibenzo(a,h)anthracene gas

Running Exhaust Dibenzo(a,h)anthracene particle

Crankcase Running Exhaust Dibenzo(a,h)anthracene particle

Running Exhaust Elemental Carbon

Crankcase Running Exhaust Elemental Carbon

Running Exhaust Ethyl Benzene

Evap Permeation Ethyl Benzene

Evap Fuel Leaks Ethyl Benzene

Crankcase Running Exhaust Ethyl Benzene

Running Exhaust Fluoranthene gas

Crankcase Running Exhaust Fluoranthene gas

Running Exhaust Fluoranthene particle

Crankcase Running Exhaust Fluoranthene particle

Running Exhaust Fluorene gas

Crankcase Running Exhaust Fluorene gas

Running Exhaust Fluorene particle

Crankcase Running Exhaust Fluorene particle

Running Exhaust Formaldehyde

Crankcase Running Exhaust Formaldehyde

Running Exhaust H2O (aerosol)

Crankcase Running Exhaust H2O (aerosol)

Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Iron

Crankcase Running Exhaust Magnesium

Running Exhaust Naphthalene gas

Evap Permeation Naphthalene gas

Evap Fuel Leaks Naphthalene gas

Crankcase Running Exhaust Naphthalene gas

Running Exhaust Naphthalene particle

Crankcase Running Exhaust Naphthalene particle

Crankcase Running Exhaust Nitrate (NO3)

Running Exhaust Non-Methane Hydrocarbons

Evap Permeation Non-Methane Hydrocarbons

Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-carbon Organic Matter (NCOM)

Running Exhaust Organic Carbon

Crankcase Running Exhaust Organic Carbon

Running Exhaust Phenanthrene gas

Crankcase Running Exhaust Phenanthrene gas

Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Potassium

Running Exhaust Primary Exhaust PM10 - Total

Crankcase Running Exhaust Primary Exhaust PM10 - Total

Running Exhaust Primary Exhaust PM2.5 - Total

Crankcase Running Exhaust Primary Exhaust PM2.5 - Total

Running Exhaust Pyrene gas

Crankcase Running Exhaust Pyrene gas

Running Exhaust Pyrene particle

Crankcase Running Exhaust Pyrene particle

Crankcase Running Exhaust Silicon

Crankcase Running Exhaust Sodium

Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Titanium

Running Exhaust Total Gaseous Hydrocarbons

Evap Permeation Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons

Crankcase Running Exhaust Total Gaseous Hydrocarbons

Running Exhaust Volatile Organic Compounds

Evap Permeation Volatile Organic Compounds

Evap Fuel Leaks Volatile Organic Compounds

Crankcase Running Exhaust Volatile Organic Compounds

Rate of Progress:

Rate of Progress calculations are disabled

Manage Input Data Sets:

2017 No-Build East Baton Rouge Emissions Factors

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	26	Acetaldehyde	1	2017	16684.2
1	1	4	26	Acetaldehyde	15	2017	552.843
1	1	4	27	Acrolein	1	2017	2982.11
1	1	4	27	Acrolein	15	2017	101.965
1	1	4	20	Benzene	1	2017	13941.7
1	1	4	20	Benzene	15	2017	205.822
1	1	4	24	1,3-Butadiene	1	2017	2241.03
1	1	4	24	1,3-Butadiene	15	2017	54.23
1	1	4	100	Primary Exhaust PM10 - Total	1	2017	268107
1	1	4	100	Primary Exhaust PM10 - Total	15	2017	57342.7
1	1	4	25	Formaldehyde	1	2017	40934.9
1	1	4	25	Formaldehyde	15	2017	1260.86
1	1	4	41	Ethyl Benzene	1	2017	5796.09
1	1	4	41	Ethyl Benzene	15	2017	79.5018
1	1	4	23	Naphthalene particle	1	2017	0.970393
1	1	4	23	Naphthalene particle	15	2017	0.00613231
1	1	4	185	Naphthalene gas	1	2017	4339.59
1	1	4	185	Naphthalene gas	15	2017	141.217

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	23	Naphthalene particle	1	2017	0.970393
1	1	4	23	Naphthalene particle	15	2017	0.00613231
1	1	4	68	Dibenzo(a,h)anthracene particle	1	2017	0.728203
1	1	4	68	Dibenzo(a,h)anthracene particle	15	2017	0.542316
1	1	4	69	Fluoranthene particle	1	2017	72.8313
1	1	4	69	Fluoranthene particle	15	2017	68.3408
1	1	4	70	Acenaphthene particle	1	2017	0.00734715
1	1	4	70	Acenaphthene particle	15	2017	5.87772E-05
1	1	4	71	Acenaphthylene particle	1	2017	0.286373
1	1	4	71	Acenaphthylene particle	15	2017	0.00180561
1	1	4	72	Anthracene particle	1	2017	19.0227
1	1	4	72	Anthracene particle	15	2017	17.8218
1	1	4	73	Benz(a)anthracene particle	1	2017	39.8179
1	1	4	73	Benz(a)anthracene particle	15	2017	35.3461
1	1	4	74	Benzo(a)pyrene particle	1	2017	20.785
1	1	4	74	Benzo(a)pyrene particle	15	2017	13.3353
1	1	4	75	Benzo(b)fluoranthene particle	1	2017	7.48789
1	1	4	75	Benzo(b)fluoranthene particle	15	2017	3.9839
1	1	4	76	Benzo(g,h,i)perylene particle	1	2017	19.1598
1	1	4	76	Benzo(g,h,i)perylene particle	15	2017	0.76496
1	1	4	77	Benzo(k)fluoranthene particle	1	2017	3.89631
1	1	4	77	Benzo(k)fluoranthene particle	15	2017	0.562737
1	1	4	78	Chrysene particle	1	2017	25.7552
1	1	4	78	Chrysene particle	15	2017	22.345
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	1	2017	8.00144
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	15	2017	1.05268
1	1	4	83	Phenanthrene particle	1	2017	75.7865
1	1	4	83	Phenanthrene particle	15	2017	70.9296
1	1	4	84	Pyrene particle	1	2017	104.832
1	1	4	84	Pyrene particle	15	2017	98.7335
1	1	4	168	Dibenzo(a,h)anthracene gas	1	2017	0
1	1	4	168	Dibenzo(a,h)anthracene gas	15	2017	0
1	1	4	169	Fluoranthene gas	1	2017	159.025
1	1	4	169	Fluoranthene gas	15	2017	5.50118
1	1	4	170	Acenaphthene gas	1	2017	131.843
1	1	4	170	Acenaphthene gas	15	2017	4.59711
1	1	4	171	Acenaphthylene gas	1	2017	247.095
1	1	4	171	Acenaphthylene gas	15	2017	7.94162
1	1	4	172	Anthracene gas	1	2017	104.373
1	1	4	172	Anthracene gas	15	2017	3.63129
1	1	4	173	Benz(a)anthracene gas	1	2017	19.1196
1	1	4	173	Benz(a)anthracene gas	15	2017	0.671748
1	1	4	174	Benzo(a)pyrene gas	1	2017	0.0654542
1	1	4	174	Benzo(a)pyrene gas	15	2017	0.000541197
1	1	4	175	Benzo(b)fluoranthene gas	1	2017	0.892003
1	1	4	175	Benzo(b)fluoranthene gas	15	2017	0.00737537
1	1	4	176	Benzo(g,h,i)perylene gas	1	2017	0.342788
1	1	4	176	Benzo(g,h,i)perylene gas	15	2017	0.0125923
1	1	4	177	Benzo(k)fluoranthene gas	1	2017	0.892003
1	1	4	177	Benzo(k)fluoranthene gas	15	2017	0.00737537
1	1	4	178	Chrysene gas	1	2017	8.33331
1	1	4	178	Chrysene gas	15	2017	0.269058
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	1	2017	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	15	2017	0
1	1	4	183	Phenanthrene gas	1	2017	347.36
1	1	4	183	Phenanthrene gas	15	2017	11.1557

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	184	Pyrene gas	1	2017	190.318
1	1	4	184	Pyrene gas	15	2017	6.60859
1	1	4	185	Naphthalene gas	1	2017	4339.59
1	1	4	185	Naphthalene gas	15	2017	141.217

2017 Build West Baton Rouge Parish MOVES Input

2017 Build WBR

Output Database Server Name: [using default]

Output Database Name: msat_build_2017_wbr_o

Time Spans:

- Aggregate By: Hour
- Years:
  - 2017
- Months:
  - January
  - February
  - March
  - April
  - May
  - June
  - July
  - August
  - September
  - October
  - November
  - December
- Days:
  - Weekend
  - Weekdays
- Hours:
  - Begin Hour: 00:00 - 00:59
  - End Hour: 23:00 - 23:59

Geographic Bounds:

COUNTY geography

Selection: LOUISIANA - West Baton Rouge Parish

On Road Vehicle Equipment:

Compressed Natural Gas (CNG) - Transit Bus

Diesel Fuel - Combination Long-haul Truck

Diesel Fuel - Combination Short-haul Truck

Diesel Fuel - Intercity Bus

Diesel Fuel - Light Commercial Truck

Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car

Diesel Fuel - Passenger Truck

Diesel Fuel - Refuse Truck

Diesel Fuel - School Bus

Diesel Fuel - Single Unit Long-haul Truck

Diesel Fuel - Single Unit Short-haul Truck

Diesel Fuel - Transit Bus

Electricity - Light Commercial Truck

Electricity - Passenger Car

Electricity - Passenger Truck

Ethanol (E-85) - Light Commercial Truck

Ethanol (E-85) - Passenger Car

Ethanol (E-85) - Passenger Truck

Gasoline - Combination Short-haul Truck

Gasoline - Light Commercial Truck

Gasoline - Motor Home

Gasoline - Motorcycle

Gasoline - Passenger Car

Gasoline - Passenger Truck

Gasoline - Refuse Truck

Gasoline - School Bus

Gasoline - Single Unit Long-haul Truck

Gasoline - Single Unit Short-haul Truck

Gasoline - Transit Bus

Road Types:

Rural Restricted Access

Urban Restricted Access

Urban Unrestricted Access

Separate ramp rates: false

Pollutants And Processes:

Running Exhaust 1,3-Butadiene

Crankcase Running Exhaust 1,3-Butadiene

Running Exhaust Acenaphthene gas

Crankcase Running Exhaust Acenaphthene gas

Running Exhaust Acenaphthene particle

Crankcase Running Exhaust Acenaphthene particle

Running Exhaust Acenaphthylene gas

Crankcase Running Exhaust Acenaphthylene gas

Running Exhaust Acenaphthylene particle

Crankcase Running Exhaust Acenaphthylene particle

Running Exhaust Acetaldehyde

Crankcase Running Exhaust Acetaldehyde

Running Exhaust Acrolein

Crankcase Running Exhaust Acrolein

Crankcase Running Exhaust Aluminum

Crankcase Running Exhaust Ammonium (NH4)

Running Exhaust Anthracene gas

Crankcase Running Exhaust Anthracene gas

Running Exhaust Anthracene particle

Crankcase Running Exhaust Anthracene particle

Running Exhaust Benz(a)anthracene gas

Crankcase Running Exhaust Benz(a)anthracene gas

Running Exhaust Benz(a)anthracene particle

Crankcase Running Exhaust Benz(a)anthracene particle

Running Exhaust Benzene

Evap Permeation Benzene

Evap Fuel Leaks Benzene

Crankcase Running Exhaust Benzene

Running Exhaust Benzo(a)pyrene gas

Crankcase Running Exhaust Benzo(a)pyrene gas

Running Exhaust Benzo(a)pyrene particle

Crankcase Running Exhaust Benzo(a)pyrene particle

Running Exhaust Benzo(b)fluoranthene gas

Crankcase Running Exhaust Benzo(b)fluoranthene gas

Running Exhaust Benzo(b)fluoranthene particle

Crankcase Running Exhaust Benzo(b)fluoranthene particle

Running Exhaust Benzo(g,h,i)perylene gas

Crankcase Running Exhaust Benzo(g,h,i)perylene gas

Running Exhaust Benzo(g,h,i)perylene particle

Crankcase Running Exhaust Benzo(g,h,i)perylene particle

Running Exhaust Benzo(k)fluoranthene gas

Crankcase Running Exhaust Benzo(k)fluoranthene gas

Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust CMAQ5.0 Unspeciated (PMOTHR)

Crankcase Running Exhaust Calcium

Crankcase Running Exhaust Chloride

Running Exhaust Chrysene gas

Crankcase Running Exhaust Chrysene gas

Running Exhaust Chrysene particle

Crankcase Running Exhaust Chrysene particle

Running Exhaust Composite - NonECPM

Crankcase Running Exhaust Composite - NonECPM

Running Exhaust Dibenzo(a,h)anthracene gas

Crankcase Running Exhaust Dibenzo(a,h)anthracene gas

Running Exhaust Dibenzo(a,h)anthracene particle

Crankcase Running Exhaust Dibenzo(a,h)anthracene particle

Running Exhaust Elemental Carbon

Crankcase Running Exhaust Elemental Carbon

Running Exhaust Ethyl Benzene

Evap Permeation Ethyl Benzene

Evap Fuel Leaks Ethyl Benzene

Crankcase Running Exhaust Ethyl Benzene

Running Exhaust Fluoranthene gas

Crankcase Running Exhaust Fluoranthene gas

Running Exhaust Fluoranthene particle

Crankcase Running Exhaust Fluoranthene particle

Running Exhaust Fluorene gas

Crankcase Running Exhaust Fluorene gas

Running Exhaust Fluorene particle

Crankcase Running Exhaust Fluorene particle

Running Exhaust Formaldehyde

Crankcase Running Exhaust Formaldehyde

Running Exhaust H2O (aerosol)

Crankcase Running Exhaust H2O (aerosol)

Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Iron

Crankcase Running Exhaust Magnesium

Running Exhaust Naphthalene gas

Evap Permeation Naphthalene gas

Evap Fuel Leaks Naphthalene gas

Crankcase Running Exhaust Naphthalene gas

Running Exhaust Naphthalene particle

Crankcase Running Exhaust Naphthalene particle

Crankcase Running Exhaust Nitrate (NO3)

Running Exhaust Non-Methane Hydrocarbons

Evap Permeation Non-Methane Hydrocarbons

Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-carbon Organic Matter (NCOM)

Running Exhaust Organic Carbon

Crankcase Running Exhaust Organic Carbon

Running Exhaust Phenanthrene gas

Crankcase Running Exhaust Phenanthrene gas

Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Potassium

Running Exhaust Primary Exhaust PM10 - Total

Crankcase Running Exhaust Primary Exhaust PM10 - Total

Running Exhaust Primary Exhaust PM2.5 - Total

Crankcase Running Exhaust Primary Exhaust PM2.5 - Total

Running Exhaust Pyrene gas

Crankcase Running Exhaust Pyrene gas

Running Exhaust Pyrene particle

Crankcase Running Exhaust Pyrene particle

Crankcase Running Exhaust Silicon

Crankcase Running Exhaust Sodium

Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Titanium

Running Exhaust Total Gaseous Hydrocarbons

Evap Permeation Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons

Crankcase Running Exhaust Total Gaseous Hydrocarbons

Running Exhaust Volatile Organic Compounds

Evap Permeation Volatile Organic Compounds

Evap Fuel Leaks Volatile Organic Compounds

Crankcase Running Exhaust Volatile Organic Compounds

Rate of Progress:

Rate of Progress calculations are disabled

Manage Input Data Sets:

2017 Build West Baton Rouge Emissions Factors

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	26	Acetaldehyde	1	2017	16916.3
1	1	2	26	Acetaldehyde	15	2017	560.66
1	1	4	26	Acetaldehyde	1	2017	16580.2
1	1	4	26	Acetaldehyde	15	2017	549.15
1	1	5	26	Acetaldehyde	1	2017	12960.12
1	1	5	26	Acetaldehyde	15	2017	421.34
1	1	2	27	Acrolein	1	2017	3024.19
1	1	2	27	Acrolein	15	2017	103.42
1	1	4	27	Acrolein	1	2017	2692.6
1	1	4	27	Acrolein	15	2017	101.27
1	1	5	27	Acrolein	1	2017	2287.3
1	1	5	27	Acrolein	15	2017	77.33
1	1	2	20	Benzene	1	2017	14193.6
1	1	2	20	Benzene	15	2017	208.52
1	1	4	20	Benzene	1	2017	13866.6
1	1	4	20	Benzene	15	2017	205.15
1	1	5	20	Benzene	1	2017	12182.4
1	1	5	20	Benzene	15	2017	178.68
1	1	2	24	1,3-Butadiene	1	2017	2277.5
1	1	2	24	1,3-Butadiene	15	2017	54.995446
1	1	4	24	1,3-Butadiene	1	2017	2230.0511
1	1	4	24	1,3-Butadiene	15	2017	53.928877
1	1	5	24	1,3-Butadiene	1	2017	1863.0866
1	1	5	24	1,3-Butadiene	15	2017	43.306695
1	1	2	100	Primary Exhaust PM10 - Total	1	2017	274242.15
1	1	2	100	Primary Exhaust PM10 - Total	15	2017	55535.3753
1	1	4	100	Primary Exhaust PM10 - Total	1	2017	267865.12
1	1	4	100	Primary Exhaust PM10 - Total	15	2017	57703.3432
1	1	5	100	Primary Exhaust PM10 - Total	1	2017	224775.66
1	1	5	100	Primary Exhaust PM10 - Total	15	2017	60147.6795
1	1	2	25	Formaldehyde	1	2017	41539.127
1	1	2	25	Formaldehyde	15	2017	1279.19742
1	1	4	25	Formaldehyde	1	2017	40693.677
1	1	4	25	Formaldehyde	15	2017	1252.62482
1	1	5	25	Formaldehyde	1	2017	31967.281
1	1	5	25	Formaldehyde	15	2017	963.16794
1	1	2	41	Ethyl Benzene	1	2017	5901.204
1	1	2	41	Ethyl Benzene	15	2017	80.54188
1	1	4	41	Ethyl Benzene	1	2017	5774.612
1	1	4	41	Ethyl Benzene	15	2017	79.28106
1	1	5	41	Ethyl Benzene	1	2017	5112.6328
1	1	5	41	Ethyl Benzene	15	2017	70.32166
1	1	2	185	Naphthalene gas	1	2017	4401.5767
1	1	2	185	Naphthalene gas	15	2017	143.216738
1	1	4	185	Naphthalene gas	1	2017	4312.1432
1	1	4	185	Naphthalene gas	15	2017	140.273169
1	1	5	185	Naphthalene gas	1	2017	3368.0813
1	1	5	185	Naphthalene gas	15	2017	107.657748
1	1	2	23	Naphthalene particle	1	2017	1.04400099
1	1	2	23	Naphthalene particle	15	2017	0.006615869
1	1	4	23	Naphthalene particle	1	2017	0.96352213
1	1	4	23	Naphthalene particle	15	2017	0.006095156
1	1	5	23	Naphthalene particle	1	2017	0.582994858
1	1	5	23	Naphthalene particle	15	2017	0.003683678

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	170	Acenaphthene gas	1	2017	133.758832
1	1	2	170	Acenaphthene gas	15	2017	4.6623465
1	1	4	170	Acenaphthene gas	1	2017	130.968301
1	1	4	170	Acenaphthene gas	15	2017	4.56596664
1	1	5	170	Acenaphthene gas	1	2017	101.017274
1	1	5	170	Acenaphthene gas	15	2017	3.49121656
1	1	2	70	Acenaphthene particle	1	2017	0.00767053
1	1	2	70	Acenaphthene particle	15	2017	6.13642E-05
1	1	4	70	Acenaphthene particle	1	2017	0.00718162
1	1	4	70	Acenaphthene particle	15	2017	0.000057453
1	1	5	70	Acenaphthene particle	1	2017	0.00179558
1	1	5	70	Acenaphthene particle	15	2017	1.43646E-05
1	1	2	171	Acenaphthylene gas	1	2017	250.81049
1	1	2	171	Acenaphthylene gas	15	2017	8.053791
1	1	4	171	Acenaphthylene gas	1	2017	245.54748
1	1	4	171	Acenaphthylene gas	15	2017	7.8895714
1	1	5	171	Acenaphthylene gas	1	2017	192.97949
1	1	5	171	Acenaphthylene gas	15	2017	6.0860659
1	1	2	71	Acenaphthylene particle	1	2017	0.308173221
1	1	2	71	Acenaphthylene particle	15	2017	0.001948663
1	1	4	71	Acenaphthylene particle	1	2017	0.284382803
1	1	4	71	Acenaphthylene particle	15	2017	0.001794986
1	1	5	71	Acenaphthylene particle	1	2017	0.172917812
1	1	5	71	Acenaphthylene particle	15	2017	0.001091586
1	1	2	172	Anthracene gas	1	2017	105.893972
1	1	2	172	Anthracene gas	15	2017	3.68281014
1	1	4	172	Anthracene gas	1	2017	103.682326
1	1	4	172	Anthracene gas	15	2017	3.60672019
1	1	5	172	Anthracene gas	1	2017	80.02262
1	1	5	172	Anthracene gas	15	2017	2.75869612
1	1	2	72	Anthracene particle	1	2017	18.4080884
1	1	2	72	Anthracene particle	15	2017	17.21558364
1	1	4	72	Anthracene particle	1	2017	19.1453098
1	1	4	72	Anthracene particle	15	2017	17.94017566
1	1	5	72	Anthracene particle	1	2017	20.0120013
1	1	5	72	Anthracene particle	15	2017	18.86557069
1	1	2	173	Benz(a)anthracene gas	1	2017	19.3980451
1	1	2	173	Benz(a)anthracene gas	15	2017	0.681281395
1	1	4	173	Benz(a)anthracene gas	1	2017	18.9921746
1	1	4	173	Benz(a)anthracene gas	15	2017	0.667189635
1	1	5	173	Benz(a)anthracene gas	1	2017	14.6276609
1	1	5	173	Benz(a)anthracene gas	15	2017	0.509941759
1	1	2	73	Benz(a)anthracene particle	1	2017	38.758555
1	1	2	73	Benz(a)anthracene particle	15	2017	34.14239302
1	1	4	73	Benz(a)anthracene particle	1	2017	40.046614
1	1	4	73	Benz(a)anthracene particle	15	2017	35.58115219
1	1	5	73	Benz(a)anthracene particle	1	2017	40.946931
1	1	5	73	Benz(a)anthracene particle	15	2017	37.42098453
1	1	2	174	Benzo(a)pyrene gas	1	2017	0.06672459
1	1	2	174	Benzo(a)pyrene gas	15	2017	0.000547517
1	1	4	174	Benzo(a)pyrene gas	1	2017	0.06525484
1	1	4	174	Benzo(a)pyrene gas	15	2017	0.000542069
1	1	5	174	Benzo(a)pyrene gas	1	2017	0.059585973
1	1	5	174	Benzo(a)pyrene gas	15	2017	0.000552581
1	1	2	74	Benzo(a)pyrene particle	1	2017	20.828308
1	1	2	74	Benzo(a)pyrene particle	15	2017	12.88548113
1	1	4	74	Benzo(a)pyrene particle	1	2017	20.830692

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	74	Benzo(a)pyrene particle	15	2017	13.42347449
1	1	5	74	Benzo(a)pyrene particle	1	2017	18.910789
1	1	5	74	Benzo(a)pyrene particle	15	2017	14.10085893
1	1	2	175	Benzo(b)fluoranthene gas	1	2017	0.909316167
1	1	2	175	Benzo(b)fluoranthene gas	15	2017	0.007461495
1	1	4	175	Benzo(b)fluoranthene gas	1	2017	0.889284954
1	1	4	175	Benzo(b)fluoranthene gas	15	2017	0.007387263
1	1	5	175	Benzo(b)fluoranthene gas	1	2017	0.812031232
1	1	5	175	Benzo(b)fluoranthene gas	15	2017	0.007530516
1	1	2	75	Benzo(b)fluoranthene particle	1	2017	7.5991
1	1	2	75	Benzo(b)fluoranthene particle	15	2017	3.85045853
1	1	4	75	Benzo(b)fluoranthene particle	1	2017	7.492543
1	1	4	75	Benzo(b)fluoranthene particle	15	2017	4.01013999
1	1	5	75	Benzo(b)fluoranthene particle	1	2017	6.417596
1	1	5	75	Benzo(b)fluoranthene particle	15	2017	4.20883731
1	1	2	176	Benzo(g,h,i)perylene gas	1	2017	0.347642027
1	1	2	176	Benzo(g,h,i)perylene gas	15	2017	0.012771448
1	1	4	176	Benzo(g,h,i)perylene gas	1	2017	0.34042826
1	1	4	176	Benzo(g,h,i)perylene gas	15	2017	0.012505229
1	1	5	176	Benzo(g,h,i)perylene gas	1	2017	0.259132396
1	1	5	176	Benzo(g,h,i)perylene gas	15	2017	0.009509497
1	1	2	76	Benzo(g,h,i)perylene particle	1	2017	20.5431543
1	1	2	76	Benzo(g,h,i)perylene particle	15	2017	0.7520836
1	1	4	76	Benzo(g,h,i)perylene particle	1	2017	19.0358573
1	1	4	76	Benzo(g,h,i)perylene particle	15	2017	0.7685886
1	1	5	76	Benzo(g,h,i)perylene particle	1	2017	11.8785801
1	1	5	76	Benzo(g,h,i)perylene particle	15	2017	0.7570482
1	1	2	177	Benzo(k)fluoranthene gas	1	2017	0.909316167
1	1	2	177	Benzo(k)fluoranthene gas	15	2017	0.007461495
1	1	4	177	Benzo(k)fluoranthene gas	1	2017	0.889284954
1	1	4	177	Benzo(k)fluoranthene gas	15	2017	0.007387263
1	1	5	177	Benzo(k)fluoranthene gas	1	2017	0.812031232
1	1	5	177	Benzo(k)fluoranthene gas	15	2017	0.007530516
1	1	2	77	Benzo(k)fluoranthene particle	1	2017	4.1302187
1	1	2	77	Benzo(k)fluoranthene particle	15	2017	0.54599722
1	1	4	77	Benzo(k)fluoranthene particle	1	2017	3.8769778
1	1	4	77	Benzo(k)fluoranthene particle	15	2017	0.56620802
1	1	5	77	Benzo(k)fluoranthene particle	1	2017	2.6118542
1	1	5	77	Benzo(k)fluoranthene particle	15	2017	0.58607366
1	1	2	178	Chrysene gas	1	2017	8.4588758
1	1	2	178	Chrysene gas	15	2017	0.272858532
1	1	4	178	Chrysene gas	1	2017	8.280955
1	1	4	178	Chrysene gas	15	2017	0.267293197
1	1	5	178	Chrysene gas	1	2017	6.5035131
1	1	5	178	Chrysene gas	15	2017	0.20615113
1	1	2	78	Chrysene particle	1	2017	25.130161
1	1	2	78	Chrysene particle	15	2017	21.58455264
1	1	4	78	Chrysene particle	1	2017	25.895549
1	1	4	78	Chrysene particle	15	2017	22.49347928
1	1	5	78	Chrysene particle	1	2017	26.234145
1	1	5	78	Chrysene particle	15	2017	23.65455426
1	1	2	168	Dibenzo(a,h)anthracene gas	1	2017	0
1	1	2	168	Dibenzo(a,h)anthracene gas	15	2017	0
1	1	4	168	Dibenzo(a,h)anthracene gas	1	2017	0
1	1	4	168	Dibenzo(a,h)anthracene gas	15	2017	0
1	1	5	168	Dibenzo(a,h)anthracene gas	1	2017	0
1	1	5	168	Dibenzo(a,h)anthracene gas	15	2017	0

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	68	Dibenzo(a,h)anthracene particle	1	2017	0.7209838
1	1	2	68	Dibenzo(a,h)anthracene particle	15	2017	0.523986731
1	1	4	68	Dibenzo(a,h)anthracene particle	1	2017	0.7308832
1	1	4	68	Dibenzo(a,h)anthracene particle	15	2017	0.5459045
1	1	5	68	Dibenzo(a,h)anthracene particle	1	2017	0.6986866
1	1	5	68	Dibenzo(a,h)anthracene particle	15	2017	0.573606901
1	1	2	169	Fluoranthene gas	1	2017	161.348175
1	1	2	169	Fluoranthene gas	15	2017	5.57920909
1	1	4	169	Fluoranthene gas	1	2017	157.976792
1	1	4	169	Fluoranthene gas	15	2017	5.46403972
1	1	5	169	Fluoranthene gas	1	2017	122.09538
1	1	5	169	Fluoranthene gas	15	2017	4.18183344
1	1	2	69	Fluoranthene particle	1	2017	70.464304
1	1	2	69	Fluoranthene particle	15	2017	66.01307805
1	1	4	69	Fluoranthene particle	1	2017	73.302413
1	1	4	69	Fluoranthene particle	15	2017	68.7951826
1	1	5	69	Fluoranthene particle	1	2017	76.6697812
1	1	5	69	Fluoranthene particle	15	2017	72.35467592
1	1	2	181	Fluorene gas	1	2017	222.479899
1	1	2	181	Fluorene gas	15	2017	7.6210707
1	1	4	181	Fluorene gas	1	2017	217.85402
1	1	4	181	Fluorene gas	15	2017	7.4638472
1	1	5	181	Fluorene gas	1	2017	168.646545
1	1	5	181	Fluorene gas	15	2017	5.7144428
1	1	2	81	Fluorene particle	1	2017	31.11529114
1	1	2	81	Fluorene particle	15	2017	29.59318108
1	1	4	81	Fluorene particle	1	2017	32.42372547
1	1	4	81	Fluorene particle	15	2017	30.83860696
1	1	5	81	Fluorene particle	1	2017	34.10124614
1	1	5	81	Fluorene particle	15	2017	32.42905037
1	1	2	182	Indeno(1,2,3,c,d)pyrene gas	1	2017	0
1	1	2	182	Indeno(1,2,3,c,d)pyrene gas	15	2017	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	1	2017	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	15	2017	0
1	1	5	182	Indeno(1,2,3,c,d)pyrene gas	1	2017	0
1	1	5	182	Indeno(1,2,3,c,d)pyrene gas	15	2017	0
1	1	2	82	Indeno(1,2,3,c,d)pyrene particle	1	2017	8.493736
1	1	2	82	Indeno(1,2,3,c,d)pyrene particle	15	2017	1.02175513
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	1	2017	7.96026
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	15	2017	1.05912903
1	1	5	82	Indeno(1,2,3,c,d)pyrene particle	1	2017	5.3141883
1	1	5	82	Indeno(1,2,3,c,d)pyrene particle	15	2017	1.09471458
1	1	2	185	Naphthalene gas	1	2017	4401.5767
1	1	2	185	Naphthalene gas	15	2017	143.216738
1	1	4	185	Naphthalene gas	1	2017	4312.1432
1	1	4	185	Naphthalene gas	15	2017	140.273169
1	1	5	185	Naphthalene gas	1	2017	3368.0813
1	1	5	185	Naphthalene gas	15	2017	107.657748
1	1	2	23	Naphthalene particle	1	2017	1.04400099
1	1	2	23	Naphthalene particle	15	2017	0.006615869
1	1	4	23	Naphthalene particle	1	2017	0.96352213
1	1	4	23	Naphthalene particle	15	2017	0.006095156
1	1	5	23	Naphthalene particle	1	2017	0.582994858
1	1	5	23	Naphthalene particle	15	2017	0.003683678
1	1	2	183	Phenanthrene gas	1	2017	352.4388
1	1	2	183	Phenanthrene gas	15	2017	11.3134399
1	1	4	183	Phenanthrene gas	1	2017	345.18374

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	183	Phenanthrene gas	15	2017	11.0819399
1	1	5	183	Phenanthrene gas	1	2017	270.75603
1	1	5	183	Phenanthrene gas	15	2017	8.5296753
1	1	2	83	Phenanthrene particle	1	2017	73.352223
1	1	2	83	Phenanthrene particle	15	2017	68.53498289
1	1	4	83	Phenanthrene particle	1	2017	76.272583
1	1	4	83	Phenanthrene particle	15	2017	71.39815412
1	1	5	83	Phenanthrene particle	1	2017	79.6777302
1	1	5	83	Phenanthrene particle	15	2017	75.01650464
1	1	2	184	Pyrene gas	1	2017	193.096686
1	1	2	184	Pyrene gas	15	2017	6.7023421
1	1	4	184	Pyrene gas	1	2017	189.059681
1	1	4	184	Pyrene gas	15	2017	6.5639238
1	1	5	184	Pyrene gas	1	2017	145.999444
1	1	5	184	Pyrene gas	15	2017	5.02208484
1	1	2	84	Pyrene particle	1	2017	101.381835
1	1	2	84	Pyrene particle	15	2017	95.3690484
1	1	4	84	Pyrene particle	1	2017	105.51526
1	1	4	84	Pyrene particle	15	2017	99.39018544
1	1	5	84	Pyrene particle	1	2017	110.5320775
1	1	5	84	Pyrene particle	15	2017	104.538611

2017 Build East Baton Rouge Parish MOVES Input

2017 Build EBR

Output Database Server Name: [using default]

Output Database Name: msat_build_2017_ebr_o

Time Spans:

- Aggregate By: Hour
- Years:
  - 2017
- Months:
  - January
  - February
  - March
  - April
  - May
  - June
  - July
  - August
  - September
  - October
  - November
  - December
- Days:
  - Weekend
  - Weekdays
- Hours:
  - Begin Hour: 00:00 - 00:59
  - End Hour: 23:00 - 23:59

Geographic Bounds:

COUNTY geography

Selection: LOUISIANA - East Baton Rouge Parish

On Road Vehicle Equipment:

Compressed Natural Gas (CNG) - Transit Bus

Diesel Fuel - Combination Long-haul Truck

Diesel Fuel - Combination Short-haul Truck

Diesel Fuel - Intercity Bus

Diesel Fuel - Light Commercial Truck

Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car

Diesel Fuel - Passenger Truck

Diesel Fuel - Refuse Truck

Diesel Fuel - School Bus

Diesel Fuel - Single Unit Long-haul Truck

Diesel Fuel - Single Unit Short-haul Truck

Diesel Fuel - Transit Bus

Electricity - Light Commercial Truck

Electricity - Passenger Car

Electricity - Passenger Truck

Ethanol (E-85) - Light Commercial Truck

Ethanol (E-85) - Passenger Car

Ethanol (E-85) - Passenger Truck

Gasoline - Combination Short-haul Truck

Gasoline - Light Commercial Truck

Gasoline - Motor Home

Gasoline - Motorcycle

Gasoline - Passenger Car

Gasoline - Passenger Truck

Gasoline - Refuse Truck

Gasoline - School Bus

Gasoline - Single Unit Long-haul Truck

Gasoline - Single Unit Short-haul Truck

Gasoline - Transit Bus

Road Types:

Urban Restricted Access

Separate ramp rates: false

Pollutants And Processes:

Running Exhaust 1,3-Butadiene

Crankcase Running Exhaust 1,3-Butadiene

Running Exhaust Acenaphthene gas

Crankcase Running Exhaust Acenaphthene gas

Running Exhaust Acenaphthene particle

Crankcase Running Exhaust Acenaphthene particle

Running Exhaust Acenaphthylene gas

Crankcase Running Exhaust Acenaphthylene gas

Running Exhaust Acenaphthylene particle

Crankcase Running Exhaust Acenaphthylene particle

Running Exhaust Acetaldehyde

Crankcase Running Exhaust Acetaldehyde

Running Exhaust Acrolein

Crankcase Running Exhaust Acrolein

Crankcase Running Exhaust Aluminum

Crankcase Running Exhaust Ammonium (NH4)

Running Exhaust Anthracene gas

Crankcase Running Exhaust Anthracene gas

Running Exhaust Anthracene particle

Crankcase Running Exhaust Anthracene particle

Running Exhaust Benz(a)anthracene gas

Crankcase Running Exhaust Benz(a)anthracene gas

Running Exhaust Benz(a)anthracene particle

Crankcase Running Exhaust Benz(a)anthracene particle

Running Exhaust Benzene

Evap Permeation Benzene

Evap Fuel Leaks Benzene

Crankcase Running Exhaust Benzene

Running Exhaust Benzo(a)pyrene gas

Crankcase Running Exhaust Benzo(a)pyrene gas

Running Exhaust Benzo(a)pyrene particle

Crankcase Running Exhaust Benzo(a)pyrene particle

Running Exhaust Benzo(b)fluoranthene gas

Crankcase Running Exhaust Benzo(b)fluoranthene gas

Running Exhaust Benzo(b)fluoranthene particle

Crankcase Running Exhaust Benzo(b)fluoranthene particle

Running Exhaust Benzo(g,h,i)perylene gas

Crankcase Running Exhaust Benzo(g,h,i)perylene gas

Running Exhaust Benzo(g,h,i)perylene particle

Crankcase Running Exhaust Benzo(g,h,i)perylene particle

Running Exhaust Benzo(k)fluoranthene gas

Crankcase Running Exhaust Benzo(k)fluoranthene gas

Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust CMAQ5.0 Unspeciated (PMOTHR)

Crankcase Running Exhaust Calcium

Crankcase Running Exhaust Chloride

Running Exhaust Chrysene gas

Crankcase Running Exhaust Chrysene gas

Running Exhaust Chrysene particle

Crankcase Running Exhaust Chrysene particle

Running Exhaust Composite - NonECPM

Crankcase Running Exhaust Composite - NonECPM

Running Exhaust Dibenzo(a,h)anthracene gas

Crankcase Running Exhaust Dibenzo(a,h)anthracene gas

Running Exhaust Dibenzo(a,h)anthracene particle

Crankcase Running Exhaust Dibenzo(a,h)anthracene particle

Running Exhaust Elemental Carbon

Crankcase Running Exhaust Elemental Carbon

Running Exhaust Ethyl Benzene

Evap Permeation Ethyl Benzene

Evap Fuel Leaks Ethyl Benzene

Crankcase Running Exhaust Ethyl Benzene

Running Exhaust Fluoranthene gas

Crankcase Running Exhaust Fluoranthene gas

Running Exhaust Fluoranthene particle

Crankcase Running Exhaust Fluoranthene particle

Running Exhaust Fluorene gas

Crankcase Running Exhaust Fluorene gas

Running Exhaust Fluorene particle

Crankcase Running Exhaust Fluorene particle

Running Exhaust Formaldehyde

Crankcase Running Exhaust Formaldehyde

Running Exhaust H2O (aerosol)

Crankcase Running Exhaust H2O (aerosol)

Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Iron

Crankcase Running Exhaust Magnesium

Running Exhaust Naphthalene gas

Evap Permeation Naphthalene gas

Evap Fuel Leaks Naphthalene gas

Crankcase Running Exhaust Naphthalene gas

Running Exhaust Naphthalene particle

Crankcase Running Exhaust Naphthalene particle

Crankcase Running Exhaust Nitrate (NO3)

Running Exhaust Non-Methane Hydrocarbons

Evap Permeation Non-Methane Hydrocarbons

Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-carbon Organic Matter (NCOM)

Running Exhaust Organic Carbon

Crankcase Running Exhaust Organic Carbon

Running Exhaust Phenanthrene gas

Crankcase Running Exhaust Phenanthrene gas

Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Potassium

Running Exhaust Primary Exhaust PM10 - Total

Crankcase Running Exhaust Primary Exhaust PM10 - Total

Running Exhaust Primary Exhaust PM2.5 - Total

Crankcase Running Exhaust Primary Exhaust PM2.5 - Total

Running Exhaust Pyrene gas

Crankcase Running Exhaust Pyrene gas

Running Exhaust Pyrene particle

Crankcase Running Exhaust Pyrene particle

Crankcase Running Exhaust Silicon

Crankcase Running Exhaust Sodium

Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Titanium

Running Exhaust Total Gaseous Hydrocarbons

Evap Permeation Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons

Crankcase Running Exhaust Total Gaseous Hydrocarbons

Running Exhaust Volatile Organic Compounds

Evap Permeation Volatile Organic Compounds

Evap Fuel Leaks Volatile Organic Compounds

Crankcase Running Exhaust Volatile Organic Compounds

Rate of Progress:

Rate of Progress calculations are disabled

Manage Input Data Sets:

2017 Build East Baton Rouge Emissions Factors

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	26	Acetaldehyde	1	2017	16760.7
1	1	4	26	Acetaldehyde	15	2017	555.497
1	1	4	27	Acrolein	1	2017	2996.26
1	1	4	27	Acrolein	15	2017	102.462
1	1	4	20	Benzene	1	2017	14003.2
1	1	4	20	Benzene	15	2017	206.462
1	1	4	24	1,3-Butadiene	1	2017	2250.93
1	1	4	24	1,3-Butadiene	15	2017	54.4621
1	1	4	100	Primary Exhaust PM10 - Total	1	2017	269249
1	1	4	100	Primary Exhaust PM10 - Total	15	2017	56778.3
1	1	4	25	Formaldehyde	1	2017	41122.5
1	1	4	25	Formaldehyde	15	2017	1266.92
1	1	4	41	Ethyl Benzene	1	2017	5821.07
1	1	4	41	Ethyl Benzene	15	2017	79.7305
1	1	4	23	Naphthalene particle	1	2017	0.987386
1	1	4	23	Naphthalene particle	15	2017	0.00623899
1	1	4	185	Naphthalene gas	1	2017	4359.93
1	1	4	185	Naphthalene gas	15	2017	141.895

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	23	Naphthalene particle	1	2017	0.987386
1	1	4	23	Naphthalene particle	15	2017	0.00623899
1	1	4	68	Dibenzo(a,h)anthracene particle	1	2017	0.725021
1	1	4	68	Dibenzo(a,h)anthracene particle	15	2017	0.536649
1	1	4	69	Fluoranthene particle	1	2017	72.0943
1	1	4	69	Fluoranthene particle	15	2017	67.6222
1	1	4	70	Acenaphthene particle	1	2017	0.00745942
1	1	4	70	Acenaphthene particle	15	2017	5.96753E-05
1	1	4	71	Acenaphthylene particle	1	2017	0.291393
1	1	4	71	Acenaphthylene particle	15	2017	0.00183706
1	1	4	72	Anthracene particle	1	2017	18.8311
1	1	4	72	Anthracene particle	15	2017	17.6346
1	1	4	73	Benz(a)anthracene particle	1	2017	39.4747
1	1	4	73	Benz(a)anthracene particle	15	2017	34.9745
1	1	4	74	Benzo(a)pyrene particle	1	2017	20.7576
1	1	4	74	Benzo(a)pyrene particle	15	2017	13.1962
1	1	4	75	Benzo(b)fluoranthene particle	1	2017	7.50236
1	1	4	75	Benzo(b)fluoranthene particle	15	2017	3.94256
1	1	4	76	Benzo(g,h,i)perylene particle	1	2017	19.4765
1	1	4	76	Benzo(g,h,i)perylene particle	15	2017	0.760166
1	1	4	77	Benzo(k)fluoranthene particle	1	2017	3.94865
1	1	4	77	Benzo(k)fluoranthene particle	15	2017	0.55742
1	1	4	78	Chrysene particle	1	2017	25.5485
1	1	4	78	Chrysene particle	15	2017	22.1102
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	1	2017	8.11197
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	15	2017	1.04282
1	1	4	83	Phenanthrene particle	1	2017	75.0273
1	1	4	83	Phenanthrene particle	15	2017	70.1895
1	1	4	84	Pyrene particle	1	2017	103.76
1	1	4	84	Pyrene particle	15	2017	97.695
1	1	4	168	Dibenzo(a,h)anthracene gas	1	2017	0
1	1	4	168	Dibenzo(a,h)anthracene gas	15	2017	0
1	1	4	169	Fluoranthene gas	1	2017	159.798
1	1	4	169	Fluoranthene gas	15	2017	5.5278
1	1	4	170	Acenaphthene gas	1	2017	132.483
1	1	4	170	Acenaphthene gas	15	2017	4.61941
1	1	4	171	Acenaphthylene gas	1	2017	248.281
1	1	4	171	Acenaphthylene gas	15	2017	7.97926
1	1	4	172	Anthracene gas	1	2017	104.881
1	1	4	172	Anthracene gas	15	2017	3.64889
1	1	4	173	Benz(a)anthracene gas	1	2017	19.2129
1	1	4	173	Benz(a)anthracene gas	15	2017	0.675008
1	1	4	174	Benzo(a)pyrene gas	1	2017	0.0657347
1	1	4	174	Benzo(a)pyrene gas	15	2017	0.000541567
1	1	4	175	Benzo(b)fluoranthene gas	1	2017	0.895826
1	1	4	175	Benzo(b)fluoranthene gas	15	2017	0.00738042
1	1	4	176	Benzo(g,h,i)perylene gas	1	2017	0.344465
1	1	4	176	Benzo(g,h,i)perylene gas	15	2017	0.0126542
1	1	4	177	Benzo(k)fluoranthene gas	1	2017	0.895826
1	1	4	177	Benzo(k)fluoranthene gas	15	2017	0.00738042
1	1	4	178	Chrysene gas	1	2017	8.37342
1	1	4	178	Chrysene gas	15	2017	0.270334
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	1	2017	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	15	2017	0
1	1	4	183	Phenanthrene gas	1	2017	349.001
1	1	4	183	Phenanthrene gas	15	2017	11.2089

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	184	Pyrene gas	1	2017	191.243
1	1	4	184	Pyrene gas	15	2017	6.64059
1	1	4	185	Naphthalene gas	1	2017	4359.93
1	1	4	185	Naphthalene gas	15	2017	141.895

2040 No-Build West Baton Rouge Parish MOVES Input

2040 No Build WBR

Output Database Server Name: [using default]

Output Database Name: msat_nobuild_2040_wbr_o

Time Spans:

- Aggregate By: Hour
- Years:
  - 2040
- Months:
  - January
  - February
  - March
  - April
  - May
  - June
  - July
  - August
  - September
  - October
  - November
  - December
- Days:
  - Weekend
  - Weekdays
- Hours:
  - Begin Hour: 00:00 - 00:59
  - End Hour: 23:00 - 23:59

Geographic Bounds:

COUNTY geography

Selection: LOUISIANA - West Baton Rouge Parish

On Road Vehicle Equipment:

Compressed Natural Gas (CNG) - Transit Bus

Diesel Fuel - Combination Long-haul Truck

Diesel Fuel - Combination Short-haul Truck

Diesel Fuel - Intercity Bus

Diesel Fuel - Light Commercial Truck

Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car

Diesel Fuel - Passenger Truck

Diesel Fuel - Refuse Truck

Diesel Fuel - School Bus

Diesel Fuel - Single Unit Long-haul Truck

Diesel Fuel - Single Unit Short-haul Truck

Diesel Fuel - Transit Bus

Electricity - Light Commercial Truck

Electricity - Passenger Car

Electricity - Passenger Truck

Ethanol (E-85) - Light Commercial Truck

Ethanol (E-85) - Passenger Car

Ethanol (E-85) - Passenger Truck

Gasoline - Combination Short-haul Truck

Gasoline - Light Commercial Truck

Gasoline - Motor Home

Gasoline - Motorcycle

Gasoline - Passenger Car

Gasoline - Passenger Truck

Gasoline - Refuse Truck

Gasoline - School Bus

Gasoline - Single Unit Long-haul Truck

Gasoline - Single Unit Short-haul Truck

Gasoline - Transit Bus

Road Types:

Rural Restricted Access

Urban Restricted Access

Urban Unrestricted Access

Separate ramp rates: false

Pollutants And Processes:

Running Exhaust 1,3-Butadiene

Crankcase Running Exhaust 1,3-Butadiene

Running Exhaust Acenaphthene gas

Crankcase Running Exhaust Acenaphthene gas

Running Exhaust Acenaphthene particle

Crankcase Running Exhaust Acenaphthene particle

Running Exhaust Acenaphthylene gas

Crankcase Running Exhaust Acenaphthylene gas

Running Exhaust Acenaphthylene particle

Crankcase Running Exhaust Acenaphthylene particle

Running Exhaust Acetaldehyde

Crankcase Running Exhaust Acetaldehyde

Running Exhaust Acrolein

Crankcase Running Exhaust Acrolein

Crankcase Running Exhaust Aluminum

Crankcase Running Exhaust Ammonium (NH4)

Running Exhaust Anthracene gas

Crankcase Running Exhaust Anthracene gas

Running Exhaust Anthracene particle

Crankcase Running Exhaust Anthracene particle

Running Exhaust Benz(a)anthracene gas

Crankcase Running Exhaust Benz(a)anthracene gas

Running Exhaust Benz(a)anthracene particle

Crankcase Running Exhaust Benz(a)anthracene particle

Running Exhaust Benzene

Evap Permeation Benzene

Evap Fuel Leaks Benzene

Crankcase Running Exhaust Benzene

Running Exhaust Benzo(a)pyrene gas

Crankcase Running Exhaust Benzo(a)pyrene gas

Running Exhaust Benzo(a)pyrene particle

Crankcase Running Exhaust Benzo(a)pyrene particle

Running Exhaust Benzo(b)fluoranthene gas

Crankcase Running Exhaust Benzo(b)fluoranthene gas

Running Exhaust Benzo(b)fluoranthene particle

Crankcase Running Exhaust Benzo(b)fluoranthene particle

Running Exhaust Benzo(g,h,i)perylene gas

Crankcase Running Exhaust Benzo(g,h,i)perylene gas

Running Exhaust Benzo(g,h,i)perylene particle

Crankcase Running Exhaust Benzo(g,h,i)perylene particle

Running Exhaust Benzo(k)fluoranthene gas

Crankcase Running Exhaust Benzo(k)fluoranthene gas

Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust CMAQ5.0 Unspeciated (PMOTHR)

Crankcase Running Exhaust Calcium

Crankcase Running Exhaust Chloride

Running Exhaust Chrysene gas

Crankcase Running Exhaust Chrysene gas

Running Exhaust Chrysene particle

Crankcase Running Exhaust Chrysene particle

Running Exhaust Composite - NonECPM

Crankcase Running Exhaust Composite - NonECPM

Running Exhaust Dibenzo(a,h)anthracene gas

Crankcase Running Exhaust Dibenzo(a,h)anthracene gas

Running Exhaust Dibenzo(a,h)anthracene particle

Crankcase Running Exhaust Dibenzo(a,h)anthracene particle

Running Exhaust Elemental Carbon

Crankcase Running Exhaust Elemental Carbon

Running Exhaust Ethyl Benzene

Evap Permeation Ethyl Benzene

Evap Fuel Leaks Ethyl Benzene

Crankcase Running Exhaust Ethyl Benzene

Running Exhaust Fluoranthene gas

Crankcase Running Exhaust Fluoranthene gas

Running Exhaust Fluoranthene particle

Crankcase Running Exhaust Fluoranthene particle

Running Exhaust Fluorene gas

Crankcase Running Exhaust Fluorene gas

Running Exhaust Fluorene particle

Crankcase Running Exhaust Fluorene particle

Running Exhaust Formaldehyde

Crankcase Running Exhaust Formaldehyde

Running Exhaust H2O (aerosol)

Crankcase Running Exhaust H2O (aerosol)

Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Iron

Crankcase Running Exhaust Magnesium

Running Exhaust Naphthalene gas

Evap Permeation Naphthalene gas

Evap Fuel Leaks Naphthalene gas

Crankcase Running Exhaust Naphthalene gas

Running Exhaust Naphthalene particle

Crankcase Running Exhaust Naphthalene particle

Crankcase Running Exhaust Nitrate (NO3)

Running Exhaust Non-Methane Hydrocarbons

Evap Permeation Non-Methane Hydrocarbons

Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-carbon Organic Matter (NCOM)

Running Exhaust Organic Carbon

Crankcase Running Exhaust Organic Carbon

Running Exhaust Phenanthrene gas

Crankcase Running Exhaust Phenanthrene gas

Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Potassium

Running Exhaust Primary Exhaust PM10 - Total

Crankcase Running Exhaust Primary Exhaust PM10 - Total

Running Exhaust Primary Exhaust PM2.5 - Total

Crankcase Running Exhaust Primary Exhaust PM2.5 - Total

Running Exhaust Pyrene gas

Crankcase Running Exhaust Pyrene gas

Running Exhaust Pyrene particle

Crankcase Running Exhaust Pyrene particle

Crankcase Running Exhaust Silicon

Crankcase Running Exhaust Sodium

Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Titanium

Running Exhaust Total Gaseous Hydrocarbons

Evap Permeation Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons

Crankcase Running Exhaust Total Gaseous Hydrocarbons

Running Exhaust Volatile Organic Compounds

Evap Permeation Volatile Organic Compounds

Evap Fuel Leaks Volatile Organic Compounds

Crankcase Running Exhaust Volatile Organic Compounds

Rate of Progress:

Rate of Progress calculations are disabled

Manage Input Data Sets:

2040 No-Build West Baton Rouge Emissions Factors

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	26	Acetaldehyde	1	2040	2016.03
1	1	2	26	Acetaldehyde	15	2040	1.97789
1	1	4	26	Acetaldehyde	1	2040	1917.2
1	1	4	26	Acetaldehyde	15	2040	2.19771
1	1	5	26	Acetaldehyde	1	2040	1657.99
1	1	5	26	Acetaldehyde	15	2040	3.2219
1	1	2	27	Acrolein	1	2040	274.509
1	1	2	27	Acrolein	15	2040	0.0841776
1	1	4	27	Acrolein	1	2040	258.075
1	1	4	27	Acrolein	15	2040	0.0854526
1	1	5	27	Acrolein	1	2040	210.788
1	1	5	27	Acrolein	15	2040	0.098553
1	1	2	20	Benzene	1	2040	2931.92
1	1	2	20	Benzene	15	2040	5.41823
1	1	4	20	Benzene	1	2040	2667.8
1	1	4	20	Benzene	15	2040	5.52525
1	1	5	20	Benzene	1	2040	2073.26
1	1	5	20	Benzene	15	2040	6.43614
1	1	2	24	1,3-Butadiene	1	2040	18.7617
1	1	2	24	1,3-Butadiene	15	2040	0.000171543
1	1	4	24	1,3-Butadiene	1	2040	17.7491
1	1	4	24	1,3-Butadiene	15	2040	0.000147488
1	1	5	24	1,3-Butadiene	1	2040	14.6303
1	1	5	24	1,3-Butadiene	15	2040	0.000106497
1	1	2	100	Primary Exhaust PM10 - Total	1	2040	11769.7
1	1	2	100	Primary Exhaust PM10 - Total	15	2040	4512.03
1	1	4	100	Primary Exhaust PM10 - Total	1	2040	10573.8
1	1	4	100	Primary Exhaust PM10 - Total	15	2040	4239.02
1	1	5	100	Primary Exhaust PM10 - Total	1	2040	7480.81
1	1	5	100	Primary Exhaust PM10 - Total	15	2040	3372.3
1	1	2	25	Formaldehyde	1	2040	5923.05
1	1	2	25	Formaldehyde	15	2040	3.10613
1	1	4	25	Formaldehyde	1	2040	5600.38
1	1	4	25	Formaldehyde	15	2040	3.37534
1	1	5	25	Formaldehyde	1	2040	4690.13
1	1	5	25	Formaldehyde	15	2040	4.69881
1	1	2	41	Ethyl Benzene	1	2040	1027.21
1	1	2	41	Ethyl Benzene	15	2040	1.8166
1	1	4	41	Ethyl Benzene	1	2040	936.448
1	1	4	41	Ethyl Benzene	15	2040	1.85304
1	1	5	41	Ethyl Benzene	1	2040	730.16
1	1	5	41	Ethyl Benzene	15	2040	2.16062
1	1	2	185	Naphthalene gas	1	2040	490.931
1	1	2	185	Naphthalene gas	15	2040	0.225159
1	1	4	185	Naphthalene gas	1	2040	460.067
1	1	4	185	Naphthalene gas	15	2040	0.228939
1	1	5	185	Naphthalene gas	1	2040	373.993
1	1	5	185	Naphthalene gas	15	2040	0.264933
1	1	2	23	Naphthalene particle	1	2040	0.287287
1	1	2	23	Naphthalene particle	15	2040	0.00123923
1	1	4	23	Naphthalene particle	1	2040	0.238239
1	1	4	23	Naphthalene particle	15	2040	0.00102746
1	1	5	23	Naphthalene particle	1	2040	0.128826
1	1	5	23	Naphthalene particle	15	2040	0.000536068

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	170	Acenaphthene gas	1	2040	3.31665
1	1	2	170	Acenaphthene gas	15	2040	0.00429509
1	1	4	170	Acenaphthene gas	1	2040	3.05362
1	1	4	170	Acenaphthene gas	15	2040	0.00437746
1	1	5	170	Acenaphthene gas	1	2040	2.41688
1	1	5	170	Acenaphthene gas	15	2040	0.00509195
1	1	2	70	Acenaphthene particle	1	2040	0.000363138
1	1	2	70	Acenaphthene particle	15	2040	2.90511E-06
1	1	4	70	Acenaphthene particle	1	2040	0.000307317
1	1	4	70	Acenaphthene particle	15	2040	2.45854E-06
1	1	5	70	Acenaphthene particle	1	2040	0.000123201
1	1	5	70	Acenaphthene particle	15	2040	9.85611E-07
1	1	2	171	Acenaphthylene gas	1	2040	11.4539
1	1	2	171	Acenaphthylene gas	15	2040	0.0194474
1	1	4	171	Acenaphthylene gas	1	2040	10.4541
1	1	4	171	Acenaphthylene gas	15	2040	0.0198237
1	1	5	171	Acenaphthylene gas	1	2040	8.16161
1	1	5	171	Acenaphthylene gas	15	2040	0.023065
1	1	2	71	Acenaphthylene particle	1	2040	0.0853835
1	1	2	71	Acenaphthylene particle	15	2040	0.000367861
1	1	4	71	Acenaphthylene particle	1	2040	0.0708039
1	1	4	71	Acenaphthylene particle	15	2040	0.000304981
1	1	5	71	Acenaphthylene particle	1	2040	0.0383009
1	1	5	71	Acenaphthylene particle	15	2040	0.00015922
1	1	2	172	Anthracene gas	1	2040	2.46064
1	1	2	172	Anthracene gas	15	2040	0.00360166
1	1	4	172	Anthracene gas	1	2040	2.25736
1	1	4	172	Anthracene gas	15	2040	0.00367135
1	1	5	172	Anthracene gas	1	2040	1.77675
1	1	5	172	Anthracene gas	15	2040	0.00427229
1	1	2	72	Anthracene particle	1	2040	0.228351
1	1	2	72	Anthracene particle	15	2040	0.0855213
1	1	4	72	Anthracene particle	1	2040	0.204763
1	1	4	72	Anthracene particle	15	2040	0.0803444
1	1	5	72	Anthracene particle	1	2040	0.144261
1	1	5	72	Anthracene particle	15	2040	0.0639137
1	1	2	173	Benz(a)anthracene gas	1	2040	0.289235
1	1	2	173	Benz(a)anthracene gas	15	2040	0.000580406
1	1	4	173	Benz(a)anthracene gas	1	2040	0.262242
1	1	4	173	Benz(a)anthracene gas	15	2040	0.00059177
1	1	5	173	Benz(a)anthracene gas	1	2040	0.202592
1	1	5	173	Benz(a)anthracene gas	15	2040	0.000688914
1	1	2	73	Benz(a)anthracene particle	1	2040	0.816888
1	1	2	73	Benz(a)anthracene particle	15	2040	0.00607065
1	1	4	73	Benz(a)anthracene particle	1	2040	0.677869
1	1	4	73	Benz(a)anthracene particle	15	2040	0.00531786
1	1	5	73	Benz(a)anthracene particle	1	2040	0.367678
1	1	5	73	Benz(a)anthracene particle	15	2040	0.00343893
1	1	2	174	Benzo(a)pyrene gas	1	2040	0.0153459
1	1	2	174	Benzo(a)pyrene gas	15	2040	3.14817E-05
1	1	4	174	Benzo(a)pyrene gas	1	2040	0.013897
1	1	4	174	Benzo(a)pyrene gas	15	2040	3.20865E-05
1	1	5	174	Benzo(a)pyrene gas	1	2040	0.0107107
1	1	5	174	Benzo(a)pyrene gas	15	2040	3.73106E-05
1	1	2	74	Benzo(a)pyrene particle	1	2040	2.05337
1	1	2	74	Benzo(a)pyrene particle	15	2040	0.0193908

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	74	Benzo(a)pyrene particle	1	2040	1.70467
1	1	4	74	Benzo(a)pyrene particle	15	2040	0.0172539
1	1	5	74	Benzo(a)pyrene particle	1	2040	0.926307
1	1	5	74	Benzo(a)pyrene particle	15	2040	0.0117478
1	1	2	175	Benzo(b)fluoranthene gas	1	2040	0.209132
1	1	2	175	Benzo(b)fluoranthene gas	15	2040	0.00042903
1	1	4	175	Benzo(b)fluoranthene gas	1	2040	0.189387
1	1	4	175	Benzo(b)fluoranthene gas	15	2040	0.000437271
1	1	5	175	Benzo(b)fluoranthene gas	1	2040	0.145964
1	1	5	175	Benzo(b)fluoranthene gas	15	2040	0.000508465
1	1	2	75	Benzo(b)fluoranthene particle	1	2040	0.999238
1	1	2	75	Benzo(b)fluoranthene particle	15	2040	0.00877209
1	1	4	75	Benzo(b)fluoranthene particle	1	2040	0.829428
1	1	4	75	Benzo(b)fluoranthene particle	15	2040	0.00777155
1	1	5	75	Benzo(b)fluoranthene particle	1	2040	0.450444
1	1	5	75	Benzo(b)fluoranthene particle	15	2040	0.0052181
1	1	2	176	Benzo(g,h,i)perylene gas	1	2040	0.00469044
1	1	2	176	Benzo(g,h,i)perylene gas	15	2040	4.28858E-08
1	1	4	176	Benzo(g,h,i)perylene gas	1	2040	0.00443726
1	1	4	176	Benzo(g,h,i)perylene gas	15	2040	3.68719E-08
1	1	5	176	Benzo(g,h,i)perylene gas	1	2040	0.00365757
1	1	5	176	Benzo(g,h,i)perylene gas	15	2040	2.66244E-08
1	1	2	76	Benzo(g,h,i)perylene particle	1	2040	5.51009
1	1	2	76	Benzo(g,h,i)perylene particle	15	2040	0.0243781
1	1	4	76	Benzo(g,h,i)perylene particle	1	2040	4.56934
1	1	4	76	Benzo(g,h,i)perylene particle	15	2040	0.0202824
1	1	5	76	Benzo(g,h,i)perylene particle	1	2040	2.472
1	1	5	76	Benzo(g,h,i)perylene particle	15	2040	0.0107545
1	1	2	177	Benzo(k)fluoranthene gas	1	2040	0.209132
1	1	2	177	Benzo(k)fluoranthene gas	15	2040	0.00042903
1	1	4	177	Benzo(k)fluoranthene gas	1	2040	0.189387
1	1	4	177	Benzo(k)fluoranthene gas	15	2040	0.000437271
1	1	5	177	Benzo(k)fluoranthene gas	1	2040	0.145964
1	1	5	177	Benzo(k)fluoranthene gas	15	2040	0.000508465
1	1	2	77	Benzo(k)fluoranthene particle	1	2040	0.999238
1	1	2	77	Benzo(k)fluoranthene particle	15	2040	0.00877209
1	1	4	77	Benzo(k)fluoranthene particle	1	2040	0.829428
1	1	4	77	Benzo(k)fluoranthene particle	15	2040	0.00777155
1	1	5	77	Benzo(k)fluoranthene particle	1	2040	0.450444
1	1	5	77	Benzo(k)fluoranthene particle	15	2040	0.0052181
1	1	2	178	Chrysene gas	1	2040	0.327477
1	1	2	178	Chrysene gas	15	2040	0.000649922
1	1	4	178	Chrysene gas	1	2040	0.297078
1	1	4	178	Chrysene gas	15	2040	0.000662716
1	1	5	178	Chrysene gas	1	2040	0.229732
1	1	5	178	Chrysene gas	15	2040	0.000771766
1	1	2	78	Chrysene particle	1	2040	0.700321
1	1	2	78	Chrysene particle	15	2040	0.010998
1	1	4	78	Chrysene particle	1	2040	0.582199
1	1	4	78	Chrysene particle	15	2040	0.0100093
1	1	5	78	Chrysene particle	1	2040	0.318055
1	1	5	78	Chrysene particle	15	2040	0.00729879
1	1	2	168	Dibenzo(a,h)anthracene gas	1	2040	0
1	1	2	168	Dibenzo(a,h)anthracene gas	15	2040	0
1	1	4	168	Dibenzo(a,h)anthracene gas	1	2040	0
1	1	4	168	Dibenzo(a,h)anthracene gas	15	2040	0

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	5	168	Dibenzo(a,h)anthracene gas	1	2040	0
1	1	5	168	Dibenzo(a,h)anthracene gas	15	2040	0
1	1	2	68	Dibenzo(a,h)anthracene particle	1	2040	0.0527636
1	1	2	68	Dibenzo(a,h)anthracene particle	15	2040	0.00341908
1	1	4	68	Dibenzo(a,h)anthracene particle	1	2040	0.0443355
1	1	4	68	Dibenzo(a,h)anthracene particle	15	2040	0.00319112
1	1	5	68	Dibenzo(a,h)anthracene particle	1	2040	0.0252478
1	1	5	68	Dibenzo(a,h)anthracene particle	15	2040	0.00249541
1	1	2	169	Fluoranthene gas	1	2040	3.99409
1	1	2	169	Fluoranthene gas	15	2040	0.00602125
1	1	4	169	Fluoranthene gas	1	2040	3.66069
1	1	4	169	Fluoranthene gas	15	2040	0.00613795
1	1	5	169	Fluoranthene gas	1	2040	2.87706
1	1	5	169	Fluoranthene gas	15	2040	0.00714305
1	1	2	69	Fluoranthene particle	1	2040	0.570481
1	1	2	69	Fluoranthene particle	15	2040	0.157817
1	1	4	69	Fluoranthene particle	1	2040	0.501386
1	1	4	69	Fluoranthene particle	15	2040	0.148192
1	1	5	69	Fluoranthene particle	1	2040	0.332719
1	1	5	69	Fluoranthene particle	15	2040	0.117738
1	1	2	181	Fluorene gas	1	2040	8.82347
1	1	2	181	Fluorene gas	15	2040	0.00872414
1	1	4	181	Fluorene gas	1	2040	8.17712
1	1	4	181	Fluorene gas	15	2040	0.00888901
1	1	5	181	Fluorene gas	1	2040	6.53768
1	1	5	181	Fluorene gas	15	2040	0.0103349
1	1	2	81	Fluorene particle	1	2040	0.284484
1	1	2	81	Fluorene particle	15	2040	0.172855
1	1	4	81	Fluorene particle	1	2040	0.26719
1	1	4	81	Fluorene particle	15	2040	0.162476
1	1	5	81	Fluorene particle	1	2040	0.21247
1	1	5	81	Fluorene particle	15	2040	0.129423
1	1	2	182	Indeno(1,2,3,c,d)pyrene gas	1	2040	0
1	1	2	182	Indeno(1,2,3,c,d)pyrene gas	15	2040	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	1	2040	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	15	2040	0
1	1	5	182	Indeno(1,2,3,c,d)pyrene gas	1	2040	0
1	1	5	182	Indeno(1,2,3,c,d)pyrene gas	15	2040	0
1	1	2	82	Indeno(1,2,3,c,d)pyrene particle	1	2040	2.07241
1	1	2	82	Indeno(1,2,3,c,d)pyrene particle	15	2040	0.0105245
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	1	2040	1.71883
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	15	2040	0.00890378
1	1	5	82	Indeno(1,2,3,c,d)pyrene particle	1	2040	0.930423
1	1	5	82	Indeno(1,2,3,c,d)pyrene particle	15	2040	0.00506308
1	1	2	185	Naphthalene gas	1	2040	490.931
1	1	2	185	Naphthalene gas	15	2040	0.225159
1	1	4	185	Naphthalene gas	1	2040	460.067
1	1	4	185	Naphthalene gas	15	2040	0.228939
1	1	5	185	Naphthalene gas	1	2040	373.993
1	1	5	185	Naphthalene gas	15	2040	0.264933
1	1	2	23	Naphthalene particle	1	2040	0.287287
1	1	2	23	Naphthalene particle	15	2040	0.00123923
1	1	4	23	Naphthalene particle	1	2040	0.238239
1	1	4	23	Naphthalene particle	15	2040	0.00102746
1	1	5	23	Naphthalene particle	1	2040	0.128826
1	1	5	23	Naphthalene particle	15	2040	0.000536068

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	183	Phenanthrene gas	1	2040	31.1485
1	1	2	183	Phenanthrene gas	15	2040	0.0232248
1	1	4	183	Phenanthrene gas	1	2040	29.0159
1	1	4	183	Phenanthrene gas	15	2040	0.023653
1	1	5	183	Phenanthrene gas	1	2040	23.3801
1	1	5	183	Phenanthrene gas	15	2040	0.0274757
1	1	2	83	Phenanthrene particle	1	2040	2.57049
1	1	2	83	Phenanthrene particle	15	2040	1.37803
1	1	4	83	Phenanthrene particle	1	2040	2.38065
1	1	4	83	Phenanthrene particle	15	2040	1.29515
1	1	5	83	Phenanthrene particle	1	2040	1.82943
1	1	5	83	Phenanthrene particle	15	2040	1.03138
1	1	2	184	Pyrene gas	1	2040	4.23127
1	1	2	184	Pyrene gas	15	2040	0.00689659
1	1	4	184	Pyrene gas	1	2040	3.86841
1	1	4	184	Pyrene gas	15	2040	0.00703277
1	1	5	184	Pyrene gas	1	2040	3.02917
1	1	5	184	Pyrene gas	15	2040	0.00819299
1	1	2	84	Pyrene particle	1	2040	0.586119
1	1	2	84	Pyrene particle	15	2040	0.151506
1	1	4	84	Pyrene particle	1	2040	0.513199
1	1	4	84	Pyrene particle	15	2040	0.142248
1	1	5	84	Pyrene particle	1	2040	0.336525
1	1	5	84	Pyrene particle	15	2040	0.112976

2040 No-Build East Baton Rouge Parish MOVES Input

2040 No Build EBR

Output Database Server Name: [using default]

Output Database Name: msat_nobuild_2040_ebr_o

Time Spans:

- Aggregate By: Hour
- Years:
  - 2040
- Months:
  - January
  - February
  - March
  - April
  - May
  - June
  - July
  - August
  - September
  - October
  - November
  - December
- Days:
  - Weekend
  - Weekdays
- Hours:
  - Begin Hour: 00:00 - 00:59
  - End Hour: 23:00 - 23:59

Geographic Bounds:

COUNTY geography

Selection: LOUISIANA - East Baton Rouge Parish

On Road Vehicle Equipment:

Compressed Natural Gas (CNG) - Transit Bus

Diesel Fuel - Combination Long-haul Truck

Diesel Fuel - Combination Short-haul Truck

Diesel Fuel - Intercity Bus

Diesel Fuel - Light Commercial Truck

Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car

Diesel Fuel - Passenger Truck

Diesel Fuel - Refuse Truck

Diesel Fuel - School Bus

Diesel Fuel - Single Unit Long-haul Truck

Diesel Fuel - Single Unit Short-haul Truck

Diesel Fuel - Transit Bus

Electricity - Light Commercial Truck

Electricity - Passenger Car

Electricity - Passenger Truck

Ethanol (E-85) - Light Commercial Truck

Ethanol (E-85) - Passenger Car

Ethanol (E-85) - Passenger Truck

Gasoline - Combination Short-haul Truck

Gasoline - Light Commercial Truck

Gasoline - Motor Home

Gasoline - Motorcycle

Gasoline - Passenger Car

Gasoline - Passenger Truck

Gasoline - Refuse Truck

Gasoline - School Bus

Gasoline - Single Unit Long-haul Truck

Gasoline - Single Unit Short-haul Truck

Gasoline - Transit Bus

Road Types:

Urban Restricted Access

Separate ramp rates: false

Pollutants And Processes:

Running Exhaust 1,3-Butadiene

Crankcase Running Exhaust 1,3-Butadiene

Running Exhaust Acenaphthene gas

Crankcase Running Exhaust Acenaphthene gas

Running Exhaust Acenaphthene particle

Crankcase Running Exhaust Acenaphthene particle

Running Exhaust Acenaphthylene gas

Crankcase Running Exhaust Acenaphthylene gas

Running Exhaust Acenaphthylene particle

Crankcase Running Exhaust Acenaphthylene particle

Running Exhaust Acetaldehyde

Crankcase Running Exhaust Acetaldehyde

Running Exhaust Acrolein

Crankcase Running Exhaust Acrolein

Crankcase Running Exhaust Aluminum

Crankcase Running Exhaust Ammonium (NH4)

Running Exhaust Anthracene gas

Crankcase Running Exhaust Anthracene gas

Running Exhaust Anthracene particle

Crankcase Running Exhaust Anthracene particle

Running Exhaust Benz(a)anthracene gas

Crankcase Running Exhaust Benz(a)anthracene gas

Running Exhaust Benz(a)anthracene particle

Crankcase Running Exhaust Benz(a)anthracene particle

Running Exhaust Benzene

Evap Permeation Benzene

Evap Fuel Leaks Benzene

Crankcase Running Exhaust Benzene

Running Exhaust Benzo(a)pyrene gas

Crankcase Running Exhaust Benzo(a)pyrene gas

Running Exhaust Benzo(a)pyrene particle

Crankcase Running Exhaust Benzo(a)pyrene particle

Running Exhaust Benzo(b)fluoranthene gas

Crankcase Running Exhaust Benzo(b)fluoranthene gas

Running Exhaust Benzo(b)fluoranthene particle

Crankcase Running Exhaust Benzo(b)fluoranthene particle

Running Exhaust Benzo(g,h,i)perylene gas

Crankcase Running Exhaust Benzo(g,h,i)perylene gas

Running Exhaust Benzo(g,h,i)perylene particle

Crankcase Running Exhaust Benzo(g,h,i)perylene particle

Running Exhaust Benzo(k)fluoranthene gas

Crankcase Running Exhaust Benzo(k)fluoranthene gas

Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust CMAQ5.0 Unspeciated (PMOTHR)

Crankcase Running Exhaust Calcium

Crankcase Running Exhaust Chloride

Running Exhaust Chrysene gas

Crankcase Running Exhaust Chrysene gas

Running Exhaust Chrysene particle

Crankcase Running Exhaust Chrysene particle

Running Exhaust Composite - NonECPM

Crankcase Running Exhaust Composite - NonECPM

Running Exhaust Dibenzo(a,h)anthracene gas

Crankcase Running Exhaust Dibenzo(a,h)anthracene gas

Running Exhaust Dibenzo(a,h)anthracene particle

Crankcase Running Exhaust Dibenzo(a,h)anthracene particle

Running Exhaust Elemental Carbon

Crankcase Running Exhaust Elemental Carbon

Running Exhaust Ethyl Benzene

Evap Permeation Ethyl Benzene

Evap Fuel Leaks Ethyl Benzene

Crankcase Running Exhaust Ethyl Benzene

Running Exhaust Fluoranthene gas

Crankcase Running Exhaust Fluoranthene gas

Running Exhaust Fluoranthene particle

Crankcase Running Exhaust Fluoranthene particle

Running Exhaust Fluorene gas

Crankcase Running Exhaust Fluorene gas

Running Exhaust Fluorene particle

Crankcase Running Exhaust Fluorene particle

Running Exhaust Formaldehyde

Crankcase Running Exhaust Formaldehyde

Running Exhaust H2O (aerosol)

Crankcase Running Exhaust H2O (aerosol)

Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Iron

Crankcase Running Exhaust Magnesium

Running Exhaust Naphthalene gas

Evap Permeation Naphthalene gas

Evap Fuel Leaks Naphthalene gas

Crankcase Running Exhaust Naphthalene gas

Running Exhaust Naphthalene particle

Crankcase Running Exhaust Naphthalene particle

Crankcase Running Exhaust Nitrate (NO3)

Running Exhaust Non-Methane Hydrocarbons

Evap Permeation Non-Methane Hydrocarbons

Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-carbon Organic Matter (NCOM)

Running Exhaust Organic Carbon

Crankcase Running Exhaust Organic Carbon

Running Exhaust Phenanthrene gas

Crankcase Running Exhaust Phenanthrene gas

Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Potassium

Running Exhaust Primary Exhaust PM10 - Total

Crankcase Running Exhaust Primary Exhaust PM10 - Total

Running Exhaust Primary Exhaust PM2.5 - Total

Crankcase Running Exhaust Primary Exhaust PM2.5 - Total

Running Exhaust Pyrene gas

Crankcase Running Exhaust Pyrene gas

Running Exhaust Pyrene particle

Crankcase Running Exhaust Pyrene particle

Crankcase Running Exhaust Silicon

Crankcase Running Exhaust Sodium

Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Titanium

Running Exhaust Total Gaseous Hydrocarbons

Evap Permeation Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons

Crankcase Running Exhaust Total Gaseous Hydrocarbons

Running Exhaust Volatile Organic Compounds

Evap Permeation Volatile Organic Compounds

Evap Fuel Leaks Volatile Organic Compounds

Crankcase Running Exhaust Volatile Organic Compounds

Rate of Progress:

Rate of Progress calculations are disabled

Manage Input Data Sets:

2040 No-Build East Baton Rouge Emissions Factors

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	26	Acetaldehyde	1	2040	2008.53
1	1	4	26	Acetaldehyde	15	2040	2.18111
1	1	4	27	Acrolein	1	2040	271.518
1	1	4	27	Acrolein	15	2040	0.0874596
1	1	4	20	Benzene	1	2040	2825.03
1	1	4	20	Benzene	15	2040	5.64503
1	1	4	24	1,3-Butadiene	1	2040	18.6507
1	1	4	24	1,3-Butadiene	15	2040	0.000161789
1	1	4	100	Primary Exhaust PM10 - Total	1	2040	11264.3
1	1	4	100	Primary Exhaust PM10 - Total	15	2040	4455.6
1	1	4	25	Formaldehyde	1	2040	5880.77
1	1	4	25	Formaldehyde	15	2040	3.37486
1	1	4	41	Ethyl Benzene	1	2040	991.245
1	1	4	41	Ethyl Benzene	15	2040	1.89302
1	1	4	23	Naphthalene particle	1	2040	0.260203
1	1	4	23	Naphthalene particle	15	2040	0.00112573
1	1	4	185	Naphthalene gas	1	2040	484.335
1	1	4	185	Naphthalene gas	15	2040	0.234166

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	23	Naphthalene particle	1	2040	0.260203
1	1	4	23	Naphthalene particle	15	2040	0.00112573
1	1	4	68	Dibenzo(a,h)anthracene particle	1	2040	0.0482202
1	1	4	68	Dibenzo(a,h)anthracene particle	15	2040	0.00336122
1	1	4	69	Fluoranthene particle	1	2040	0.537719
1	1	4	69	Fluoranthene particle	15	2040	0.155789
1	1	4	70	Acenaphthene particle	1	2040	0.000333769
1	1	4	70	Acenaphthene particle	15	2040	2.67015E-06
1	1	4	71	Acenaphthylene particle	1	2040	0.0773324
1	1	4	71	Acenaphthylene particle	15	2040	0.00033416
1	1	4	72	Anthracene particle	1	2040	0.218259
1	1	4	72	Anthracene particle	15	2040	0.0844502
1	1	4	73	Benz(a)anthracene particle	1	2040	0.740209
1	1	4	73	Benz(a)anthracene particle	15	2040	0.00571858
1	1	4	74	Benzo(a)pyrene particle	1	2040	1.86117
1	1	4	74	Benzo(a)pyrene particle	15	2040	0.018458
1	1	4	75	Benzo(b)fluoranthene particle	1	2040	0.905622
1	1	4	75	Benzo(b)fluoranthene particle	15	2040	0.00832585
1	1	4	76	Benzo(g,h,i)perylene particle	1	2040	4.99062
1	1	4	76	Benzo(g,h,i)perylene particle	15	2040	0.0221958
1	1	4	77	Benzo(k)fluoranthene particle	1	2040	0.905622
1	1	4	77	Benzo(k)fluoranthene particle	15	2040	0.00832585
1	1	4	78	Chrysene particle	1	2040	0.63537
1	1	4	78	Chrysene particle	15	2040	0.0106289
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	1	2040	1.87721
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	15	2040	0.00968803
1	1	4	83	Phenanthrene particle	1	2040	2.51309
1	1	4	83	Phenanthrene particle	15	2040	1.36115
1	1	4	84	Pyrene particle	1	2040	0.551025
1	1	4	84	Pyrene particle	15	2040	0.149546
1	1	4	168	Dibenzo(a,h)anthracene gas	1	2040	0
1	1	4	168	Dibenzo(a,h)anthracene gas	15	2040	0
1	1	4	169	Fluoranthene gas	1	2040	3.87083
1	1	4	169	Fluoranthene gas	15	2040	0.00627186
1	1	4	170	Acenaphthene gas	1	2040	3.22598
1	1	4	170	Acenaphthene gas	15	2040	0.00447331
1	1	4	171	Acenaphthylene gas	1	2040	11.0635
1	1	4	171	Acenaphthylene gas	15	2040	0.0202564
1	1	4	172	Anthracene gas	1	2040	2.38649
1	1	4	172	Anthracene gas	15	2040	0.0037515
1	1	4	173	Benz(a)anthracene gas	1	2040	0.2779
1	1	4	173	Benz(a)anthracene gas	15	2040	0.000604633
1	1	4	174	Benzo(a)pyrene gas	1	2040	0.0147306
1	1	4	174	Benzo(a)pyrene gas	15	2040	3.27881E-05
1	1	4	175	Benzo(b)fluoranthene gas	1	2040	0.200747
1	1	4	175	Benzo(b)fluoranthene gas	15	2040	0.000446832
1	1	4	176	Benzo(g,h,i)perylene gas	1	2040	0.00466267
1	1	4	176	Benzo(g,h,i)perylene gas	15	2040	4.04474E-08
1	1	4	177	Benzo(k)fluoranthene gas	1	2040	0.200747
1	1	4	177	Benzo(k)fluoranthene gas	15	2040	0.000446832
1	1	4	178	Chrysene gas	1	2040	0.314779
1	1	4	178	Chrysene gas	15	2040	0.000677097
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	1	2040	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	15	2040	0
1	1	4	183	Phenanthrene gas	1	2040	30.5825
1	1	4	183	Phenanthrene gas	15	2040	0.024178

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	184	Pyrene gas	1	2040	4.09247
1	1	4	184	Pyrene gas	15	2040	0.00718529
1	1	4	185	Naphthalene gas	1	2040	484.335
1	1	4	185	Naphthalene gas	15	2040	0.234166

2040 Build West Baton Rouge Parish MOVES Input

2040 Build WBR

Output Database Server Name: [using default]

Output Database Name: msat_build_2040_wbr_o3

Time Spans:

- Aggregate By: Hour
- Years:
  - 2040
- Months:
  - January
  - February
  - March
  - April
  - May
  - June
  - July
  - August
  - September
  - October
  - November
  - December
- Days:
  - Weekend
  - Weekdays
- Hours:
  - Begin Hour: 00:00 - 00:59
  - End Hour: 23:00 - 23:59

Geographic Bounds:

COUNTY geography

Selection: LOUISIANA - West Baton Rouge Parish

On Road Vehicle Equipment:

Compressed Natural Gas (CNG) - Transit Bus

Diesel Fuel - Combination Long-haul Truck

Diesel Fuel - Combination Short-haul Truck

Diesel Fuel - Intercity Bus

Diesel Fuel - Light Commercial Truck

Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car

Diesel Fuel - Passenger Truck

Diesel Fuel - Refuse Truck

Diesel Fuel - School Bus

Diesel Fuel - Single Unit Long-haul Truck

Diesel Fuel - Single Unit Short-haul Truck

Diesel Fuel - Transit Bus

Electricity - Light Commercial Truck

Electricity - Passenger Car

Electricity - Passenger Truck

Ethanol (E-85) - Light Commercial Truck

Ethanol (E-85) - Passenger Car

Ethanol (E-85) - Passenger Truck

Gasoline - Combination Short-haul Truck

Gasoline - Light Commercial Truck

Gasoline - Motor Home

Gasoline - Motorcycle

Gasoline - Passenger Car

Gasoline - Passenger Truck

Gasoline - Refuse Truck

Gasoline - School Bus

Gasoline - Single Unit Long-haul Truck

Gasoline - Single Unit Short-haul Truck

Gasoline - Transit Bus

Road Types:

Rural Restricted Access

Urban Restricted Access

Urban Unrestricted Access

Separate ramp rates: false

Pollutants And Processes:

Running Exhaust 1,3-Butadiene

Crankcase Running Exhaust 1,3-Butadiene

Running Exhaust Acenaphthene gas

Crankcase Running Exhaust Acenaphthene gas

Running Exhaust Acenaphthene particle

Crankcase Running Exhaust Acenaphthene particle

Running Exhaust Acenaphthylene gas

Crankcase Running Exhaust Acenaphthylene gas

Running Exhaust Acenaphthylene particle

Crankcase Running Exhaust Acenaphthylene particle

Running Exhaust Acetaldehyde

Crankcase Running Exhaust Acetaldehyde

Running Exhaust Acrolein

Crankcase Running Exhaust Acrolein

Crankcase Running Exhaust Aluminum

Crankcase Running Exhaust Ammonium (NH4)

Running Exhaust Anthracene gas

Crankcase Running Exhaust Anthracene gas

Running Exhaust Anthracene particle

Crankcase Running Exhaust Anthracene particle

Running Exhaust Benz(a)anthracene gas

Crankcase Running Exhaust Benz(a)anthracene gas

Running Exhaust Benz(a)anthracene particle

Crankcase Running Exhaust Benz(a)anthracene particle

Running Exhaust Benzene

Evap Permeation Benzene

Evap Fuel Leaks Benzene

Crankcase Running Exhaust Benzene

Running Exhaust Benzo(a)pyrene gas

Crankcase Running Exhaust Benzo(a)pyrene gas

Running Exhaust Benzo(a)pyrene particle

Crankcase Running Exhaust Benzo(a)pyrene particle

Running Exhaust Benzo(b)fluoranthene gas

Crankcase Running Exhaust Benzo(b)fluoranthene gas

Running Exhaust Benzo(b)fluoranthene particle

Crankcase Running Exhaust Benzo(b)fluoranthene particle

Running Exhaust Benzo(g,h,i)perylene gas

Crankcase Running Exhaust Benzo(g,h,i)perylene gas

Running Exhaust Benzo(g,h,i)perylene particle

Crankcase Running Exhaust Benzo(g,h,i)perylene particle

Running Exhaust Benzo(k)fluoranthene gas

Crankcase Running Exhaust Benzo(k)fluoranthene gas

Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust CMAQ5.0 Unspeciated (PMOTHR)

Crankcase Running Exhaust Calcium

Crankcase Running Exhaust Chloride

Running Exhaust Chrysene gas

Crankcase Running Exhaust Chrysene gas

Running Exhaust Chrysene particle

Crankcase Running Exhaust Chrysene particle

Running Exhaust Composite - NonECPM

Crankcase Running Exhaust Composite - NonECPM

Running Exhaust Dibenzo(a,h)anthracene gas

Crankcase Running Exhaust Dibenzo(a,h)anthracene gas

Running Exhaust Dibenzo(a,h)anthracene particle

Crankcase Running Exhaust Dibenzo(a,h)anthracene particle

Running Exhaust Elemental Carbon

Crankcase Running Exhaust Elemental Carbon

Running Exhaust Ethyl Benzene

Evap Permeation Ethyl Benzene

Evap Fuel Leaks Ethyl Benzene

Crankcase Running Exhaust Ethyl Benzene

Running Exhaust Fluoranthene gas

Crankcase Running Exhaust Fluoranthene gas

Running Exhaust Fluoranthene particle

Crankcase Running Exhaust Fluoranthene particle

Running Exhaust Fluorene gas

Crankcase Running Exhaust Fluorene gas

Running Exhaust Fluorene particle

Crankcase Running Exhaust Fluorene particle

Running Exhaust Formaldehyde

Crankcase Running Exhaust Formaldehyde

Running Exhaust H2O (aerosol)

Crankcase Running Exhaust H2O (aerosol)

Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Iron

Crankcase Running Exhaust Magnesium

Running Exhaust Naphthalene gas

Evap Permeation Naphthalene gas

Evap Fuel Leaks Naphthalene gas

Crankcase Running Exhaust Naphthalene gas

Running Exhaust Naphthalene particle

Crankcase Running Exhaust Naphthalene particle

Crankcase Running Exhaust Nitrate (NO3)

Running Exhaust Non-Methane Hydrocarbons

Evap Permeation Non-Methane Hydrocarbons

Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-carbon Organic Matter (NCOM)

Running Exhaust Organic Carbon

Crankcase Running Exhaust Organic Carbon

Running Exhaust Phenanthrene gas

Crankcase Running Exhaust Phenanthrene gas

Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Potassium

Running Exhaust Primary Exhaust PM10 - Total

Crankcase Running Exhaust Primary Exhaust PM10 - Total

Running Exhaust Primary Exhaust PM2.5 - Total

Crankcase Running Exhaust Primary Exhaust PM2.5 - Total

Running Exhaust Pyrene gas

Crankcase Running Exhaust Pyrene gas

Running Exhaust Pyrene particle

Crankcase Running Exhaust Pyrene particle

Crankcase Running Exhaust Silicon

Crankcase Running Exhaust Sodium

Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Titanium

Running Exhaust Total Gaseous Hydrocarbons

Evap Permeation Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons

Crankcase Running Exhaust Total Gaseous Hydrocarbons

Running Exhaust Volatile Organic Compounds

Evap Permeation Volatile Organic Compounds

Evap Fuel Leaks Volatile Organic Compounds

Crankcase Running Exhaust Volatile Organic Compounds

Rate of Progress:

Rate of Progress calculations are disabled

Manage Input Data Sets:

2040 Build West Baton Rouge Emissions Factors

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	26	Acetaldehyde	1	2040	2016.03451
1	1	2	26	Acetaldehyde	15	2040	1.97788552
1	1	4	26	Acetaldehyde	1	2040	2001.34634
1	1	4	26	Acetaldehyde	15	2040	2.28342573
1	1	5	26	Acetaldehyde	1	2040	1819.86504
1	1	5	26	Acetaldehyde	15	2040	3.52734804
1	1	2	27	Acrolein	1	2040	274.509291
1	1	2	27	Acrolein	15	2040	0.084177614
1	1	4	27	Acrolein	1	2040	269.546469
1	1	4	27	Acrolein	15	2040	0.089581177
1	1	5	27	Acrolein	1	2040	231.383521
1	1	5	27	Acrolein	15	2040	0.107155589
1	1	2	20	Benzene	1	2040	2931.9145
1	1	2	20	Benzene	15	2040	5.4182357
1	1	4	20	Benzene	1	2040	2788.8374
1	1	4	20	Benzene	15	2040	5.7877606
1	1	5	20	Benzene	1	2040	2282.6879
1	1	5	20	Benzene	15	2040	6.9968603
1	1	2	24	1,3-Butadiene	1	2040	18.76174752
1	1	2	24	1,3-Butadiene	15	2040	0.000171543
1	1	4	24	1,3-Butadiene	1	2040	18.53492279
1	1	4	24	1,3-Butadiene	15	2040	0.000159652
1	1	5	24	1,3-Butadiene	1	2040	16.0512402
1	1	5	24	1,3-Butadiene	15	2040	0.00011769
1	1	2	100	Primary Exhaust PM10 - Total	1	2040	11069.808
1	1	2	100	Primary Exhaust PM10 - Total	15	2040	4426.10696
1	1	4	100	Primary Exhaust PM10 - Total	1	2040	11069.808
1	1	4	100	Primary Exhaust PM10 - Total	15	2040	4426.10696
1	1	5	100	Primary Exhaust PM10 - Total	1	2040	8281.785
1	1	5	100	Primary Exhaust PM10 - Total	15	2040	3719.73823
1	1	2	25	Formaldehyde	1	2040	5923.0524
1	1	2	25	Formaldehyde	15	2040	3.10612508
1	1	4	25	Formaldehyde	1	2040	5847.8772
1	1	4	25	Formaldehyde	15	2040	3.51458351
1	1	5	25	Formaldehyde	1	2040	5147.77639
1	1	5	25	Formaldehyde	15	2040	5.137584
1	1	2	41	Ethyl Benzene	1	2040	1027.2139
1	1	2	41	Ethyl Benzene	15	2040	1.81660407
1	1	4	41	Ethyl Benzene	1	2040	978.8804
1	1	4	41	Ethyl Benzene	15	2040	1.94102267
1	1	5	41	Ethyl Benzene	1	2040	803.77165
1	1	5	41	Ethyl Benzene	15	2040	2.34894258
1	1	2	185	Naphthalene gas	1	2040	490.93129
1	1	2	185	Naphthalene gas	15	2040	0.225159134
1	1	4	185	Naphthalene gas	1	2040	480.55706
1	1	4	185	Naphthalene gas	15	2040	0.239930784
1	1	5	185	Naphthalene gas	1	2040	410.64911
1	1	5	185	Naphthalene gas	15	2040	0.288035659
1	1	2	23	Naphthalene particle	1	2040	0.287287264
1	1	2	23	Naphthalene particle	15	2040	0.001239227
1	1	4	23	Naphthalene particle	1	2040	0.250600405
1	1	4	23	Naphthalene particle	15	2040	0.001085677
1	1	5	23	Naphthalene particle	1	2040	0.144114075
1	1	5	23	Naphthalene particle	15	2040	0.000599755

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	170	Acenaphthene gas	1	2040	3.3166467
1	1	2	170	Acenaphthene gas	15	2040	0.004295087
1	1	4	170	Acenaphthene gas	1	2040	3.1911373
1	1	4	170	Acenaphthene gas	15	2040	0.004585817
1	1	5	170	Acenaphthene gas	1	2040	2.6580107
1	1	5	170	Acenaphthene gas	15	2040	0.005535527
1	1	2	70	Acenaphthene particle	1	2040	0.000363138
1	1	2	70	Acenaphthene particle	15	2040	2.90511E-06
1	1	4	70	Acenaphthene particle	1	2040	0.000322279
1	1	4	70	Acenaphthene particle	15	2040	2.57824E-06
1	1	5	70	Acenaphthene particle	1	2040	0.000136015
1	1	5	70	Acenaphthene particle	15	2040	1.08812E-06
1	1	2	171	Acenaphthylene gas	1	2040	11.453885
1	1	2	171	Acenaphthylene gas	15	2040	0.019447421
1	1	4	171	Acenaphthylene gas	1	2040	10.927518
1	1	4	171	Acenaphthylene gas	15	2040	0.020766498
1	1	5	171	Acenaphthylene gas	1	2040	8.9832951
1	1	5	171	Acenaphthylene gas	15	2040	0.025073709
1	1	2	71	Acenaphthylene particle	1	2040	0.085383435
1	1	2	71	Acenaphthylene particle	15	2040	0.000367861
1	1	4	71	Acenaphthylene particle	1	2040	0.07447806
1	1	4	71	Acenaphthylene particle	15	2040	0.000322269
1	1	5	71	Acenaphthylene particle	1	2040	0.042846914
1	1	5	71	Acenaphthylene particle	15	2040	0.000178141
1	1	2	172	Anthracene gas	1	2040	2.4606348
1	1	2	172	Anthracene gas	15	2040	0.003601659
1	1	4	172	Anthracene gas	1	2040	2.3592508
1	1	4	172	Anthracene gas	15	2040	0.003845994
1	1	5	172	Anthracene gas	1	2040	1.9546765
1	1	5	172	Anthracene gas	15	2040	0.004644455
1	1	2	72	Anthracene particle	1	2040	0.22835075
1	1	2	72	Anthracene particle	15	2040	0.08552128
1	1	4	72	Anthracene particle	1	2040	0.21439272
1	1	4	72	Anthracene particle	15	2040	0.083890744
1	1	5	72	Anthracene particle	1	2040	0.15974121
1	1	5	72	Anthracene particle	15	2040	0.070498629
1	1	2	173	Benz(a)anthracene gas	1	2040	0.28923492
1	1	2	173	Benz(a)anthracene gas	15	2040	0.000580407
1	1	4	173	Benz(a)anthracene gas	1	2040	0.27416662
1	1	4	173	Benz(a)anthracene gas	15	2040	0.000619893
1	1	5	173	Benz(a)anthracene gas	1	2040	0.223133592
1	1	5	173	Benz(a)anthracene gas	15	2040	0.000748912
1	1	2	73	Benz(a)anthracene particle	1	2040	0.816887165
1	1	2	73	Benz(a)anthracene particle	15	2040	0.006070656
1	1	4	73	Benz(a)anthracene particle	1	2040	0.713014894
1	1	4	73	Benz(a)anthracene particle	15	2040	0.005588871
1	1	5	73	Benz(a)anthracene particle	1	2040	0.411268306
1	1	5	73	Benz(a)anthracene particle	15	2040	0.003817111
1	1	2	174	Benzo(a)pyrene gas	1	2040	0.015345881
1	1	2	174	Benzo(a)pyrene gas	15	2040	3.14817E-05
1	1	4	174	Benzo(a)pyrene gas	1	2040	0.014529401
1	1	4	174	Benzo(a)pyrene gas	15	2040	3.36125E-05
1	1	5	174	Benzo(a)pyrene gas	1	2040	0.01179805
1	1	5	174	Benzo(a)pyrene gas	15	2040	4.05583E-05
1	1	2	74	Benzo(a)pyrene particle	1	2040	2.05336588
1	1	2	74	Benzo(a)pyrene particle	15	2040	0.019390771

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	74	Benzo(a)pyrene particle	1	2040	1.79300355
1	1	4	74	Benzo(a)pyrene particle	15	2040	0.018106191
1	1	5	74	Benzo(a)pyrene particle	1	2040	1.03604741
1	1	5	74	Benzo(a)pyrene particle	15	2040	0.013017815
1	1	2	175	Benzo(b)fluoranthene gas	1	2040	0.209132249
1	1	2	175	Benzo(b)fluoranthene gas	15	2040	0.00042903
1	1	4	175	Benzo(b)fluoranthene gas	1	2040	0.198005062
1	1	4	175	Benzo(b)fluoranthene gas	15	2040	0.000458067
1	1	5	175	Benzo(b)fluoranthene gas	1	2040	0.160783055
1	1	5	175	Benzo(b)fluoranthene gas	15	2040	0.000552724
1	1	2	75	Benzo(b)fluoranthene particle	1	2040	0.999237966
1	1	2	75	Benzo(b)fluoranthene particle	15	2040	0.008772091
1	1	4	75	Benzo(b)fluoranthene particle	1	2040	0.872416511
1	1	4	75	Benzo(b)fluoranthene particle	15	2040	0.008158815
1	1	5	75	Benzo(b)fluoranthene particle	1	2040	0.503821325
1	1	5	75	Benzo(b)fluoranthene particle	15	2040	0.005784812
1	1	2	176	Benzo(g,h,i)perylene gas	1	2040	0.004690437
1	1	2	176	Benzo(g,h,i)perylene gas	15	2040	4.28858E-08
1	1	4	176	Benzo(g,h,i)perylene gas	1	2040	0.00463373
1	1	4	176	Benzo(g,h,i)perylene gas	15	2040	3.99129E-08
1	1	5	176	Benzo(g,h,i)perylene gas	1	2040	0.004012814
1	1	5	176	Benzo(g,h,i)perylene gas	15	2040	2.94225E-08
1	1	2	76	Benzo(g,h,i)perylene particle	1	2040	5.510096985
1	1	2	76	Benzo(g,h,i)perylene particle	15	2040	0.024378075
1	1	4	76	Benzo(g,h,i)perylene particle	1	2040	4.806442923
1	1	4	76	Benzo(g,h,i)perylene particle	15	2040	0.021424453
1	1	5	76	Benzo(g,h,i)perylene particle	1	2040	2.765393285
1	1	5	76	Benzo(g,h,i)perylene particle	15	2040	0.012024902
1	1	2	177	Benzo(k)fluoranthene gas	1	2040	0.209132249
1	1	2	177	Benzo(k)fluoranthene gas	15	2040	0.00042903
1	1	4	177	Benzo(k)fluoranthene gas	1	2040	0.198005062
1	1	4	177	Benzo(k)fluoranthene gas	15	2040	0.000458067
1	1	5	177	Benzo(k)fluoranthene gas	1	2040	0.160783055
1	1	5	177	Benzo(k)fluoranthene gas	15	2040	0.000552724
1	1	2	77	Benzo(k)fluoranthene particle	1	2040	0.999237966
1	1	2	77	Benzo(k)fluoranthene particle	15	2040	0.008772091
1	1	4	77	Benzo(k)fluoranthene particle	1	2040	0.872416511
1	1	4	77	Benzo(k)fluoranthene particle	15	2040	0.008158815
1	1	5	77	Benzo(k)fluoranthene particle	1	2040	0.503821325
1	1	5	77	Benzo(k)fluoranthene particle	15	2040	0.005784812
1	1	2	178	Chrysene gas	1	2040	0.32747744
1	1	2	178	Chrysene gas	15	2040	0.000649922
1	1	4	178	Chrysene gas	1	2040	0.31058186
1	1	4	178	Chrysene gas	15	2040	0.000694204
1	1	5	178	Chrysene gas	1	2040	0.25301335
1	1	5	178	Chrysene gas	15	2040	0.000838989
1	1	2	78	Chrysene particle	1	2040	0.70032089
1	1	2	78	Chrysene particle	15	2040	0.01099796
1	1	4	78	Chrysene particle	1	2040	0.61231541
1	1	4	78	Chrysene particle	15	2040	0.010481475
1	1	5	78	Chrysene particle	1	2040	0.355649084
1	1	5	78	Chrysene particle	15	2040	0.008070778
1	1	2	168	Dibenzo(a,h)anthracene gas	1	2040	0
1	1	2	168	Dibenzo(a,h)anthracene gas	15	2040	0
1	1	4	168	Dibenzo(a,h)anthracene gas	1	2040	0
1	1	4	168	Dibenzo(a,h)anthracene gas	15	2040	0

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	5	168	Dibenzo(a,h)anthracene gas	1	2040	0
1	1	5	168	Dibenzo(a,h)anthracene gas	15	2040	0
1	1	2	68	Dibenzo(a,h)anthracene particle	1	2040	0.052763559
1	1	2	68	Dibenzo(a,h)anthracene particle	15	2040	0.003419081
1	1	4	68	Dibenzo(a,h)anthracene particle	1	2040	0.04659866
1	1	4	68	Dibenzo(a,h)anthracene particle	15	2040	0.003333943
1	1	5	68	Dibenzo(a,h)anthracene particle	1	2040	0.028182557
1	1	5	68	Dibenzo(a,h)anthracene particle	15	2040	0.002753811
1	1	2	169	Fluoranthene gas	1	2040	3.9940891
1	1	2	169	Fluoranthene gas	15	2040	0.006021254
1	1	4	169	Fluoranthene gas	1	2040	3.82602
1	1	4	169	Fluoranthene gas	15	2040	0.006429884
1	1	5	169	Fluoranthene gas	1	2040	3.1654569
1	1	5	169	Fluoranthene gas	15	2040	0.007765267
1	1	2	69	Fluoranthene particle	1	2040	0.5704809
1	1	2	69	Fluoranthene particle	15	2040	0.157817317
1	1	4	69	Fluoranthene particle	1	2040	0.5255721
1	1	4	69	Fluoranthene particle	15	2040	0.154739724
1	1	5	69	Fluoranthene particle	1	2040	0.36919
1	1	5	69	Fluoranthene particle	15	2040	0.129872955
1	1	2	181	Fluorene gas	1	2040	8.823464
1	1	2	181	Fluorene gas	15	2040	0.00872414
1	1	4	181	Fluorene gas	1	2040	8.5438497
1	1	4	181	Fluorene gas	15	2040	0.00931262
1	1	5	181	Fluorene gas	1	2040	7.1855978
1	1	5	181	Fluorene gas	15	2040	0.011235531
1	1	2	81	Fluorene particle	1	2040	0.284484349
1	1	2	81	Fluorene particle	15	2040	0.172854712
1	1	4	81	Fluorene particle	1	2040	0.279031743
1	1	4	81	Fluorene particle	15	2040	0.169639478
1	1	5	81	Fluorene particle	1	2040	0.234351262
1	1	5	81	Fluorene particle	15	2040	0.14275232
1	1	2	182	Indeno(1,2,3,c,d)pyrene gas	1	2040	0
1	1	2	182	Indeno(1,2,3,c,d)pyrene gas	15	2040	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	1	2040	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	15	2040	0
1	1	5	182	Indeno(1,2,3,c,d)pyrene gas	1	2040	0
1	1	5	182	Indeno(1,2,3,c,d)pyrene gas	15	2040	0
1	1	2	82	Indeno(1,2,3,c,d)pyrene particle	1	2040	2.072413333
1	1	2	82	Indeno(1,2,3,c,d)pyrene particle	15	2040	0.010524537
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	1	2040	1.808005666
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	15	2040	0.00938946
1	1	5	82	Indeno(1,2,3,c,d)pyrene particle	1	2040	1.040826262
1	1	5	82	Indeno(1,2,3,c,d)pyrene particle	15	2040	0.005645666
1	1	2	185	Naphthalene gas	1	2040	490.93129
1	1	2	185	Naphthalene gas	15	2040	0.225159134
1	1	4	185	Naphthalene gas	1	2040	480.55706
1	1	4	185	Naphthalene gas	15	2040	0.239930784
1	1	5	185	Naphthalene gas	1	2040	410.64911
1	1	5	185	Naphthalene gas	15	2040	0.288035659
1	1	2	23	Naphthalene particle	1	2040	0.287287264
1	1	2	23	Naphthalene particle	15	2040	0.001239227
1	1	4	23	Naphthalene particle	1	2040	0.250600405
1	1	4	23	Naphthalene particle	15	2040	0.001085677
1	1	5	23	Naphthalene particle	1	2040	0.144114075
1	1	5	23	Naphthalene particle	15	2040	0.000599755

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	2	183	Phenanthrene gas	1	2040	31.148488
1	1	2	183	Phenanthrene gas	15	2040	0.023224767
1	1	4	183	Phenanthrene gas	1	2040	30.313046
1	1	4	183	Phenanthrene gas	15	2040	0.024782211
1	1	5	183	Phenanthrene gas	1	2040	25.685232
1	1	5	183	Phenanthrene gas	15	2040	0.029870889
1	1	2	83	Phenanthrene particle	1	2040	2.5704929
1	1	2	83	Phenanthrene particle	15	2040	1.378028882
1	1	4	83	Phenanthrene particle	1	2040	2.4880827
1	1	4	83	Phenanthrene particle	15	2040	1.352258562
1	1	5	83	Phenanthrene particle	1	2040	2.020015
1	1	5	83	Phenanthrene particle	15	2040	1.137606279
1	1	2	184	Pyrene gas	1	2040	4.231271
1	1	2	184	Pyrene gas	15	2040	0.006896593
1	1	4	184	Pyrene gas	1	2040	4.0433831
1	1	4	184	Pyrene gas	15	2040	0.00736698
1	1	5	184	Pyrene gas	1	2040	3.3336225
1	1	5	184	Pyrene gas	15	2040	0.008906908
1	1	2	84	Pyrene particle	1	2040	0.5861193
1	1	2	84	Pyrene particle	15	2040	0.151506421
1	1	4	84	Pyrene particle	1	2040	0.5380726
1	1	4	84	Pyrene particle	15	2040	0.148534046
1	1	5	84	Pyrene particle	1	2040	0.3735689
1	1	5	84	Pyrene particle	15	2040	0.124621553

2040 Build East Baton Rouge Parish MOVES Input

2040 Build EBR

Output Database Server Name: [using default]

Output Database Name: msat_build_2040_ebr_o

Time Spans:

- Aggregate By: Hour
- Years:
  - 2040
- Months:
  - January
  - February
  - March
  - April
  - May
  - June
  - July
  - August
  - September
  - October
  - November
  - December
- Days:
  - Weekend
  - Weekdays
- Hours:
  - Begin Hour: 00:00 - 00:59
  - End Hour: 23:00 - 23:59

Geographic Bounds:

COUNTY geography

Selection: LOUISIANA - East Baton Rouge Parish

On Road Vehicle Equipment:

Compressed Natural Gas (CNG) - Transit Bus

Diesel Fuel - Combination Long-haul Truck

Diesel Fuel - Combination Short-haul Truck

Diesel Fuel - Intercity Bus

Diesel Fuel - Light Commercial Truck

Diesel Fuel - Motor Home

Diesel Fuel - Passenger Car

Diesel Fuel - Passenger Truck

Diesel Fuel - Refuse Truck

Diesel Fuel - School Bus

Diesel Fuel - Single Unit Long-haul Truck

Diesel Fuel - Single Unit Short-haul Truck

Diesel Fuel - Transit Bus

Electricity - Light Commercial Truck

Electricity - Passenger Car

Electricity - Passenger Truck

Ethanol (E-85) - Light Commercial Truck

Ethanol (E-85) - Passenger Car

Ethanol (E-85) - Passenger Truck

Gasoline - Combination Short-haul Truck

Gasoline - Light Commercial Truck

Gasoline - Motor Home

Gasoline - Motorcycle

Gasoline - Passenger Car

Gasoline - Passenger Truck

Gasoline - Refuse Truck

Gasoline - School Bus

Gasoline - Single Unit Long-haul Truck

Gasoline - Single Unit Short-haul Truck

Gasoline - Transit Bus

Road Types:

Urban Restricted Access

Separate ramp rates: false

Pollutants And Processes:

Running Exhaust 1,3-Butadiene

Crankcase Running Exhaust 1,3-Butadiene

Running Exhaust Acenaphthene gas

Crankcase Running Exhaust Acenaphthene gas

Running Exhaust Acenaphthene particle

Crankcase Running Exhaust Acenaphthene particle

Running Exhaust Acenaphthylene gas

Crankcase Running Exhaust Acenaphthylene gas

Running Exhaust Acenaphthylene particle

Crankcase Running Exhaust Acenaphthylene particle

Running Exhaust Acetaldehyde

Crankcase Running Exhaust Acetaldehyde

Running Exhaust Acrolein

Crankcase Running Exhaust Acrolein

Crankcase Running Exhaust Aluminum

Crankcase Running Exhaust Ammonium (NH4)

Running Exhaust Anthracene gas

Crankcase Running Exhaust Anthracene gas

Running Exhaust Anthracene particle

Crankcase Running Exhaust Anthracene particle

Running Exhaust Benz(a)anthracene gas

Crankcase Running Exhaust Benz(a)anthracene gas

Running Exhaust Benz(a)anthracene particle

Crankcase Running Exhaust Benz(a)anthracene particle

Running Exhaust Benzene

Evap Permeation Benzene

Evap Fuel Leaks Benzene

Crankcase Running Exhaust Benzene

Running Exhaust Benzo(a)pyrene gas

Crankcase Running Exhaust Benzo(a)pyrene gas

Running Exhaust Benzo(a)pyrene particle

Crankcase Running Exhaust Benzo(a)pyrene particle

Running Exhaust Benzo(b)fluoranthene gas

Crankcase Running Exhaust Benzo(b)fluoranthene gas

Running Exhaust Benzo(b)fluoranthene particle

Crankcase Running Exhaust Benzo(b)fluoranthene particle

Running Exhaust Benzo(g,h,i)perylene gas

Crankcase Running Exhaust Benzo(g,h,i)perylene gas

Running Exhaust Benzo(g,h,i)perylene particle

Crankcase Running Exhaust Benzo(g,h,i)perylene particle

Running Exhaust Benzo(k)fluoranthene gas

Crankcase Running Exhaust Benzo(k)fluoranthene gas

Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust Benzo(k)fluoranthene particle

Crankcase Running Exhaust CMAQ5.0 Unspeciated (PMOTHR)

Crankcase Running Exhaust Calcium

Crankcase Running Exhaust Chloride

Running Exhaust Chrysene gas

Crankcase Running Exhaust Chrysene gas

Running Exhaust Chrysene particle

Crankcase Running Exhaust Chrysene particle

Running Exhaust Composite - NonECPM

Crankcase Running Exhaust Composite - NonECPM

Running Exhaust Dibenzo(a,h)anthracene gas

Crankcase Running Exhaust Dibenzo(a,h)anthracene gas

Running Exhaust Dibenzo(a,h)anthracene particle

Crankcase Running Exhaust Dibenzo(a,h)anthracene particle

Running Exhaust Elemental Carbon

Crankcase Running Exhaust Elemental Carbon

Running Exhaust Ethyl Benzene

Evap Permeation Ethyl Benzene

Evap Fuel Leaks Ethyl Benzene

Crankcase Running Exhaust Ethyl Benzene

Running Exhaust Fluoranthene gas

Crankcase Running Exhaust Fluoranthene gas

Running Exhaust Fluoranthene particle

Crankcase Running Exhaust Fluoranthene particle

Running Exhaust Fluorene gas

Crankcase Running Exhaust Fluorene gas

Running Exhaust Fluorene particle

Crankcase Running Exhaust Fluorene particle

Running Exhaust Formaldehyde

Crankcase Running Exhaust Formaldehyde

Running Exhaust H2O (aerosol)

Crankcase Running Exhaust H2O (aerosol)

Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene gas

Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Indeno(1,2,3,c,d)pyrene particle

Crankcase Running Exhaust Iron

Crankcase Running Exhaust Magnesium

Running Exhaust Naphthalene gas

Evap Permeation Naphthalene gas

Evap Fuel Leaks Naphthalene gas

Crankcase Running Exhaust Naphthalene gas

Running Exhaust Naphthalene particle

Crankcase Running Exhaust Naphthalene particle

Crankcase Running Exhaust Nitrate (NO3)

Running Exhaust Non-Methane Hydrocarbons

Evap Permeation Non-Methane Hydrocarbons

Evap Fuel Leaks Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-Methane Hydrocarbons

Crankcase Running Exhaust Non-carbon Organic Matter (NCOM)

Running Exhaust Organic Carbon

Crankcase Running Exhaust Organic Carbon

Running Exhaust Phenanthrene gas

Crankcase Running Exhaust Phenanthrene gas

Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Phenanthrene particle

Crankcase Running Exhaust Potassium

Running Exhaust Primary Exhaust PM10 - Total

Crankcase Running Exhaust Primary Exhaust PM10 - Total

Running Exhaust Primary Exhaust PM2.5 - Total

Crankcase Running Exhaust Primary Exhaust PM2.5 - Total

Running Exhaust Pyrene gas

Crankcase Running Exhaust Pyrene gas

Running Exhaust Pyrene particle

Crankcase Running Exhaust Pyrene particle

Crankcase Running Exhaust Silicon

Crankcase Running Exhaust Sodium

Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Sulfate Particulate

Crankcase Running Exhaust Titanium

Running Exhaust Total Gaseous Hydrocarbons

Evap Permeation Total Gaseous Hydrocarbons

Evap Fuel Leaks Total Gaseous Hydrocarbons

Crankcase Running Exhaust Total Gaseous Hydrocarbons

Running Exhaust Volatile Organic Compounds

Evap Permeation Volatile Organic Compounds

Evap Fuel Leaks Volatile Organic Compounds

Crankcase Running Exhaust Volatile Organic Compounds

Rate of Progress:

Rate of Progress calculations are disabled

Manage Input Data Sets:

2040 Build East Baton Rouge Emissions Factors

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	26	Acetaldehyde	1	2040	2011.38
1	1	4	26	Acetaldehyde	15	2040	2.10614
1	1	4	27	Acrolein	1	2040	272.616
1	1	4	27	Acrolein	15	2040	0.0859587
1	1	4	20	Benzene	1	2040	2854.52
1	1	4	20	Benzene	15	2040	5.54311
1	1	4	24	1,3-Butadiene	1	2040	18.7036
1	1	4	24	1,3-Butadiene	15	2040	0.000164428
1	1	4	100	Primary Exhaust PM10 - Total	1	2040	11391.5
1	1	4	100	Primary Exhaust PM10 - Total	15	2040	4459.06
1	1	4	25	Formaldehyde	1	2040	5897.08
1	1	4	25	Formaldehyde	15	2040	3.27302
1	1	4	41	Ethyl Benzene	1	2040	1001.22
1	1	4	41	Ethyl Benzene	15	2040	1.85873
1	1	4	23	Naphthalene particle	1	2040	0.268166
1	1	4	23	Naphthalene particle	15	2040	0.00115901
1	1	4	185	Naphthalene gas	1	2040	486.595
1	1	4	185	Naphthalene gas	15	2040	0.230073

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	23	Naphthalene particle	1	2040	0.268166
1	1	4	23	Naphthalene particle	15	2040	0.00115901
1	1	4	68	Dibenzo(a,h)anthracene particle	1	2040	0.0495404
1	1	4	68	Dibenzo(a,h)anthracene particle	15	2040	0.00336882
1	1	4	69	Fluoranthene particle	1	2040	0.546603
1	1	4	69	Fluoranthene particle	15	2040	0.155928
1	1	4	70	Acenaphthene particle	1	2040	0.000343199
1	1	4	70	Acenaphthene particle	15	2040	2.74559E-06
1	1	4	71	Acenaphthylene particle	1	2040	0.0796991
1	1	4	71	Acenaphthylene particle	15	2040	0.00034404
1	1	4	72	Anthracene particle	1	2040	0.220818
1	1	4	72	Anthracene particle	15	2040	0.0845163
1	1	4	73	Benz(a)anthracene particle	1	2040	0.762738
1	1	4	73	Benz(a)anthracene particle	15	2040	0.00581432
1	1	4	74	Benzo(a)pyrene particle	1	2040	1.91762
1	1	4	74	Benzo(a)pyrene particle	15	2040	0.0187005
1	1	4	75	Benzo(b)fluoranthene particle	1	2040	0.93312
1	1	4	75	Benzo(b)fluoranthene particle	15	2040	0.00844358
1	1	4	76	Benzo(g,h,i)perylene particle	1	2040	5.14332
1	1	4	76	Benzo(g,h,i)perylene particle	15	2040	0.0228337
1	1	4	77	Benzo(k)fluoranthene particle	1	2040	0.93312
1	1	4	77	Benzo(k)fluoranthene particle	15	2040	0.00844358
1	1	4	78	Chrysene particle	1	2040	0.654426
1	1	4	78	Chrysene particle	15	2040	0.0107137
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	1	2040	1.93459
1	1	4	82	Indeno(1,2,3,c,d)pyrene particle	15	2040	0.00992859
1	1	4	83	Phenanthrene particle	1	2040	2.52338
1	1	4	83	Phenanthrene particle	15	2040	1.36209
1	1	4	84	Pyrene particle	1	2040	0.560626
1	1	4	84	Pyrene particle	15	2040	0.149684
1	1	4	168	Dibenzo(a,h)anthracene gas	1	2040	0
1	1	4	168	Dibenzo(a,h)anthracene gas	15	2040	0
1	1	4	169	Fluoranthene gas	1	2040	3.90571
1	1	4	169	Fluoranthene gas	15	2040	0.00615907
1	1	4	170	Acenaphthene gas	1	2040	3.25218
1	1	4	170	Acenaphthene gas	15	2040	0.00439304
1	1	4	171	Acenaphthylene gas	1	2040	11.1724
1	1	4	171	Acenaphthylene gas	15	2040	0.0198922
1	1	4	172	Anthracene gas	1	2040	2.40756
1	1	4	172	Anthracene gas	15	2040	0.00368405
1	1	4	173	Benz(a)anthracene gas	1	2040	0.280998
1	1	4	173	Benz(a)anthracene gas	15	2040	0.000593736
1	1	4	174	Benzo(a)pyrene gas	1	2040	0.0148984
1	1	4	174	Benzo(a)pyrene gas	15	2040	3.21994E-05
1	1	4	175	Benzo(b)fluoranthene gas	1	2040	0.203033
1	1	4	175	Benzo(b)fluoranthene gas	15	2040	0.00043881
1	1	4	176	Benzo(g,h,i)perylene gas	1	2040	0.00467589
1	1	4	176	Benzo(g,h,i)perylene gas	15	2040	4.11071E-08
1	1	4	177	Benzo(k)fluoranthene gas	1	2040	0.203033
1	1	4	177	Benzo(k)fluoranthene gas	15	2040	0.00043881
1	1	4	178	Chrysene gas	1	2040	0.318254
1	1	4	178	Chrysene gas	15	2040	0.00066488
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	1	2040	0
1	1	4	182	Indeno(1,2,3,c,d)pyrene gas	15	2040	0
1	1	4	183	Phenanthrene gas	1	2040	30.7608

Polycyclic Aromatic Hydrocarbons (PAH)

MOVESRunID	iterationID	roadTypeID	pollutantID	pollutantName	processID	yearID	emissionRate
1	1	4	183	Phenanthrene gas	15	2040	0.0237476
1	1	4	184	Pyrene gas	1	2040	4.13136
1	1	4	184	Pyrene gas	15	2040	0.00705557
1	1	4	185	Naphthalene gas	1	2040	486.595
1	1	4	185	Naphthalene gas	15	2040	0.230073

Appendix G – MSATs Analysis Results

Projected MSAT Emissions (tons/year)

I-10 from LA 77 to LA 415

	Year/Alternative					
	2017			***2040***		
Pollutant	***No-Build***	***Build***	***Change***	***No-Build***	***Build***	***Change***
Acetaldehyde	0.62235	0.62235	0.0%	0.02758	0.02758	0.0%
Acrolein	0.11355	0.11355	0.0%	0.00362	0.00362	0.0%
Benzene	0.33399	0.33399	0.0%	0.04193	0.04193	0.0%
1,3-Butadiene	0.06907	0.06907	0.0%	0.00024	0.00024	0.0%
Diesel Particulate Matter	43.46420	43.46419	0.0%	3.39492	3.39492	0.0%
Formaldehyde	1.45813	1.45813	0.0%	0.07908	0.07908	0.0%
Ethyl Benzene	0.13444	0.13444	0.0%	0.01463	0.01463	0.0%
Naphthalene	0.16004	0.16004	0.0%	0.00654	0.00654	0.0%
Polycyclic aromatic hydrocarbons	0.40929	0.40929	0.0%	0.00770	0.00770	0.0%

Projected MSAT Emissions (tons/year)

I-10 from LA 415 to LA 1

	Year/Alternative					
	2017			*2040*		
Pollutant	*No-Build*	*Build*	*Change*	*No-Build*	*Build*	*Change*
Acetaldehyde	0.11336	0.11397	0.5%	0.00494	0.00516	4.4%
Acrolein	0.02067	0.02013	-2.6%	0.00064	0.00067	4.5%
Benzene	0.06090	0.06123	0.5%	0.00721	0.00754	4.6%
1,3-Butadiene	0.01258	0.01265	0.5%	0.00004	0.00004	4.4%
Diesel Particulate Matter	8.49737	8.39987	-1.1%	0.59500	0.62133	4.4%
Formaldehyde	0.26547	0.26693	0.6%	0.01403	0.01465	4.4%
Ethyl Benzene	0.02452	0.02465	0.5%	0.00252	0.00263	4.6%
Naphthalene	0.02914	0.02930	0.5%	0.00115	0.00120	4.5%
Polycyclic aromatic hydrocarbons	0.07773	0.07735	-0.5%	0.00135	0.00141	4.5%

Projected MSAT Emissions (tons/year)

I-10 from LA 1 to I-110

	Year/Alternative					
	2017			***2040***		
Pollutant	***No-Build***	***Build***	***Change***	***No-Build***	***Build***	***Change***
Acetaldehyde	0.10017	0.10067	0.5%	0.00445	0.00453	1.6%
Acrolein	0.01827	0.01814	-0.7%	0.00058	0.00059	1.9%
Benzene	0.05372	0.05396	0.4%	0.00654	0.00668	2.2%
1,3-Butadiene	0.01111	0.01116	0.5%	0.00004	0.00004	1.9%
Diesel Particulate Matter	7.37721	7.30468	-1.0%	0.53841	0.54784	1.8%
Formaldehyde	0.23456	0.23574	0.5%	0.01267	0.01290	1.8%
Ethyl Benzene	0.02163	0.02172	0.4%	0.00228	0.00233	2.2%
Naphthalene	0.02575	0.02588	0.5%	0.00104	0.00106	2.0%
Polycyclic aromatic hydrocarbons	0.06798	0.06772	-0.4%	0.00122	0.00123	1.1%

Projected MSAT Emissions (tons/year)

I-10 from I-110 to Washington Street

	Year/Alternative					
	2017			*2040*		
Pollutant	*No-Build*	*Build*	*Change*	*No-Build*	*Build*	*Change*
Acetaldehyde	0.02138	0.02148	0.5%	0.00096	0.00096	-0.1%
Acrolein	0.00390	0.00392	0.5%	0.00012	0.00013	0.4%
Benzene	0.01145	0.01150	0.4%	0.00142	0.00143	0.8%
1,3-Butadiene	0.00237	0.00238	0.4%	0.00001	0.00001	0.3%
Diesel Particulate Matter	1.55651	1.54290	-0.9%	0.11664	0.11676	0.1%
Formaldehyde	0.05006	0.05030	0.5%	0.00274	0.00275	0.2%
Ethyl Benzene	0.00461	0.00463	0.4%	0.00050	0.00050	0.7%
Naphthalene	0.00550	0.00552	0.5%	0.00022	0.00023	0.4%
Polycyclic aromatic hydrocarbons	0.01441	0.01437	-0.3%	0.00026	0.00026	-1.0%

Projected MSAT Emissions (tons/year)

I-10 from Washington Street to Dalrymple Drive

	Year/Alternative					
	2017			*2040*		
Pollutant	*No-Build*	*Build*	*Change*	*No-Build*	*Build*	*Change*
Acetaldehyde	0.02399	0.02410	0.5%	0.00108	0.00108	-0.1%
Acrolein	0.00438	0.00440	0.5%	0.00014	0.00014	0.4%
Benzene	0.01285	0.01290	0.4%	0.00159	0.00160	0.8%
1,3-Butadiene	0.00266	0.00267	0.4%	0.00001	0.00001	0.3%
Diesel Particulate Matter	1.74633	1.73106	-0.9%	0.13087	0.13100	0.1%
Formaldehyde	0.05617	0.05643	0.5%	0.00308	0.00308	0.2%
Ethyl Benzene	0.00517	0.00519	0.4%	0.00056	0.00056	0.7%
Naphthalene	0.00617	0.00620	0.5%	0.00025	0.00025	0.4%
Polycyclic aromatic hydrocarbons	0.01617	0.01612	-0.3%	0.00030	0.00029	-1.0%

Projected MSAT Emissions (tons/year)

I-10 from Dalrymple Drive to Perkins Road

	Year/Alternative					
	2017			*2040*		
Pollutant	*No-Build*	*Build*	*Change*	*No-Build*	*Build*	*Change*
Acetaldehyde	0.03285	0.03301	0.5%	0.00148	0.00148	-0.1%
Acrolein	0.00599	0.00602	0.5%	0.00019	0.00019	0.4%
Benzene	0.01760	0.01767	0.4%	0.00218	0.00220	0.8%
1,3-Butadiene	0.00364	0.00366	0.4%	0.00001	0.00001	0.3%
Diesel Particulate Matter	2.39171	2.37080	-0.9%	0.17923	0.17942	0.1%
Formaldehyde	0.07692	0.07729	0.5%	0.00421	0.00422	0.2%
Ethyl Benzene	0.00708	0.00711	0.4%	0.00076	0.00077	0.7%
Naphthalene	0.00845	0.00849	0.5%	0.00035	0.00035	0.4%
Polycyclic aromatic hydrocarbons	0.02214	0.02208	-0.3%	0.00041	0.00040	-1.0%

Projected MSAT Emissions (tons/year)

I-10 from Perkins Road to Acadian Thruway

Pollutant	Year/Alternative					
	2017			2040		
	No-Build	Build	Change	No-Build	Build	Change
Acetaldehyde	0.02346	0.02358	0.5%	0.00106	0.00106	-0.1%
Acrolein	0.00428	0.00430	0.5%	0.00014	0.00014	0.4%
Benzene	0.01257	0.01262	0.4%	0.00156	0.00157	0.8%
1,3-Butadiene	0.00260	0.00261	0.4%	0.00001	0.00001	0.3%
Diesel Particulate Matter	1.70837	1.69343	-0.9%	0.12802	0.12815	0.1%
Formaldehyde	0.05494	0.05520	0.5%	0.00301	0.00302	0.2%
Ethyl Benzene	0.00506	0.00508	0.4%	0.00054	0.00055	0.7%
Naphthalene	0.00603	0.00606	0.5%	0.00025	0.00025	0.4%
Polycyclic aromatic hydrocarbons	0.01582	0.01577	-0.3%	0.00029	0.00029	-1.0%

Projected MSAT Emissions (tons/year)

I-10 from Acadian Thruway to College Drive

	Year/Alternative					
	2017			***2040***		
Pollutant	***No-Build***	***Build***	***Change***	***No-Build***	***Build***	***Change***
Acetaldehyde	0.03598	0.03615	0.5%	0.00162	0.00162	-0.1%
Acrolein	0.00656	0.00660	0.5%	0.00021	0.00021	0.4%
Benzene	0.01927	0.01935	0.4%	0.00239	0.00240	0.8%
1,3-Butadiene	0.00399	0.00401	0.4%	0.00001	0.00001	0.3%
Diesel Particulate Matter	2.61950	2.59659	-0.9%	0.19630	0.19650	0.1%
Formaldehyde	0.08425	0.08465	0.5%	0.00462	0.00462	0.2%
Ethyl Benzene	0.00776	0.00779	0.4%	0.00083	0.00084	0.7%
Naphthalene	0.00925	0.00929	0.5%	0.00038	0.00038	0.4%
Polycyclic aromatic hydrocarbons	0.02425	0.02418	-0.3%	0.00044	0.00044	-1.0%

Projected MSAT Emissions (tons/year)

I-10 from College Drive to I-12

	Year/Alternative					
	2017			***2040***		
Pollutant	***No-Build***	***Build***	***Change***	***No-Build***	***Build***	***Change***
Acetaldehyde	0.07509	0.07544	0.5%	0.00338	0.00338	-0.1%
Acrolein	0.01370	0.01376	0.5%	0.00044	0.00044	0.4%
Benzene	0.04022	0.04038	0.4%	0.00498	0.00502	0.8%
1,3-Butadiene	0.00832	0.00836	0.4%	0.00003	0.00003	0.3%
Diesel Particulate Matter	5.46677	5.41897	-0.9%	0.40968	0.41009	0.1%
Formaldehyde	0.17582	0.17665	0.5%	0.00963	0.00965	0.2%
Ethyl Benzene	0.01619	0.01625	0.4%	0.00174	0.00175	0.7%
Naphthalene	0.01931	0.01940	0.5%	0.00079	0.00079	0.4%
Polycyclic aromatic hydrocarbons	0.05062	0.05046	-0.3%	0.00093	0.00092	-1.0%

Projected MSAT Emissions (tons/year)

I-10 from I-12 to Essen Lane

	Year/Alternative					
	2017			*2040*		
Pollutant	*No-Build*	*Build*	*Change*	*No-Build*	*Build*	*Change*
Acetaldehyde	0.05684	0.05710	0.5%	0.00256	0.00256	-0.1%
Acrolein	0.01037	0.01042	0.5%	0.00033	0.00033	0.4%
Benzene	0.03045	0.03056	0.4%	0.00377	0.00380	0.8%
1,3-Butadiene	0.00630	0.00633	0.4%	0.00002	0.00002	0.3%
Diesel Particulate Matter	4.13804	4.10186	-0.9%	0.31010	0.31042	0.1%
Formaldehyde	0.13309	0.13372	0.5%	0.00729	0.00730	0.2%
Ethyl Benzene	0.01225	0.01230	0.4%	0.00132	0.00133	0.7%
Naphthalene	0.01461	0.01468	0.5%	0.00060	0.00060	0.4%
Polycyclic aromatic hydrocarbons	0.03831	0.03819	-0.3%	0.00070	0.00069	-1.0%

Projected MSAT Emissions (tons/year)

LA 415 from Rosedale Road to I-10

	Year/Alternative					
	2017			***2040***		
Pollutant	***No-Build***	***Build***	***Change***	***No-Build***	***Build***	***Change***
Acetaldehyde	0.05835	0.05777	-1.0%	0.00221	0.00243	9.7%
Acrolein	0.01060	0.01050	-1.0%	0.00025	0.00027	9.7%
Benzene	0.03238	0.03209	-0.9%	0.00301	0.00331	9.8%
1,3-Butadiene	0.00660	0.00654	-1.0%	0.00002	0.00002	9.7%
Diesel Particulate Matter	6.45664	6.40135	-0.9%	0.35309	0.38950	10.3%
Formaldehyde	0.13613	0.13472	-1.0%	0.00581	0.00637	9.7%
Ethyl Benzene	0.01311	0.01299	-0.9%	0.00105	0.00115	9.8%
Naphthalene	0.01497	0.01483	-1.0%	0.00045	0.00045	0.0%
Polycyclic aromatic hydrocarbons	0.05122	0.05101	-0.4%	0.00054	0.00055	2.1%

Projected MSAT Emissions (tons/year)

I-110 from I-10 to Government Street

	Year/Alternative					
	2017			*2040*		
Pollutant	*No-Build*	*Build*	*Change*	*No-Build*	*Build*	*Change*
Acetaldehyde	0.00678	0.00681	0.5%	0.00031	0.00030	-0.1%
Acrolein	0.00124	0.00124	0.5%	0.00004	0.00004	0.4%
Benzene	0.00363	0.00365	0.4%	0.00045	0.00045	0.8%
1,3-Butadiene	0.00075	0.00075	0.4%	0.00000	0.00000	0.3%
Diesel Particulate Matter	0.49353	0.48921	-0.9%	0.03698	0.03702	0.1%
Formaldehyde	0.01587	0.01595	0.5%	0.00087	0.00087	0.2%
Ethyl Benzene	0.00146	0.00147	0.4%	0.00016	0.00016	0.7%
Naphthalene	0.00174	0.00175	0.5%	0.00007	0.00007	0.4%
Polycyclic aromatic hydrocarbons	0.00457	0.00456	-0.3%	0.00008	0.00008	-1.0%

Projected MSAT Emissions (tons/year)

I-12 from I-10 to Essen Lane

	Year/Alternative					
	2017			2040		
Pollutant	No-Build	Build	Change	No-Build	Build	Change
Acetaldehyde	0.04849	0.04872	0.5%	0.00218	0.00218	-0.1%
Acrolein	0.00885	0.00889	0.5%	0.00028	0.00028	0.4%
Benzene	0.02598	0.02608	0.4%	0.00322	0.00324	0.8%
1,3-Butadiene	0.00538	0.00540	0.4%	0.00002	0.00002	0.3%
Diesel Particulate Matter	3.53062	3.49975	-0.9%	0.26458	0.26485	0.1%
Formaldehyde	0.11355	0.11409	0.5%	0.00622	0.00623	0.2%
Ethyl Benzene	0.01046	0.01049	0.4%	0.00112	0.00113	0.7%
Naphthalene	0.01247	0.01253	0.5%	0.00051	0.00051	0.4%
Polycyclic aromatic hydrocarbons	0.03269	0.03259	-0.3%	0.00060	0.00059	-1.0%