

## **Executive Summary**

### ***Milestones and Background***

On September 30, 2008, the Federal Highway Administration certified that the Houston-Galveston area's 2035 Metropolitan Transportation Plan (MTP) Update and the 2008-2011 Transportation Improvement Program (TIP) conformed to the requirements of the State Implementation Plan for the Houston-Galveston ozone nonattainment area. The September 30, 2008 conformity finding was established with the *Revisions to the State Implementation Plan for the Control of Ozone Air Pollution, Houston/Galveston/Brazoria Ozone Nonattainment Area* (hereafter referred to as the "RFP SIP"). This SIP did not have an Attainment Demonstration for the 1997 8-hour Ozone standard; it had a Reasonable Further Progress portion to which it was conformed using its 2008 Motor Vehicle Emission Budgets (MVEBs). The EPA found these MVEBs adequate on March 21 2008 and approved them on April 22 2009.

This conformity is necessary to fulfill the need to update the *Regional Transportation Plan* (RTP) and the *Transportation Improvement Program* (TIP). Since the last conformity, a few projects already included in the transportation plan have changed in scope and/or timing. In some cases, the projects were originally modeled incorrectly in the travel demand model analysis for the RTP. Some changes were significant enough to warrant a new conformity determination for the RTP and TIP. Following is the list of all projects that were changed on this conformity determination:

- IH 45N HOV lanes from FM 1960 to LP (loop) 336 S – change milestone year; advance from 2025 to 2019.
  - FM 1960 to FM 2920 (MPO ID# 12725)
  - FM 2920 to Harris/Montgomery county line (MPO ID# 12724)
  - Montgomery county line to SH 242 (MPO ID# 12599)
  - SH 242 to LP 336 S Add new project to database (MPO ID# 14109 & 14628)
- BF (Business Farm to Market Road) 1960 from FM 1960 west of Humble to FM 1960 east of Humble – rescope from added capacity to access management treatments. Modeled under (MPO ID# 53 & 54)
- Allendale Extension: Oaks Rd. and Judy St. – remove project from RTP; local sponsor has withdrawn the project (MPO ID# 13611)
- Little York between Airline and Hardy Toll Road - change from 6 lanes (in 2025 and 2035) to 4 lanes (in 2019, 2025 and 2035). Cancel MPO ID#14590 (6 lanes) from database Modeled under MPO ID#4098.
- Dulles Ave from SH 6 to US 90A – project incorrectly modeled as widening from 4 to 6 lanes; project will reconstruct 4 through lanes and add 2 auxiliary lanes (MPO ID# 11184).

- FM 2234 from FM 521 to SH 288 – modeled as widening to 6 lanes (MPO ID# 12758); project is to widen from 2 to 4 lanes.
- SH 105 Cleveland Bypass – modeled as widening to 6 lanes; project is to widen to 4 lanes in 2025 (MPO ID# 14633)
- SH 105 in Montgomery County – modeled as 6 lanes; project should be 4 lanes; revise limits as Walden Road to Old River Road (0.870 miles) as 6 lanes in 2025 (MPO ID#7704)
- SH 146 modeling has been modified according to project description:
  - From Red Bluff to NASA 1: Widen to 8-lane with GS at major intersections and 4-lane frontage roads (MPO ID# 139)
  - From NASA 1 to Harris/Galveston County line: Widen to 6-lane arterial with 4-lane express lanes (MPO ID# 14632)
  - From Harris/Galveston County line to FM 518: Widen to 6-lane arterial with 4-lane express lanes (MPO ID#13842)
  
- SH 87 Galveston Ferry Landing to Bolivar Ferry Landing Toll Bridge - remove from RTP (MPO ID#12435 (model), MPO ID#13866 (RTP))
  
- SH 242 @ IH 45 Direct Connectors - project delayed due to funding shortfall remove from 2009 network (MPO ID#13513)
- FM 646 from IH 45 to FM 517 Widen from 2 to 4 lanes - remove from 2009 network (MPO ID#9708)
- FM 1314 S of Gene Campbell Blvd to 2.6 MI NW of LP 494 Widen to 4 lanes - remove from 2009 network (MPO ID#11558)
- FM 1314 1.0 MI S of SH 242 to S of Gene Campbell Blvd Widen to 4 lanes - remove from 2009 network (MPO ID#496)
- FM 1484 FM 3083 to FM 2432 Widen to 4 lanes - remove from 2009 network (MPO ID#11186)

The new TIP and RTP are scheduled for consideration and approval by the Transportation Policy Council (TPC) in August and by the Federal Highway Administration (FHWA) in September.

### ***Conformity Requirements***

The Clean Air Act Amendments of 1990 (CAAA) require transportation plans, programs, and projects in nonattainment areas, which are funded or approved by the FHWA or the Federal Transit Administration (FTA), to conform to the MVEBs established in the SIP. This ensures that transportation plans, programs, and projects do not produce new air quality violations, worsen existing violations, or delay timely attainment of the National Ambient Air Quality Standards (NAAQS). Conformity analysis requirements include:

- Use of the latest planning assumptions
- Analysis based on the latest emission estimation model available
- Interagency consultation, as well as a public involvement process, must be conducted during the analysis (found in Sections 7 and 8, respectively)
- Timely implementation of Transportation Control Measures (TCMs)
- An RTP and TIP that are consistent with the MVEBs established in the applicable SIP
- Include all regionally significant projects expected in the nonattainment area in the RTP and TIP

### ***Regional Inventory***

H-GAC conducts regional emission analyses of transportation plans to ensure that these activities are consistent with the air quality goals identified in the RFP SIP. This conformity analysis of the Houston-Galveston-Brazoria (HGB) nonattainment area accounts for emissions resulting from the nonattainment area’s transportation plans, including all regionally significant projects and the effects of emission control programs.

### ***Motor Vehicle Emission Budgets***

The budgets established in the RFP SIP are as follows:

Table 1: RFP Review Motor Vehicle Emission Budgets

<b>Reasonable Further Progress Budget (tpd)</b>		
<b><i>Year</i></b>	<b><i>NOx</i></b>	<b><i>VOC</i></b>
2008	186.13	86.77

*Source: RFP SIP, TCEQ*

These MVEBs represent the maximum allowable amount of emissions that may be produced by on-road sources as a result of the implementation of the RTP and TIP. These budgets are developed based on the emission inventories and the analysis conducted for the development of the RFP SIP and include emission reduction benefits from federal and state control programs.

### ***Conformity Tests***

As specified by the Code of Federal Regulations (40 CFR §93.109[c], as amended by 62 FR 43807, Aug. 15, 1997) all ozone nonattainment areas designated moderate and above must pass a motor vehicle emissions budget test if an approved SIP budget exists. The HGB area has been designated as “Severe”

for the 1997 eight-hour standard with an attainment year of 2019. As noted earlier, the budget test must be satisfied using the MVEBs established in the RFP SIP. Specifically, this test is satisfied when emissions of the ozone pollutant's precursors (VOC and NOx) for each analysis year are less than or equal to the MVEBs established in the SIP. For the test, the regional emission analysis may be performed for any years within the timeframe of the transportation plan, provided they are not more than ten years apart, the attainment year (2019) and the plan horizon year (2035). To meet this analysis requirement then, the years 2009, 2019, 2025 and 2035 were selected.

### ***Modeling***

Two modeling suites were used in this process in order to obtain total emissions. The Travel Demand Modeling at H-GAC used the EMME/2 model with a special post-mode choice speed model in order to establish the region's total vehicle miles traveled (VMT). The TTI suite of emissions software was used in conjunction with the latest version of EPA's MOBILE6 model to replicate the on-road modeling performed in the SIP and obtain the appropriate emissions factors. The data used in this conformity analysis is consistent with what was used in the SIP, except where more recent planning assumptions have been developed. Total emissions were then calculated by multiplying the VMT by the emission factors for each of the analysis years.

### ***Conformity Analysis Results***

The results of this conformity determination show that the *2035 Regional Transportation Plan* and the *2008-2011 Transportation Improvement Program* for the HGB Transportation Management Area meet the requirements of the SIP for the Houston-Galveston ozone nonattainment area, as submitted to EPA on May 30, 2007, and in accordance with the Clean Air Act (42 U.S.C. 7504, 7506 (c) and (d)), as amended on November 15, 1990, and the final conformity rule (40 CFR Parts 51 and 93).

Table 2: Conformity Analysis Summary

<b>Analysis Year</b>	<b>VOC Emissions (tons/day)</b>	<b>VOC Budget (tons/day)</b>	<b>NOx Emissions (tons/day)</b>	<b>NOx Budget (tons/day)</b>
<b>2009</b>	78.74	86.77	154.32	186.13
<b>2019</b>	46.14	86.77	50.09	186.13
<b>2025</b>	42.65	86.77	39.70	186.13
<b>2035</b>	51.03	86.77	43.05	186.13

Figure 1: VOC Emissions Summary

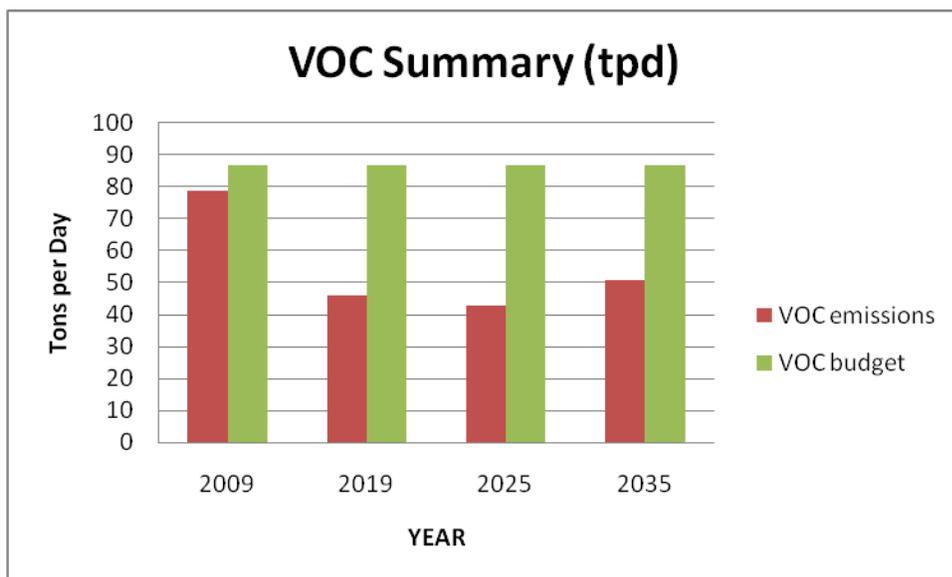
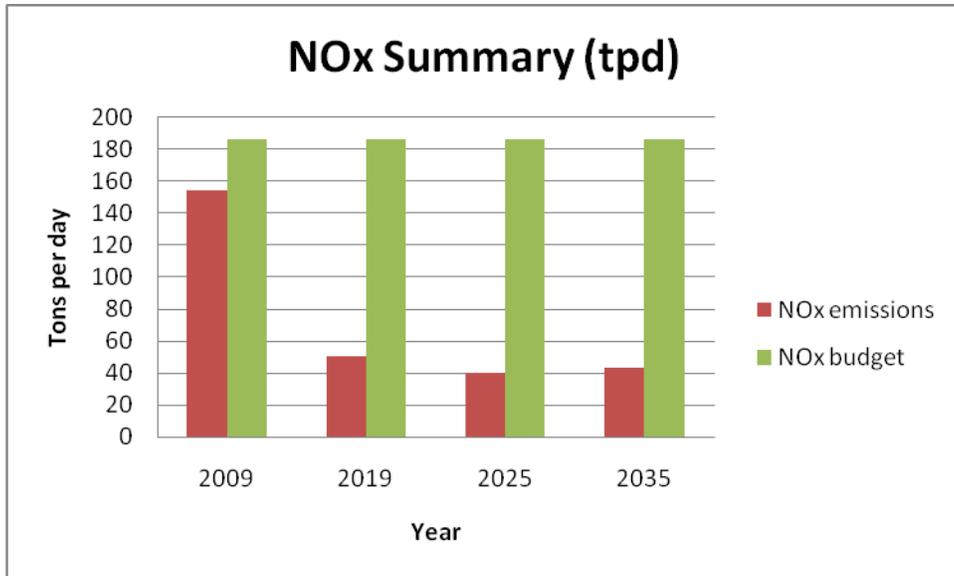


Figure 2: NOx Emission Summary



### ***Background Information on Conformity***

More information on what conformity is and the regulations that apply to it can be found at: <http://www.fhwa.dot.gov/environment/conform.htm>. This conformity determination involved a pre-analysis review discussion with the review agencies (Section 7) and a public comment period (Section 8).