

## **Executive Summary**

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

On April 9, 2013, the Federal Highway Administration and the Federal Transit Administration certified that the amendments to the Houston-Galveston area's *2035 Regional Transportation Plan (RTP) Update* and the *2013-2016 Transportation Improvement Program (TIP)* met all the requirements for making a joint conformity determination to the State Implementation Plan for the Houston-Galveston ozone nonattainment area.

The EPA action designating the 8-county Houston-Galveston-Brazoria region as nonattainment under the 2008 ozone standard became effective on July 20, 2012 and began a 1-year grace period to demonstrate conformity under the new standard. This grace period expires on July 20, 2013, at which time a conformity lapse could occur if federal approval of this conformity is not obtained. During a conformity lapse, no federal actions for non-exempt projects (added capacity) can occur, including approval of environmental documents and authorizations to obligate federal funds.

Currently, H-GAC is processing a transportation conformity determination update to establish conformity for the non-attainment designation with a classification of "marginal" for the Houston-Galveston-Brazoria area under the 2008 8 hour ozone standard (75 ppb) with 2015 as the attainment year. To satisfy this requirement, 2015 must be added as an additional milestone analysis year.

Following are the major project changes<sup>1</sup> within the Regional Transportation Plan that have been included in this conformity determination:

- **BW 8 SE, Advance segments between SH 288 and IH 10 E (HCTRA)**
- **SH 288 Toll Road, Phase I, 4-lane instead of 2-lane reversible Managed Lanes (TxDOT/BCTRA)**
- **SH 146, Advance segments between Red Bluff and FM 518 (TxDOT/Cat-2)**
- **SH 249, Adjust timing of project elements (HCTRA/MCTRA)**
- **US 59 S, Advance segments between SH 99/FM 762 and SP 10 (TxDOT/TIP Call)**
- **US 290, Advance remaining segments (TxDOT/Cat-2)**

<sup>1</sup> This list is not exhaustive of all project revisions that affect conformity. A complete listing of such revisions is contained within Appendix 18

Due to the seriousness of the July 20th deadline, this determination has been focused on requested project revisions where (1) a federal action is needed before the next conformity is likely to be available (Dec. 2013, approx.), or (2) all needed documentation with regard to fiscal constraint has been provided and determined to be complete. As a result, some requested modifications to the RTP have been deferred to the next opportunity to revise the RTP and conformity, anticipated for later this year.

This conformity finding will be using the Motor Vehicle Emission Budgets (MVEBs) coming from the latest revisions to the *Houston-Galveston-Brazoria Attainment Demonstration and Reasonable Further Progress State Implementation Plan for the 1997 Eight-Hour Ozone Standard* (hereafter referred to as the “AD and RFP SIPs”), which are the “**March 2010 HGB RFP SIP Revision** (TCEQ Project No. 2009-018-SIP-NR, adopted March 10, 2010) [Houston-Galveston-Brazoria Reasonable Further Progress State Implementation Plan Revision for the 1997 Eight-Hour Ozone Standard](#)” and the “**March 2010 HGB AD SIP Revision** (TCEQ Project No. 2009-017-SIP-NR, adopted March 10, 2010) [Houston-Galveston-Brazoria Attainment Demonstration State Implementation Plan Revision for the 1997 Eight-Hour Ozone Standard](#)”. The EPA found these MVEBs adequate on January 25, 2011 (effective by February 9, 2011).

### ***Conformity Requirements***

The Clean Air Act Amendments of 1990 (CAAA) require transportation plans, programs, and projects in nonattainment and maintenance 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 (although MOVES is the latest emission model, this conformity is done using MOBILE6.2.03 because it is allowed under the grace period)
- 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 (if there is an adequate or approved SIP budget)
- Include all regionally significant projects expected in the nonattainment and maintenance 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 AD and RFP SIPs. 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 AD and RFP SIPs are as follows:

Table 1: AD Motor Vehicle Emission Budgets

<b>Attainment Demonstration Budgets (tpd)</b>		
<b>Year</b>	<b>NOx</b>	<b>VOC</b>
2018	49.22	45.97

*Source: AD SIP, TCEQ*

Table 2: RFP Motor Vehicle Emission Budgets

<b>Reasonable Further Progress Budgets (tpd)</b>		
<b>Year</b>	<b>NOx</b>	<b>VOC</b>
2011	135.74	75.17
2014	95.26	61.84
2017	67.95	53.23
2018	60.92	51.35

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 AD and RFP SIPs. The MVEBs include emission reduction benefits from federal and state control programs.

### ***Conformity Tests***

As noted in Section 1.1, CAA section 176(c)(6) and 40 CFR 93.102(d) provide a one-year grace period from the effective date of designations before transportation conformity applies in areas newly designated nonattainment for a specific NAAQS. Therefore, transportation conformity for the 2008 8 hour ozone NAAQS must be completed within one of the effective date of nonattainment designations. EPA's final rule for designating areas for the 2008 ozone NAAQS was effective July 20, 2012, as a consequence the HGB region must demonstrate conformity for this NAAQS before July 20, 2013.

Since there are no SIP budgets available for the 2008 ozone NAAQS, the budgets for the 1997 ozone standard will be used, as explained on EPA's documentation "Transportation Conformity Guidance for 2008 Ozone Nonattainment Areas". Specifically, for the new attainment year 2015, the 1997 budget for the year 2014 will be used. The budget 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 SIPs.

When using the budget test for the 2008 8 hour ozone standard, 40 CFR 93.118(d)(2) requires the regional emission analysis to be performed for:

- The attainment year for the 2008 ozone NAAQS, if it is within the timeframe of the transportation plan and conformity determination
- The last year of the timeframe of the conformity determination
- Intermediate years as necessary, such that analysis years are no more than ten years apart.

The analysis years chosen must meet 40 CFR 93.118(d)(2) for all NAAQS that apply. During the one-year grace period for newly designated 2008 ozone areas when the 1997 ozone NAAQS also applies, the 2008 ozone areas with adequate or approved 1997 ozone budgets can determine conformity for both of these NAAQS at the same time. In addition, in areas that have budgets for a previous ozone NAAQS that are established for years in the timeframe of the conformity determination, consistency with those budgets must also be determined (40 CFR 93.118(b)). This consistency can be demonstrated by interpolating between the years for which regional emissions analyses are performed (40 CFR 93.118(d)(2)).

To meet this analysis requirement then, the years 2011, 2014, 2015, 2017, 2018, 2025 and 2035 were selected. For the test, the regional emissions analysis must be performed for the attainment year and the horizon year, and any years with an associated MVEB, and any years within the timeframe of the plan provided they are not more than ten years apart. In our case, H-GAC selected all the years to calculate regional emission analysis to agree with the Pre-Analysis Consensus Template (Appendix 17).

### ***Modeling***

Two modeling suites were used in this process in order to obtain total emissions. The Travel Demand Modeling at H-GAC used the Cube Voyager 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 MOBILE6.2.03 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 amendments to the *2035 Regional Transportation Plan Update and to the 2013-2016 Transportation Improvement Program* for the HGB Transportation Management Area meet the requirements of the SIPs for the Houston-Galveston ozone nonattainment area and are 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 3: Conformity Analysis Summary

<b>Year</b>	<b>NOx Emissions (tons/day)</b>	<b>NOx Budget (tons/day)</b>	<b>VOC Emissions (tons/day)</b>	<b>VOC Budgets (tons/day)</b>
<b>2011</b>	135.20	135.74	74.20	75.17

<b>2014</b>	92.19	95.26	59.58	61.84
<b>2015</b>	80.98	95.26	55.63	61.84
<b>2017</b>	61.40	67.95	48.88	53.23
<b>2018</b>	48.88	49.22	45.96	45.97
<b>2025</b>	33.10	49.22	38.31	45.97
<b>2035</b>	35.16	49.22	45.91	45.97

Figure 1: VOC Emissions Summary

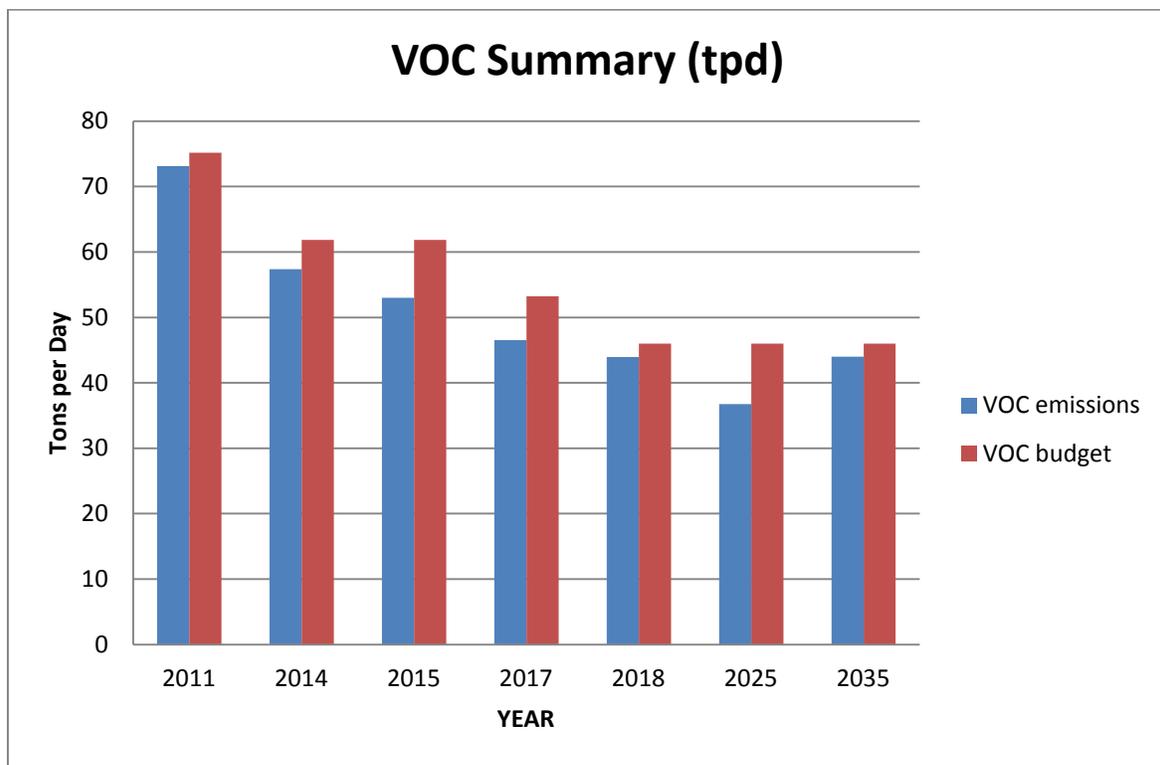
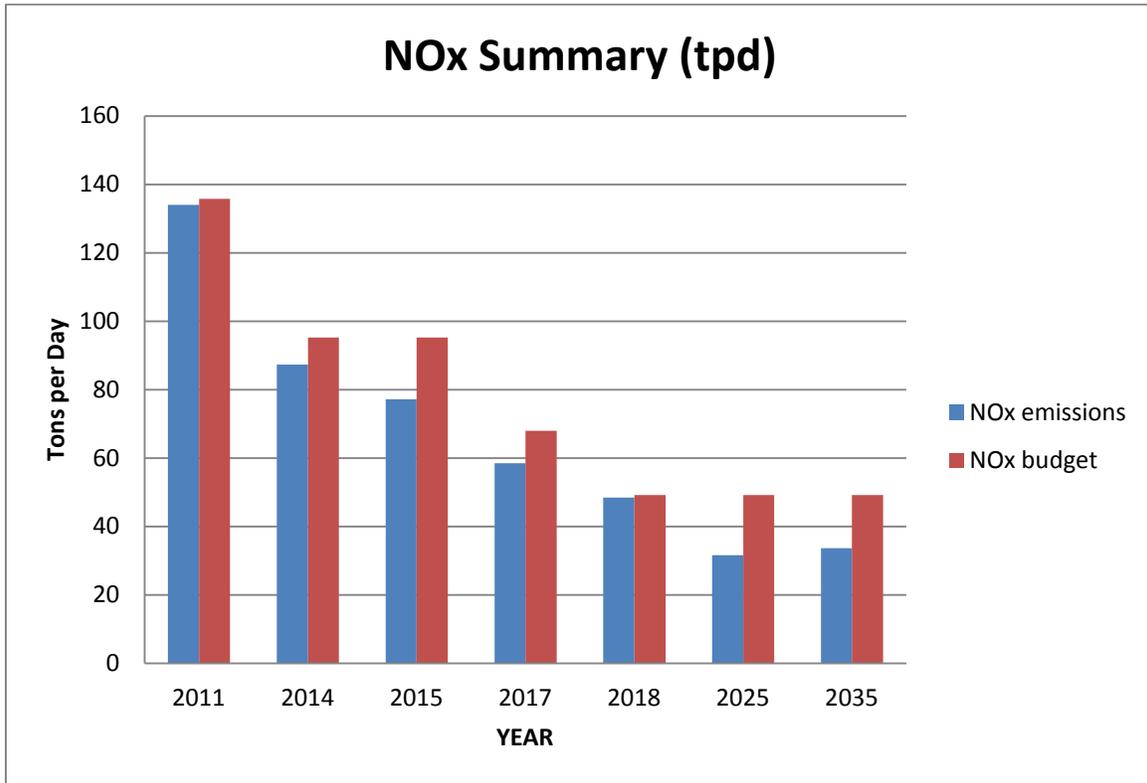


Figure 2: NOx Emission Summary



### ***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).