

Executive Summary

Milestones and Background

On January 25 and February 1, 2011 respectively, the Federal Highway Administration certified that the Houston- Galveston area's 2035 *Regional Transportation Plan (RTP) Update* and the 2011-2014 *Transportation Improvement Program (TIP)* conformed to the requirements of the State Implementation Plan for the Houston-Galveston ozone nonattainment area. The financial plan for the RTP Update reflected a significantly reduced revenue forecast for transportation plans and programs.

Currently, due to a short term availability of funds (Proposition 12), the Comprehensive Development Agreement authority to implement projects specified in the Senate Bill 1420, and other local requests, H-GAC is amending the 2035 Regional Transportation Plan Update and the Transportation Improvement Program, and as a consequence it has to update the Air Quality Conformity Funding. In this way, some projects that were taken out of the plan due to lack of funding were put back, and projects already in the plan may have been moved to different years based on sponsor request.

The major projects highlights¹ are the following:

2014 Analysis Year

- Fort Bend Parkway Extension (SH 6 to Sienna Pkwy) – New to RTP
- SH 99 Frontage Road (Morton To Peek Rd) – New to RTP

2017/2018 Analysis Years

- Cane Island/IH 10 W (Bridge over IH 10, Frontage Roads) – New to RTP
- BW 8 Widening (US 59 N to Old Humble Rd) – Restore to RTP
- FM 529 Widening (Fry Rd to Freeman/SH 99) – Advance
- FM 1488 Grade Separation (At UPRR) – Restore to RTP
- FM 1774 Grade Separation (At UPRR) – Restore to RTP
- FM 2978 Widening (Conroe Huffsmith to FM 1488) - Restore to RTP
- IH 45 N Managed Lanes/HOV (LP 336 to FM 1960) – Advance
- IH 610/US 290 Interchange (Project 'J-1') – Advance
- IH 10 W Aux Lanes (BW 8 to SH 6) – New to RTP
- SH 99 Segment I-2 (BS 146 to FM 1405) – Advance
- SH 99 Segment I-2 (Fisher Rd Overpass) – New to RTP
- SH 249 Tollway (Spring Cypress Rd to FM 1774/Pinehurst) – Restore to RTP
- SH 288 Tollway in Brazoria Co. (SH 6 to BW 8) – Advance

2025 Analysis Year

- METRO LRT, University Line – Delay
- METRO LRT, Uptown Line – Delay

- SH 99 Segments H/I-1 (US 59 N to IH 10 E) – Advance
- US 59 S Reconstruction/Widening (FM 2759 to SH 36) – Advance
- Westpark Toll Road Extension (SH 99 to Cross Creek Ranch) – Advance

2035 Analysis Year

- SH 146 Widening (Fairmont Pkwy to Red Bluff Rd) – Restore to RTP

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

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”). 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 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 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

Attainment Demonstration Budgets (tpd)		
Year	NOx	VOC
2018	49.22	45.97

Source: AD SIP, TCEQ

Table 2: RFP Motor Vehicle Emission Budgets

Reasonable Further Progress Budgets (tpd)		
Year	NOx	VOC
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, 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 date of June 15, 2019. Since to show attainment, data from a whole ozone season is needed, then the year 2018 is being modeled to show attainment. As noted earlier, the budget test must be satisfied using the MVEBs established in the AD and RFP SIPs. 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 SIPs. For the test, the regional emission analysis should be performed for any years within the timeframe of the transportation plan, provided they are not more than ten years apart, any year that has an emission budget (2011, 2014 and 2017), the attainment year (2018) and the plan horizon year (2035). To meet this analysis requirement then, the years 2011, 2014, 2017, 2018, 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 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 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 Update Amendment*, the *2011-2014 Transportation Improvement Program*, and 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 2: Conformity Analysis Summary

Analysis Year	VOC Emissions (tpd)	VOC Budget (tpd)	NOx Emissions (tpd)	NOx Budget (tpd)
2011	73.11	75.17	134.06	135.74
2014	56.61	61.84	82.96	95.26
2017	46.85	53.23	58.34	67.95
2018	43.94	45.97	46.99	49.22
2025	37.22	45.97	32.89	49.22
2035	44.35	45.97	34.97	49.22

Figure 1: VOC Emissions Summary

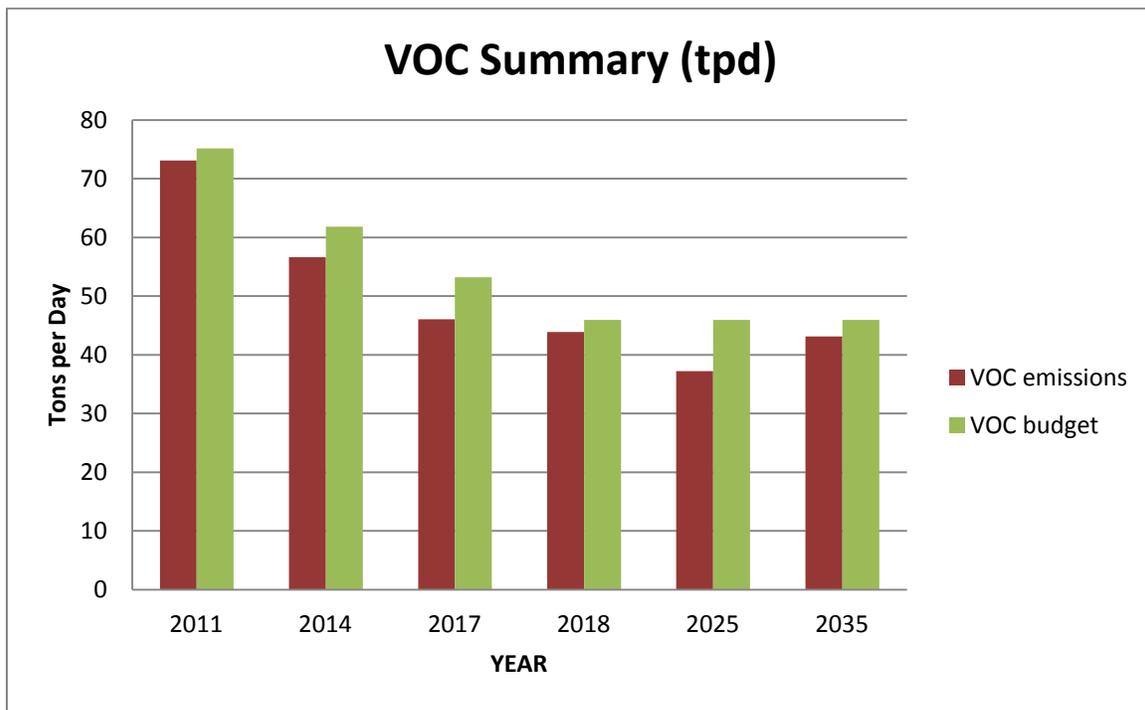
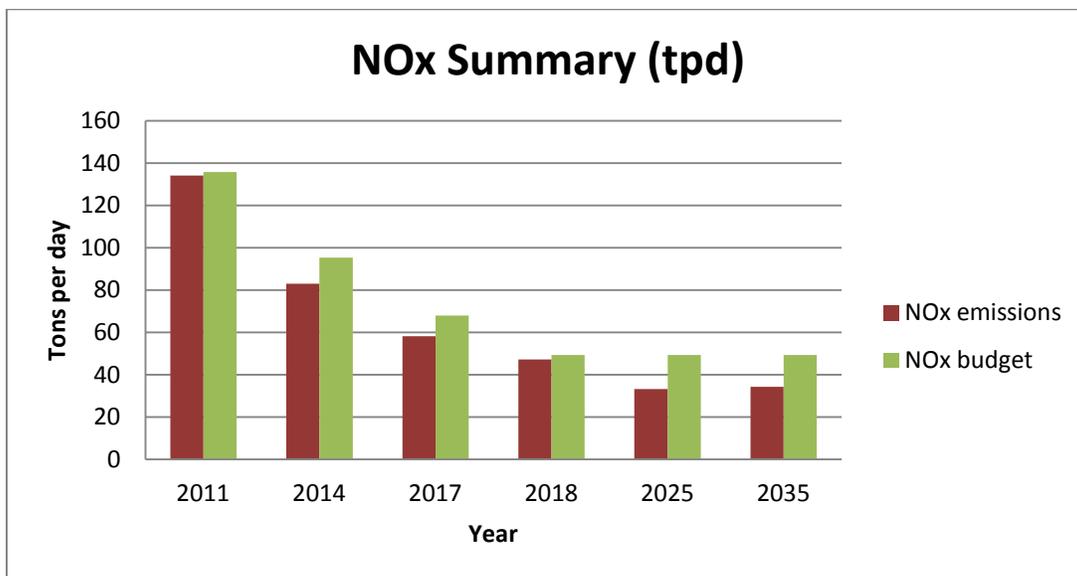


Figure 2: NOx Emission Summary



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).