

APPENDIX 15

Public Comment Process

HOUSTON-GALVESTON AREA COUNCIL
Public Comment Period and Public Meetings
The 2040 RTP and Transportation Conformity Determination

H-GAC is announcing the opening of a comment period to give the public an opportunity to review the proposed new transportation plan as well as a new transportation conformity determination for the 2015-2018 TIP and the 2040 Regional Transportation Plan (RTP). **The public comment period begins on Monday, November 24, 2014 and ends on Friday, January 9, 2015 at 5:00 pm.**

H-GAC will engage in numerous regional presentations, as well as host two public meetings at its offices, 3555 Timmons Lane, 2nd Floor Conference Room, Houston, TX 77027, on **Wednesday, December 17, 2014, from Noon-1:00 p.m. and 5:00-7:00 p.m.**

The public is encouraged to attend meetings, review the Draft document, and provide comment at <http://www.2040plan.org>. All other comments can be mailed to Transportation Public Information, Houston-Galveston Area Council, PO Box 22777, Houston, TX 77227-2777, emailed to publiccomments@h-gac.com, faxed to (713) 993-4508, or called in to our toll-free telephone number 1-855-363-2516.

In compliance with the Americans with Disabilities Act, H-GAC will provide for reasonable accommodations for persons attending H-GAC functions. Requests from persons needing special accommodations should be received by H-GAC staff 24 hours prior to a function. The public meeting will be conducted in English, and requests for language interpreters or other special communication needs should be made at least two working days prior to a function. Please call 713-993-2471 for assistance.



January 07, 2015

H-GAC Transportation Public Information
P.O. Box 22777
Houston, TX 77227

Via email.

Re: 2040 Regional Transportation Plan Comments

I appreciate the opportunity to submit these brief comments on behalf of Air Alliance Houston. I visited HGAC on December 17 and spoke with Alan Clark, Graciela Lubertino, and others about the Air Quality Conformity portion of the plan. My comments are generally limited to what I learned about that option of the plan in the conversations I had on that day.

Broadly speaking, our interest in this plan lies in its ability to reduce emissions from mobile sources and thereby improve public health. At the highest level, the ways to do this include: reducing per capita vehicle miles traveled; increased use of mass transportation; fleet turnover and introduction of more efficient vehicles; clean fuel alternatives; and increased transportation efficiency. Although we won't get into each of these massive issues here, in general we support efforts on these fronts. I am happy to engage with you on any of these issues in more detail as needed.

We also must point out that we are very interested in the impact of our region's commercial diesel fleet on air quality and public health. In addition to diesel fleet turnover (more on that below) we would like to see such programs as local ordinances limiting idling from diesel trucks, dedicated truck lanes on major highways, prohibitions on truck traffic in residential areas, and special connectors to route Port of Houston traffic around and away from denser areas.

Turning to the Air Quality Conformity Determination, it seems to contemplate a great deal happening in the period 2018-2025. During this seven year period, NOx emissions are reduced more than 40%. See *2040 RTP, Appendix C, table in Abstract (pdf p. 4)*.

As it was explained to me on Dec. 17, this reduction is due almost entirely to fleet turnover. Turnover is assumed to be 3% per year, with 100% fleet turnover achieved by 2025. (I apologize if I have misunderstood or misrepresented this fact, but after a cursory search of the 2040 RTP documents I have not been able to find confirmation. This comes from notes jotted down after my conversations.)

This is a very aggressive turnover rate. If it is going to be met, the region is going to have to make full and effective use of state and local incentive programs—TERP, LIRAP, DERA, etc. HGAC should take steps to ensure that this happens. For example, we would like to see HGAC work with the state legislature to ensure full funding of state programs such as TERP and LIRAP.

We also want to see these programs used as effectively as possible. Often, incentive programs are used disproportionately by large commercial fleet owners. But many of the oldest, most polluting diesel vehicles are owned by individual owner/operators. HGAC should endeavor to reach out specifically to these individuals with incentive opportunities. This may be the only way to ensure turnover of some of the oldest, most polluting vehicles.

Thank you again for the opportunity to provide these comments. I am available by phone or email (713-528-3779, adrian@airalliancehouston.org) to discuss these issues further.

Sincerely,

A handwritten signature in black ink, appearing to read "Adrian Shelley". The signature is fluid and cursive, with the first name "Adrian" and last name "Shelley" clearly distinguishable.

Adrian Shelley
Executive Director



HOUSTON-GALVESTON AREA COUNCIL

PO Box 22777 • 3555 Timmons Ln. • Houston, Texas 77227-2777 • 713/627-3200

January 13, 2015

Adrian Shelley
Executive Director
Air Alliance Houston
3914 Leeland Street
Houston, Texas 77003

Dear Mr. Shelley,

Thank you for your comments regarding conformity for the 2040 Regional Transportation Plan. The purpose of this letter is to specifically address your comment on the 40% NO_x emission reductions between the years 2018 and 2025. These emissions reductions are due primarily to fleet turn over and the implementation of new federal standards. The Tier 2 emission standards, implemented in 2004 for light duty gasoline vehicles and light duty gasoline trucks show emission reductions of up to 95% in NO_x versus Tier 1 vehicles. In addition, the Clean Diesel federal rule, which was implemented in 2006 for heavy duty diesel vehicles, shows an emission reduction of 96% in NO_x versus previous standards.

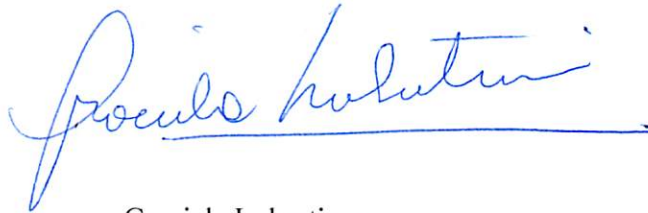
For more information on the emission reductions and the implementation timeline for these rules, please refer to the following EPA websites:

<http://www.epa.gov/oms/standards/light-duty/>

<http://www.epa.gov/otaq/standards/heavy-duty/hdci-exhaust.htm>

H-GAC appreciates Air Alliance Houston's contribution to the improvement of the region's air quality, and we look forward to continued collaboration on future activities. If you have any questions regarding the information in this letter, please feel free to contact me at 713-993-4582 or Graciela.Lubertino@H-GAC.com.

Sincerely



Graciela Lubertino

Chief Air Quality Coordinator



HOUSTON-GALVESTON AREA COUNCIL

January 13, 2015

Adrian Shelley
Executive Director
Air Alliance Houston
3914 Leeland St.
Houston, TX 77003

Dear Mr. Shelley,

Thank you for your comment regarding the 2040 Regional Transportation Plan. The success of the 2040 RTP is dependent on input from organizations such as Air Alliance Houston, and we appreciate your contribution. Your letter will be included in the public comment section of the 2040 RTP, but we also wished to address some of your comments directly.

Idling Ordinances

In late 2011, H-GAC's Regional Air Quality Planning Advisory Committee (RAQPC) formed an Idling Reduction Subcommittee to develop a voluntary diesel idling reduction policy for public and private sector fleets operating in our nonattainment region. The subcommittee developed sample anti-idling policies and resources for private and public organizations. Information on this program is available at www.EngineOffHGAC.com.

Freight Movement

H-GAC is interested in working with regional entities to study and implement alternative routing for freight vehicles. These activities can have a positive impact on congestion and air quality. H-GAC completed a regional goods movement plan in 2013, which can be viewed [here](#).

Use of Federal and State Incentive Programs

H-GAC has aggressively pursued federal and state air quality funding (including TERP, LIRAP and DERA) which have been used to supplement and expand existing vehicle replacement programs. H-GAC is currently compiling information on these programs to inform local officials of opportunities available through these programs, and of the current legislative challenges.

Outreach to Drayage Truck Owner-Operators

In 2009, H-GAC received a DERA grant for the development of a drayage truck loan program. To date, this program has assisted in the accelerated turnover of over 200 trucks, and over 80% of the participants in the program are small businesses/owner-operators. H-GAC staff and other organizations such as the Environmental Defense Fund and the Port of Houston Authority have partnered for targeted outreach events to owner-operators as well as additional DERA proposals for the accelerated replacement of heavy-duty drayage vehicles.

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HOUSTON-GALVESTON AREA COUNCIL

H-GAC appreciates Air Alliance Houston's contribution to the improvement of the region's air quality, and we look forward to continued collaboration on future activities. If you have any questions regarding the information in this letter, please feel free to contact me at 713-499-6695 or Shelley.Whitworth@H-GAC.com.

Sincerely,

A handwritten signature in black ink that reads "Shelley Whitworth".

Shelley Whitworth
Air Quality Program Manager

SW/nw



Houston Regional Group

P.O. Box 3021

Houston, Texas 77253-3021

713-895-9309

<http://texas.sierraclub.org/houston/>

December 17, 2014

Mr. Alan Clark
Director of Transportation Planning
Houston-Galveston Area Council
P.O. Box 22777
3555 Timmons, Suite 120
Houston, Texas 77027

Dear Alan,

Enclosed are the comments of the Houston Regional Group of the Sierra Club (Sierra Club) regarding the Houston-Galveston Area Council (HGAC) 2040 Regional Transportation Plan (RTP).

1) The Sierra Club encourages HGAC to make the print size larger for the RTP and associated documents. For instance, **Appendix H: Healthy Planning Framework**, is of a print size that can be read without removing glasses and squinting at the text. The rest of the RTP should be printed in a similar size type.

2) **Page 3, Executive Summary**, HGAC states, "Growth has not, however, been matched with commensurate investment in state and regional transportation infrastructure, challenging the sustainability of our future economic prosperity." It is troubling that HGAC only refers to "economic prosperity" and says nothing about social and environmental prosperity upon which "economic prosperity" is based. HGAC should state plainly, particularly since one of the goals of the RTP is **"Conserve and Protect Natural and Cultural Resources"**, how social and environmental prosperity will be increased and enhanced by the RTP. If social and environmental prosperity will not be increased and enhanced then HGAC should be honest and say so, state why this is the case, and state how this will be changed.

HGAC never states at what point development and population growth is too much for the Houston area. At which point do we exceed the carrying capacity for humans in the Houston area. At which point do we remove or push out most other living things and take up too much of the soil, water, vegetation, and other natural resources for ourselves. The RTP should take this into account and state clearly at what point there are too many roads for the environment to function well. This is particularly important with regards to maintenance, operation, repair, and replacement of existing roads versus new roads. HGAC does not state clearly the priority of new roads versus existing roads. HGAC should state what the existing

"When we try to pick out anything by itself, we find it hitched to everything else in universe." ¹*John Muir*

road deficit is in maintenance, operation, repair, and replacement versus new roads.

The RTP ignores the importance of local roads. Local roads are not a part of the RTP and are not paid for by most dollars that fund the RTP. Since local roads are used at least twice a day by people where they live and since their condition, if the City of Houston is any indication, is not good (potholes, cracks, uneven pavement, broken curbs, etc.) the solution for local road maintenance, operation, repair, and replacement must also be covered in the RTP. The same is true for private roads which also are not covered by the RTP. These are additional road problems that must be acknowledged and assessed by the RTP for it to fully address our road problems. A holistic solution to our road problems is needed and the RTP should provide this holistic solution.

HGAC should conduct a retrospective study of past RTPs and other transportation plans and see if the benefits/costs that were projected came true. It is important that HGAC learns and projects better in the future by looking backward and seeing where mistakes and successes have been.

3) **Page 3, Executive Summary**, HGAC calls the RTP a “responsible guide” for transportation systems. HGAC should state clearly why the RTP is a “responsible guide”, should define what a “responsible guide” is, and should state how the RTP meets this definition of “responsible guide”.

4) **Page 3, Executive Summary and page 4, 2040 RTP Process**, HGAC states that the RTP has “been shaped by the public ... and include more than 1,450 unique projects which are sponsored locally by 61 different public entities.” It is not clear which members of the public have shaped the RTP and where particularly this has occurred. The public usually is not meant to include “public entities” but usually refers to individual citizens, non-governmental organizations, and special interests like business organizations. HGAC should state clearly which members of the public shaped which parts of the RTP.

5) **Page 3, Executive Summary, page 5, Goals and Performance Measures, and page 7, Strategy 1: Improve System Management and Operations**, HGAC has a fifth goal for the RTP, “**Conserve and Protect Natural and Cultural Resources**”. However, the RTP does little to implement this goal. “**8-hour Ozone Design Value and Reduce Impacts Requiring Mitigation**” are the performance measures for this goal. Ozone air pollution levels will be used by the RTP, via tracking of those levels, to determine whether HGAC really does “**Conserve and Protect Natural and Cultural Resources**”. Since Houston has not met the ozone standard for 40 years it is not clear whether design value is the best metric to use especially if number of violations of the ozone standard go up.

HGAC does not provide state a measurement unit for how **“Reduce Impacts Requiring Mitigation”** will be measured and what specifically will have impacts reduced so that mitigation is not required.

HGAC has a program called **“Ecological”** that identifies many of the important ecosystems in the HGAC area. HGAC should use this program to prepare a performance measure that results in the protection of these important ecosystems. One of these performance measures could be “To protect a sustainable portion of the Katy Prairie” and a certain number of acres that are protected could be the metric used to determine success or failure. In addition, there are no cultural resource performance measures in the RTP even though the goal is to “protect” these cultural resources. HGAC does not state what “Reduce Impacts Requiring Mitigation” means, how many of the RTP projects must meet this performance measure, and what specific impacts will be used to determine success for this goal. This oversight should be corrected. HGAC should state what the goal **“Conserve and Protect Natural Cultural Resources”** means and then should prepare performance measures that result in the protection of all elements of this goal. HGAC does not state how these performance measures will be measured (unit of measure) and defined as success or failure.

The first goal is **“Improve Safety”**. The performance measure for this goal is **“Reduce Crash Rates”**. HGAC fails to state how much the crash rates must be reduced, where the priority crash rate reduction areas are, how many of these crash rate reduction areas there are, and whether HGAC expects each crash rate reduction area to have a reduction in crash rate if the goal is to be met. HGAC does not state how this performance measure will be measured (unit of measure) and defined as success or failure.

The second goal is **“Manage and Mitigate Congestion”**. The performance measure for this goal is **“Increase Reliability, Increase Bus On-time Performance”**. There is no indication of how much of an increase in reliability and bus on-time performance is a success or failure. The RTP does not commit to any specific reduction in congestion at any location by any percent. HGAC does not state how these performance measures will be measured (unit of measure) and defined as success or failure.

The third goal is **“Ensure Strong Asset Management and Operations”**. The performance measure for this goal is **“System Condition, Incident Response”**. HGAC does not state how these performance measures will be measured (unit of measure) and defined as success or failure.

The fourth goal is **“Strengthen Regional Economic Competitiveness”**. The performance measure is **“Truck Congestion Cost, Incident Response”**. HGAC does not state how these performance measures will be measured (unit of measure) and defined as success or failure.

6) **Page 5, Vision**, HGAC states that the “**Vision**” is, “In the year 2040, our region will have a multimodal transportation system through coordinated investments that supports a desirable quality of life, enhanced, economic vitality and increased safety, access and mobility.” The Sierra Club is amazed that the HGAC does not include environmental protection and social betterment in the “**Vision**”. The Sierra Club requests that the “**Vision**” be changed to include these two extremely important regional goals.

7) **Page 5, Vision, page 8, Strategy 2: Enhance State of Good Repair, and page 20, Corridor Based Major Investments**, it is sad that HGAC includes the over \$5 billion unnecessary Grand Parkway in its “**Vision**” but will not include and fund local and private roads in the RTP. The RTP cannot truly be called a RTP if local and private roads are not included in the analysis, assessment, evaluation, and implementation of the RTP. As shown in the table the Grand Parkway is a “money sucker” since it costs more than \$700,000,000 than the next most expensive corridor, US 290.

8) **Page 7, Strategy 1: Improve System Management and Operations**, HGAC should discuss in the RTP how construction of additional roads and repair and replacement of existing roads causes congestion. HGAC should proposed mitigation measures that will be implemented to reduce the congestion and air pollution impacts of road construction.

9) **Page 7, Strategy 1: Improve System Management and Operations**, HGAC should provide an analysis of how the “**Commute Solutions**” program is doing. For instance, over the past 5 years HGAC should tell the public what the trend has been for “**Commute Solutions**” specific transportation measures. HGAC should state what percent of total traffic is affected by “**Commute Solutions**”. HGAC should compare the effectiveness of “**Commute Solutions**” to other cities. It is not clear from the RTP and appendices what progress “**Commute Solutions**” has really made. HGAC should state what the goals of “**Commute Solutions**” are and what performance measures are used and how they are measured (unit of measure). HGAC should determine the rate of compliance and participation of voluntary transportation programs with mandatory ones. The public deserves a complete discussion about this program, how it is performing, and how it can be made more effective.

10) **Page 9, Strategy 3: Expand the Multimodal Network and page 12, Regional Roadway System**, the Sierra Club does not believe that the Grand Parkway and other tolled roads can be called multimodal. These roads serve vanpools, carpools, and buses only incidentally and are for one person-one car drivers who can afford to pay tolls every day. The RTP disappointingly does not discuss who uses tollroads and compare their economic and job status to those who do not. The RTP does not discuss why people do not use tollroads and what can be done to assist these people for their transportation needs. The Sierra Club

is concerned about the trend toward tolling virtually all new major highways or existing major highways when they are expanded. This means that people often have to pay at least twice to ride roads that they own (gas taxes, tolls, and sales taxes for roads). It is unfortunate that HGAC supports a form of transportation that excludes taxpayers who cannot afford to pay every day to ride on tollroads that that their governments construct. As HGAC figures show, this 1% of road users gets special treatment.

11) **Page 10, Strategy 4: Coordinate Development**, HGAC should conduct an analysis to reveal how often transportation investments create new development in one location and reduce development at other locations. Such transportation assisted development results in simply shifting development from one area to another (a zero sum game).

12) **Page 12, Challenges and pages 15 and 16**, HGAC should explain why designated truck lanes are not implemented as an alternative on major roads to reduce congestion, reduce accidents, increase safety, save time, and reduce air pollution.

It is of great concern to the Sierra Club that HGAC supports and assists the future addition of the Prairie Parkway to the RTP as part of the Texas 36 port freight route from Freeport north. A highway through Waller County, instead of using existing Texas 36, ensures that Katy Prairie Conservancy (KPC) properties (about 20,000 acres) will be surrounded, cut off, and fragmented from additional significant prairie and riparian areas that could serve as possible acquisitions and that exist west of the KPC properties (to the Brazos River). The illustration in the RTP that is labeled "Future Vision" is a chilling one because it endorses a truck route that creates almost a fifth loop around Houston (the others are Interstate 610, Beltway 8, SH 6/FM 1960/SH 146, and the Grand Parkway). Agencies in the past stated that the Grand Parkway (as a part of Interstate 69) could serve as this truck route to the Houston Ship Channel. This "Future Vision" proposed truck route would go through some of the last, best, prairie areas and Columbia Bottomland and other riparian habitats left in the Houston area. Such a route, which would open up more virgin, undeveloped, landscape for development. Such a move appears antithetical to making "**Ecological**" work for road planning and the protection of important ecosystems in the Houston area.

13) **Pages 12 and 13, Regional Transit System**, HGAC should include school buses as part of the transit system since they reduce vehicle mileage and congestion in areas near schools. HGAC needs a better analysis of how we will address the transportation needs of the nearly one in five people who either do not own or do not drive a car.

14) **Page 14, Regional Bicycles/Pedestrian System**, the RTP must provide information about sidewalks, where the need is greatest, and how the RTP will help fund the top priority areas that need sidewalks. Sidewalks are forms of

transportation too. If long distance bike routes are desired to connect to local green spaces then the Sierra Club suggests that a bicycle route to the Katy Prairie, via possibly FM 529 and Katy–Hockley Road. Another route to local green space could be on FM 521 (known as Almeda Road in Houston) to the U.S. Fish and Wildlife Service's Hudson Woods (part of the San Bernard National Wildlife Refuge) near Angleton. However, such routes should only be constructed with a public education program that informs bicyclists that they may be able to bike to public lands but this may not mean that they can ride their bikes on public lands. Many public lands are closed to bike use due to the need for soil, water, vegetation, wildlife, and ecosystem protection.

It is very important that a significant public education campaign be fully funded and implemented so that bicyclists are educated to obey all traffic laws. Bicyclists can be seen every day as they routinely run stop signs, red lights, fail to signal, ride the wrong way on streets, and commit other infractions of the law. These illegal actions make bicycle use on roads even more dangerous than it already is. Yes, motorists must be educated to "share the road" but bicyclists must shoulder their share of the load and be responsible riders on roads.

15) Pages 16 and 17, Population and Jobs Forecast, HGAC assumes that population and growth projections are reality instead of estimates based upon assumptions that can be changed and policy decisions that can be altered. It is of concern that the RTP assumes that population and growth projections will occur and then plans to meet these projections. This results in the acceptance that "Trend is destiny". There should be a retrospective study to determine how well we have been able to predict population growth, economic growth, job growth, and other factors used in predicting what the Houston area will look like in the future.

HGAC should address various questions in the RTP like, Do we need to grow from 5.8 million to 9.6 million in 2040?; Do we need to plan and make possible a large increase of vehicle traffic?; Do we need to plan for and make possible a large increase in volume for highways?; Do we need to plan and allow for an almost 60% growth in employment?.

The Sierra Club is concerned that growth predictions as currently utilized in the RTP preordain what our population will be in 25 years. Instead of having a public discussion and debate about what population the public in the Houston area would like to have in 25 years Houstonians are being told that they must plan for a population that grows from 5.8 million 9.6 million (a 65.52% increase in population).

HGAC does not discuss what Houstonians want with regard to population size. HGAC is not telling Houstonians what increasing the population by over 65% will mean for them, their children, and grandchildren with regard to traffic congestion, air quality, water quality, noise, light pollution, traffic congestion, green space/parks/wildlife habitat, farmland, social services, quality of life, etc.

The RTP is based on implementing a policy decision with no public policy debate. This policy decision accepts population and development growth that Houstonians must endure and does not determine what population and development growth Houstonians want. By not conducting this public policy debate we ensure that construction of \$77 billion of mostly roads will occur and that we will, in all probability, utilize these roads to grow to 9.6 million people in 25 years. By conducting transportation planning in this way we support "Trend is destiny." Houstonians are not preordained to have a certain continued growth in population.

There are many public policy questions that must be answered by Houstonians before population estimates, predictions, and projections are accepted. Some of these include:

- 1) What population do we want?
- 2) What population can we handle (so we do not exceed natural carrying capacities)?
- 3) Is growth in population good or bad?
- 4) Do we need growth in population?
- 5) Why do we need growth in population?
- 6) How much population growth should we have?
- 7) What quality of population growth do we want?
- 8) What can we do to reduce population growth?
- 9) Why don't we reduce population growth?
- 10) How much immigration is good?
- 11) How much immigration is bad?
- 12) How can we control population growth?
- 13) How can we implement control of population growth (for example, birth control, sex education, and family planning)?
- 14) What level of economic growth do we want?
- 15) What level of economic growth do we need?

Without conducting a public policy debate on these and other questions first, the population projections are presented as **fait accompli** and Houstonians are not allowed a fair opportunity to voice what they want. The RTP does not provide the comprehensive framework needed for Houstonians to answer these questions because they are not discussed or analyzed in the RTP.

The trend (and policy issue) of companies moving out of the more urban or populated areas and taking jobs with them to more rural areas is not addressed in the RTP. Instead HGAC simply reports that "The share of population inside Loop 610 will decrease by 2% by 2040, and the share of employment inside Loop 610 will decrease by 4%". Do we want to encourage this or other trends or not? We need to debate these public policy issues before or during preparation of the RTP. Houstonians are locked out of the process that determines development growth, population growth, and growth in congestion, road construction, air pollution, noise, non-point water pollution, reduction in parks/green space/wildlife habitat, etc.

We need a full, public, debate to ensure that we get it right. By getting it wrong we ensure that we will degrade the environment that we rely on for all of our needs which means we will degrade our quality of life and reduce the carrying capacity for humans and especially for those who live after us. We reduce their choices as we mandate road use now. We bring ourselves closer to ecological overshoot or collapse by not recognizing that humans are animals too and we are dependent on the same ecological principles as every other living organism. We cannot avoid the bullet.

By not asking the hard questions, getting the public's view on population and transportation, and then discussing these issues in the RTP we avoid determining whether the accepted growth figures are sustainable? HGAC does not answer these questions or comprehensively address population and transportation versus what Houstonians want in relation to quality of life and what is a sustainable human carrying capacity.

16) **Page 21, Strategy Costs**, HGAC should explain in this table what the \$25 billion, other transit is. It is not clear what this category contains. HGAC must include all costs when it shows transportation project costs. It is the public that pays for all transportation projects and the public deserves to know the full costs which include not just construction, operation, repair, and maintenance costs, but also financing costs (interest on bonds or other methods of payment). Since HGAC works for the public and says that it wants to be as transparent as it can be, including financing costs, must be provided to the public. The public has a right to decide whether it wants to pay the costs and can only do so if it knows what the total costs are.

17) There is a lack of environmental analysis in the RTP. HGAC does not state how many acres of park/green space/wildlife habitat will be lost to road construction or other transportation alternatives. It would not be difficult to determine the widths of all the roads and their right-of-ways and add them together to give a cumulative impact of how much wildlife habitat has been and will be lost by 2040. The same can be done for habitat fragmentation since there are maps that show where development and roads are and where future roads will be. How many parks will have space taken to use for roads?

HGAC should be able to state how the RTP will protect environmentally sensitive areas, who will pay to do this, who will coordinate this action, and specifically which areas will be protected. After all, this is a plan and a plan should answer the questions of who, what, when, where, why, and how. HGAC should state which areas have the "most significant ecology" and provide documentation of how the RTP will protect these areas.

Who will closely examined the regionally significant projects? Who will coordinate this effort? In the past, HGAC has stated that there is "no mechanism for

cumulatively identifying or mitigating environmental impacts” how will this problem be resolved by the RTP? Where is the solution and who will be in charge?

HGAC should determine for the RTP how sustainable long-range planning will emphasize coordination of transportation investments with environmental conservation and environmental mitigation. HGAC should state who will do this coordination? Who will make recommendations to sponsors to investigate the possibility of mitigation or realignment in the long-range planning stages?

HGAC appears to do nothing about climate change. HGAC can coordinate with others to pull together local information about areas that may be affected by climate change and determine how transportation will be affected. Where is the discussion to give the public an idea of where we really are on climate change?

18) HGAC should identify air, water, and noise pollution and park/green space/wildlife habitat studies that are needed for implementation of the RTP. The Sierra Club recommends that the following studies be conducted or that the RTP accept the results of the same or similar studies in other places in the United States and the World and use these to provide more protection to the public with regard to air, water, noise, and green space impacts from transportation projects:

- a. In vehicle levels of air pollution that drivers/passengers breathe.
- b. Near roadway levels of air pollution that people breathe at schools, businesses, residences, and other establishments, within about 1,000 feet of major roads.
- c. Vehicle in motion concentrations of air pollutants that are emitted during actual driving conditions and routes.
- d. Actual noise levels at major roads out to at least 1,000 feet.
- e. A mechanism to reduce or eliminate the use of parks and important green space, including regional significant wildlife habitat, for roads or road right-of-ways. This would include a required mitigation ratio (at least a two to one ratio) for park/green/significant wildlife habitat destroyed or altered by roads. More significant wildlife habitat, like bottomland hardwood forested wetlands, would have a higher mitigation ratio (perhaps as high as eight to one).
- f. The amount of non-point source water pollution and the levels of that water pollution (in units of measure for each water pollutants) that is generated by all roads or other transportation projects in the RTP.

19) **Appendix C: Air Quality Conformity**, the conformity demonstration is incomplete. Time after time the emissions inventory for mobile sources has been shown to be inaccurate. In part, this is because the testing method used by the U.S. Environmental Protection Agency to determine how much air pollution is

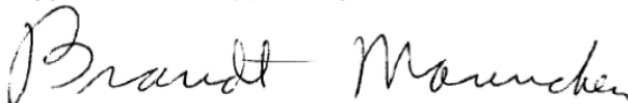
generated by a vehicle over a certain driving cycle inaccurately documents the air pollution generated. Real-time monitoring of vehicles measures air pollutants from the tailpipes of those vehicles at much higher levels, in part because of how people drive.

In addition, HGAC uses and refers to a State Implementation Plan (SIP) that does not commit to all control measures necessary to meet the ozone attainment deadline. This has resulted in a status where the latest SIP that has been submitted documents that the 8-hour ozone standard has not been attained.

HGAC uses many models to obtain the numbers needed to create and compare volatile organic compound (VOC) and nitrogen oxides (NOx) budgets. However, the accuracy of these numbers due to percent error for each model is not provided or its effects on model results shown. HGAC also uses data that is too old to give a reliable estimate of what trip production rates are. The data used is from 2007-2009 which is 5-7 years old and was deep in the recession which officially lasted until 2010. Using this data may cause inaccuracies in the trip rates. In addition, data used from this timeframe may underestimate emissions since lower economic activity during the recession probably resulted in lower amounts of air pollutants.

The Sierra Club appreciates this opportunity to comment. Thank you.

Sincerely,



Brandt Mannchen
Chair, Air Quality Committee
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Houston, Texas 77096
713-664-5962
brandtshnfbt@juno.com

From: noreply@h-gac.com [<mailto:noreply@h-gac.com>]

Sent: Friday, January 09, 2015 1:44 PM

To: PublicComments

Subject: RTP 2040 Feedback Notification

This email is to notify you that RTP 2040 Feedback has been submitted. Please see the details below:

Contact Information

First Name	Brandt
Last Name	Mannchen
Primary Phone Number	713-664-5962
Email Address	brandtshnfbt@juno.com

Comment

These comments are supplemental to the comments I submitted to HGAC on December 17, 2014 on behalf of the Houston Regional Group of the Sierra Club. The RTP does not have a project listing like the last RTP I commented on about seven years ago. Where is the project listing and how is the public supposed to comment on an RTP when it does not know which projects are in the RTP and therefore cannot comment about the appropriateness of including certain transportation projects in the RTP? There does not appear to be a definition in the conformity determination for regional or project significant definitions. This means the public cannot understand the conformity determination fully and then comment on its appropriateness. The Sierra Club objects to these omissions of information.

From: Ruthe, Hans-Michael

Sent: Monday, January 12, 2015 12:20 PM

To: 'brandtshnfbt@juno.com'

Cc: Porter, Kelly

Subject: RE: RTP 2040 Feedback Notification

[Mr. Mannchen](#)

Thank you for your comments in supplement to the letter you previously submitted. H-GAC is in the process of replying to your letter, and can address these comments in conjunction with that reply. There is a project listing associated with the 2040 RTP, you can download it at the following link: <http://www.h-gac.com/taq/plan/2040/default.aspx>. It is titled "Draft 2040 RTP Project Listing". It was included with the original download materials. Sorry we did not communicate that effectively.

We are looking into the issue with the missing section for "regional significance" in the AQ Conformity determination. Thank you for bringing it to our attention.

HOUSTON-GALVESTON AREA COUNCIL

Public Comment Period and Public Meeting

Additional Air Quality Analysis for Transportation Conformity

H-GAC is announcing the opening of a comment period to give the public an opportunity to review additional air quality analysis which may be used to support a finding of conformity with the Clean Air Act and associated regulations for the 2015-2018 Transportation Improvement Program (TIP) and the 2040 Regional Transportation Plan (RTP). This additional analysis reflects the advancement of several projects using FY 2015 Proposition 1 funds and supplements the conformity analysis and documentation previously produced for the RTP and TIP. **The public comment period will begin on Friday, February 13, 2015 and ends on Thursday, February 26, 2015 at 5:00 pm.**

H-GAC will host a public meeting at 3555 Timmons Lane, 2nd Floor Conference Room B, Houston, TX 77027 on **Tuesday, February 17, from 5:30-6:30 p.m.** This meeting will also be available through a webinar (register at <http://goo.gl/A22YV3>), and a recording will be available online for persons unable to attend.

The public is encouraged to attend the meeting, review the conformity documentation, and provide comment by visiting the H-GAC website at http://www.h-gac.com/taq/public_info. Comments may also be mailed to Transportation Public Information, Houston-Galveston Area Council, PO Box 22777, Houston, TX 77227-2777, emailed to publiccomments@h-gac.com, faxed to (713) 993-4508, or called in to our toll-free telephone number 1-855-363-2516.

In compliance with the Americans with Disabilities Act, H-GAC will provide for reasonable accommodations for persons attending H-GAC functions. Requests from persons needing special accommodations should be received by H-GAC staff 24 hours prior to a function. The public meeting will be conducted in English, and requests for language interpreters or other special communication needs should be made at least two working days prior to a function. Please call 713-993-2471 for assistance.



Houston Regional Group

P.O. Box 3021

Houston, Texas 77253-3021

713-895-9309

<http://texas.sierraclub.org/houston/>

February 17, 2015

Mr. Alan Clark
Director of Transportation Planning
Houston-Galveston Area Council
P.O. Box 22777
Houston, Texas 77227-2777

Dear Alan,

Enclosed are the comments of the Houston Regional Group of the Sierra Club (Sierra Club) regarding the Houston-Galveston Area Council (HGAC) **2040 Regional Transportation Plan (RTP) Conformity Addendum #1**.

1) Regarding **Appendix 15, Public Comment Process**, the Sierra Club was surprised that it never received a response to its comments from December 2014. It was only looking at Appendix 15 that the Sierra Club discovered that HGAC responded to our comments. The Sierra Club did note that the Air Alliance Houston did get a response because there was a date on the letter that HGAC sent them. In the future, the Sierra Club would also like to get a letter that responds to our comments.

2) Regarding **Appendix 12, TCM Timely Implementation**, the Sierra Club supports monitoring of Transportation Control Measures (TCM) to determine how successful they have been in the reduction of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) air pollutants. There should be some way that HGAC monitors and demonstrates that reductions of air pollutants occurred, what levels of reductions of air pollutants occurred, did those levels of reductions of air pollutants meet the expected reductions, and do those levels of reductions of air pollutants still occur. If such monitoring is currently required then the 2040 Transportation Conformity document should present the monitoring results and explain what they mean to the public.

In essence some form of actual monitoring is needed, both short-term and long-term, to determine the effectiveness of each TCM. Some of the TCM listed are 15 years old and some are two years old. If such monitoring is currently required then the 2040 Transportation Conformity document should present the monitoring results and explain what they mean. If no such monitoring is currently conducted then HGAC should prepare a program for

"When we try to pick out anything by itself, we find it hitched to everything else in universe." John Muir

monitoring, get public input, and implement that monitoring program. After all the public's health is affected by air pollutants from transportation systems and the public's money is used to construct and operate these TCM. The public has a right to know if these TCM are working as envisioned, how accurate the monitoring is, and how much the monitoring costs.

3) Regarding **Appendix 10, Post Process TxLED Adjustments**, the adjustments appear simply to be assumptions (we are not told how they were derived) where a certain percent reduction of air pollutants is plugged in and assumed to occur. There are many reasons why assumed air pollutant reductions do not occur. Some of these reasons include insufficient enforcement personnel, training, or money; deterioration of air pollution control equipment; economic slowdowns which reduce the incentive to replace old equipment with new equipment, new diesel engines, for example; increased congestion; regulatory slowdowns; increased numbers of vehicles and miles traveled; data collection that is not comprehensive; etc.

It would be very helpful to the public to be told what the assumptions are, why these assumptions were used, and in past conformity determinations whether the assumptions proved correct. This would require, again, actual monitoring to determine if the actual percent reductions in air pollutants occurred in the years expected.

4) Regarding the **Addendum #1, Transportation Air Quality Conformity Report for Houston-Brazoria-Galveston Region**, for many years the Sierra Club has requested that HGAC reveal the plus or minus percent error that the NOx/VOC budget model uses. Several computer models are used to compute the NOx/VOC budget. Each computer model used has a plus or minus percent error. If the percent error is such that there could be a case where the NOx/VOC air pollutants exceed the NOx/VOC budget then the model will not be 100% reliable about whether the NOx/VOC budget will be attained.

For instance, in 2018 the NOx emissions are estimated to be 97.19 tons/day while the NOx budget is 103.34 tons/day, a difference of 6.15 tons/day. Since computer models often have a 10-20% error this means that the results could be minus 10.33 tons/day to 20.66 tons/day. If in the minus direction then the NOx budget would be exceeded and transportation conformity would fail. The same holds true for the VOC budget in 2015 where the VOC emissions are estimated as 52.76 tons/day and the VOC budget is estimated as 65.04 tons/day, a 12.28 tons/day difference. If a minus 10-20% error of the computer model results the difference would be 6.50 to 13.00 tons/day. The same is true for 2040 where the VOC emissions are estimated as 46.27 tons/day and the VOC budget is 50.13 tons/day which is a difference of 3.86 tons/day. If a minus 10-20% error is used for the computer model this would result in 5.01 tons/day to 10.02 tons/day and there would be an exceedance of the VOC budget.

This type of result seems possible because in the past U.S. Environmental Protection Agency (EPA) vehicle models have underestimated emissions. This was verified by EPA when it conducted actual NOx/VOC air pollutant monitoring of vehicles that were being driven in traffic. One of the factors that underestimates the NOx/VOC air pollutants is the concocted model vehicle drive trip that is prepared and used by EPA in its vehicle air pollution models. The way people drive in real life often results in more air pollutants being emitted than the concocted model vehicle drive trip that EPA uses.

The Sierra Club expresses its concern that the estimated NOx/VOC air pollutants and the estimated NOx/VOC budgets are underestimating the air pollution that vehicles emit during transportation conformity modeling exercises.

The Sierra Club is also concerned that as vehicles age their emission of NOx/VOC air pollutants increases. How this affects the assumed reduction of air pollutants due to better vehicle air pollution standards is not explained in the transportation conformity document. Another concern is that vehicle turnover may be less quick than assumed. If this is so then higher emitting vehicles will stay on the road longer than the model anticipates.

The Sierra Club finds **Table 10** of particular interest. This table provides a cumulative total of Centerline Miles that will exist in a certain year. The Sierra Club finds it hard to believe that between 2018 and 2040 that Centerline Miles will only increase 158 miles and that between 2035 and 2040 Centerline Miles will only increase 1 mile. This does not make sense and is not believable because the State of Texas has increased the money that it will use to build or expand highways, tollroads, freeways, and other roads. In addition, the population and development growth that is expected, planned for, and will be built for suggests that more and not fewer Centerline Miles will be built. It is likely that Centerline Miles will be in excess of those that are listed in **Table 10** which means that it is likely that additional NOx/VOC air pollutants will be emitted.

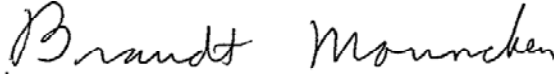
Table 14, pages 6 and 7, for 2017 and 2018 do not make sense. For 2017 the End Model Year used is 1995 and 2015 but for 2018 the end model year used is 2038. These two years are consecutive so the difference in model years used should be essentially the same. What is presented does not make sense.

5) Regarding the **2040 RTP Fiscally Constrained Projects, Part 1: Corridor-Based Major Investments; Part II: Regional Investment Programs, Projects Subject to Conformity; and Part III: Regional Investment Programs, Exempt and Other Projects FY2015-2024**, the Sierra Club goes on record as opposing all projects for the Grand Parkway (State Highway 99) due to the landscape, land use, and natural ecosystem impacts that this road proposal will create. The Sierra Club also opposes the Fort Bend Toll Road from Sienna Parkway to SH 99 (CSJ 3585-02-900), a 9.25 mile four-lane Toll Road and Brazos River Bridge,

that will be built for an underestimated \$241 million and which will destroy important Columbia Bottomlands hardwood floodplain forested wetlands;

The Sierra Club appreciates this opportunity to comment. Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Brandt Mannchen".

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew, Houston
Texas 77096
713-664-5962
brandtshnfbt@juno.com

February 22, 2015

Mr. Alan Clark
Director of Transportation Planning
Houston-Galveston Area Council
P.O. Box 22777
Houston, Texas 77227-2777

Dear Alan,

Enclosed are the additional comments of the Houston Regional Group of the Sierra Club (Sierra Club) regarding the Houston-Galveston Area Council (HGAC) **2040 Regional Transportation Plan (RTP) Conformity, Addendum #1, Transportation Air Quality Conformity Report and the original Transportation Air Quality Conformity Report.**

1) Regarding **Appendix 10, Post Process TxLED Adjustments, Additional Table for 2017 and 2018, page 3**, at the bottom of the table the first sentence states, "The TxLED adjustments factors were calculated by TTI following TCEQ indications." HGAC should state clearly what this means. HGAC should define what "indications" are in this case. HGAC should state clearly what the "indications" are for, a description and definition of each, how they were derived, and what data or documentation backs up their use.

The Sierra Club requests a copy of the "indications", a description and definition for each "indication", and the data or documentation that backs up each "indications" use.

2) Regarding **Addendum #1, Transportation Air Quality Conformity Report for Houston-Brazoria-Galveston Region, page 1**, and the original **Transportation Air Quality Conformity Report for Houston-Brazoria-Galveston Region, page 3**, which preceded Addendum #1, there is a double asterisk note underneath each table which states for the **original Transportation Air Quality Conformity Report**, "The emissions for years 2017 and 2018 have been **interpolated** using the data for the years 2015 and 2025 regional air quality analysis" while **Addendum #1, Transportation Air Quality Report**, states "Emissions estimates for 2017 and 2018 have been updated to reflect a **direct analysis of emissions** rather than interpolation between 2015 and 2025."

If a different analysis was conducted to document what the NOx and VOC emissions and emission budgets were for **Addendum #1, Transportation Air Quality Conformity Report (direct analysis of emissions)** versus what was done by the **original Transportation Air Quality Conformity Report (interpolation)** then HGAC has a responsibility to the public, the Texas Commission on Environmental Quality, and the U.S. Environmental Protection Agency to show in the Transportation Air Quality Conformity Reports (original and addendum) the interpolation and direct analysis of emissions analyses and that they **are equivalent and or appropriate**.

This would be done by showing which analysis was used in each case, a description and definition of the analysis used, the assumptions used in the analysis for each case, the calculations/figures that were used or derived for the analysis for each case, and the data or documentation that was generated or which support the analysis in each case.

The Sierra Club requests from HGAC, for the **original Transportation Air Quality Conformity Report and Addendum #1, Transportation Air Quality Conformity Report**, a copy of the interpolation analysis and direct analysis of emissions analysis used, a description and definition of the interpolation analysis and the direct analysis of emissions analysis used, the assumptions used in the interpolation analysis and the direct analysis of emissions analysis, the calculations/figures that were used for the interpolation analysis and the direct analysis of emissions analysis, and the data or documentation that was generated or which supports the interpolation analysis and the direct analysis of emissions analysis used in the two conformity reports (original and addendum).

The Sierra Club is concerned that the interpolation analysis and direct analysis of emissions analysis (two different analysis) that were used to determine conformity for the two conformity reports (original and addendum) for the years 2017 and 2018 may not be equivalent and or appropriate.

The Sierra Club appreciates this opportunity to comment. Thank you.

Sincerely,

Brandt Mannchen
Conservation Committee
Houston Regional Group of the Sierra Club
5431 Carew, Houston
Texas 77096
713-664-5962
brandtshnfbt@juno.com

Martinez, Lucinda

From: brandtshnfbt@juno.com
Sent: Saturday, April 11, 2015 2:48 PM
To: Clark, Alan
Cc: brandtshnfbt@juno.com; Lubertino, Graciela; Ruthe, Hans-Michael;
oldham_melanie@yahoo.com; art.browning@gmail.com; elmerz@hal-pc.org;
frankblake@juno.com
Subject: Information Request
Attachments: HGAC 2040 RTP Conformity Addendum II Comments 2015.doc

Dear Alan,

On February 22, 2015 the Houston Regional Group of the Sierra Club (Sierra Club) submitted a letter to you which provided comments about the 2040 Regional Transportation Plan Conformity, Addendum #1, Transportation Air Quality Conformity Report and the original Transportation Air Quality Conformity Report. A copy of the Sierra Club's February 22, 2015 comments are attached to this email.

In that February 22, 2015 comment letter, the Sierra Club requested from HGAC on page 1 of our letter, with reference to Appendix 10, Post Process TxLED Adjustments, Additional Table for 2017 and 2018, page 3, that the Sierra Club receive "... a copy of the "indications", a description and definition for each "indication", and the data or documentation that backs up each "indications" use."

In addition, on page 2 of our February 22, 2015 comment letter, the Sierra Club requested from HGAC "... for the original Transportation Air Quality Conformity Report and Addendum #1, Transportation Air Quality Conformity Report, a copy of the interpolation analysis and direct analysis of emissions analysis used, a description and definition of the interpolation analysis and the direct analysis of emissions analysis used, the assumptions used in the interpolation analysis and the direct analysis of emissions analysis, the calculations/figures that were used for the interpolation analysis and the direct analysis of emissions analysis, and the data or documentation that was generated or which supports the interpolation analysis and the direct analysis of emissions analysis used in the two conformity reports (original and addendum)."

To date, 50 days later, the Sierra Club has not received the information that was requested. On behalf of the Sierra Club I request that you look into this matter and let me know when the information that was requested will be provided to the Sierra Club.

The Sierra Club appreciates your help with this important matter. Thank you.

Brandt Mannchen
Houston Regional Group of the Sierra Club
Conservation Committee
713-664-5962
brandtshnfbt@juno.com

Old School Yearbook Pics

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Houston-Galveston Area Council

August 4, 2015

Brandt Mannchen
Chair, Air Quality Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096

Mr. Mannchen,

Thank you for your comments provided on behalf of the Sierra Club Houston Regional Group regarding H-GAC's 2040 Regional Transportation Plan (dated December 17, 2014) and "Addendum #1" to the Plan's transportation conformity determination (dated February 17, 2015 and February 22, 2015). Please find below responses to the issues and concerns expressed by your organization. Where possible, we have used the same numbering system employed in your comment letters.

Please do not hesitate to contact me with any additional questions or concerns you may have. I may be reached by email at alan.clark@h-gac.com or by phone at (713) 993-4585. Again, thank you for your comments and your continued participation in the metropolitan transportation planning process.

Sincerely,

A handwritten signature in black ink that reads "Alan Clark".

Alan Clark
MPO Director

Comments on the 2040 Regional Transportation Plan (Dated December 17, 2014)

Comment #1: The body of the 2040 RTP and the Executive Summary are published in the same font size as Appendix H. However, they do utilize different typefaces and a number of figures and tables include text of substantially smaller font sizes. We will explore development of a 2040 RTP document and/or Executive Summary which addresses the needs of those who suffer from visual acuity/low vision issues.

Comment #2: References within the 2040 RTP to economic growth in our region are intended to communicate the centrality of mobility to the health of our region's economy, an issue of importance and concern for elected officials, stakeholders, and residents alike. The 2040 RTP, however, also reflects significant analysis and policy direction in the areas of conservation and protection of the natural and built environment. In particular, we have introduced the EcoLogical framework into our corridor investment plans (see Appendix G), built on previous efforts to identify regional mitigation opportunities to address impacts to critical wetlands (see Appendix K), and developed a framework for linking transportation decision-making with public health outcomes (see Appendix H). H-GAC will continue to seek opportunities to integrate efforts in these and other planning areas into the transportation practice.

The population and employment forecasts developed by H-GAC to support the 2040 RTP reflect the long-term trends our region has experienced and contemplate robust, but realistic, growth within the 8-county metropolitan planning area. These forecasts are developed by H-GAC to support the agency's many and diverse planning activities, such as the recently completed Our Great Region 2040 regional plan, and rely upon data supplied by our local governments and partner agencies. You are correct that the 2040 growth forecast presents challenges beyond transportation which have real implications for our region. These issues were explored during development of Our Great Region 2040 and are reflected in its six "Big Ideas" (Economic Development, Environment, Healthy Communities, Housing, Transportation and Resiliency).

The goals and strategies of the 2040 RTP are consistent with feedback received during the Our Region planning effort, especially the focus on existing transportation infrastructure. Two of the 2040 RTP's four strategies, Systems Management/Operations and State of Good Repair, are aligned with this focus and constitute nearly 80% of the \$75 billion in anticipated expenditures.

Contrary to your statement, the operation, maintenance and development of local roadways are addressed within the RTP. While these anticipated expenditures often have less project-level

specificity in the RTP than the corridor-based major investments, they are reflected in aggregate estimates (see regional investment programs).

With regard to improving our planning processes and tools with new information gained through observation and experience, we are continually looking to refine our approaches including conducting before-and-after assessments of specific programs and activities. For example, we recently completed a review of our access management planning program and determined that projects implemented as a result of the program did in fact achieve or exceed the safety and mobility benefits that were anticipated.

Comment #3: The 2040 RTP considers a wide range of challenges to continued mobility for people and goods within the greater Houston region. It promotes five key goals and identifies specific strategies needed to address them. And, it does so within the context of insufficient funding and the need to maximize the return on investment. As a result we believe the 2040 RTP represents sound public policy and is a “responsible guide for maintaining and improving the current transportation system”.

Comment #4: A detailed account of the public outreach activities undertaken in support of the 2040 RTP is provided in Appendix J. This document specifically identifies the methods employed, audiences targeted, and meetings held to ensure broad engagement and participation from residents and stakeholders. In particular, our outreach strategy included a targeted environmental justice (EJ) campaign to reach communities and groups historically underrepresented and often excluded from the transportation decision-making process. For more information on our EJ efforts, please refer to Appendix B.

Comment #5: The identification of performance measures to track the effectiveness of plan strategies and project recommendations is an on-going work-in-progress. H-GAC, along with other MPOs, state departments of transportation and public transportation providers are working toward implementation of the performance management requirements contained in the current federal surface transportation reauthorization legislation (MAP-21). As others have found, we are currently constrained by limited data availability and rudimentary analytical techniques. Indeed, USDOT and their modal administrations have not yet published complete guidance and instructions in this area. Accordingly, the 2040 RTP begins what will be a long-term continuing process to measure, monitor and respond to performance indicators in fulfilling the goals articulated by the metropolitan transportation planning process.

You are correct that additional performance measures will need to be identified in relation to a number of RTP goals, including “Conserve and Protect Natural and Cultural Resources”. As we continue work on the 2040 RTP and its successors we will take under consideration the

suggestions you have made regarding the protection of key ecosystems/habitats. Any further recommendations you may have are welcome.

With regard to the use of the 8-hour design value for ground-level ozone as a performance measure, we believe design value statistics are both consistent with our conformity process requirements and extremely meaningful as the key criteria for determining compliance with past, current and any future National Ambient Air Quality Standards (NAAQS) for mobile-source sensitive pollutants.

In response to the remainder of your fifth comment, a thorough discussion of each performance measure identified in the 2040 RTP can be found in Appendix E, including baseline performance levels and desired outcomes.

Comment #6: The vision statement for the 2040 RTP reflects the work of the Technical Advisory Committee (TAC) and its RTP Subcommittee. We believe that the adopted Vision, supported by the five Plan goals, furthers and does not diminish or conflict with the concepts of environmental protection and social betterment. As discussed above in our response to your second comment, the 2040 RTP expands upon previous work to provide new analysis and policy direction in the areas of conservation and protection of the natural and built environment. Further, the RTP is consistent with and supports the priorities identified in H-GAC's 2040 Our Great Region, an effort which considered the social and environmental issues facing our region.

Comment #7: Your organization's long-standing opposition to State Highway 99 ("Grand Parkway") is noted. However, the corridor has been a part of regional transportation plans for the better part of five decades and has been subjected to detailed analysis of potential impacts (the conclusions of which have withstood legal challenge). Implementation of the SH 99 project is self-evidently a major investment in our region's transportation system and as the project is backed by the commitment of sponsors to implement it within the time frame of the Plan, it has been included within the fiscally constrained 2040 RTP.

As noted above in our response to Comment #2, the operation, maintenance and development of local roadways are addressed within the 2040 RTP. While these anticipated expenditures often have less project-level specificity in the RTP than the corridor-based major investments, they are reflected in aggregate estimates (see regional investment programs).

Comment #8: We agree that additional roadway capacity, in and of itself, is insufficient to address our growing region's mobility needs. Indeed, beyond limited network expansion the 2040 RTP identifies a number of strategies to address this need including improving the condition, management and operation of the roadway and transit systems, providing alternatives to vehicular travel, and better coordinating transportation improvements with private and public

sector economic development plans. We would also point out that H-GAC's congestion management process (see Appendix I) requires the consideration of alternatives to adding roadway capacity and a plan for managing additional capacity prior to widening major roadways.

Comment #9: H-GAC regularly reports on the effectiveness of its air quality programs, including Commute Solutions. The most recent report for 2014 is available on our website ([link](#)). As a voluntary association of local governments, H-GAC remains committed to implementing voluntary incentive-based programs and believes they are the most effective way, for our region, to encourage greater participation from the public and private sectors.

Comment #10: While individual improvements, such as the example in your comment of SH 99 ("Grand Parkway") may not include more than one mode of travel within their scope of work the "Multimodal Network Expansion" strategy of the 2040 RTP will result in investment, when taken as a whole, that addresses the need for additional capacity on roadways, transit and pedestrian/bicycle networks.

H-GAC evaluates the impact of all transportation investments contained in the RTP on populations protected under Title VI and Executive Order 12898 ("[Environmental Justice](#)"). The evaluation for the 2040 RTP is contained within Appendix B, and concludes that the Plan is unlikely to generate disproportionate impacts. Further, following federal approval of the conformity determination for the 2040 RTP, H-GAC will be updating the regional toll analysis (RTA) to reflect the demographics, EJ analysis methodology and fiscally constrained project mix of the adopted Plan. For reference, the RTA prepared for the original 2035 RTP may be found on our website here: <http://www.h-gac.com/taq/tip/tip-project-resources.aspx>

H-GAC believes that tolling, fares, and other forms of user fees will remain necessary to finance and efficiently manage the regional transportation system. Funding from federal state and other local sources are insufficient to provide the amount of infrastructure needed to support our growing region.

H-GAC staff disputes the assertion within your letter that only 1% of road users use toll roads and that toll roads are a form of double taxation. The figures presented in the 2040 RTP regarding usage of tolled facilities indicates 1% of vehicle miles traveled are made on the region's toll network. Further, user fees are a common method of recouping operating and maintenance costs on many forms of transportation, not just toll roads, and the tolls collected with the Houston region are dedicated to improving the respective agency's roadway systems and thereby reducing the burden placed upon other forms of general taxation to provide these services. .

Comment #11: This relates to an advanced transportation and land use research area. The depiction of the relationship between development and transportation investment is an industry-wide concern; one that confounds public and private sector transportation stakeholders alike. In some cases (not fully in Texas yet) value-capture fees or levies have been assessed along transportation corridors. Such is the most advanced tool we are aware of to confront this notion of a “zero sum” game. Again, the question of knowing where development is going or when is not really the critical issue—but rather how much (if at all) did transportation investment X provoke real estate development Y. And, “can that relationship be quantified or generalized?”

Comment #12: Designated truck lanes have been associated with improved traffic flow and even increased system operation in different areas of the country, but the decision to limit facility usage at this scale, which is not left to H-GAC, has been met with intense resistance from major transportation stakeholders in the past. A review of TPC and TAC minutes from January through March 2012 (during the adoption of the study) will reveal the nature of the dissension. Suffice it to say that travel demand is viewed as too intense in this region at the current time to consider—beyond what is already being done for high-occupancy vehicles—isolating a certain type of vehicular traffic to a certain lane or roadway.

Regarding the supporting or assisting of the Prairie Parkway development, H-GAC does not value-judge widely discussed and recommended proposals such as the Prairie Parkway; before engaging local stakeholders and executing area planning studies. It is left up to the agency itself to say whether a certain improvement should be advanced or not. Neither does the agency “take sides” in committing to support certain improvements at early stages such as those the Prairie Parkway is at. A set of improvements in the general area you reference have been recommended in various studies in the past, including recent work concluded in the wake of Hurricane Ike, and is being pursued by private and public sector interests in the general area, but is not being “supported” or “assisted” as you say by H-GAC. We are in constant contact with the Katy Prairie Conservancy, local elected officials in the area, and local and state level public sector transportation officials. Should a future study be funded through H-GAC to consider the feasibility or impact of the corridor, neither will this indicate H-GAC’s support of any certain action. As the MPO for this region, H-GAC serves as a forum of regional transportation planning, not an implementing agent. H-GAC encourages the Sierra Club Houston Regional Group to maintain observation of the proceedings of the Transportation Policy Council to keep up to date on the matter, and feel free to call 713 993 2478 at your convenience to discuss with long-range planning staff.

Comment #13: School buses are not in the scope of this project. And according to recent Census data, the rate of zero-car ownership in the region is 7%, or about 1 in 14 people, with a slightly higher rate in certain areas.

Comment #14: Sidewalks represent a critical mode of transportation in need of comprehensive survey. H-GAC looks forward to funding the next opportunity to complete such a study and better understand the important role sidewalks play in regional mobility. Regarding the construction of a certain bicycle path, H-GAC would respectfully direct the Sierra Club toward an implementing agency, like a city or county, that could sponsor such a project, as H-GAC does not construct or implement transportation improvements. Additional information can be found in Appendix F of the 2040 RTP or by visiting the following website: <http://www.h-gac.com/community/qualityplaces/pedbike/regional-pedestrian-and-bicycle-plan.aspx> (last accessed July 2015).

Comment #15: Responses to this comment may best be preceded by a disclaimer: the 2040 RTP is not a prescriptive policy document. It does not intend to instruct or insist local governments in this region change their ordinances or local policy practice. Practically speaking, it is an update to a long-familiar set of recommended improvements already under development, with slight changes to recommended list of improvements to include some self-financed roadway capacity increases. What it lacks in long-range policy suggestion it makes up for in pragmatic positioning within the current political framework. In other words, it accomplishes a multimodal improvement of the regional transportation system without calculating for major revenue enhancements, fee changes, or tax increases—all while assessing impact using models depicting future travel demand and air quality-related emissions.

Due to the nature of the metropolitan planning process (for more information, see the following web address: <http://www.planning.dot.gov/documents/briefingbook/bbook.htm>), the RTP will always focus on recommendations within the current political or legislative paradigm. State or federal level policy changes can be assumed, but these must meet the approval of the local policy committee, as well as regulators at TxDOT and the FHWA. The regional document more appropriately detailing what residents and the public should/could/would aspire to regarding future development is the H-GAC regional vision plan, Our Great Region. This plan, unfettered by fiscal or policy concerns, outlines a much more robust vision for the future in general, including environmental and ecological concerns. H-GAC 2040 RTP staff has completed a “cross walk” of the goals, objectives, and performance measures of the two plans in order to demonstrate cohesion, and this work can be made available upon request. This explanation, though unsolicited, may be the best way to respond to much of comment #15.

Comment #16: The \$25 billion in “Transit Other” refers to transit-related expenses *not* included in the remaining categories. Examples of these projects include transit center modification or enhancement, bus lane work, transit station improvements, etc. Additional language clarifying this area of activity has been added to the latest draft of the 2040 RTP due, in part, to your comment. Thank you.

Comment #17: Regarding environmental analysis of the RTP, this is employed on a project-by-project basis—given the long-range nature of the recommendations included. Project-level environmental analysis is carried out by federal partners and the project’s sponsor, using a widely known process called the “NEPA” process. In addition to the “NEPA” process, H-GAC is proud to offer the Eco-Logical tool for use by the public and private sector in consideration of potential ecological impacts of planned transportation improvements. Thanks, in part, to this comment, more development of the Eco-Logical tool has been included in the latest version of Appendix G, Corridor Summary Sheets.

Regarding climate change, H-GAC has engaged in some of the earliest related work at the regional government-level in Texas. After suffering direct damage from the landfall of Hurricane Ike, H-GAC's Board of Directors established an expert panel to develop recommendations for local governments to adapt to potential changes in the region’s climate and associated environmental effects. The Foresight Panel on Environmental Effects Report outlines the panel’s findings and recommended strategies. Our Great Region 2040 also refers to future changes in climate and environmental consequences in 2 of its 5 “Big Ideas” – *Environment and Resiliency*.

Comment #18: Regarding these suggestions for future study, H-GAC appreciates the Sierra Club-Houston’s perspective and expertise in these matters. In the future, should the opportunity and funding be available, H-GAC will need local partners such as those the Sierra Club could assist in identifying. Coordination at that time may be necessary between the two organizations, and H-GAC looks forward to continuing the conversation.

Comment #19: Although the photochemical model you mention indicated that the monitor on Manvel Croix Park was the only one showing nonattainment of the 1997 8 hr ozone standard, the SIP uses weight of evidence described on Chapter 5 to show attainment for this monitor. Also, although the SIP for the 1997 8 hr ozone standard has not been approved yet by EPA, its Motor Vehicle Emission Budgets used for this conformity were found adequate by EPA January 25 2011.

Regarding the accuracy of the models, H-GAC uses for conformity the same models used to calculate the motor vehicle emission budgets, with the same general assumptions and approximations. As a consequence, the only error between both calculations is the computer error. In addition, in agreement with the Clean Air Act, to calculate conformity H-GAC uses the latest model developed by EPA with the latest planning assumptions. TxDOT and H-GAC invest millions of dollars every ten years to obtain household surveys which are used to calculate trip production rates. For this conformity, the travel demand model used a base year of 2012 with the latest household survey from 2008-2009. The vehicle miles travelled for the year 2012 was validated using 2012 traffic counts and 2012 Highway Performance Monitoring System. Please

note that these last few paragraphs were written by Dr. Graciela Lubertino, PhD, in conjunction with our agency's contacts at the Texas Commission on Environmental Quality, TCEQ.

Comments on the 2040 Regional Transportation Plan Conformity Addendum #1 (Dated February 17, 2015)

Dear Mr. Mannchen,

Thank you for your comments dated February 17, 2015 to the 2040 Regional Transportation Plan (RTP) Conformity Addendum #1. Following are H-GAC's answers to each of your comments using the same numbering system that you used in your letter. In advance H-GAC wants to thank you for all your comments and for your interest in the conformity process.

Comment #1: H-GAC apologizes for not have sending a response letter sooner. To amend this mistake, H-GAC sent a draft letter on February 18, 2015 to Sierra Club. This document constitutes H-GAC's official response.

Comment #2: Current transportation conformity regulations require MPOs to monitor the implementation progress of projects, programs and policies committed in State Implementation Plans as Transportation Control Measures (TCMs). The regulations are intended to ensure that these commitments are implemented as quickly as possible by requiring MPOs to work with the state and relevant transportation partners to track their implementation progress, discuss any challenges to their implementation, identify replacements if implementation proves impossible and provide the funding necessary to perform their implementation. The documentation provided by H-GAC in this (and previous) transportation conformity meets this requirement.

Please note that all projects committed as TCMs through the HGB 1-hour and 8-hour AD SIPs have been implemented and Appendix 12 demonstrates such timely implementation.

Comment #3: Diesel fuel has changed dramatically in recent years due to newer federal regulations that have resulted in diesel formulations that burn much more cleanly than in the past, while maintaining high energy efficiency. Clean diesel refers to diesel products that reduce pollutants such as sulfur or nitrogen oxides (NOx). The sulfur content of standard No. 2 Diesel (common highway diesel fuel) was reduced significantly in 2006 through the Environmental Protection Agency (EPA) Highway Diesel Rule, which mandated the production and use of Ultra-Low Sulfur Diesel (ULSD) <http://www.epa.gov/otaq/fuels/dieselfuels/index.htm>.

ULSD has a sulfur content of 15 parts per million (ppm); prior to the ULSD mandate diesel fuel had a sulfur content of 500 ppm. The lower sulfur content not only reduces the "black clouds" of smoke seen coming from diesel vehicles but also allows vehicles to be fitted with retrofit devices that reduce exhaust emissions even further. In fact, new diesel engines must be fueled with ULSD in order to work properly because the advanced technologies of modern engines cannot tolerate high sulfur levels. The federal ULSD standard was effective nationwide in June

2006 for all on-road diesel vehicles, and will go into effect in June 2010 for off-road diesel vehicles.

In addition to federally-mandated ULSD, the Texas Commission on Environmental Quality (TCEQ) is requiring the use of Texas Low Emission Diesel (TxLED) in certain areas in Texas. TxLED is a low emission diesel fuel that is designed to further reduce emissions of NOx and other pollutants. TxLED requirements are effective in 110 Texas counties to the east of Interstate 35, including the Houston-Galveston-Brazoria ozone nonattainment area. For more information on the TxLED fuel, please visit

<https://www.tceq.texas.gov/airquality/mobilesource/txled/cleandiesel.html>

The TxLED adjustment factors showing in Appendix 10, were produced by TTI according to a TCEQ procedure that produces each diesel powered vehicle's type average adjustment factor as a combination of a 4.8% reduction and a 6.2% reduction for the 2002 and newer and for the 2001 and older model year vehicles, respectively. These percent emission reductions are further reductions due to the use of TxLED instead of ULSD. For more information about how the calculation are done, please visit

ftp://amdaftp.tceq.texas.gov/pub/Mobile_EI/Statewide/mvs/txled/mvs10/.

Comment #4: There is no estimation of plus or minus percent error in the modeling of emission inventories. The only way to calculate the error in these models would be to have cameras all over the region counting vehicles and length of trips, in addition of measuring the pollution from each individual vehicle. If that data would be available, then it would become the real emission inventories, and there would be no need of any modeling.

H-GAC uses for conformity the same models used to calculate the motor vehicle emission budgets, with the same general assumptions and approximations. As a consequence, the only error between both calculations is only the computer error. In addition, in agreement with the Clean Air Act, to calculate conformity H-GAC uses the latest model developed by EPA with the latest planning assumptions. TxDOT and H-GAC invest millions of dollars every ten years to obtain household surveys which are used to calculate trip production rates. For this conformity, the travel demand model used a base year of 2012 with the latest household survey from 2008-2009. The vehicle miles travelled for the year 2012 was validated using 2012 traffic counts and 2012 Highway Performance Monitoring System.

Sierra Club is right in its statement that as vehicle age their emissions increase. The mobile model takes that into account since the counties vehicle population and age distribution are input into the model (these data are coming from the Texas Department of Motor Vehicles) and the vehicle age and type are used to calculate the emission factors. For more information, please visit <http://www.epa.gov/otaq/models/moves/>

As to the centerline miles contained in Table 10, data issues were due to summary errors. The modeling networks use in both travel demand and air quality modeling were correct. The data summaries were correct, and Table 10 was updated accordingly.

Regarding Table 14, H-GAC will be adding a footnote to this table explaining what each number means. In addition, for the 2018 analysis year, the modeling calculations were done corrected, but Table 14 has a typo. The table should say 2016 instead of 2038 for the “end model year”. Thank you for pointing this out to us.

Comment # 5: The opposition of the Sierra Club to the Grand Parkway (State Highway 99) and the Fort Bend Toll Road extension from Sienna Parkway to SH 99 (CSJ 3585-02-900) is noted and your input is recorded for public record. Thank you.

Comments (additional) on the 2040 Regional Transportation Plan Conformity Addendum #1 (Dated February 22, 2015)

Dear Mr. Mannchen,

Thank you for your comments dated February 22, 2015 to the 2040 Regional Transportation Plan (RTP) Conformity Addendum #1. Following are H-GAC's answers to each of your comments using the same numbering system that you used in your letter. In advance H-GAC wants to thank you for all your comments and for your interest in the conformity process.

Comment #1: Diesel fuel has changed dramatically in recent years due to newer federal regulations that have resulted in diesel formulations that burn much more cleanly than in the past, while maintaining high energy efficiency. Clean diesel refers to diesel products that reduce pollutants such as sulfur or nitrogen oxides (NOx). The sulfur content of standard No. 2 Diesel (common highway diesel fuel) was reduced significantly in 2006 through the Environmental Protection Agency (EPA) Highway Diesel Rule, which mandated the production and use of Ultra-Low Sulfur Diesel (ULSD) <http://www.epa.gov/otaq/fuels/dieselfuels/index.htm>.

ULSD has a sulfur content of 15 parts per million (ppm); prior to the ULSD mandate diesel fuel had a sulfur content of 500 ppm. The lower sulfur content not only reduces the "black clouds" of smoke seen coming from diesel vehicles but also allows vehicles to be fitted with retrofit devices that reduce exhaust emissions even further. In fact, new diesel engines must be fueled with ULSD in order to work properly because the advanced technologies of modern engines cannot tolerate high sulfur levels. The federal ULSD standard was effective nationwide in June 2006 for all on-road diesel vehicles, and will go into effect in June 2010 for off-road diesel vehicles.

In addition to federally-mandated ULSD, the Texas Commission on Environmental Quality (TCEQ) is requiring the use of Texas Low Emission Diesel (TxLED) in certain areas in Texas. TxLED is a low emission diesel fuel that is designed to further reduce emissions of NOx and other pollutants. TxLED requirements are effective in 110 Texas counties to the east of Interstate 35, including the Houston-Galveston-Brazoria ozone nonattainment area. For more information on the TxLED fuel, please visit <https://www.tceq.texas.gov/airquality/mobilesource/txled/cleandiesel.html>

By saying "The TxLED adjustment factors were calculated by TTI using TCEQ indications", H-GAC means that to calculate these adjustment factors TTI followed TCEQ procedures, which are the same used in the Air Quality State Implementation Plan. These TCEQ procedures produce each diesel powered vehicle's type average adjustment factor as a combination of a 4.8% reduction and a 6.2% reduction for the 2002 and newer and for the 2001 and older model year vehicles, respectively. These percent emission reductions are further reductions due to the use of TxLED instead of ULSD. The TxLED adjustment factors are showed in Appendix 10. For more

information about how the calculation are done, please visit
ftp://amdaftp.tceq.texas.gov/pub/Mobile_EI/Statewide/mvs/txled/

Comment #2: In the original Transportation Air Quality Conformity Report for Houston-Brazoria-Galveston Region, H-GAC used interpolation to calculate the NOx and VOC emissions for the years 2017 and 2018. These interpolations were done using the NOx and VOC emissions from the years 2015 and 2025, which were calculated using the direct emission analysis (Travel Demand Model and the Air Quality Model). However, in Addendum 1, the emissions for years 2017 and 2018 were also calculated using the direct emission analysis. The inputs for all the direct emission analysis are in Appendices 4, 7, 9, 10.

Through the transportation conformity consultation process, which includes representatives from relevant local, state and federal agencies, a decision has been made to utilize interpolation to satisfy the budget test for the 2017 analysis year. Mobile source emissions for 2017 will be estimated using linear interpolation between the 2015 and 2018 direct analysis results.

From: Wurdlow, David
Sent: Monday, August 17, 2015 10:05 AM
To: brandtshnfbt@juno.com
Cc: Clark, Alan; Van Slyke, Chris; Lubertino, Graciela
Subject: FW: H-GAC 2040 RTP Transportation Conformity - Emissions Estimate Interpolation Calculation.xlsx
Attachments: H-GAC 2040 RTP Transportation Conformity - Emissions Estimate Interpolation Calculation.xlsx

Brandt,

I have been asked to send you information regarding how H-GAC performs interpolation of regional emissions analysis results to satisfy interim-year transportation conformity budget tests.

Please find attached an Excel spreadsheet that details how this currently done.

The spreadsheet reflects revised emissions analysis results due to comments received from federal and state air quality and transportation agencies through the conformity consultation process.

This communication will be added to our record of public comments and agency responses for the 2040 RTP conformity.

If this is not the information you have requested, or you have any other questions or concerns please do not hesitate to contact us.

Best,

David Wurdlow
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Year	NOx Emissions (t/d)	NOx Budgets (t/d)	VOC Emissions (t/d)	VOC Budgets (t/d)
2015*	124.60	171.63	52.64	71.56
2017**	103.76	130.00	48.46	59.76

2018	93.34	103.34	46.37	50.13
2025	63.17	103.34	36.12	50.13
2035	63.96	103.34	38.63	50.13
2040	69.42	103.34	41.20	50.13

**2015 used the emission budget from the year 2014 RFP SIP for the 1997 8 hr ozone standard.*

***The emissions for year 2017 have been linearly interpolated using the data for the years 2015 and 2018 regional air quality analysis.*

2017 NO_x Interpolation Formula:

$$=B2+(\$A3-\$A2)*((B4-B2)/(\$A4-\$A2))$$

$$=124.60+(2017-2015)*((93.34-124.60)/(2018-2015))$$

2017 VOC Interpolation Formula:

$$=D2+(\$A3-\$A2)*((D4-D2)/(\$A4-\$A2))$$

$$=52.64+(2017-2015)*((46.37-52.64)/(2018-2015))$$