

Bridging
OUR COMMUNITIES

2035



THE 2035 HOUSTON-GALVESTON
REGIONAL TRANSPORTATION PLAN

Executive Summary

Final — October 26, 2007

Our community will have a better quality of life through improved mobility, better access and a healthier environment.

With over 3 million new residents expected by the horizon year of 2035, the new Regional Transportation Plan (RTP) addresses greater regional growth and its attendant mobility needs than any previous plan. Based on expected growth patterns, the demand for vehicle travel will double during the plan's time horizon. The movement of goods, however, may triple in volume over our network of highways and rail corridors during this same time period. As an outcome, mobility on our roadways, transit network and freight rail system may deteriorate to such a level that the assumptions about future growth will become increasingly less likely.

The **2035 RTP** explores how the core values of our region's residents relate to the way in which our region will grow and the quality of life which this growth will afford. This plan explores potential benefits from changing our planning paradigm from one that is a reaction to growth trends to a toolbox for achieving the plans of local governments, their citizens and businesses. The Plan explores the impact of two potential growth scenarios on a wide range of performance measures related to preservation of open space, reduced flood risk, improved air quality and mobility.

The **2035 RTP** is the new long-range transportation plan for the Houston-Galveston region that identifies common values and goals for our region, alternative strategies to meet those goals, and priority actions to be implemented to achieve them. The purpose of the RTP is to ensure the region's transportation investments work to achieve the goals and values identified by the communities comprising the region. By seeking out the articulated goals of the region's citizens, this RTP introduces a new dimension in public participation and public understanding for the transportation planning process. That process incorporates the region's projected mobility needs and fiscal limitations while promoting the transportation outcomes needed to support the region's goals and values.

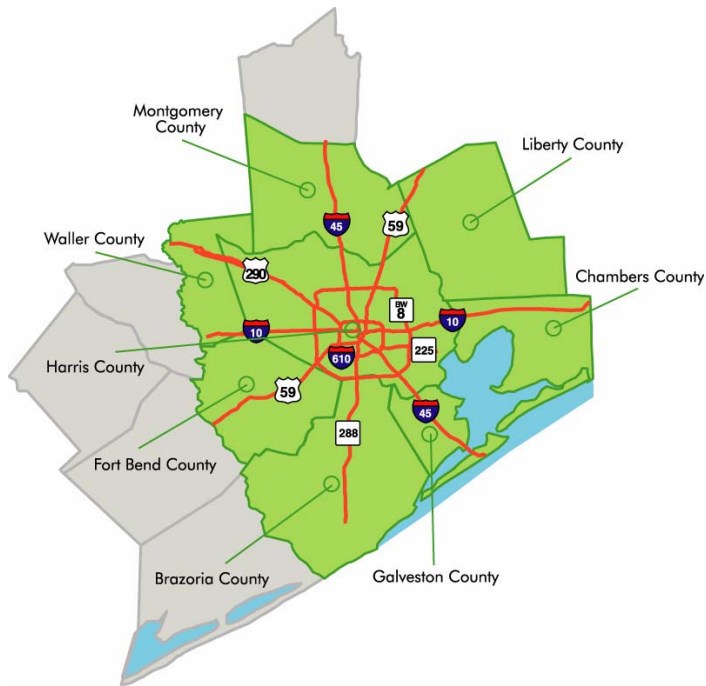
The 2035 RTP Goals are summarized here:

- 1. Improve mobility, less congestion and cost.***
- 2. Build stronger communities.***
- 3. Increase transit.***
- 4. Preserve floodplains for water detention and recreation.***
- 5. Healthier environment.***

Looking forward to the planning horizon of the 2035 RTP, the most striking forecast is the expected future growth of the region. The Houston-Galveston Area Council (H-GAC) predicts that over the next thirty years, a population equal to the size of the City of Los Angeles, an additional three and a half million people, will call the 8-county Houston-Galveston region home, bringing the regional population to 8.8 million people with 4 million jobs.

Key factors in the region's growth include our strategic access to the Gulf, our natural resources (including oil and gas) and our high quality of life. The region's diverse economy, human resources, and affordable cost of living make our region an attractive place to live and work. Yet with the continued population expansion of the region several questions arise. How will the expected future growth impact the assets that make our region attractive? Will our mobility be hampered by gridlock? What do we want the region to look like in the 21st century? The 2035 RTP begins to answer these questions by examining the dimensions of future growth, including population, employment, land use and transportation, and incorporating these dimensions into the transportation planning process.

Figure 1. Eight County Region Map



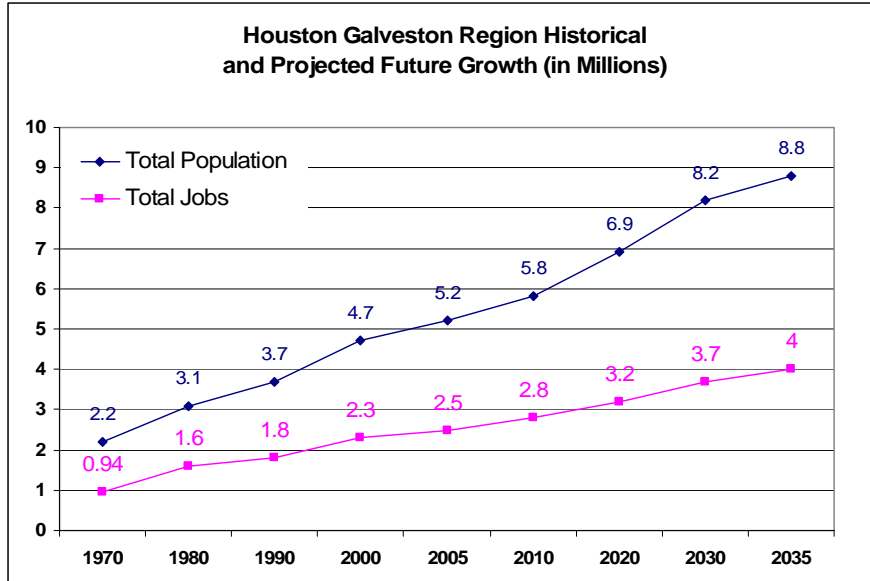
Implementation Strategies of 2035 RTP

How do we pursue transportation measures based on these goals? What do we use to measure success of the goals? The measurements of success of the 2035 RTP goals are directly related to the strategies of the plan.

The five goals recommended in the 2035 RTP can be achieved through the four major strategies:

- ◆ **System Capacity** - increasing highway and transit capacity
- ◆ **Demand Management** - for peak-period travel
- ◆ **Operations Management** – improving the efficiency of existing facilities
- ◆ **Livable Centers** – coordinating land use and transportation investments

Ultimately, land use and development decisions are made by private investors and local governments -- the role of H-GAC and the 2035 RTP is to provide decision-makers with analyses for a spectrum of transportation investments. These analytical results will assist decision makers in determining cost-effective projects to improve future mobility within the confines of today's transportation budgets.



With the projected population and employment growth in the region it is *not likely* that peak period congestion levels will be reduced compared to today's levels. A reduction in the *rate of growth* in regional traffic congestion can be achieved with the implementation of the projects, programs and strategies in the 2035 RTP. Some of the potential benefits are *summarized* below:

- Reduced travel costs of \$ 3 billion annually as measured by the value of time and gasoline saved in 2035, if the projects in the RTP are implemented.
- A doubling of transit usage from current levels if higher density development patterns are coupled with the RTP projects.
- A healthier environment through improved air quality from reduced on-road emissions and expansion of programs such as the Clean Cities program,
- More travel options through expansion of the Commute Solutions and regional Bicycle and Pedestrian programs.
- Almost \$ 400 million annual reduction in the cost of vehicle crashes.

The 2035 RTP Planning Process: To examine the impacts of future growth, the 2035 RTP departs from the traditional metropolitan transportation planning process and introduces our region to a new concept called “scenario planning”. In 2005-2006, H-GAC began this new approach with envision+Houston Region (e+HR). e+HR was a broad based public outreach initiative involving hundreds of stakeholders, elected officials, students and citizens throughout the region who participated in a series of visioning workshops and forums. Participants contributed their ideas for the future thru statements and spatial allocation of future jobs and housing. The e+HR process outcomes include citizen created common goals and values, which have guided the development of the 2035 RTP.

Mayor Wallace (Sugar Land):
“This isn’t a plan developed by H-GAC. This is a plan developed by the community.”

An additional outcome of e+HR is a series of land use scenarios, which have been used to guide the policy recommendations of the 2035 RTP. Scenarios explore alternative growth strategies and identify new approaches to solve transportation problems. Scenario planning examines a range of possible future land use forecasts and evaluates the feasibility and cost-effectiveness of transportation choices based on differences in transportation demand generated by the different land use forecasts. Scenario planning can prepare regional decision makers to recognize the various issues shaping the future, in order to make informed decisions today, and to plan for meeting tomorrow's needs.



Scenario planning is an expansion of, not a replacement for, traditional transportation planning. The results of the analyses of the scenarios (A,B,C) from the Envision Houston Region workshops are summarized in Appendix A of the 2035 RTP. For planning purposes and further discussions below, an Envision Scenario was developed that was based on increased growth in high capacity transit corridors and emerging employment centers. The Envision scenario is also characterized by reduced growth in the floodplains in the future.

Our Region Today and Tomorrow

Today's Trends

The current population of the Houston-Galveston region is over five million people, includes eight counties and covers more than 7,000 square miles. Several counties in the region are listed among the top ten for growth in the nation having experienced double-digit population growth for over a decade. Significant investments have been made to the regional transportation system, such as the expansion of our major highways and our tollway systems, yet rush hour or peak period congestion persists lasting more than six hours a day and cost the region \$2.2 billion in 2003¹.

Housing costs in the region are relatively low in part due to the prevalence of cheap, developable land on the fringes of the urbanized areas; where large residential development continue to build. These large residential developments occur further and further away from the region's business districts which currently contain the majority of the region's employment. Couple this development pattern, suburban housing and a centrally located employment base, with rapid population and job growth and considerable stress is placed on the region's transportation infrastructure and natural assets.

The Scenarios – Trend and Envision

Public input, through the e+HR process, was used to develop new growth scenarios representing different types of development patterns. These alternative growth scenarios were analyzed and compared to the forecast for the region. The scenarios use the same employment and population totals based on H-GAC's 2035 demographic forecasts. The scenarios are as follows:

The Trend Scenario (also referred to as Scenario "A"), represents a continuation of our current growth and development patterns in the region. Development in this region has historically been tied to major transportation routes, and if growth does maintain current patterns and the "business as usual" future is accurate, the year 2035 will likely see commute times doubling. With the trend, the future form of the region will include a densification of Houston's core and a dynamic

¹ Based on travel delay and excess fuel consumption, according to the Texas Transportation Institute (TTI)

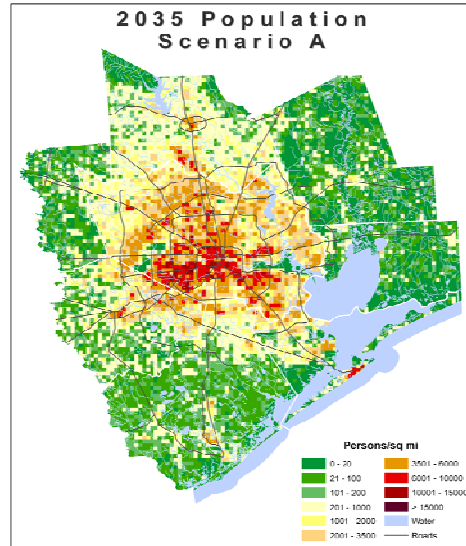
suburbanization of its periphery. There will be a significant expansion of residential land use throughout the region accompanied by persistent increases in commercial land use along major transportation corridors.

The question is; are there alternatives to the region’s traditional growth patterns that can produce substantial improvements in travel patterns, which have huge impacts on our environment, health, and quality of life?

Trend Scenario Summary:

- Low-density housing development in currently undeveloped portions of the region;
- Some mixed-use development along major roadways and highway feeder roads;
- Jobs are concentrated in the central core, predominately within Loop 610, with some small employment centers scattered throughout the region;
- Reduce morning peak period congestion;
- Suburban development fills the areas between major roadways, and in the floodplains;
- More vehicle miles traveled and less transit use than the other scenarios;
- Development leapfrogs available land for cheaper land further out.

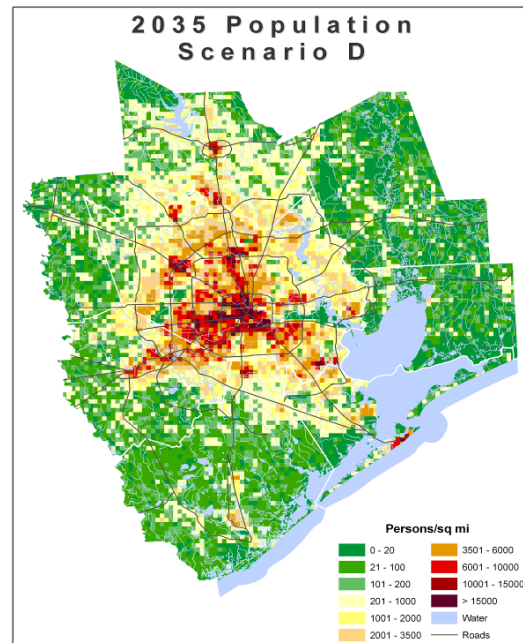
Figure 2. 2035 Population- Trend



The Envision Scenario (also referred to as Scenario “D”) portrays the e+HR goals as a realistic, alternative forecast. The recommendations maximize resources to achieve transportation and environmental goals, more cost-effectively. This scenario achieves a dramatic decrease in vehicle miles traveled, fewer emissions from on-road vehicles, increase in transit ridership, and less congestion on our roadways, resulting from changes to our land usage. This scenario is no more or less plausible than the Trend Scenario; both are attempts to forecast the future. Envision Scenario Summary:

- High-density mixed-use development along transit corridors and town centers;
- Doubling the employment locations accessible within 30 minutes by local transit from 100,000 to 200,000 by 2035;
- Assumes reduction in development in floodplain by 2015.

Figure 3. 2035 Population- Envision



Another way to measure the impact of the plan and the Envision Scenario is through examining future congestion. Below are a series of graphic illustrations on regional transportation maps, which show congestion levels thru time and scenarios. The highlighted areas show severe congestion on the 2005 roadway system, the no-build map illustrates congestion with no new transportation improvements yet adding population growth. The next two maps show noticeable differences with the projects in the 2035 RTP and additional improvements with the alternative land use Envision Scenario.

Figure 4. Congestion 2005

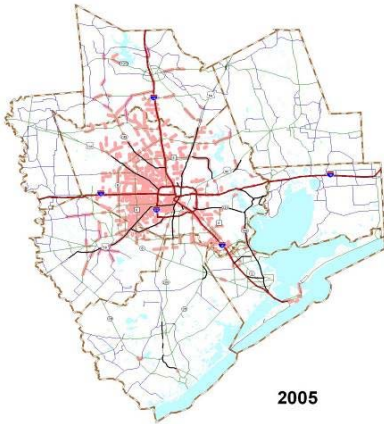


Figure 5. Congestion 2035 No Build

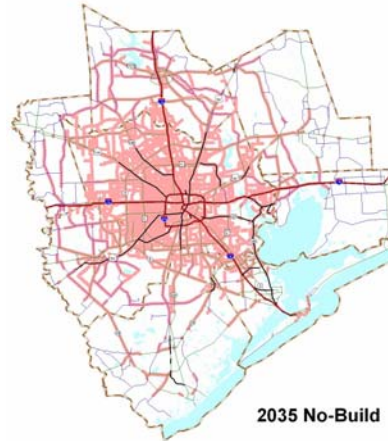


Figure 6. Trend Scenario

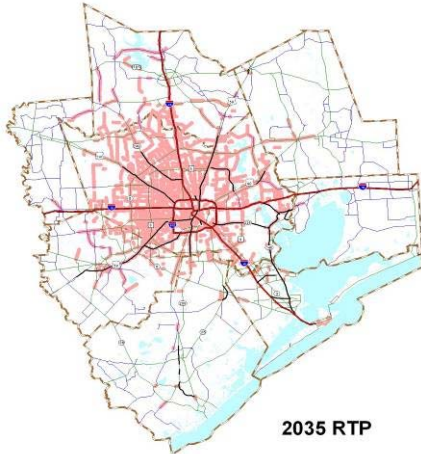
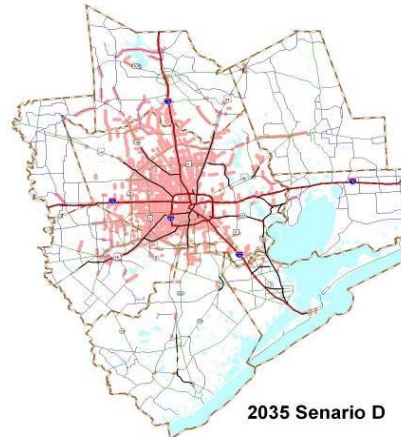


Figure 7. Envision Scenario



A portion of daily travel is during peak periods resulting in 1.9 million gallons of fuel wasted daily. Due to congestion the region currently loses 23.1 million dollars a day. If the future growth forecasts become a reality and we don't implement the projects and strategies in the 2035 RTP those values will change to 2.3 million gallons of fuel wasted daily and 34.9 million dollars lost daily.

Alternatively, if we implement the suggestions in the Trend scenario we will see a 27% reduction from the No Build scenario in the amount of fuel and cost wasted in congestion travel. Better yet, if we decide to implement the Envision scenario along with the 2035 RTP projects there will be a

reduction of 33 % reduction in the amount of fuel and money lost to delay time in addition to an 8% reduction in VMT.

Differences between these scenarios serve to illustrate the impact made by changing land use alone. Decisions being made today influence regional growth and will affect our lives for decades. Scenario analysis shows how critical land use and development decisions are in determining appropriate transportation systems and outcomes. While the 2035 RTP can present these analytical results, ultimately local governments and the private sector will need to respond to the region's desired vision.

John Fregonese: “Scenarios are not master plans. They’re plausible futures. They’re things that you can learn from to help you develop the strategies where you want to go.”

Relationship of 2035 RTP to Envision Houston

In seeking an innovative planning approach, H-GAC has placed an increased emphasis on improving coordination between land use and transportation. The e+HR region-wide effort collectively delivered some clear and uniform messages which have evolved into statements of common goals and values. The 2035 RTP is based on these common goals and values, identifies the policy challenges to meeting these goals, and recommends strategies and policy to overcome those challenges. Following are the goals of the 2035 RTP with some of the supporting strategies outlined:

2035 RTP Goals - *Community Values from e+HR* and Recommended Policies

1. Improve mobility, less congestion and cost

- Support policies to reduce demand for the transportation system
- Promote coordination between transportation and land use
- Advocate multi-modal transportation, internal street connections and pedestrian facilities

2 Build stronger communities

- Fund local planning studies to assist in the development of the Livable Centers Initiative
- Work with local jurisdictions to encourage the development of centers
- Identify sub-regional areas to assess needs of local jurisdictions for the 2040 RTP
- Refine operational improvements in strategic corridors for Signature bus and Smart Streets.
- Promote the continued development of more pedestrian friendly streets.

3. Increase transit

- Implement the METRO Solutions 2035 plan.
- Pursue recommendations from the 13-County Regional Transit Coordination effort
- Develop guidelines for Transit-Oriented Development with METRO, City of Houston, and TxDOT
- Study Transit Ready Development in and outside of existing transit service areas
- Inform local elected officials and citizens on the costs and benefits of Transit-Oriented and Transit-Ready Development

- Continue commuter rail feasibility studies for corridors not currently in the METRO Solutions plan
- 4. Preserve floodplains for water detention and recreation**
- Coordinate with stakeholders in the development of storm water retention areas and green-space plans
 - Create an information clearinghouse to provide support to public-private partnerships
 - Research Green Streets guidelines with stakeholders
- 5. Healthier Environment**
- Continue to enhance awareness of the health effects of air pollution in the region
 - Sustain implementation measures to improve air quality in the Houston-Galveston region
 - Refine evaluation of transportation impacts on the environment in collaboration with sponsors
 - Implement environmental evaluation system in the project prioritization and selection process
 - Formalize environmental goals and policy with the Transportation Policy Council
 - Support an eco-system base for future avoidance, minimization or mitigation of regionally significant transportation projects
 - Identify early mitigation sites and measures with project sponsors to help identify future mitigation feasibility and cost effectiveness for wetlands, habitat.

System Benefits

The following system benefits summary is based on comparisons between the current and two alternative future transportation systems, 1) the 2035 baseline or Trend, and 2) the 2035 Envision, or higher density development system. Those systems are contrasted to a *hypothetical* system based on future travel demands on the current transportation network, also known as no-build. Benefits gained from the implementation of the 2035 RTP are measured by the decrease in vehicle miles and hours traveled (Figures 8 and 9), increase in transit usage (Figure 10), and reduction in congestion cost (Figure 11).

The analyses show significant mobility benefits as well as economic and environmental benefits. In 2007, VMT was approximately 139 million daily miles. As depicted in Figure 8, by 2035, VMT is expected to increase to about 266 million daily miles, an increase of 91%. In the Envision Scenario, VMT results are approximately 10% lower, 225 million daily miles, than the Trend Scenario.

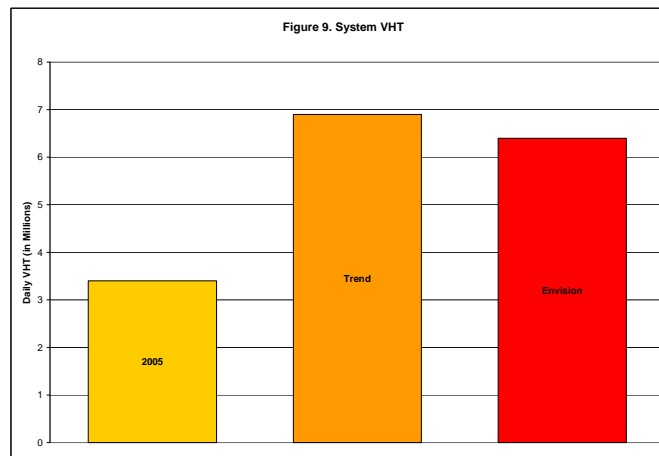
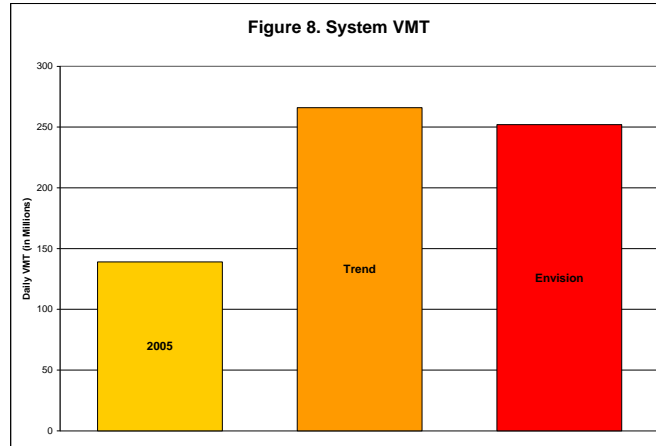
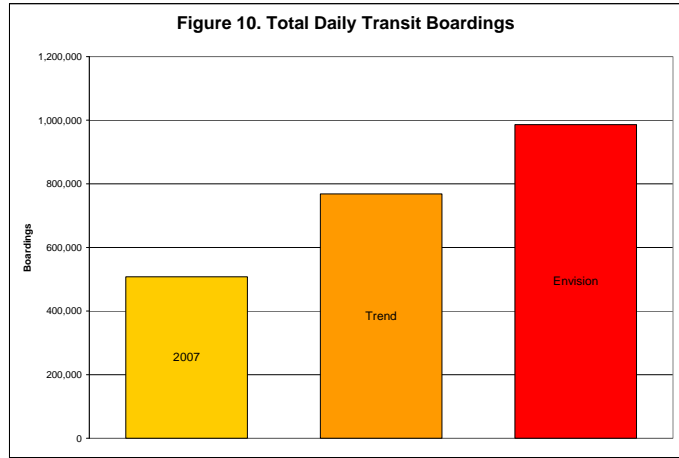


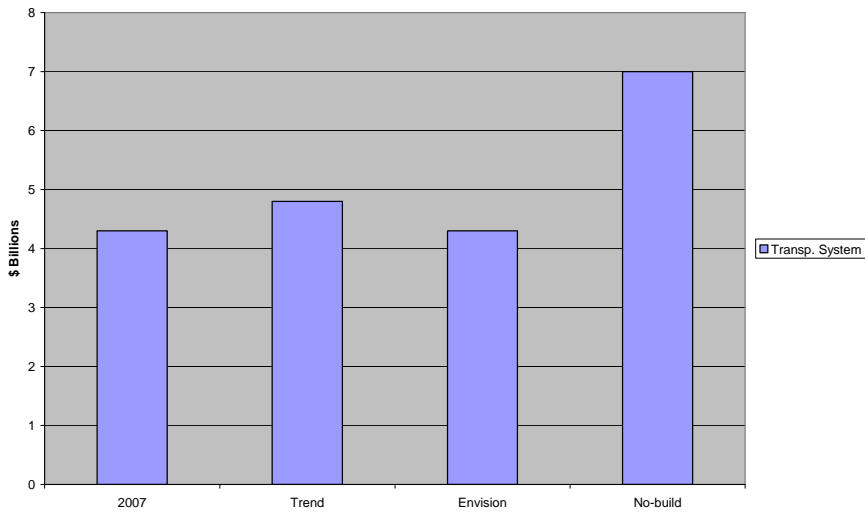
Figure 9 estimates current VHT to be approximately 3.4 million daily hours of travel. VHT results are approximately 15% lower in the e+HR Scenario than the Trend Scenario.

Transit boardings are also expected to increase significantly with the implementation of the 2035 RTP. Boardings are highest under the Envision Scenario, and are expected to more than double by 2035, Figure 10.



As shown in Figure 11 below, there would be a significant reduction in the annual congestion costs related to lost travel time and wasted fuel in the Trend and Envision scenarios, when contrasted to a no-build situation. Those savings would amount to about \$3 billion annually. Roughly half a billion more would be saved with the implementation of the RTP (Trend) and higher density development strategies (as in the Envision scenario).

Figure 11
Annual Delay Costs

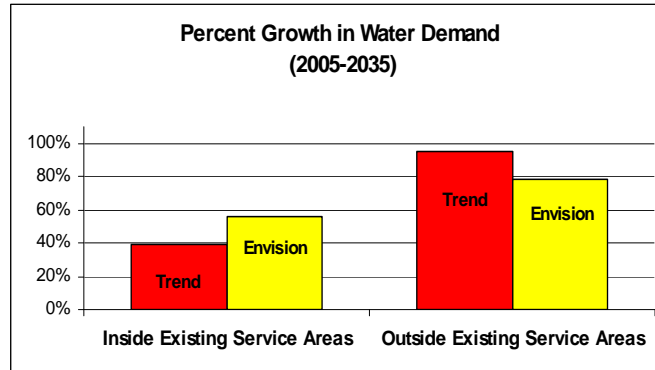


These data reflect a decrease in the rate of growth of congestion and a substantial increase in transit ridership. By coordinating land use and transportation planning, our public dollars and private investments will produce greater benefits as well as economic and quality of life dividends.

The e+HR scenarios were also examined for variation on the effects of environmental factors resulting from the land use changes. Air polluting emissions from on-road mobile sources are appreciably lower with the alternative scenarios, due to reduced driving.

The Envision scenario also reduces costs for water use and treatment. The Envision scenario places more growth within established areas compared to the Trend scenario. Densification of areas that already have infrastructure, including water and wastewater treatment plants, decreases costs to the public. The Trend scenario, by continuing the trend of population growth in new outlying areas, places more water demand in areas outside of existing infrastructure. The cost difference for water demand between the Trend and Envision scenarios is estimated at \$566.2 million lower for the Envision scenario.

Figure 12. Water Demand



The Major Elements of the Plan

Roadway

Congestion levels are expected to increase, even with the implementation of the 2035 RTP. The purpose of the 2035 RTP is to manage congestion growth. Toll roads will play an increasing role in the expansion of the regional roadway system due to the limited growth of traditional road funding. The map below depicts the 2035 Regional Roadway System. Key elements of the 2035 network include: more managed lanes throughout the region, completion of the Grand Parkway (SH99), an upgrade of SH 249 to freeway status between BW 8 and the Grand Parkway, and improvements to other major roadways such as US 59, US 290, IH 45 and SH 288.

Transit

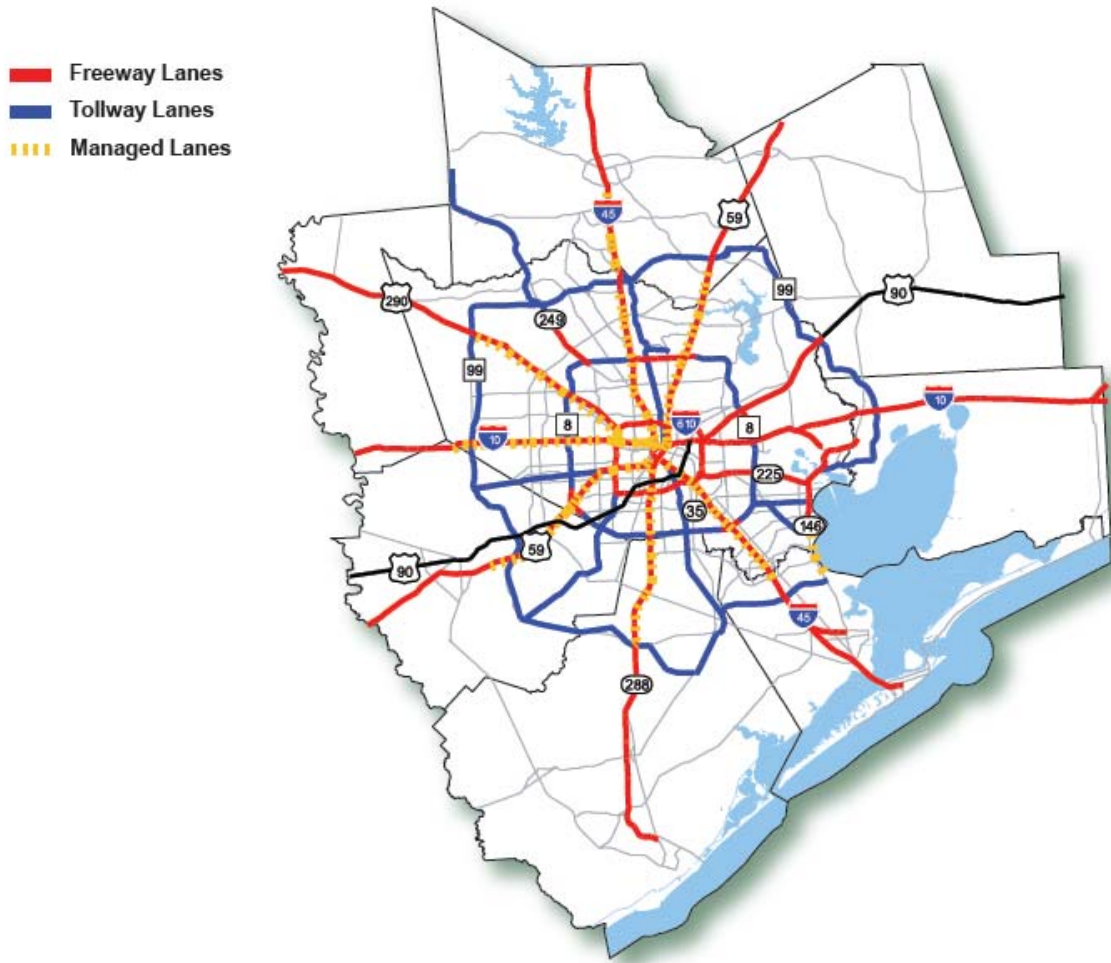
Our region's low-density pattern of development and limited connections between destinations, make transit difficult to sustain or implement. Transit-Oriented Development (TOD or compact development around existing or planned transit stations) and Transit-Ready Development (in areas where future service is wanted) can make transit more accessible, efficient and expansion more viable. TOD within large scale developments

Rendering of Proposed METRO Intermodal Terminal



can provide the density and ridership needed to support the ‘backbone’ for transit systems.

Figure 13. Regional Roadway Map



A new project currently underway within the City of Houston’s Planning Department is an effort to link transportation, transit, and land use – many of the same elements of e+HR’s common goals and values. The City of Houston has developed the *Urban Corridors* project to coordinate urban redevelopment trends with transit investments, in a way that meets mobility needs, promotes economic development, and addresses community concerns.

Despite the need for transit, there are significant obstacles to improving our region’s public transportation. Currently less than 5% (averaged over peak and non-peak times) of our population utilizes transit, while nearly 10% are in households without an automobile. For people outside of the Metro Service Area (approximately 1/3 of Harris County and all of the other 7 counties) there are limited transit options.

METRO Solutions 2035 represents a substantial expansion of the existing transit system and a major investment and commitment to the future of transit in the region. By extending transit beyond the METRO service area, commuter rail lines significantly expand the number of residents able to access METRO’s transit services. Transit corridors beyond those proposed in METRO Solutions are being examined in the 2035 RTP for feasibility. H-GAC is the lead

agency in developing a regional transit coordination plan and pilot projects to be implemented. The Regional Coordination Plan which covers the broader 13 county area.

Goods Movement

The next two decades will see a robust growth in goods movement, particularly in maritime containers. While this growth will present significant challenges, the region should have adequate capacity to have an advantage over competing regions. For example, the Port of Houston has the ability to adapt its practices to meet fluctuating demand. Case in point is trade with China, which is altering the composition of the Port of Houston container trade, and accounts for a rapidly increasing share of the port's container growth. As Bayport comes online, the Port will be able to handle increased volumes.

The Port of Texas City plans to construct a container terminal on the Shoal Point dredge disposal island, however, there are complications with landside access because of no on-dock rail. Phase I of the project is scheduled to be completed in the first quarter of '09.

The Port of Galveston has predominantly become a cruise facility. Their existing container yard has been abandoned due to complications with landside access. Future plans may call for a container facility on Pelican Island.

The Port of Freeport currently sees substantial volumes of containers with refrigerated cargo, 65-75% bananas. The Port projects 18% annual growth for the next few years. Freeport has sufficient depth to accommodate a more diverse fleet of container vessels, but landside connections to Houston may constrain growth if the roadway is not expanded.

Rail efficiency is weak in the region, principally because the tracks are currently at capacity. Years ago, the rail lines were placed outside of the urbanized area; but those same tracks are now in highly developed areas, causing massive slow downs and congestion for the railroads and the roadways. Grade separations have been proposed system wide to improve the Houston system velocity and broaden the customer base for rail intermodal shipments leaving Houston.

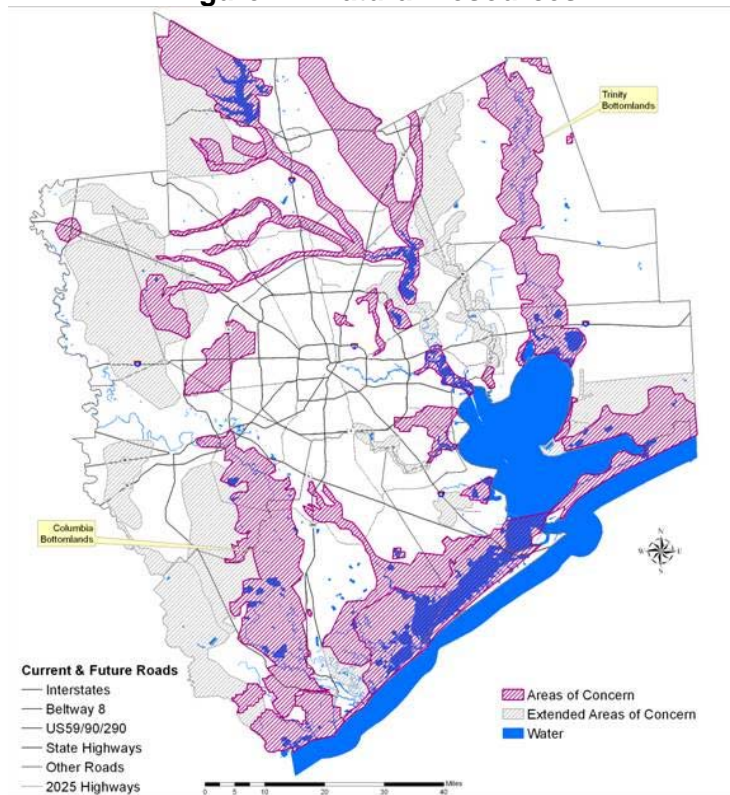
To prepare for the region's future road network needs due to growth in goods movement, it is important to understand the function of distribution centers. Distribution centers are used to consolidate freight, and vary in size greatly, including the small-box, less than 100,000 sq. ft. to Mega-Box centers with over 1 million sq ft. New centers are based on road and rail access, land value and productivity. Cedar Crossing located in Chambers County is a major growth area for new distribution centers, such as the enormous 4 million sq ft. Wal-Mart Distribution Center. In order for the region to address freight growth successfully, roadway rehabilitation is critical and there are plans in the 2035 RTP to improve Barbours Cut Blvd., SH 146, and SH 225.

Environmental Stewardship

The strategies and concepts outlined in this RTP increase mobility choices and improve our region's environment. The region's natural resources were identified, mapped, and prioritized by a group of environmental professionals from federal, state, and nonprofit specialty resource agencies and groups. Once identified, areas containing distinct natural assets were documented for consideration in the planning process for future transportation projects.

While identifying areas of environmental concern, major focus was given to the region's contiguous and intact ecosystems, such as our coastal prairies, salt and fresh water wetlands, riparian systems, and upland forests. Areas containing natural resources that help protect our region from hurricane storm surges, for example, sand dunes and coastal wetlands were given a high priority for consideration. Priority environmental areas were defined to assist decision-

Figure 14. Natural Resources



makers in determining the avoidance, minimization, or mitigation² needs of future projects in the long-range planning process. By including our natural systems in the examination of land use and transportation, planners can reach an informed decision on which areas will yield the greatest benefit for the environment and humanity.

Improving Safety

In the Houston-Galveston region between 1999 and 2001, there were 252,241 *serious* crashes, an average of 84,080 a year (or 230 a day). Of these crashes, 1,882 persons were killed (an average of 627 a year) and 281,914 persons were injured (an average of 93,971 a year).

H-GAC has been actively involved in trying to improve safety through a number of actions taken over the last few years:

1. Documentation of motor vehicle crashes using a GIS-based crash information system;
2. Production of safety reports. To date more than 40 safety reports have been conducted;
3. Identifying high crash locations, (hot spots) or (high crash risk);
4. Sponsoring safety engineering studies of hazardous locations (hot spots) in cities and counties in the region;
5. Creating a multi-agency safety advisory group (the Regional Safety Council) to provide policy-level recommendations for our member communities and the State.

² SAFETEA-LU

The 2035 RTP includes projects and programs that were identified through the safety planning initiative. Many of those projects also include improvements that will enhance access and mobility along specific corridors in the region.

Evacuation

Evacuation has become a front and center issue for the Gulf Coast as we continue to recover from the 2004-2005 Hurricane Season. In a recent report by the American Highway Users Alliance of 37 of the largest regions in the nation, Kansas City, Missouri was given an A for evacuation ability, while Houston fell short with an F. The study looked at three factors to evaluate evacuation capacity, including exit capacity, internal traffic flow and automobile access. Exit capacity is considered to be the “ability of routes leading out of the urban area to accommodate the evacuation population.” As is most evident by the daily congestion on roads, Houston scored high on the “share of households owning cars.”

Houston has an estimated 51 lanes, (including major thoroughfares) that can be used to exit the urban region, including 9 contraflow lanes. In order to evacuate residents from the surge zone areas A, B, and C (for a Category 3 Hurricane or higher), approximately one million people, it would take 36 hours (1.2 persons per car), if all things were perfect. If the same number of people evacuated in future events as they did during the Hurricane Rita event, approximately three million, it would take 120 hours, again if everything went perfectly. If there was a cause to evacuate the entire urban area, approximately 5.2 million people, it would take 206 hours. These numbers are of concern considering that Hurricane Katrina’s change in path, strength, and speed left Louisiana with as little as 24 hours to evacuate. Our region must improve our evacuation capabilities. The Envision scenario illustrates how changes in land use may improve evacuations in the future.

Figure 15. Population in Evacuation Zone

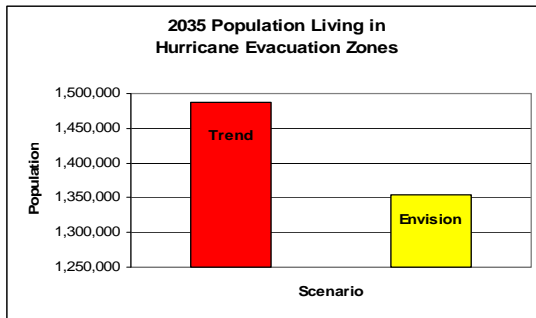
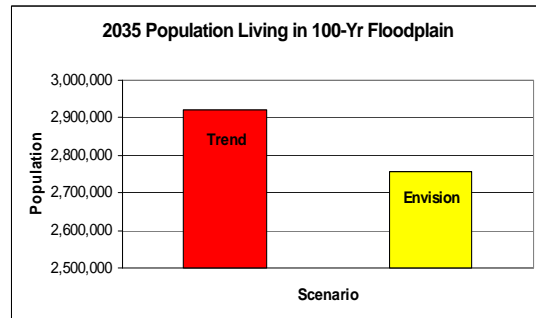


Figure 16. Population in 100 Year Floodplain



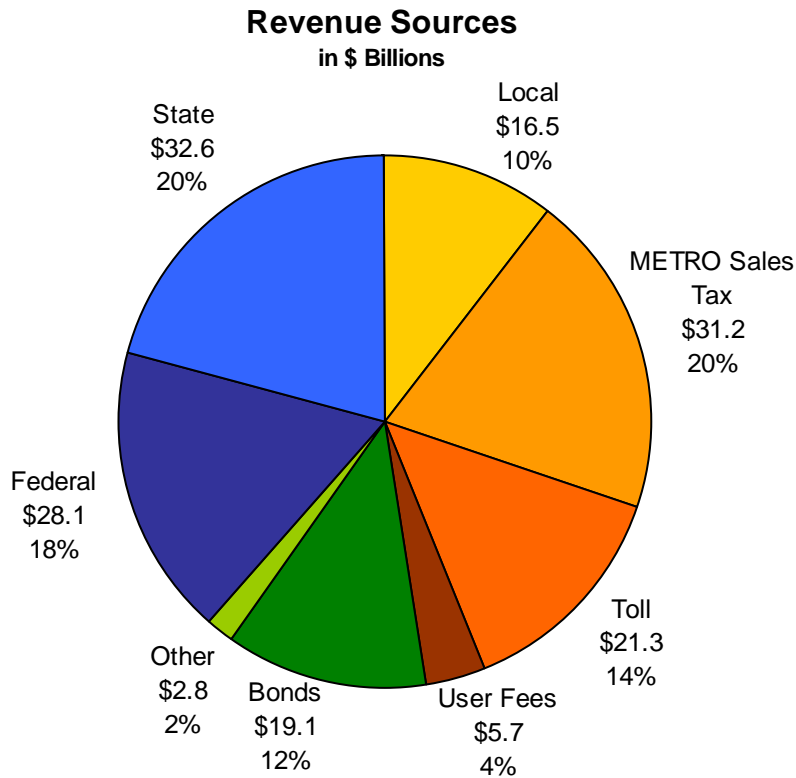
Envision participants expressed concern about the viability of continuing the pace of development in the floodplains. The Envision scenario shows less population within the 100-year floodplain in the year 2035. This is consistent with the e+HR goal of preserving floodplains as open space for storm water detention and for recreational use. With the impacts of Hurricanes Katrina and Rita fresh in their minds, e+HR participants also recommended lower population growth rates within hurricane evacuation zones. The Envision scenario places less population within the hurricane evacuation zones in 2035, decreasing demand on evacuation routes compared to the Trend scenario.

Financial Constraint

The RTP's financial analysis makes projections about the amount of expected revenues available for the region to devote to transportation-related projects.

Revenues come from a variety of federal, state, and local sources including Federal Highway Administration formula and discretionary funds, Federal Transit Administration funds, State gas taxes, tolls collected from the region's tollways, and contributions from local governments. It is particularly important to note that the region's reliance on toll receipts to fund the RTP is growing each year. **Total Estimated Revenues 2035: \$157.2 Billion**

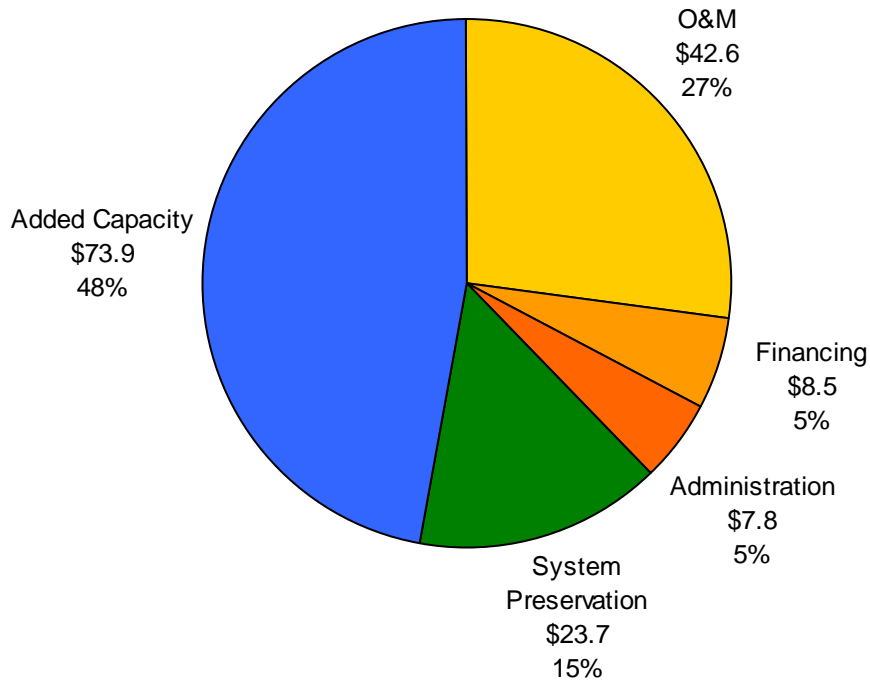
Figure 17



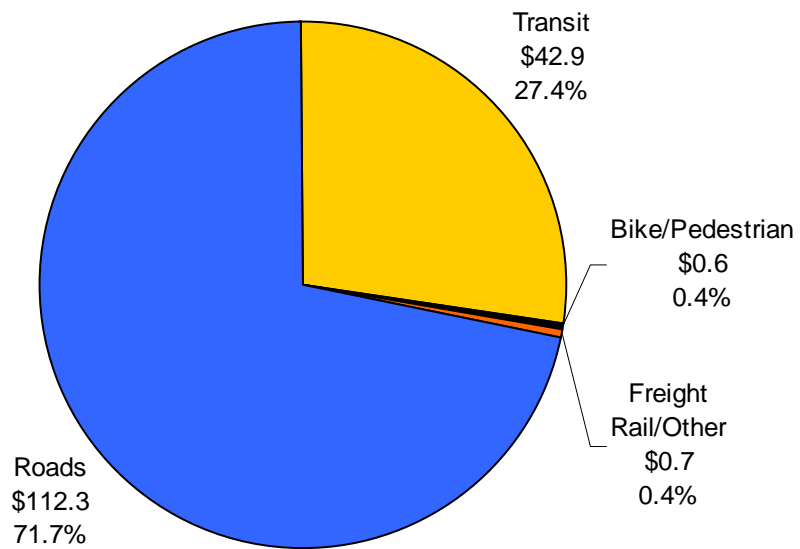
Expenditures on the transportation network include building new and improving existing roadways and transit lines (Added Capacity), operating the network and maintaining it in good repair (Operations & Maintenance), reconstructing existing facilities when they have reached the end of their useful life (System Preservation), financing costs associated with debt incurred for transportation projects (Financing), and wages and salaries paid to the staff of the roadway and transit agencies and project development (Administration). **Total Estimated Expenditures 2035: \$156.59 Billion**

Figure 18

Expenditures By Category in \$ Billions



Expenditures by Mode in \$ Billions



Air Quality

The conformity determination shows that the *2035 Regional Transportation Plan* and the *2008 - 2011 Transportation Improvement Program* for the Houston-Galveston Transportation Management Area meet the requirements of the State Implementation Plan for the Houston-Galveston Ozone Nonattainment Area.

TABLE 1: Conformity Analysis Summary

Analysis Year	VOC Emissions (tpd)	VOC Budget (tpd)	NO _x Emissions (tpd)	NO _x Budget (tpd)
2007	88.09	89.99	171.35	186.13
2009	80.56	89.99	150.51	186.13
2019	45.99	89.99	49.59	186.13
2025	42.14	89.99	39.25	186.13
2035	48.14	89.99	40.27	186.13

Challenges

The 2035 RTP lays forth a wide range of policies that, if implemented, will help achieve the major goals of the plan, including improving mobility and accessibility. A major obstacle is funding. Effective implementation of the recommended policies requires a substantial financial commitment. Funding has traditionally been a major barrier in transportation planning as we can no longer assume financial growth through the gas tax and increasingly transportation planners are turning to innovative financing mechanisms to bridge the gap. Public-private partnerships will play a greater role in transportation financing. By recognizing these challenges, local policy makers can begin collaboration to overcome these barriers.

One of the major recommendations of this plan, coordination of transportation and land use, faces the challenge of lack of authority by local governments. This plan does not endorse zoning, and a major hurdle exists in helping local governments have the tools needed to implement desired land use policies. The lack of land use tools to implement desired policies also impacts the ability of local governments to protect our natural resources. Partnerships between local governments and the private sector will increasingly play a role in moving these policies toward reality.

Despite these limitations, new strategies in the RTP can help build the desired transportation system. By changing the way we grow, develop, and finance, we can maximize the connections between vision and reality and a more efficient system may evolve over time.

The Next Steps and Moving towards the 2040 RTP

The 2035 RTP plan includes many ground-breaking initiatives: the expansion of METRO Solutions, the e+HR public process, the analyses of land use scenarios on transportation factors, and the broader examination of environmental considerations. These efforts are unique to the 2035 RTP. Nonetheless, the projects within the 2035 RTP are largely adopted from the previous plan, the 2025 RTP. Each long range transportation plan provides a stepping stone for the next plan, in a progressive cycle of improvements and evolving regional priorities. This RTP is a series or a continuum of previous plans, each plan representing a snapshot in time. The purpose for creating the 'snapshot' is to test whether the projects in the plan collectively meet two federal requirements: air quality standards³ and financial constraint. If the air emissions generated from

³ National Ambient Air Quality Standards, NAAQS, as set by EPA and the TCEQ

the on-road mobile engines on all the transportation projects are predicted to be below the established air quality limit, and the estimated revenues cover the projected expenses, then the plan and its projects are allowed to proceed.

The 2040 RTP will build on the foundation of the e+HR initiative, utilized in the 2035 RTP by conducting localized visioning and planning at a sub-regional level. This collaborative “bottom-up” approach will enable local governments and citizens to tailor goals and strategies for growth and mobility to their individual communities. The exact configuration and size of these sub-regions is unknown today. The potential geography of the sub-regions may be at the county level, or a grouping of cities or corridors whose land use, mobility, or environmental futures are closely linked. H-GAC expects an intensive public input process plus coordination, in each of the sub-regions to be selected with local officials and staff. The purpose, as with the City of Houston’s Urban Corridors project, will be to ensure that transportation investments are supportive of local plans and growth policies.

Long-range transportation planning is a continuously evolving process. By preparing for our region’s anticipated growth while engaging the public in our region’s future, we expect to encourage significant change that will *reduce the rate of growth of traffic congestion*, provide more travel choices, and improve the region’s environment and quality of life.

Tomorrow’s Options

The examination of the growth scenarios in the 2035 RTP does not constitute a consensus on the nature or location of development in the eight county region. It is intended to give policy makers additional information against which to assess the need for and scope of potential transportation investments. The 2035 RTP will help set the stage for future exploration of transportation and land use coordination by our local governments as they look to maximize the use of public transit, reduce commute distances or increase walking opportunities.