



Houston Priority Corridor: A Multi-agency Plan

A diverse set of innovative Intelligent Transportation Systems (ITS) applications is being implemented as part of the Houston ITS Priority Corridor Plan. The plan involves six local agencies deploying 26 projects ranging across many of the ITS user services.

The U.S. Department of Transportation in 1993 designated Houston as one of four ITS Priority Corridors. The intent of the Priority Corridor Program is to showcase ITS and provide test beds for demonstrating and evaluating ITS concepts and technologies.

The Federal Highway Administration (FHWA) and Texas Department of Transportation (TxDOT) entered into an ITS Partnership Agreement which established and funded the Houston ITS Priority Corridor Program. In addition to establishing the framework for program development and administration, it also

recognized the importance of involvement of other local implementing agencies in development of the program. TxDOT, METRO, Harris County, and the City of Houston entered into a Memorandum of Understanding to manage and implement the Houston ITS Priority Corridor Program.

One of the FHWA requirements of the program was that each of the designated corridors was to develop an ITS Priority Corridor Program Plan to identify projects, priorities, schedules, and estimated funding requirements. The Texas Transportation Institute (TTI) was selected to assist TxDOT and the local agencies in developing the plan.

What We Did . . .

The plan was developed within the multi-agency structure of the four local transportation agencies which formed Houston TranStar (the Greater

Houston Transportation and Emergency Management Center). TxDOT provided the program manager and was administratively responsible for the entire program. A Priority Corridor Technical Committee was formed to assist in development and implementation of the plan and included representatives of each local agency's transportation operations and emergency management branches.

TTI served as a technical resource to the program manager and the committee. TTI assisted in identifying goals, evaluating needs, identifying potential ITS projects, and evaluating candidate projects. TTI was also responsible for documenting the plan and updates in a series of reports.

The approach to development of the plan was to build upon the substantial existing ITS infrastructure in the Houston area and extend and enhance its coverage and



functionality. The U.S. Department of Transportation identified an Intelligent Transportation Infrastructure (ITI) for emphasis in deploying ITS in urban areas. The ITI is composed of nine areas, and an attempt was made by the committee to include as many of these elements as possible in the Priority Corridor Program Plan. Projects were developed for seven of the nine ITI areas.

Initial efforts were oriented to development of an Immediate Action Program, which identified key projects to proceed concurrently with completion of the entire Priority Corridor Program Plan. The immediate action plan included 14 projects. The completed plan was comprised of a short-range program of 28 projects (including immediate action projects) and an intermediate-range program of nine projects. The plan is considered a “living document” and was later updated in 1996 and 2000 to reflect program refinements, revisions, and actual funding allocations by FHWA, TxDOT, and local agencies.

What We Found . . .

The current Priority Corridor Program Plan (highlighted in Table 1), as updated in 2000, is comprised of 26 projects, all with work orders defining scope and budgets approved by TxDOT and FHWA. Funding for implementation of the plan is

considered complete, as federal funding for the Priority Corridor Program ended with the Fiscal Year 1997 federal budget and the end of the Intermodal Surface Transportation Efficiency Act (ISTEA). ITS funding from the Transportation Equity Act for the 21st Century (TEA-21) (the Houston area allocation for Fiscal Year 1998 and 1999) was used to supplement Priority Corridor projects. Table 1 lists project title, lead agency, and total project budget. Project budgets include project development, design, deployment, integration, and evaluation.

The action elements of the plan are a series of projects which extend or test intelligent transportation infrastructure. The interrelationships of many of the projects foster a building-block approach to development and evaluation of transportation management and traveler information systems. Deployment activities should not overlook the need to operate and maintain the deployed ITS infrastructure. In addition, FHWA requires that each project undergo an evaluation study to provide documentation and independent assessment of the projects.

Total cost of the Priority Corridor Program is estimated to be \$26,293,378, with planned agency participation as follows.

U.S. Department of Transportation	\$20,084,939
Texas Department of Transportation	\$ 4,137,452
METRO	\$ 1,042,509
Harris County	\$ 624,175
City of Houston	\$ 90,525
Houston-Galveston Area Council	\$ 60,000
Harris County Improvement District #1	\$ 253,778

Individual projects are in varying levels of planning, deployment, and evaluation, with initial projects having been initiated in 1994. The current status of the 26 projects comprising the Priority Corridor Program Plan is as follows:

- Eight projects completed.
- Eleven projects being deployed or evaluated.
- Two projects discontinued.
- Five projects in preliminary development.

The Researchers Recommend . . .

The Priority Corridor Program Plan is a “living document,” which has been revised a number of times and documented in two plan update reports. The Houston ITS Priority Corridor Program is an ongoing program with 16 of the projects remaining to be completed. Therefore, the plan should be monitored and updated periodically to reflect program changes.



Table 1. Summary of Priority Corridor Projects

Work Order/Project	Lead Agency	Estimated Cost
1 CCTV Surveillance System Lease for Astrodome Area	TxDOT	\$480,000
2 Development of ITS Priority Corridor Program Plan	TxDOT	600,000
3 Monitoring Traffic and Transit Conditions and Incident Detection with AVI (Phase 4)	TxDOT	2,231,250
4 Changeable Lane Assignment System (CLAS) on Frontage Roads	TxDOT	750,000
5 Public Information/Program Administration	METRO	200,000
6 Truck Monitoring and Warning Systems for Freeway-to-Freeway Connections	TxDOT	220,000
7 Real-Time Information Kiosks	TxDOT	84,943 ⁽¹⁾
8 Railroad Grade Crossing Monitoring System	TxDOT	700,000
9 Automatic Vehicle Locator System for Incident Management	TxDOT	100,000
10 On-Vehicle Navigation/Information Applications	TxDOT	0 ⁽²⁾
11 Monitoring and Information Systems for Environmental Conditions	TxDOT	725,000
12 Changeable Lane Assignment System (CLAS) at Arterial Intersections	Harris County	1,050,000
13 Integrated Corridor Transportation Management and Traveler Information System	METRO	1,862,500
14 Washburn Tunnel Traffic Management and Information System	Harris County	1,220,000
15 Traffic Management and Traveler Information for Critical Roadway Links	TxDOT	4,890,878
16 ITS Technology for Data Collection and Transportation Planning	H-GAC	300,000
17 Priority Lane Pricing Using AVI	METRO	462,500
18 Program Administration/Public Information/Project Development	TxDOT/METRO	790,000
19 En-Route Transit Information System	METRO	1,046,167
20 ITS Enhanced Incident Management	TxDOT/METRO	787,500
21 Automatic Traffic Management in Flood-Prone Areas through Use of ITS Technologies	Harris County	2,000,000
22 Dissemination of Traveler Information	TxDOT	1,508,750
23 Coordinated Ramp Metering and Intersection Traffic Signal Control	TxDOT	0 ⁽³⁾
24 Condition Responsive Uptown Traveler Information System	HCID #1/COH	1,268,890
25 Automated Incident Management Strategies and Support Systems	TxDOT	1,650,000
26 Integration of Priority Corridor Projects into TranStar	TxDOT	1,365,000

⁽¹⁾ Project 1-1 (Work Order 7) was completed and remaining funds distributed to Project 4-1 (Work Order 19) and 1-5 (Work Order 24).

⁽²⁾ Project 1-2 (Work Order 10) eliminated and funds distributed to Project 3-1 (Work Order 3) and Project 0-5 (Work Order 25).

⁽³⁾ Project 3-4 (Work Order 23) eliminated and funds distributed to Project 0-3 (Work Order 18) and Project 0-5 (Work Order 26).



For More Details . . .

The research is documented in the following reports:

Report 2931-1, *Immediate Action Program, Houston ITS Priority Corridor Program Plan*

Report 2931-2, *Houston ITS Priority Corridor Program Plan*

Report 2931-3, *Houston ITS Priority Corridor Program Plan – 1996 Update*

Report 2931-4, *Houston ITS Priority Corridor Program Plan – 2000 Update*

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TxDOT Implementation Status December 2003

The focus of this research project is on the implementation of a diverse set of innovative intelligent transportation systems (ITS) applications into the Houston ITS Priority Corridor. Of the original 26 projects developed for the Houston ITS Priority Corridor Program Plan, 15 projects are complete, seven projects are in progress, three projects are discontinued, and one project is scheduled for letting in February 2004. The coordination and cooperation among all agencies involved has been a key to the successful implementation of these ITS applications.

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