

Innovative Transportation Solutions



3. Innovative Transportation Solutions

Community Vision for University & Austin Ave Downtown Corridors



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Community Input

GNA received quite a few community comments from the interviews and survey about the growing traffic problems and delays on University Avenue. The comments in the interviews focused on finding new, innovative solutions to this building traffic congestion.

Based on that community input, GNA concentrated on researching new proven ideas and solutions to respond to these increasing traffic problems.

Research

Since Georgetown population growth officially will surpass the 50,000 State threshold, TxDOT will be transferring the operation and maintenance of all TxDOT traffic signals to the City of Georgetown. This move gives the City the responsibility to manage all traffic lights in the City.

GNA sees that this added management control and responsibility can have a significant potential impact of the growing traffic congestion on the University Avenue corridor. The City has the opportunity to now rethink traffic signal management and find new, innovative approaches to reduce traffic delay and congestion by creating a smoother traffic flow along the corridor.

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) is a set of strategies for advancing transportation safety and mobility by integrating communication and information technology applications into the management and operation of the transportation system.

In the future, ITS technologies will lay the foundation to transform surface transportation by offering a connected environment among vehicles, the infrastructure and passengers' wireless devices, allowing drivers to send and receive real-time information about potential hazards and road conditions.

A Comprehensive Smart City Strategy

ITS is an enabler of a broader "Smart City" approach. There are many definitions of a Smart City concept. GNA found the best definition was from the Smart Cities

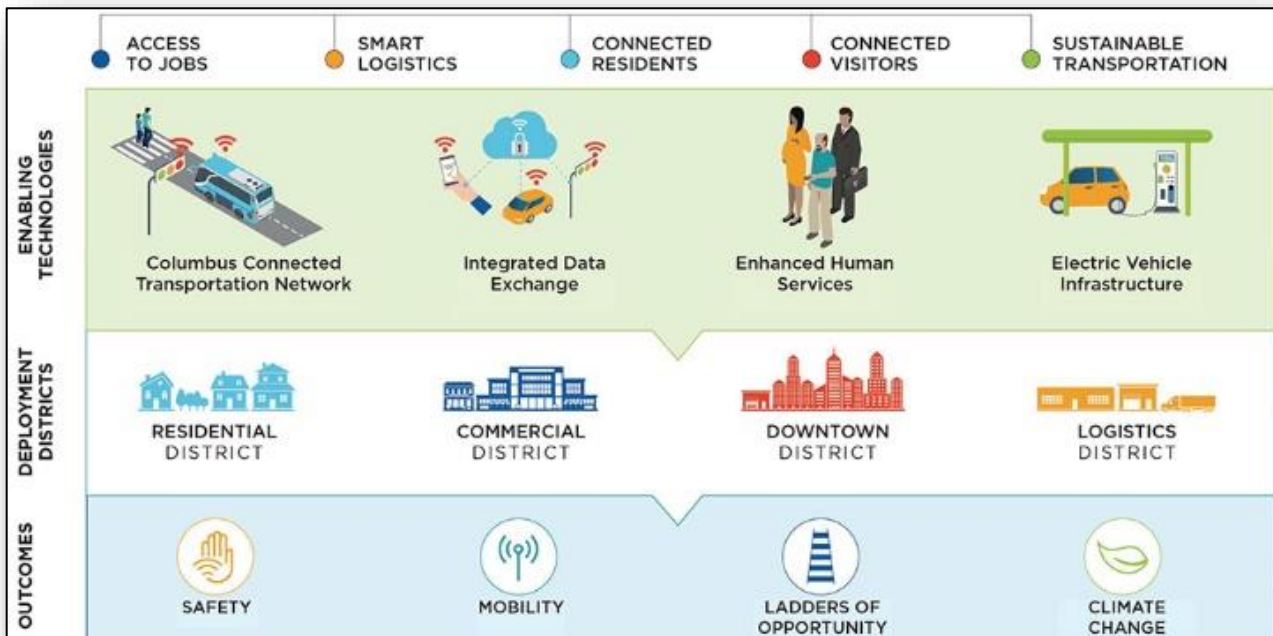
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Council that simply summarized many of the elements required to make a city or region connected and smart: “A city that uses information and communications technology to enhance its livability, workability, and sustainability.”

A Smart City can provide services that include smart lighting, smart parking, smart waste management, connecting citizens, smart traffic signaling with analytics, and real-time monitoring of pollution and air quality, in addition to ITS. These services can help make cities more accessible, safer, and livable.

GNA found that cities that want to move into the future need to plan and prepare for that move first. The City of Columbus, Ohio recently won USDOT's Smart City Challenge.



Columbus developed a comprehensive approach to becoming a Smart City, though its first focus will be on working to reshape its transportation system to become part of a fully integrated city that harnesses the power and potential of data, technology, and creativity to reimagine how people and goods move throughout their city.

Active Traffic Management

Active Traffic Management (ACM) through adaptive traffic signaling, an integral part of ITS, can adjust the timing of their green light cycles to match current traffic conditions on the ground. ACM tools are constantly collecting data about approaching vehicles and creating new timing sequences to match them.

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Whereas Georgetown's existing responsive signal systems can only run preset timing patterns, adaptive signal systems are able to adjust patterns and timing cycles based on real-time conditions. For example, if no cars are detected in a left-turn lane, the signal may skip the protected left-turn green arrow for a cycle.

Adaptive traffic signal control (ATSC) allows signals to "adapt" to real-time traffic data (gathered either by in-pavement sensors or cameras mounted on the pole alongside the traffic signal) and create a customized timing sequence in real time. The software then communicates this sequence to coordinated signals up and down the corridor, so that they all function in sync with each other.

ATSC can move traffic along faster and with fewer stops. Signals are constantly being reprogrammed to maximize the green light length and allow the most cars through. Multiple intersections are coordinated, so that traffic can move freely throughout the corridor, rather than encountering frequent starts and stops.

The City of Austin deployed ATSC along 2.1 miles of South Lamar Boulevard, 2.1 miles along Burnet Road, and 6.7 miles along Loop 360 from November 2016 to June 2017. According to the City's analysis (see Section 7 – Attachments) "ATSC produced a 5% reduction in peak period travel times, and a 15% average reduction in evening peak period travel times. Because of the better use of green time, the side streets benefited too, by an average of 25% during weekday peak periods."

Georgetown has already implemented an innovative traffic solution in 2015. The City, in conjunction with TxDOT and CAMPO (Capital Metropolitan Transportation Authority), installed enhanced traffic signal timing management on the Williams Drive Corridor that created smoother traffic flow and improved travel time reliability.

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Innovative Transportation Strategy Recommendations

GNA Recommendation #3.1.

GNA recommends that the City consider creating a citizen advisory committee to assist in the creation of a framework for a Smart City Vision & Strategy for Georgetown.

GNA Recommendation #3.2.

GNA recommends that the City deploy a 12-month adaptive traffic signal control (ATSC) proof of concept pilot along University Avenue from Maple St to DB Wood Road, like the City of Austin's pilot discussed above. The purpose of the pilot is to examine if the use of ATSC is a viable option for managing Georgetown's traffic congestion along certain mobility corridors like University Ave and Williams Dr. The pilot would allow traffic signals to change or "adapt" timing based on real-time demand.