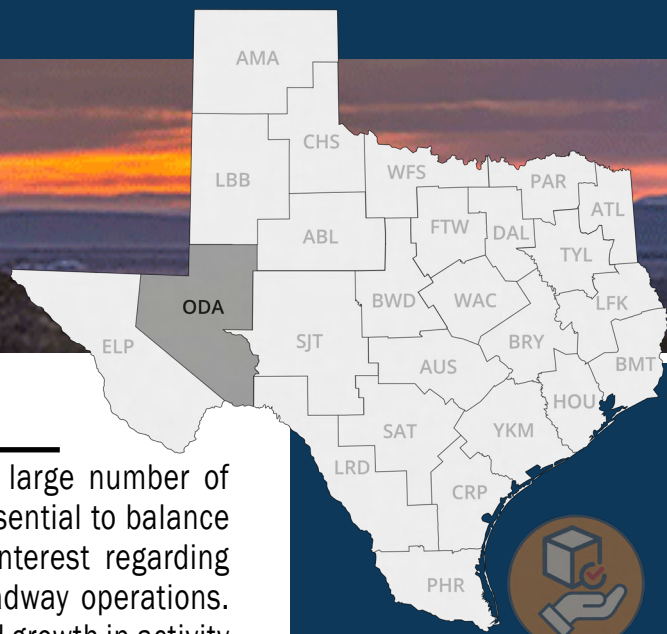


TxDOT Innovations and Technology Deployment Briefs

Access Planning for Rapid Growth in Rural Communities



PROBLEM

Previous efforts have indicated a strong linkage between the large number of driveways/access points and the occurrence of crashes. It is essential to balance the interests of property owners and those with a property interest regarding access to state highways to improve the overall safety and roadway operations. This is particularly challenging in the areas experiencing the rapid growth in activity associated with the development of energy resources.

SOLUTION

Texas A&M Transportation Institute used data from traditional data sources, TxDOT traffic volume and crash data, and two innovative sources (connected vehicle [CV] third party data and light duty and heavy-duty truck in-vehicle monitoring system [IVMS]) to perform this evaluation of access points along the US 285 corridor between I-20 in Pecos and I-10 in Fort Stockton (approximately 50 miles long). This data, in concert with local engineering judgment, provided recommendations for consolidating driveways and improving access points from energy-related activities within TxDOT access management policy. These recommendations improve safety and mobility on the corridor and bring the corridor closer to compliance with the Access Management Policy Supplement.

BENEFITS

Improving the performance of driveways in the Permian Basin provides a broad spectrum of benefits for multiple parties, to different degrees. Safety is the cornerstone of all benefits and is the basis for justification. Consolidated/improved driveways operate much safer with lower delays due to congestion and incidents.

There are benefits to using multiple data sources, traditional and innovative. The CV and IVMS data are beneficial because using these data sources do not require the time, risk, or potential error from manual data collection.



PROJECT DELIVERY



CUSTOMER FOCUS



FOSTER STEWARDSHIP



PRESERVE ASSETS



OPTIMIZE PERFORMANCE



PROMOTE SAFETY



VALUE EMPLOYEES



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KEY TASKS

- Establish the link between roadway access and crash history.
- Document the boundaries of existing TxDOT policies/procedures to define the limits and opportunities for action.
- Complete District Map with designation of functional classifications of Energy Highways.
- Identify driveway locations along using crowd-source data.
- Evaluate CV third party data from General Motors vehicles to explore the use of this data for safety evaluation and driveway consolidation efforts. (See Figure 2-Example Roadway Segment and Figure 3-Turning Movements).
- Recommend a driveway design to address the specific needs of energy developments.
- Recommend a signing program for mile markers and driveway signing.
- Recommend designating highways in the energy sector based on function and traffic conditions,] and provided specific design recommendations. One key to this recommendation is the interaction with driveways on the opposite side of the highway.
- Provide recommendations for an access management approach on corridors with existing driveways and anticipated future access requests.
- Work with private industry partners (Permian Strategic Partnership) to ensure private sector support of project recommendations.

DATA SOURCES

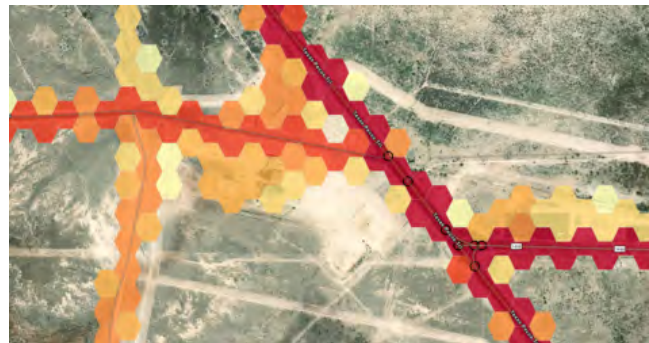
The data sources utilized allowed large areas to be evaluated without collecting manual data. The use of CV and IVMS data to evaluate access points along these corridors allow locations to be identified that might have been missed with traditional data collection methods.

PROACTIVE APPROACH

It is important that a proactive approach be taken when addressing areas where driveways are being consolidated. Outreach to impacted property owners and business operators early in the process is critical to a successful project.



Example Segment Level Review.



Turning Locations and Counts.



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