

The DFW Connector Project is a nearly \$1 billion Comprehensive Development Agreement owned by the Texas Department of Transportation (TxDOT) and constructed by NorthGate Constructors (NorthGate), a Kiewit-led joint-venture with Zachry construction company. The DFW Connector reconstructs more than eight miles of State Highways 114 and 121 in north Texas, and is aimed at improving mobility and air quality for the more than 250,000 daily commuters who travel through the area. Work on the DFW Connector includes demolishing 17 existing bridges, building 39 new bridges, moving more than 3.6 million cubic yards of dirt and paving 152 lane miles of concrete.

Construction on the DFW Connector began in February 2010 and will finish in summer 2013, one year ahead of the original completion date. This expedited schedule can be attributed to the innovations and best practices that have been implemented from the project's beginning, including:

1. Integrated Material Tracking System: This web-based program was designed to electronically integrate a buyer with its suppliers and haulers in order to streamline distribution of bulk materials, as well as provide a GPS fleet management system for real-time truck management. NorthGate worked extensively with an outside software company prior to construction of the DFW Connector to tailor the program to the project's needs, making sure communication between the contractor and aggregate haulers was increased with the use of the program. The Integrated Material Tracking System minimized the need for manual input of information, provided real time data for material handling and reduced the number of trucks needed to service the project.

2. Intelligent Compaction: NorthGate has used two different types of Intelligent Compaction technologies since 2010. The first technology is the Compaction Meter Value system, which has a drum-mounted accelerometer that measures the G-force of the vibratory frequency and harmonics, and is used on NorthGate's CAT CS-56 rollers. The second technology is the Machine Drive Power system, used on both the CAT CS-56 and 800-series rollers, and measures the rolling resistance while compensating for the grade slope. With Intelligent Compaction, inspectors are no longer needed to randomly select areas of grade for testing, increasing safety on the project by using fewer manhours to inspect the work. The use of Intelligent Compaction on the DFW Connector has not only provided a better quality product for the traveling public, but has set the precedent for future TxDOT projects; NorthGate is currently working with TxDOT to use Intelligent Compaction as a quality acceptance tool on future state projects, minimizing the financial burden of project oversight.

3. Telematics: Telematics involves the integrated use and transmission of fleet information via the worldwide web; information can be organized and sorted to provide a wide array of reports to help improve safety, efficiency and fleet management on the DFW Connector. By implementing Telematics on the project, NorthGate is able to effectively keep maintenance costs down - not only do Telematics provide NorthGate's maintenance department with accurate diagnostics of the equipment, but it also monitors excess vehicle idling. These functions improve efficiency by lowering the equipment down-times and decreasing fuel costs by 20 percent. Through telematics, NorthGate is also able to access production hours and available hours for our equipment, allowing crews to easily adjust shifts for optimized equipment usage and reducing equipment cost. By reducing operated hours of equipment, Telematics has minimized NorthGate's carbon footprint, making the DFW Connector an environmentally friendly project to the north Texas region.

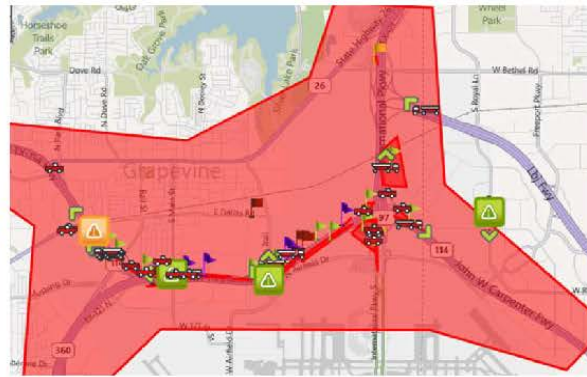
All three of these innovations were implemented from the beginning of the DFW Connector, establishing a foundation for a successful, innovative project to take shape. NorthGate's Integrated Material Tracking System, Intelligent Compaction and Telematics use on the DFW Connector was a first for both Kiewit and Zachry, as well as a first for the owner, TxDOT. By implementing all three programs on the DFW Connector, NorthGate is allowing the project's engineers and craft to focus on the operations at hand and providing a quality product to the owner and traveling public.

DFW Connector Project
2013 NOVA Nomination

1. Integrated Material Tracking System



An automated scale kiosk, located on the DFW Connector project, allows haulers to record truck information electronically, eliminating manual input and error.

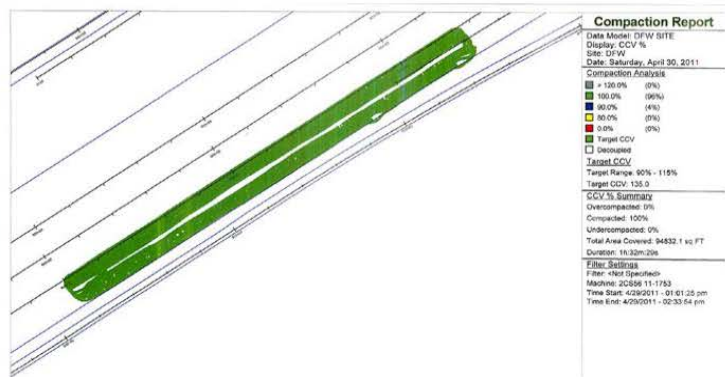


GPS Fleet Management provides real time data for managing our trucking operations.

2. Intelligent Compaction



Shown is NorthGate equipment utilizing the intelligent compaction software, with the receiver at the top.

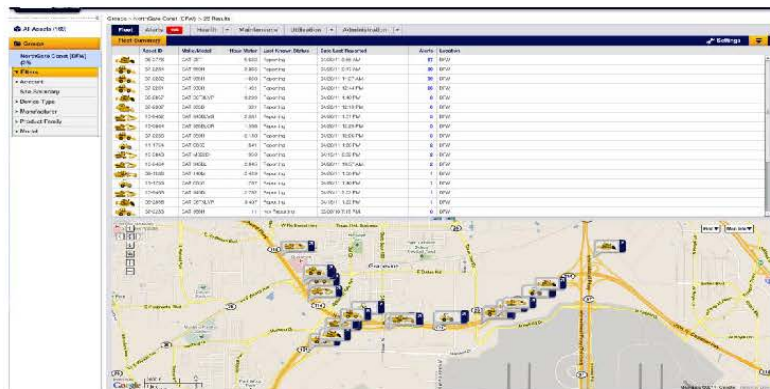


Above is the report TxDOT receives from NorthGate after intelligent compaction has been completed (compacted area in green). These reports allow for real-time testing of earthwork and increases transparency between the contractor and the owner.

3. Telematics



Telematics allows NorthGate to maximize the use of our equipment, as well as help better plan and schedule operations.



Shown is a screenshot of Telematics providing real-time, accurate equipment location information. NorthGate is able to sort through the system by equipment type or prefix, allowing for quicker location and maintenance of equipment.