

Safer Routes, Quicker Permitting in Washington D.C.

Safer Routes, Quicker Permitting in the Nation's Capital

More than one million people commute through Washington, D.C., each work day, and 18 million visitors travel to the city each year. The mission of the District Department of Transportation (DDOT) is to ensure these people - as well as goods and information - move efficiently and safely with minimal adverse impact on residents and the environment.



Among DDOT's mandates is to enable efficient and safe mobility of commercial vehicles traveling in D.C., while mitigating community impacts and preserving transportation infrastructure. Commercial vehicles are essential to the city, providing goods and services to thousands of residents and businesses every day. However, there are challenges to commercial vehicle routing. The city has a diverse mixture of land uses, a dense urban environment, and extensive transportation infrastructure.

"In Washington, D.C., where you have really narrow streets, 68 square miles, and over a million commuters each day, it can be quite an issue," said José Colón, DDOT's chief information officer.

DDOT must also coordinate extensively with federal agencies, including the U.S. Secret Service, U.S. Capitol Police, and National Park Service. These factors require a distinct set of rules and regulations to govern the operation of trucks and commercial vehicles.

Automating the Workflow

To protect the public and city infrastructure and limit traffic congestion, DDOT requires a permit for oversize/overweight (OS/OW) vehicles to travel within the district. While DDOT issues thousands of single-haul permits for OS/OW vehicles each year, the process for determining the safest route - taking into consideration factors such as the height of overpasses and weight restrictions for bridges - was manual, and therefore cumbersome, costly, and potentially error-prone. It also prolonged the issuance of permits, causing a lengthy delay for carriers.

DDOT previously used paper maps to determine routes before switching to a geographic information system (GIS); but even the district's GIS required DDOT personnel to manually review routes - segment by segment - checking overpasses, bridges, and more. District officials decided to introduce an automated process that would conduct the proper checks and balances for safe routing, as well as reduce the amount of time required to generate a route and thus approve a single-haul permit.

To meet this need, DDOT selected Hexagon's software for automated route planning and restriction management, which was integrated with DDOT's permitting system to offer a seamless workflow. The new solution streamlines the routing process to ensure safety, increase efficiency, and expedite permits for trucking companies.

At a Glance


The Challenge

The District Department of Transportation (DDOT) ensures people and goods move efficiently and safely through Washington, D.C. The department requires a permit for oversize/overweight (OS/OW) vehicles to travel within the district. While DDOT issues thousands of single-haul, OS/OW permits each year, the process for determining the safest route was manual, cumbersome, costly, and potentially error-prone. It also delayed the issuance of permits, causing a lengthy delay for carriers.

The Solution

DDOT selected Hexagon's software for automated route planning and restriction management, which was integrated with DDOT's permitting system for a seamless workflow. Carriers can input vehicle, load, and location information and request permits. The solution streamlines and automates routing, cross-referencing against transportation infrastructure data and restrictions, before generating the safest route. Drivers receive detailed maps and driving directions and are alerted if new restrictions arise that would require re-routing. By ensuring the most suitable route, the system helps prevent bridge strikes and other actions that could damage infrastructure and impact public safety.

"Before, it was a tedious, cumbersome process," said Colón. "Automating the workflow and making sure all the right stakeholders are involved really helps to improve the overall process and makes us much more streamlined, much more efficient."

 **You can only imagine what the return on investment would be if we can avoid just one bridge strike a year."**

José Colón,
DDOT's chief information officer

Managing Routes & Restrictions

The solution is delivered to users via a web browser. The system's restriction management application maintains all permanent restrictions, such as bridges, tunnels, turning radius, signal light, and overhead clearances, to name a few - all which could impact the safe routing of an OS/OW load. DDOT permitting agents can also upload additional data on temporary restrictions, such as road closures, construction zones, parade or dignitary routing, or weather/accident-related restrictions.

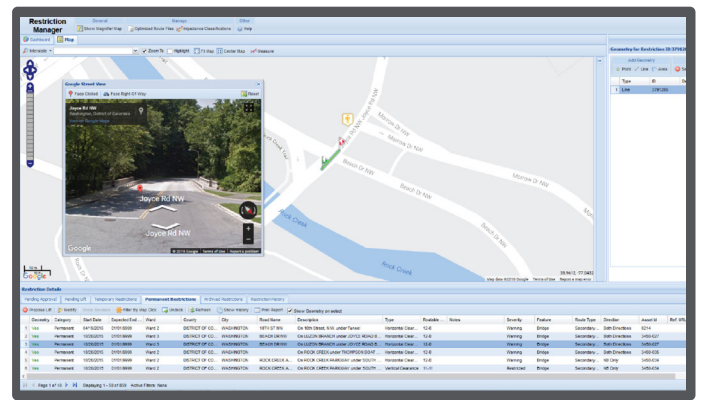
Carriers can access the system to register their companies; input vehicle and load information and entry, destination, and exit locations; and request permits. The solution's route planning application streamlines and automates the process - taking into consideration vehicle and load information, cross-referencing against transportation infrastructure data, and factoring in temporary restrictions - before generating the safest route.

The routes are then sent for approval to relevant stakeholders, such as bridge engineers or district or federal police departments. The system tracks all approved routes and makes that data available to DDOT for later analysis and reporting. Drivers receive detailed maps and driving directions and are alerted if new restrictions arise that would require re-routing.

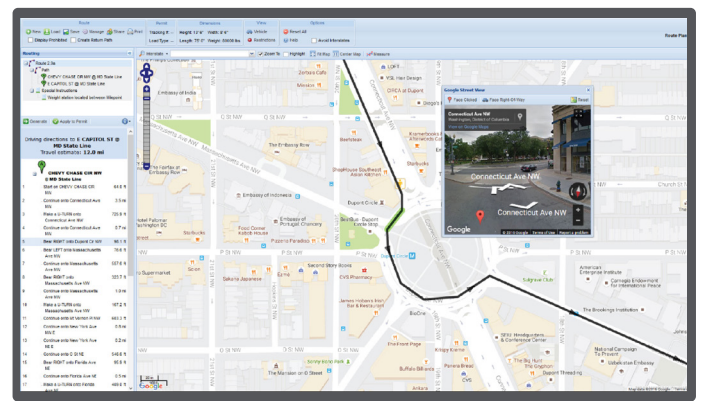
By providing the most suitable route, the system helps prevent bridge strikes and other actions that could damage infrastructure and impact public safety. "You can only imagine what the return on investment would be if we can avoid just one bridge strike a year," said Colón.

It also improves overall traffic congestion by keeping OS/OW vehicles off main arterial roads and diverting them to more suitable and safer routes. Overall, the solution ensures permits are issued quickly and safely, which keeps people safer, protects infrastructure, and supports the needs of carriers.

"Part of our agency's mission is to move goods throughout the district safely and efficiently," said Colón. "This helps ensure we are issuing permits at a high confidence level."



The Restriction Manager application highlighting a bridge restriction in the map view and a detailed data grid below the map. An optional Google Street View window was opened directly within the application.



The Route Planner application generates a route through the district. On the left are detailed driving directions. In the center is a map with the route location. On the right is the map legend with optional map features and base maps.

Contact us

For more information, please contact us at:



marketing.us.gsp@hexagon.com



+1 877 463 7327



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Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's Geospatial division creates solutions that deliver a 5D smart digital reality with insight into what was, what is, what could be, what should be, and ultimately, what will be.

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