

Bentley Oversize / Overweight Permitting and Routing

Prepared for the North Dakota
Public Safety and Transportation Committee

Bentley Systems' Scope

Bentley is:

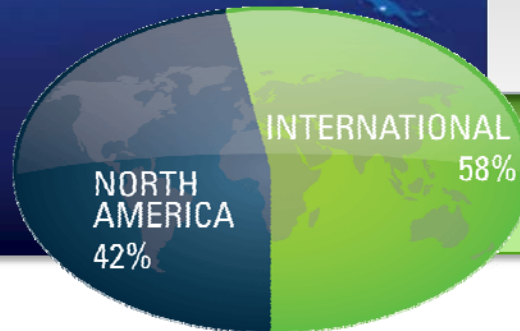
- #1 in Roads and Transit Design
- #1 in Bridge Engineering
- #1 in Structural Engineering
- #1 in Water Modeling
- #1 in Building Performance



Global Business:

- 2,850 colleagues
- Offices in 45 countries

Revenues by Region:

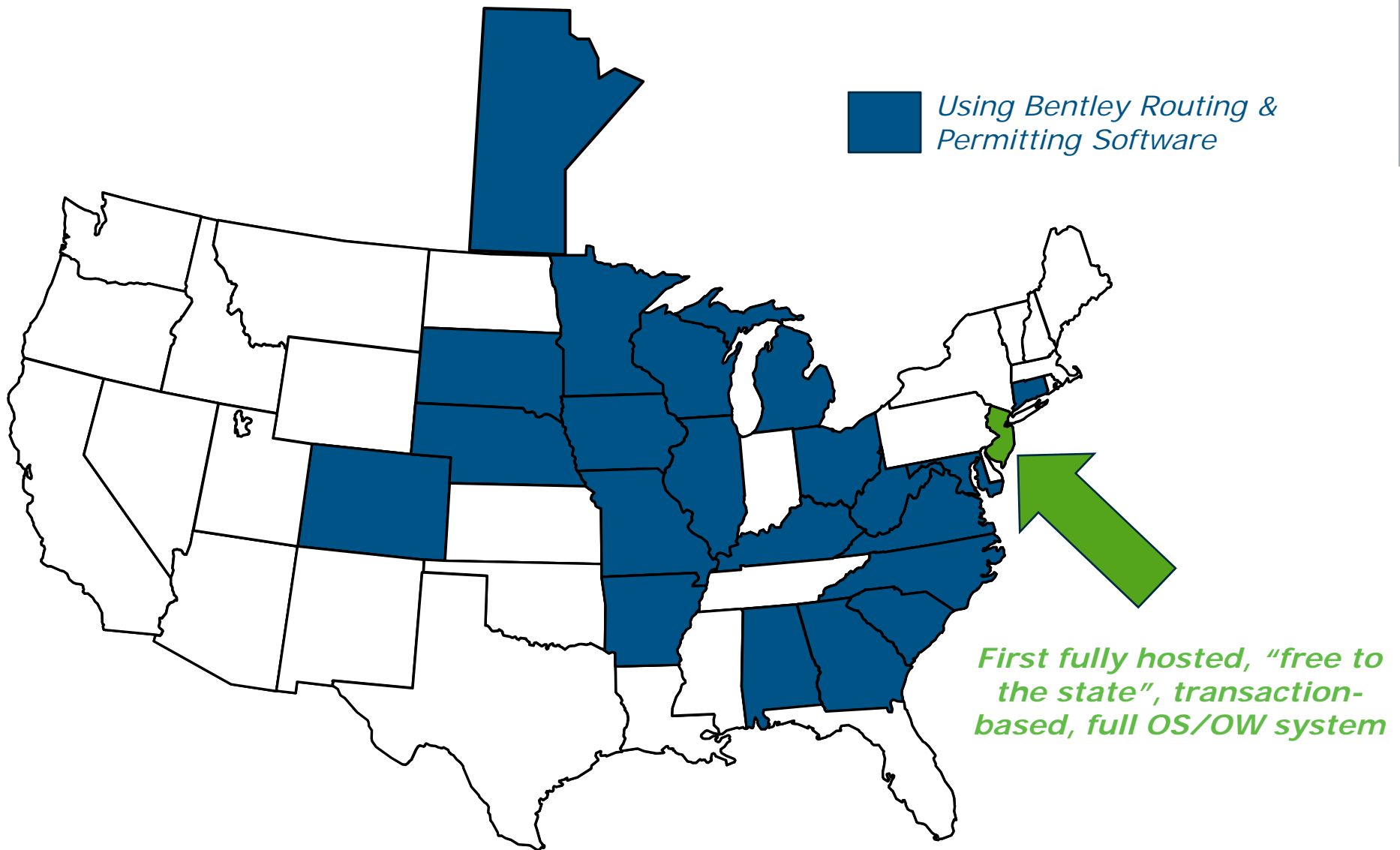


Bentley Subscribers in the ENR Top Design Firms:

- 20 of the Top 20 in:
 - Transportation
 - General Building
 - Industrial Process/Petroleum
 - Power
 - Water
 - Telecommunications
- 19 of the Top 20 in:
 - Manufacturing
 - Hazardous Waste
 - Sewer/Waste
- 47 of Top 50 Int'l Designers

\$450M US in 2009 Revenues

Bentley's Permitting and Routing Experience



Permitting & Routing for Oversize and Overweight Vehicles in North Dakota

“Vehicles and load movements in North Dakota shall comply with the following dimensions: Non-reducible loads and/or vehicles that exceed the limits listed below shall obtain a special permit.”

- North Dakota Highway Patrol – Trucker's Handbook

- Legal Width – 8 feet 6 inches on all highways.
- Legal Height – 14 feet, except where bridges or underpasses < 14'
- Legal Length – 50 - 110' depends on vehicle config & highway
- Legal Weight – Federal Bridge Formula B plus additional limits
and no more than 550 pounds per inch of tire width
- Additional Spring Load Weight Restrictions

Permitting & Routing for Oversize and Overweight Vehicles in North Dakota

- The current permitting procedures are not fully automated
- Internet app entry is available for most “routines” w/ manual review
- Superloads & non-routines delayed by call volume & staff availability
- Detailed routing and manual analysis is limited to the largest vehicles
- Alternative rules / processes have been used to keep up with volumes
- 2008 – Issued about 177,000 OS/OW permits ~ \$4.7M in revenue
 - Single Trip (49K permits)
 - Single Trip Movement Approval Form (113K permits)
 - Multiple Trip (10K permits)
 - Identification Supplement (6K permits)

Avoid the Damage of Insufficient Analysis....



SUPERLOAD System Justification

- Protect the infrastructure, by routing OS/OW trucks in accordance with highway and bridge height / width / weight limits
- Improve service & permit compliance, by making permits available immediately
- Improve safety, by ensuring OS/OW trucks are properly permitted and routed
- Allow law enforcement real-time access to permit information online
- Facilitate agency partnerships for statewide & regional permitting
- Data Creation / Mining – Knowledge of every move & their impacts
- Contribute to economic growth (remove constraints & facilitate multi-state / multi-jurisdiction moves)

SUPERLOAD System Justification*

- A recent study by the North Dakota State University's Upper Great Plains Transportation Institute (UGPTI) shows that transportation funding for North Dakota's state and county roads and bridges as well as urban streets and township roads is vastly insufficient.
- According to the UGPTI report, the amount needed strictly to maintain the state and local road and bridge system is \$254 million per year greater than the amount of funding available. The report estimates that approximately \$509 million per year is needed to maintain the system, while only \$255 million per year is available.
- The expansion and growth of North Dakota's agricultural, manufacturing and energy industries has had a positive impact on the state's economy, creating jobs and providing additional revenue. However, many of the state's roads were not built to accommodate the increase in traffic and the heavy loads associated with these industries. The resulting increase in truck traffic has caused significant deterioration of several state and local highways.
- In 2008, 16 percent of North Dakota's bridges (20 feet or longer) were rated as structurally deficient and six percent were rated functionally obsolete.
- Every year, \$19 billion in goods are shipped annually from sites in North Dakota and another \$24 billion in goods are shipped annually to sites in North Dakota, mostly by truck.
- Commercial trucking in North Dakota is projected to increase 42 percent by 2020.
- Increasingly, companies are looking at the quality of a region's transportation system when deciding where to re-locate or expand. Regions with congested or poorly maintained roads may see businesses relocate to areas with transportation systems that are smoother, more reliable and efficient, and have greater load carrying capacity

* "Moving into North Dakota's Future – TRIP, April 2009"

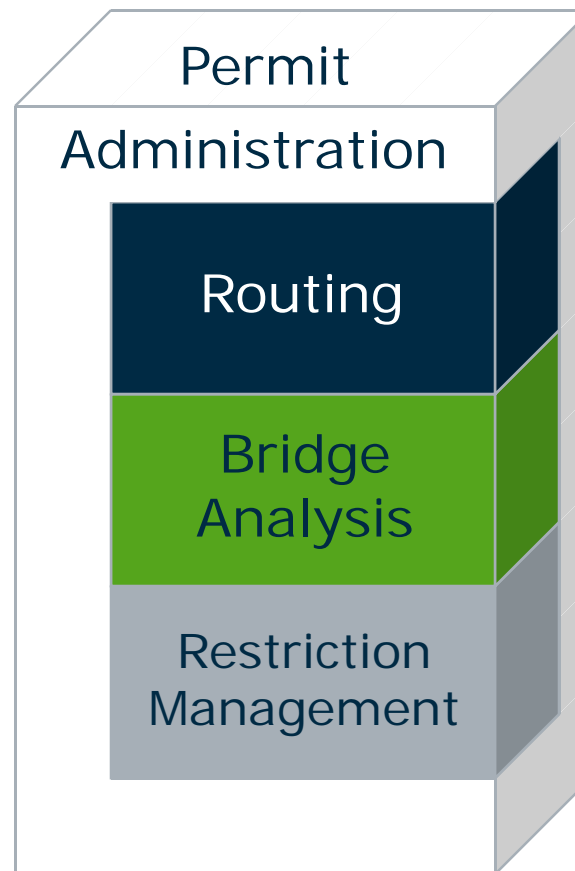
Industry Benefits

- 24 X 7 access to automated online permitting process
- Expect 60-75% of all permits to be system issued
- Empower users to perform own routing and “what ifs”
- “Time is money” – faster turnaround means reduced expenses and less likely to “need” to move without a permit
- Current information and notification on conditions that impact OS/OW moves
- Request permits for more than one state in a single application when supported by other states / local jurisdictions
- Maintain consistency in implementation across states


Bentley's Answer to Permit and Routing

The SUPERLOAD Product Suite

A fully integrated & web based permitting and vehicle routing software



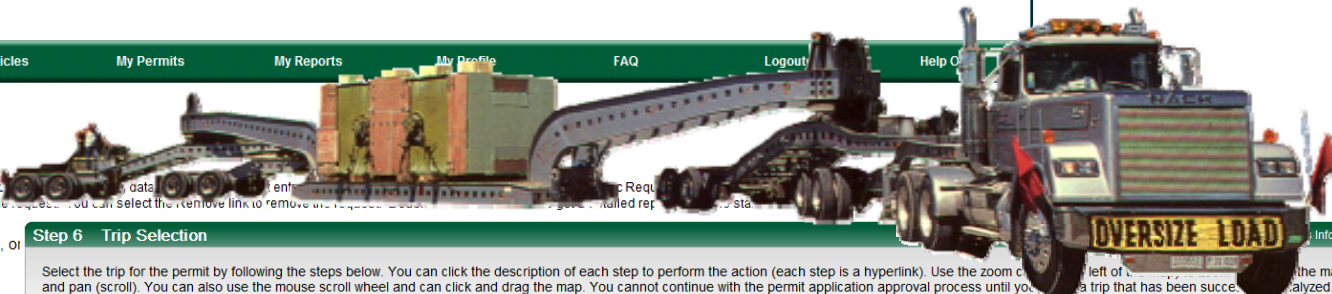
Bentley Permitting & Routing



**NNDOT at
GotPermits.com**

Permits in Web Time

[Application](#)
[My Vehicles](#)
[My Permits](#)
[My Reports](#)
[My Profile](#)
[FAQ](#)
[Logout](#)
[Help](#)



Below is a table listing all the issued and pending permit applications. You can search by data, permit type, permit status, or permit location. You can select the Copy link to make a copy of the permit. You can select the Remove link to remove a permit from the list.

Select to view either permits that are still pending, permits that are issued, or permits that are expired.

Recent

	RequestID	PermitID	Permit Type	Permit Status
			ALL	
Search				
Copy	100285	201	Single Trip	ALIC
Copy	100287	202	Single Trip	ALIC
Copy	100289	203	Single Trip	ALIC

3 results shown

© Cop
By accessing any in

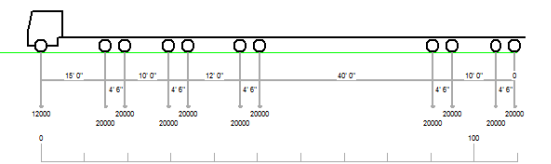
Axle Information

Number of Axles: 11

Declare Overweight: ☒ *click when the vehicle exceeds 80000 Gross Vehicle Weight

	(Front)Axle 1	Axle 2	Axle 3	Axle 4	Axle 5	Axle 6	Axle 7
Load	12000	20000	20000	20000	20000	20000	20000
Space Between	15' 0"	4' 6"	10' 0"	4' 6"	12' 0"	4' 6"	40' 0"
Load	20000	20000	20000	20000			
Space Between	4' 6"	10' 0"	4' 6"				

Truck Display



Step 6 Trip Selection

Select the trip for the permit by following the steps below. You can click the description of each step to perform the action (each step is a hyperlink). Use the zoom controls on the left of the map to zoom in and out of the map, and pan (scroll). You can also use the mouse scroll wheel and can click and drag the map. You cannot continue with the permit application approval process until you select a trip that has been successfully analyzed. If you are having problems selecting a trip, select Manual (Free Form Text) for your Method of Routing in Step 1 below. Please click the 'Help' button located in the lower left corner in order to view a tutorial and examples.

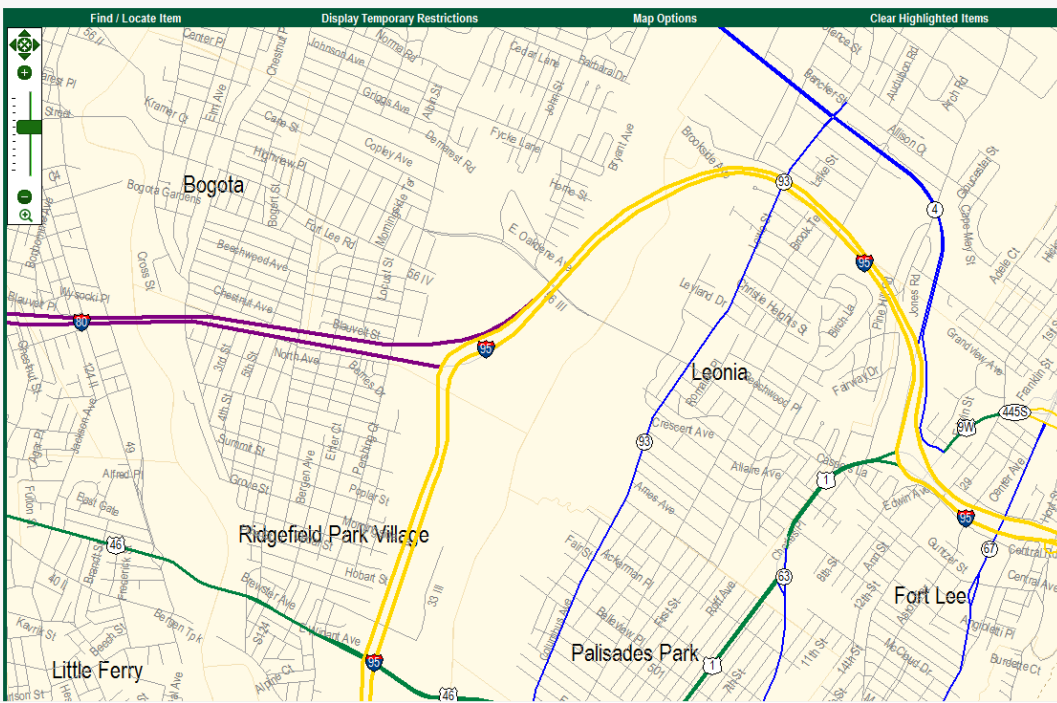
To request a waiver to one or more restrictions, please click the Request office review (for waivers, failing trips or questions) option button below, after you have attempted your analysis.

1. Select method of routing
Picking Route Segments
2. Select trip on the map
3. Analyze the trip

Analysis Status:
Not Analyzed

4. Trip Usage
 - ☒ Use selected trip to request permit
 - ☐ Request office review (for waivers, failing trips or questions. Please note that office review may take up to 5 business days to complete.)

Optional
☐ Save trip for future use
☐ Delete a saved trip



Bentley Restriction Management

Restrictions - Microsoft Internet Explorer provided by Bentley Systems
<http://voged30995chil/njrstmgr/restrictions.htm>

★ Restrictions

SUPERLOAD
Restriction Information Management

Home Restriction Information Add Restriction Add Reason Account Logout Help

Welcome ADMINISTRATOR

Restriction Type: Roadway Range Category: Attribute

Reason: ATR - Vertical Clearance Restricted due to Construction

Comment:

Applicable Permit Type: ALL

Route: NJ-439 Direction: Both County: Beg: UNION .75 End: UNION 1.31

Scheduled: to

☐ Auto Remove

CrossOver: None

Cardinal		Non Cardinal	
Height	13.9 FT	13.9	FT
Width	FT		FT
Length	FT		FT
Weight	lbs.		lbs.
Axle Weight	lbs.		lbs.
Lbs/TireInch			

☐ Legal Trucks Only ☐ Legal Trucks Only

Add Reset

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 System Requirements Site Map

Find / Locate Item Map Options

Clear Highlighted Items - Highlighted items cleared

<http://voged30995chil/njrstmgr/address.asp#>

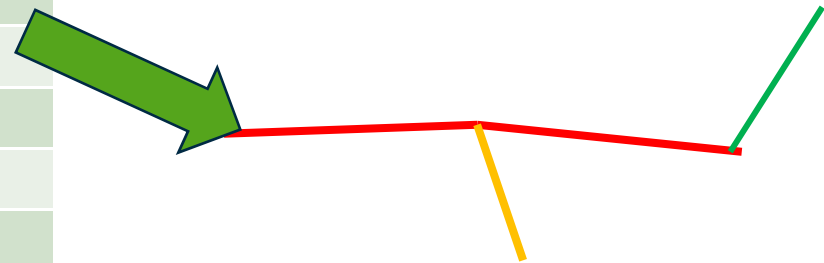
Local intranet | Protected Mode: Off 100%



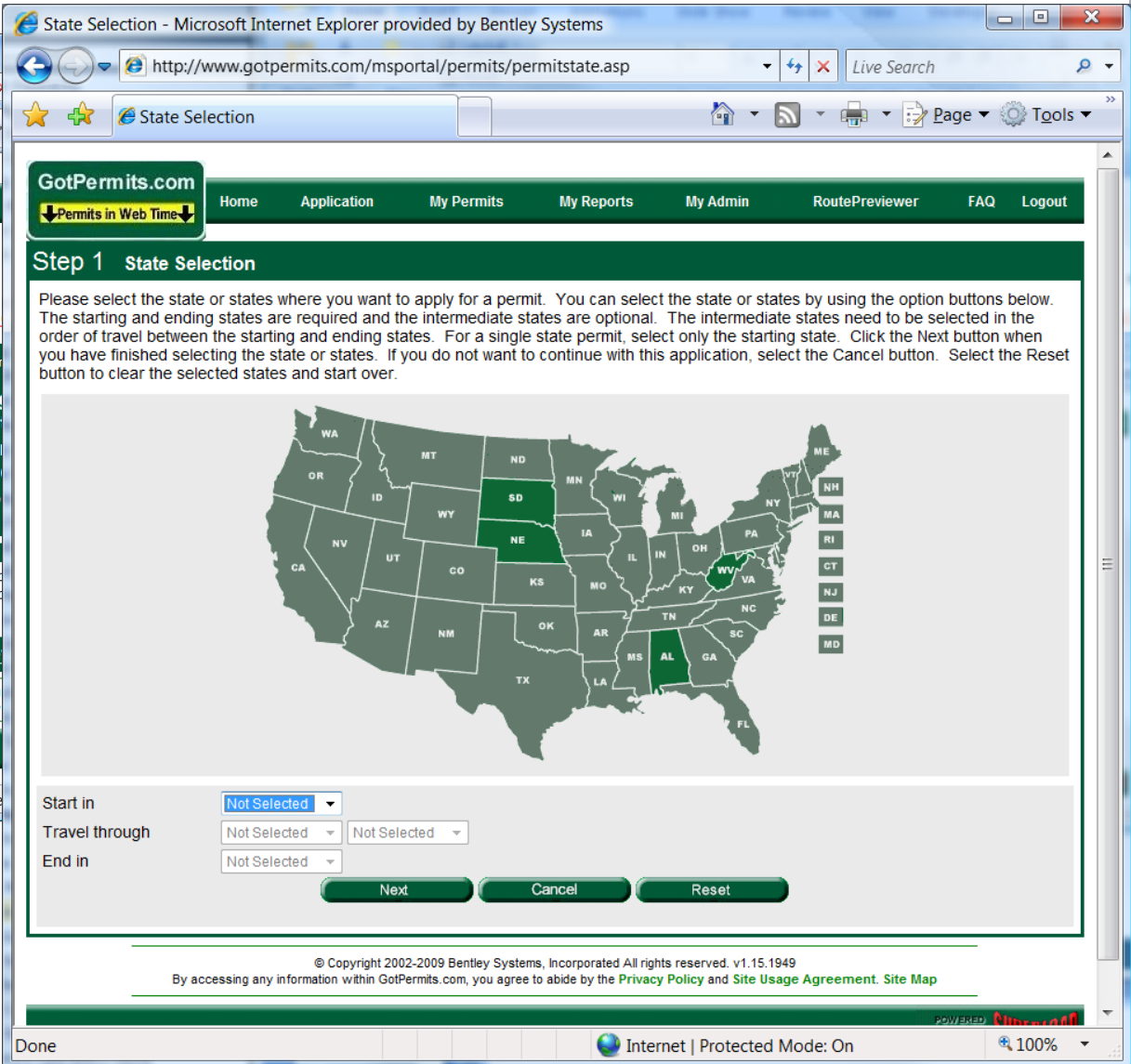
Data Mining (Detailed Analysis Produces Data)

- How many times has...
 - Each segment
 - been used in a trip
 - by a vehicle more than 200,000 lbs
 - by a vehicle more than 200K lbs & more than 12' wide in a county
 - A specific bridge
 - been involved in a trip
 - by a vehicle more than 200,000 lbs
 - by a vehicle more than 200,000 lbs in October 2008

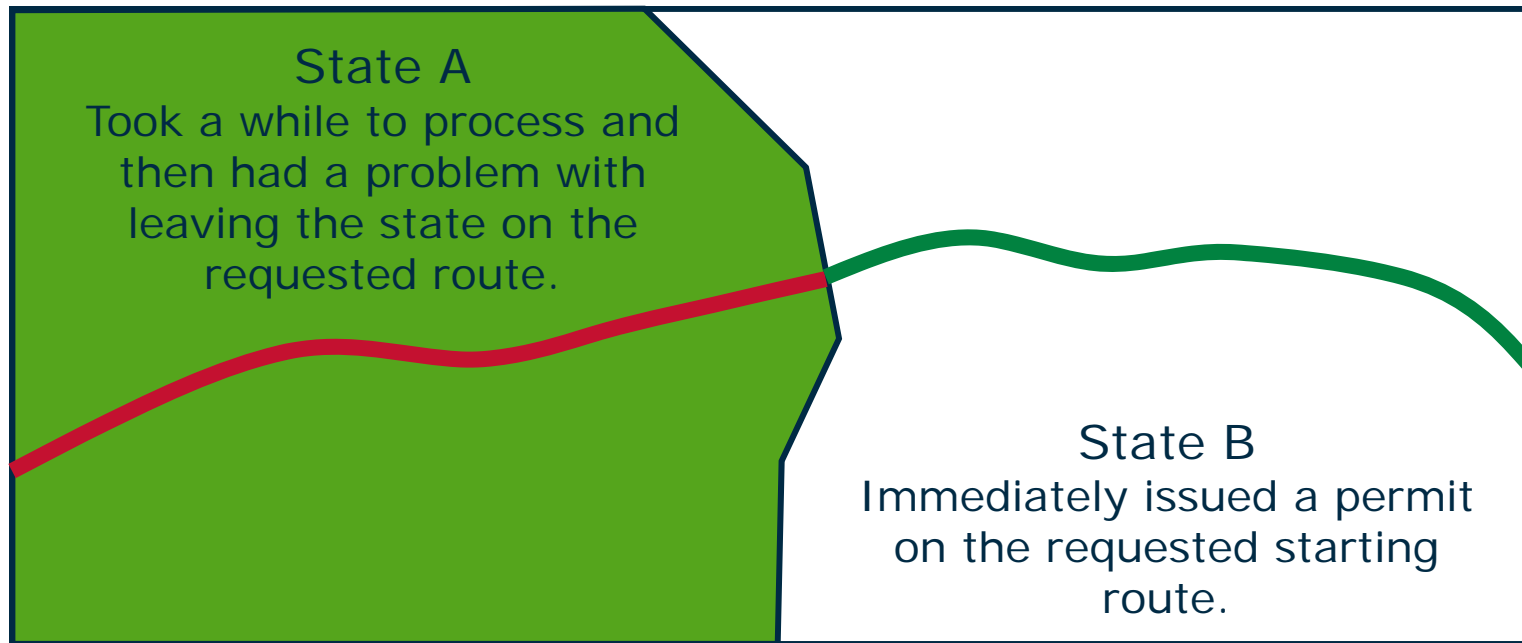
Link	Route	County	BegMP	EndMP	#
10038	I-1	A	1.2	1.4	4393
20482	US-2	A	31.5	31.9	4102
10039	I-1	A	1.4	1.8	3984
48938	SR-3	A	4.7	5.2	1853



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Cross Border Routing Help



GotPermits.com can solve the cross border routing problem by working with the routing processes in each state. Any problems are known before the applications are submitted.

Implementation Methods and Costs

- **Project**
 - Software Purchase
 - Services payment through project execution
 - SELECT Support Agreement
 - Enhancement services
- **Transaction Based**
 - No expense during 12 month implementation
 - Permit Automation Fee for production use
 - Flat Fee regardless of permit type, variable fee, or fixed fee by permit type
 - Assumed 5-yr term

New NJDOT Transaction-Fee Implementation

"Online Permitting of Oversize Overweight (OS/OW) Vehicles Will Help NJDOT Better Serve Transport Professionals and Help Protect the State's Transportation Infrastructure"

About 120,000 permits will be issued annually

News Alert Bentley Pay-Per-Permit Contract Helps New Jersey Department of Transportation Immediately Adopt Streamlined Online Vehicle Permitting

Online Permitting of Oversize/Overweight Vehicles Will Help NJDOT Better Serve Transport Professionals and Help Protect State's Transportation Infrastructure
October 21, 2009 Bentley Roads and Bridges Conference

CHARLOTTE, N.C. – Bentley Systems, Inc. announced that it is with a transaction- service for the int vehicles. This p SUPERLOAD

vehicles. This public-private partnership will enable New Jersey to implement SUPERLOAD now – at no cost – and pay for it via an automated transaction fee as the service is used. SUPERLOAD will streamline NJDOT's entire OS/OW permitting process – from application to approval, payment processing, issuance, and reporting – substantially improving service availability and response. Moreover, SUPERLOAD's intelligent routing will help protect the state's transportation infrastructure, increasing road safety.

"We are excited that New Jersey will soon have the ability to instantly review and issue online permits for oversized and overweight vehicles," said Stephen Dilts, Commissioner of the New Jersey Department of Transportation. "This system will greatly benefit both our business community and our infrastructure in the state."

Transaction Based Payment Outcome

Bentley Bears ...

- Risk
- Yr-1 100% Investment
- Opportunity Cost
- Cost of Capital
- Ongoing costs
 - User Support
 - Software
 - System Enhancements
 - Hardware
 - Facility

North Dakota Benefits ...

- Infrastructure Protection
- Public Safety
- Improved Service Delivery
 - Increased Accuracy
 - Increased Speed
 - Reduced Cost
 - Simpler Enforcement
- \$3.78M of software, implementation, hosting, support, ...
- Does require participation in data provision / review, testing, etc.

Questions for North Dakota to Consider

- As highly productive permitting systems are enabled, we are seeing increasing levels of compliance requirement – because OS/OW haulers can get permits quickly and easily 24*7. For example, some DOTs are now insisting that annual permit holders obtain an authorized route for each and every trip.
 - Given this ability, would North Dakota consider removing the self-issue Movement Approval Forms?
 - More permits enables broader spread of fees
 - Transaction Based numbers only work for Bentley if they are included
- Haulers see significant benefit from the system through reduced permit issue time (mostly immediate) and 24*7 accessibility – which they are mostly prepared to fund
 - Bentley propose that the per permit (automation) fee is passed directly to the hauler

Next Steps

- Need ND Direction (Legislature, DOT, HP)
- Project Approach
 - Can funding be provided?
- Transaction Approach
 - Legislative / regulation changes?
- Find a way to improve the overall process for HP, DOT, and the entire OS/OW industry!
- Increase public safety and better preserve infrastructure

For More Information

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