NEBRASKA
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DEPARTMENT OF TRANSPORTATION

RFQ Questions / Answers

Professional Services for NDOT GIS Environment Restructuring

February 9, 2026

Statements of Qualifications are due Wednesday, February 18, 2026, 1:00 P.M.

1. Is there a current consultant or system integrator supporting NDOT's existing GIS/Portal environment, and if so, does NDOT anticipate the selected firm coordinating knowledge transfer or transition activities as part of this effort?

   The State of Nebraska is currently using Office of the Chief Information Office(OCIO) to provide all ArcGIS Enterprise Server support, GIS Infrastructure support (SQL databases). OCIO staff will help with knowledge transfer and access needed for the consultant.

2. Is there a geographic preference given to a North Dakota based consultant?
   No.

3. Can NDOT clarify the current ArcGIS Enterprise/Portal architecture (hosting model, versioning, authentication method, and major integrations) to help respondents properly scope migration and high-availability design considerations?

   We have one ArcGIS Enterprise Portal environment for 17 state agencies and currently using ArcGIS Enterprise Portal 11.3 with Single Sign On using Azure Active Directory. The state of Nebraska did an IT consolidation about 8 years ago and GIS was selected as an enterprise system to be consolidated and housed at OCIO. We have two different environments: CAT (Test) Portal and Production Portal. Please find the attached architecture diagrams on the environment and servers. We currently have a secondary stack 2 in production but have not been able to successfully transition to that secondary stack 2 (data center) due to servers not all synced with the webgisdr process and not all the servers were on stack 2. Nebraska DOT would be looking to improve on this and have ability to switchover to stack 2 environment if the first data center servers went down. Nebraska DOT uses Business To Business (B2B) within Azure AD for consultants to access internal GIS web applications if they have been contracted to collect data such as our Culvert Inventory. Nebraska DOT also has its own organization within ArcGIS Online. Currently NDOT will publish map services to the GIS enterprise Portal and then create some public facing ArcGIS Online web applications. Having the ability to use both Enterprise Portal and ArcGIS Online will continue as we move forward. NDOT has very limited credits within AGO environment so hosted feature services are currently not something that has been explored.

   State of Nebraska GIS enterprise uses enterprise SQL databases (SQL Server 2019) for all agencies for GIS databases version 11.3.0.52636. We also have two SQL environments, CAT(Test) SQL and Production SQL. Only the CAT SQL is registered to CAT portal and Prod SQL registered to production portal. Nebraska DOT has a linked SQL server to NDOT on-premise tabular SQL database to GIS SQL database. When publishing the Enterprise Portal all map and feature services are registered to the Portal. No hosted feature services are used.

   State of Nebraska is currently storing our GIS Imagery on AWS cloud FSX environment but will be looking at moving back on-premise due to the OCIO Cost model changes to be able to do "cold" storage and other cheaper options. Currently the GIS elevation and soil data is still on-premise due to the speed being poor on AWS FSX.

Integrations:

FME Form (2024.2) and FME Flow (2024.2) only Nebraska DOT has access and uses. Will be expanding use of FME as part of Digital Project Delivery and ability to have data ETL and integrations throughout the data lifecycle.

Bentley ProjectWise, Microstation and ORD 2024 Update 2. Will be continuing to investigate Geospatial Context and have ability to pull in GIS mapping services into the Bentley system.

NDOT on-premise SQL database environment with linked server gives the ability to talk to tabular information from many other software systems

GIS Other Agencies

Having GIS Enterprise Portal Environment has allowed agencies to freely share data between each other or within the state itself. This data integration has helped share data within the system and not having to create copies of data in house. We would like to figure out how we can continue to share data between Nebraska State Patrol and the Nebraska State Historical Society.

We are also asking for a consultant to review our existing GIS enterprise environment to help keep it running as Nebraska DOT transitions into its own environment knowing it will take time.

Total Map, Image and Geoprocessing Services

639 on GIS Production Portal

NDOT Specific services: 165 map services, 131 published to DOT server rest are on enterprise server.

NDOT web applications: 77 web applications (38% in Experience Builder, rest are Dashboard or Web app builder apps).

4. Can NDOT describe the current maturity of its Roads and Highways implementation, including whether an LRS is already established and approximately how many event layers and networks are anticipated for migration?

NDOT transitioned from Geomedia to Esri (non-roads and highways) about a year and a half ago. We are using ArcGIS Pro 3.3 and have paid for roads and highways extensions and for enterprise server but have not implemented the software. NDOT paid for a prototype of Roads and Highway in March 2020 it was using ArcMap 10.8 due to ArcGIS Pro R&H wasn't mature enough to use yet. NDOT is looking at using only ArcGIS Pro version of R&H. It is unknown how many event layers will be transitioned, the initial thought is most of the data items that need to be submitted for HPMS.

Currently the "source of truth" of the NDOT LRS is on our mainframe tables called Integrated Highway Inventory (IHI). Our Materials and Research Roadway Asset Management group maintains the LRS within IHI and many of the events table data. The GIS IT group maintains the Spatial LRS that must match the IHI tables. The tabular data must be entered first, then the Spatial LRS will be inputted after the tabular centerline table is updated. NDOT maintains two different measure systems, our reference post (mile marker) system and Log Miles (driven distance) measures. Log Miles are only generated when the IHI103 table (a table that combines many events together into one big table) that will pull the accumulated centerline miles.

GIS Spatial LRS currently is maintained in separate feature classes of Highways, Divided Highways, Major Roads, Minor Roads, Local Roads, and Ramps. Ramps are still not connected to the highway system.

The divided highways are also not fully connected to the Highway system. However, we did have a project to connect all Highway, Major, Minor and Locals together. It is understood that R&H will make everything into a "centerline" and won't be separated. We believe we will need two separate route systems of reference post and log mile routes. NDOT submits the log mile routes for the HPMS submittal, but the reference post routes are used for many other systems that only have reference post as those are NOT supposed to change like log miles that can change a lot throughout a route.

NDOT has Data Reviewer extension after a pilot with Esri to create an ETL process to convert data from Geomedia to Esri datasets for cartographic maps, then created Spatial LRS Data Reviewer checks in ArcMap 10.8.1 batch job files. NDOT has not converted the data reviewer checks into ArcGIS Pro version of contingent values and attribute rules.

5. The RFQ references an on-premise, NDOT-controlled deployment; should respondents assume a strictly on-prem architecture, or would NDOT consider hybrid designs that support high availability and disaster recovery objectives?

   It is currently assumed that NDOT is looking for on-prem architecture due to other systems that are also on-premise. GIS Enterprise Portal system was reviewed about a year ago to move to the cloud and found that EVERYTHING must live in the cloud including file shares like AWS FSX and SQL databases.

6. Beyond ProjectWise and FME, are there other priority systems or enterprise platforms NDOT anticipates integrating with ArcGIS Enterprise as part of this restructuring effort?

   As noted above, the current source of truth of the LRS is mainframe tables, we will need to be able to push data from R&H back into mainframe tables as needed. We are also looking at Bentley Infrastructure Cloud.

7. What technologies are NDOT currently using to maintain their LRS?

   ArcGIS Pro 3.3. We use basic out of the box technology in ArcGIS Pro. We have SQL views that have event data that we dynamically segment to create layers in GIS applications. We maintain two routes, the reference post and log mile as stated below.

8. Does NDOT envision all event data to be stored internally within Roads and Highways, or will some datasets be maintained as external events?

   We assume some events will live internally to Roads and Highways and will have others maintained as external events. Such as Construction projects within AASHTWO Project would be external event.

9. What technology does NDOT envision using to maintain their event data - ArcGIS Pro, Experience Builder, other?

   I believe this would depend on the ArcGIS Enterprise Portal version we use for R&H from what we have heard it will most likely be ArcGIS Pro until Experience Builder has all the capabilities. We have heard other states try event editor but since this won't be supported in version of ArcGIS Enterprise Portal, we don't think that would be a good option.

10. Is *experience integrating ArcGIS Enterprise with Bently ProjectWise using Safe Software FME* a *nice to have* or a *required qualification*?

    Nice to have

11. Are Esri technical certifications required, or can years of experience be used as a substitute?

    Substitution of year of experience would be fine.

12. Are GISP, PMP certifications required, or can years of experience be used as a substitute?

    Substitution of year of experience would be fine.