STATE OF NEVADA

DEPARTMENT OF TRANSPORTATION

REQUEST FOR INFORMATION

Specifications and Instructions

for Submitting Information for

ITS CENTRAL SYSTEM SOFTWARE

Release Date:

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Department of Transportation

Table of Contents

Acronyms/Definitions 3

1. General Information 4

1.1 Introduction 4

1.2 Submission of Questions 4

1.3 Vendor Submissions 4

1.4 RFI Schedule 5

1.5 RFI Coordinator 5

1.6 Response Format 5

1.7 Vendor Presentation 6

1.8 Cost of Preparing Response 6

1.9 General Terms and Conditions 6

1.10 Request for Confidential Treatment 6

2. Background 7

2.1 Nevada Department of Transportation Organization 7

2.2 RFI Background 7

2.3 Current System 8

2.3.1 CSS Design Objectives 8

2.3.2 CSS Functionality 8

3. Vendor Responses 9

3.1 Cover Letter 9

3.2 Section 1 – Executive Summary 9

3.3 Section 2 – Vendor Profile 9

3.4 Section 3 –Questions 10

3.4.1 ITS Field Devices 10

3.4.1.1 Closed-Circuit Television (CCTV) Cameras 10

3.4.1.2 Dynamic Message Signs (DMS) and Trailblazer Signs 10

3.4.1.3 Roadway Sensors 10

3.4.1.4 Ramp Meters 10

3.4.1.5 Highway Advisory Radio and Beacons 11

3.4.1.6 RWIS 11
3.4.1.7 Traffic Signals 11
3.4.2 Incident Management 11
3.4.3 Construction and Maintenance Activities 11
3.4.4 Failure Management 11
3.4.5 System Reporting 11
3.4.6 Data 12
3.4.7 Operations, Support and Upgrades/Enhancements 12
3.4.8 Other 13
3.5 Section 4 - ITS Device Overview 13
3.6 Section 5 – Additional Vendor Comments 13

Acronyms/Definitions

Acronym/Term	Definition
ADUS	Archived Data User Service
ATIS	An advanced traveler information system that automatically integrates data from different sources and distributes critical information through multiple channels to support trip management decision making by travelling public.
C2C	Center to Center
CCTV	Closed Circuit Television Camera
CD	Compact Disc
CSS	Central System Software
DMS	Dynamic Message Sign
FAST	Freeway And Arterial System of Transportation
HAR	Highway Advisory Radio
ITS	Intelligent Transportation System
NDOT	Nevada Department of Transportation
NTCIP	National Transportation Communications for ITS Protocol
OS	Operating System
Ramp Meter	A traffic signal device used to regulate the flow of traffic entering a limited access roadway
RFI	Request For Information
RFP	Request for Proposal
RFQ	Request For Qualifications
ROC	Roads Operation Center
RWIS	Road Weather Information Systems
Sensors	Vehicle detection and surveillance devices and technologies that provide information about roadway status including but not limited to speed monitoring, traffic counting, presence detection, headway measurement, vehicle classification, weigh-in-motion, weather conditions etc.
Thin Client	A terminal machine that processes user interface and relies on the server to perform data processing
TMC	Transportation (or Traffic) Management Center
Trailblazer signs	Trailblazers or trailblazer signs are signs that provide direction to motorists to major transportation facilities, cultural facilities and recreational facilities
VSL	Variable Speed Limit
WAN	Wide Area Network
WYSIWYG	What You See Is What You Get

1. General Information

1.1 Introduction

The Nevada Department of Transportation (NDOT) is seeking information from Vendors who are capable of and interested in providing information on a Central System Software (CSS) to meet the planned statewide expansion and potential enhancements to the Department's Intelligent Transportation System (ITS) program. Through this RFI, the NDOT desires to engage Vendors in a process to evaluate available CSS solutions. Vendors may be invited to give a demonstration after review of the responses.

This RFI will be used as a vehicle to educate NDOT, to obtain information about the latest CSS solutions, and to identify potential CSS suppliers. This RFI and potential future Vendor presentations do not imply any form of an agreement with candidate suppliers. Responses to the RFI may be used to build and fine-tune any potential future Request for Proposal (RFP).

While this RFI may not result in an award, we believe it is in the Vendor community's best interest to assist in providing information. At the same time, we understand that Vendors will not eagerly pursue extremely detailed and time consuming requests. We have constructed this RFI, and the accompanying response section to make it easy for Vendors to respond.

1.2 Submission of Questions

If you have any questions about this RFI, please submit them to the NDOT Administrative Services Division in writing via electronic mail. All responses to questions will be posted on the NDOT's RFP/RFQ/RFI website. No vendor names will be included in the questions and answers posted to the website. The deadline for submission of questions is **December 13, 2012**. Answers to questions submitted will be posted on or before **December 20, 2012**. Questions should be submitted to **agreeservices@dot.state.nv.us** and should be titled as follows:

ITS Central System Software RFI Questions

1.3 Vendor Submissions

Vendor responses are due by **No later than 3:00 P.M., January 10, 2013**. Please include **one (1) hard copy** of the RFI response and **one (1) electronic copy** submitted on a CD. If a vendor has multiple CSS offerings, separate responses are to be submitted. Response should be submitted addressed exactly as follows:

Agreement Services
Nevada Department of Transportation
Attn: RFI ITS Central System Software
1263 South Stewart Street, Room 101
Carson City, NV 89712

Responses containing confidential information shall have each page marked as confidential to include the front cover of the response.

1.4 RFI Schedule

Description	Timeline
Release of RFI	December 3, 6, 2012
Submission of Questions	December 13, 2012
Responses to Submitted Questions	December 20, 2012
Vendor Submissions	January 10, 2013, by 3:00 P.M.

The NDOT reserves the right to revise the above timeline.

1.5 RFI Coordinator

Vendor communications concerning this RFI should be directed to the RFI Coordinator listed below.

RFI Coordinator	Procurement Person
Address	Nevada Department of Transportation Administrative Services Division 1263 S. Stewart Street, #101 Carson City, NV 89410
Phone	(775) 888-7070
E-mail	agreeservices@dot.state.nv.us

1.6 Response Format

The responses shall be submitted in the following format (see Section 3):

Cover Letter
Section 1 – Executive Summary
Section 2 – Vendor Profile
Section 3 – Questions
Section 4 – ITS Device Overview
Section 5 – Additional Vendor Comments

1.7 Vendor Presentation

Vendors may be invited to give a presentation at a time and date to be determined after review of the responses.

1.8 Cost of Preparing Response

The NDOT is not responsible for any cost incurred by the vendor in the RFI response preparation or presentation.

1.9 General Terms and Conditions

The State of Nevada is not obligated to any course of action as the result of this RFI. Issuance of this RFI does not constitute a commitment by the NDOT to issue an RFP or to award any contract.

Information submitted in response to this RFI will become the property of NDOT.

The NDOT will not pay for any information herein requested, nor will it be liable for any other costs incurred by any respondent related to the preparation or delivery of the response to this RFI or any subsequent presentation.

The NDOT reserves the right to modify the RFI at any time.

By submitting a response, the vendor agrees that the NDOT may copy the response information for purposes of facilitating review or to respond to requests for public records. The vendor consents to such copy by submitting a response and warrants that such copying will not violate the rights of any third party. The NDOT will have the right to use ideas or adaptations presented in the responses.

The NDOT reserves the right to reject any and all of the responses to the RFI, in whole and in part, at any time. This RFI is designed to provide vendors with the information necessary for the preparation of informative response proposals and demonstrations of product. This RFI process is for the NDOT's benefit and is intended to provide the Department with information regarding the industry's CSS capabilities and functions. The RFI is not intended to be comprehensive. Each vendor is responsible for determining all factors necessary for submission of a comprehensive response and complete product capability demonstration. The RFI response and demonstration will not be subject to an RFP type evaluation but only to a review of suggested product performance, and abilities to perform services that may be of use to the NDOT.

1.10 Request for Confidential Treatment

The State of Nevada will treat all information submitted by a Vendor as public information unless the Vendor properly requests that the information be treated as confidential at the time of submitting the response. Any requests for confidential treatment of information must be included in a cover letter with the Vendor's RFI response. The request must also include the name, address, and telephone

number of the person authorized by the Vendor to respond to any inquiries concerning the confidential status of the materials.

A single confidential page in the document will not classify the whole document as being confidential. Each page shall be marked as containing confidential information. The confidential information must be clearly identifiable to the reader on the outside of the document, cover letter, and on each page of the document.

2. Background

2.1 Nevada Department of Transportation Organization

The mission of the Nevada Department of Transportation is to provide a better transportation system for Nevada through unified and dedicated efforts. The Department is responsible for the planning, construction, operation and maintenance of the 5,400 miles of highway and over 1,000 bridges which make up the state highway system. The Department is divided into three Districts, with a District Engineer and Assistant Engineers in each. The Districts are responsible for supervising all state transportation activities within their local areas. The NDOT headquarters building is located in Carson City, with the three main district offices located in Las Vegas (District 1), Reno (District 2) and Elko (District 3). Major maintenance stations are in Ely, Tonopah and Winnemucca. NDOT is overseen by a seven-member Board of Directors and directed by Senior Staff.

The Department's current ITS infrastructure is installed in both rural and urban locations within the State. Currently these resources are managed out of several centers including the Department's Headquarters and Hot Springs offices in Carson City; the Freeway and Arterial System of Transportation (FAST) Traffic Management Center in District 1 which also houses the Las Vegas ROC; Reno ROC in District 2; and the Elko ROC in District 3. Additionally the Department and its regional partners may establish other ITS centers (including jurisdictional management centers) to monitor, control and/or direct local/regional ITS activities.

2.2 RFI Background

The Department is considering the expansion of its current ITS infrastructure including the incorporation of significant additional numbers of CCTVs, HAR, ATIS, RWIS, sensors, new ITS centers and new data warehousing capabilities (note that this is not an exhaustive list). With the possibility of expansion of the ITS infrastructure in the State (rural and urban), the Department desires to learn about the capabilities (and implemented solutions) of various CSS available in the United States. This RFI is planned as the vehicle to educate NDOT, to obtain information about the latest CSS solutions, and to identify potential CSS suppliers. It is being used as a means to gather market information and knowledge of capabilities of available and implemented CSS systems. The information provided by respondents may be used for planning purposes and may influence a future RFP or acquisition if that is the course the Department chooses to pursue.

2.3 Current System

2.3.1 CSS Design Objectives

The current CSS consists of all the computing and communications resources necessary to integrate the CSS functional features and to provide the CSS operators with the capability to monitor and control freeway traffic.

The CSS is designed to accommodate, control, and/or monitor the following system elements:

- Freeway Segments for Detection;
- Ramp Meters;
- Trailblazers;
- Highway Advisory Radio (HAR) Transmitters (10 watt);
- Dynamic Message Signs (DMS);
- Closed-Circuit Television (CCTV) Cameras; and
- Operator Workstations (Internal & External to the TMC).

The design life of the CSS was targeted to be approximately 15 years.

2.3.2 CSS Functionality

This section presents design guidelines that were used for the system functional elements and features that comprise the CSS as currently implemented. This design in some measure supports each of the following high-level system functions:

- Roadway Network Monitoring;
- Surface Street Control;
- Freeway Control;
- Traffic Information Dissemination;
- Incident Management;
- Traffic Prediction and Demand Management; and
- Broadcast Traveler Information.

In addition to the above functions, the Archived Data User Service (ADUS) is included in the CSS.

The major elements included in this system to accomplish these high-level functions include:

- An interface with the Las Vegas Area Arterial Management System (AMS);
- Ramp Meters;
- DMS and Trailblazer Signs;
- Incident Detection and Traffic Management for the freeway;
- CCTV Monitoring;
- Area-wide Graphics;
- Data Archiving;

- Interfaces with other Agencies for Information Sharing (Jurisdictional Management Centers (JMCs));
- An Interface with the NDOT Wide Area Network (WAN);
- HAR;
- RWIS; and
- Traveler Information Component.

Each of these elements is or will be designed to operate under the direct or indirect control of the CSS. The CSS is designed to accommodate future expansion, allowing for additional functionality as well as additional geographic coverage.

3. Vendor Responses

Responses should consist of the following sections. Each section is described below. Small print or typeface that is difficult to read is not encouraged. The maximum number of pages indicated includes all figures and text. Pages shall be single-sided, $8^{1/2}$" x 11" ("letter") or 11" x 17" ("tabloid") in size. Pages which are 11" x 17" will be counted as two (2) pages.

3.1 Cover Letter

A cover letter shall be included. This cover letter shall not exceed one (1) single-spaced page and include the name, address, and telephone number of the person authorized by the Vendor to respond to any inquiries concerning the RFI response.

3.2 Section 1 – Executive Summary

Vendors shall provide an executive summary written in non-technical language to summarize the overall capability and functionality of their ITS CSS offerings.

A maximum of two (2) single-spaced pages is allowed for this section.

3.3 Section 2 – Vendor Profile

Each vendor shall include a brief synopsis of its company history, background, market share, target market and industries. Specific experiences with implementations similar to NDOT should be included in this section.

If the vendor anticipates or currently uses sub-contractors with its ITS CSS, a brief description should be included on the type of service those sub-contractors provide or would be providing. It is not necessary to provide specific profiles. If the vendor recognizes services that would be essential to their CSS, but

believes it to be outside the scope of this RFI, a description of all such services should be included in this section.

A maximum of five (5) single-spaced pages is allowed for this section.

3.4 Section 3 – Questions

3.4.1 ITS Field Devices

3.4.1.1 Closed-Circuit Television (CCTV) Cameras

1. Describe your method of controlling and monitoring both analog and digital video. Describe how your system manages video devices including CCTV cameras, Video Wall, Display Monitors, Encoders, Video Recorders, and Video Switches.

2. Describe your CSS capabilities and method of sharing analog and digital video with other entities including video to web.

3.4.1.2 Dynamic Message Signs (DMS) and Trailblazer Signs

1. Describe your unique approach to utilizing Dynamic Message Signs as part of a planned or unplanned event. Please discuss scheduling, message priorities, communication monitoring, and confirmation of message displays (fonts, WYSIWYG etc.).

2. How would your system control and monitor signs such as Lane Use Signals and/or Variable Speed Limit (VSL) Signs? What is your approach to operating Lane Use Signals and VSL signs?

3.4.1.3 Roadway Sensors

1. How do you present multiple sources of roadway data (e.g., loops, radar, tag readers etc.) to the operator? Describe how your system takes raw traffic data and presents potential incidents and general traffic information.

2. Can your solution support Weigh in Motion technologies? If so, explain how your solution supports Weigh in Motion technologies and how this information is used by your system and presented to the operator.

3.4.1.4 Ramp Meters

1. Does your solution support integration with ramp metering? If so, describe how these devices are incorporated into the overall ATMS. In particular, does your solution offer automation to simplify controlling these devices?

3.4.1.5 Highway Advisory Radio and Beacons

1. How does your system integrate Highway Advisory Radio (HAR) and Beacons? Describe how an operator would use your system to operate HAR and Beacons.

3.4.1.6 RWIS

1. How does your system integrate RWIS?
2. How can your system help operators monitor other weather related devices and information including high wind, fog, ice and snow warning systems?

3.4.1.7 Traffic Signals

1. Does your solution support integration with Traffic Signals? If so, describe how these devices are incorporated into the CSS. In particular, how does your solution help an operator manage a large quantity of these devices?

3.4.2 Incident Management

1. Describe your approach to incident detection and incident management, including automated incident detection and incident response coordination. What devices can be tied to and controlled through the system (e.g., CCTV, HAR, DMS etc.) to manage an incident?

3.4.3 Construction and Maintenance Activities

1. Describe your approach to construction and maintenance activities including your system's ability to log, plan, coordinate, and/or report construction and maintenance activities.

3.4.4 Failure Management

1. Describe your approach to failure management including classification and action, status, temperature, ability to set/reset devices remotely, communications errors, event logs and repair ticket management.

3.4.5 System Reporting

1. Please provide information with regard to your system's reporting capabilities. In particular, describe how information can be filtered. Describe your approach to status and other reports (e.g., end-of-day). Describe how your system performs logging, tracking and reporting of Incidents. In particular, provide details of your experiences with performance measures. Can local operators create custom reports without assistance from you – without one of your technicians at the terminal?

Samples of standard and custom reports may be provided as an attachment – the attachment will not count towards the number of pages limit for this section.

3.4.6 Data

1. How does your system support Interfaces to key external systems such as computer aided dispatch or 511?

3.4.7 Operations, Support and Upgrades/Enhancements

1. Please describe your pricing model. Do you provide a site license with unlimited devices, per location/device (based on number of supported devices), or some other model?

2. Describe your system's operating environment from a hardware and software perspective (e.g., Server OS, Database, Workstation OS, Thin Client, etc.).

3. Describe your approach to implementing patches and updates? Please discuss both commercial off-the-shelf updates to the supporting hardware and software, as well as updates to the CSS software. Are the CSS updates/upgrades free or paid?

4. What is your approach to technical support? Describe your software support capabilities including both on-site and over the phone troubleshooting. Include support hours and available options for extended support.

5. Provide information with regard to the user interface for your system. In particular, provide details of the map interface and any other common tasks performed by an operator which highlight the unique approach of your system.

6. Describe which ITS standards your system meets including Center-to-Center communications (C2C), Traffic Management Data Dictionary and National Transportation Communications for ITS Protocol (NTCIP).

7. How does your system handle multiple operators sharing resources (e.g., priority levels, configure control responsibilities, user levels, etc.)?

8. What is your approach to customizing the software and/or modifying the requirements/ functionality of the system? Can these changes be done by anyone, or only your firm? Is your software closed or not?

9. Describe the level of documentation you typically provide to a client or an authorized third party.

10. Describe your approach to redundancy and high availability.

11. How do you approach adding new devices to the system (discuss both a new device of an existing type and adding a new device of a new type).

12. How can your system be applied to a rural and urban environment?

13. Does your CSS run as a service or application?

3.4.8 Other

1. In the next three to five years, what technology or industry trends do you anticipate most impacting the CSS industry?

2. Please describe any unique features or functionality that you recommend NDOT consider for a CSS application which may not have been discussed above.

3. Please provide client operator references (name, title, agency, telephone number and email address); operators who may be willing to discuss your implemented CSS from a user perspective.

A maximum of 20 single-spaced pages is allowed for this section (Section 3 – Questions).

3.5 Section 4 - ITS Device Overview

Please provide information that describes the field devices your system is currently controlling for a client. Specifically, please provide a comprehensive overview of the current device types, manufacturers and model numbers. If applicable, please organize your overview according to the following classes of devices: CCTV Video, DMS and Trailblazer Signs, Roadway Sensors, Ramp Meters, HAR and Beacons, RWIS, and Traffic Signals.

Respondents may provide this information in any format they feel appropriate. While the response to this section is not limited to a number of pages, respondents are encouraged to be as concise and brief as possible.

3.6 Section 5 – Additional Vendor Comments

As part of your response to this RFI, please feel free to include any additional comments or suggestions that your company believes would be helpful to the NDOT. However, generic marketing brochures, marketing resumes, and other non-project specific materials may be discarded without consideration and is not encouraged.

A maximum of five (5) single-spaced pages is allowed for this section.

Vendors may submit comments and questions and questions to the RFI Coordinator prior to responding to the RFI by the date indicated in the RFI schedule in Section 1.4. Responses to vendor questions will be considered addendums to the RFI. Modifications to the RFI that may result from Vendor comments will be sent to all Vendors (or posted to the procurement website). Where there appears to be a conflict between the RFI and any amendment or addenda issued, the last amendment or addendum will prevail.