



Board Summary Report

Date: 10/10/2019

To: Board of County Commissioners

Through: Bryan D Weimer PWLF, Director, Public Works and Development Department

From: Karl Packer, PWD Traffic Operations Manager

Subject: **Arapahoe County Traffic Data Sharing**

Direction & Information: Public Works and Development (PWD) in conjunction with Information Technology (IT) Department is providing information to the Board of County Commissioners (BoCC) on requests received to share Arapahoe County Traffic Data and its relationship to Intelligent Transportation Systems (ITS) and transportation technology.

PWD and IT are seeking BoCC support for a Arapahoe County Traffic Data Sharing application request the Board's direction for desired approval of this data sharing agreement. PWD, IT, the Attorney's Office, and the Sheriff's Office will be developing a full policy recommendation and process for handling data sharing requests over the next few months and will bring the resultant policy recommendation and process to the E-Team and the BoCC, as it is finalized.

Request and Recommendation

The purpose of this report is to provide information on cross-departmental and cross-jurisdictional ongoing efforts on Data Sharing traffic data collected by the County.

Recommendation that PWD and IT collaborate on requests to share data share agreement to be licensed by agreement with terms and conditions reviewed jointly by PWD, IT, and Legal for desired beneficial use of data and Arapahoe County goals.

Staff would recommend that the BoCC either approve the IGA directly or authorize the Public Works and Development Director to have approval/signature authority to enter into this traffic data sharing agreement, as collaboration and coordination with the County Attorney Department and the IT Director has occurred. If this recommendation is acceptable to the BoCC, PWD Staff will bring a BoCC consent agenda forward to the Board for an official resolution authorizing either action.

Background

Records Request vs. Data Requests: County records are public information subject to Colorado Open Records Act (CORA). CORA requests could be received for record documentation in digital format but have some allowable delay to produce.

Requests for data are typically for "real time" data / or data that represent current conditions. Typically, this is traffic signal or camera video from traffic signals, or some roadway data related device.

Arapahoe County traffic devices are installed and maintained by way of Arapahoe County PWD/Transportation Division /Traffic Operations Program. Physical communication for a device (fiber optic / cellular / radio) are also typically arranged via Transportation-Traffic Operations Program via separate “traffic signal network”, with Information Technology providing for service of getting devices onto County network- and to appropriate / authorized end users.

Real-time traffic devices that the County maintains include –

- Traffic Signals – timing/ function / controller data/ detector data or unified ATMS data (Centracs).
- Travel Time Index devices (Blue Toad Devices and /or access to Software management of this Data via program Blue Argus)
- Traffic Signal Video Cameras – Arapahoe County Traffic Camera VLAN
- School Flashers (Cloud Based)
- Construction Cameras (Cloud Based)

Information Technology Department provides and maintains authorized users and access onto the network, as well as program applications installed on County Network Computers. Software and hardware security measures administered by Information Technology prevent unwanted and possibly harmful intrusions onto the network.

Not all traffic device data is on the County network. Some devices are “cloud” based. Examples of such a system is the School Zone Flashing Beacon remote monitoring system that was installed in Q2 of 2019. This system sends information on School Zone device information to the cloud. A cloud-based software management program is provided for County / Traffic Operations to monitor and manage the system. Adjustments, and often repairs can be conducted remotely via this management system. Data on this system is also available in a user application format (app) accessible via cellular in-vehicle or smart phone. This user application provides real time conditions of the “school zone” being active, the school zone speed limit, and the vehicles current speed. This trend of technology is an example of sharing active traffic device “data” with a driver’s vehicle (Infrastructure to Vehicle data).

Another such cloud-based system is the PWD construction camera monitoring system. With this system, staff can monitor the construction activity of a project, including number of contractor resources at any one particular time, evaluate impacts to traffic, and to see progress of the project.

Links to Align Arapahoe

Fiscal Responsibility –

The request for data share would typically be at no net additional cost to Arapahoe County, with benefit of reciprocal data share and/or program diagnostic/analytic tools of available to Arapahoe County, and including the Arapahoe County roadway data.

Service First –

Arapahoe County customers, business, and employees – and all general traveling public can benefit from a more efficient roadway network and less time delayed in traffic. ITS data sharing applications can ultimately help with this goal.

Quality of Life –

Data Sharing for use in Intelligent Transportation System (ITS) applications is recognized internationally to be a benefit to the regional improvement, effective management, and efficiency of Transportation Networks –and ultimately Arapahoe County Roadway Network Traveling Public. Providing more data and tools to reduce congestion via technology can reduce travel times of a vehicle polluting and an improvement to quality of life.

Performance Based Culture –

Data sharing is intended to regionally enhance and improve performance of existing systems and available data for services beyond any boundaries defined by a division, department, jurisdictional boundary of a public or private party. By sharing the data the information can be more regionally viewed for measures to manage and improve overall operations of the roadway network.

Discussion

The County currently has no established process for review and approval of this type of ITS / data sharing agreement. As noted above, the intent is to collaboratively develop a process and bring it to the BoCC for review and approval. For the specific agreement in hand, coordination between Information Technology Department and Public Works and Development is essential and has been established, and legal review of the agreement has occurred.

The specific agreement for which we are seeking approval is for a traffic data sharing request from a private “ITS” vehicle-based application.

PWD Traffic was contacted by the private firm TTS with request to access Arapahoe County Traffic Signal Timing Data. TTS uses Traffic Signal data in a privately developed vehicle application which is currently available /offered in Audi and soon to be in other manufacturer’s vehicles. This application runs “in dash” to predict the arrival of the vehicle at an upcoming signal on the driver’s route – and what the status of that signal will be. TTS request to access this data is through existing traffic signal controller devices by way of the Arapahoe County vendor of the device – Econolite.

Technically, this is not direct access to real time traffic signal data. It is a request to access to the programmed signal timing data. TTS vehicle sensing data, combined with traffic signal program data, runs predictive software, then can display information on the dashboard instrument panel or screen of a vehicle. Additionally, the vehicle app sends feedback on vehicle performance and travel, via the cloud, allowing for additional diagnostic tools and a “vehicle to vehicle” and/or “vehicle to infrastructure” roadway network status. This feedback between vehicles, roadway travel times, and predictive/expected signal timing can provide additional product improvements and operational efficiencies.

TTS also offers in return to County access to the TTS diagnostic/analytic tool application. This enables County to benefit from the data collected by TTS. The application also extends the information to regional areas. TTS has already entered into data license / sharing agreements with CDOT, Littleton, Greenwood Village, Centennial and Douglas County and is interested in incorporating Arapahoe County so that we have a “southern metro” network.

By way of this example, PWD staff recommends, that Arapahoe County enter into an agreement to share the requested data with TTS.

A sample data sharing agreement has been submitted by TTS and reviewed by PWD, IT, and Attorney staff. Examples of agreements from neighboring jurisdictions have also been reviewed by staff.

Both PWD and IT staff have participated in vehicle demonstrations of the TTS application. TTS additionally demonstrated the (cloud based) TTS diagnostic tools to PWD staff.

Alternatives

- **No Action** / do not enter into data share agreements.
- **BoCC** signs data share agreements.
- **PWD** Director is given authority to sign traffic data share agreements.
- **IT** Director is given BoCC authority to sign data share agreement.
- **PWD/IT** Director both given joint authority to sign data share agreements

PWD and IT Directors have discussed the alternatives and would recommend that the either the BoCC approve the agreement directly with TTS or authorize the PWD Director to have authority to sign this traffic data sharing agreement. Because we anticipate receiving additional traffic data and traffic video sharing requests in the future as the technology becomes more prevalent, it is prudent for PWD, IT, the Attorney's Office and the Sheriff's Office to work on developing a review, recommendation and approval process for Arapahoe County.

Fiscal Impact

There is no fiscal impact to Arapahoe County with sharing traffic data.

Concurrence

The Public Works and Development Department concurs with the proposal. PWD Staff has also coordinated this proposal with the Information Technology Department and they support the proposal to enter into a traffic data sharing agreement.

Attorney Comments

The County Attorney Department has reviewed this document and the in question agreement.

Reviewed By:

Bryan Weimer, Director – Public Works and Development

David Bessen, IT Director

Robert Hill, Assistant County Attorney – County Attorney's Office

Todd Weaver, Budget Manager – Finance Department