FINAL Status Report on LRRB Grant to Operate AVL System at City of Eagan, MN **6-25-10**

Tom Struve (Tstruve@cityofeagan.com) 651-788-5258 ©

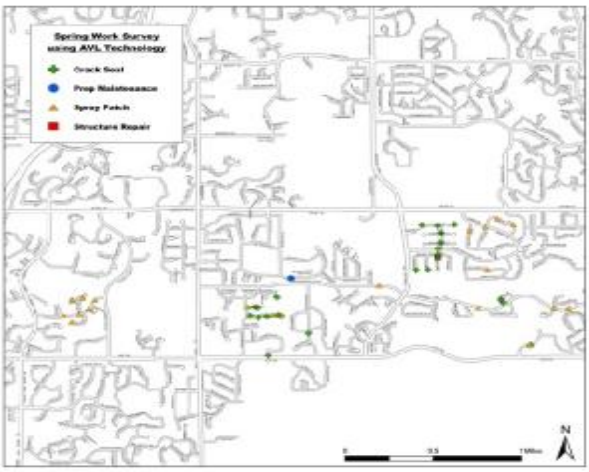
In spring of 2008, the LRRB awarded the City of Eagan $8000 ($4000 for each of two years) in funding for research related to AVL systems. Representatives from the city agreed to provide/share information about the research during public educational/training events as well as a mid-term status update and a full report of research at the end of the two years.

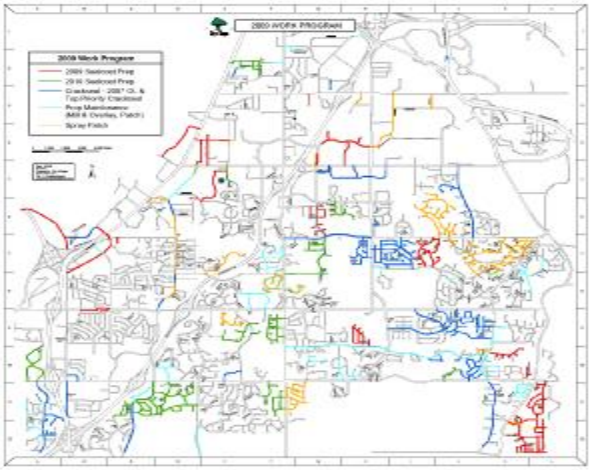
EAGAN Public Works staff had implemented the beginnings of an automated vehicle locating (AVL) system in February of 2008. At about the same time budget shortfalls became acute and it became clear that funding for this prototype program would not be available into the future. A grant from the LRRB rescued the program.

One half of the fully implemented system of 25 units were installed in snow plow vehicles with the original goal of using the system to track plow vehicles progress so that resources could be reallocated when needed. Maintenance operations managers used the 12 permanently mounted units to monitor progress of plow vehicles and this process worked out well. The vendor indicated that the software allowed for tracking of other real time and reportable information in addition to vehicle location such as "plow up/plow down" and when the vehicle was applying chemical to roadways. We quickly identified this additional tracking ability as an opportunity to gather additional GPS related data.

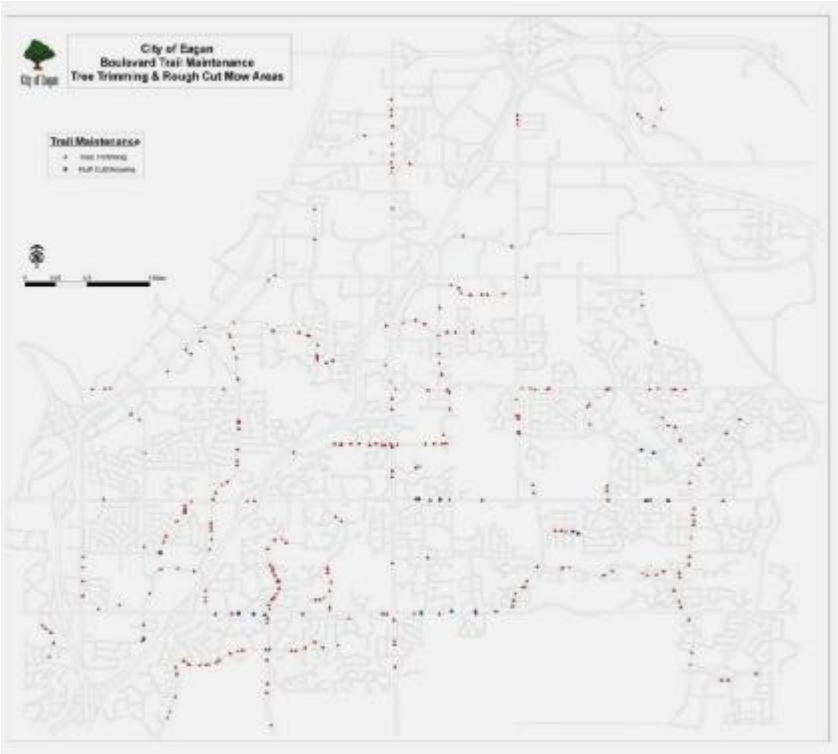
In house personnel removed the permanent installations and changed all units to easily interchangeable portable units providing the opportunity to use the AVL (with a "button box") for numerous applications. See photo below

One successful use for this additional tracking ability is centered on gathering maintenance data related to the annual street supervisor review of city street related infrastructure. The spring “drive thru” results annually in a summer season work map. Pls see sample/conversion below

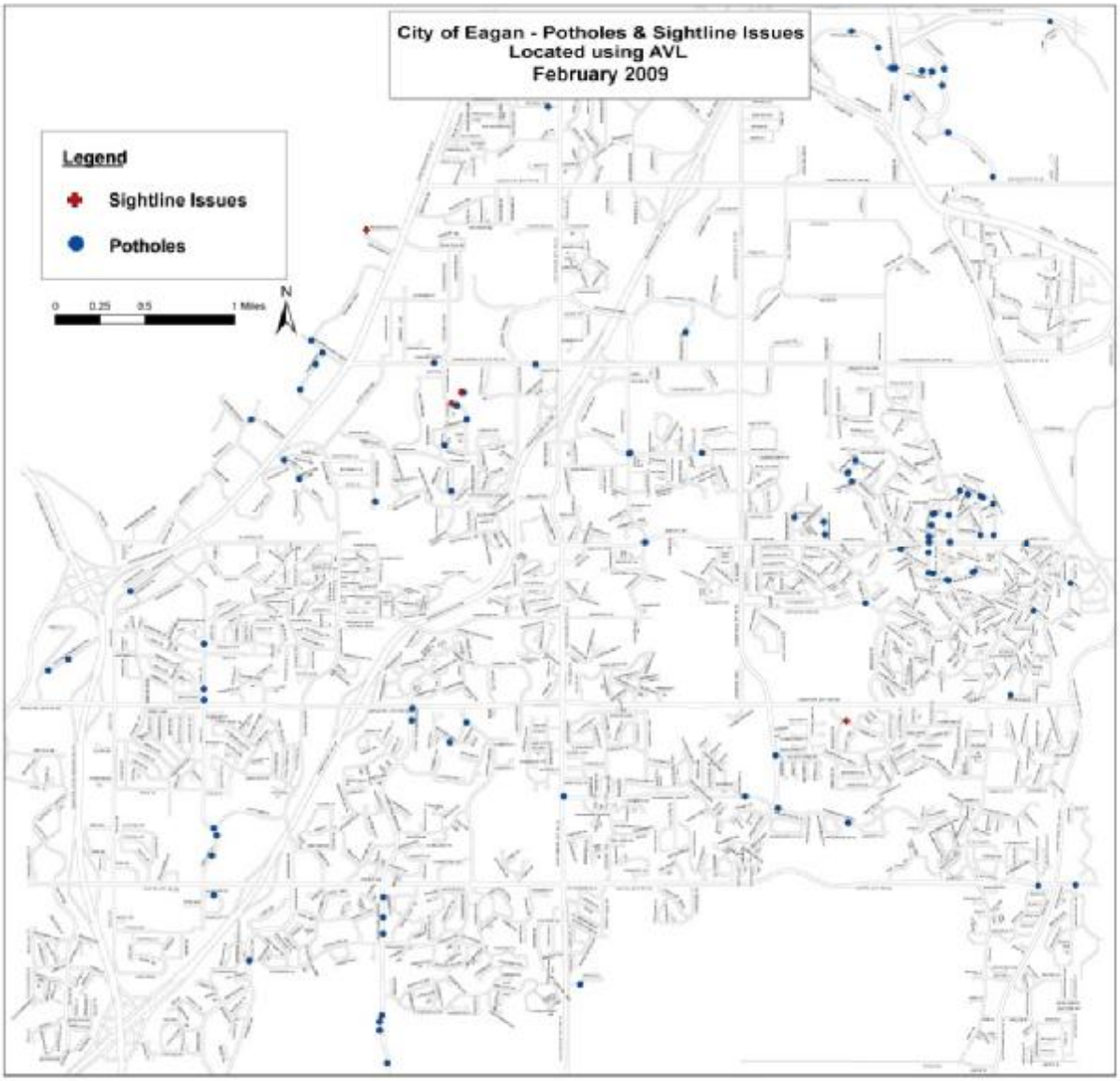




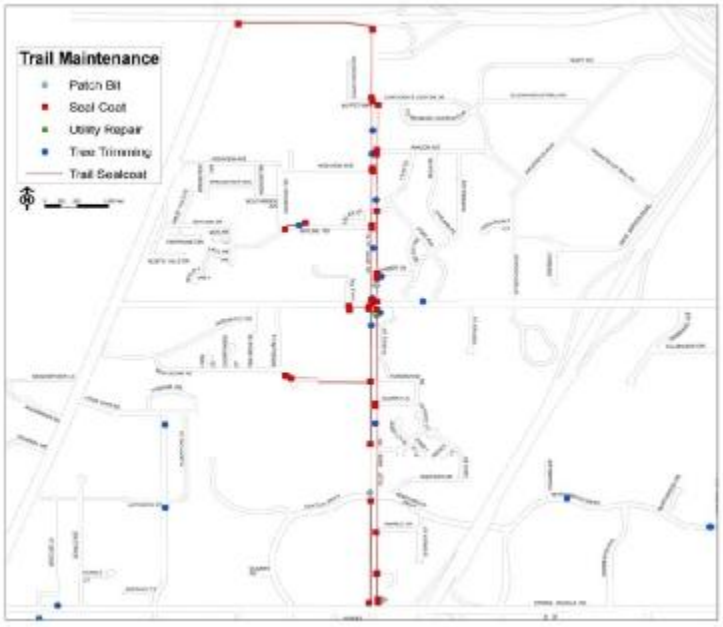
In many, many similar successful cases the additional tracking ability was employed to physically gather data points; (examples- identify boulevard trees and encroaching vegetation around the city’s multi-modal transportation system (trails/sidewalks) to specifically direct maintenance employees to locations needing trimming, identify and catalogue all retaining walls in city rights of way, identify and catalogue utility obstructions in rights of way). This useful application of technology saved the city many many staff hours. See map below.



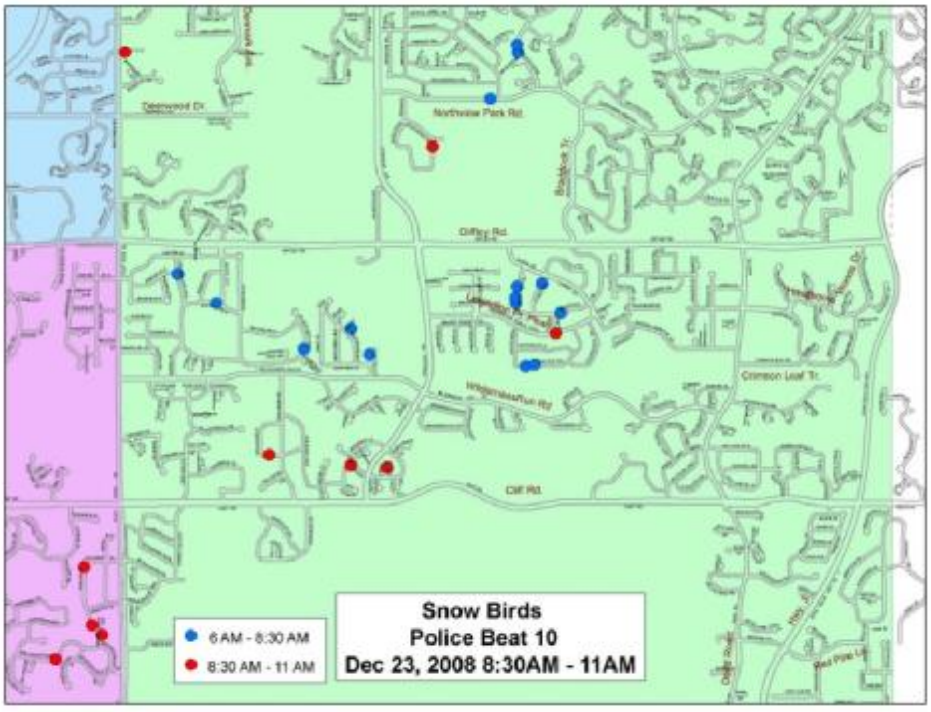
Additionally, staffers used this additional tracking ability to physically identify potholes and sightline issues around the city. Instead of sending staffers out early in the spring to randomly locate and repair potholes, all snow route employees reviewed/drove all of their plow routes (thus dividing up the entire roadway system) in one morning and used the AVL "button boxes" to track GPS locations of potholes needed repairs and trees needed trimming for sightline issues. Like the last example above; this approach was far more successful than prior efforts because a system wide plan was implemented to patch potholes and trim sightline trees not subject to employee interpretation. See map below.



Similarly, the AVL technology was used to assess need for summer trail repairs in one area of the city adjacent to a county roadway . See map below



And another very fruitful use of the AVL technology was identified. Maintenance staffers can currently drive past a winter parking violation, press a button in the cab, and that mapping data is subsequently electronically transferred directly to a “beat map” on the computer in our squad cars so that officers can proceed directly to the location when time allows saving fuel and resources used in the past when this effort was more random.



Future…

Extraordinary budgeting restrictions prevail into 2011 budgets and beyond. The grant to continue to operate the AVL system was every effective in providing support information to enable managers to continue to keep budgeting for the use of the system.

2011 Budgets at the City of Eagan are still being reviewed. I have proposed that we continue to fund year round use of (4) units. Assuming that funding request prevails, we will enjoy the continued use of the partial system for the many data point collection uses identified in this document. Additionally, the partial system will be used for partial management of snow and ice operations and it will also be used in the event of emergency response (wind storms, etc.) to gather "real time" damage information.

The City of Eagan is VERY grateful to the Local Road Research Board for the generous funding of this study over the past two years.

Please feel to contact me personally at any time for additional information.