

MAGnitude: MAG's Interactive Reporting Tool

In 2011, the Maricopa Association of Governments (MAG) Performance Management team launched MAGnitude, an interactive web-based reporting tool, in partnership with Arizona DOT (ADOT) and the Valley Metro Transit Authority. MAG and its partners developed the tool to support planning functions associated with its Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP). MAGnitude displays data in a variety of ways to make performance information accessible to audiences ranging from the general public, who can use the tool to answer questions about transportation projects, to engineers and planners, who can download data sets to conduct analyses.

MAG developed MAGnitude as it prepared for its first State Performance Audit. Since 2010, Arizona law has required an independent audit be conducted every five years of regional transportation plans and projects scheduled for funding. MAG's 2011 audit assessed project performance in relieving congestion and improving mobility, as well as system and project efficiency. The MAG Performance Management team collaborated with its Information Technology (IT) programming staff to create the MAGnitude Dashboard, an easy to use web-based application. They also worked with their partners to consolidate and analyze the initial data sets and they continuously update the information on the application.

KEY ACCOMPLISHMENTS

- **Developed an interactive web-based tool providing easily accessible performance and project data to broad audiences**
- **Improved project selection process by incorporating quantitative data into project prioritization ranking**
- **Collaborated with State DOT and local agencies to link transportation project data to system performance data**

What is MAGnitude?

The [MAGnitude dashboard](#) provides network performance data and project information through an interactive map and supporting graphics. Users can manipulate the map using menus at the top of the page to see the performance for any year between 2009 and 2014 for freeways, arterials, transit, and non-motorized modes on the system and corridors. Within each of these infrastructure layers, viewers can select various metrics related to throughput and speed. MAG receives speed and throughput data from ADOT and travel time from third party providers. Users can also download the data to conduct analyses on measures such as delay and congestion. The dashboard provides additional information in infographics, charts, and graphs adjacent to the map, which update as users select different geographies and metrics.

In response to the State Audit recommendation to display a clearer relationship between performance data and project selection, MAG added a layer to the map that provides information on almost 200 projects from the RTP that are either completed or under construction on freeways and arterials. By



overlaying metric and measure data with project specific information, users can study the relationship between specific regional investments and system performance.

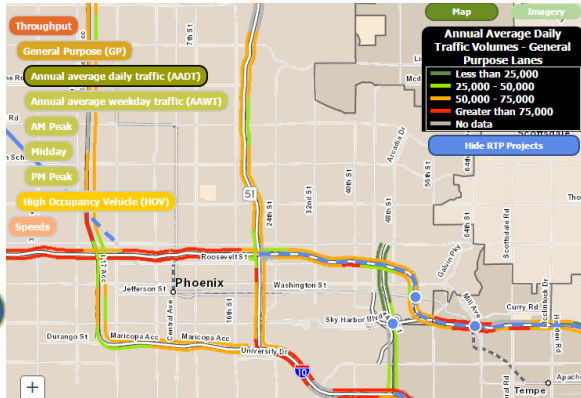


Figure 1. The MAGnitude dashboard

How does MAGnitude affect transportation planning in the Phoenix region?

MAGnitude has enabled MAG and stakeholders to transition from a more qualitative project selection process to one that is based more on quantitative project data. MAG now uses performance-based tools to rank and prioritize projects, as well as to demonstrate how it uses an analytical process to inform all funding decisions. MAG engaged member jurisdiction advisory committees to assist with developing the criteria and weighing strategies for the prioritization tools, which increased the transparency of and support for the transition.

MAG has also improved the connection between system performance and project-based data by linking the MAGnitude dashboard to the RTP Project Cards for the Freeway and Arterial Life Cycle Program, including all completed projects as well as projects underway. Organized by project, the cards provide project information, such as expenditures, scheduling and maps of the project area. The data are available at a range of geographic levels, down to the segment level.

How will MAGnitude grow?

In addition to continually updating and maintaining MAGnitude, MAG plans to add recently acquired non-motorized data, such as counts and bicycle Level of Service, in the spring of 2016. MAG also plans to expand the transit data to include information relevant for transit planning, such as distance to stops, population and employment densities relative to transit access, and gaps in service. Finally, the performance management team is working with the IT department to enable viewers to download data at a more granular level.

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