

# REIMAGINING REGIONAL SAFETY PLANNING WITH A SAFE SYSTEM APPROACH IN ARIZONA



## Equity Case Study



The Maricopa Association of Governments (MAG), the regional planning organization for the greater Phoenix area, has been reimagining how it views regional safety planning through the lens of the Safe System Approach (SSA). MAG has established [extensive safety programs](#) spanning from strategic planning and safety improvement to regional and local programs that study safety in communities and engage the public for input.

For many years MAG, like many other state, regional and national agencies, has been focused on approaching planning under the paradigm of the 4 Es: Education, Engineering, Enforcement and Emergency Services. As more resources are developed in support of the implementation of a Safe System Approach, agencies across the country are finding it helps support holistic planning.

In a significant shift, MAG recognizes that equity is a cornerstone when incorporating Safe System elements and principles in safety planning. Margaret Herrera, MAG Transportation Safety Program Manager notes that the SSA “asks us to look at every road from the human point of view and design it to meet the needs of all those using it, equitably.” With a desire to be more consistent with the Safe System Approach and with all users in mind, MAG is shifting from using it as one of many criteria to using it as a foundational piece of project prioritization.



MAG Safety Program Website

## LAYING THE GROUNDWORK

For several years, MAG has been implementing programs in many different areas to improve equity. In 2019, the MAG Regional Council approved the Roadway Safety Program (RSP) regional funding program and began taking applications. The RSP allows MAG member agencies to apply for funding short-term, immediate safety improvements as a supplement to the Arizona DOT Highway Safety Improvement Program.

MAG is infusing equity into their Roadway Safety Program (RSP) specifically by expanding the application to provide guidance and clearly define expectations for equity elements included in the application for both quantitative and qualitative criteria.

While the RSP application initially included a question about underserved populations as a data point, in 2021, MAG updated the RSP application to prompt applicants to not only report percentages of equity-related populations but compare them to the regional averages (quantitative). Next, applicants are asked to describe how the proposed safety improvement will impact the over-represented populations (qualitative).

## APPLY SOME PERSPECTIVE

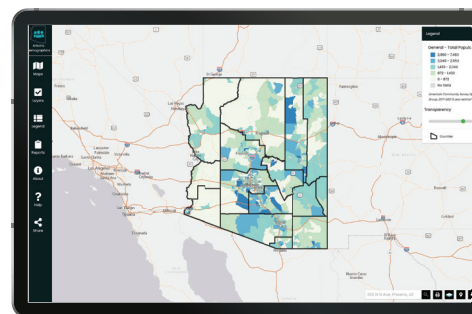
A closer look at the Roadway Safety Program (RSP) finds that the application for project funding prompts applicants to define the basic elements of the proposed project. In addition to these scope questions, MAG has now added prompts for applicants and evaluators to access the equity-related data for those persons within their project in five specific categories including percentages within the project area who are 65 years and older, are in minority groups, live in no-vehicle households, are disabled persons and living in poverty. These categories were defined from guidance from FHWA, specifically the [Executive Order 13985: Advancing Racial Equity and Support for Underserved Communities \(2021\)](#).

Applicants are also provided direct access to the [MAG Arizona Demographics Mapping Portal](#) to pull data for each of these equity categories for their project area and compare to the regional percentages for each equity element. Once applicants have defined the percentages of each equity category, they are prompted to discuss populations at or above regional averages and powerfully, include clear discussion on the impact of the improvement on those populations, using relevant research related to the underserved population in connection to the proposed improvement.

Equity is weighted to be an appropriate portion of the overall score of both qualitative and quantitative criteria, helping evaluators prioritize the most impactful projects for the community and other users.

Lead Agency:		Title of Project:	
Date:	Contact Name and Title:	Phone:	E-Mail:
1. Project Type: <input type="checkbox"/> Basic <input type="checkbox"/> Advanced			
2. Project Location: (include extent of improvement and crash data query definitions)			
2a. For projects on State System: <input type="checkbox"/> BMAP <input type="checkbox"/> BMAP <input type="checkbox"/> BMAP			
3. RSP Scope and Schedule: Describe RSP scope of work and established ability to complete in 24 months.			
3a.			
4. Network Screening: Select (right), describe method, rate and characteristics below: <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes			
4a.			
5. Project Study Identification: (check all that apply) and describe below: <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes			
5a.			
6. Alignment with the MAG region STSP: <a href="#">MAG System in Action</a>			
6a.			
7. Project Value: Describe how this project considers the value to the user in the greater system context			
7a.			
8. Equity: Input percent for the five elements in a 1-mile buffer (click hyperlinks to access maps, provide screenshot of queries in Equity Elements table)			
8a.			
8b.			
8c.			
8d.			
8e.			
8f.			
8g.			
8h.			
8i.			
8j.			
8k.			
8l.			
8m.			
8n.			
8o.			
8p.			
8q.			
8r.			
8s.			
8t.			
8u.			
8v.			
8w.			
8x.			
8y.			
8z.			
9. Equity Impacts: Describe the connection between project and the disadvantaged populations indicated above			
9a.			
9b.			
9c.			
9d.			
9e.			
9f.			
9g.			
9h.			
9i.			
9j.			
9k.			
9l.			
9m.			
9n.			
9o.			
9p.			
9q.			
9r.			
9s.			
9t.			
9u.			
9v.			
9w.			
9x.			
9y.			
9z.			
10. Avg Daily Traffic (ADTT) Volume			
11. Total Crash Frequency			
12. What is the posted speed limit?			
13. Year Collected			
14. Crash Rate (MFM or MMT)			
15. Benefits/Costs			
16. RDN/ID			

RSP 2022 Funding Application Request



Arizona Demographics Mapping Portal

## SEEING RESULTS

MAG has already noted an increase in projects chosen from smaller agencies and more rural areas. In the past these projects did not compete well with larger projects, but with the adjusted application, more of these areas are being approved for funding because they may have shown more equity impact.

Traditionally, safety funding prioritization programs are more focused on benefit/cost, but the changes to the application prompted additional thought by both applicants and evaluators as they considered the impact to regional equity.

In a notable example of how this is beginning to change how local agencies think about equity, an application was received for correcting a negative offset improvement at a left turn. As the local agency completed their application, they investigated the equity elements in the project area and found the number of persons that were 65 years or older was well above the regional average. With this information, the applicant was able to make a connection to research demonstrating that a person's perception-reaction time increases with age. Their application discussed how a positive offset for this older population would create more detection and reaction time.

Although in this example the connection between safety improvements and an older population was made in this case after the project was identified, rather than as a proactive tool, this example indicates increased awareness about how equity can be considered throughout projects. MAG expects that future applications and tools will encourage projects to identify areas where safety and equity need to be addressed, proactively, more often.

## WHAT'S NEXT? PUTTING DATA TO WORK

The successful implementation of the equity measures in the RSP has encouraged other programs at MAG to reconsider their own evaluation processes in search of opportunities to include equity in their project prioritization tools.

Herrera emphasizes that MAG continues to look forward and expects to use the safety recommendations from Roadway Safety Assessments (RSAs), Safe Routes to School studies and Traffic Signalization Program projects to “implement safety improvements proactively and promote the inclusion of safety elements in all transportation projects through a safe system lens.” Part of implementing this vision will include developing a toolkit and user interface called the Regional Priority Safety Implementation Toolkit (RP-SIT), which will be underway in the next few months.

Several programs have provided invaluable data to fuel their progress, including the:

- Roadway Safety Assessment program. Each RSA analyzes and reports on possible road safety issues and identifies opportunities for safety improvement.
- Traffic Signal Optimization Program projects.
- Local Agency Safety Studies providing data from local agencies.
- Safe Routes to School giving visibility into data coming in from schools annually.

As a result of these and other programs, MAG currently has a catalogue of over 8,500 safety recommendations, associated roadway and infrastructure characteristics and readily available sociodemographic data for each location subject in the above-noted MAG studies. The RP-SIT will incorporate the location characteristics and safety recommendations to provide a database that can be queried to assess inclusion of safety elements, underserved populations and other quantitative data that can be included in all project types regardless of funding source. The RP-SIT will also provide guidance, case studies and communication materials that can be used to better inform decision-making during the project planning process.

With the future in mind, Herrera suggests that MAG will use this tool to “provide resources to member agencies to assist:

- 1) in making safety elements part of transportation planning conversations;
- 2) in the adoption of the SSA in all transportation-related projects in agencies region-wide;
- 3) in developing a regional culture of safety and
- 4) in defining safety priorities for the region.”