



Performance Based Planning: MD SHA Innovative Approach

Maryland State Highway Administration

Performance Based Planning

MDOT Mission Statement

Customer-driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions in order to connect our customers to life's opportunities.

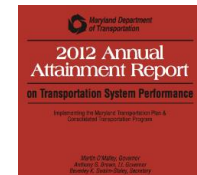
SHA Mission Statement

Provide a safe, well-maintained, reliable highway system that enables mobility choices for all customers and supports Maryland's communities, economy and environment.

SHA Vision

Provide a world-class highway system.

Support MDOT and the Administration's broader initiatives, policies and goals.



SHA Business Plan 2012-2015

Key Performance Areas (KPA)

- Highway Safety
- Mobility & Economy
- System Preservation & Maintenance
- Managing our Agency
- Environmental Compliance & Stewardship
- Customer Communications, Service & Satisfaction

Focus on **OUTCOMES**

Objectives and Strategies are

- **S**pecific
- **M**easurable
- **A**chievable/Attainable
- **R**esults oriented
- **T**ime-bound

Agency wide and office / district level plans are aligned

Dashboards

- Tell a Story
- Increase Transparency
- Increase Accountability
- Showcase SHA's performance-based approach
 - More efficient investments

Performance Based Planning



Dashboard Features

- Review Performance Metrics
 - Charts and Tables - Aggregated and differentiated data
- Mapping
 - Quickly identify problem areas
 - View mitigation strategies with hotspots
- Filtering
 - Location, Year, Time of Day, Attributes
- Metadata for charts
- Definitions for Technical Terms

Mobility Dashboard

- Based on MDOT SHA's Annual Mobility Report
 - Document and Benchmark Traffic Operations
 - Highlight SHA's Mitigation Strategies
- Mobility Performance Metrics:
 - Congestion (TTI)
 - Reliability (PTI)
 - Volume (AADT & VMT)
- Mobility Data Source:
 - INRIX and MDOT Traffic Counts

Mobility Dashboard


Mobility and Economy Dashboard

Welcome to the Mobility and Economy Dashboard for the State of Maryland!

The Maryland Department of Transportation State Highway Administration's (SHA) mobility related efforts are highlighted in this dashboard based on data from the Maryland State Highway Mobility Report. Mobility is a key performance area (KPA) at SHA which aims to "Support Maryland Economy and Communities with Reliable Movement of People and Goods". This dashboard aims to identify successes, challenges, and strategies being utilized to improve the transportation services SHA delivers to Marylanders and the traveling public. This effort aims to drive investment related decisions and make the best use of transportation revenues using data driven performance based approaches.

I would like to explore:

Where?

[View](#)

Disclaimer: This application is intended to serve as a public resource for general reference. The data is preliminary and subject to change. SHA provides this information without any warranty of any kind either expressed or implied.

What are the Mobility Trends in Maryland?

Maryland's highway system handles over 56 Billion vehicle miles of travel on an annual basis. SHA has developed comprehensive performance measurement systems. In 2015:

Congestion Costs ↓ 21%	System Reliability	Vehicle Miles Traveled ↑ 1.6%
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[View What's Happening](#)

What is SHA doing to address Mobility Challenges?

SHA implements various projects, programs and policies to enhance mobility on its facilities. Our approach includes:

CHART System	MDTA Toll Lanes	Freight Policies	

What is the outcome of SHA's Mobility Initiatives?

The mobility solutions implemented by SHA projects, programs and policies result in user cost savings for automobile and truck travel. In 2015, annual user savings included:

\$1,360 Mil.	+	\$4 Mil.	+	\$93 Mil.	=	\$1.46 Billion
CHART		Capital Improvements		Signal Systems & Multimodal Strategies		Total Savings

[View What SHA is Doing](#)

- What is Happening?
- What is SHA Doing?
- What Has Changed Over Time?



Demonstration

Mobility Dashboard

Asset Management at SHA

- Asset Management is an opportunity for SHA to:
 - Get the biggest bang for our 💰 ;
 - Prolong asset life for fiscal benefit (life-cycle cost);
 - Compare across assets;
 - Optimize resource allocation and utilization;
 - Enhance credibility of and accountability in SHA.

Asset Management Dashboard

- **Bridge Condition:**

- Percent of bridges in Fair or Better Condition vs. Structurally Deficient

*The **Structurally Deficient** rating, which is a result of an in-depth hands-on bridge inspection, is an early warning sign for engineers to use to prioritize funding and to initiate repairs or to begin the process to rehabilitate or replace the bridge. **This does not mean the bridge is unsafe.***

- **Bridge Projects:**

- Status of Structurally Deficient Bridges
- Maintenance activities on other bridges
- Bridge Trends – Annual Expenditures vs. Count of Structurally Deficient bridges over time

Asset Management Dashboard

- **Pavement Condition**

- Distribution of Pavement Overall Condition
 - Poor
 - Mediocre
 - Fair
 - Good
 - Very Good
 - Excellent
- Distribution by Location and by Year

Demonstration

Asset Management Dashboard

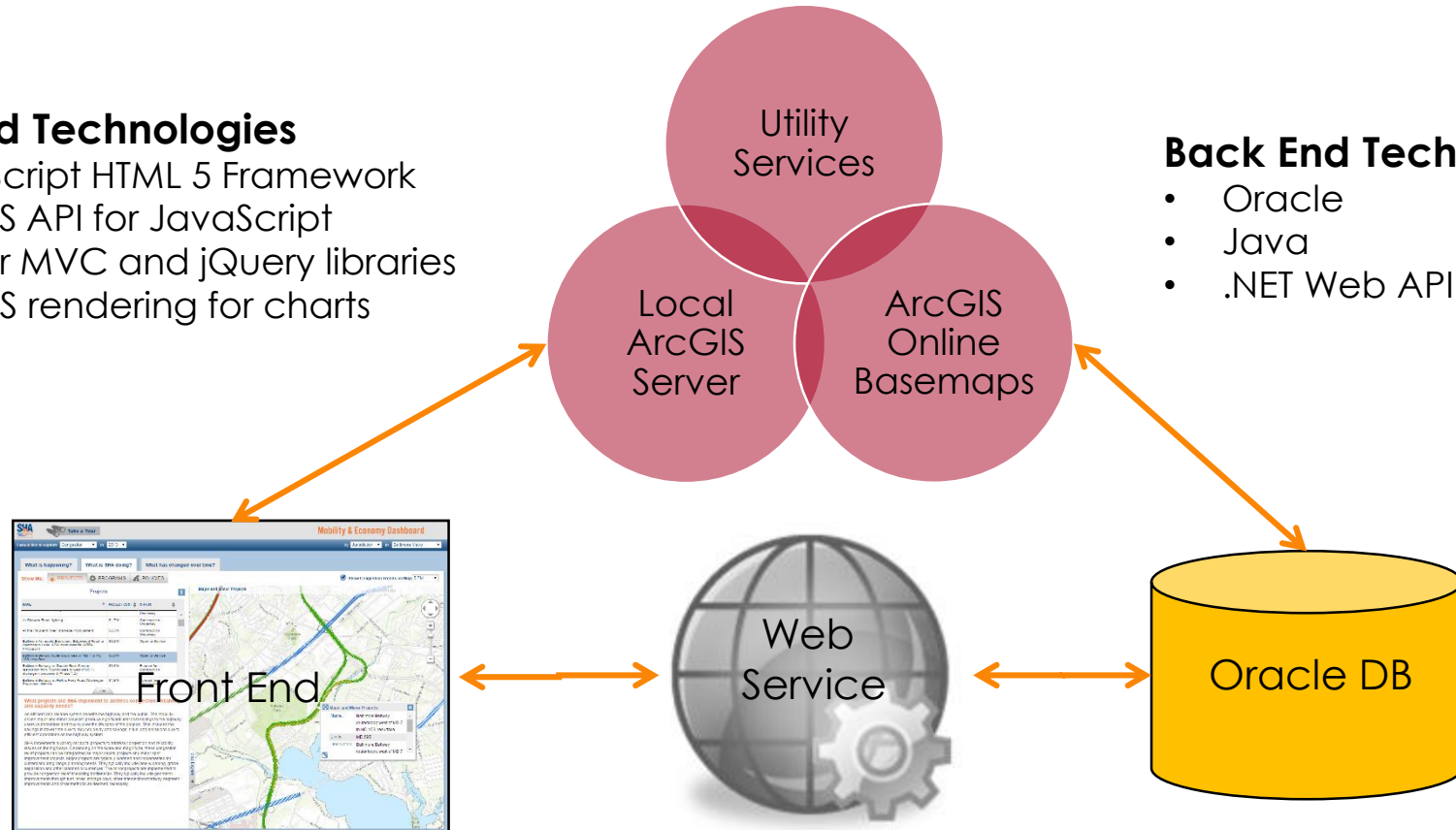
System Architecture

Front End Technologies

- JavaScript HTML 5 Framework
- ArcGIS API for JavaScript
- Ember MVC and jQuery libraries
- D3 – JS rendering for charts
- SCSS

Back End Technologies

- Oracle
- Java
- .NET Web API



Future Plans

- Develop additional KPA Dashboards
 - Performance Based Management Portal
 - Maryland's Freight Story
- Mobility and Economy Dashboard Enhancements
 - Incident Management data
 - Signal Systems data
 - Traveler Information data
 - Arterial data
 - Map TMCs to SHA's new LRS
- Asset Management Dashboard Enhancements
 - Pavement projects in Asset Management Dashboard
 - Look into adding other assets

Questions?

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