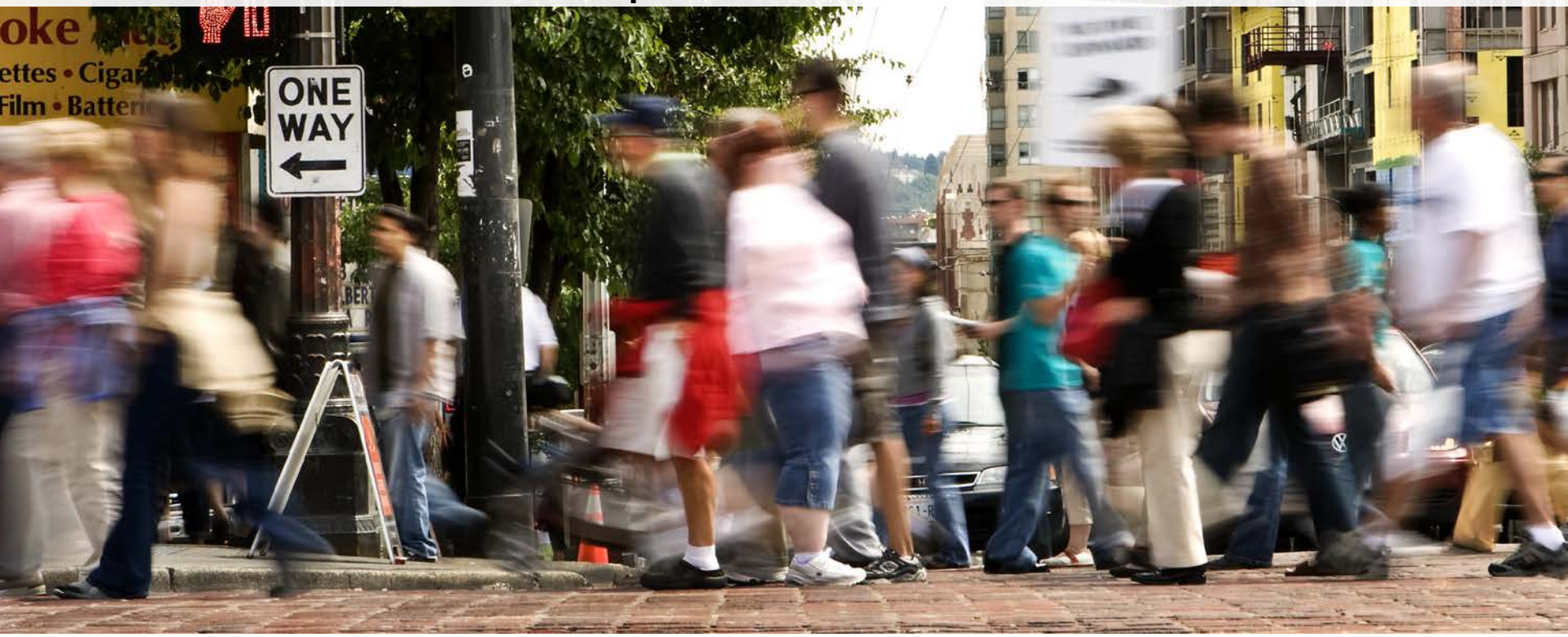
Development of Two Unique & Publicly Accessible Performance Dashboards at the Seattle Department of Transportation (SDOT)



11th National Conference on Transportation Asset Management

Terry Martin, P.E.

July 12th, 2016

SDOT
Seattle Department of Transportation

Presentation Agenda

- Background and Introduction to Seattle and SDOT
- Context for Emerging Emphasis on Performance Reporting in Seattle
- Performance Seattle dashboard
- Capital Projects Dashboard
- …and to provide more value for your money (!), a 3rd emerging dashboard: SDOT's Move Seattle levy tracking dashboard

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Background and Introduction to Seattle and SDOT

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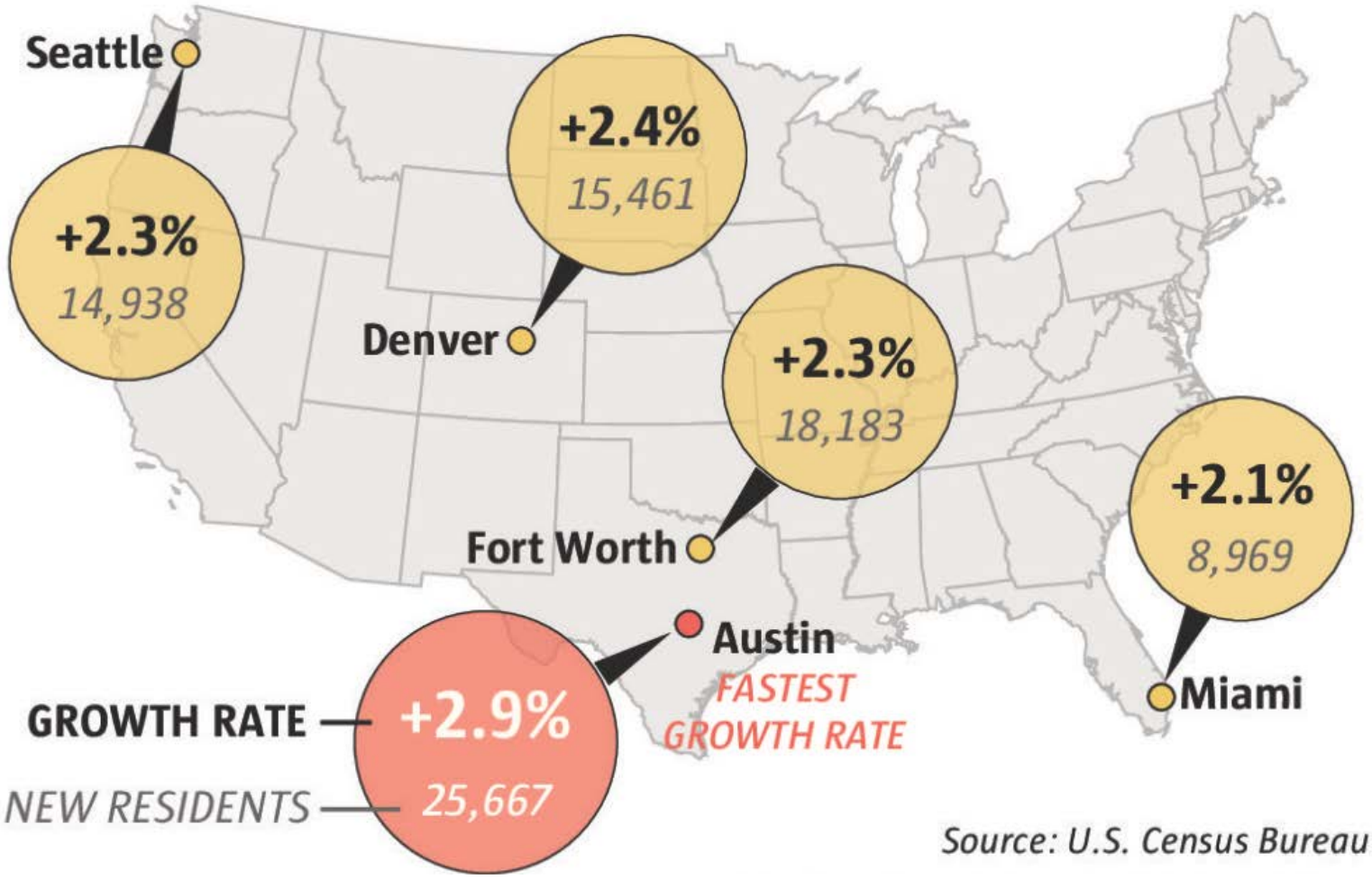
Since 2012 Seattle has been one of the 3 fastest growing large cities in the U.S…



Context for Emerging Emphasis on Performance Reporting in Seattle

- Increasing public expectation of government transparency and efficiency
- City audit recommendation to enhance performance-based planning
- Heightened emphasis on Asset Management at SDOT starting in late 2013
- New data-driven mayor elected in 2013
- Shift to council districts in 2015 (geography-based reps want to see results)
- Emerging and highly interactive software tools
- Emerging national MAP-21 regulations emphasizing links to performance
- Increased emphasis on accountability leading up to a levy vote last November

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The First Dashboard - "Performance Seattle"

- Early development in 2014 from within the Seattle DOT Asset Management group
- Many one on one meetings with subject matter experts to select the "right" measures

At first it looked like this…

SDOT Performance Dashboard

Policy goal/Performance Measure	Previous Reporting Period	Current Reporting Period	Goal	Goal Met	Trend	Desired Trend
A Safe City						
Annual number of **traffic fatalities** by all modes of travel (Annual measure: Calendar years 2011 & 2012) (5-year Rolling Trend)	18.0	21.0	*5% reduction every 3 years?*	○		⇩
Annual number of **lost work days due to injury** per 100 SDOT employees (Annual measure: Calendar years 2012 & 2013)	168.5	124.5	*5% reduction every 2 years?*	✓		⇩
A Vibrant City						
Pedestrian volumes (avg. quarterly aggregate of evening peak hour counts at 50 locations) (Annual measure: 2012 & 2013)	31,813	32,617	*5% increase per biennium?*	✓		⇧
Bicycle volumes (avg. quarterly aggregate of evening peak hour counts at 50 locations) (Annual measure: 2012 & 2013)	4,394	6,336	*X% increase per biennium?*	✓		⇧
Percentage of planned annual **Bridging-the-Gap** programmatic goals met or exceeded (Annual measure: 2012 & 2013) (5-year Rolling Trend)	99.1%	98.6%	90.0%	✓		⇧
An Affordable City						
Percentage of **arterial pavement** in fair or better condition (PCI> 55) (Measured trienially: 2010 & 2013)	74%		*80% by 20XX?*		*Waiting for results of 2013 pavement condition assessment data*	⇧
Percentage of **arterial pavement** in very poor or failed condition (PCI<40) (Measured trienially: 2010 & 2013)	12.7%		*2.0% by 20XX?*		*Waiting for results of 2013 pavement condition assessment data*	⇩
Number of claims filed annually due to **potholes** (Annual measure: 2011 & 2012) (5-Year Rolling Trend)	211.6	250.4	*200?*	○	*Waiting for results of 2013 pavement condition assessment data*	⇩
Percentage of **weight-restricted bridges** (Annual measure: 2011 & 2012)	6.8%	6.8%	5.0%	✗		⇩
An Interconnected City						
Citywide **bus ridership** (avg. weekly boardings) (Annual measure: 2012 & 2013)	303,000	307,000	*3% annual increase?*	○		⇧
Number of **streetcar** riders per servce hour (Annual measure: 2012 & 2013)	64	64	65			⇧
Percentage of contracts issued to **WMBE** firms for consulting services (Annual measure: 2012 & 2013)	17.2%	15.3%	10.0%	✓		⇧
A City That Fosters and Delivers Innovation						
Citizen satisfaction with transportation services (Annual measure (?): 2014 & 2015)	N/A	???	TBD		**Placeholder**	⇧

"Safe" KPIs | "Vibrant" KPIs | "Affordable" KPIs | "Interconnected" KPIs | "Innovation" KPIs | Performance Dashboard | Statistics

…but it evolved into this

The First Dashboard -Performance Seattle
Keys to Success

1) Outcome-based measures
2) Emphasizes high-level items important to citizens
3) Inexpensive to launch (used existing city contract with software vendor)
4) Pivotal partnering with City IT department
5) Big early wins (successful city council presentation, executive buy-in, local news coverage)
6) Streamlined "care and feeding" of site
7) SDOT site has evolved into a city-wide performance dashboard including 26 departments

(https://performance.seattle.gov/)

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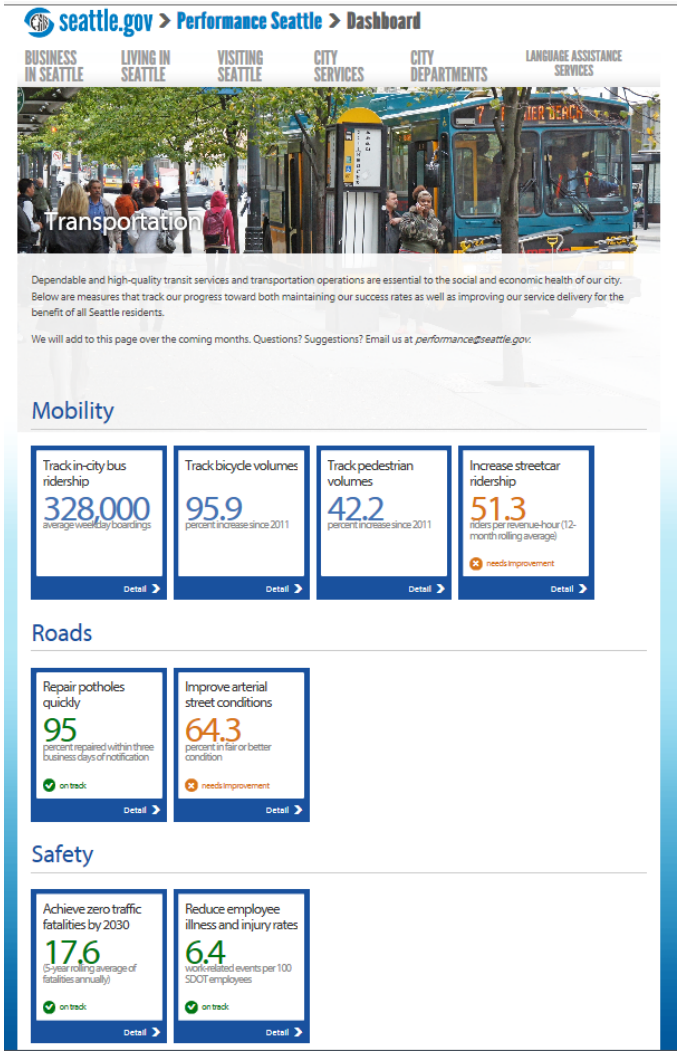
Performance Seattle

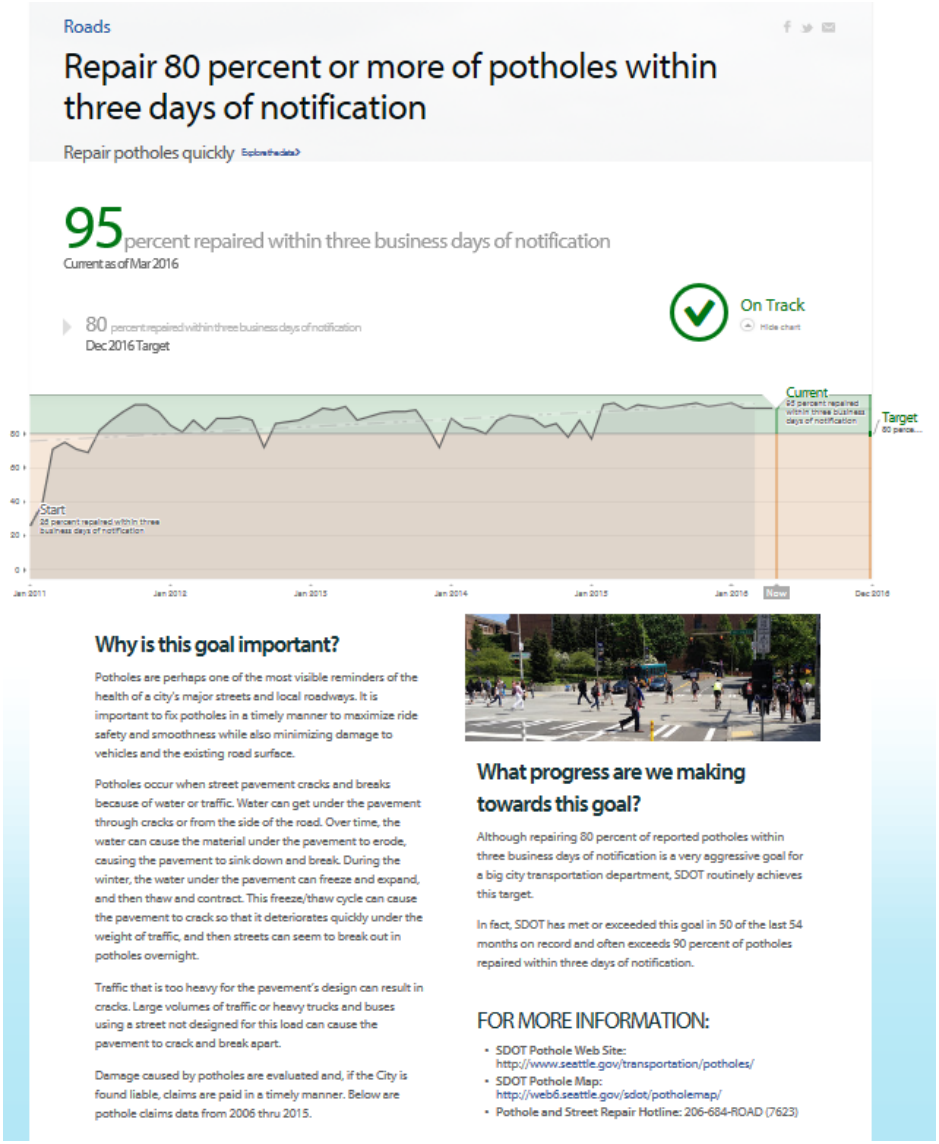
City Wide Landing Page

Performance Seattle



Seattle DOT Landing Page

Performance Seattle



Roads

Repair 80 percent or more of potholes within three days of notification

Repair potholes quickly

95 percent repaired within three business days of notification

Current as of Mar 2016

On Track

80 percent repaired within three business days of notification

Dec 2016 Target

Current

Target

Start

Jan 2011 Jan 2012 Jan 2013 Jan 2014 Jan 2015 Jan 2016 Now Dec 2016

Why is this goal important?

Potholes are perhaps one of the most visible reminders of the health of a city's major streets and local roadways. It is important to fix potholes in a timely manner to maximize ride safety and smoothness while also minimizing damage to vehicles and the existing road surface.

Potholes occur when street pavement cracks and breaks because of water or traffic. Water can get under the pavement through cracks or from the side of the road. Over time, the water can cause the material under the pavement to erode, causing the pavement to sink down and break. During the winter, the water under the pavement can freeze and expand, and then thaw and contract. This freeze/thaw cycle can cause the pavement to crack so that it deteriorates quickly under the weight of traffic, and then streets can seem to break out in potholes overnight.

Traffic that is too heavy for the pavement's design can result in cracks. Large volumes of traffic or heavy trucks and buses using a street not designed for this load can cause the pavement to crack and break apart.

Damage caused by potholes are evaluated and, if the City is found liable, claims are paid in a timely manner. Below are pothole claims data from 2006 thru 2015.

What progress are we making towards this goal?

Although repairing 80 percent of reported potholes within three business days of notification is a very aggressive goal for a big city transportation department, SDOT routinely achieves this target.

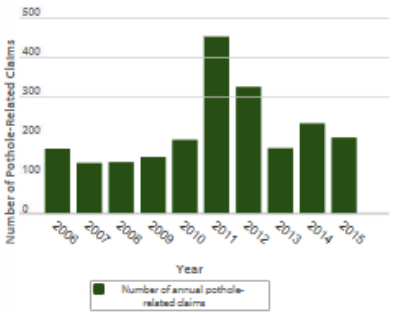
In fact, SDOT has met or exceeded this goal in 50 of the last 54 months on record and often exceeds 90 percent of potholes repaired within three days of notification.

FOR MORE INFORMATION:

- SDOT Pothole Web Site: http://www.seattle.gov/transportation/potholes/
- SDOT Pothole Map: http://web6.seattle.gov/sdot/potholemap/
- Pothole and Street Repair Hotline: 206-684-ROAD (7623)

Specific Measures - Pothole Repair Efficiency

Performance Seattle

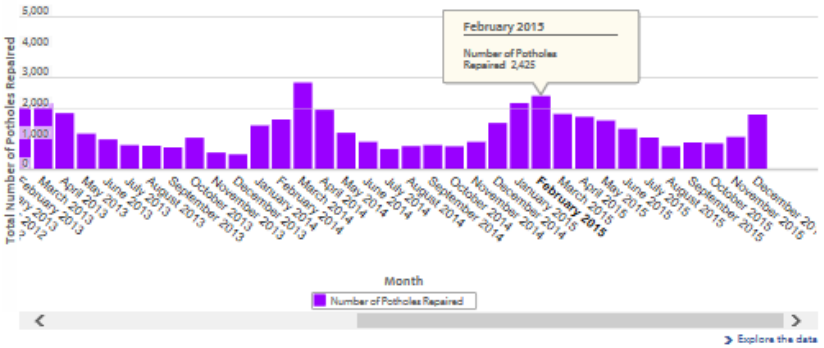


The chart above shows the trend in pothole-related claims against the City of Seattle.

How do we measure this goal?

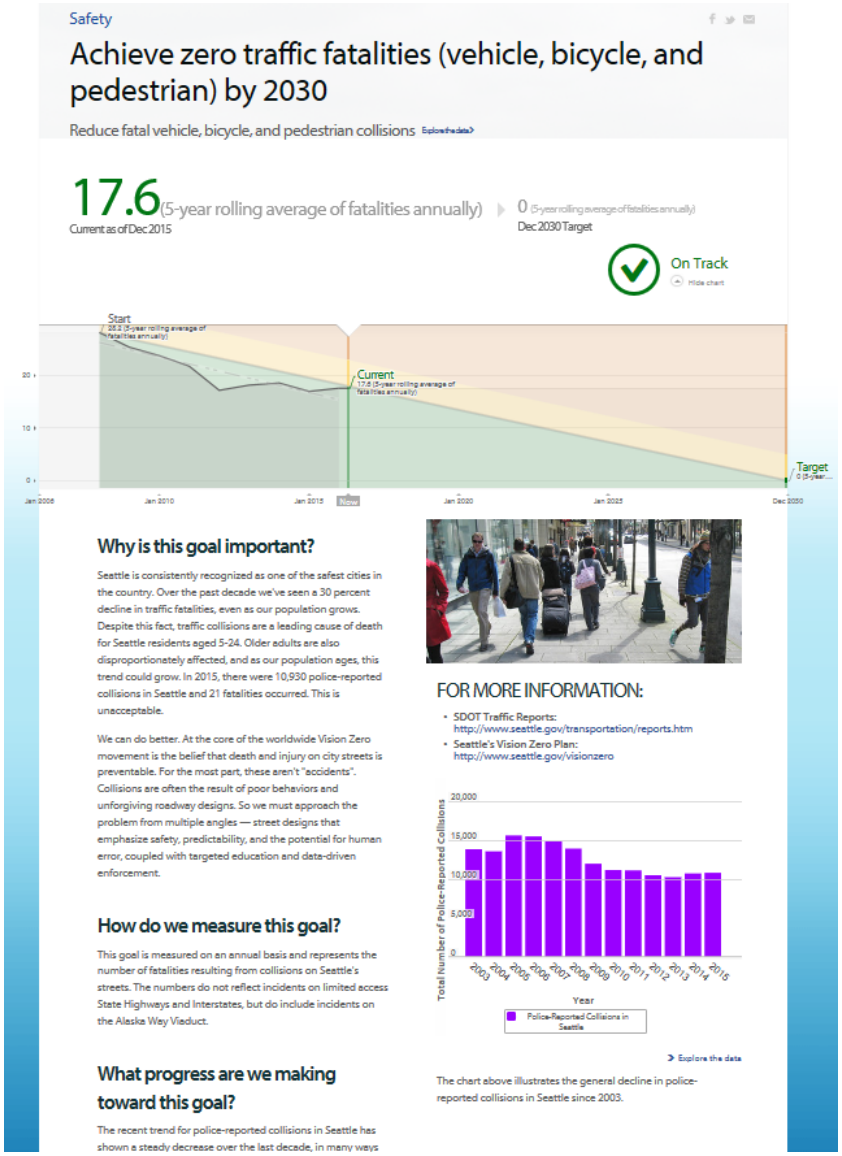
SDOT has repaired an average of 1,644 potholes per month since January 2011. As can be seen from the chart below, however, the work tends to be very seasonal with more pothole repair work orders being filed in late winter and early spring than during other times of the year. The peak month for pothole repairs each year for the past four years has been either February or March, with March 2011 being the month with the highest total number of pothole repairs (4,849) during this period.

SDOT uses a work management database to track when a request is received and how long it takes SDOT crews to repair the pothole. Data are updated on a quarterly basis.



Specific Measures - Pothole Repair Efficiency (Continued)

Performance Seattle



Safety

Achieve zero traffic fatalities (vehicle, bicycle, and pedestrian) by 2030

Reduce fatal vehicle, bicycle, and pedestrian collisions

17.6 (5-year rolling average of fatalities annually)
Current as of Dec 2015

0 (5-year rolling average of fatalities annually)
Dec 2030 Target

On Track

Start
Current
Target
Now

Why is this goal important?

Seattle is consistently recognized as one of the safest cities in the country. Over the past decade we've seen a 30 percent decline in traffic fatalities, even as our population grows. Despite this fact, traffic collisions are a leading cause of death for Seattle residents aged 5-24. Older adults are also disproportionately affected, and as our population ages, this trend could grow. In 2015, there were 10,930 police-reported collisions in Seattle and 21 fatalities occurred. This is unacceptable.

We can do better. At the core of the worldwide Vision Zero movement is the belief that death and injury on city streets is preventable. For the most part, these aren't "accidents". Collisions are often the result of poor behaviors and unforgiving roadway designs. So we must approach the problem from multiple angles — street designs that emphasize safety, predictability, and the potential for human error, coupled with targeted education and data-driven enforcement.

How do we measure this goal?

This goal is measured on an annual basis and represents the number of fatalities resulting from collisions on Seattle's streets. The numbers do not reflect incidents on limited access State Highways and Interstates, but do include incidents on the Alaska Way Viaduct.

What progress are we making toward this goal?

The recent trend for police-reported collisions in Seattle has shown a steady decrease over the last decade, in many ways

FOR MORE INFORMATION:

- SDOT Traffic Reports: http://www.seattle.gov/transportation/reports.htm
- Seattle's Vision Zero Plan: http://www.seattle.gov/visionzero

Total Number of Police-Reported Collisions

Year

Police-Reported Collisions in Seattle

Explore the data

The chart above illustrates the general decline in police-reported collisions in Seattle since 2003.

Specific Measures - Achieve Zero Traffic Fatalities by 2030

The 2nd Dashboard -Capital Projects Dashboard Keys to Success

1) Excellent existing project controls system for tracking schedule and budget of projects
2) Outstanding track record of delivering projects on schedule and on budget
3) Frequent communication with software vendor
4) Aggressive but achievable deadlines for development
5) Intuitive nature of product popular with citizens and government officials

(https://capitalprojects.seattle.gov/#/)

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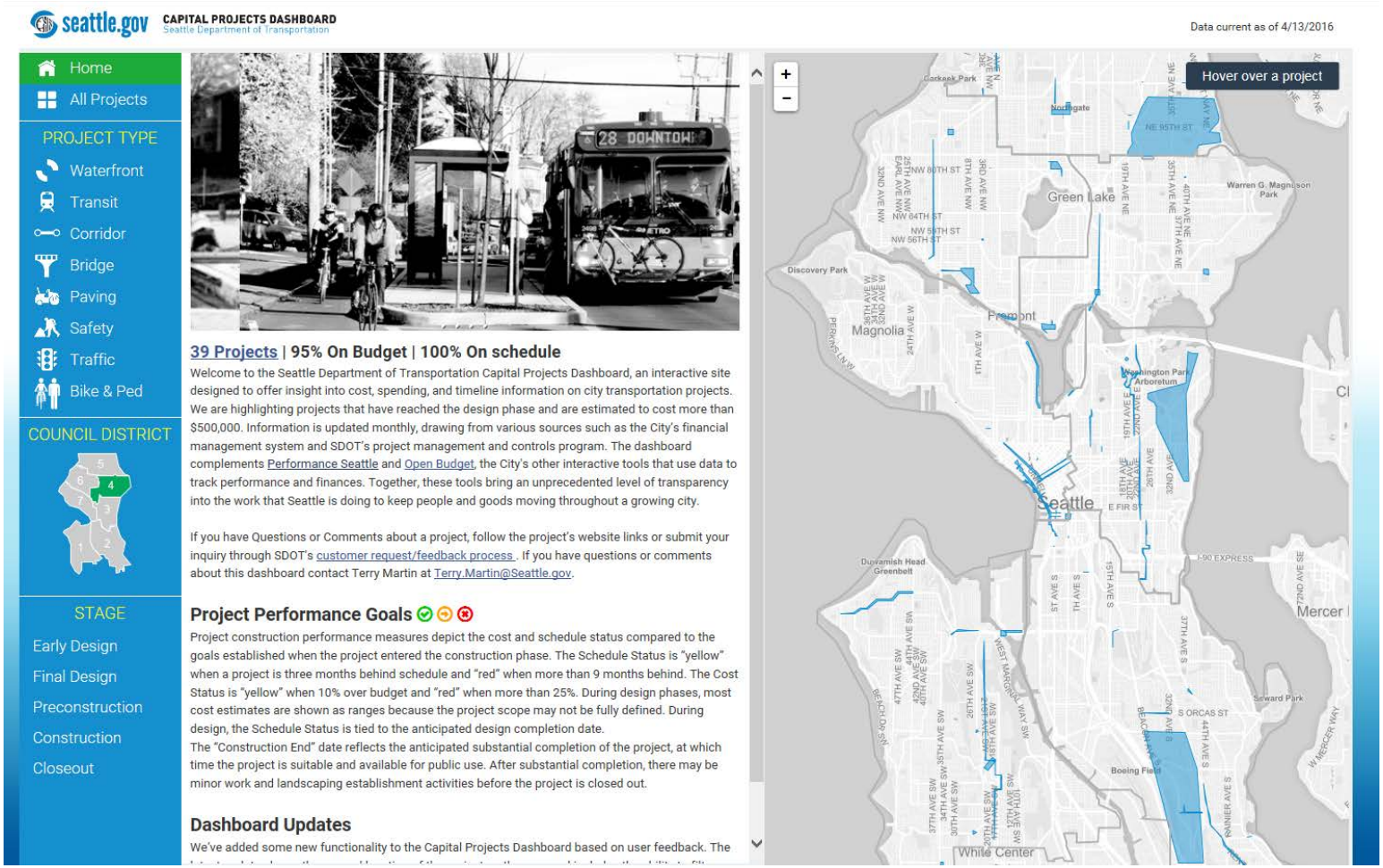
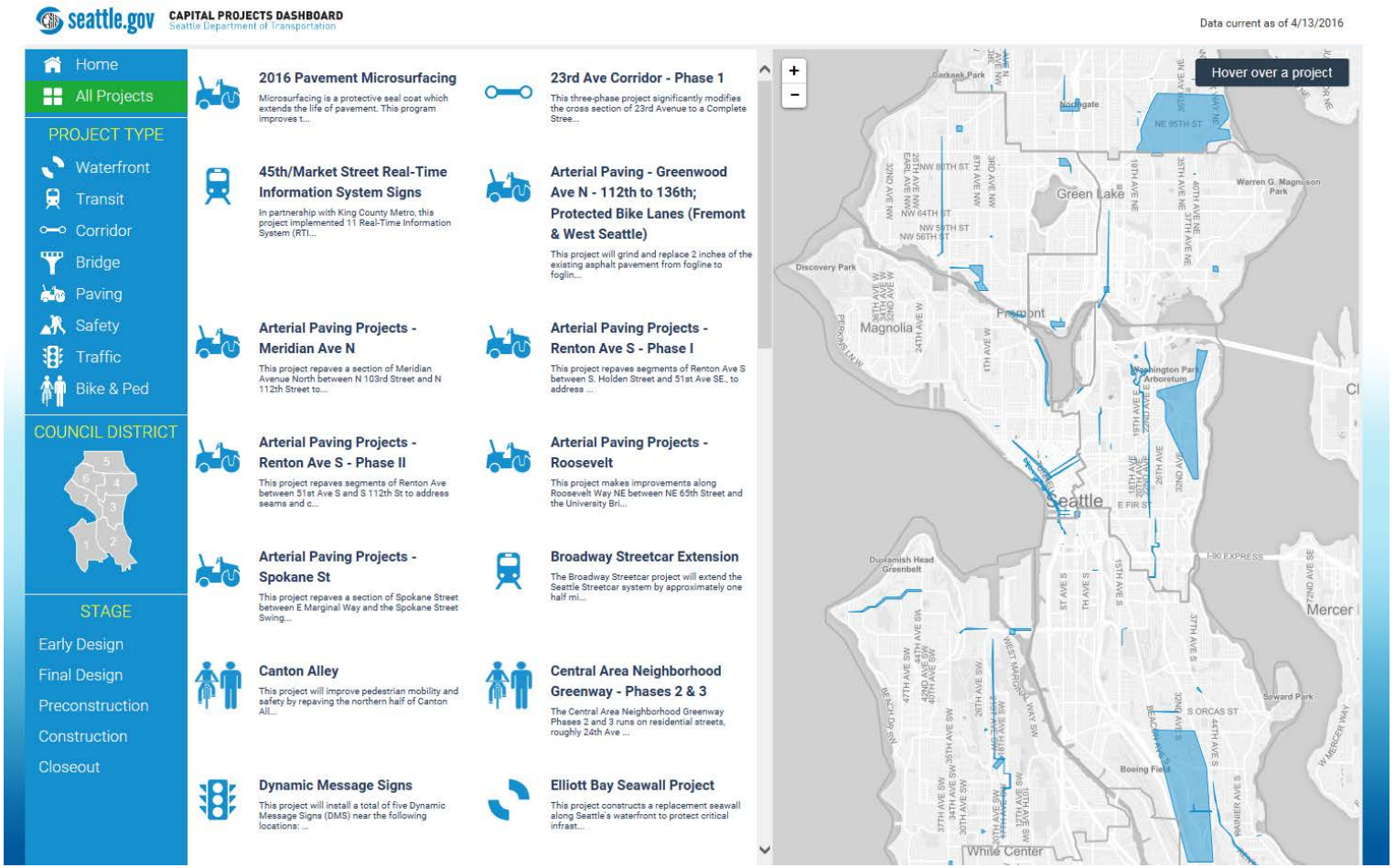
Capital Projects Dashboard –Home Page



Landing Page – can filter by project type, council district location, or project stage

Capital Projects Dashboard - Project List



"All Projects" Page – note differing icons based on project type

Capital Project Dashboard - Project Detail

23rd Ave Corridor - Phase 1

Project Website

Description

This three-phase project significantly modifies the cross section of 23rd Avenue to a Complete Street and improves safety and mobility for people who drive, walk, bike and take transit. Phase 1 rebuilds the roadway between E John Street to S Jackson Street from a four-lane street to a three-lane street — one lane in each direction with a center-turn lane.

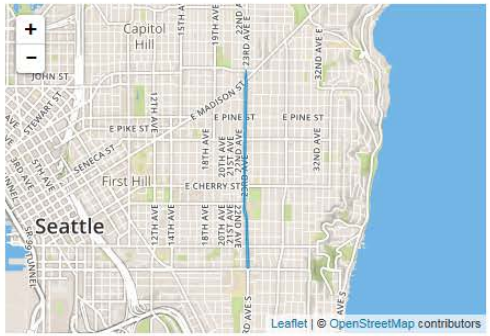
Cost Estimate	Spent
$34.9 Million	$17.4 Million
Design Completion	**Construction Completion**
Jan 2015	Mar 2017

Current Stage

Early Design | Final Design | Preconstruction | **Construction** | Closeout

The Cost Estimate is on budget. The cost estimate is more than the original cost estimate of $31.9M due to an approved change to scope and project funding.

Construction Completion is on schedule.



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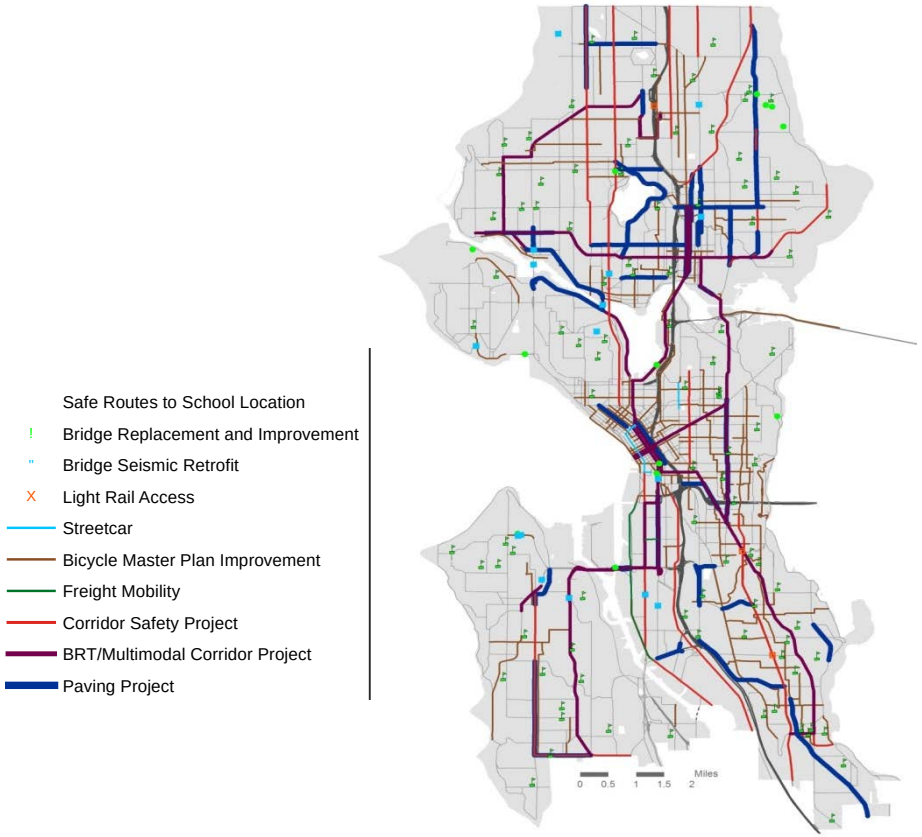
"Project Detail" Page – cost to date, project estimate, schedule info, progress bar, and "red, yellow, green" for cost and schedule status

SDOT's Latest Dashboard – "Move Seattle" Levy Accomplishment Tracking Dashboard



- Initiated by the need to transparently track levy deliverables over time.

(https://moveseattle.gov/)

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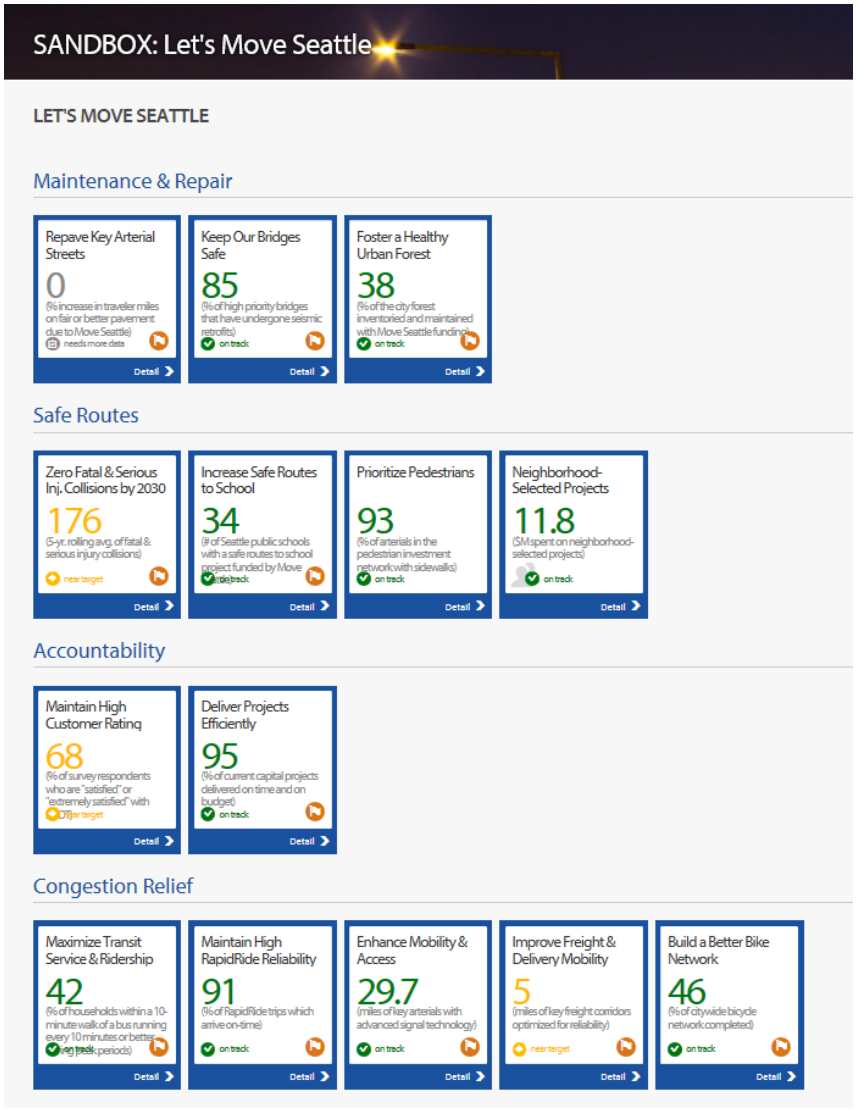
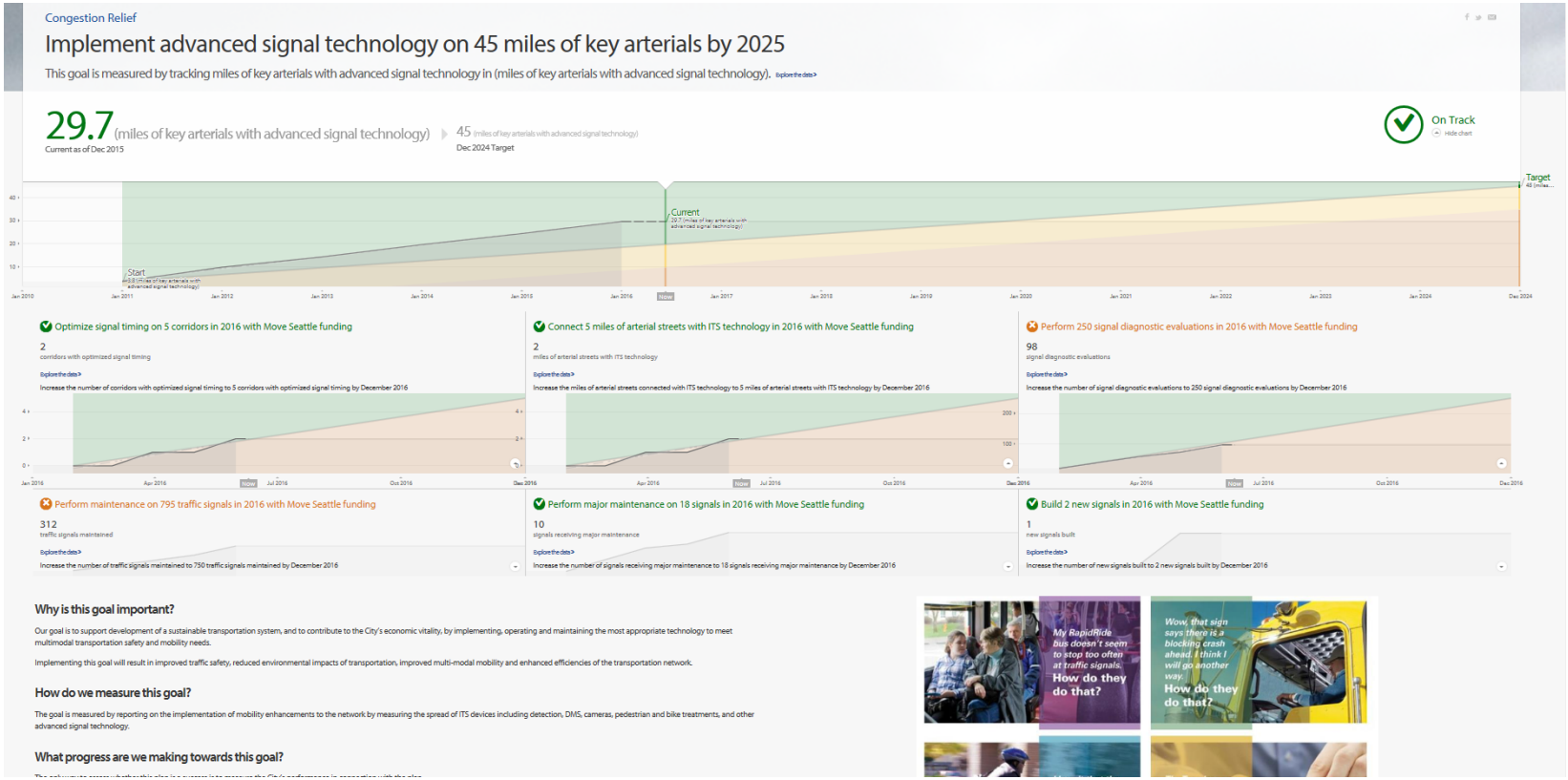
Move Seattle Dashboard



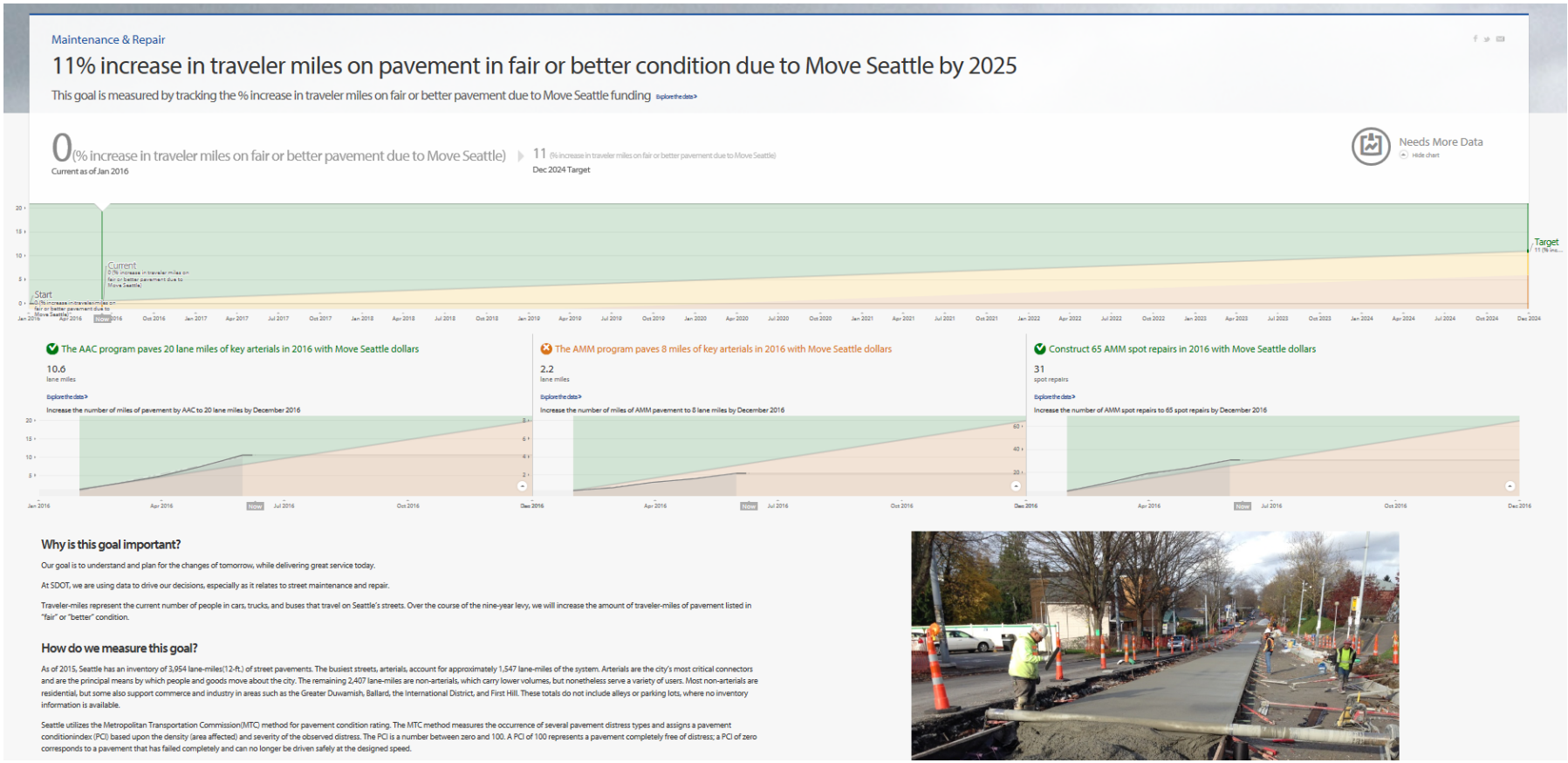
Move Seattle Dashboard Landing Page

Move Seattle Dashboard



Specific Measures – Implement Advanced Signal Technology

Move Seattle Dashboard



Specific Measures – Increase the traveler experience on arterial roads

Questions?

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www.seattle.gov/transportation




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