



**SMART
SCALE**

DASHBOARD

WEBINAR TO LOCALITIES

March 2, 2017

AGENDA



- Goals and Objectives
- Business Drivers
- VDOT Dashboard Assessment
- Business Rule Changes
- Application of Business Rules
- Demo of Smart Scale Web-App
- What This Means for You

PROJECT GOALS AND OBJECTIVES



Goal: Deliver a Dashboard that clearly shows the progress of Smart Scale Projects.

Objectives:

Develop Smart Scale Tracking Strategy:

- Develop business rules for measuring implementation of Smart Scale projects including measurement of on-time and on-budget performance
- Develop method of providing predictive indicators for project performance
- Track overall program performance as well as individual project performance

Develop Smart Scale Dashboard Visualization Tool

- Develop dashboard for Smart Scale projects and program overall
- Dashboard is intuitive and accessible to a wide audience including leaders in government and the public

HOW THIS WILL DRIVE OUR BUSINESS



Drivers (Why):

- Fully funded program is a new paradigm in project development and delivery
- Emphasis on budgets and schedules (versus estimates and durations)
- Project delivery risk mitigation through use of “Yellow” indicators to flag projects early
- Continue transparency to maintain trust of public and legislature
- Drive for Early Start/Early Finish

VDOT DASHBOARD ASSESSMENT



Strengths of VDOT Dashboard

- Provides broad scale transparency, for wide audience
- Graphics and metrics updated daily
- Data Rich

Smart Scale Dashboard Needs

- Predictive/leading indicators
 - More use of “Yellow” to flag projects at risk
 - Report on more milestones than just “Advertisement” and “Contract Acceptance”
- Fully funded projects is a paradigm shift requiring new metrics
- Mobile content/ Mobile first
- Independent Smart Scale program performance



BUSINESS RULE CHANGES



- Project Development
 - **No longer just tracking advertisement date**
 - Using eight key milestones to track on-time status
 - Providing early warning if milestones are being missed
 - Tracking award activity
 - **Schedule is baselined (or fixed) for the duration of the project once scoping is complete**
 - **More Yellow**
 - On-Time status will turn yellow in advance of the due date, as a reminder that early-start/early-finish is the goal
 - Projects recover to Green with each on-time or early milestone completion
 - Yellow is not “bad”, it is a leading indicator for schedule risk
 - **Project Estimates are compared to the CTB Approved Budget**
 - Red, Yellow, Green ranges updated to reflect Smart Scale Program policies
 - Estimates must be updated annually
- Project Delivery
 - **No changes yet, but we will be reviewing these rules this spring.**

PROJECT DEVELOPMENT ON-TIME



Business Rules

Green: Indicates that the project has completed its most recent milestone on-time or early, and that there is no current risk to meeting the next milestone.

Yellow: Indicates that the project has missed its last milestone completion date by a small number of days, or may be at risk of missing its next milestone completion date.

Red: Indicates that the project has missed its last milestone completion date by a significant amount.

Projects in current Yellow or Red status can become Green again if the schedule recovers by finishing subsequent milestones on-time.

PROJECT DEVELOPMENT ON-TIME



| Activity Description | Activity Code | Early Finish | | Activity Baseline End Date | Late Finish | |
|--|---------------|--------------|----------|----------------------------|-------------|----------|
| | | >30 days | ≤30 days | | ≤12 days | >12 days |
| Start Development (Authorize PE) | 12 | >30 days | ≤30 days | | ≤12 days | >12 days |
| Determine Requirements (Scope Project) | 22 | >30 days | ≤30 days | | ≤12 days | >12 days |
| Engage Public (Willingness Posted Date, Adopt Location/Design) | 47, 49 | >30 days | ≤30 days | | ≤12 days | >12 days |
| Start Purchasing Right-of Way (Authorize R/W & UT Funds) | 52 | >30 days | ≤30 days | | ≤12 days | >12 days |
| Complete Purchasing Right-of-Way (Acquire Right of Way) | 69 | >60 days | ≤60 days | | ≤12 days | >12 days |
| Obtain Permits | 70 | >60 days | ≤60 days | | ≤12 days | >12 days |
| Solicit Bids (Advertise Project) | 80 | >60 days | ≤60 days | | ≤15 days | >15 days |
| Start Delivery (Award Contract) | 84 | >30 days | ≤30 days | | >0 days | |

Addition of Local Agreement (10) and Utility Relocation (67U) to occur in phase 2.

BUSINESS RULE DEMONSTRATION DEVELOPMENT ON-TIME



- Project Sample A
 - Project Score: Yellow
 - Previous Activity finished ahead of schedule, however
 - Current activity is within 60 days of the Baseline end date

| Code | Activity | Baseline End Date | Actual End Date |
|------|---|-------------------|-----------------|
| 12 | Authorize Preliminary Engineering | 4/1/2011 | 1/4/2011 |
| 22 | Scope Project | 10/31/2012 | 10/31/2012 |
| 49 | Adopt Location/Design | 3/31/2014 | 3/31/2014 |
| 52 | Authorize R/W & UT Funds | 9/30/2015 | 9/23/2015 |
| 70 | Obtain Environmental Permits | 3/9/2017 | |
| 69 | Acquire Right of Way | 3/30/2017 | |
| 80 | Advertise Project/Begin State Forces/Hired Equipment Construction | 5/9/2017 | |
| 84 | Award Contract | 8/18/2017 | |

On Time Status

A key milestone is near and has not been completed.

BUSINESS RULE DEMONSTRATION DEVELOPMENT ON-TIME



- Project Sample B
 - Project Score: Yellow
 - Previous Activity behind schedule by 2 days
 - Project will remain Yellow until next activity is completed

| Code | Activity | Baseline End Date | Actual End Date |
|------|---|-------------------|-----------------|
| 12 | Authorize Preliminary Engineering | 7/1/2013 | 7/3/2013 |
| 22 | Scope Project | 9/25/2017 | |
| 47 | Approve Willingness | 4/20/2018 | |
| 52 | Authorize R/W & UT Funds | 10/25/2018 | |
| 69 | Acquire Right of Way | 6/5/2019 | |
| 80 | Advertise Project/Begin State Forces/Hired Equipment Construction | 1/14/2020 | |

On Time Status

A key milestone has been missed by up to two weeks.

BUSINESS RULE DEMONSTRATION DEVELOPMENT ON-TIME



- Project Sample C
 - Project Score: Red
 - Activity 12 is Red because it finished 16 days late
 - Activity 22 is yellow because it is scheduled to be completed in the next 30 days
 - Overall project is red

| Code | Activity | Baseline End Date | Actual End Date |
|------|---|-------------------|-----------------|
| 12 | Authorize Preliminary Engineering | 3/31/2014 | 4/16/2014 |
| 22 | Scope Project | 3/25/2017 | |
| 49 | Adopt Location/Design | 5/1/2017 | |
| 52 | Authorize R/W & UT Funds | 7/4/2017 | |
| 69 | Acquire Right of Way | 5/20/2019 | |
| 70 | Obtain Environmental Permits | 6/13/2019 | |
| 80 | Advertise Project/Begin State Forces/Hired Equipment Construction | 7/4/2019 | |
| 84 | Award Contract | 11/14/2019 | |

On Time Status

A key milestone has been missed by more than two weeks.

BUSINESS RULE DEMONSTRATION DEVELOPMENT ON-TIME



- Project Sample D
 - Project Score: Green
 - Multiple activities were late previously
 - However, Award was on schedule
 - This is an example of how a project can recover

| Code | Activity | Baseline End Date | Actual End Date |
|------|---|-------------------|-----------------|
| 12 | Authorize Preliminary Engineering | 3/25/2012 | 12/5/2012 |
| 22 | Scope Project | 12/30/2014 | 3/31/2015 |
| 52 | Authorize R/W & UT Funds | 8/1/2015 | 7/14/2015 |
| 69 | Acquire Right of Way | 12/4/2015 | 11/12/2015 |
| 80 | Advertise Project/Begin State Forces/Hired Equipment Construction | 1/10/2016 | 6/14/2016 |
| 84 | Award Contract | 9/7/2016 | 9/7/2016 |

 **On Time Status**
On schedule.

BUSINESS RULE DEMONSTRATION DEVELOPMENT ON-TIME



- Project Sample E
 - Project Score: Red
 - Multiple activities were late previously
 - Current activity is one days late, so far
 - Project Score is also Red due to missing baseline end dates

| Code | Activity | Baseline End Date | Actual End Date |
|------|---|-------------------|-----------------|
| 12 | Authorize Preliminary Engineering | 12/29/2006 | 1/11/2007 |
| 22 | Scope Project | 12/20/2013 | 7/20/2016 |
| 49 | Adopt Location/Design | 9/30/2014 | 7/26/2016 |
| 47 | Approve Willingness | 10/31/2014 | 7/26/2016 |
| 80 | Advertise Project/Begin State Forces/Hired Equipment Construction | 3/1/2017 | |
| 70 | Obtain Environmental Permits | | 10/28/2016 |
| 84 | Award Contract | | |

 **On Time Status**
Missing critical schedule data.

PROJECT DEVELOPMENT - ON BUDGET

| Approved Budget | Current Estimate | | |
|-----------------------------|------------------|----------------------|------------------------------|
| <\$5 million | ≤ 0 | >0 to <20% | $\geq 20\%$ |
| \$5 million to \$10 million | ≤ 0 | >0 to <\$1M | $\geq \$1M$ |
| >\$10 million | ≤ 0 | >0 to <10% or <\$5M* | $\geq 10\%$ or $\geq \$5M^*$ |

*Whichever is less

If an estimate has not been updated in more than 365 days, Score = Yellow

BUSINESS RULE DEMONSTRATION DEVELOPMENT ON-BUDGET



- Project Example F
 - Project Score: Red
 - CTB Budget: \$43,566,697
 - Current Estimate: \$56,103,000
 - Over budget by \$12,536,303 or 28%

| Approved Budget | Current Estimate | | |
|-----------------------------|------------------|-------------------------|-------------------|
| <\$5 million | ≤0 | >0 to <20% | ≥20% |
| \$5 million to \$10 million | ≤0 | >0 to <\$1M | ≥\$1M |
| >\$10 million | ≤0 | >0 to <10% or <\$5M* | ≥10% or ≥\$5M* |

* Whichever is less

If an estimate has not been updated in more than 365 days, Score = Yellow

● On Budget Status

Over budget by more than 10%, or more than \$5.0M.

BUSINESS RULE DEMONSTRATION DEVELOPMENT ON-BUDGET



- Project Example G
 - Project Score: Yellow
 - CTB Budget: \$6,107,013
 - Current Estimate: \$6,325,951
 - Over budget by \$218,938 or 3.6%

| Approved Budget | Current Estimate | | |
|-----------------------------|------------------|-------------------------|-------------------|
| <\$5 million | ≤0 | >0 to <20% | ≥20% |
| \$5 million to \$10 million | ≤0 | >0 to <\$1M | ≥\$1M |
| >\$10 million | ≤0 | >0 to <10% or <\$5M* | ≥10% or ≥\$5M* |

* Whichever is less
If an estimate has not been updated in more than 365 days, Score = Yellow

 **On Budget Status**
Over budget by up to \$1.0M.

BUSINESS RULE DEMONSTRATION DEVELOPMENT ON-BUDGET



- Project Example H
 - Project Score: Yellow
 - CTB Budget: \$721,625
 - Current Estimate: \$809,485
 - Over budget by \$87,860 or 12.2%

| Approved Budget | Current Estimate | | |
|-----------------------------|------------------|-------------------------|-------------------|
| <\$5 million | ≤0 | >0 to <20% | ≥20% |
| \$5 million to \$10 million | ≤0 | >0 to <\$1M | ≥\$1M |
| >\$10 million | ≤0 | >0 to <10% or <\$5M* | ≥10% or ≥\$5M* |

* Whichever is less

If an estimate has not been updated in more than 365 days, Score = Yellow

 **On Budget Status**

Over budget by up to 20%.

BUSINESS RULE DEMONSTRATION DEVELOPMENT ON-BUDGET



- Project Example I
 - Project Score: Yellow
 - Current estimate has not been updated since August 6, 2015

| Approved Budget | Current Estimate | | |
|-----------------------------|------------------|-------------------------|-------------------|
| <\$5 million | ≤0 | >0 to <20% | ≥20% |
| \$5 million to \$10 million | ≤0 | >0 to <\$1M | ≥\$1M |
| >\$10 million | ≤0 | >0 to <10% or <\$5M* | ≥10% or ≥\$5M* |

* Whichever is less

If an estimate has not been updated in more than 365 days, Score = Yellow

● On Budget Status

Budget information is out-of-date.

VISUALIZATION



<http://dashboard.vasmartscale.org>

(clickable from PowerPoint Presentation Mode)

WHAT THIS MEANS FOR YOU



- Project data, descriptions, schedule, budget, etc. must all be kept current and accurate
- Project manager email and phone (both VDOT and Non-VDOT) will be on Project Details page for public contact
- On non-VDOT managed projects, VDOT project coordinators need to have close coordination with the project manager through the end of construction



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