



COMMONWEALTH of VIRGINIA  
Office of the  
SECRETARY of TRANSPORTATION

# Proposed Enhancements to SMART SCALE Policies and Methods - Round 4

November 2019







# Summary



- Timeline and schedule
- Project eligibility
- Project Readiness
- Analytical methods and weights





# SMART SCALE

*Funding the Right  
Transportation Projects  
in Virginia*

## SMART SCALE is coming...

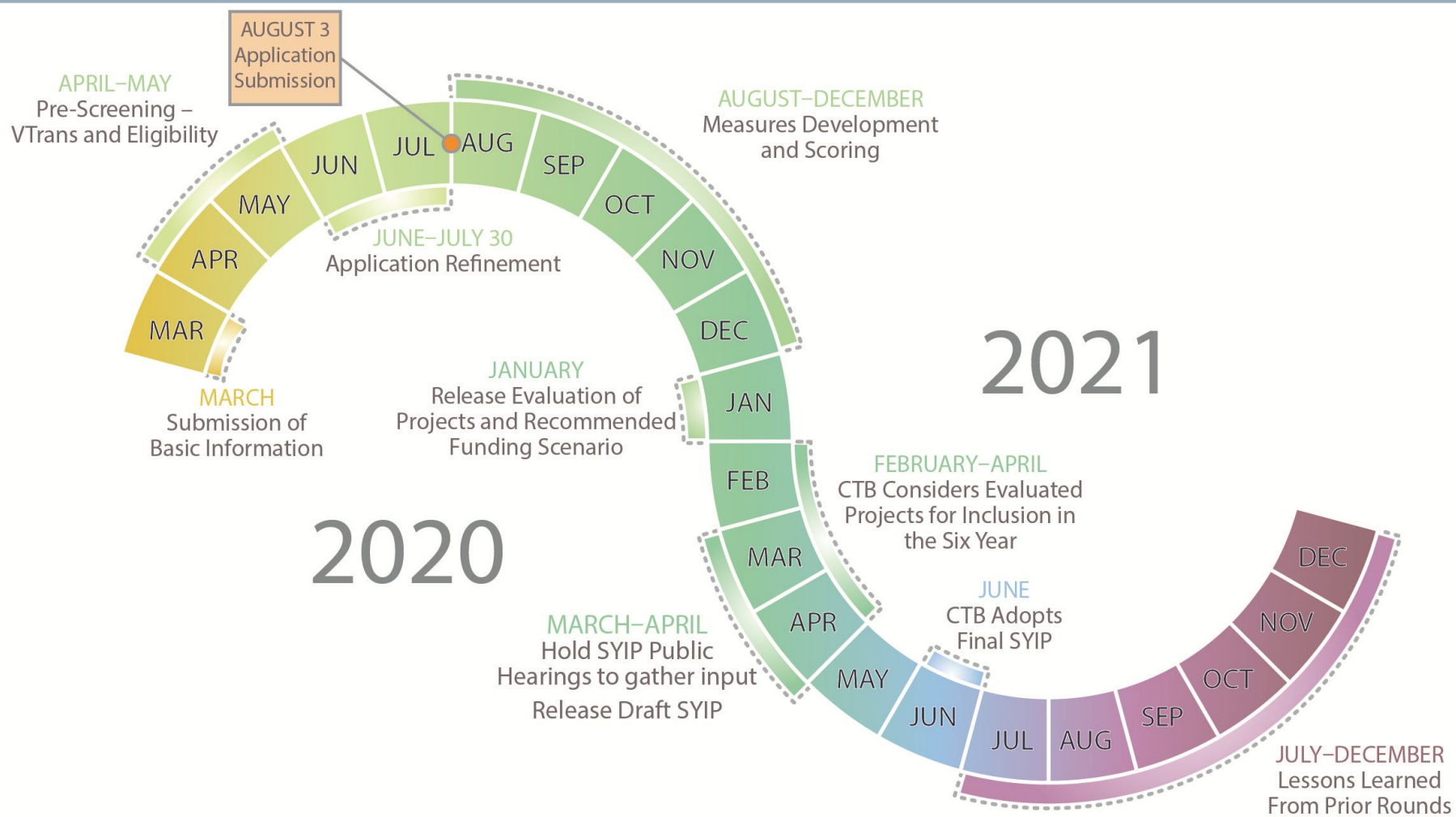




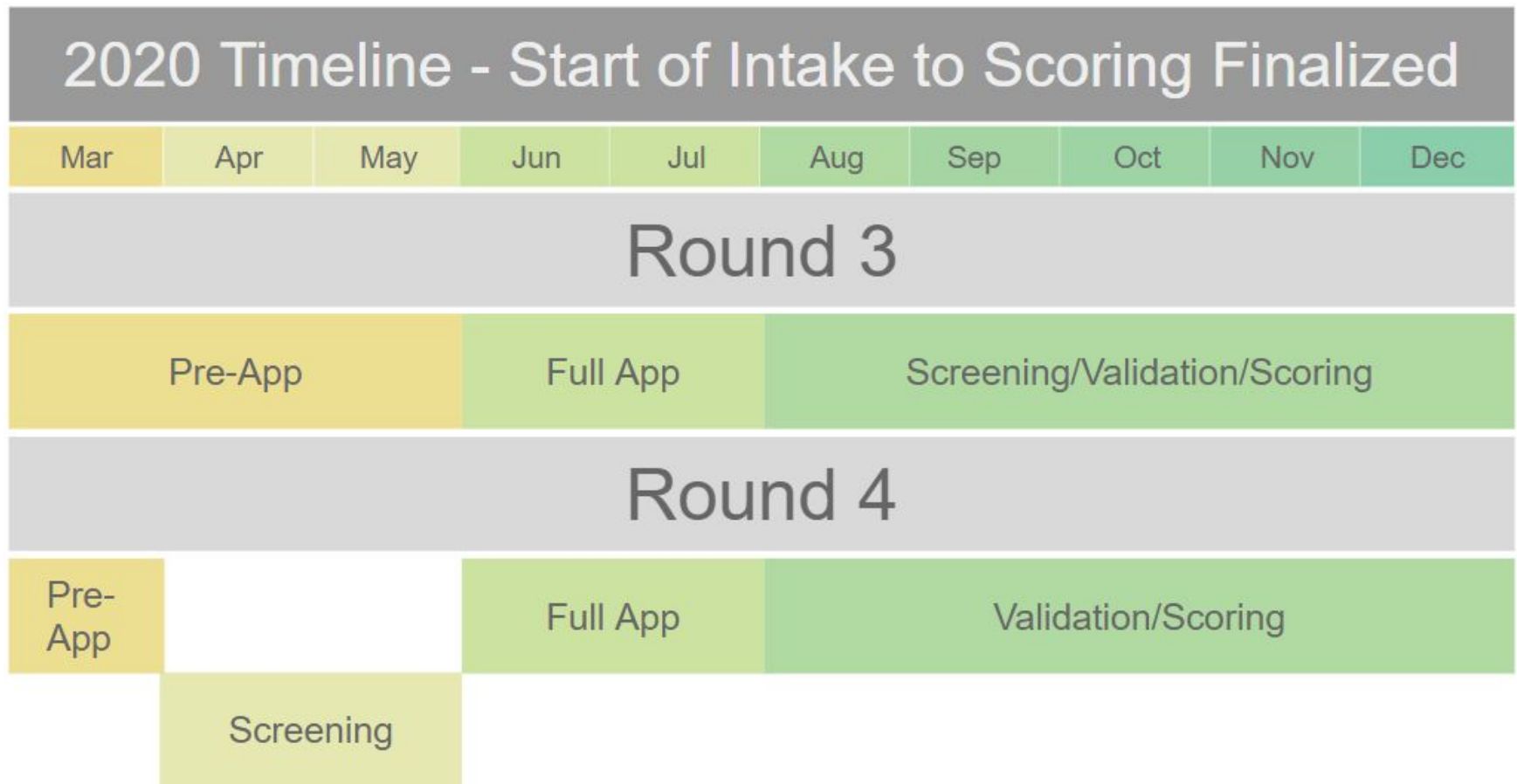
# SMART SCALE

*Funding the Right  
Transportation Projects  
in Virginia*

## Round 4 Timeline



# Differences in timeline from Round 3

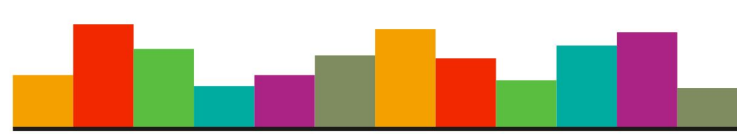




## Changes to Timeline

- Pre-App
  - Intake window reduced from **3 months to 1 month**
  - NEW - Pre-apps that can be submitted will be based on cap limits
    - Cap limit of 10: will be allowed to submit 12 pre-apps (10+2)
    - Cap limit of 4: will be allowed to submit 5 pre-apps (4+1)
  - Pre-application cap limits prevent VDOT/DRPT staff from reviewing applications that will not be submitted while providing cushion in case a project screens out

Localities	MPOs/PDCs/Transit Agencies	Pre-Application Cap	Final Application Cap
Less than 200K	Less than 500K	5	4
Greater than 200K	Greater than 500K	12	10



# SMART SCALE

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## Changes to Timeline

- **Screening Applications**
  - 2-month window - VTrans need, eligibility and project readiness
  - Address challenge in Round 3 of major project changes occurring during pre-screening
- **Final Full Application**
  - 2-month window
  - Applicant provides economic development sites and refines final cost estimate and supporting documents
  - Applicant must receive approval from Commonwealth to change scope of work - this is to ensure project still meets VTrans need, readiness and eligibility
  - Can only submit up to their cap limit: 10 or 4 depending on population



# Project Eligibility



- Two areas to clarify/limit eligibility:
  - Transit Maintenance Facilities - propose that stand-alone maintenance facilities not be eligible - must include capacity expansion of transit system
  - Systemwide Investments - improvements that do not have a typical from/to and often cover a larger geographic area
    - **Examples**
      - Jurisdiction-wide implementation of adaptive signal controllers
      - Countywide bus stop upgrades
    - Prohibit project applications that include improvements that are jurisdiction-wide
    - Expansive scope and multi-faceted nature of improvements present considerable challenges for scoring and validation

# Project Readiness



- Board has strengthened project readiness requirements each round
- Strengthened policies to-date have focused on highway expansion investments - requiring alternative analysis and planning studies
- Recommend similar policy provisions for corridor level adaptive signal controller upgrades and major transit capital investments such as Bus Rapid Transit (BRT) and light rail
  - Corridor level adaptive signal controllers - require detailed corridor study/plan
  - BRT/Light Rail
    - Planning study that shows alternatives considered
    - Inclusion in agency's Transit Strategic/Development Plan

# Project Evaluation and Scoring



# Congestion

- Feedback - concern that current methods do not account for congestion on both weekdays and weekends
- Implement method to better account for peak period congestion throughout entire week (weekdays and weekends)
- Datasource: INRIX dataset
- Approach: For most recent calendar year - calculate the average daily hours the Travel Time Index (TTI) is greater than or equal to 1.5. Use this average daily value to convert the peak hour analysis for delay and throughput to peak period

## Congestion- Recommendation for Round 4

- 1) Implement method to better account for peak period congestion throughout entire week (weekdays and weekends)

# Congestion

Approach: For most recent calendar year - calculate the average daily hours the Travel Time Index (TTI) is greater than or equal to 1.5. Use this average daily value to convert the peak hour analysis for delay and throughput to peak period

## Example calculations

Project	MON	TUE	WED	THU	FRI	SAT	SUN	AVG	Peak Hour Delay	AVG Peak Period Delay
A	2.5	3	3	3	3.5	3	4	<b>3.14</b>	300	942
B	1.5	2	2	1.5	2	1	1	<b>1.57</b>	500	785
C	4	4.5	4.5	4	4.5	2	3	<b>3.79</b>	500	1895

- **SMART SCALE team has been working on the following areas related to safety**
  - **Targeted Crash Modification Factors (CMFs)**
  - **Weighting of S1 (crash frequency) versus S2 (crash rate) - currently 50/50**
    - Recommend changing weight to 70/30
    - Supports Board targets to reduce fatal and injury crashes and pending policy changes related to HSIP program
  - **Increase weight for Safety factor in Area Type A from 5% to 10%**

**Safety - Recommendations for Round 4**

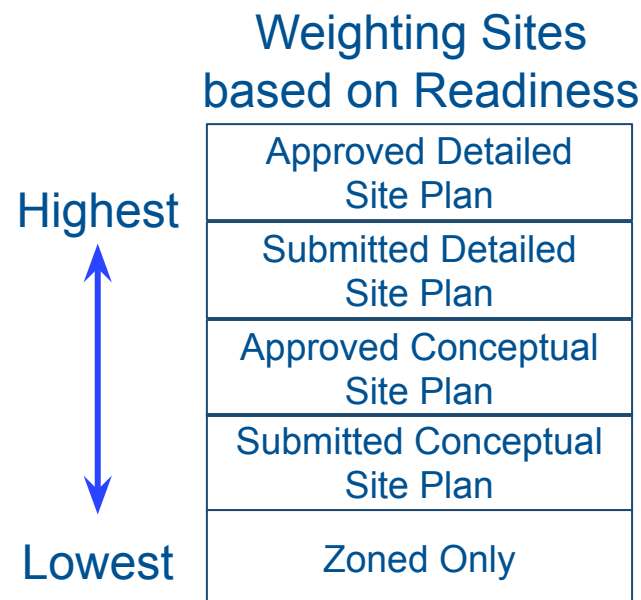
- 1) For certain project types a targeted CMF will be used
- 2) 70/30 split in weighting - more weight to reduction in crash frequency
- 3) Area Type A - Increase safety weight from 5% to 10%



# Economic Development Sites

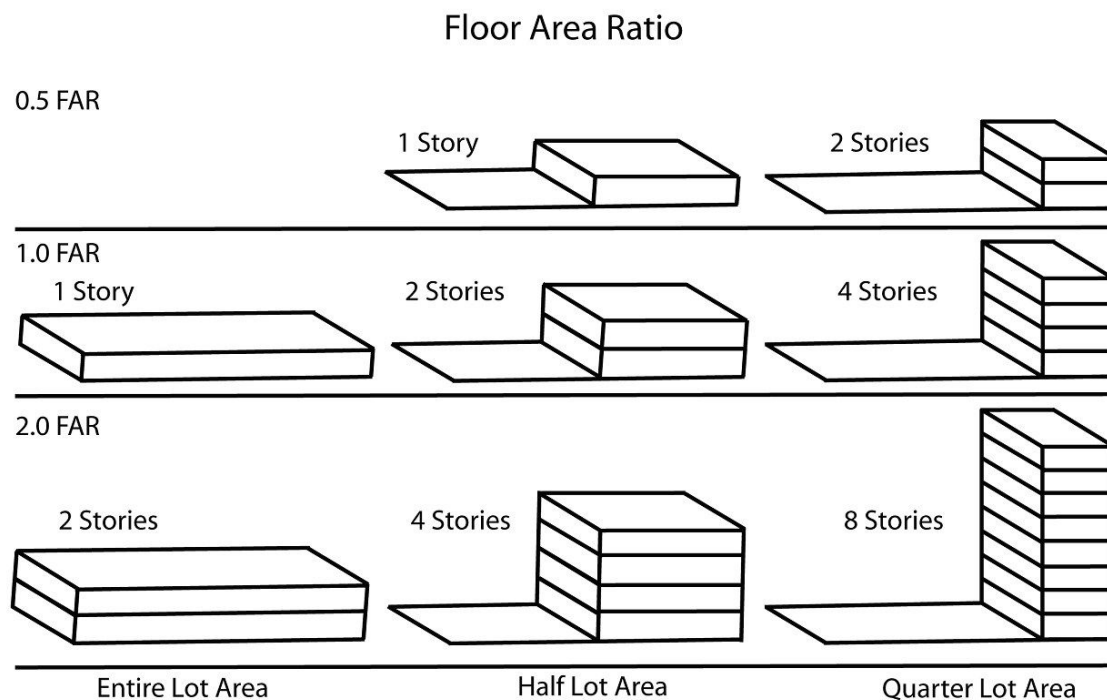


- Policies adopted by the Board for Round 3 improved the reasonableness of economic development results
- Zoned only properties has to be adjacent to the proposed transportation improvement
- In validating zoned properties and conceptual site plans we noticed several examples of high floor area ratios (FAR) - values in range of 5 were not uncommon
- Applicants uploaded zoning ordinances showing that larger FAR are allowed, but that does not mean they are likely



# Floor Area Ratio Explained

**Floor area ratio is the ratio of a building's total floor area to the size of the piece of land upon which it is built**



# Economic Development Sites



- Floor Area Ratio (FAR) assumptions for zoned-only properties can be problematic
- Large industrial tracks (250+ acres) with assumed FARs of 1 250 acre would equate to 10,890,000 sq ft building
  - **Boeing Everett Factory - 4.28M sqft**
- Several tracts with assumed FARs of 5.0 or higher
- Applicants provided documentation of local ordinances allowing FAR value used - just because it is allowed does not mean it is likely

## Economic Development - Recommendation for Round 4

- 1) FAR for zoned only properties capped at 0.3 unless applicant can prove average FAR around project is higher or minimum FAR in local zoning ordinance is higher than 0.3



# Environment

## Resource Impact Measure



- Problem: treating measure as a benefit
- Significant potential impact = 0 and No impact = 100
- After lessons of Round 1 - potential impact was then scaled by points in all other measures
- Results can be counter intuitive - if you do not consider \$
- Example - HRBT, which had the second-highest total impact to sensitive resources received the greatest number of points for this measure due to high benefit score

### Environment - Recommendation for Round 4

- 1) Convert E1 to subtractive measure (subtracting up to 5 points at end of scoring)
- 2) E2 (Air Quality Energy) measure weight changed to 100%

# Environment

## Resource Impact Measure



Proposed method would be subtractive, taking away up to five benefit points based on potential sensitive acres impacted

Project	Description	Impacted Acres	E1 Weighted Score	Benefit Score Before E1	Benefit Score After E1	Requested Amount	SS Score
W	High score, high cost, large footprint	900	-5.00	59.00	54.00	\$ 80,000,000.00	6.75
X	High score, moderate cost, moderate footprint	300	-1.67	26.00	24.33	\$ 15,000,000.00	16.22
Y	Moderate score, moderate cost, large footprint	450	-2.5	6.00	3.5	\$ 40,000,000.00	0.85

# Land Use

- For Round 3, the Board adopted a new method objective metric to replace subjective metric to measure a project's support for transportation efficiency of development
- L1 multiplies non-work accessibility by future density; this favors projects in areas that are already very dense over projects in areas that, though growth may be expected, existing density is low
- L2 multiplies non-work accessibility by the *change* in population and employment; this measure favors projects in areas where growth is expected regardless of initial density

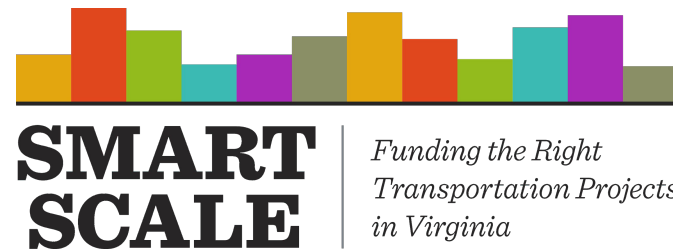
## Land Use - Recommendations for Round 4

- 1) Drop L1 measure and give 100% of weight to L2
- 2) Area Type A - Land Use weight changed from 20% to 15%
- 3) Area Type A = Safety weight changed from 5% to 10%



# Land Use

## Rationale for Changes

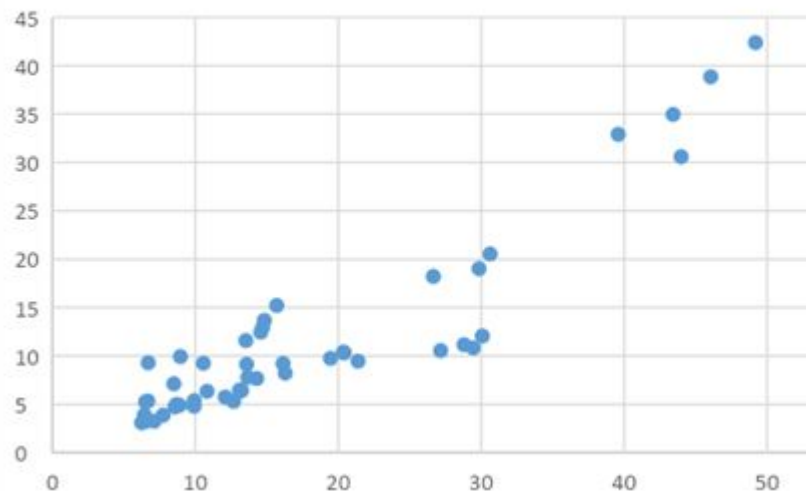


- Projects in areas with already high population/employment density tend to have a greater density of non-work destinations
- L1 measure involves scaling accessibility to non-work destinations by the 2025 population/employment density
- Since areas with dense population and employment also have higher density of non-work destination we feel the current math leads to a double benefit - this issue is exacerbated by a measure weight of 70%
- Proposed change has minimal impact on projects that score well in L1.

# Land Use

## Rationale for Changes

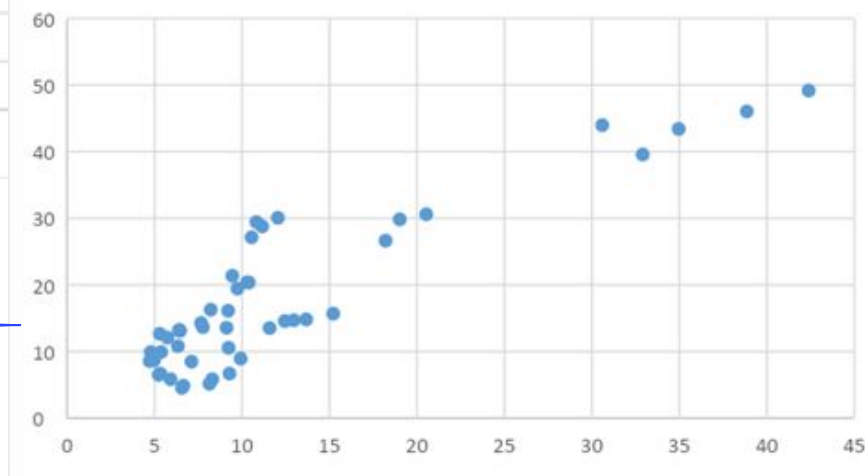
Top 50 L1 vs L2 (top 2 not shown)



Strong correlation between L1 and L2 among the 50 top-scoring L1 projects (top 2 projects removed to make chart easier to read – top 2 are the same for L1 and L2)

On the other hand, not all projects that score well in L2 are in the top for L1. Projects that score well in L1 are unaffected while projects in emerging growth areas - areas that need bike/ped investment - get a boost.

Top 50 L2 vs L1 (top 2 not shown)



# Treatment of Interstate Projects



- Interstate projects have been outlier projects that have suppressed benefits scores for other investments
- Dedicated funding sources for operational and capacity improvements for Interstates exists now from the 81 legislation
- Should Interstate projects still be eligible for SMART SCALE or should they be handled through the new dedicated Interstate funding?
- Intent is to develop Interstate Corridor Plans for each Interstate
  - I-81 Complete
  - I-95 Underway
  - I-64 to start in January





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Thank you.

