ACCENTUATE THE POSITIVE,
ELIMINATE THE NEGATIVE

Steve Heminger – Metropolitan Transportation Commission
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Performance-based planning is increasingly common across the U.S. But there is a big difference between simply monitoring performance and using performance assessment to influence decision-making.
Setting numeric performance targets can ground a planning process, but it must be done in a limited and focused manner.

Rigorous quantitative evaluation of major transportation projects is worth it, despite the time and effort required.

Prioritizing high-performing projects is just as important as eliminating low-performing projects.

Investing in new analytical methodologies for non-expansion projects is critically important in the 21st century.
New federal performance requirements are a small step forward.

But they are flawed in many respects – too focused on annual reporting of 20th-century highway performance measures.
Metropolitan areas are leading the way – selecting measures to track and forecast outcomes for transportation, land use, the economy, and the environment.
What We Heard
Numeric targets associated with these measures are extremely ambitious.

The targets aim to mitigate all growth in displacement risk, prevent any development outside existing growth boundaries, bring all infrastructure into good condition, double the share of affordable housing, etc.
Summary of the Draft Preferred Scenario
Performance Target Results

**TARGET ACHIEVED (5)**
- Climate Protection
- Adequate Housing
- Open Space and Agricultural Preservation
- Middle-Wage Job Creation
- Goods Movement/ Congestion Reduction

**RIGHT DIRECTION (5)**
- Healthy and Safe Communities
- Affordable Housing
- Non-Auto Mode Shift
- Road Maintenance
- Transit Maintenance

**WRONG DIRECTION (3)**
- Housing + Transportation Affordability
- Displacement Risk
- Access to Jobs
Moving to a performance-based prioritization is best handled in an evolutionary manner to achieve greater buy-in from stakeholders.
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Adding state of good repair to the mix for the first time required significant research and development – integrating asset condition into a travel demand model. But it’s critical in a region with only 9% of funding going to expansion.

For links to peer-reviewed methodologies: http://data.mtc.ca.gov/performance/reference/; published papers in TRR and Journal of Public Transportation
General Framework:
• Evaluate ~70 major transportation projects (>\$100M)
• Includes expansion, efficiency, and state of good repair investments
• Two components:
  • **Benefit-cost assessment**
    • Relies on travel demand model
    • Incorporates economic best practices
  • **Targets assessment**
    • Relies on qualitative criteria
    • Reflects regional values

Time and Effort:
• 3 months – update methodologies & engage stakeholders
• 2 months – collect project definitions
• 4 months – run travel demand model & calculate scores
For detailed data and methodologies: http://data.mtc.ca.gov/performance/dashboard/
Plan Bay Area 2040
Project Performance Assessment: Results for Road Projects

For detailed data and methodologies: http://data.mtc.ca.gov/performance/dashboard/
Plan Bay Area 2040
Project Performance Assessment:
Results for Transit Projects

For detailed data and methodologies: http://data.mtc.ca.gov/performance/dashboard/
In addition to calculating benefit-cost ratios and target scores for state of good repair, we were also able to quantify benefits from maintenance for system users for the first time.

- Achieving state of good repair on state highways will save motorists $3.5 billion per year in vehicle maintenance costs, while maintaining local streets will save $2.3 billion per year.

- Between 270,000 and 320,000 transit boardings would be lost if we don’t invest in transit maintenance – primarily choice riders.

- All expansion projects proposed for the region combined generate just $5.5 billion in annual benefits – while state of good repair across all modes generates at least $6.8 billion in annual benefits at a substantially lower annualized cost.
Prioritizing (and De-Prioritizing) Projects

Fiscal Constraint

- High-Performing Projects
- Medium-Performing Projects
- Projects Exempt from Assessment
- Low-Performing Projects

Investment Tradeoffs Process

- Funding Plan Development with Sponsors
- Compelling Case Process

Plan Bay Area 2040 Investment Strategy

Projects Not Included in Plan Bay Area 2040
Prioritizing (and De-Prioritizing) Projects

**High** benefit-cost ratio (B/C) and **medium** targets score (TS)
- Plan Bay Area 2040: B/C ≥ 7 and TS ≥ 3

**Medium** benefit-cost ratio and **high** targets score
- Plan Bay Area 2040: B/C ≥ 3 and TS ≥ 7

All other projects

**Low** benefit-cost ratio or **low** targets score
- Plan Bay Area 2040: B/C < 1 or TS < 0

**Plan Bay Area 2040 Projects Breakdown**
- **11** high-performers
- **40** medium-performers
- **18** low-performers
High-Performing Projects

1. Rail Maintenance
2. Bus Maintenance
3. Columbus Day Initiative
4. Downtown San Francisco Congestion Pricing
5. Treasure Island Congestion Pricing

SHORTFALL COST = $11 BILLION

PROJECTS COST = $2 BILLION
High-Performing Projects

- BART Metro Program
- BART to Silicon Valley: Phase 2
- Caltrain Modernization + Extension to Transbay

PROJECTS COST = $15 BILLION

- El Camino Bus Rapid Transit
- San Pablo Bus Rapid Transit
- Geary Bus Rapid Transit

PROJECTS COST = $1 BILLION
Making a Compelling Case

Process:
- Commission **approves thresholds** for high- and low-performers, as well as **eligible criteria** for a case
- Project sponsor must **submit compelling case letter** under adopted criteria
- Staff reviews cases and **makes recommendations**
- Commission reviews staff recommendations and **makes ultimate decision** on how to proceed

Eligible Cases:
- **Based on travel model limitations** (low B/C projects only):
  Must demonstrate that project would exceed B/C ratio of one without limitation(s) in place
- **Based on federal requirements** (all projects):
  Air quality conformity and Title VI
Projects withdrawn by sponsors

- Compelling cases approved:
  - (6) Communities of Concern
  - (1) Recreational trips
  - (1) Air quality

Projects re-scoped:
- (7) Environmental phase only
- (5) Sponsor agreed to fully fund project locally
- (2) Reduced project costs to achieve B/C ratio greater than 1

Projects withdrawn by sponsors

- Compelling cases approved:
  - (3) Communities of Concern
  - (1) Recreational trips
  - (1) Air quality

Projects re-scoped:
- (5) Environmental phase only
- (2) Sponsor agreed to fully fund downscoped project locally
- (1) Reduced project costs to achieve B/C ratio greater than 1

Plan Bay Area (34 low-performing projects)

Plan Bay Area 2040 (18 low-performing projects)
Low-Performing Projects: Rejected Cases

SR-152 Tollway

Redwood City Ferry

SMART (Phase 3)
What have we learned from two cycles of extensive project prioritization?

1. **It’s worth it in the end, despite a significant time commitment.** Project sponsors have generally accepted the approach and have begun to proactively identify projects with potential performance issues. We feel that project performance is one of the most valuable aspects of the long-range planning process.

2. **Adding state of good repair to the mix was essential in a maturing region.** “Fix It First” shouldn’t be taken on faith. This effort also highlighted the need for additional innovative methodologies to simulate benefits for other types of non-capacity increasing projects.
What have we learned from two cycles of extensive project prioritization?

3. While it’s hard to talk about low-performing projects, it’s better to face the music. Many medium-performing projects join the high-performers in the final investment strategy, but failing to find a path forward in the compelling case leads to real-world consequences.

4. Evaluating transportation projects against a broad spectrum of targets is challenging. Estimating the implications of a given transportation project on displacement (for example) is more art than science. Further investment in land use models are needed to help us validate sponsor’s claims.
Questions?

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