



Northern Virginia Transportation Authority

The Authority for Transportation in Northern Virginia

TECHNICAL ADVISORY COMMITTEE

Wednesday, September 16, 2015, 7:00pm

NVTA Offices

3040 Williams Drive, Suite 200

Fairfax, Virginia 22031

AGENDA

I. Call to Order/Welcome

Chairman Boice

II. Meeting Summary of March 18, 2015, Meeting

*Recommended action: Approval [with abstentions
from those who were not present].*

Discussion/Information

III. NVTA Update

Ms. Backmon

IV. TransAction 2040 Update: Status

Mr. Jasper

V. NVTA FY2017 Program: Status

Mr. Jasper

Adjournment

VI. Adjourn

Next Meeting: October 21, 2015

FY2017 Program: Project Selection Process

Initial Recommendation



Presentation to the Technical Advisory Committee

September 16, 2015

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Tentative Schedule

- Sept. 25 thru Nov. 30, 2015: Call for Projects
- Dec. 10: NVTA approves candidate project list (for HB 599 and NVTA evaluations)
- April 2016: Project evaluations complete
- May 2016: NVTA approves candidate project list (for public comment)
- June 2016: Public Hearing and Town Halls
- July 2016: NVTA adopts FY2017 Program



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FY2017 Program Size

- Preliminary estimate: \$220 million PayGo funds, plus finance option
- Candidate projects (non-binding):
 - 25 projects
 - \$750 million
 - Includes \$370 million for I-66/Route 28 interchange



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Project Selection Process

- Generally consistent with FY2015-16 Two Year Program:
 - Preliminary Screening
 - Quantitative Score, including HB 599 rating for ALL projects
 - Qualitative Considerations
- Proposed enhancements



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HB 599 Methodology

- Recommendations:
 - Regardless of measures, use of TRANSIMS will continue
 - Baseline will be updated
 - All candidate projects will be evaluated, and rated against each other, incl. continuation projects
 - Evaluations for 2020 (2025?) and 2040
 - Grouping opportunities will be explored when candidate project pool is confirmed, subject to available VDOT resources



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Proposed Enhancements

- Eligibility for funding
- HB 599 measures versus HB 2 measures
- Criteria weighting for NVTA quantitative score
- Congestion relief relative to cost



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Eligibility for Funding

- Studies – an appropriate use of FY2017 Program funds?
- FY2017 Program funds – expiration date?
- Recommendations:
 - Studies ineligible
 - First drawdown of funds by FY2020



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HB 599 versus HB 2

HB 599

- Seven congestion measures
- Selected and weighted through a regional process
- Approved by NVTa
- Projects evaluated using TRANSIMS model for NoVA
- HB 599 rating is part of NVTa quantitative score
- NoVA candidate pool

HB 2

- Two congestion measures
- Selected and weighted through a statewide process
- Approved by CTB
- Projects evaluated based on HCM principles
- Congestion measures are part of overall HB 2 rating
- VA candidate pool

One common measure: 'Person hours of delay'



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HB 599 versus HB 2 Measures

- Recommendations:
 - Retain the seven HB 599 measures
 - Review possible changes for FY2018 and beyond as part of TransAction Update



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Quant. Score: Criteria Weighting

FY2015-16

- Congestion Relief: 35%
- Project Readiness*: 25%
- Urgency: 5%
- Reduce VMT: 5%
- Safety: 5%
- Connectivity*: 10%
- Improved Bike/Ped: 5%
- Management/Ops: 5%
- Cost Sharing: 5%

FY2017

- Congestion Relief: review
- Project Readiness*: review
- Urgency: 5%+
- Reduce VMT: 5%+
- Safety: 5%+
- Connectivity*: 10%+
- Improved Bike/Ped: 5%+
- Management/Ops: 5%+
- Cost Sharing: 5%+

Notes: * two criteria + adjust as needed



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Quant. Score: Criteria Weighting

- Recommendations:
 - Review weighting for 'Congestion Reduction' based on policy/emphasis considerations
 - If increased, weighting for 'Project Readiness' criteria will likely be reduced
 - Adjust other criteria to maintain similar level of relative emphasis to each other



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Congestion Relief Relative to Cost

- Previously relied on TransAction 2040 analysis
- TRANSIMS estimates congestion relief
- Need a comparison methodology that:
 - Considers congestion relief over time
 - Uses full project cost as well as the NVTa share
 - Complements the quantitative score



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Congestion Relief Relative to Cost

- Inputs
 - 2020 and 2040 person hours of delay reductions for each candidate project (from TRANSIMS)
 - Annual conversion factor for time savings
 - Average value of time
 - Project costs allocated to years (full project cost and requested NVTa share from FY2017 Program)
 - Discount rate to be applied to costs and monetized annual time savings



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Congestion Relief Relative to Cost

- Key Points (see examples)
 - Evaluation period thru 2040
 - Delay reductions based on the 2020 and 2040 TRANSIMS outputs
 - Delay reductions and costs allocated to the year in which they occur
 - Delay reductions cannot be accrued prior to the anticipated year of opening or after 2040
 - Delay reductions and costs 'discounted' prior to summation
 - Ratios of congestion relief relative to cost < 1.0 indicate congestion benefit is less than the cost of the project
 - Two analyses will be prepared for each candidate project, one based on the full cost and one on just the NVTa share
 - Further consideration needed for addressing operations costs, etc.



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Example #1

Year	Person Hours of Delay		Diff.	Daily Adjusted Hours	Annual Adjusted Hours	Annual VTT Savings	Annual VTT Savings Discounted	Project costs NVTA Only	Project costs NVTA Only Discounted
	Before	After							
0	2016			0	260	\$15.00	4.40%		4.40%
1	2017	211,805	207,174	4,631	0	\$0	\$0	\$1,750,000	\$1,676,245
2	2018	213,248	208,664	4,585	1,191,970	\$17,879,550	\$16,404,220		\$0
3	2019	214,692	210,153	4,538	1,179,945	\$17,699,175	\$15,554,338		\$0
4	2020	216,135	211,643	4,492	1,167,920	\$17,518,800	\$14,746,955		\$0
5	2021	217,578	213,133	4,446	1,155,895	\$17,338,425	\$13,979,999		\$0
6	2022	219,022	214,622	4,400	1,143,870	\$17,158,050	\$13,251,497		\$0
7	2023	220,465	216,112	4,353	1,131,845	\$16,977,675	\$12,559,569		\$0
8	2024	221,908	217,601	4,307	1,119,820	\$16,797,300	\$11,902,426		\$0
9	2025	223,352	219,091	4,261	1,107,795	\$16,616,925	\$11,278,366		\$0
10	2026	224,795	220,581	4,215	1,095,770	\$16,436,550	\$10,685,766		\$0
11	2027	226,238	222,070	4,168	1,083,745	\$16,256,175	\$10,123,085		\$0
12	2028	227,682	223,560	4,122	1,071,720	\$16,075,800	\$9,588,852		\$0
13	2029	229,125	225,049	4,076	1,059,695	\$15,895,425	\$9,081,669		\$0
14	2030	230,569	226,539	4,030	1,047,670	\$15,715,050	\$8,600,205		\$0
15	2031	232,012	228,029	3,983	1,035,645	\$15,534,675	\$8,143,192		\$0
16	2032	233,455	229,518	3,937	1,023,620	\$15,354,300	\$7,709,426		\$0
17	2033	234,899	231,008	3,891	1,011,595	\$15,173,925	\$7,297,758		\$0
18	2034	236,342	232,497	3,845	999,570	\$14,993,550	\$6,907,096		\$0
19	2035	237,785	233,987	3,798	987,545	\$14,813,175	\$6,536,401		\$0
20	2036	239,229	235,477	3,752	975,520	\$14,632,800	\$6,184,683		\$0
21	2037	240,672	236,966	3,706	963,495	\$14,452,425	\$5,851,002		\$0
22	2038	242,115	238,456	3,660	951,470	\$14,272,050	\$5,534,462		\$0
23	2039	243,559	239,945	3,613	939,445	\$14,091,675	\$5,234,210		\$0
24	2040	245,002	241,435	3,567	927,420	\$13,911,300	\$4,949,436		\$0
Total thru horizon year				93,742	24,372,985	\$365,594,775	\$222,104,613	\$1,750,000	\$1,676,245
Total project cost including non-NVTA Sources								\$1,750,000	
Congestion Relief relative to Cost (NVTA share only)									132.50



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Example #2

Year	Person Hours of Delay		Diff.	Daily Adjusted Hours	Annual Adjusted Hours	Annual VTT Savings	Annual VTT Savings Discounted	Project costs NVTA Only	Project costs NVTA Only Discounted
	Before	After							
0	2016			0	260	\$15.00	4.40%		4.40%
1	2017			0	0	\$0	\$0	\$1,000,000	\$957,854
2	2018			0	0	\$0	\$0	\$2,000,000	\$1,834,970
3	2019	279,897	210,601	69,296	0	\$0	\$0	\$10,000,000	\$8,788,171
4	2020	289,338	216,109	73,229	0	\$0	\$0	\$155,000,000	\$130,475,720
5	2021	298,780	221,617	77,162	0	\$0	\$0	\$125,000,000	\$100,787,697
6	2022	308,221	227,126	81,095	0	\$0	\$0	\$35,000,000	\$27,031,183
7	2023	317,663	232,634	85,028	22107397	\$331,610,955	\$245,315,720		\$0
8	2024	327,104	238,142	88,962	23130016	\$346,950,240	\$245,846,032		\$0
9	2025	336,546	243,651	92,895	24152635	\$362,289,525	\$245,895,901		\$0
10	2026	345,987	249,159	96,828	25175254	\$377,628,810	\$245,504,882		\$0
11	2027	355,429	254,667	100,761	26197873	\$392,968,095	\$244,710,050		\$0
12	2028	364,870	260,176	104,694	27220492	\$408,307,380	\$243,546,137		\$0
13	2029	374,312	265,684	108,627	28243111	\$423,646,665	\$242,045,665		\$0
14	2030	383,753	271,193	112,561	29,265,730	\$438,985,950	\$240,239,071		\$0
15	2031	393,195	276,701	116,494	30,288,349	\$454,325,235	\$238,154,822		\$0
16	2032	402,636	282,209	120,427	31,310,968	\$469,664,520	\$235,819,533		\$0
17	2033	412,078	287,718	124,360	32,333,587	\$485,003,805	\$233,258,065		\$0
18	2034	421,519	293,226	128,293	33,356,206	\$500,343,090	\$230,493,631		\$0
19	2035	430,961	298,734	132,226	34,378,825	\$515,682,375	\$227,547,890		\$0
20	2036	440,402	304,243	136,159	35,401,444	\$531,021,660	\$224,441,035		\$0
21	2037	449,844	309,751	140,093	36,424,063	\$546,360,945	\$221,191,878		\$0
22	2038	459,285	315,259	144,026	37,446,682	\$561,700,230	\$217,817,932		\$0
23	2039	468,727	320,768	147,959	38,469,301	\$577,039,515	\$214,335,488		\$0
24	2040	478,168	326,276	151,892	39,491,920	\$592,378,800	\$210,759,684		\$0
Total thru horizon year				2,132,284	554,393,853	\$8,315,907,795	\$4,206,923,418	\$328,000,000	\$269,875,596
Total project cost including non-NVTA Sources								\$500,000,000	
Congestion Relief relative to Cost (NVTA share only)									15.59



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Congestion Relief Relative to Cost

- Recommendations
 - Incorporate the proposed approach
 - Calculate two ratios for each candidate project, one based on the full cost and one on just the NVTa share



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Summary

- Recommended Project Selection Process comprises:
 - Preliminary Screening
 - Quantitative Score, including HB 599 rating for ALL projects
 - Ratios of congestion relief relative to cost (two per project)
 - Qualitative Considerations



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Northern Virginia Transportation Authority TransAction Update **TECHNICAL ADVISORY COMMITTEE**



September 16, 2015

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TransAction Update

Summary

1. Schedule Overview
2. Vision and Goals
3. Technical Evaluation: Corridor Approach
4. Public Information and Participation
5. Upcoming Topics for Discussion





Review TransAction Vision and Goals

Previous TransAction 2040 Vision:

In the 21st century, Northern Virginia will develop and sustain a multimodal transportation system that supports our economy and quality of life.

It will be fiscally sustainable, promote areas of concentrated growth, manage both demand and capacity, and employ the best technology, joining rail, roadway, bus, air, water, pedestrian, and bicycle facilities into an interconnected network.

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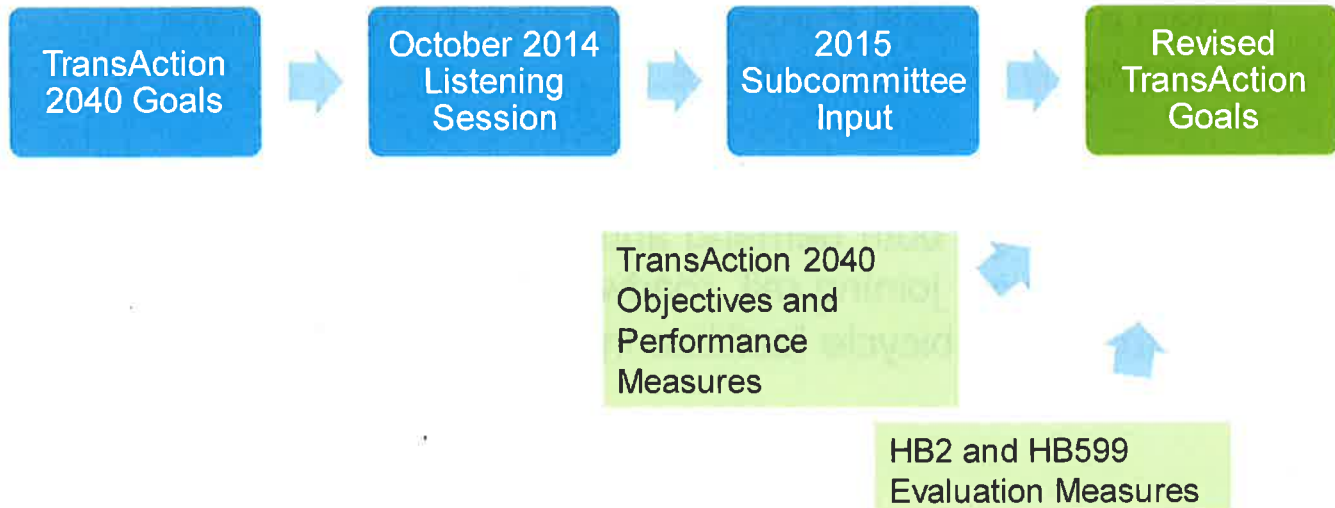
Review TransAction Vision and Goals

Previous TransAction 2040 Goals:

1. Provide an integrated, multimodal transportation system
2. Provide responsive transportation service to customers
3. Respect historical and environmental factors
4. Maximize community connectivity by addressing transportation and land use together
5. Incorporate the benefits of technology
6. Identify funding and legislative initiatives needed to implement the Plan
7. Enhance Northern Virginia relationships among jurisdictions, agencies, the public, and the business community

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Review/Update TransAction Vision and Goals



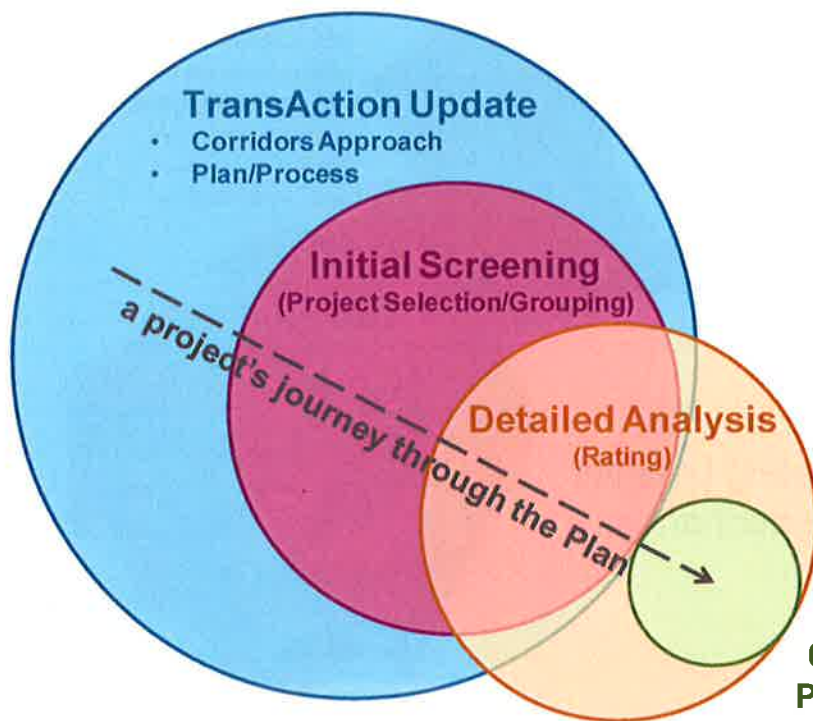
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How are Goals Reflected in the Plan Outcomes?

Goals have different applications, and are relevant at different stages in the planning process:

- 1) Overarching: Is the TransAction plan good? How was the process executed?**
- 2) Early screening: selection of corridors/projects for consideration**
- 3) Detailed rating: evaluation comparison of project**
- 4) Funding eligibility: 6-year program**

TransAction Update Process



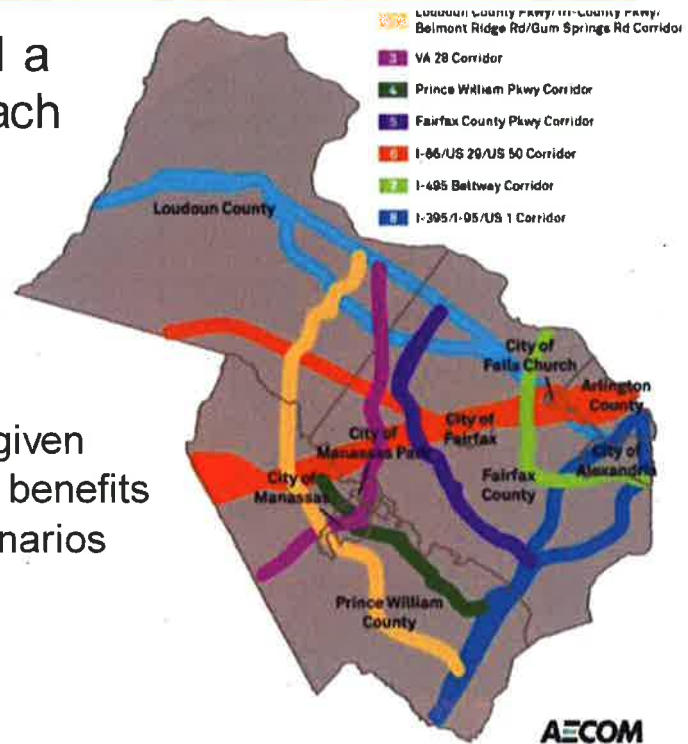
7. Enhance Northern Virginia relationships among jurisdictions, agencies, the public, and the business community
4. Maximize community connectivity by addressing transportation and land use together
5. Incorporate the benefits of technology
1. Provide an integrated, multimodal transportation system
2. Provide responsive transportation service to customers
3. Respect historical and environmental factors
6. Identify funding and legislative initiatives needed to implement the Plan

Framework for Application of Goals and Measures

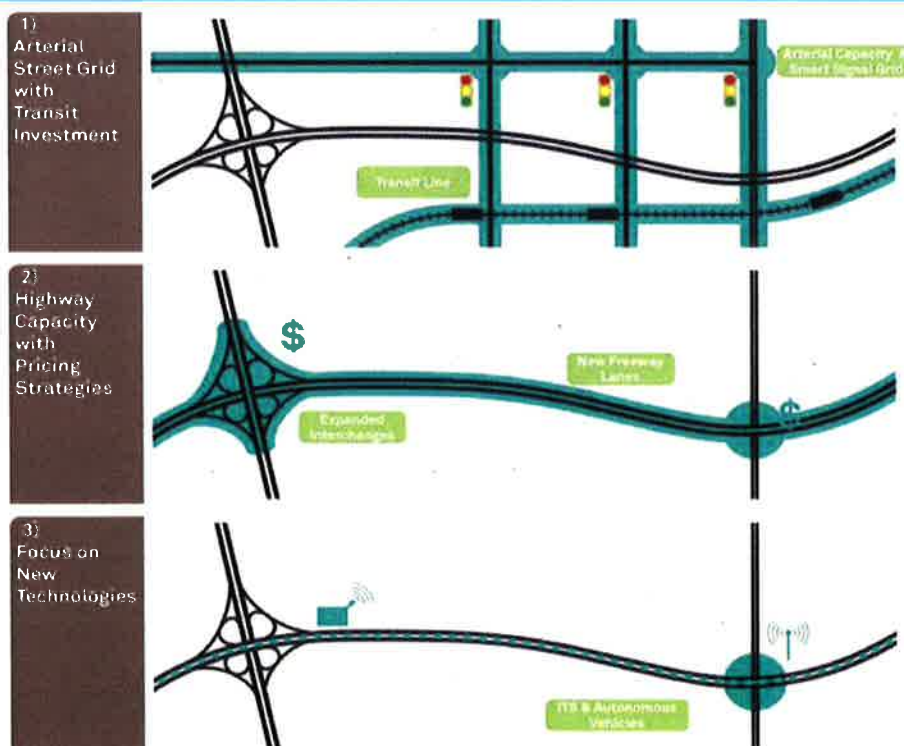
	Goals	Primary Application	Performance Measure Type
1	Provide an integrated, multimodal transportation system	Detailed analysis	Quantitative
2	Provide responsive transportation service to customers	Detailed analysis	Quantitative
3	Respect historical and environmental factors	Detailed analysis	Quantitative
4	Maximize community connectivity by addressing transportation and land use together	Initial screening	Quantitative
5	Incorporate the benefits of technology	Initial screening	Quantitative
6	Identify funding and legislative initiatives needed to implement the Plan	Programming	Quantitative
7	Enhance Northern Virginia relationships among jurisdictions, agencies, the public, and the business community	Overarching	Qualitative
Potential new Goals based on input from 2014 Listening Session and Subcommittee Discussion			
8	Provides congestion relief	Detailed analysis	Quantitative
9	Reinforces regional and geographic balance among jurisdictions	Initial screening	Qualitative
10	Sustains regional economy by providing cost effective transportation solutions	Detailed analysis	Quantitative

Technical Evaluation: Corridor Approach

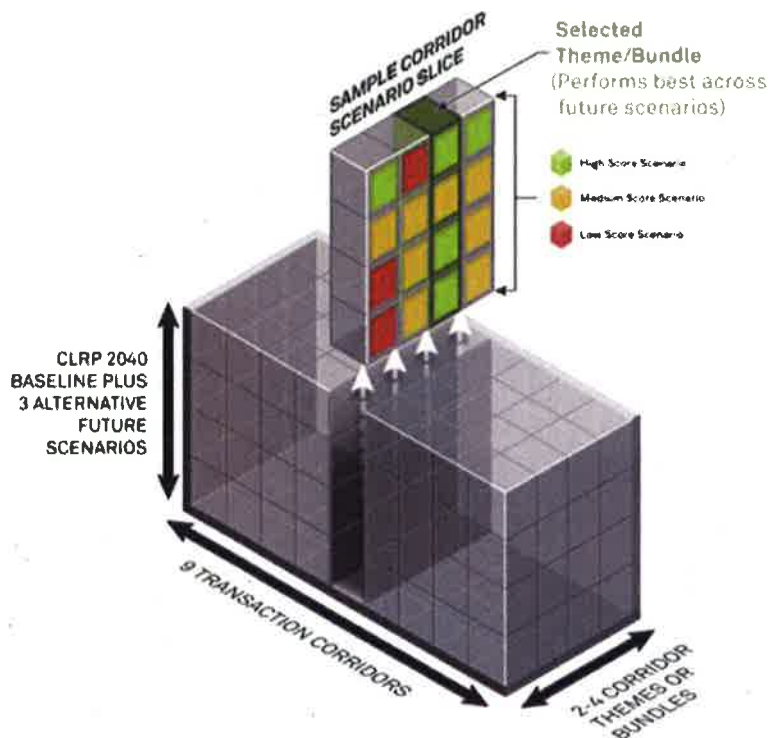
- Build consensus around a preferred strategy for each corridor
 - Model a full set of complementary projects focused on a given strategy
 - Select the strategy for a given corridor with the greatest benefits under multiple future scenarios



Technical Evaluation: Corridor Approach

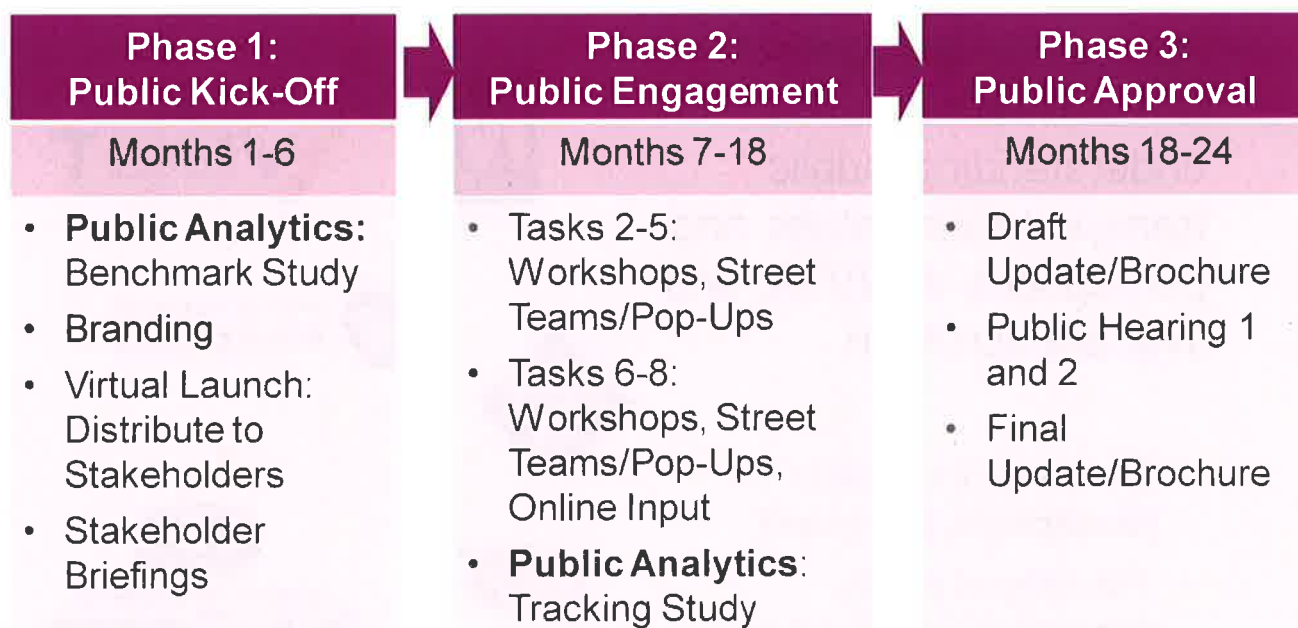


Technical Evaluation: Corridor Approach



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Public Involvement Plan Overview



Ongoing -

Database of Stakeholder Contacts; Newsletters (4 total); Notices/Press Releases; Catalog of Public Outreach Activities/Participation

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Launch Activities and Branding

- Initial Public Outreach:
 - Website
 - E-Newsletter
- Stakeholder Briefings
 - On-the-Ground Support
(contact cards, overview presentation)



Public Analysis

- Research component focused on understanding public transportation values and perceptions of NVTA, and TransAction Plan
 - Benchmark of public perceptions (early on)
 - Tracking of public perceptions (following Phase 2 engagement)



Upcoming Topics For Discussion

- Task 3: Literature Review
- Task 4: Analysis of What's New
- Task 5: Regional Transportation Needs