COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

Aubrey L. Layne, Jr.
Chairman

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Richmond, Virginia 23219

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COMMONWEALTH TRANSPORTATION BOARD
WORKSHOP AGENDA

VDOT Central Auditorium
1221 East Broad Street
Richmond, Virginia 23219
June 20, 2017
10:00 a.m.

1. FY 2018 - 2023 CTF Six-Year Financial Plan and
   FY 2018 VDOT Budget Six-Year Improvement Program
   John Lawson, Virginia Department of Transportation

2. Proposed Final FY 2018 – 2023
   Six-Year Improvement Program
   John Lawson, Virginia Department of Transportation
   Steve Pittard, Virginia Department of Rail & Public Transportation

3. FY 2018 Local Programs Update
   Russ Dudley, Virginia Department of Transportation

4. FY 2018 Revenue Sharing Program Guidelines Revisions
   Russ Dudley, Virginia Department of Transportation

5. HB 1359 – Transit Capital Project Revenue Advisory Board
   Steve Pittard, Virginia Department of Rail & Public Transportation
   Jen DeBruhl, Virginia Department of Rail & Public Transportation

6. Pavement and Bridge Briefing
   Garrett Moore, Virginia Department of Transportation

7. Urban Development Area Program
   Nick Donohue, Deputy Secretary of Transportation

8. VTrans Scenario Analysis Update
   Lorna Parkins, Michael Baker International

9. Commissioner's Items
   Charles Kilpatrick, Virginia Department of Transportation

10. Director's Items
    Jennifer Mitchell, Virginia Department of Rail and Public Transportation

11. Secretary's Items
    Aubrey Layne, Secretary of Transportation

# # #

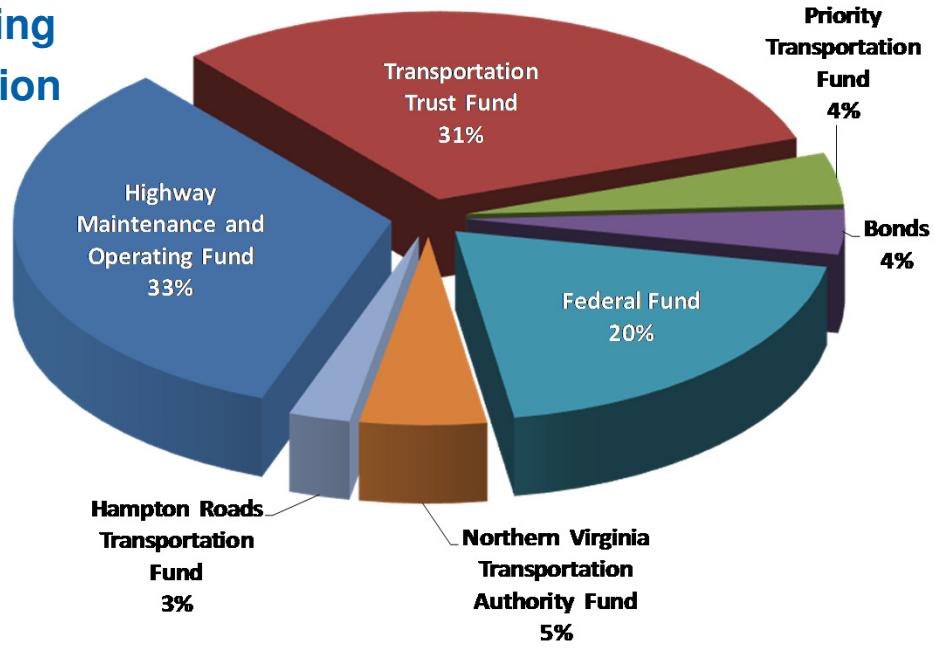
FY 2018 - 2023 CTF Six-Year Financial Plan and FY 2018 VDOT Budget

John W. Lawson
Chief Financial Officer
June 20, 2017

Commonwealth Transportation Fund
FY 2018 Budget

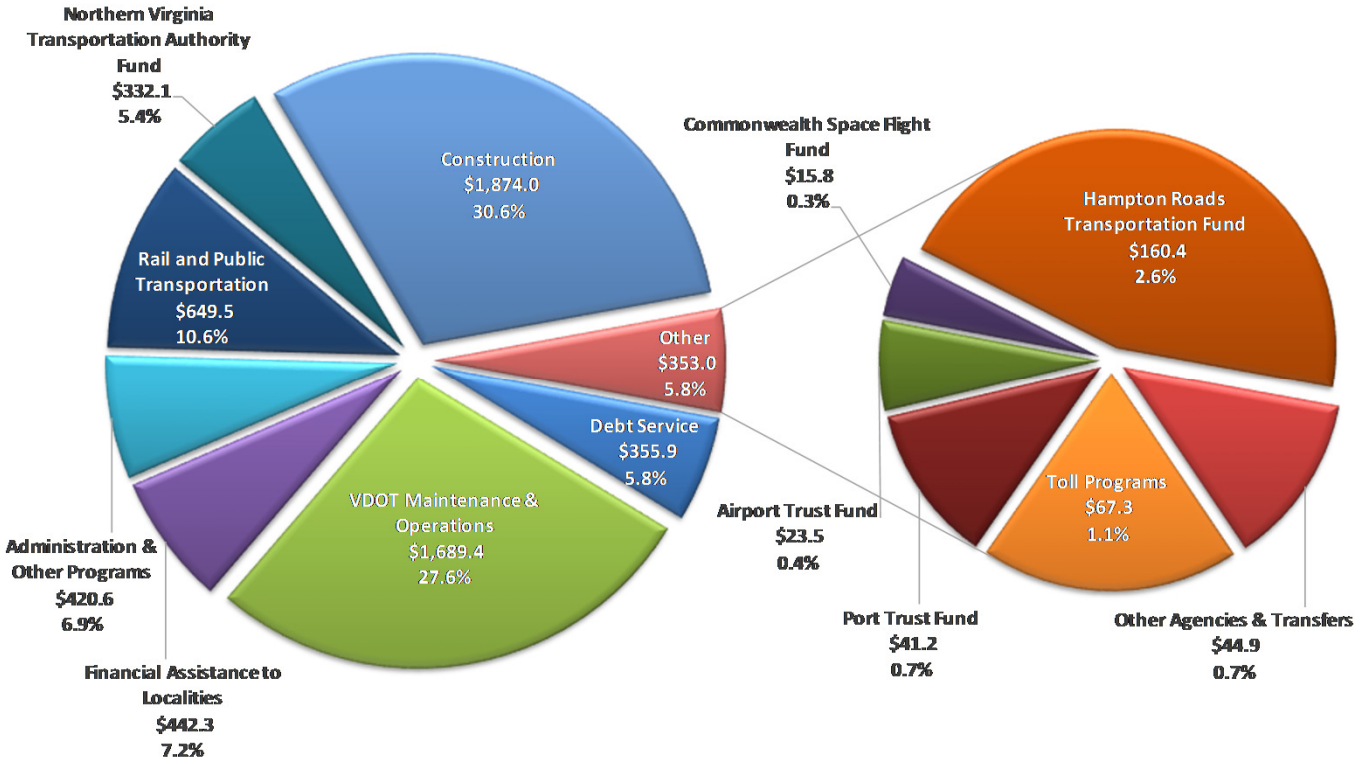
- **FY 2018 CTF Revenues total $6.1 billion, 1.9 percent increase over the FY 2017 Budget**
- **Dedicated Regional revenues represent 8 percent of total budget**
- **Planned use of bond proceeds is down from 6 percent of total**
- **Decrease in state revenue forecast is offset by increased regional/local project funding**
- **Up from draft budget amount of $5.8 billion**

Revenue	Total Estimate
Highway Maintenance and Operating Fund	$2,031.1
Transportation Trust Fund	1,893.6
Priority Transportation Fund	272.4
Bonds	236.0
Federal Fund	1,191.0
Total Operating Revenues	**$5,624.1**
Pass Through Revenue	
Northern Virginia Transportation Authority Fund	332.1
Hampton Roads Transportation Fund	160.4
Subtotal	**492.5**
Total	**$6,116.6**



FY 2018 Recommended Allocations

- Highway Maintenance, VDOT maintained and Locality Maintained, represents 35 percent of budget, up from 35 percent in FY 2017
- Highway Construction receives 31% of the total with support of regional / local funding
- Funding for Rail and Public Transportation is 11 percent of budget



$ in millions

FY 2018 VDOT Recommended Allocations

- **VDOT budget up by 1 percent**
- **Draft budget was $5.1 billion**
- **Construction amount reflects increased dedicated amounts from regional entities and localities, offsetting state revenue reduction**
- **Maintenance growth of approximately 1 percent after revenue reduction**

	FY 2017	Recommended FY 2018	Increase (Decrease)
VDOT Programs			
Environmental Monitoring and Evaluation (514)	$ 13.5	$ 13.7	$ 0.2
Ground Transportation Planning and Research (602)	72.8	73.8	1.0
Highway System Acquisition and Construction (603)	1,869.1	1,892.0	22.9
Highway System Maintenance (604)	1,674.4	1,689.4	14.9
Commonwealth Toll Facilities (606)	48.2	70.5	22.2
Financial Assistance to Localities (607)			
VDOT Programs	452.9	457.5	4.6
Regional Programs	496.1	492.5	(3.6)
Non-Toll Supported Transportation Debt Service (612)	352.0	358.4	6.4
Administrative and Support Services (699)	266.1	263.4	(2.6)
VDOT Capital Outlay (998)	40.0	30.7	(9.3)
Total VDOT Programs	**$ 5,285.2**	**$ 5,341.8**	**$ 56.7**
Support to Other State Agencies	68.1	60.7	(7.5)
Support to DRPT Programs	4.6	7.9	3.3
TOTAL	**$ 5,357.9**	**$ 5,410.3**	**$ 52.5**
TOTAL OPERATING BUDGET (Net Regional Programs)	**$ 4,861.8**	**$ 4,917.8**	**$ 56.1**

Commonwealth Transportation Fund
Fiscal Years 2018–2023 Six-Year Financial Plan
Estimated Revenues (in millions)

	2018	2019	2020	2021	2022	2023	Total	FY 2017-2022	Difference
State Transportation Revenues									
HMO	$ 2,031.1	$ 2,064.8	$ 2,081.8	$ 2,101.5	$ 2,118.3	$ 2,139.4	$ 12,537.0	$ 12,591.0	$ (54.0)
TTF net interest	1,166.8	1,183.4	1,199.2	1,218.5	1,233.6	1,255.0	$ 7,256.4	7,454.5	(198.1)
PTF (From TTF)	257.9	210.0	218.8	228.4	237.5	248.1	1,400.7	1,293.4	107.3
Local and Other Revenues	741.3	689.9	602.5	656.5	457.6	418.3	3,566.1	2,531.6	1,034.5
Total	**4,197.1**	**4,148.1**	**4,102.3**	**4,204.9**	**4,047.0**	**4,060.8**	**24,760.2**	**23,870.5**	**889.7**
Federal Revenues	**1,191.0**	**1,064.0**	**1,088.5**	**1,106.3**	**1,124.3**	**1,135.8**	**6,709.9**	**6,597.2**	**112.7**
Total Revenues	**5,388.1**	**5,212.1**	**5,190.8**	**5,311.2**	**5,171.4**	**5,196.6**	**31,470.0**	**30,467.6**	**1,002.4**
Other Financing Sources									
GARVEE Bonds	113.1	85.7	101.2	98.0	76.3	100.0	574.3	699.5	(125.2)
Capital Improvement Bonds	122.9	61.6	50.0	-	-	-	234.5	357.4	(122.9)
Route 58	-	-	150.9	249.1	-	195.7	595.7	400.0	195.7
Total	**236.0**	**147.3**	**302.1**	**347.1**	**76.3**	**295.7**	**1,404.5**	**1,457.0**	**(52.4)**
Total Operating Revenues and Other Financing Sources	**$ 5,624.1**	**$ 5,359.4**	**$ 5,492.9**	**$ 5,658.3**	**$ 5,247.7**	**$ 5,492.3**	**$ 32,874.6**	**$ 31,924.6**	**$ 950.0**
Pass Through Revenues									
Regional Transportation Funds	492.5	499.9	509.0	520.3	531.0	541.3	3,094.0	3,223.6	(129.6)
Grand Total	**$ 6,116.6**	**$ 5,859.3**	**$ 6,001.9**	**$ 6,178.6**	**$ 5,778.7**	**$ 6,033.6**	**$ 35,968.6**	**$ 35,148.2**	**$ 820.4**

Commonwealth Transportation Fund
Fiscal Years 2018 – 2023 Six-Year Financial Plan
Estimated Allocations (in millions)

	2018	2019	2020	2021	2022	2023	Total	2017 - 2022 SYFP	Difference
Debt Service	$ 355.9	$ 376.1	$ 372.1	$ 417.0	$ 415.4	$ 435.1	$ 2,371.6	$ 2,413.5	$ (41.9)
Other Agencies & Transfers	44.9	45.9	46.2	47.3	47.6	48.8	280.6	284.2	(3.57)
Maintenance & Operations	2,131.6	2,175.3	2,138.7	2,242.3	2,235.1	2,281.6	13,204.7	13,098.6	106.1
Administration & Other Programs	420.6	411.1	439.2	483.3	490.9	471.2	2,716.2	2,635.8	80.5
Toll Programs	67.3	65.9	69.4	78.7	90.3	90.8	462.4	227.3	235.1
Rail and Public Transportation									
Public Transportation	496.4	456.8	434.7	397.2	404.5	395.8	2,585.3	2,704.2	(118.9)
Rail Assistance	139.2	125.1	115.5	116.6	122.4	111.3	730.1	520.5	209.5
Other Programs and Administration	13.9	14.4	14.5	14.7	15.1	15.4	88.0	86.0	2.0
Port Trust Fund	41.2	42.7	43.4	44.1	44.5	45.3	261.2	269.8	(8.5)
Airport Trust Fund	23.5	24.4	24.7	25.2	25.4	25.9	149.0	153.9	(4.9)
Commonwealth Space Flight Fund	15.8	15.8	15.8	15.8	15.8	15.8	94.8	94.8	0.0
Construction	1,874.0	1,606.0	1,778.7	1,776.1	1,340.7	1,555.3	9,930.6	9,436.1	494.6
Total Operating Programs	**$ 5,624.1**	**$ 5,359.4**	**$ 5,492.9**	**$ 5,658.3**	**$ 5,247.7**	**$ 5,492.3**	**$ 32,874.6**	**$ 31,924.6**	**$ 950.0**
Pass Through Programs									
Northern Virginia Transportation Authority Fund	332.1	334.5	337.5	343.8	349.9	356.3	2,054.1	2,116.4	(62.3)
Hampton Roads Transportation Fund	160.4	165.4	171.5	176.5	181.1	185.0	1,039.9	1,107.2	(67.3)
Subtotal	**492.5**	**499.9**	**509.0**	**520.3**	**531.0**	**541.3**	**3,094.0**	**3,223.6**	**(129.6)**
Total	**$ 6,116.6**	**$ 5,859.3**	**$ 6,001.9**	**$ 6,178.6**	**$ 5,778.7**	**$ 6,033.6**	**$ 35,968.6**	**$ 35,148.2**	**$ 820.4**

Significant Changes

Updates in the Final SYFP:

- Updated Debt Service estimates in FYs 2018-2020 based on recent Bond Refunding
- Transfers among Administrative Programs to meet demands of personnel costs
- Capturing Project Participation Revenue from Localities and Regional Entities
- Updated E-ZPass Operations assumptions
- Updated funds programmed to Rail and Mass Transit

Proposed Final FY 2018 – 2023 Six-Year Improvement Program

John Lawson, CFO VDOT

June 20, 2017

Highlights

- **Funded full consensus scenario to $1.0 billion preliminary estimate ($358 million District Grant Program and $658 million High Priority Projects Program)**
- **Allocated $1.1 billion to State of Good Repair in FY2018 – FY2023**
- **Continue special programs after sunset of CTB Formula in FY2020**
- **Pre-SMART SCALE/HB1887 allocations remain the same**
  - **Optional CTB Formula**
  - **Federal fund sources not subject to formula (e.g., dedicated bridge funds)**
- **New construction formula fully implemented by FY 2021**
- **Working to consolidate remaining 40/30/30 formula funds on active projects to comply with new Appropriations Act language**

  All unspent Primary, Secondary and Urban formula funds will be de-allocated and transferred to the State of Good Repair Program January 1, 2018 unless allocated to a fully funded and active project

Proposed Final FY 2018 – 2023 SYIP

	Draft FY 2018 - 2023	Proposed Final FY 2018 – 2023	Change
Highway Construction	$14.7 billion	$15.2 billion	$0.5 billion
Rail & Public Transp.	$ 3.4 billion	$ 3.4 billion	$0.0 billion
Total SYIP*	$18.1 billion	$18.6 billion	$0.5 billion

- **Highway Construction Program (FY 2018 – 2023) $15.2 billion**
  - **Provides funding to more than 3,600 projects**
  - **Current program includes $5.6 billion to be provided by others**

*(excludes debt service)

SMART SCALE Funding Distribution for Round 2

(in millions)

District Grant Programs	**$358.9**
Bristol	*$20.7*
Culpeper	*$19.9*
Fredericksburg	*$26.4*
Hampton Roads	*$78.1*
Lynchburg	*$22.7*
NOVA	*$80.0*
Richmond	*$55.7*
Salem	*$31.6*
Staunton	*$23.9*
High Priority Projects Program (Statewide)	**$658.8**
Total	**$1,017.7**

VDOT Virginia Department of Transportation | DRPT Virginia Department of Rail and Public Transportation

State of Good Repair Funding Distribution FY2018 – FY2023

(in millions)

	VDOT		Localities		Total	
District	**Pavement**	**Bridge**	**Pavement**	**Bridge**	**Pavement**	**Bridge**
Bristol	$27.8	$84.7	$2.6	$17.2	$30.4	$101.9
Culpeper	$17.0	$30.5	$2.0	$18.3	$19.0	$48.8
Fredericksburg	$24.6	$105.2	$2.7	$4.1	$27.3	$109.3
Hampton Roads	$11.7	$63.5	$41.8	$50.2	$53.5	$113.7
Lynchburg	$24.9	$54.2	$4.3	$2.6	$29.2	$56.8
Northern Virginia	$32.2	$72.9	$13.1	$1.2	$45.4	$74.1
Richmond	$49.3	$128.3	$7.9	$11.8	$57.2	$140.1
Salem	$28.7	$91.6	$4.1	$12.3	$32.8	$103.8
Staunton	$11.6	$67.5	$3.6	$6.2	$15.1	$73.8
Subtotal	$227.8	$698.4	$82.2	$123.9	$310.0	$822.3
Total*	**$926.2**		**$206.1**		**$1,132.3**	

**$10.4million in SGR funding is set aside for rest areas.*

VDOT Virginia Department of Transportation | DRPT Virginia Department of Rail and Public Transportation

Funds Programmed According to HB1887 Formula FY2018 – FY2023

(in millions)

District	DGP*	HPP**	SGR***	Total
Bristol	$76.7	$2.8	$132.3	$211.8
Culpeper	$68.7	$36.7	$67.8	$173.3
Fredericksburg	$72.7	$176.1	$136.6	$385.5
Hampton Roads	$210.9	$258.6	$167.2	$636.8
Lynchburg	$78.4	$35.2	$86.0	$199.6
NOVA	$219.3	$257.9	$119.4	$596.7
Richmond	$153.5	$119.1	$197.3	$469.9
Salem	$104.8	$53.6	$136.6	$295.1
Staunton	$86.7	$51.9	$88.9	$227.5
Statewide	$0.0	$55.5	$10.5	$66.0
Total	**$1,071.8**	**$1,047.5**	**$1,142.8**	**$3,262.1**

**DGP includes Round 1 and 2 and funds for Unpaved Roads.*

***HPP includes Round 1 and 2 and funds for ITTF.*

Virginia Department of Rail and Public Transportation

DRPT
FY 2018 – 2023 SYIP / Budget Update

June 20, 2017

Steve Pittard
CFO

Transit SYIP by Program Draft vs. Final

($ in millions)

	Draft FY 18 - 23	Final FY 18 - 23	Change
Operating	$ 1,349	$ 1,349	$ -
Capital	1,180	1,192	12
Other	63	64	1
Total	$ 2,592	$ 2,605	$ 13

Final SYIP Transit Updates

- Recommend adding $7.3 M for 17 GRTC Replacement Buses and 20 Replacement Vans
- Recommend adding $5.4 M for Blacksburg Facility
- Recommend adding $0.6 M for Metro Rail Safety Commission
- Other technical changes

Rail SYIP by Program Draft vs. Final
($ in millions)

	Draft FY 18 - 23	Final FY 18 - 23	Change
Passenger & Freight	$ 791	$ 797	$ 6
Rail Preservation	26	26	-
Total	$ 817	$ 823	$ 6

- Recommend adding $6.2 M for Grain Terminal Project

FY 2018 SYIP Allocations by District

($ in millions)

	Transit	Rail	Total
Bristol	$ 6.3	$ -	$ 6.3
Culpeper	12.6	9.2	21.8
Fredericksburg	7.3	13.4	20.7
Hampton Roads	51.9	23.4	75.3
Lynchburg	8.7	6.9	15.6
Northern Virginia	328.0	64.0	392.0
Richmond	38.4	67.2	105.6
Salem	18.1	0.9	19.0
Staunton	9.2	3.8	13.0
Total	$ 480.5	$ 188.8	$ 669.3

FY 2018 DRPT Budget by District

($ in millions)

	Transit	Rail	Total
Bristol	$ 6.3	$ -	$ 6.3
Culpeper	8.9	9.2	18.1
Fredericksburg	6.1	20.7	26.8
Hampton Roads	37.2	23.7	60.9
Lynchburg	7.6	21.1	28.7
Northern Virginia	335.1	68.0	403.1
Richmond	38.9	42.3	81.2
Salem	14.1	28.8	42.9
Staunton	4.2	2.8	7.0
Total	$ 458.4	$ 216.6	$ 675.0

DRPT Administrative Budget

- Combined Project Management and Administrative Budget
  - $13.9 million for FY 2018 vs. $13.4 million for FY 2017
    - Appropriation Act increases the amount the CTB may allocate from the Intercity Passenger Rail Operating and Capital fund for program oversight from 3.5% to 5.0% for Atlantic Gateway
    - Increase in staffing from 60 to 64 positions for Atlantic Gateway
  - 2.0 % of total proposed budget of $689 M
- Funding Sources: Va. Code §33.2-1604 authorizes CTB to approve up to 3.5% of the MTTF, REF, and Rail Preservation funds

Virginia Department of Rail and Public Transportation

DRPT
FY 2018 – 2023 SYIP / Budget Update

June 20, 2017

Steve Pittard
CFO

FY 2018
Local Programs Approvals

June 20, 2017

Russ Dudley
Local Assistance Division

FY18 Program Approvals on the action agenda:

- FY18 Revenue Sharing Program Allocations
- FY18 Transportation Alternatives Allocations
- FY18 Maintenance Payments to Cities and Certain Counties
- FY18 Maintenance Payments to Arlington and Henrico Counties
- FY18 Primary Extension/State of Good Repair (SGR) Paving
- FY18 High Volume Unpaved Roads

FY18 Revenue Sharing Program Update

District Breakdown of Requests

DISTRICT	# Localities	# Projects	Total Requested
Bristol	10	13	$11,013,517
Culpeper	4	12	$8,300,465
Fredericksburg	4	6	$2,882,320
Hampton Roads *	9	36	$48,728,585
Lynchburg	5	13	$9,419,032
Northern Virginia *	14	35	$49,307,850
Richmond *	10	52	$31,360,893
Salem *	12	42	$25,856,851
Staunton	10	31	$25,880,335
TOTALS	78	240	$212,669,848

* District has locality(s) applying for $10M

FY18 Revenue Sharing Program Recommendation

- Total Requests: **$212.6M**
- Budget for FY17 Revenue Sharing: **$100M**
- Funds Previously De-allocated by CTB: **$1.7M**
- **Funds released by localities since de-allocation: $1.8M**
- Total Available for FY17 Requests: **$103.5M**
  - **All requests meeting first priority criteria fully funded**
  - **Insufficient funding available for second or third priority or other requests**
  - **Priority 1 requests recommended for funding – $102.1M**

FY18 Revenue Sharing Program Update

District Breakdown of Recommendation

DISTRICT	# Localities	# Projects	Total Recommended
Bristol	1	1	$315,000
Culpeper	1	1	$4,500,000
Fredericksburg	0	0	$0
Hampton Roads *	5	13	$20,383,935
Lynchburg	3	4	$4,442,594
Northern Virginia *	8	16	$32,247,400
Richmond *	6	21	$14,965,557
Salem *	6	11	$12,193,684
Staunton	6	10	$13,062,500
TOTALS	36	77	$102,110,670

* District has locality(s) applying for $10M

FY18 Application Summary - TA

Received November 1, 2016

99 Eligible Applications requesting ~ $37.9M

Allocations FY18 ~ $ 20.1M, after Rec Trails distribution ($1M)

Allocation Distribution	
MPO/TMA Areas	$ 6.1M
District Members	$ 9M ($1M per District)
At-Large Members/Secretary	$5M
Total	$ 20.1M
District Re-Allocations from Balance	$ 1.5M

FY18 Transportation Alternatives Program Update

- FY18 Application Summary
  - **101 Applications received (2 withdrawn)**
  - **59 requests recommended for full funded**
  - **11 requests recommended for partial funding**
  - **29 requests recommended for no funding**

Urban Maintenance Program
Local Maintenance Payments

Eligibility Requirements for Maintenance Payments:

- **Urban street acceptance criteria established in Code Section 33.2-319**
- **CTB approves mileage additions/ deletions**

Payment - General

- **Payments based on moving lane miles (available to peak-hour traffic)**
- **CTB approves payment amounts to localities**
- **Localities annual growth rate is based upon the base rate of growth for VDOT's maintenance program**
- **Payments to localities made quarterly**

Payment Categories – Based on Functional Classifications

1. **Principal and Minor Arterial Roads**
2. **Collector Roads and Local Streets**

Some Localities will receive a total budget reduction as a result of FHWA's functional reclassification requirements

Proposed FY18 Urban Local Maintenance Payments

- Urban (84 Cities and Towns)
  - *Overall Urban Budget* ≈ $374M
  - *Payment Rates:*
    - Principal and Minor Arterial Roads = $21,061 per lane mile
    - Collector Roads and Local Streets = $12,365 per lane mile
  - *Arterial Lane Miles:* 5,944
  - *Collector/ Local Miles:* 20,064
- Overweight Permit Fee Revenue
  - *FY18 Urban Distribution* ≈ $178,018
    - Equivalent to $6.84 per lane mile
- Continue $1M to Chesapeake to address additional costs associated with movable bridges (payments began 2005)

County (Arlington/ Henrico) Maintenance Program

- **Eligibility Requirements**
  - Established by Code Section: 33.2-366
  - These counties maintain their own systems of local roads
  - Annual submission of additions/ deletions provided by county
  - Annual arterial inspection not required
- **Payment - General**
  - No differential in payment rates based on Functional Classifications
  - CTB approves payment amounts to localities
  - Annual growth rate is based upon the base rate of growth for VDOT's Maintenance Program
  - Payments to localities made quarterly

Proposed FY18 County Local Maintenance Payments

- County (Arlington and Henrico)
  - *Overall Arlington/ Henrico Budget* ≈ $67M
    - Arlington = $19,470,746
    - Henrico = $47,273,884
  - *Payment Rates:*
    - Arlington = $18,515 per lane mile
    - Henrico = $13,473 per lane mile
  - *County Lane Miles:* 4,560
    - Arlington = 1,051.58 lane miles
    - Henrico = 3,508.78 lane miles
  - *FY18 Overweight Permit Fee County Distribution* ≈ $31,213; Equivalent to $6.84 per lane mile

Primary Extension/ State of Good Repair (SGR) Local Paving Programs - Update

- Scored 159 applications with requests over $36.5M
- $19,949,627 recommended for approval
  - **$12,358,969 from draft FY18 CTB Formula budget**
  - **$1,693,623 recommended to allocate from draft FY19 CTB Formula budget, to fund all projects on tentative list (May CTB), including those with revised scores**
  - **$5,606,352 from draft FY18 State of Good Repair budget $290,683 surplus Primary Extension CTB Formula and SGR Funding available for reallocation**
- Recommend funding the highest 76 top scoring applications with total scores of 53.8 and above
- Recommend distribution of CTB Formula and SGR allocations
- Localities in all 9 VDOT districts to receive funding
- Represents 76 projects in 30 different localities

High Volume Unpaved Road Program

- **Loudoun County, Route 789** **$300,000**
  - Traffic Count – 1,008 vehicles per day in 2016
- **Prince William County, Route 622** **$300,000**
  - Traffic Count – 1,045 vehicles per day in 2016
- **Warren County, Route 603** **$300,000**
  - Traffic Count – 820 vehicles per day in 2016
- **Wythe County, Route 619** **$298,000**
  - Traffic Count – 660 vehicles per day in 2016

FY18 Program Approvals

All Programs will be presented for vote during CTB Action Meeting

Virginia Department of Transportation

FY 2018
Local Programs Approvals

June 20, 2017

Russ Dudley
Local Assistance Division

FY 2018
Revenue Sharing Program Guidelines Revisions

June 20, 2017

Russ Dudley
Local Assistance Division

REVENUE SHARING PROGRAM GUIDELINES REVISIONS

KEY CHANGES TO REVENUE SHARING GUIDELINES:

- **New Requirements for Allocation / Transfer Resulting from Updated CTB policy – highlighted in yellow on draft revised Guidelines**
- **Clarifications as a result of CTB Policy Changes**
- **Changes to Reflect Revised Application Processes**
- **Clarification of Existing Policies / Procedures**
- **Miscellaneous**
  - Deallocation of Completed Projects
  - Minor Modifications to Guidelines
  - Code Changes

REVENUE SHARING PROGRAM GUIDELINES REVISIONS

New Requirements based on CTB Policy Changes

- Table provided comparing new policy to old policy

Clarifications as a Result of CTB Policy Changes

- Definition of Eligible Project
  - Logical Termini; Independent Utility

New Application Process

- On-line Application Process (SMART Portal)
- Biennial Application Process including distribution of additional funding in 2nd year

Clarification of Existing Policies / Procedures

- Project serving exclusively private developments are not eligible
- Localities may request to make payments on VDOT Administered projects when construction phase > $5M

REVENUE SHARING PROGRAM GUIDELINES\ REVISIONS

Other Modifications

- Deallocation Process
  - Changes when completed projects are subject to deallocation – from 24 months to 6 months after completion.
- Statement allowing minor modifications to Revenue Sharing Guidelines without CTB action
  - "Occasionally modifications to these Guidelines may be necessary to adjust for changes in Departmental procedures. Where those modifications fully comport with Virginia Code and CTB Policy, they may be made administratively without further approval of the CTB." Any changes will be reported to CTB.
- All Code references updated based on recodification last October

REVENUE SHARING PROGRAM GUIDELINES (Next Steps)

- **CTB approval of revised Guidelines**
  - Approval of Policy and Guidelines at July CTB Meeting
  - Effective August 1, 2017
  - Will apply to applications submitted for FY2019 and forward
- **Formal solicitation to Localities for FY 2019 Applications**
  - Early August – e-mail to localities with invitation for applications
  - November 1st Application Submittal Deadline

Revenue Sharing Program Guidelines Revisions

June 20, 2017

Russ Dudley
Assistant Director, Local Assistance Division

Virginia Department of Rail and Public Transportation

HB 1359 – Transit Capital Project Revenue Advisory Board

Status Update to the Commonwealth Transportation Board

June 20, 2017

Steve Pittard
Chief Financial Officer

Jennifer DeBruhl
Chief of Public Transportation

Revenue Advisory Board – Key Questions

- How much funding is needed?
  - Estimate state transit capital needs
- What are potential funding sources?
  - Examine potential revenue sources
- Which projects should be funded?
  - Develop approach for project prioritization
- How should funds be allocated to capital projects?
  - Develop approach for capital program structure

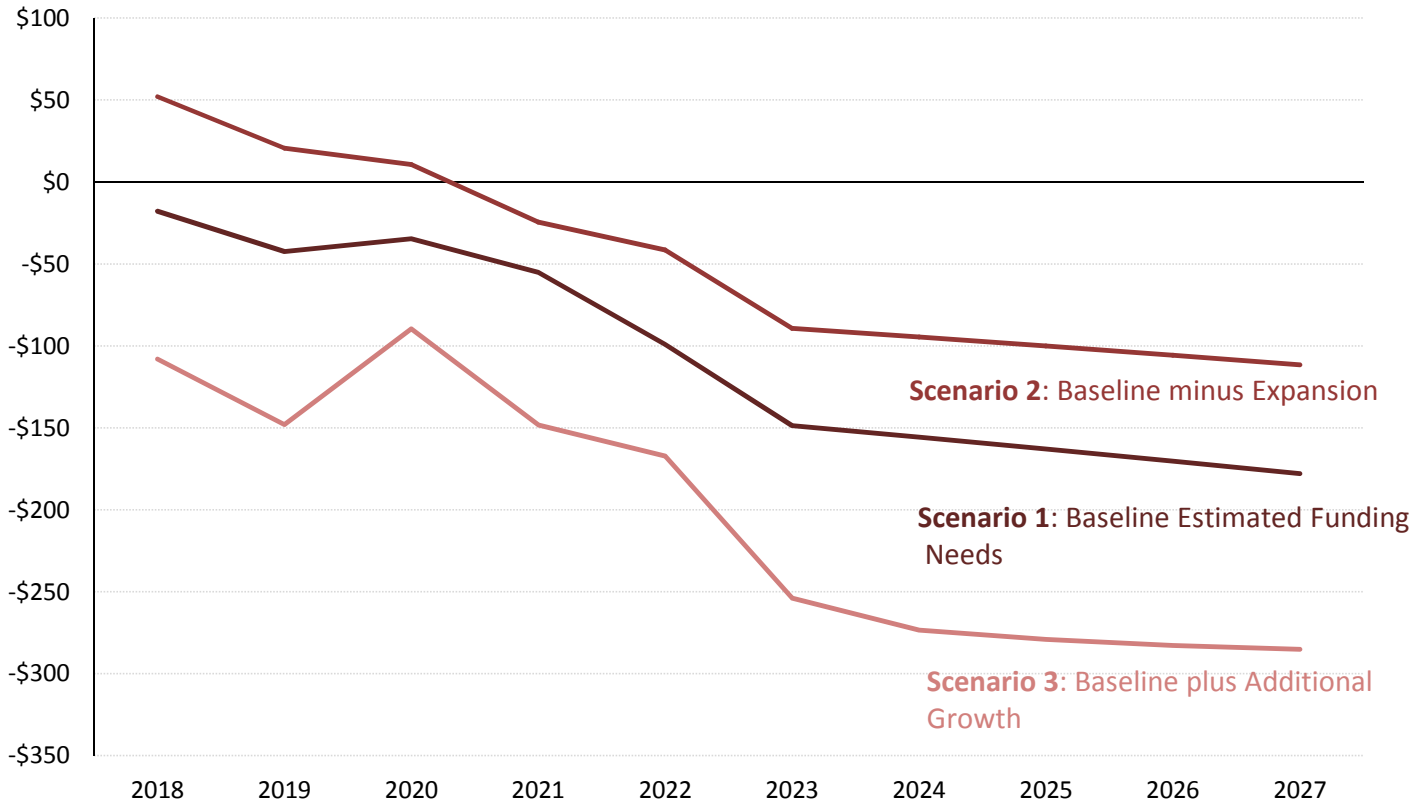
Existing Transit Capital Revenue Sources

- Transportation Trust Fund – 1986 Session
  - 14.7% dedicated to transit; of this amount, 25% allocated to Transit Capital ~ $37 M annually
- Recordation Taxes
  - $0.01/$100 ~ $15 M annually
- Retail Sales and Use Tax – 0.3% increase in HB2313
  - 0.075% dedicated to transit; of this amount, 25% allocated to Transit Capital ~ $20 M annually
- Sales Tax on Fuel
  - 5.1% tax; 3.11% of revenue dedicated to transit capital ~ $28 M annually
- CPR Bonds – 20% minimum; $110 M annually
  - Actual allocations have exceeded 40%
- Federal Transit Administration ~ $41 M annually

	2018	2019	2020	2021	2022	2023	Total
1986 Special Session (14.7%)	$ 36.0	$ 37.3	$ 37.9	$ 38.5	$ 38.9	$ 39.6	$ 228.2
Retail Sales and Use Tax	19.3	20.3	20.6	21.0	22.4	22.8	126.4
Sales Tax on Fuel	27.2	27.4	27.6	27.9	28.2	28.5	166.8
Recordation Tax	15.6	15.3	14.4	14.4	14.4	14.4	88.5
Transportation CPR Bonds	110.0	77.3	50.0	-	-	-	237.3
Federal Transit Administration	41.0	41.0	41.0	41.0	41.0	41.0	246.0
Total	**$ 249.1**	**$ 218.6**	**$ 191.5**	**$ 142.8**	**$ 144.9**	**$ 146.3**	**$ 1,093.2**

- Bond funds represent 44% of FY18 transit capital funding

Annual Projected State Transit Capital Deficit by Scenario (FY18 – FY27)



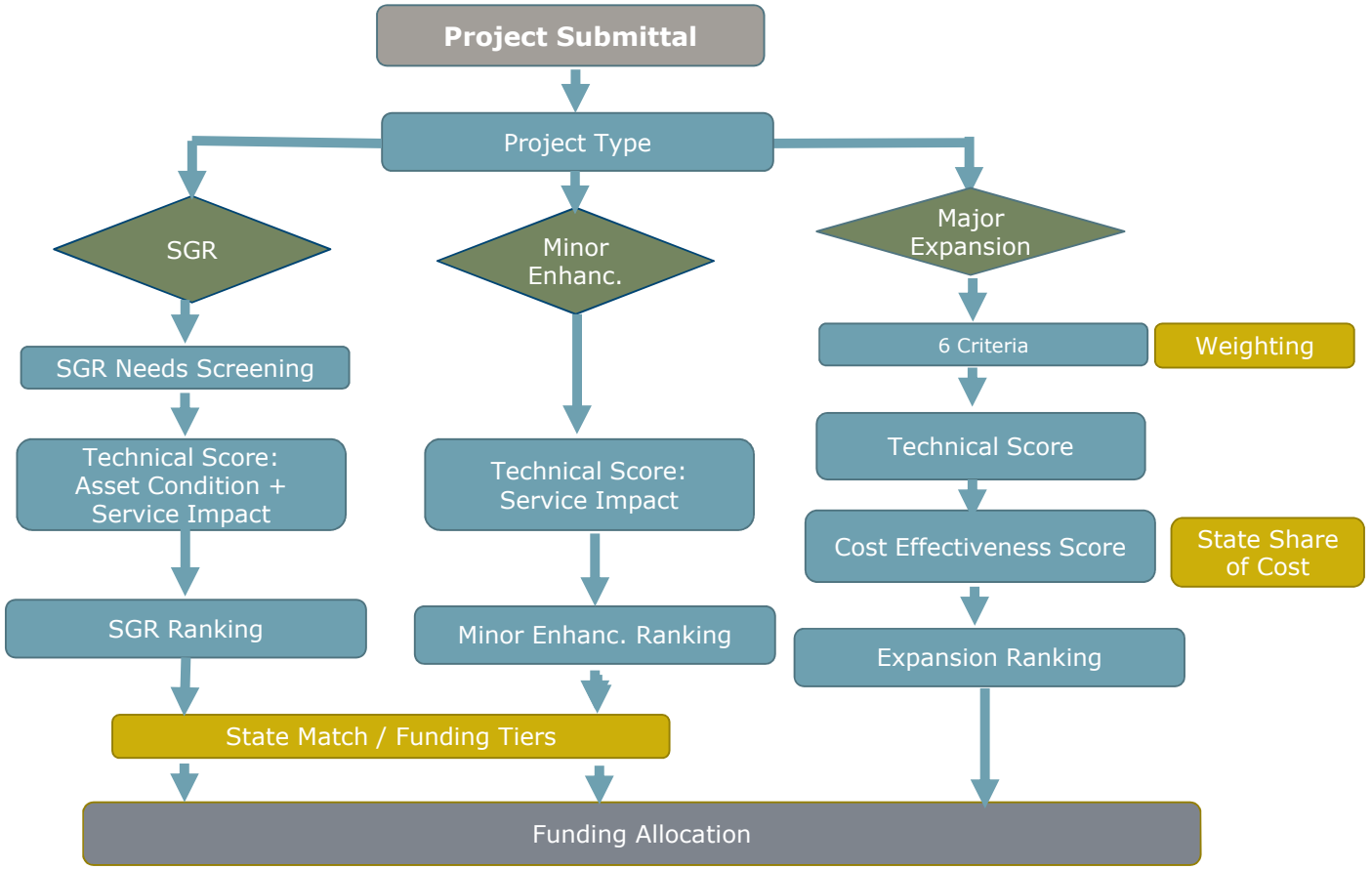
Long List of Revenue Options Considered

- Airport use excise tax
- Alcohol tax
- Amusement taxes
- Building permit tax
- Dedicated value added taxes
- Energy & utilities taxes
- Fertilizer/pesticide taxes (agricultural chemicals)
- Hotel excise tax
- Disposal tax surcharge
- Improvement district tax
- Insurance premium taxes
- Litter control tax
- Marine facilities tax
- Marine fuels tax
- Restaurant/prepared food tax
- Tax on marine vessels
- Tax on personal watercraft (personal property)
- Vehicle titling tax
- Licensing and recreational fee
- Local aquifer protection fee
- Tobacco tax
- Voluntary "check off" designating a portion of state income
- taxes to go towards identified item
- Access rights fee
- Bicycle registration fee
- Construction fee
- Connection fee
- Commercial and industrial property tax
- Property tax
- Fuel Tax
- Hospitality tax
- Mortgage transaction fee
- Real estate transfer tax
- Recordation Taxes
- Rental car taxes
- Sales and use tax
- Toll increase/implementation
- Special regional transportation taxing districts
- Payroll Tax
- Road branding / providing advertising space on public facilities
- Local water/wastewater utility user fee
- Fees for trucks servicing the port
- Inspection/monitoring/testing fee
- Off and/or on-street parking space fee
- Project investment fee
- Septic system impact fee
- Solid waste disposal fee (tipping fees, septage/sludge fees)
- Special permitting fees
- State public water supply withdrawal fee
- Transportation/Infrastructure fee for non-profits/governmental organizations whose property is not subject to property taxes
- Utility rights application fee
- Vehicle registration fee for public colleges/universities
- Vehicle use fees based on mileage (payable w/ state inspection)
- Well permit/pumping fee
- Container truck surcharge
- Development of public-private partnerships
- Leasing of air space and right-of-way
- Lottery and/or casino revenue / dedicated lottery
- Tourist tolls on roadways as part of toll system
- Traffic violation revenues - percentage
- Cap and Trade
- Driver license fee
- HOT Lanes
- Franchise fee
- Taxes on Certain Transportation and Transmission Companies
- Petroleum Business Tax
- Tire Tax
- Occupational license tax
- Dedicate portion of commercial and/or residential real estate taxes or impose a separate special tax district
- Increase sales tax base to include more services - dedicate extra revenue transportation
- Impact fees / proffers for new development
- Car registration fees
- Car tax (personal property)
- Head tax (based on # of employees)
- Impact fees / proffers / contributions for new development
- Income tax for localities with the proceeds dedicated to transit
- Joint Development
- Naming rights

Recommendations for Transit Capital Revenue

- Consider a package that includes a variety of sources
- Consider a combination of statewide and regional options
  - Regional funds should be dedicated and prioritized regionally
- Consider incremental implementation of revenue enhancements (3 to 5 year phase-in)
- Consider implementation of a floor on regional gas taxes as part of solution
- Consider dedication of additional PTF revenues to transit capital
- WMATA needs are not fully factored into the analysis and may result in additional revenue needs beyond replacement of the PRIIA resources.

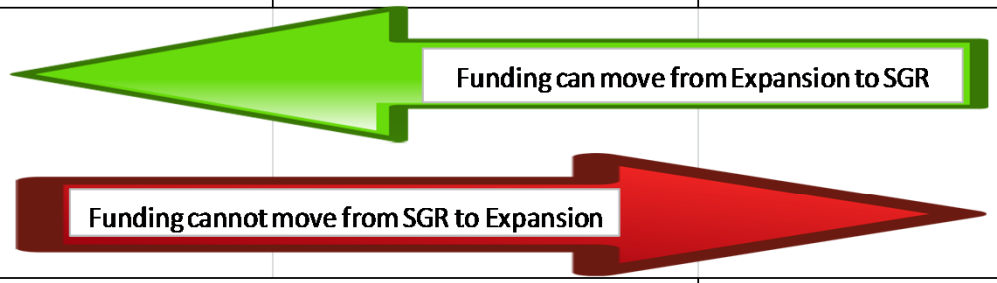
Illustrative Structure for Capital Program Prioritization



Policy Principles for Prioritization

- It is possible and desirable to prioritize transit capital projects using quantitative and qualitative measures
- Prioritization policies should be developed by CTB, in a manner similar to Smart Scale, via Board policy
- Allow for input/outreach to transit partners and ongoing process improvement

Principles for Transit Capital Program Structure

	State of Good Repair and Minor Enhancement (80%)		Expansion (20%)
	SGR (95%)	Minor Enhancement (5%)	
			
Funding Level	Minimum funding level (floor) for SGR Funding can be moved from expansion to SGR based on need		Funding level to be determined based on review of needs, funding can be moved to SGR but not from SGR to expansion
Illustrative State Match	up to 80%	up to 80%	up to 50%

Next Steps

- July 2017 – CTB Resolution endorsing final report with legislative recommendations
- August 1 – Report due to General Assembly
- Future:
  - Development and implementation of CTB policy on transit capital prioritization

Virginia Department of Rail and Public Transportation

HB 1359 – Transit Capital Project Revenue Advisory Board

Status Update to the Commonwealth Transportation Board

June 20, 2017

Steve Pittard
Chief Financial Officer

Jennifer DeBruhl
Chief of Public Transportation

Infrastructure Condition (Pavements and Bridges) Briefing

June 20, 2017

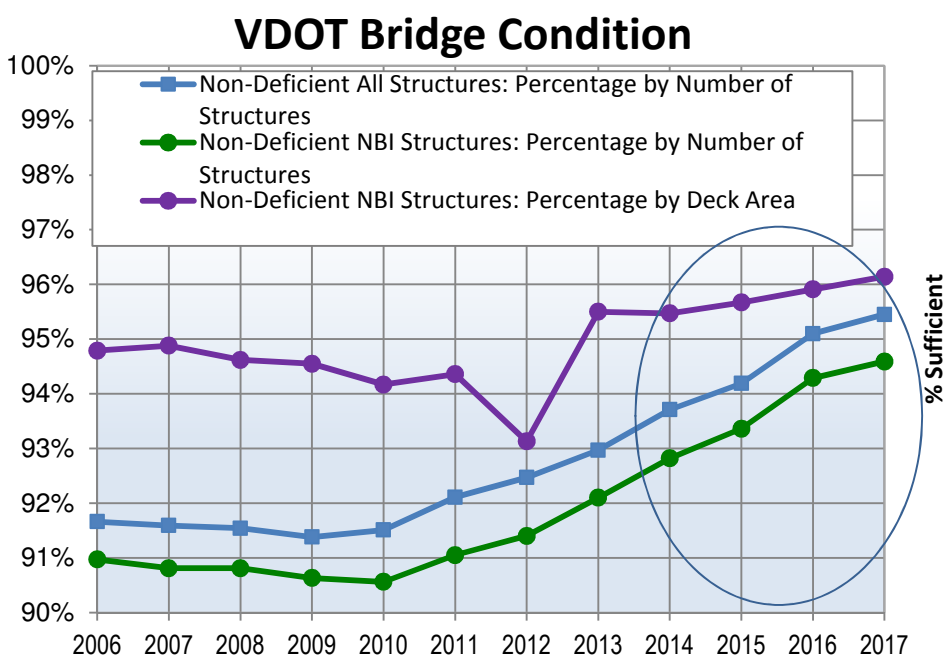
Garrett Moore, PE
Chief Engineer

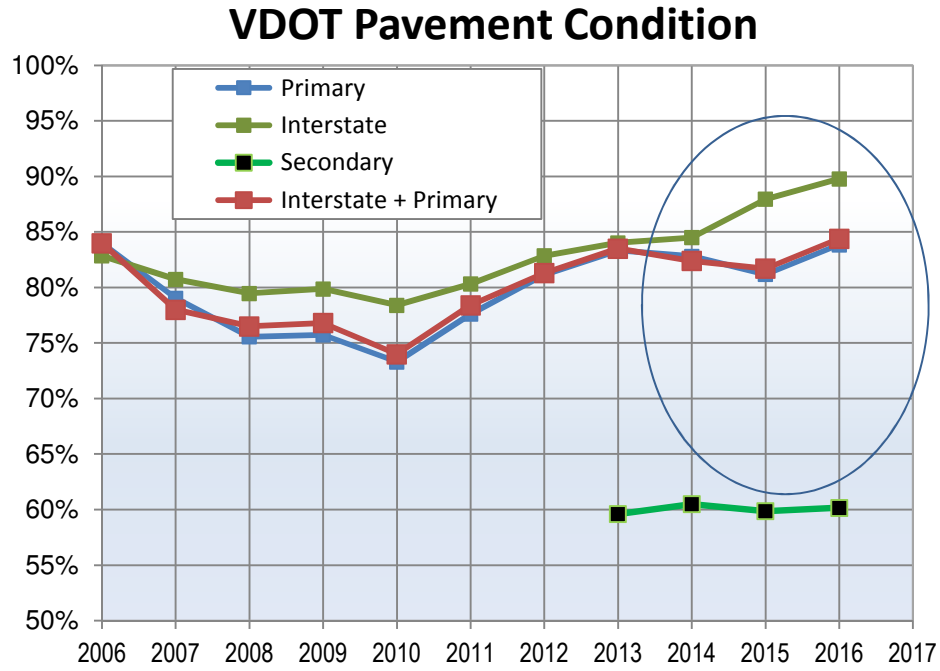
VDOT's Dashboard
The Numbers - All Projects
Maintenance and Construction

On Time: 92%			
(FY2017 Target: 77%)			
	Active	Completed	Total
R	16	12	28
Y	1	0	1
G	14	309	323
Total	31	321	352

On Budget: 95%			
(FY2017 Target: 85%)			
	Active	Completed	Total
R	2	9	11
Y	6	1	7
G	23	311	334
Total	31	321	352

VDOT's Dashboard
The Numbers - Core Assets' Condition
Pavement and Bridge





Existing Assets
Key Communication

Commonwealth Of Virginia Focus

- Impacts VDOT and Locality Maintained Assets

Core Assets – Pavements and Bridges

- Approximately *$400 B* – Full Replacement Costs
- Approximately *$12 B* – Costs to Update to Fair or better

Bridges

- Current funding levels – age to replacement *170 years on average*
- Bridge built prior to 2007 - expected 50 year service life
  - 94% of inventory (19,827 structures)
- Bridges built after 2007 - expected 75 year service life
  - 6% of our inventory (1,287 structures)
- Based on current funding replace approximately *86* bridges per year
  - Replaced at the end of service life, need to replace *305* bridges per year at a total cost of *$1.6B annually* for the next 40 years and *117* per year thereafter at a cost of *$610M annually*

Existing Assets
Key Communication - Continued

State of Good Repair Program focuses on pavement and bridge repair (replacement/rehabilitation)

- FY 2021 full implementation

$1.6 B - Maintenance and Operations Program

- Used for other assets and services besides core assets

More extensive repairs on existing assets will be required in the future

- 48 years - current average age of structures

Special Structures – 25 bridges and tunnels

- 30 year plan
- VTRANs

Core Assets
Pavement and Bridge Details

VDOT's Maintenance and Operations Program Fiscal Year 2018

- **Pavements - $500 M (all inclusive)**
- **Bridges - $200 M**
  - **Work with VDOT Bridge Crews and Contracts**

State of Good Repair

- **Initial funds - FY 2017**

State of Good Repair Program Progress				
Description	VDOT		Localities	
	Year 1	Year 2	Year 1	Year 2
Bridge (# of structures)	78*	55	54	
Pavement (Lane Miles)	248	111	48	50
*Original list 83 – work completed with other sources or closed				

Core Assets
Performance Targets
Pavement Condition - Statewide

Performance Measure Description	Current Policy (Percent Sufficient)*	Updated Policy (Percent Sufficient)	Current Performance 2016 (rounded) (Percent Sufficient)
Interstate	82% No Section CCI less than 30	82% ***No Section CCI less than 35***	90%
Primary	82%	82%	84%
Secondary	65%	65%	60%
Current Funding sustains Interstate and Primary condition			
Additional funding required to achieve secondary target			

***Sufficient means 'fair' or better**

NOTE: Objective is to *sustain or improve* current performance on the interstate and primary and achieve target on the secondary

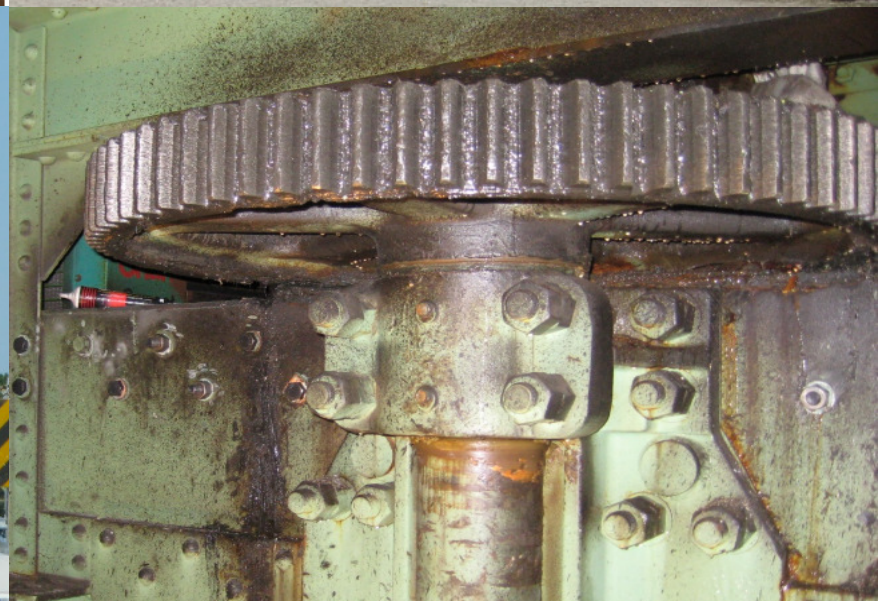
Core Assets
Performance Targets
Bridge Condition - Statewide

Performance Measure Description	Current Policy (Percentage Not Structurally Deficient)*	Updated Policy (Percentage Not Structurally Deficient)	Current Performance (VDOT and Localities) (Percentage Not Structurally Deficient)
Statewide	92%	***95.5%***	95.4%
Interstate	97%	***99%***	98.5%
Primary	94%	***96%***	96.4%
Secondary	89%	***94%***	94.7%
Updated Performance Goals are Predicted to be Attained with Current Funding by the End of FY18			

***Bridges that are not Structurally Deficient are in a Fair or Good Condition.**

NOTE: Objective is to *sustain or improve* current performance on the interstate and primary and achieve target on the secondary

Special Structures



Special Structures
Varina Enon Bridge

Special Structures

Large and/or complex and play a critical role in the function of the transportation network

One or more of the following traits:

-High traffic in conjunction with a long detour

-Critical and non-redundant link for communities with significant population

-Structural complexity

-High maintenance and/or operational demands

	STRUCTURE		ROUTE	YEAR BUILT (AGE)	2018-2027	2028-2037	2038-2047	TOTAL
TUNNELS	BRISTOL	Big Walker Mountain	I-77	1972 (45)	$12 M	$2 M	$5 M	$20 M
	BRISTOL	East River Mountain	I-77	1974 (43)	$13 M	$3 M	$6 M	$21 M
	HAMPTON ROADS	Hampton Roads Bridge Tunnel	I-64	WBL - 1958 (59) EBL - 1974 (43)	$86 M	$51 M	$113 M	$250 M
	HAMPTON ROADS	Monitor Merrimac Memorial Bridge Tunnel	I-664	1992 (25)	$142 M	$46 M	$110 M	$298 M
	HAMPTON ROADS	Elizabeth River Downtown Tunnel			*Maintained by Elizabeth River Crossings*			$0 M
	HAMPTON ROADS	Elizabeth River Midtown Tunnel			*Maintained by Elizabeth River Crossings*			$0 M
	NORTHERN VIRGINIA	Rosslyn Tunnel	I-66	1983 (34)	$4 M	$2 M	$2 M	$8 M
				Subtotal	**$257 M**	**$103 M**	**$236 M**	**$597 M**
MOVABLE BRIDGES	RICHMOND	Benjamin Harrison	Rte 156	1967 (50)	$56 M	$3 M	$4 M	$63 M
	HAMPTON ROADS	Chincoteague	Rte 175	2010 (7)	$1 M	$2 M	$18 M	$21 M
	HAMPTON ROADS	High Rise	I-64	1969 (48)	$5 M	$2 M	$0 M	$7 M
	HAMPTON ROADS	Berkley	I-264	WBL - 1952 (65) EBL - 1990 (27)	$78 M	$20 M	$18 M	$116 M
	HAMPTON ROADS	Coleman	Rte 175	1996 (21)	$9 M	$11 M	$14 M	$33 M
	HAMPTON ROADS	James River	Rte 17	1980 (37)	$55 M	$6 M	$25 M	$86 M
	FREDERICKSBURG	Eltham	Rte 30/33	2007 (10)	$12 M	$1 M	$9 M	$22 M
	FREDERICKSBURG	Gwynn's Island	Rte 223	1938 (79)	$18 M	$1 M	$40 M	$59 M
				Subtotal	**$234 M**	**$45 M**	**$127 M**	**$406 M**
COMPLEX FIXED SPAN STRUCTURES	BRISTOL	460 Connector	460	2017 (new)	$1 M	$0 M	$3 M	$4 M
	SALEM	Smart Road Bridge		2001 (16)	$1 M	$1 M	$2 M	$4 M
	RICHMOND	Varina Enon	I-295	1990 (27)	$69 M	$20 M	$11 M	$99 M
	RICHMOND	895/Pocahontas Parkway	895		*Maintained by Transurban*			$0 M
	HAMPTON ROADS	HRBT Approaches	I-64	WBL 1957 (60) EBL 1974 (43)	$79 M	$490 M	$15 M	$584 M
	HAMPTON ROADS	Willoughby Bay	I-64	1972 (45)	$33 M	$2 M	$0 M	$35 M
	HAMPTON ROADS	MMMBT approaches	I-664	1992 (25)	$36 M	$48 M	$20 M	$104 M
	HAMPTON ROADS	James River bridge approaches	Rte 17	1980 (37)	$61 M	$38 M	$23 M	$122 M
	HAMPTON ROADS	I-64 High Rise bridge approaches	I-64	1969 (48)	$22 M	$13 M	$0 M	$35 M
	FREDERICKSBURG	Norris bridge	Rte 3	1957 (60)	$27 M	$258 M	$12 M	$297 M
				Subtotal	**$329 M**	**$869 M**	**$85 M**	**$1,283 M**
				Total (rounded to $100M)	**$0.8 B**	**$1.0 B**	**$0.5 B**	**$2.3 B**

- 2017 Dollars
- Includes $40M Replacement Costs for Gwynn's Island
- High Rise Replacement Costs not Included (already funded – HRTC)

Core Asset Focus
Risks

Core Assets – Pavements and Bridges

- Only resourcing to current performance targets and maintaining
  - Heavier work not addressed – Special Structures
    - VTRANS
    - Working on fracture critical structures with available resources
  - Need to focus more on proactive preventive maintenance to reduce the needs of heavier future maintenance
    - Shifting funds to proactive preventive maintenance where available
  - Increase in traffic management costs

Other Assets and Services Needs

- Examples
  - Concrete Repair
  - Soundwalls
  - Mowing
  - Operational Investment

Financial

- Federal fund uncertainty
- Unfunded mandates
  - Piloting sponsorships and resolution for naming rights

Investment, Priorities and Focus

Automobile and Technology Industries – Number 1 attraction factor for autonomous vehicles is good conditions of bridges, pavements and pavement markings

In addition, it is fundamental to the Virginia Economy, mobility of its citizens and quality of life

Infrastructure Condition Briefing

June 20, 2017

Garrett Moore, PE
Chief Engineer

COMMONWEALTH *of* VIRGINIA

Office of the

SECRETARY *of* TRANSPORTATION

Urban Development Area Grant Program

Nick Donohue

Deputy Secretary of Transportation

June 2017

History

- Established in Code as a part of Republican legislative initiative in 2007 (HB3202)
- Goal was to promote transportation efficient land development patterns to help reduce the impact of growth on the state transportation network
- 2009 law requires VTrans to identify transportation needs of designated urban development areas (HB2019/SB1398)

Urban Development Areas

- **A UDA is defined as (Section 15.2-2223.1):**
  - Areas designated by a locality that may be sufficient to meet projected residential and commercial growth of at least 10 but not more than 20 years, and up to 40 years near rail transit
  - Areas that may be appropriate for density of at least four single-family residences, six townhouses, or 12 apartments per acres and an authorized floor area ratio of at least 0.4 per acre for commercial development, or any combination thereof
  - Urban development areas shall incorporate principles of traditional neighborhood design (TND) including mixed-use development, pedestrian friendly road design, connected grid of streets, and reduced setback and other subdivision requirements

History and Timeline

2007 — Virginia General Assembly added Section 15.2-2223.1 requiring high growth localities to designate UDAs in their comprehensive plans

2010 — Code amended to establish density and design criteria; OIPI/VDOT administers UDA Local Government Technical Assistance Program

2012 — Designation via Code now voluntary, density requirements also voluntary

2014 — HB2 & VTrans – "promote urban development areas"

2015 — Grant program restarted

VTrans 2040 LOCAL • GLOBAL • MOBILE

SMART SCALE Funding the Right Transportation Projects in Virginia

VMTP 2025 VTRANS MULTIMODAL TRANSPORTATION PLAN LOCAL GLOBAL MOBILE

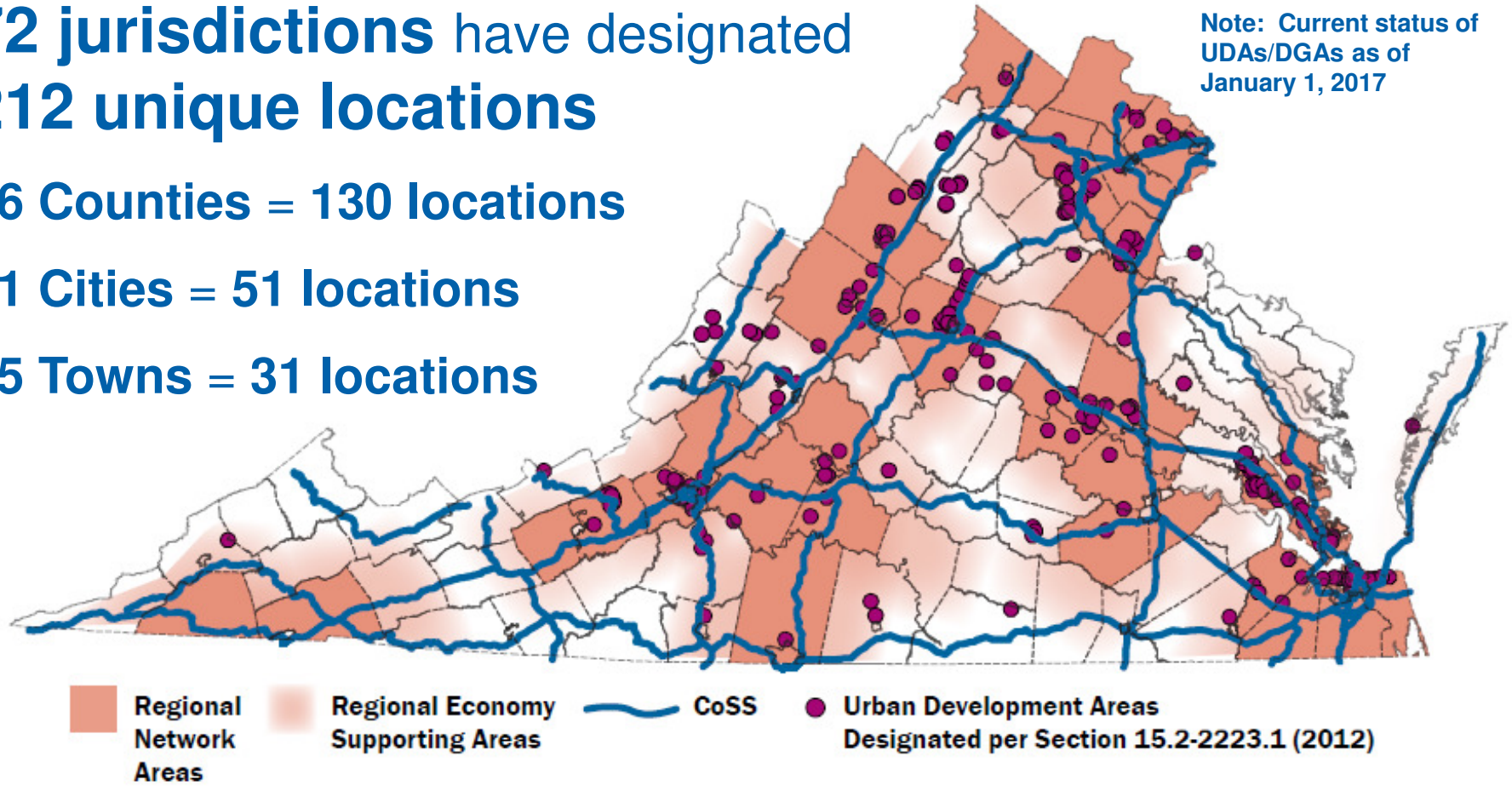
Designated Urban Development Areas

72 jurisdictions have designated
212 unique locations

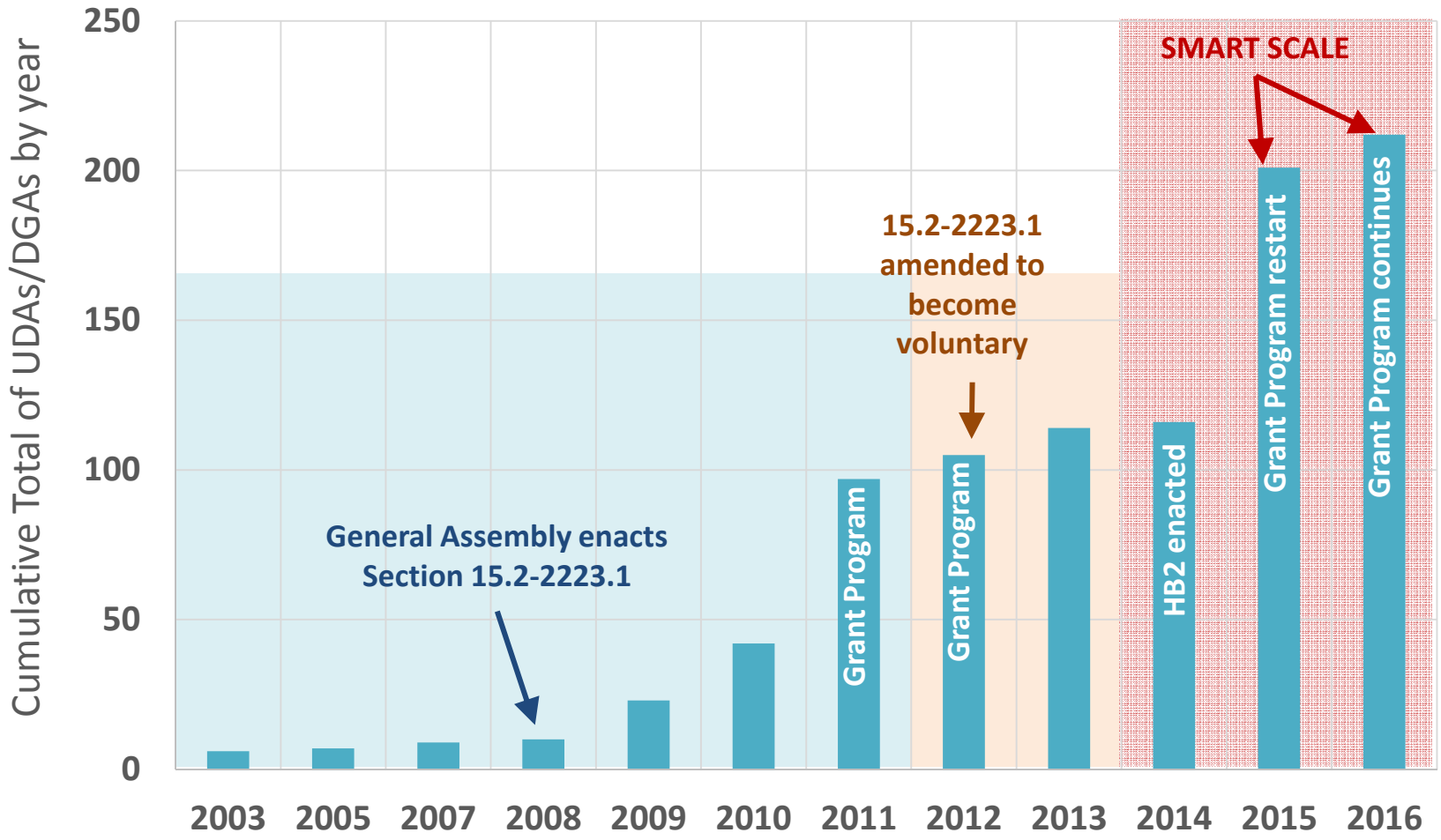
36 Counties = 130 locations

21 Cities = 51 locations

15 Towns = 31 locations

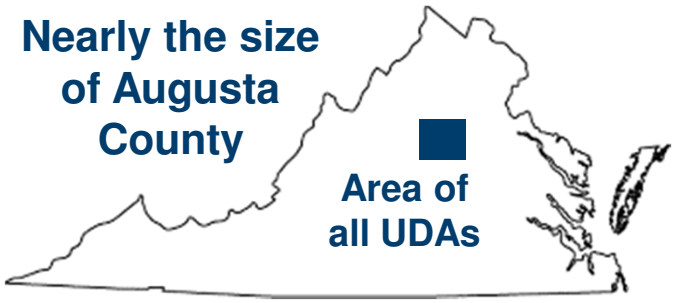


Impact of VTrans & SMART SCALE



UDA CHARACTERISTICS
Totals: Area, Population, Employment

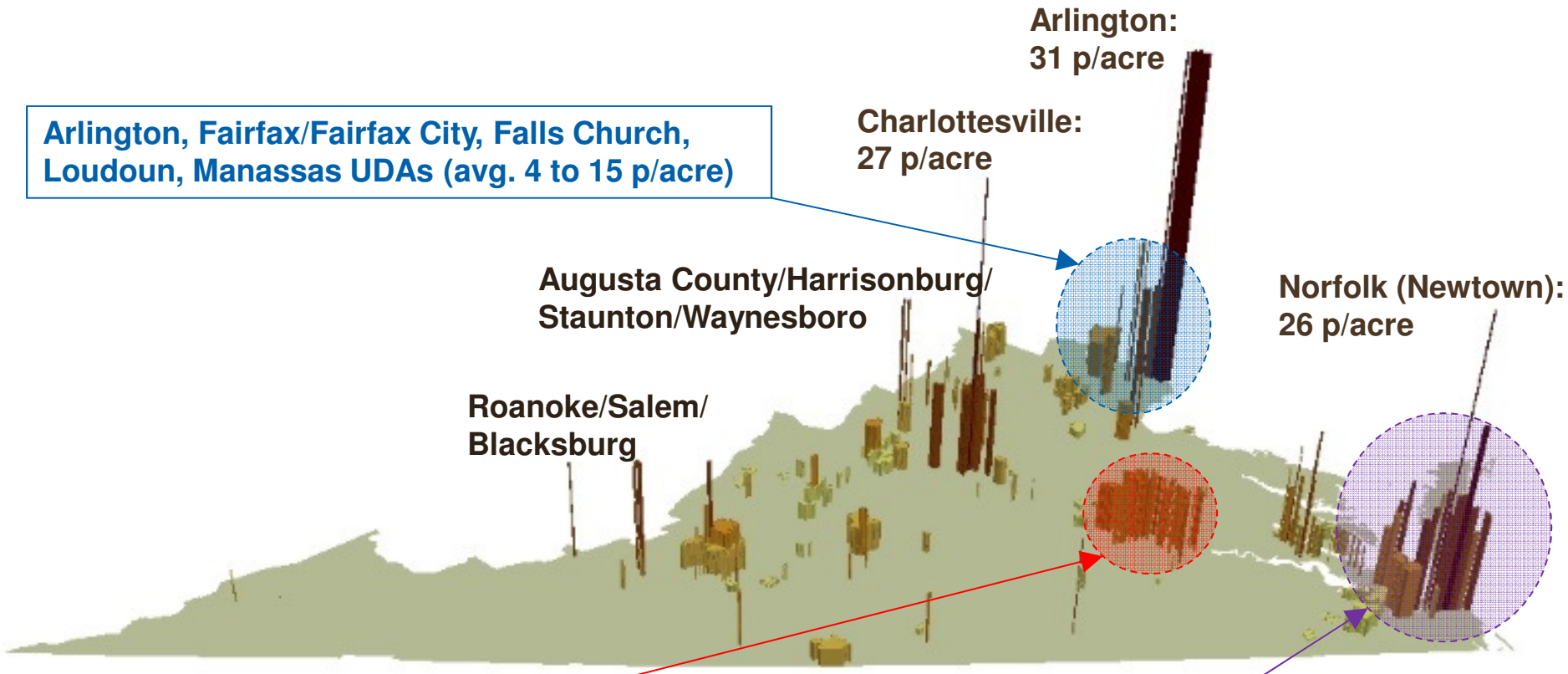
Total area of all the UDAs (946 sq.mi) represents 2.4% of Virginia's land area



Total Population in these UDAs accounts for 20% of Virginia's population in 2010
(Source: US Census Bureau)

Total jobs in the UDAs account for 19% of Virginia's labor force in 2010
(Source BLS)

UDA CHARACTERISTICS
Population Density & UDA Clusters

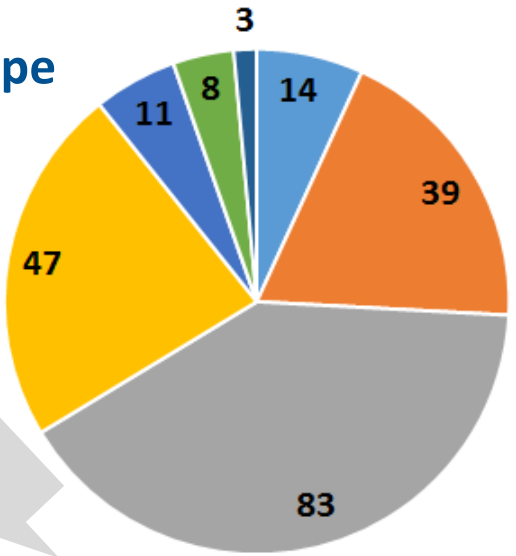


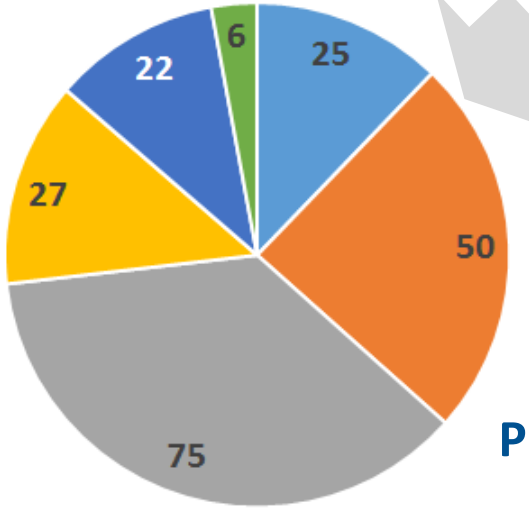
UDA CHARACTERISTICS
Place Type

Undeveloped	
Rural or Village Center	Amelia Courthouse
Small Town/ Low Density Suburban	South Boston, Stafford Courthouse
Medium Town, Multimodal Suburban	Staunton, Manassas
Large Town, High Density Suburban	Charlottesville, Innsbrook
Urban Center	Lynchburg, Roanoke
Urban Core	Downtown Norfolk, Tysons Corner

Existing Place Type

Completely based on local input collected through direct outreach.





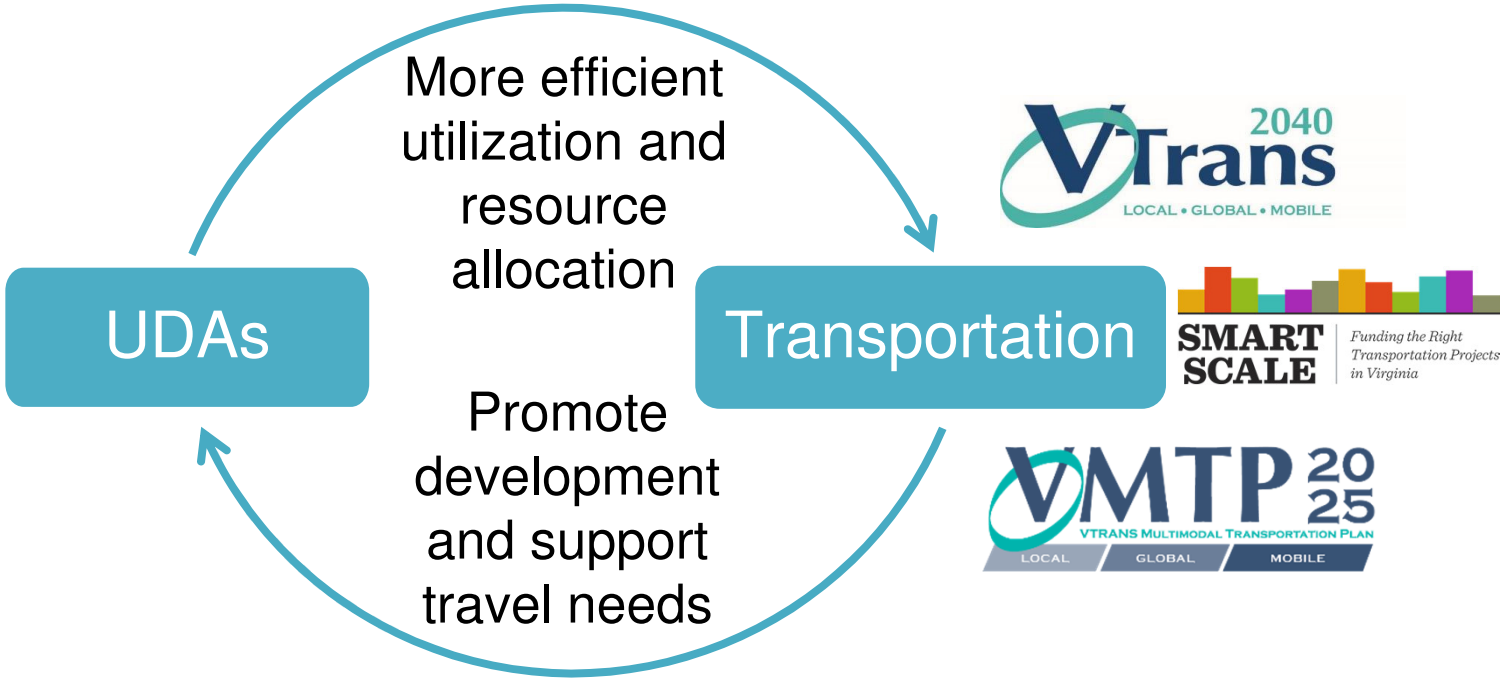
Planned Place Type

UDA GRANT PROGRAM

Transportation's Role in Promoting UDAs

Local Comprehensive Planning

UDA Grant Program



UDA GRANT PROGRAM

Assistance available for localities interested in:

- Conducting planning to identify and designate UDAs
- Updating plans and modal studies for areas already designated
- Updating other designated growth area plans to meet the legislated characteristics of UDAs
- Revising applicable land use ordinances to incorporate the principles of traditional neighborhood design (see § 15.2-2223.1 of the Code of Virginia)
- Assisting with public participation processes, and other related tasks

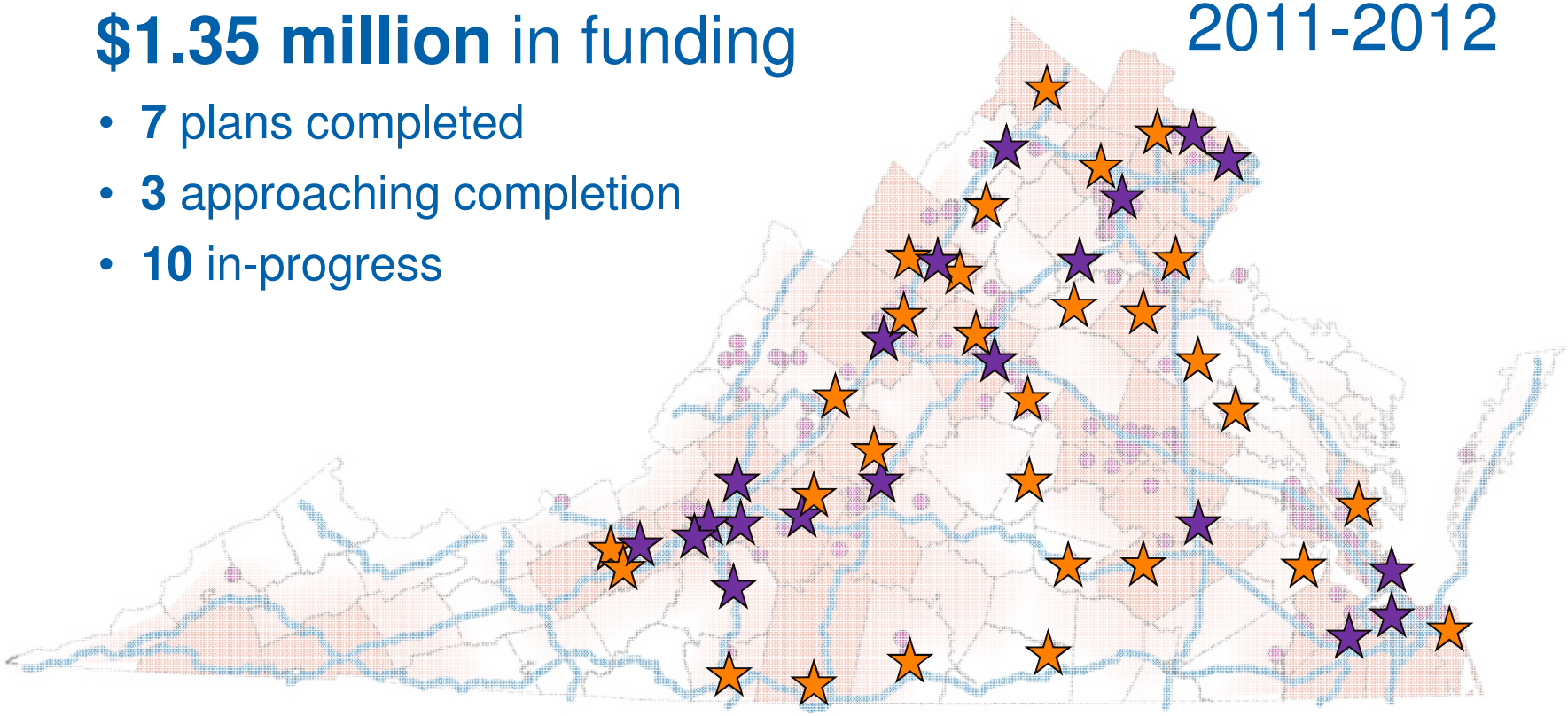
UDA GRANT PROGRAM

★ **20** total grants since 2015

$1.35 million in funding

- **7** plans completed
- **3** approaching completion
- **10** in-progress

★ **32** total grants 2011-2012



UDA STORY – Marshall

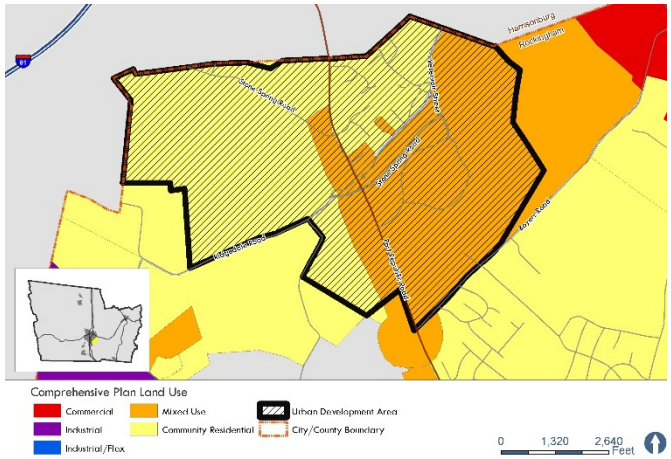
- Plan for new mixed use, walkable "gateway" to historic village
- New interchange design to relieve pressure on Rt. 17
- New grid of secondary streets
- 351 housing units approved in growth area & new businesses on Main Street since 2011

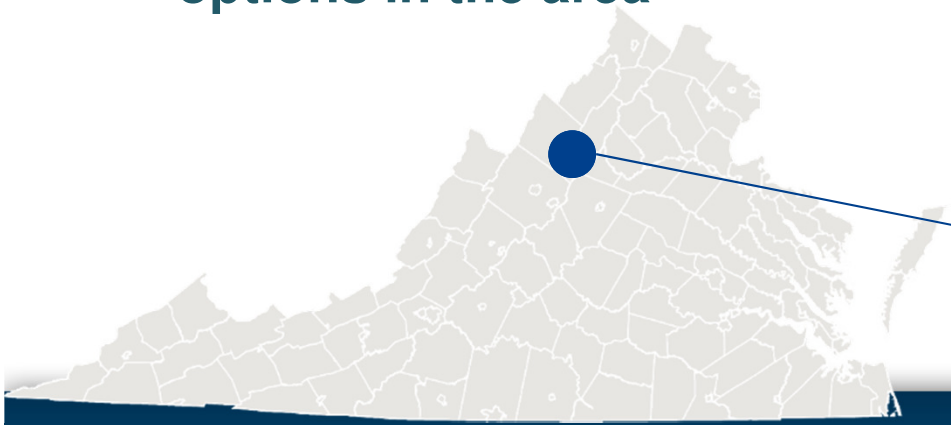

Commercial Realtor bullish about Marshall's future

Marshall
Fauquier Co.
2011

UDA STORY – Rockingham County

- UDA planned around new hospital and new Stone Spring connector road
- Lead to zoning ordinance revisions in 2012 for high density mixed uses at entry to Harrisonburg
- UDA has offered owners/ developers traditional neighborhood development options in the area

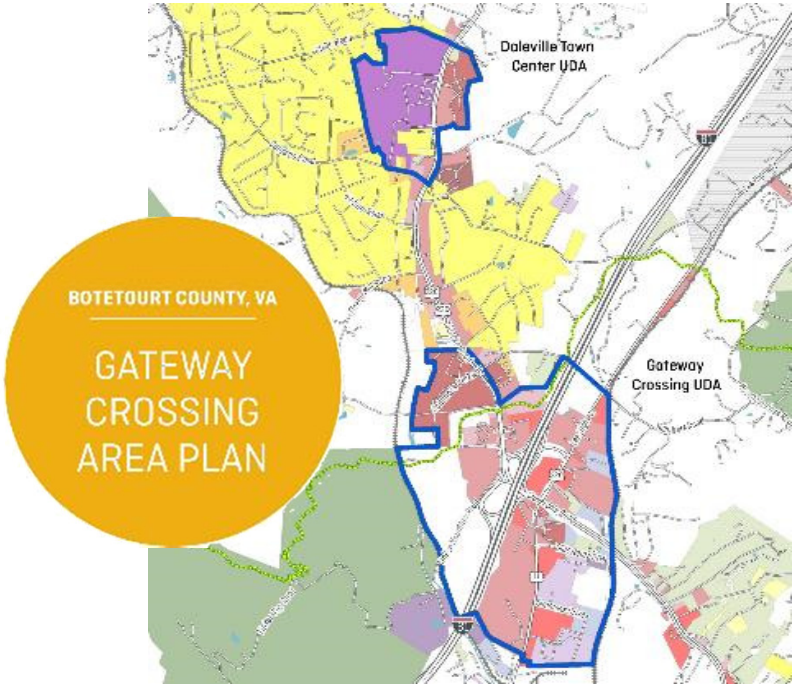


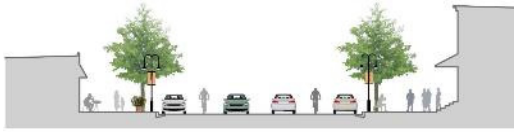


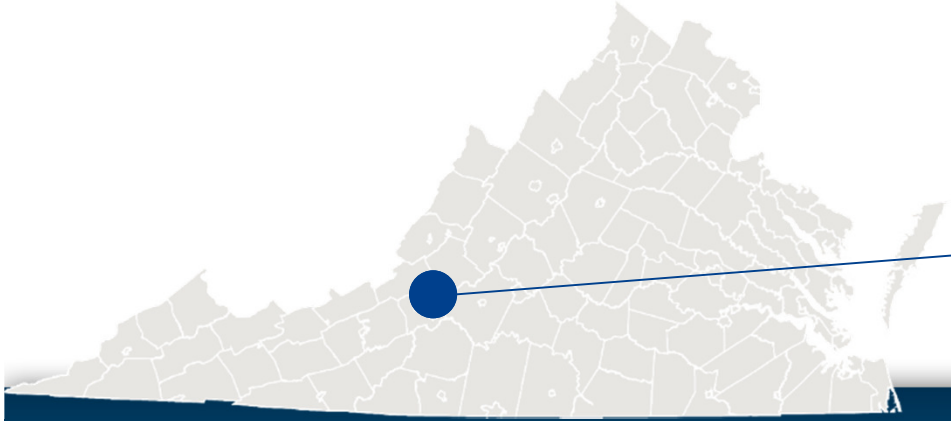
Hospital Area UDA
Rockingham Co.

UDA STORY – Botetourt County

- Congestion relief on I-81 with compatible land use plan around interchange
- Access management on Rt. 220 and grid of secondary roads to serve new development
- Property owner & developer participation in process
- Over 600 jobs coming to area in the next 2-3 years







Gateway Crossing
Botetourt Co.
2016

UDA STORY – Norfolk

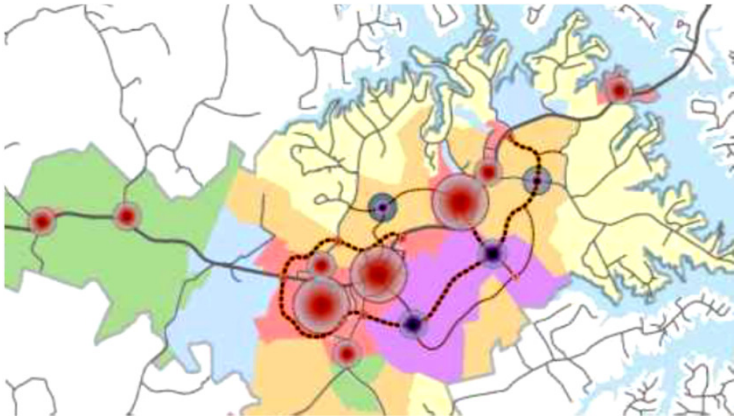
- UDA redevelopment plan for Military Circle Mall & Military Highway area
- Norfolk's top priority area for its Vision 2100 Resilience Plan
- Plan for new Tide light rail extension and transit-oriented neighborhoods
- Extensive public support for process and new jobs moving to renovated Mall building

Movement Mortgage will bring 200 new jobs to Military Circle

Military Circle
Norfolk
2016

UDA STORY – Franklin County

- Plan for new communities along parallel roads to relieve pressure on Rt. 123
- New development activity focused on senior needs including trails and trail connectivity
- Several needs identified through the UDA process and plans to submit for future SMART SCALE funding



Westlake
Franklin Co.
2016

UDA GRANT PROGRAM
Other Stories

Herndon – 2011, 2017

Evaluate feasibility of bike/pedestrian access improvements needed to enhance access to the Silver Line station. Includes design guidelines for cycletracks, bus stops, private driveways/access road entrances, and major intersections.

Salem – 2016

Demonstrated potential for mixed use redevelopment, resulting in an RFP for development of the air rights above the publicly owned Farmers' Market. Several proposals were received and the City reports that it has selected an exciting mixed use development plan that, it believes, will serve as a "game changer" for the downtown area.

Stafford County – 2011

The process educated the Board about the important factors to consider in future development and allowed the County to reserve ROW as shown in the UDA plans. It also informed the Comprehensive Plan process (2016). A real estate company is currently looking at implementation of the UDA plans through a P3 partnership in the Germanna College UDA area.

Dinwiddie County – 2011

UDAs have helped the County significantly in receiving SMART SCALE projects. The community and elected officials have bought into the idea, particularly now after 5 years of no growth, understanding the importance of defining and following UDA land use policies.

UDA Grant Program Awards

- **National APA 2017: Small Area Plan Award of Merit for the Westlake UDA Plan in Franklin County**
- **Virginia APA 2012: Planning and Innovation in Education for UDA Program**
- **Virginia APA 2012: Honorable Mention for the Transportation Efficient Land Use and Design Guidebook**
- **National APA 2017: APA Gold Best Practice Award for the UDA Program**

APA
2017 National Planning Achievement Award
Gold
BEST PRACTICE

APA
American Planning Association
Making Great Communities Happen

UDA GRANT PROGRAM
Value Added – Local Perspectives

- A great planning tool in determining future transportation needs: **"a marriage of infrastructure and planning"**
- Allow us to dig deeper into **what makes strategic areas "tick"**
- Learned more about **mixed use zoning** and how to implement it
- Advantageous to **future development and financial support**
- Can help foster **more connected and walkable areas**
- Can help **improve safety** at more dangerous intersections
- Help to **designate and brand an activity center**
- Helped explain the **importance of planning to decision makers**
- Helped understand how disconnected current development is and **short-term strategies to fix**
- Provides a **valuable framework to guide future development**

UDA Grant Program Benefits

To localities:

- Plan for economic development of growth areas
- Expertise in how to plan for mixed use, redevelopment, etc.

To the Commonwealth:

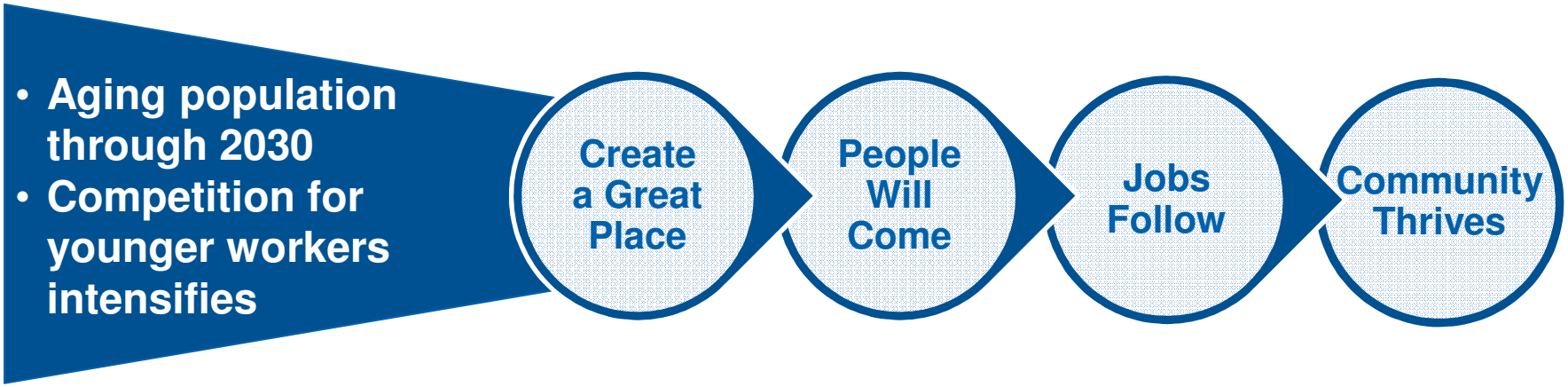
- More compact and efficient development
- Less $$ for transportation and utility expansion, maintenance

NEXT STEPS
Ideas for 2017 and Beyond

- **Complete 13 ongoing UDA grants**
  - Grant Program remains open for applications through August 31, 2017
  - Continue Grant Program into 2018
- **Compile all Grant Program resulting plans and lessons learned into a single-source, UDA website**
  - Consider outreach and awareness campaign
- **Develop tracking mechanism for transportation improvements and private investment**

Placemaking & Economic Growth

- **"Winning Places of Tomorrow"**
  SIR Presentation from 5/16/17 Workshop



Placemaking leads the new economic development model

- Create a remarkable place
- Transportation and services support successful placemaking

Economic Development Model & What People Want – "UDAs as the Nexus"

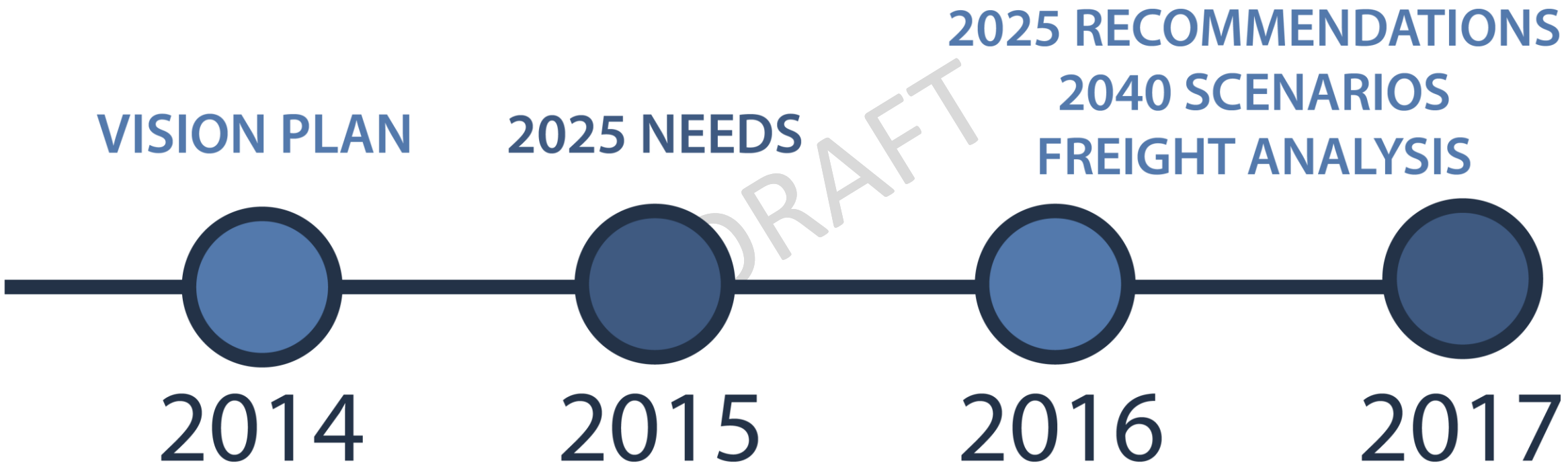
- **Great and diverse places that:**
  - Are unique and represent a community
  - Provide full-range of mobility options
  - Connect to recreation and culture
  - Include a mix of uses ("15 minute community")
  - Amenities for all generations

Attract skilled workers & jobs

VTrans2040 Scenario Analysis

JUNE 2017

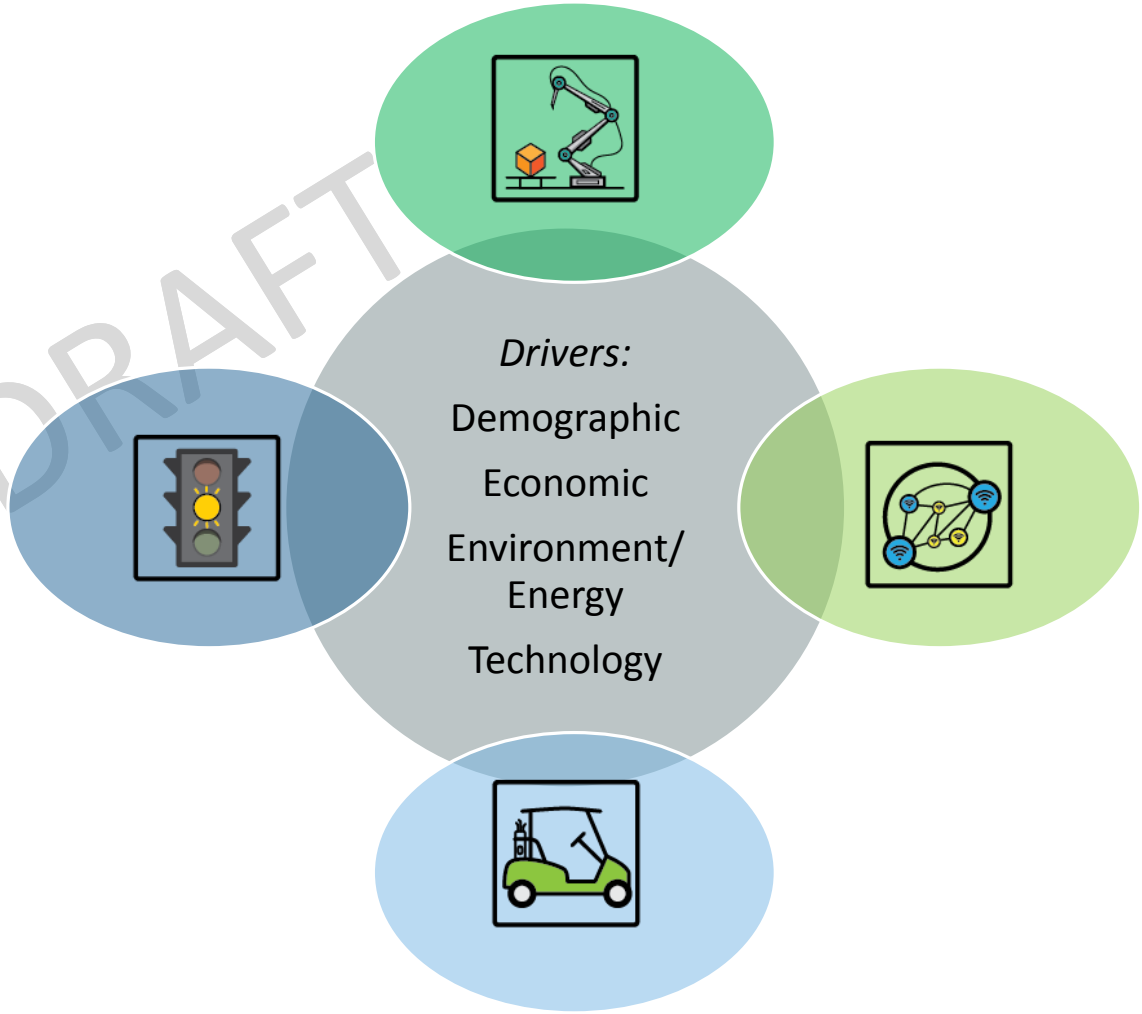
Timeline



Exploratory Scenarios

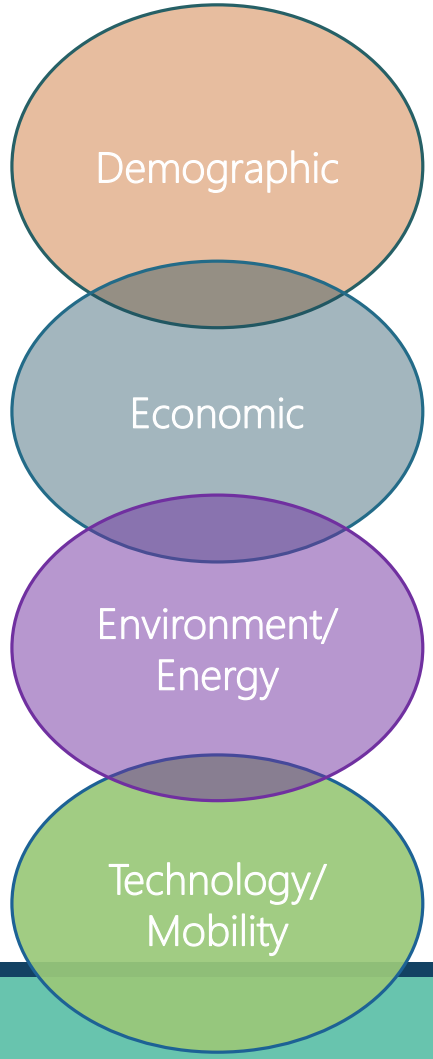
Ask “What Could Happen?” . . .
As opposed to, “What Should Happen?”

Not looking at What is Best, but rather, What to be Prepared for.



Scenario Planning Toolkit

DRIVERS



COMMUNITY TYPES

V6 – Multimodal Urban

V5 – High Density Suburban

V4 – Multimodal Suburban

V3 – Small Town/Suburban

V2 – Low-Density Suburban

V1 – Rural

GENERATIONS

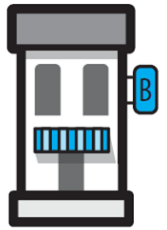
Baby Boomer

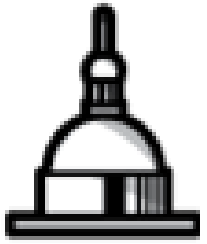
Generation X

Millennial

Generation Z

INDUSTRY MIX





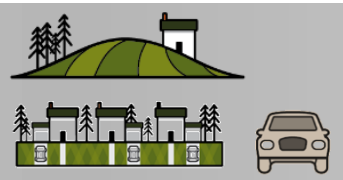
Scenarios Recap

Industrial Renaissance

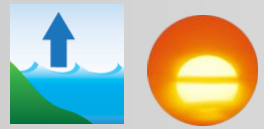


High Pop. Growth


Industrial


Suburban/Rural


Med. AV/MOD


Climate Extremes

Techtopia



High Pop. Growth

High Tech.


Urban


High AV/MOD


Climate Stability

Silver Age

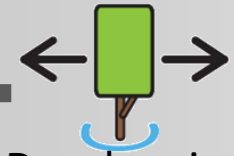


Comparable Pop. Growth


Small business/ Health Care


Walkable Places


Med.-High AV/ Low MOD


Develop. in less Vulnerable Places

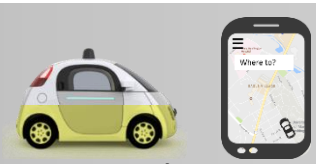
General Slowdown



Lower Pop. Growth

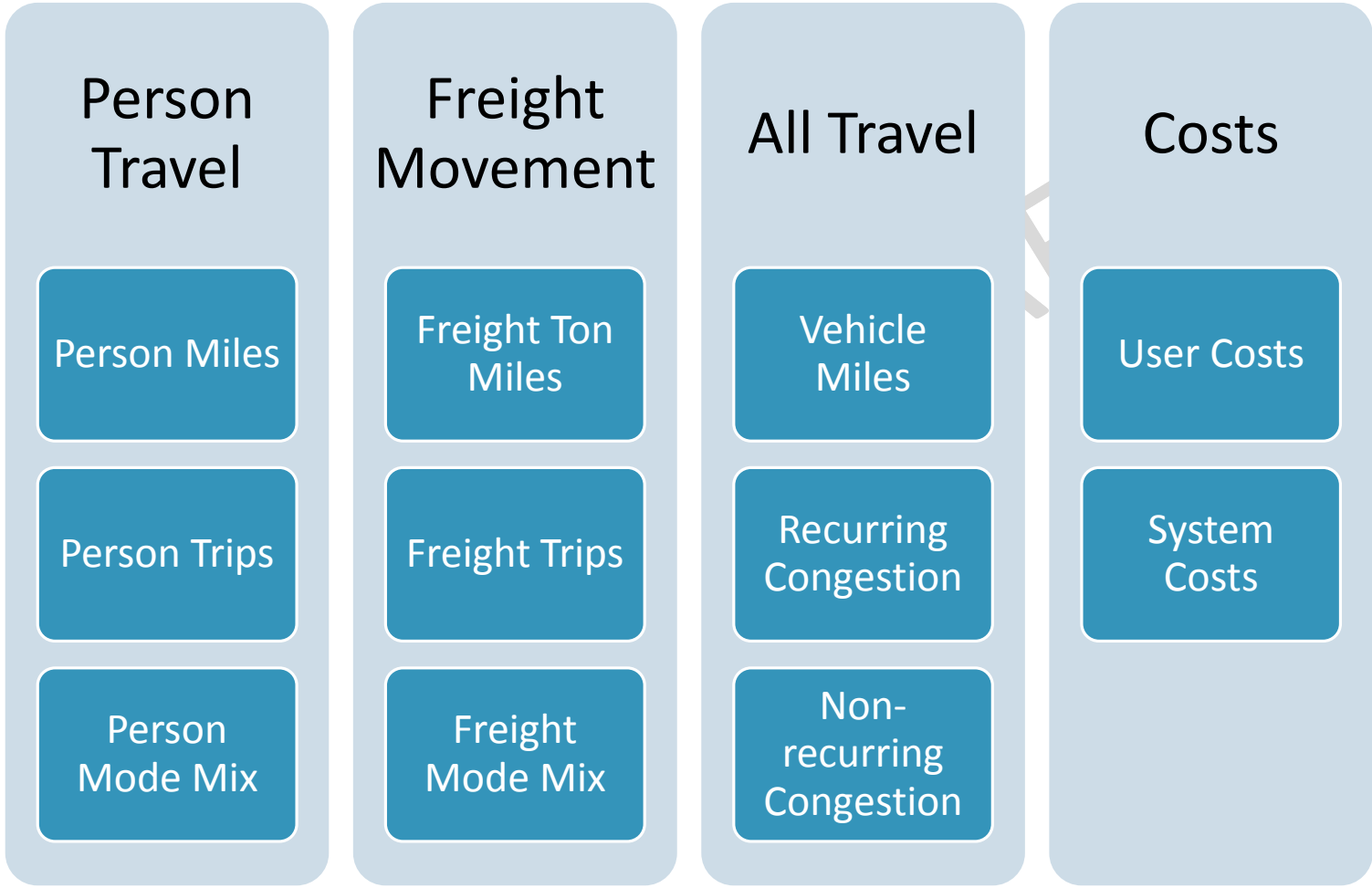

Reduced Spending


Less Urban

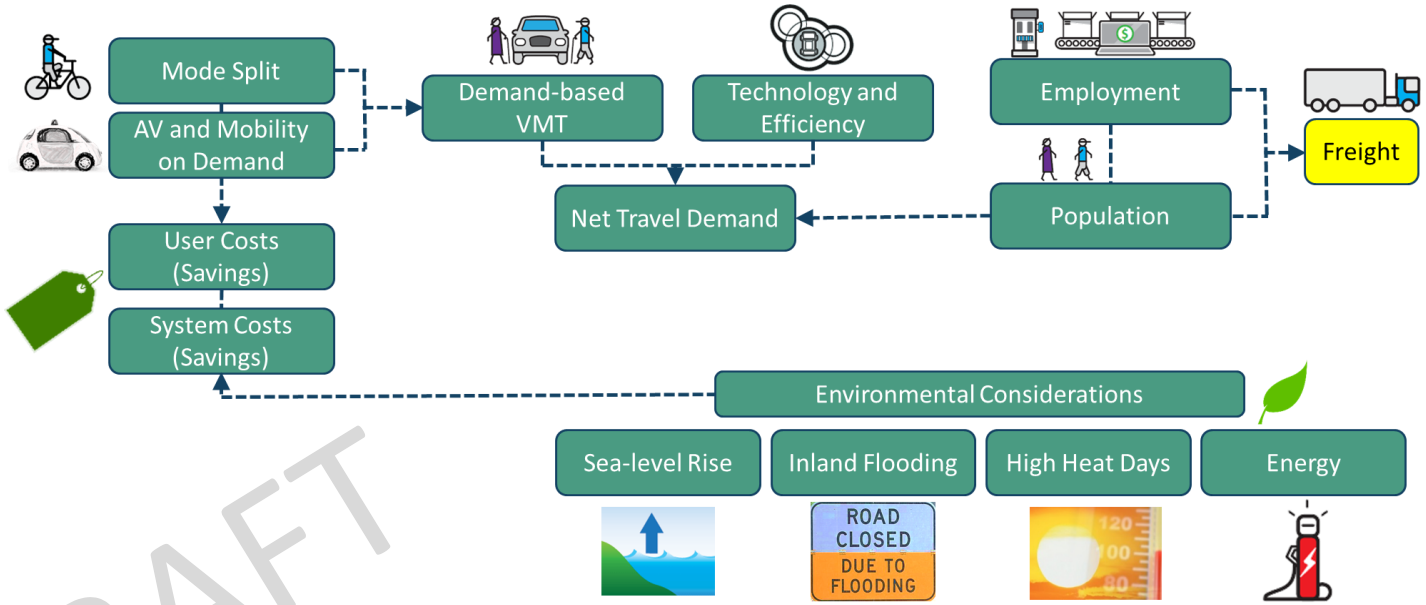

Low AV/MOD


Volatile Energy $

Sketch Planning Outputs



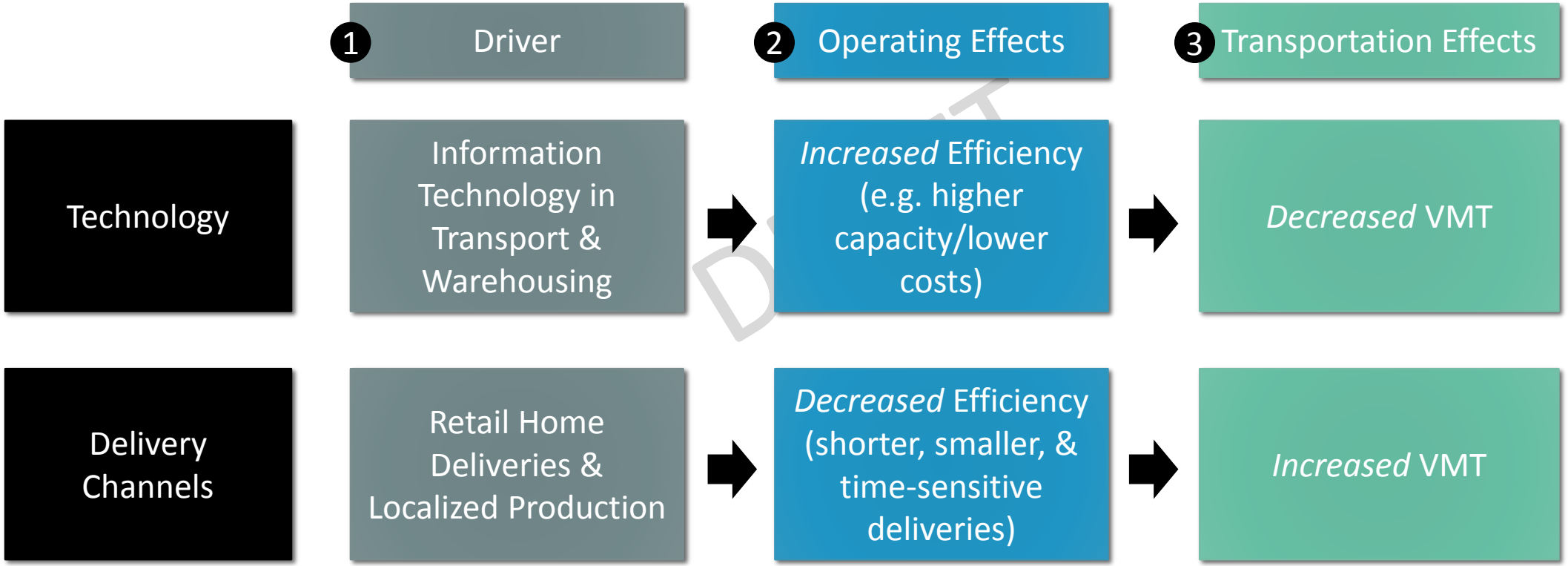
- Quantitative
- Qualitative
- Directional/Relative



Freight

DEMAND, MODE, EFFICIENCY, AND VMT

Supply Chain Dynamics



Freight Results: Industrial Renaissance

How does it differ from the Baseline?

Demand ↑

More People

Inbound and outbound freight increase due to high production demand

Mode Share

Truck mode share still high, but smaller trucks likely used. Air cargo increases to accommodate low weight, high value products.

Efficiency ↓

Efficiency losses as smaller trucks, haul smaller loads, more frequently

Truck VMT ↑

Increase in VMT

Freight Results: Techtopia

How does it differ from the Baseline?

Demand

More People

High consumption & retail demand and desire for just-in-time deliveries. Inbound freight activity exceeds outbound activity

Mode Share

High service trucking with lower unit weights, but higher value products. Intercity rail/trucking serve smaller distribution centers on fringe of metropolitan areas

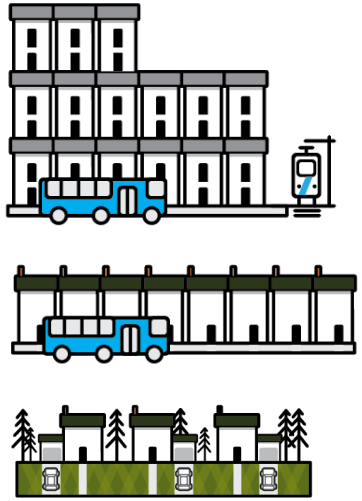
Efficiency

Less focus on stocking shelves and more focus on prompt delivery reduces productivity of freight system

At the same time, technology and automation could help increase efficiency

Truck VMT

Increase in VMT with disproportionate increases in metro areas. Potential VMT reductions in rural areas



Freight Results: Silver Age

How does it differ from the Baseline?

Demand

Older population

Dispersed population and demand. Less spending on goods and more spending on services, such as healthcare, that generate less freight demand

Mode Share

Less demand across all freight modes compared to Baseline

Efficiency

Less opportunity for reengineered supply chains due to population dispersion and growth in small towns

Truck VMT

Potentially higher VMT due to population dispersion

Freight Results: General Slowdown

How does it differ from the Baseline?

Demand

Fewer People

Lower government spending, less disposable income for products

Mode Share

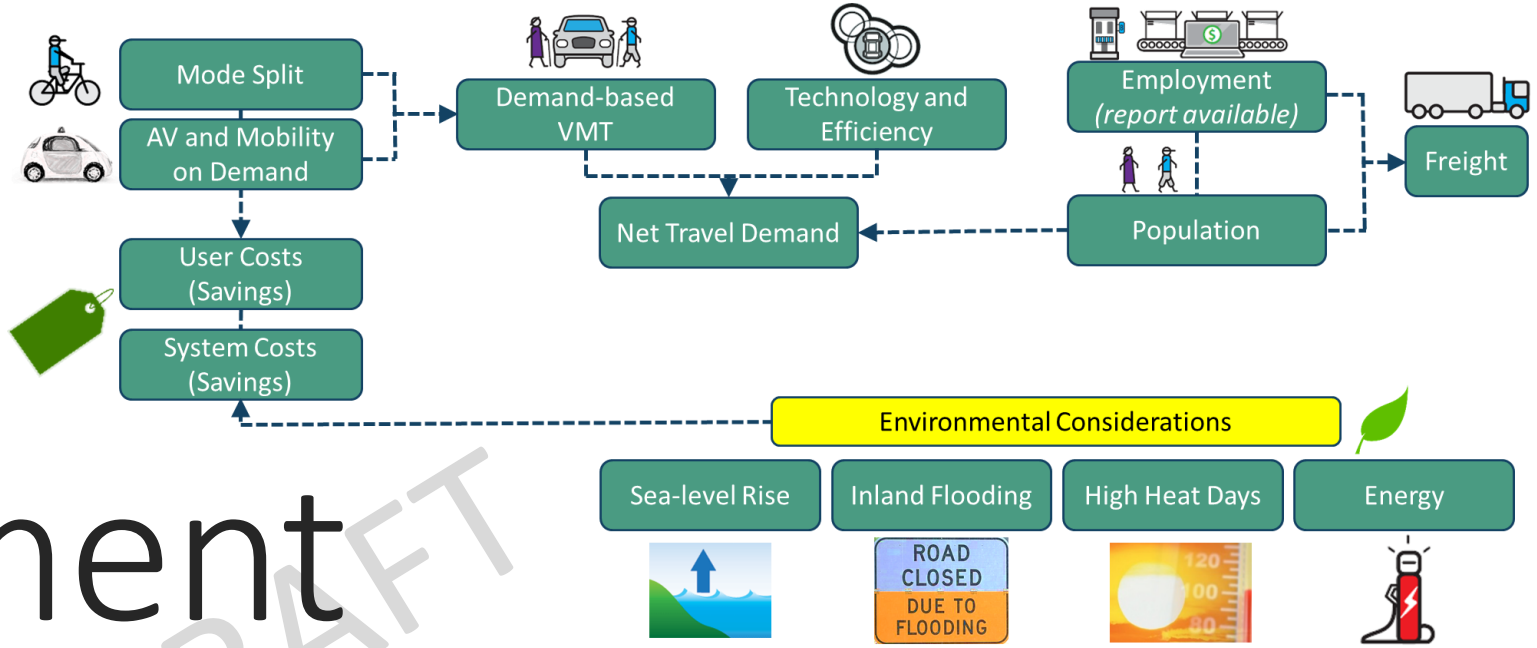
Less demand across all freight modes compared to Baseline

Efficiency

While freight carriers may adjust to volatile energy prices, technology adoption is limited, potentially slowing any efficiency gains

Truck VMT

VMT declines with reduction in demand



Environment & Energy

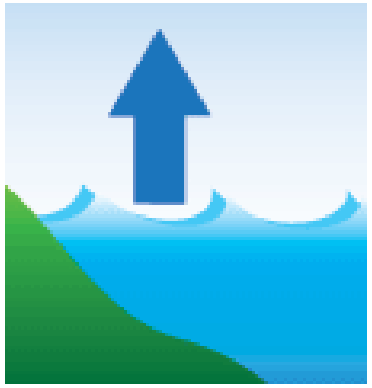
Industrial Renaissance and Techtopia: Climate Change

Hampton Roads is rated second only to New Orleans as the most vulnerable area to relative sea level rise in the country (http://www.centerforsealevelrise.org)

Former Norfolk Mayor, Paul Fraim, has stated, “We deal with stormwater flooding in the city now on a monthly basis” and…“in a severe Category 2 or Category 3 storm, if we were to receive a direct hit, almost all of the city would be underwater.” (http://www.centerforsealevelrise.org)

Industrial Renaissance and Techtopia: Climate Change Assumptions

0.5 Meters



.124 Meters

Scen. 1 Scen. 2

Meters of Sea-level Rise

Required Response:
Roadway reconstruction, roadway repairs

1.3 Events

2.1 Events

1.7 Events

Today Scen. 1 Scen. 2

Inland Flood Events Per Year

Required Response:
Bridge, road, culvert repairs

10 Days

60 Days

20 Days

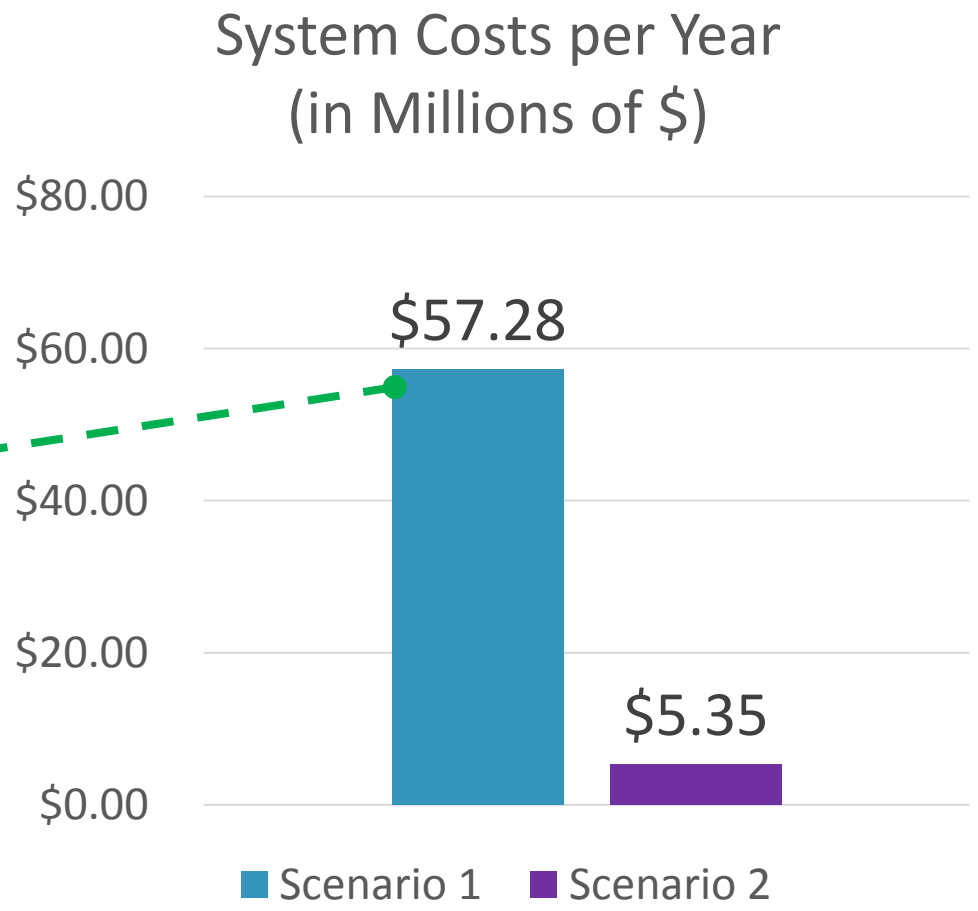
Today Scen. 1 Scen. 2

High Heat Days Per Year

Required Response:
Asphalt repairs (potholes)

Industrial Renaissance and Techtopia: Climate Change Assumptions

485 additional miles could be subject to flooding in Scenario 1 ($52.3 million in annual system costs)



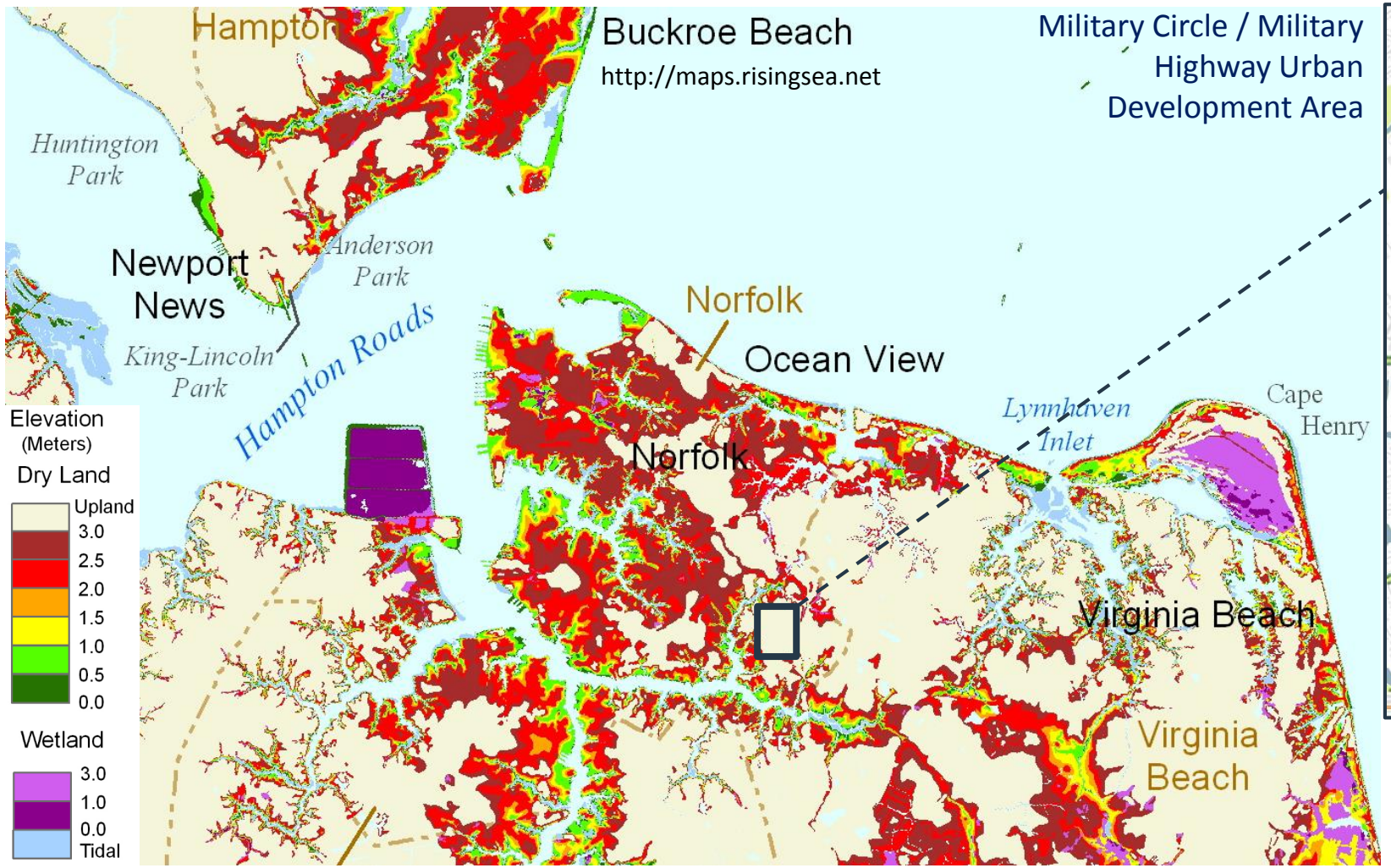
Scenario 3 Assumptions: Virginia develops away from the most vulnerable areas

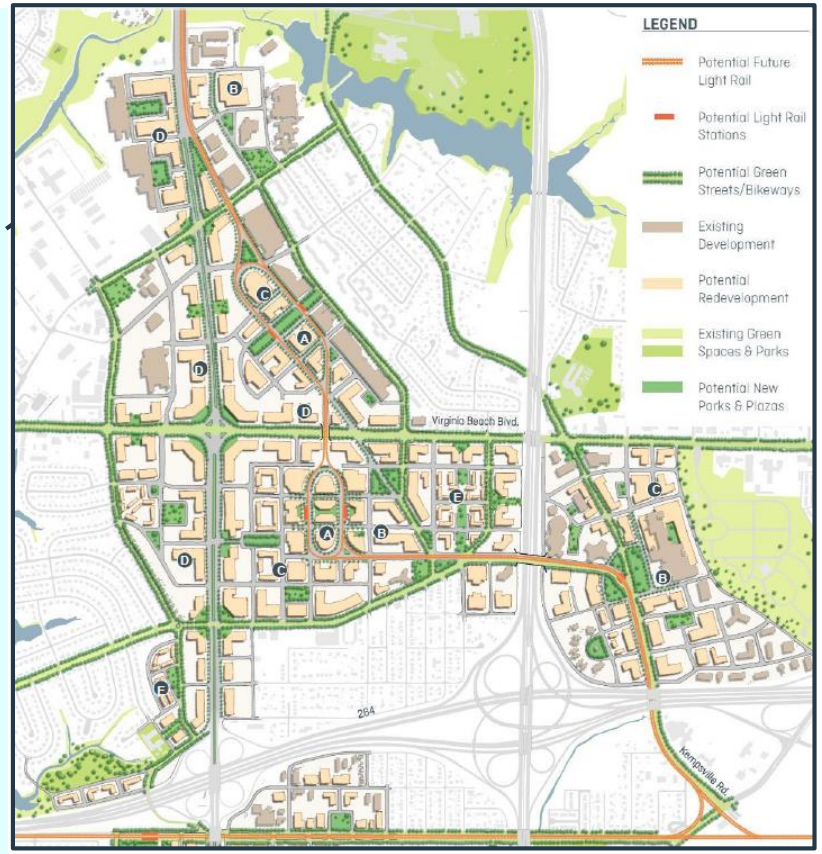
It's unknown where residents and businesses would relocate to in the event of extreme sea-level rise

Communities, like Norfolk, are developing Resilience Plans to acknowledge vulnerabilities and to work proactively to find solutions.

Ideas for Water Storage in Norfolk, Virginia. Source: Dutch Dialogues

Scenario 3 Results: Virginia develops away from the most vulnerable areas

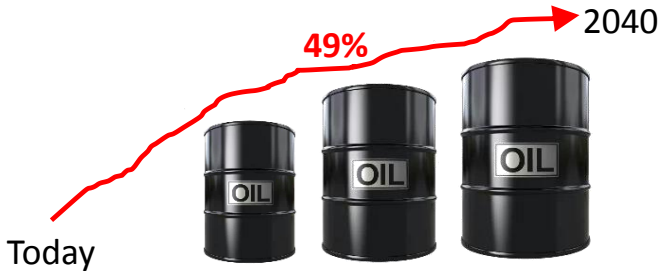




"Concentrating new development in areas relatively better protected from recurrent coastal flooding" -Military Circle/Military Highway UDA: A Vision for the Future (2017)

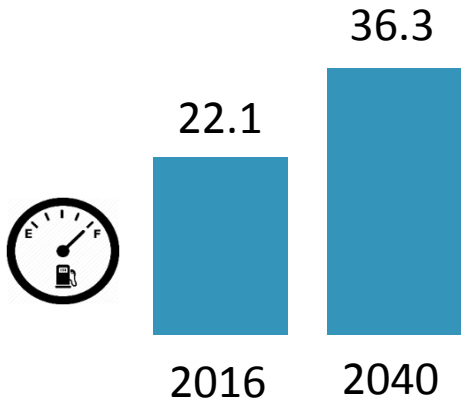
Scenario 4 Assumptions: Environment status quo; Volatile global energy prices

What does the research say?



The U.S. Energy Information Agency (EIA) predicts that gasoline will remain the dominant automobile fuel through 2040, and that the average cost of gasoline will increase by 49%

It does not appear as though 2040 roadway demand will be constrained by rising energy prices, particularly if fuel efficiency continues to improve

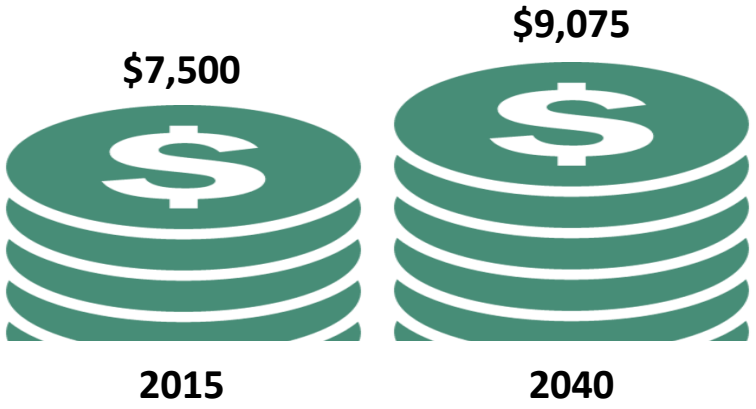


The EIA predicts that average vehicle efficiency will increase by 64%, from 22.1 miles per gallon to 36.3 miles per gallon

Scenario 4 Results: Environment status quo; Volatile global energy prices

What if energy prices outpace EIA expectations?

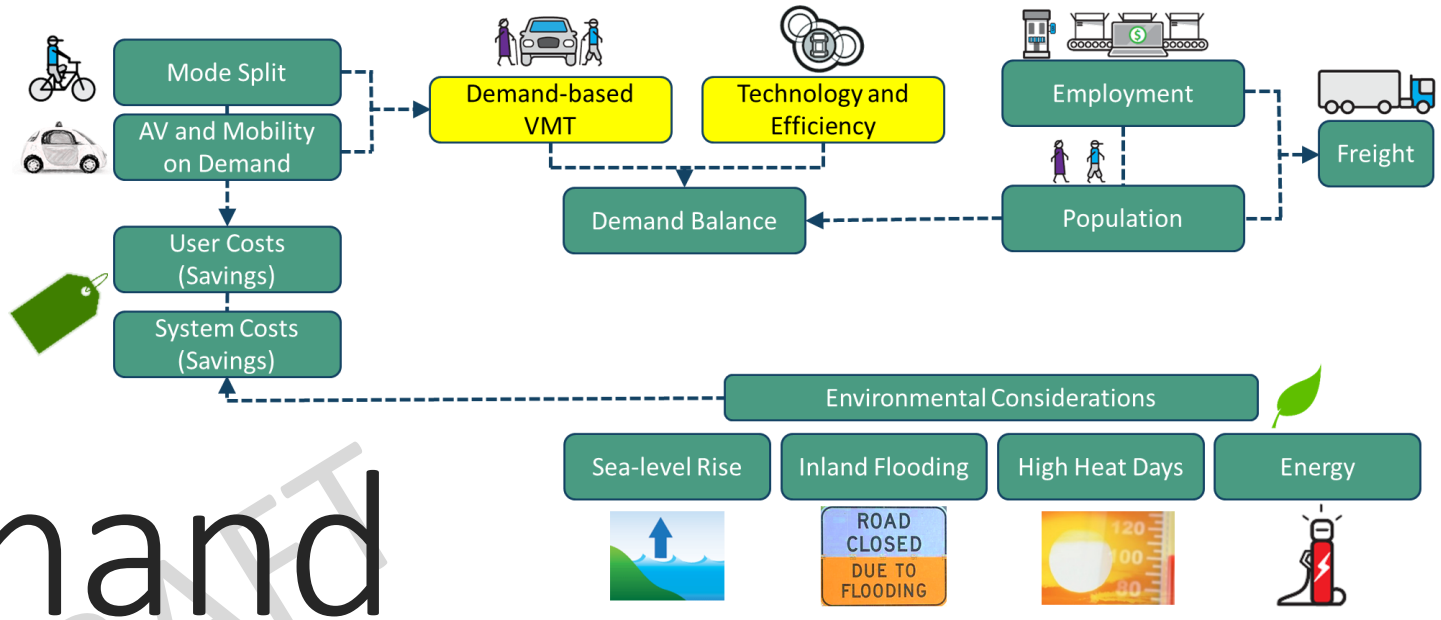
Driving Cost Per Year



If energy prices rise at double the rate that the EIA anticipates, **cost per mile will increase by 21%**

Transit Mode Share could **increase 1.9% in urban areas**

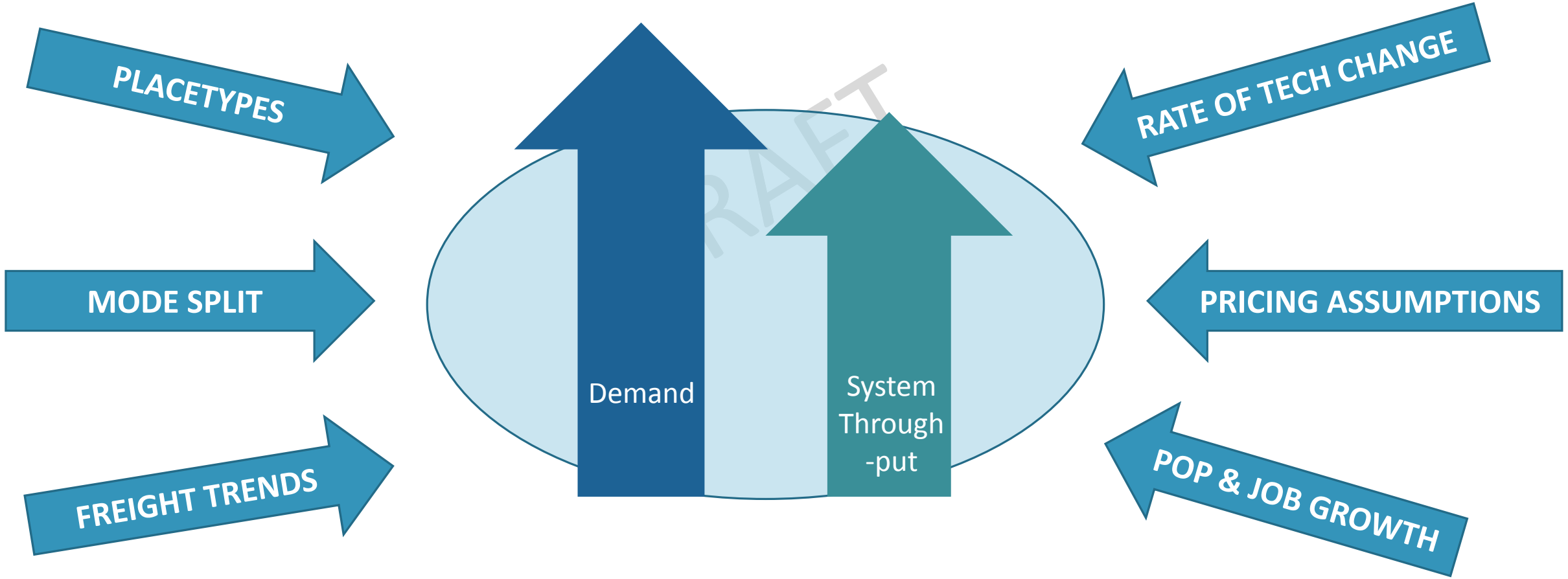
Overall VMT could **decline by 2.7%**



Travel Demand & Through-put

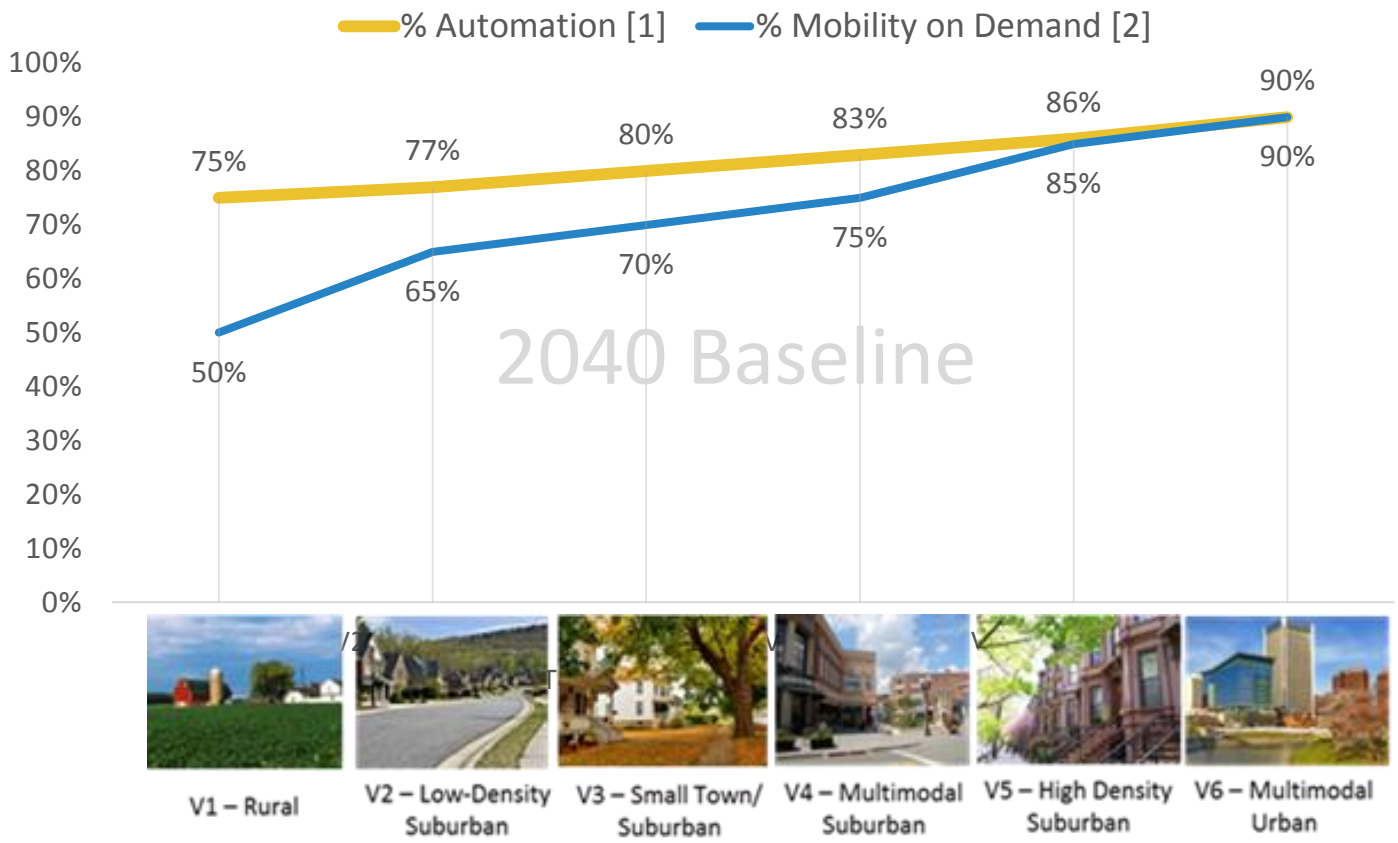
DEMAND-BASED VMT, TECHNOLOGY, AND EFFICIENCY

Factors Influencing Demand



Baseline Technology Assumptions

Percent passenger travel by autonomous vehicles and Mobility on Demand *in the 2040 Baseline*



By 2040…it is likely that autonomous vehicles and Mobility on Demand (ex: Uber and Lyft) will play a significant role in passenger travel, especially in urban areas.

Automation and Mobility on Demand assumptions vary across placetypes and by scenario.

★ Information above was inspired by input received at fall meetings

What's Driving Demand in 2040?

Photo credits: Karagetv, familypedia, Rand Corp, CBS, Bloomberg, Cleveland Clinic, TechCrunch, Autocar

Transit in 2040

Anticipate a Spectrum of Services…

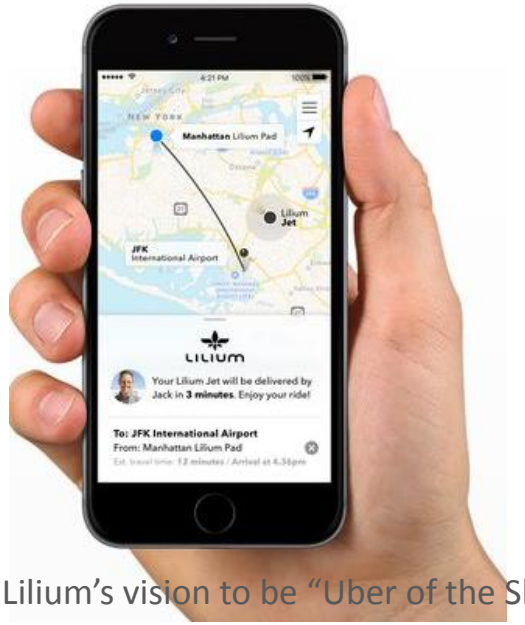
Rail | BRT | Fixed-Route Bus | Custom Route Bus | Circulator Shuttles | Personal Transit

Fixed Route
High Capacity

Demand-Responsive
Lower Capacity

Aviation in 2040

- More fuel-efficient, lower maintenance costs, and greater range and utility
- Affordable commuter services, like Southern Airways Express
- Vertical take-off and landing (VTOL)
- “Uber of the skies”



Lilium’s vision to be “Uber of the Skies”

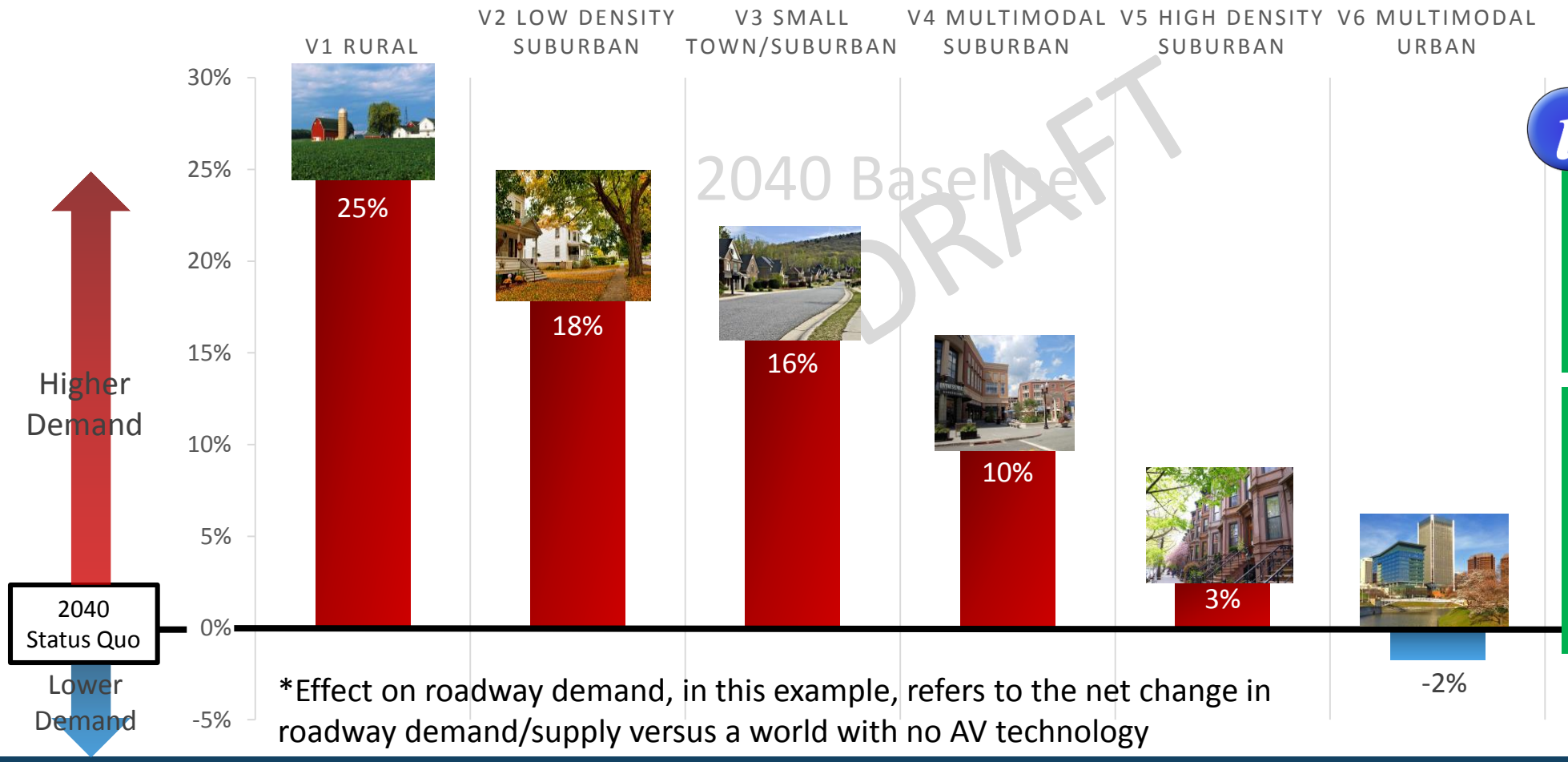
Lilium launched a “flying car” in Spring 2017

Southern Airways offers affordable commuter service

Results of Autonomous Vehicle Technology and Roadway Demand in 2040

ROADWAY DEMAND BALANCE BY PLACETYPE:

2040 BASELINE VS. 2040 "Status Quo" (NO AV INFLUENCE)



*Effect on roadway demand, in this example, refers to the net change in roadway demand/supply versus a world with no AV technology

VMT is expected to increase in the 2040 Baseline as AVs and Mobility on Demand take shape.

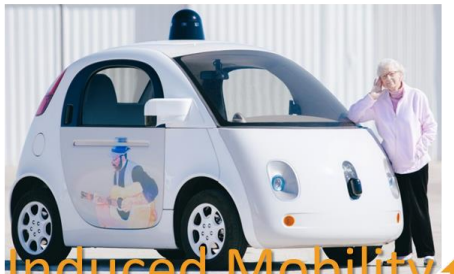
The majority of increased auto travel is expected to occur in Virginia's rural and suburban areas.

Roadway Demand

Technology and changing travel behavior are expected to increase roadway demand (VMT) by

26%-39%

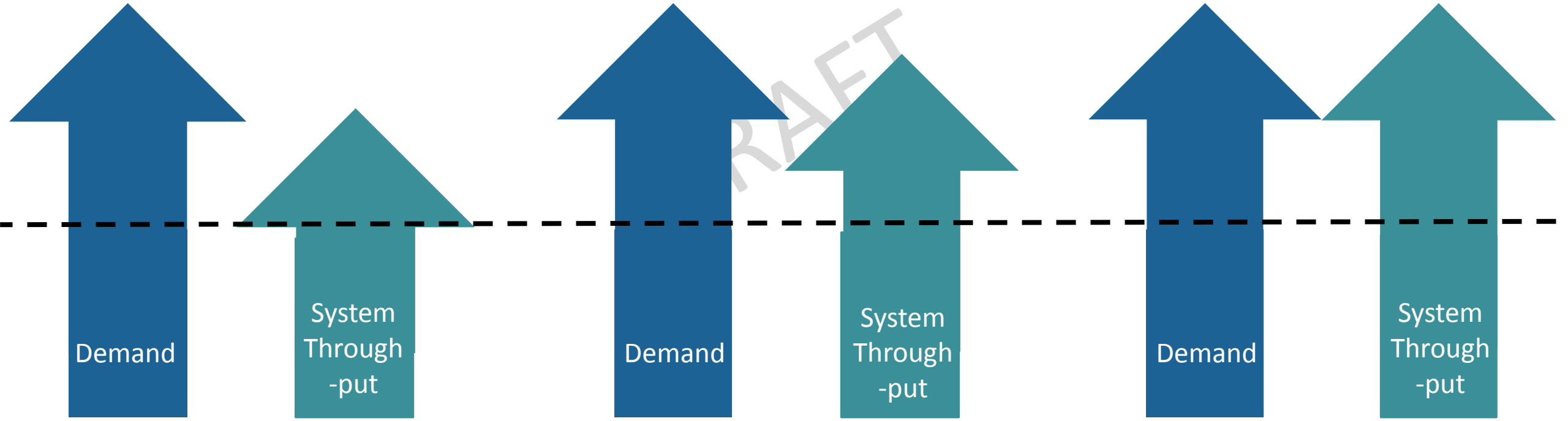
(depending on Scenario)



VMT is expected to increase as auto travel becomes safer, more accessible, and more enjoyable

Demand and System Through-put

Different Possibilities for System Through-put…

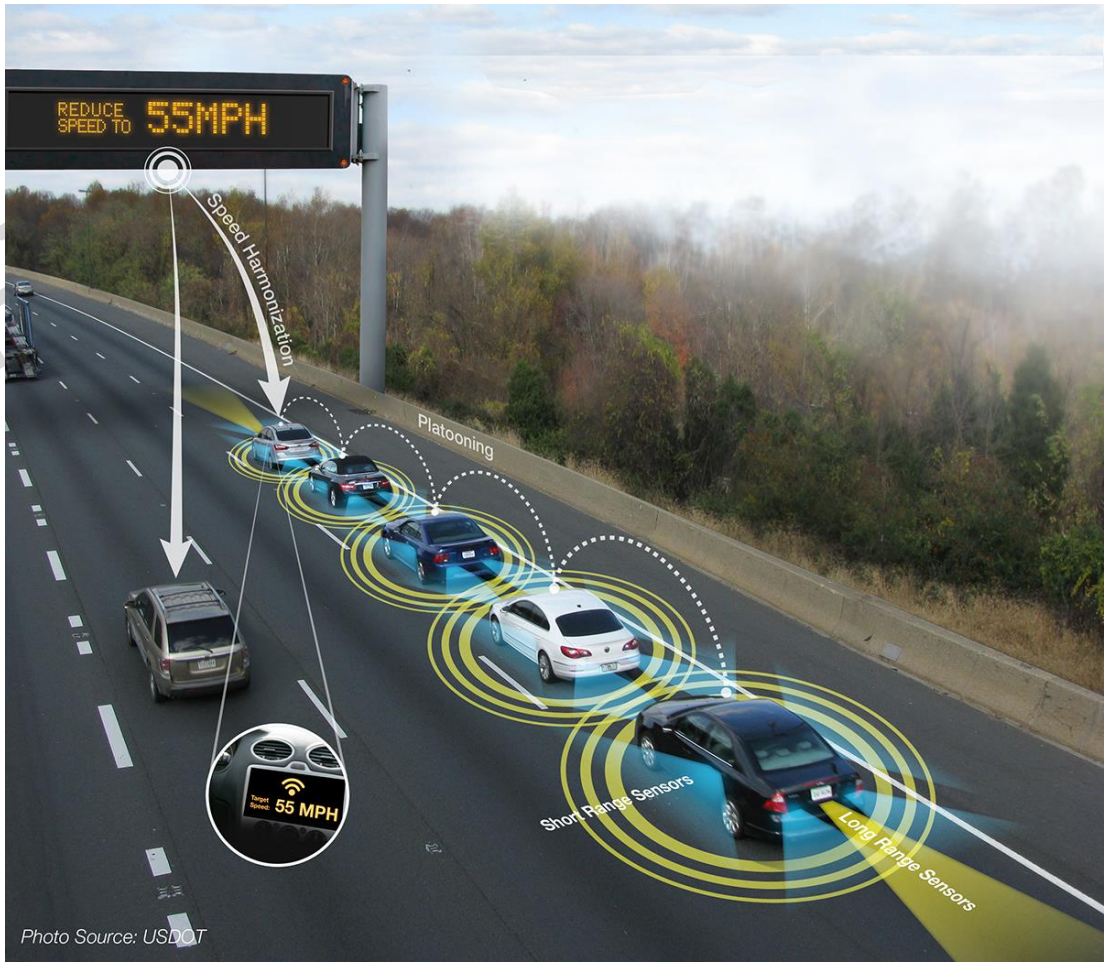


1 No Change

2 Slight increase

3 Matched increase

Technology and Efficiency

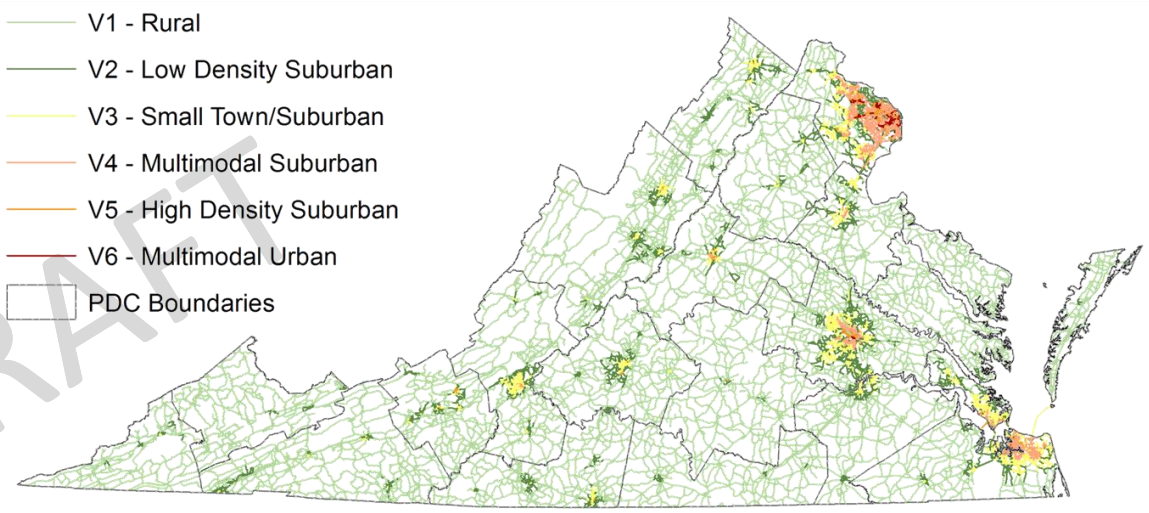


Induced VMT Change Results

Technology's most significant capacity/through-put benefits will likely occur on *interstates and arterials*

VDOT's interstate and arterial network was classified *by VTrans Placetype* to help capture the extent of technology benefits across the Commonwealth

Roadway Network Classified by Placetype



Interstates and Arterials by Placetype (2014)

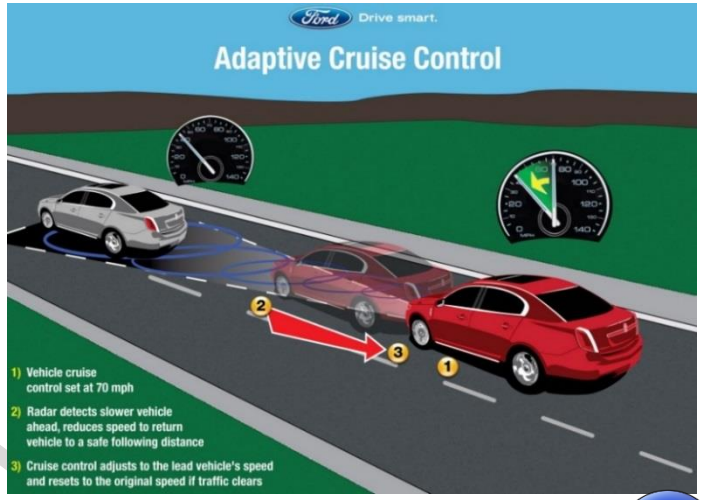
Placetype	Interstates as % of total network	Arterials as % of total network	**Total**
V1 Rural	4%	16%	**20%**
V2 Low Density Suburban	7%	24%	**31%**
V3 Small Town/Suburban	7%	30%	**37%**
V4 Multimodal Suburban	7%	31%	**38%**
V5 High Density Suburban	12%	35%	**47%**
V6 Multimodal Urban	10%	31%	**42%**

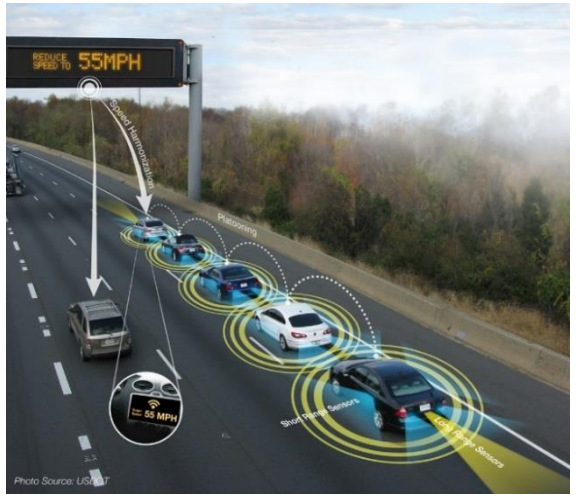
Technology, Efficiency and Throughput

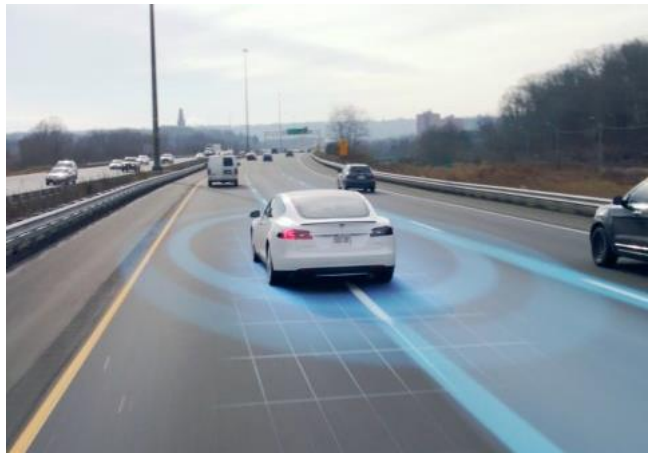
Technology and improved efficiency are expected to increase throughput by

9%-21%

(depending on Scenario)





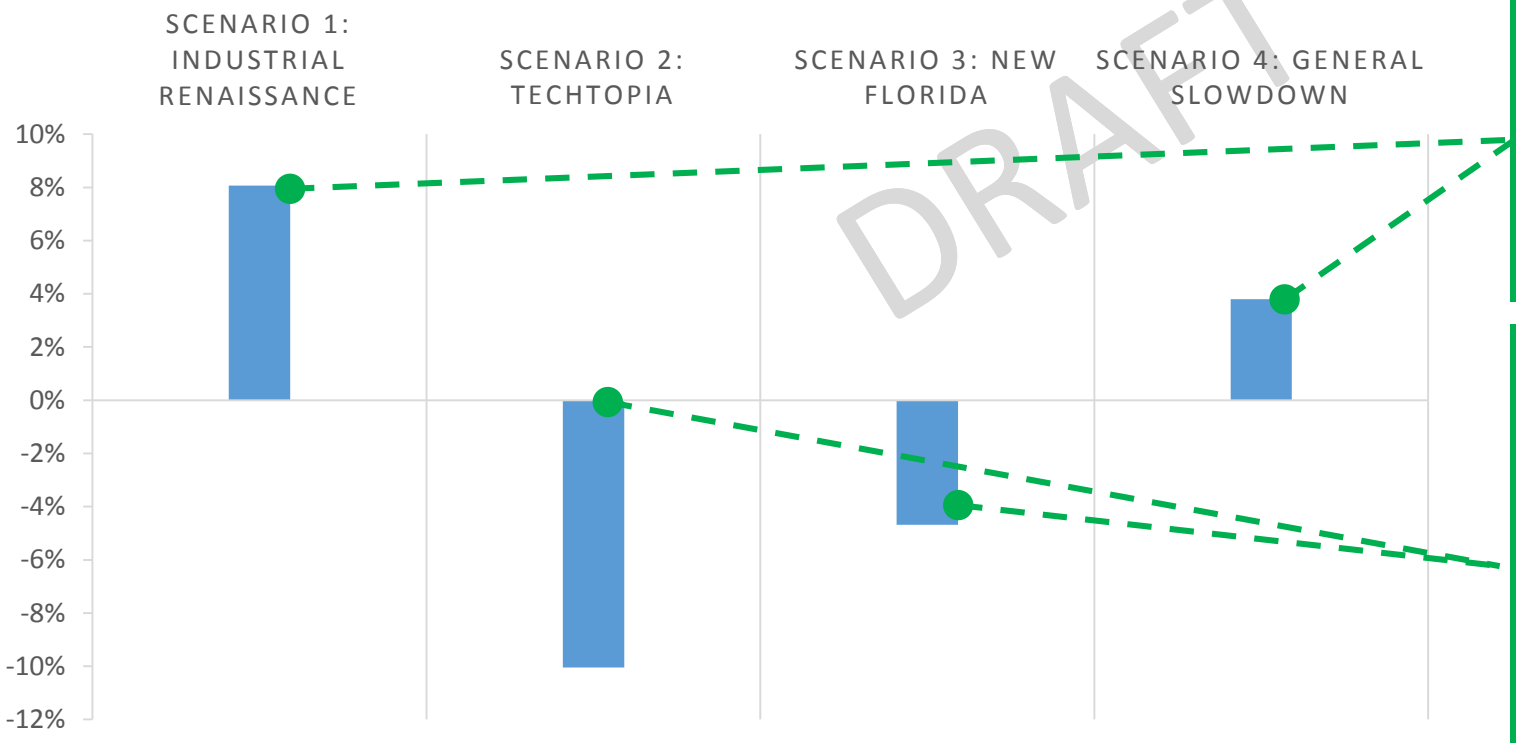


Although VMT is expected to increase, vehicle technology & infrastructure improvements will help increase travel efficiency and throughput (*effectively increasing roadway capacity*)

Net Change in Roadway Demand

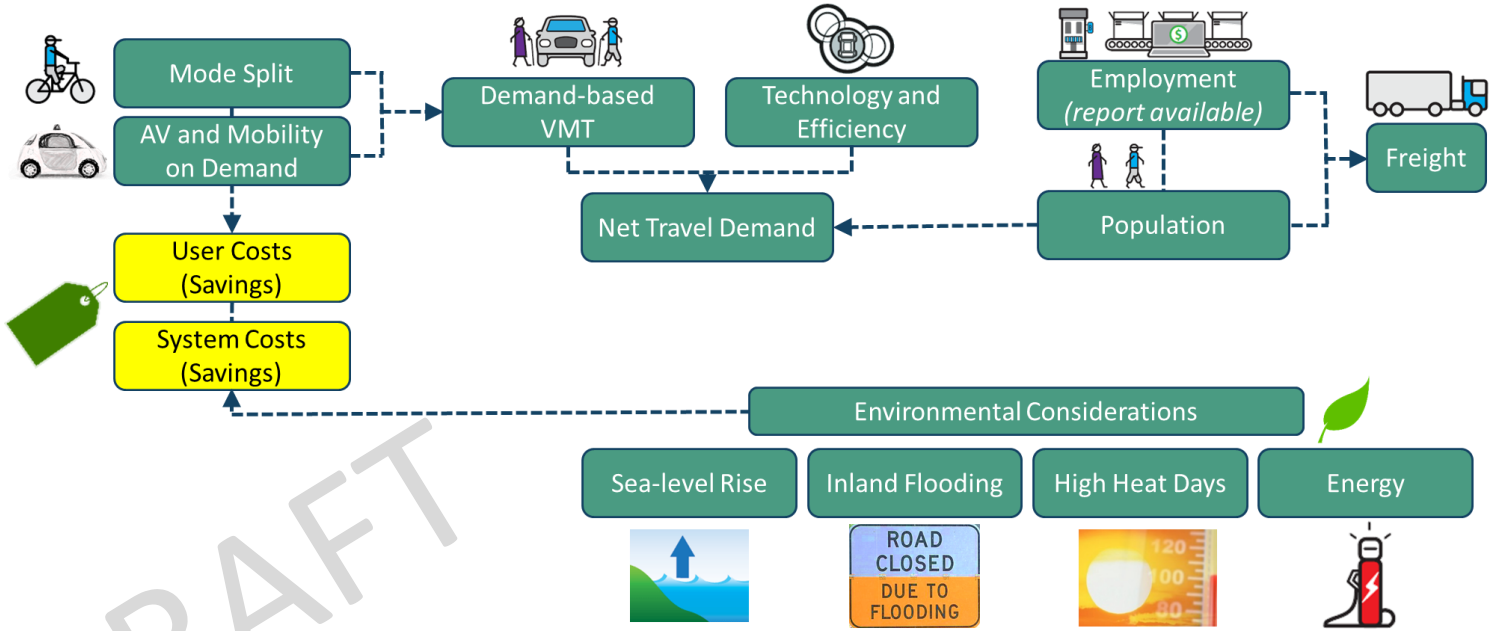
How can Technology and Travel Behavior Influence Demand in 2040:

EXAMPLE NET CHANGE IN ROADWAY DEMAND BY SCENARIO
(VS. 2040 BASELINE)



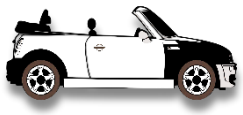
Net roadway demand is expected to increase in **Scenarios 1 and 4** as VMT outpaces the capacity and efficiency benefits provided by technology and alternative transportation.

Net roadway demand is expected to decrease in **Scenarios 2 and 3** as travel behavior and efficiency increase the "effective capacity" of the roadway network

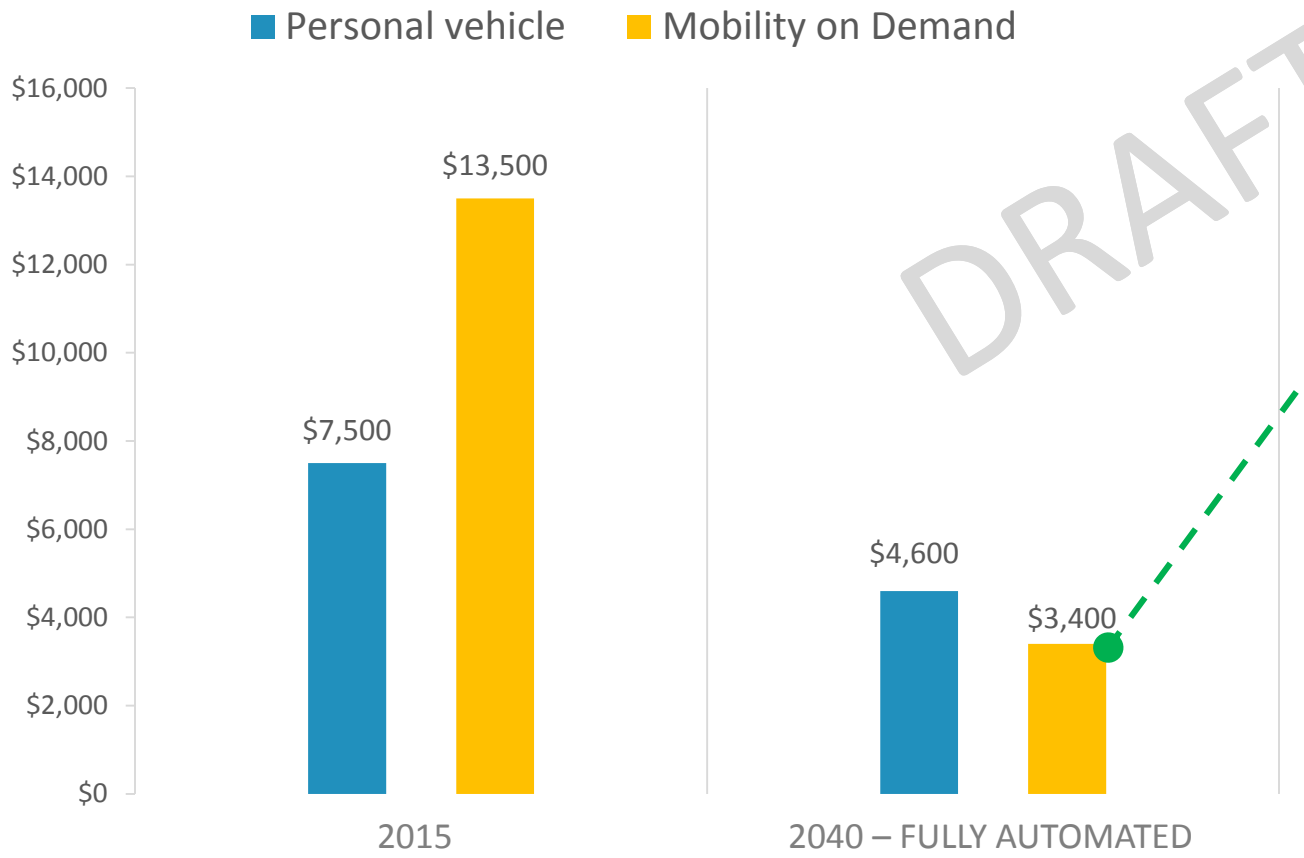


System & User Costs

The Assumed Cost of Driving, 2015 and 2040

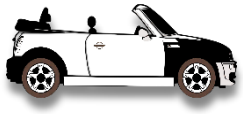


ESTIMATED COST OF DRIVING PER YEAR: 2015 AND 2040 (IN 2015 DOLLARS)

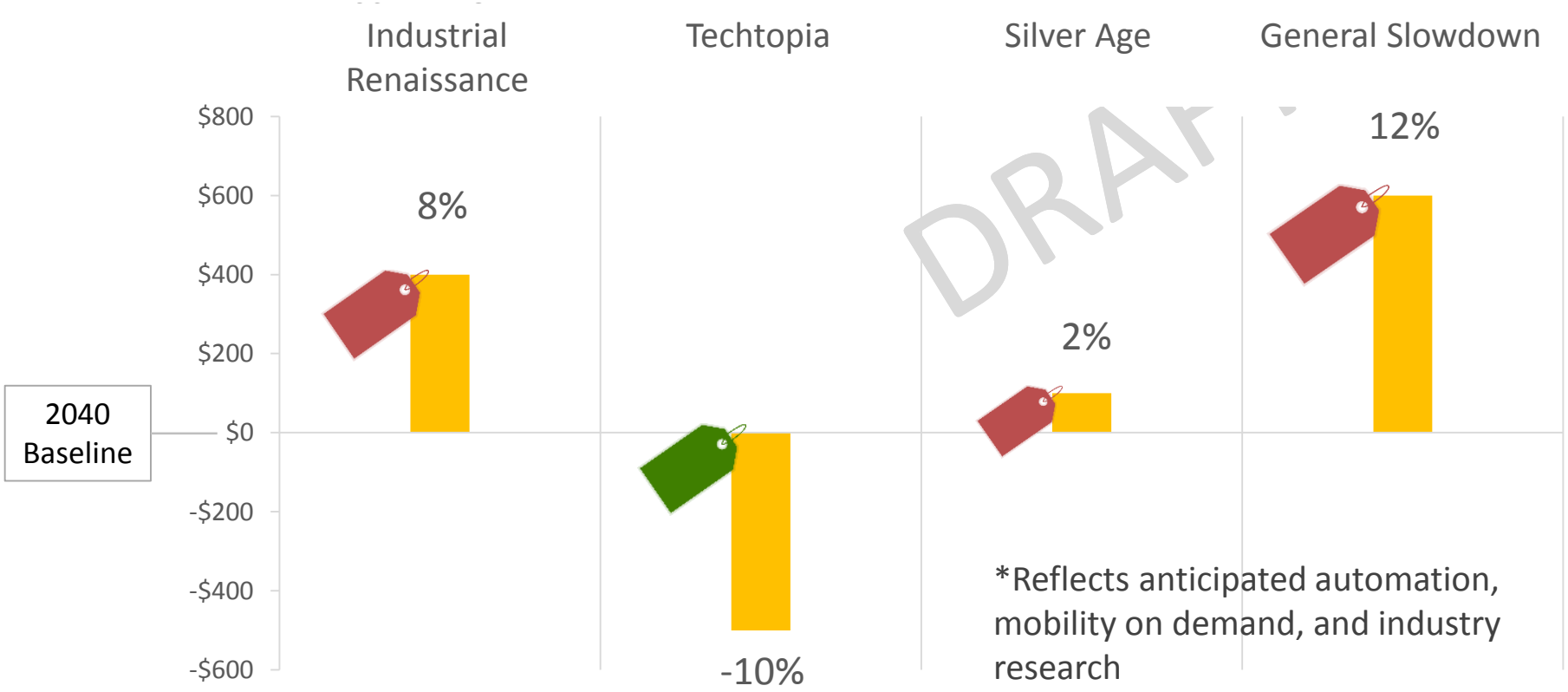


Industry economics, profitability, and affordability will influence the timing and extent of automation and mobility on demand.

Cost of Driving by Scenario Results



CHANGE IN ANNUAL DRIVING COST BY SCENARIO (VS. 2040 BASELINE)*



*Reflects anticipated automation, mobility on demand, and industry research

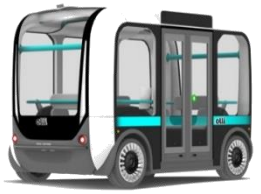
Autonomous vehicles and Mobility on Demand are expected to reduce annual driving costs

Cost Efficiencies and Mode Choice

Autonomous taxis and public transit services are likely complements rather than substitutes

Autonomous Taxis (and other Mobility on Demand services)

Autonomous Public Transit



Autonomous Taxis (and other Mobility on Demand services)		Autonomous Public Transit
• First and last mile connections • Commutes outside the urban core • Traditionally underserved communities	LOCATION ADVANTAGES	• High activity corridors • Downtowns, public spaces • Park and ride lots • College campuses, military bases, airports
• More flexible • Best for off-peak travel, short trips • Likely more cost-effective and convenient for paratransit providers and users	OTHER ADVANTAGES	• More affordable • Helps reduce VMT • Best for peak period travel and during congestion or “surge” pricing

Infrastructure Deployment Costs

The USDOT and AASHTO estimate that Vehicle to Infrastructure (V2I) technology could cost approximately $50,000 per site (ex: an intersection) and be 80% implemented by 2040

*Includes planning, design, equipment, installation, and backhaul (connecting roadside unit to the traffic management center/office). *Excludes operating & maintenance.*

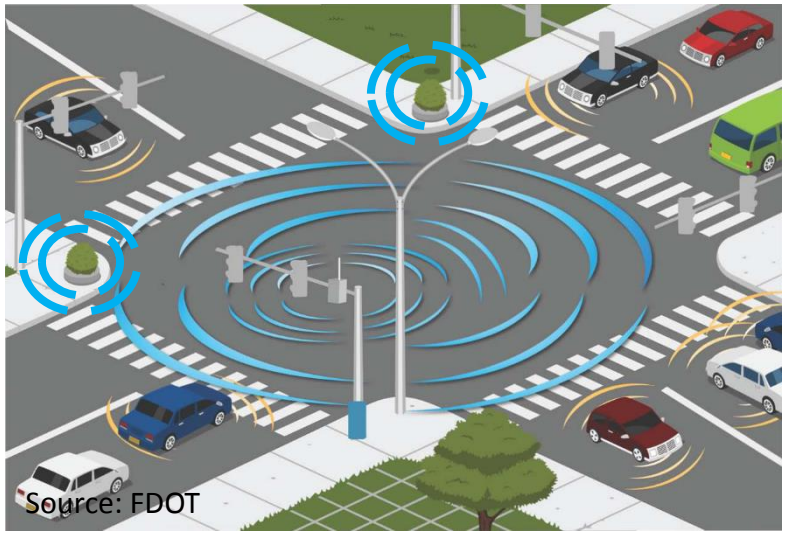
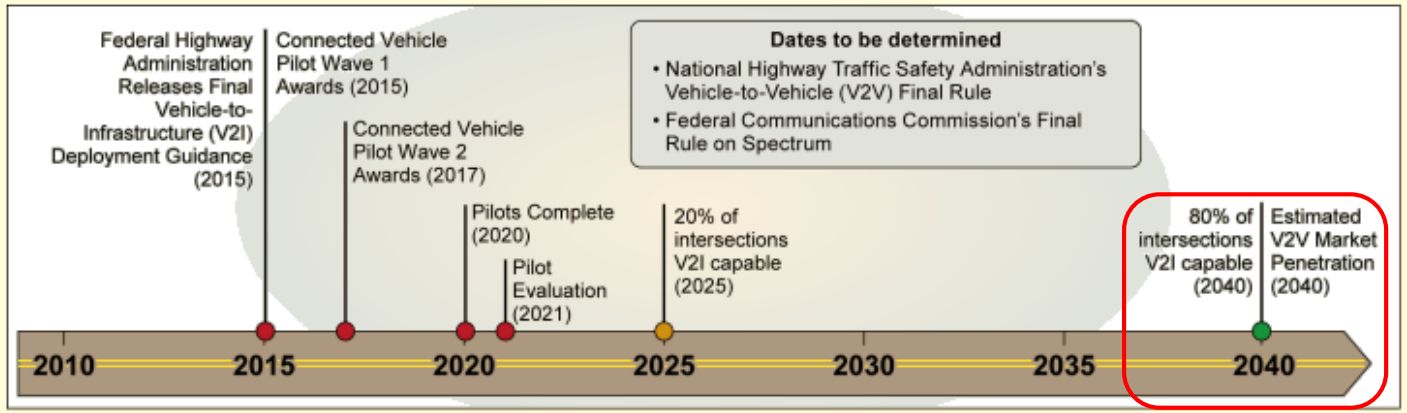

Source: FDOT

Figure 3: DOT's Planned Connected Vehicle Path to Deployment, 2010-2040



Source: GAO analysis of Department of Transportation documents. | GAO-15-775

Many states and localities may lack resources for funding both V2I equipment and the personnel to install, operate, and maintain the technologies.

Roadway Safety

There are approximately 120,000 roadway crashes per year in Virginia, accounting for 700 fatalities per year[1]

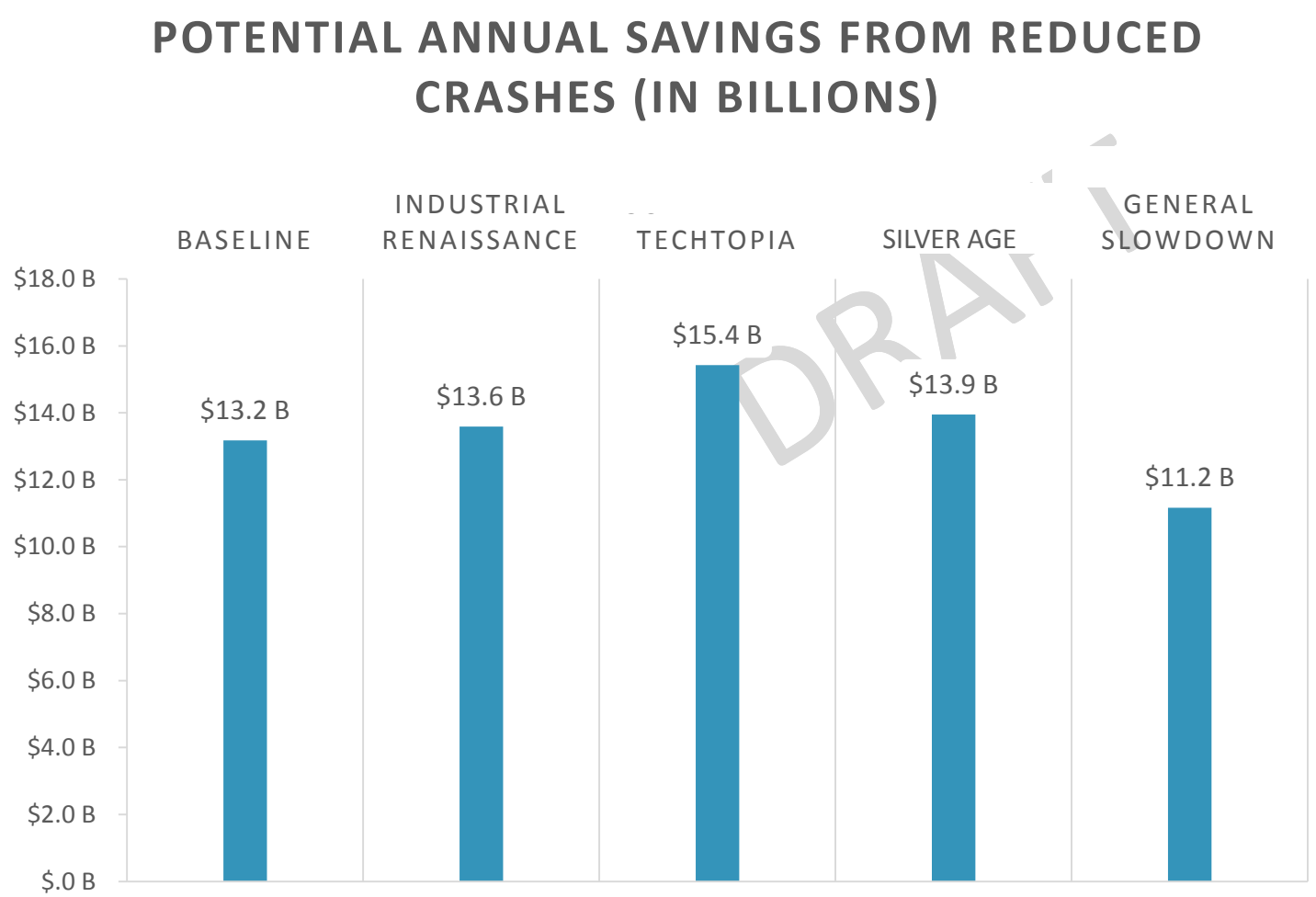
These crashes account for over $15 billion in costs per year (more like $20 billion in 2040)

Driver error is responsible for 80-90% of all crashes

Crash reductions will save lives, reduce user costs, reduce congestion and improve system reliability

[1] Based on averages from 2011-2015 crashes

Technology, Safety, and Societal Savings

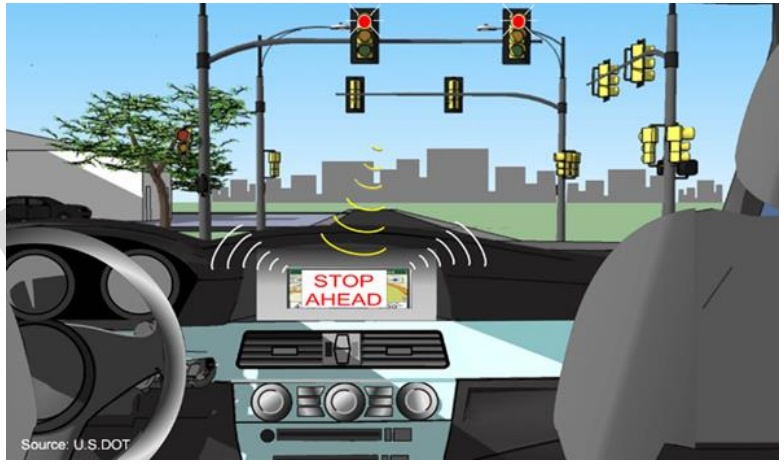


Autonomous vehicles are expected to significantly improve roadway safety and there could be tremendous savings to society as a result of fewer crashes.

Travel Time Savings

The USDOT estimates that *Connected Vehicle* technology could help reduce travel times by up to 27 percent

When cooperative adaptive cruise control and speed harmonization applications are optimized for the environment, they can potentially reduce travel time on freeways by up to 42 percent



Example technologies:

- Intelligent Traffic Signal System
- Freight Signal Priority, Transit Signal Priority

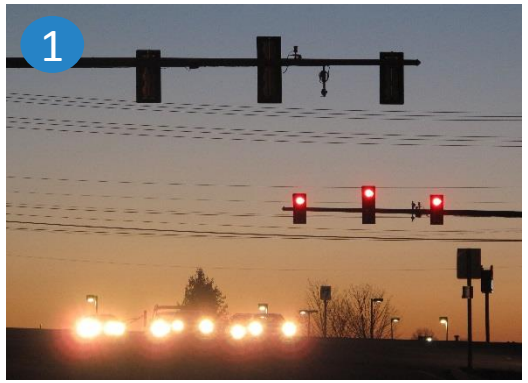
As technology evolves, connected vehicle solutions can help mitigate the impact of rising travel demand

System Savings from Connected Vehicles

VDOT estimates $1.1 billion could be saved by eliminating….

1. Traffic signals (3,200 signals x $250,000 per signal = $800 million)
2. Changeable messaging signs (550 signs x $200,000 per sign = $110 million)
3. Overhead guide signs (1,000 signs x $100,000 per structure = $100 million)

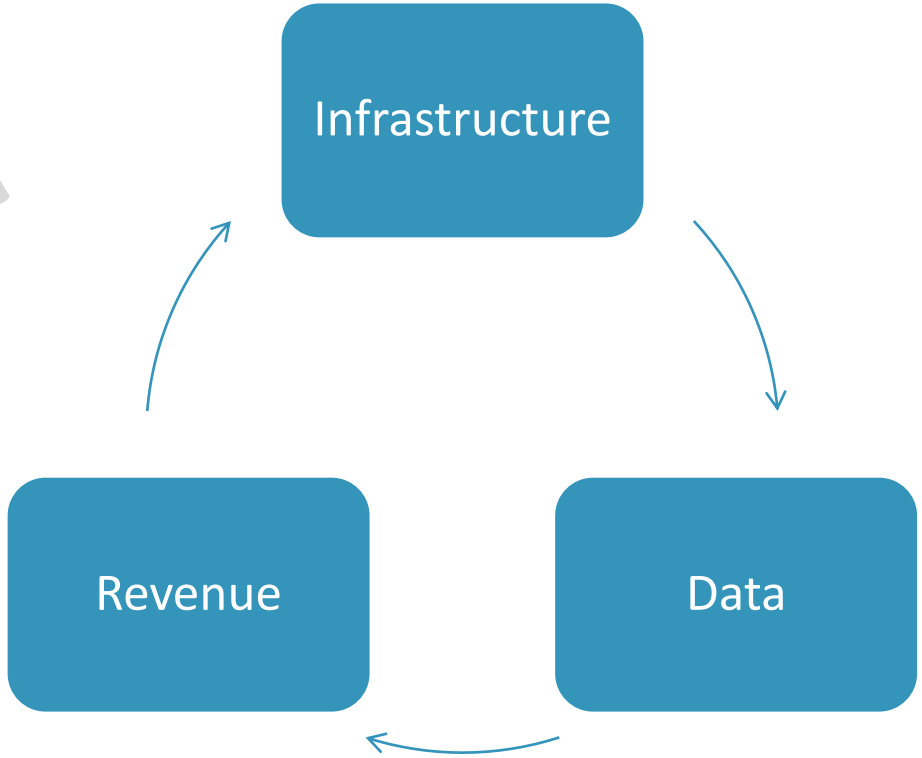
*Based on planning level cost estimates for removing VDOT-maintained signals and signs throughout Virginia



5G Telecommunications

Evolution to 5G

- Data: Faster processing speeds to handle massive data generated and needed by AVs
- Vehicle-to-Everything Connectivity (V2X): allowing vehicles talk to each other and the surrounding environment (giving vehicles additional “vision”)
- Timing: Expected as early as 2019



Summary

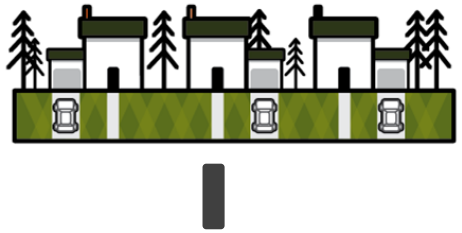
SCENARIO OVERVIEW, INVESTMENT CHOICES

Some Big Takeaways

- The transportation system of 2040 is going to look A LOT DIFFERENT!
- Freight supply chain dynamics are adaptive, helping to balance outcomes
- For environmental resiliency, we need land use-transportation coordination and vulnerability (risk) assessment
- User costs are expected to go down, especially if high demand for technology drives cost reductions. Lower costs + fewer mobility constraints = potentially significant increases in demand
- There will be challenges and opportunities in paying for our transportation system, such as the decline of gasoline-based revenue and the potential to leverage big data to fund new infrastructure
- New models of private sector involvement need to be carefully planned and negotiated

Industrial Renaissance - Trends

Growth



Industry

Mode

Autonomous Vehicles

Medium Adoption

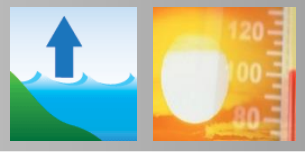
Mobility on Demand

Medium Adoption

Freight

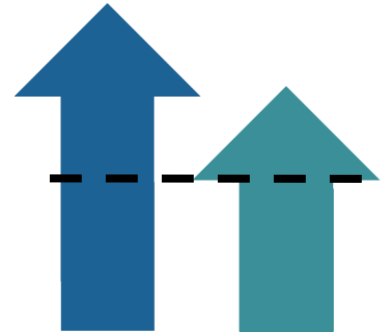
Increased demand, smaller trucks

Environment



Higher-than-expected sea-level rise, inland flooding, high heat

Travel Demand



Travel Costs

High

Industrial Renaissance - Outcomes

Person Travel	Freight Movement	All Travel	Costs
Person Miles	Freight Ton Miles	Vehicle Miles	User Costs
Person Trips	Freight Trips	Recurring Congestion	System Costs
Person Mode Mix	Freight Mode Mix	Non-recurring Congestion	

Relative Change from the 2040 Baseline

- Increase
- Neutral
- Decrease

*These results are intended to provide an illustration of potential trends and outcomes in each Scenario, *relative to the Baseline 2040 Scenario*.

Industrial Renaissance - Implications

Dispersed growth in VMT

Reduced throughput resiliency

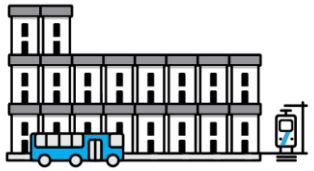
What are the congestion patterns?

What does this mean for investment choices?

What are the policy initiatives that will mitigate negative impacts & foster positive outcomes?

Techtopia – Trends

Growth



Industry

Mode

Autonomous Vehicles

High Adoption

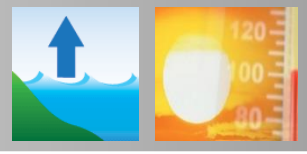
Mobility on Demand

High Adoption

Freight

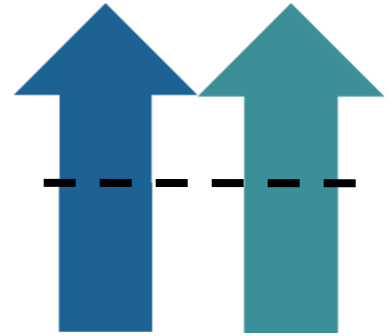
Increased demand, trucking/intercity rail

Environment



Lower-than-expected sea-level rise, inland flooding, high heat

Travel Demand



Travel Costs

Low

Techtopia – Outcomes

Person Travel	Freight Movement	All Travel	Costs
Person Miles	Freight Ton Miles	Vehicle Miles	User Costs
Person Trips	Freight Trips	Recurring Congestion	System Costs
Person Mode Mix	Freight Mode Mix	Non-recurring Congestion	

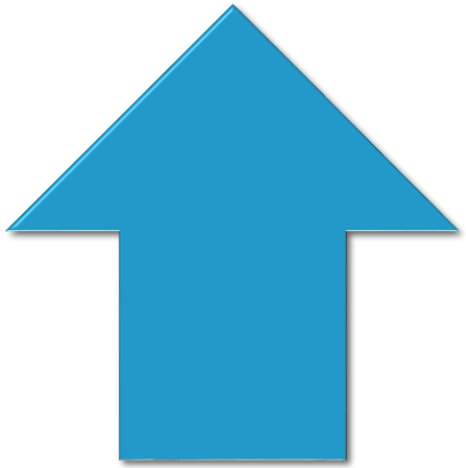
Relative Change from the 2040 Baseline

- Increase
- Neutral
- Decrease

*These results are intended to provide an illustration of potential trends and outcomes in each Scenario, *relative to the Baseline 2040 Scenario*.

Techtopia – Implications

Reduced relative VMT growth



Increased throughput resiliency

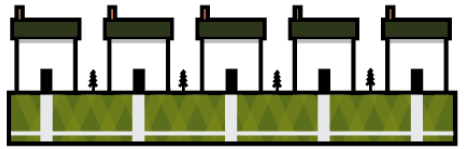
What are the congestion patterns?

What does this mean for investment choices?

What are the policy initiatives that will mitigate negative impacts & foster positive outcomes?

Silver Age – Trends

Growth



Industry

Mode

Autonomous Vehicles

Medium-High Adoption

Mobility on Demand

Low-Medium Adoption

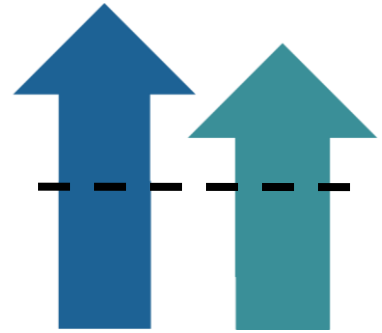
Freight

Less demand, reduced efficiency (pop. dispersion)

Environment

Developing away from vulnerable areas

Travel Demand



Travel Costs

Low-Med.

Silver Age – Outcomes

Person Travel	Freight Movement	All Travel	Costs
Person Miles	Freight Ton Miles	Vehicle Miles	User Costs
Person Trips	Freight Trips	Recurring Congestion	System Costs
Person Mode Mix	Freight Mode Mix	Non-recurring Congestion	

Relative Change from the 2040 Baseline

- Increase
- Neutral
- Decrease

*These results are intended to provide an illustration of potential trends and outcomes in each Scenario, *relative to the Baseline 2040 Scenario*.

Silver Age – Implications

Moderated VMT Growth

Moderated User & System Costs

What are the congestion patterns?

What does this mean for investment choices?

What are the policy initiatives that will mitigate negative impacts & foster positive outcomes?

General Slowdown – Trends

Growth

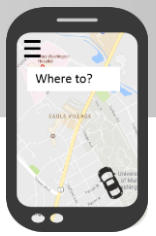
Industry

Mode

Autonomous Vehicles

Low Adoption

Mobility on Demand



Low Adoption

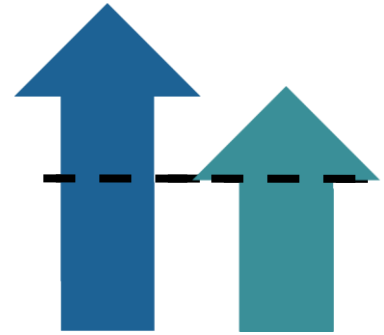
Freight

Less demand, reduced efficiency

Environment

Volatile global energy prices

Travel Demand



Travel Costs

High

General Slowdown – Outcomes

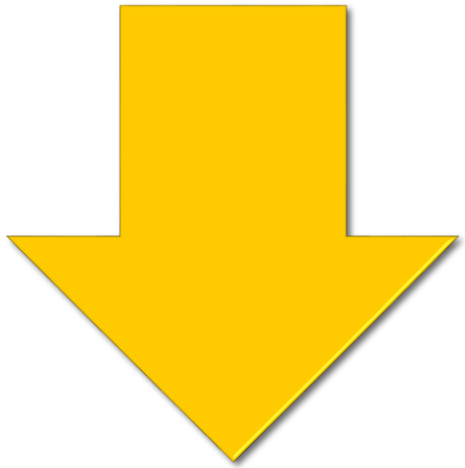
Person Travel	Freight Movement	All Travel	Costs
Person Miles	Freight Ton Miles	Vehicle Miles	User Costs
Person Trips	Freight Trips	Recurring Congestion	System Costs
Person Mode Mix	Freight Mode Mix	Non-recurring Congestion	

Relative Change from the 2040 Baseline

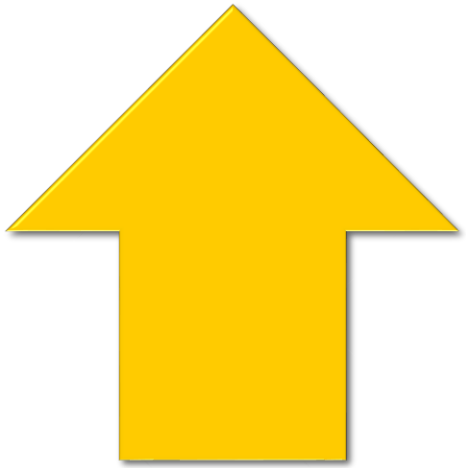
- Increase
- Neutral
- Decrease

*These results are intended to provide an illustration of potential trends and outcomes in each Scenario, *relative to the Baseline 2040 Scenario*.

General Slowdown – Implications



AV delay & lower growth mitigate relative VMT growth



Increased User & System Costs

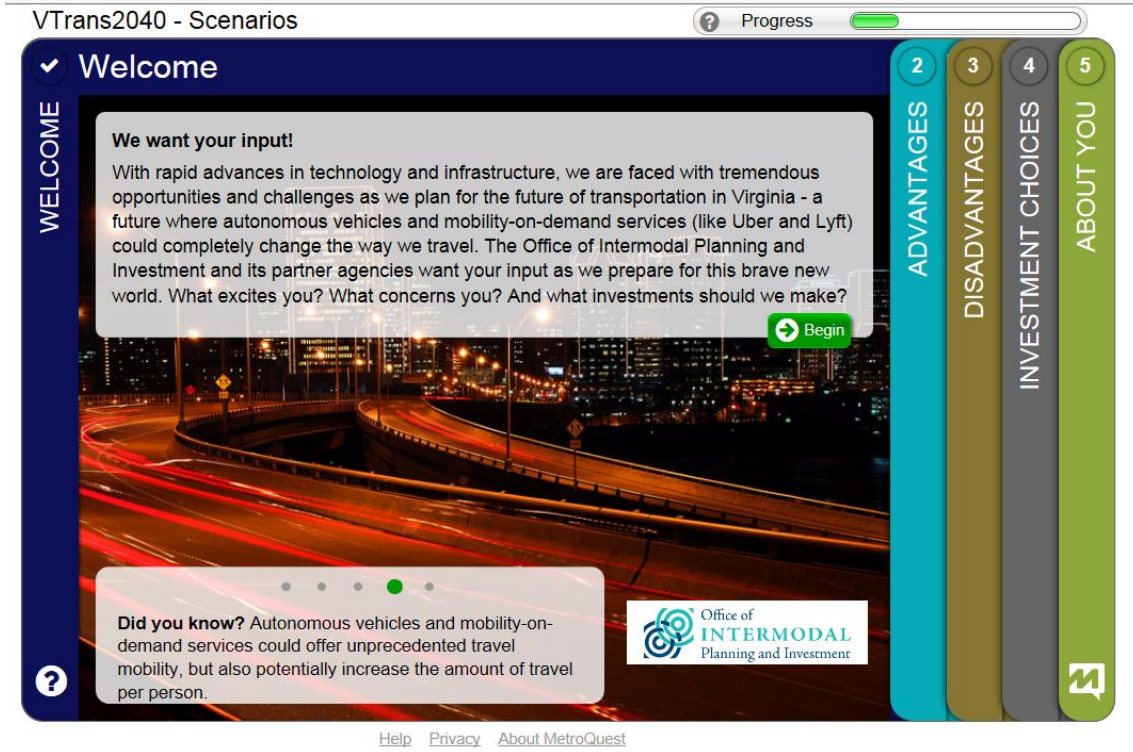
What are the congestion patterns?

What does this mean for investment choices?

What are the policy initiatives that will mitigate negative impacts & foster positive outcomes?

Next Steps

- VMTP “Stress Test”
  - Summarizing investments (operational, capacity, multimodal, etc)
  - Discussion of risks and resiliency in light of scenario findings
- Investment and Policy Findings
  - Digital outreach
  - Summarize scenario implications
  - Summarize Policy and Investment recommendations



COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

Aubrey L. Layne, Jr.
Chairman

1401 East Broad Street
Richmond, Virginia 23219

(804) 786-2701
Fax: (804) 786-2940

COMMONWEALTH TRANSPORTATION BOARD
WORKSHOP AGENDA

VDOT Central Auditorium
1221 East Broad Street
Richmond, Virginia 23219

June 20, 2017
10:00 a.m.

9. Commissioner's Items
   Charles Kilpatrick, Virginia Department of Transportation

   This item does not have a presentation associated with it but rather serves as an opportunity for the Commissioner to provide updates on various items.

COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

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Chairman

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COMMONWEALTH TRANSPORTATION BOARD
WORKSHOP AGENDA

VDOT Central Auditorium
1221 East Broad Street
Richmond, Virginia 23219

June 20, 2017
10:00 a.m.

10. Director's Items
Jennifer Mitchell, Virginia Department of Rail & Public Transportation

This item does not have a presentation associated with it but rather serves as an opportunity for the Director to provide updates on various items.

COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

Aubrey L. Layne, Jr.
Chairman

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COMMONWEALTH TRANSPORTATION BOARD
WORKSHOP AGENDA

VDOT Central Auditorium
1221 East Broad Street
Richmond, Virginia 23219

June 20, 2017
10:00 a.m.

11. Secretary's Items
Aubrey Layne, Secretary of Transportation

This item does not have a presentation associated with it but rather serves as an opportunity for the Secretary to provide updates on various items.

# # #