

# Integrated Transportation Plan

JIM Briefing 12 - 9 - 14



# Meeting Objectives<sup>1</sup>

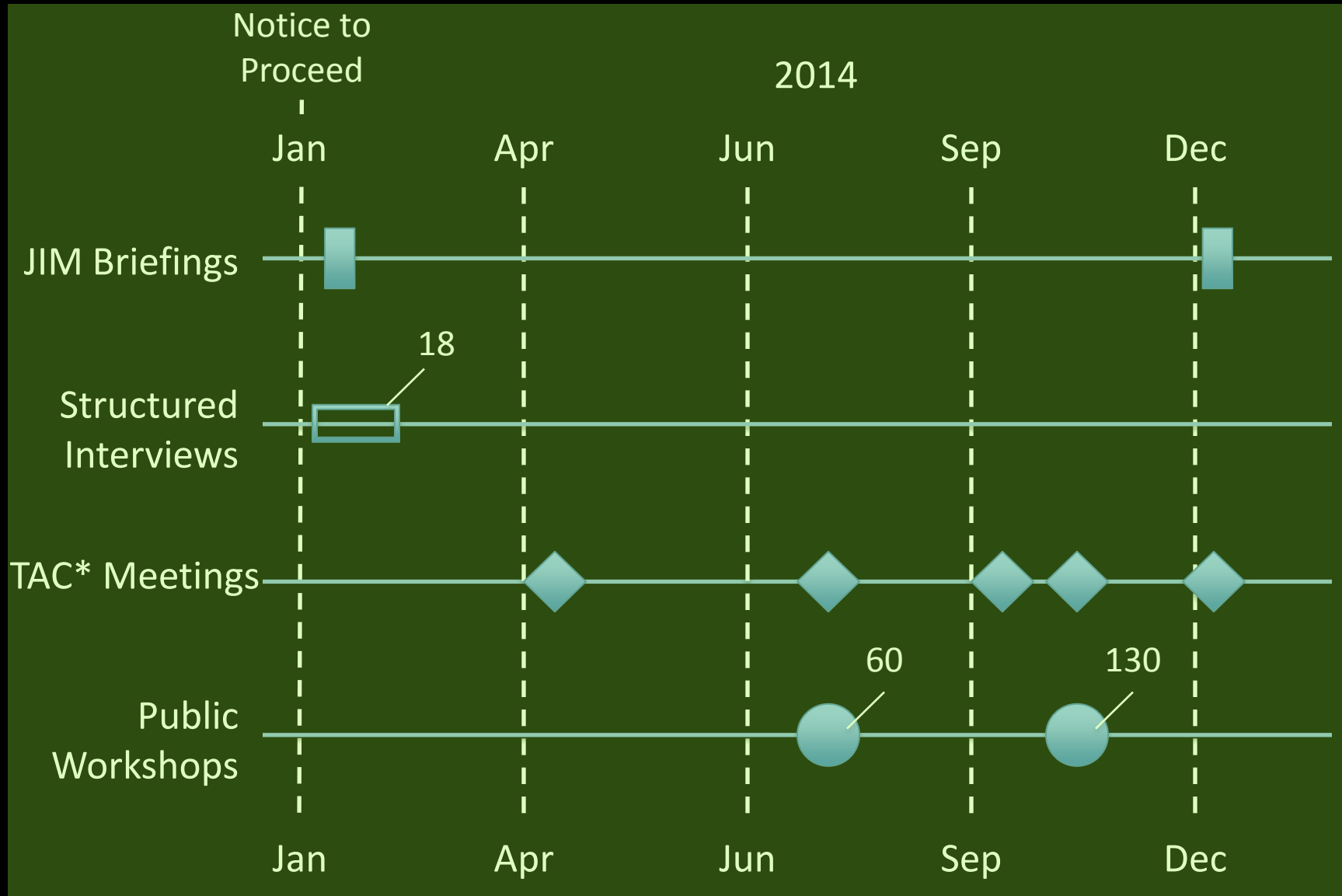
- Provide thorough briefing for elected leaders<sup>2</sup>
- Preview implementation recommendations
- Discover issues, concerns, missing elements
- Set stage for adoption process

# Agenda<sup>1</sup>

- Plan Development Process<sup>2</sup>
- Structure and Approach
- Indicators and Benchmarks
- Baseline Scenario
- Plan Scenario
- Implementation
- Revenue

# Plan Development Process<sup>1</sup>

# Plan Development Process



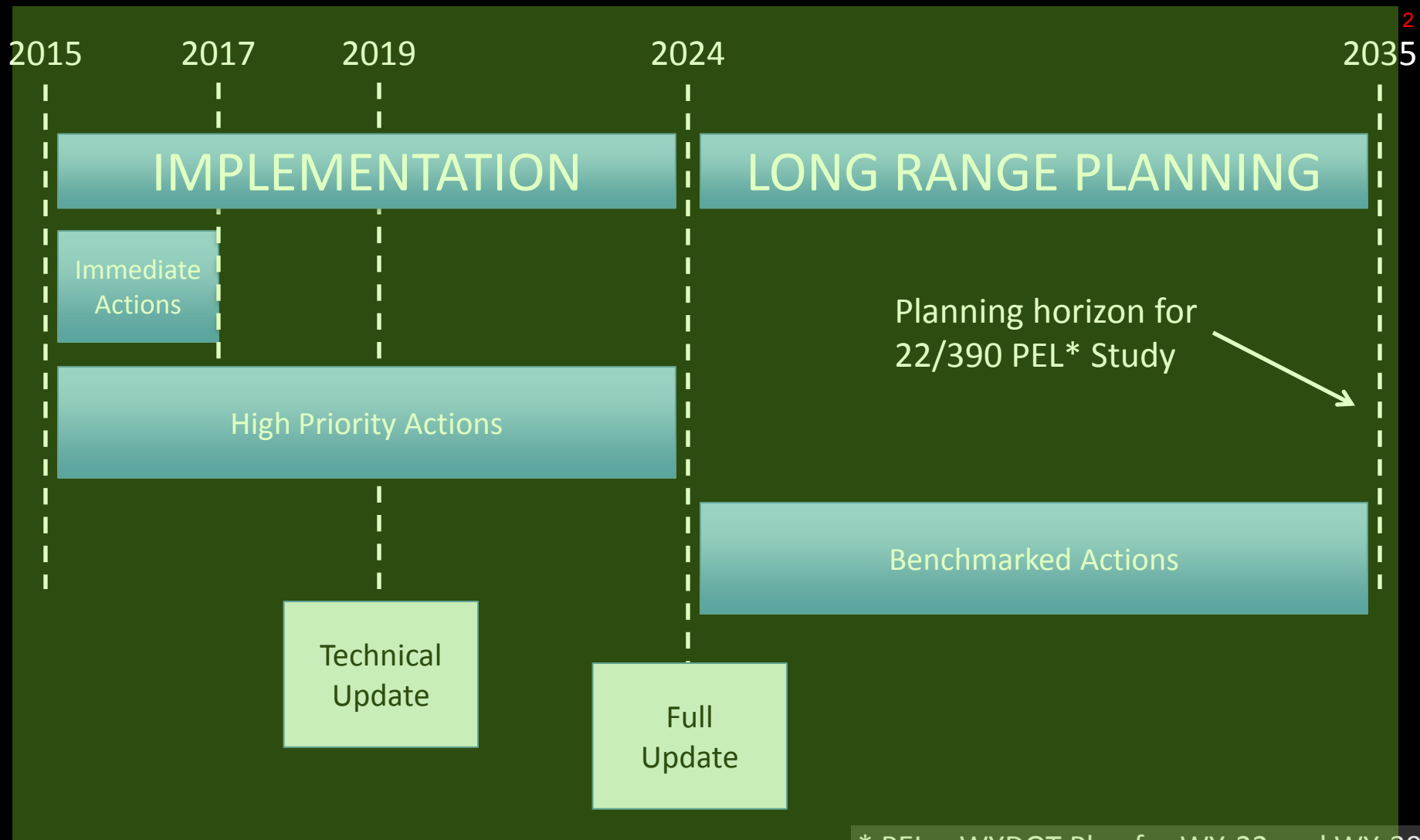
\* TAC = technical advisory committee

# Structure and Approach<sup>1</sup>

# Technical Advisory Committee (TAC)<sup>1</sup> Guidance

- Base the Integrated Transportation Plan on adopted Comprehensive Plan<sup>2</sup>
  - Policies are already set<sup>3</sup>
  - Focus on strategic implementation
- Simplify analytical process<sup>4</sup>
- Make information transparent and accessible<sup>5</sup>
- Rely on a lean, focused public process<sup>6</sup>

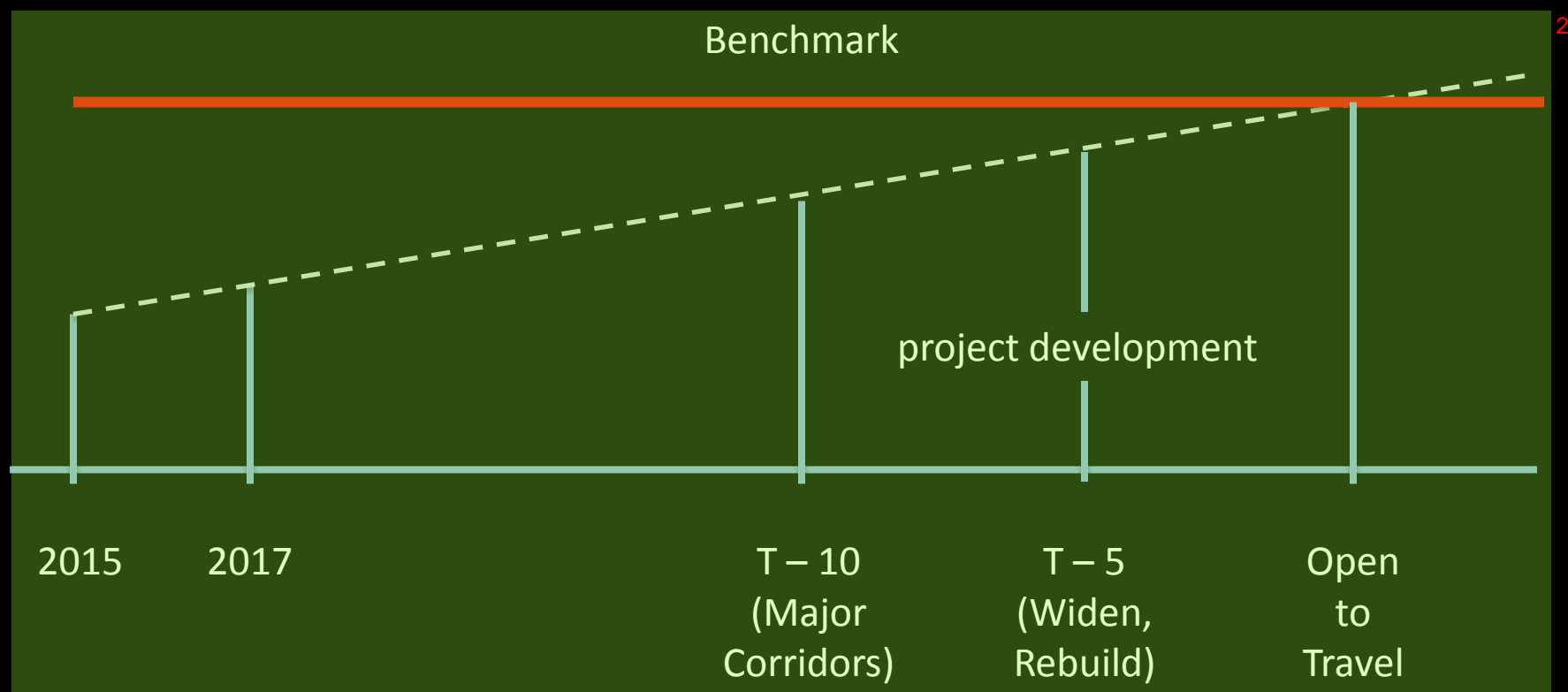
# Planning Horizons<sup>1</sup>



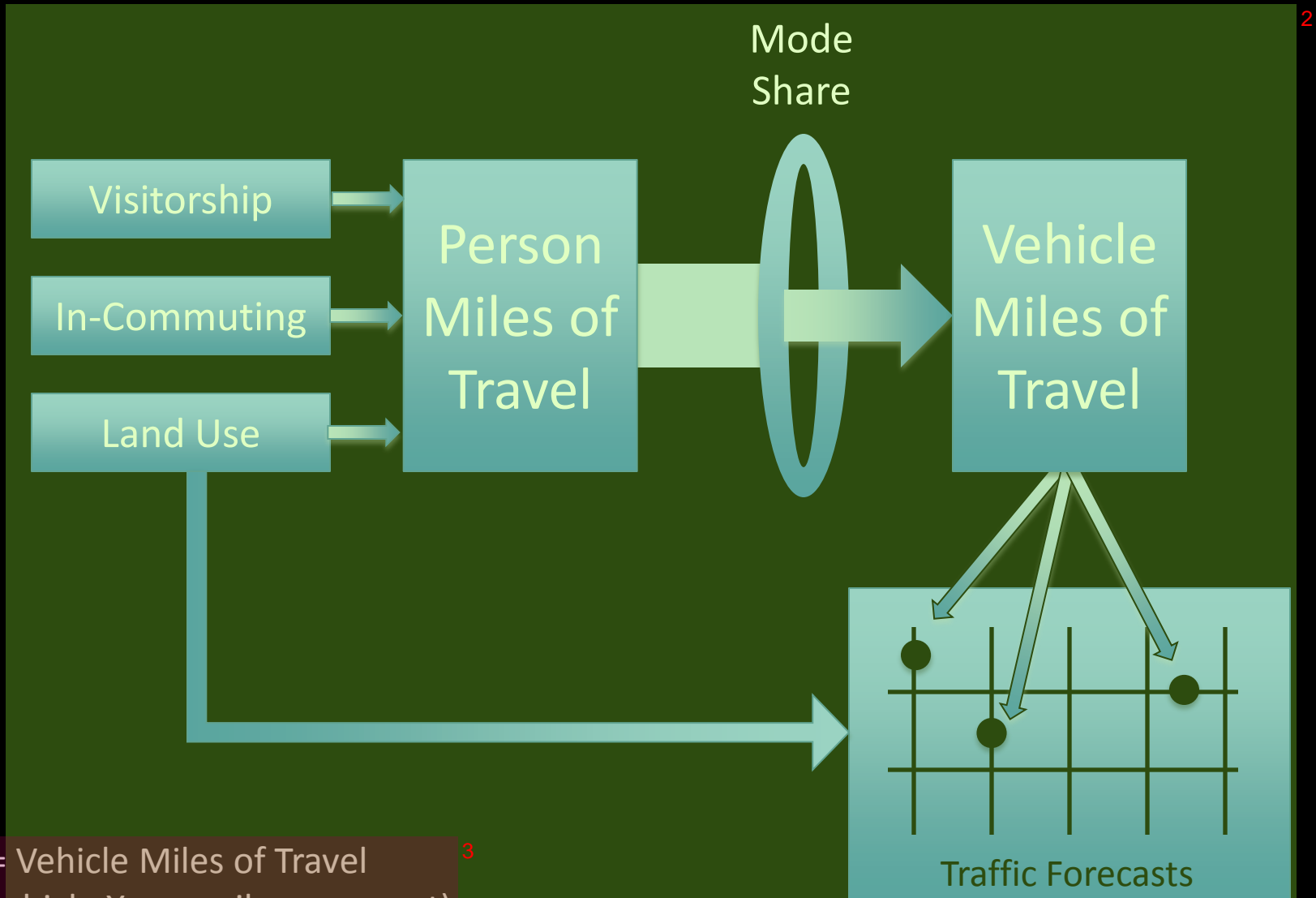
\* PEL = WYDOT Plan for WY-22 and WY-390



# Strategic Approach to Major Projects<sup>1</sup>

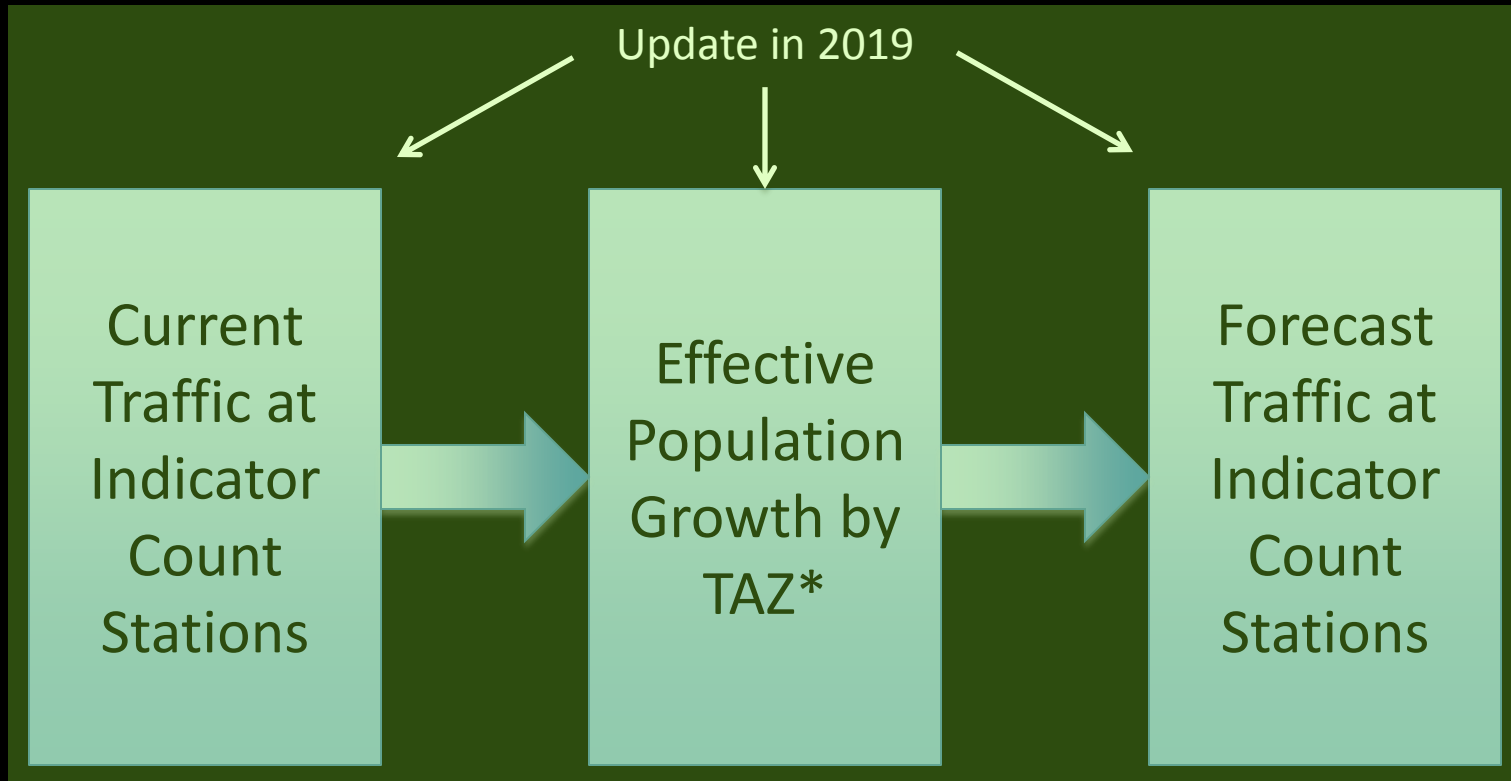


# VMT Model (update in 2019)<sup>1</sup>



VMT = Vehicle Miles of Travel  
(one vehicle X one mile = one vmt)<sup>3</sup>

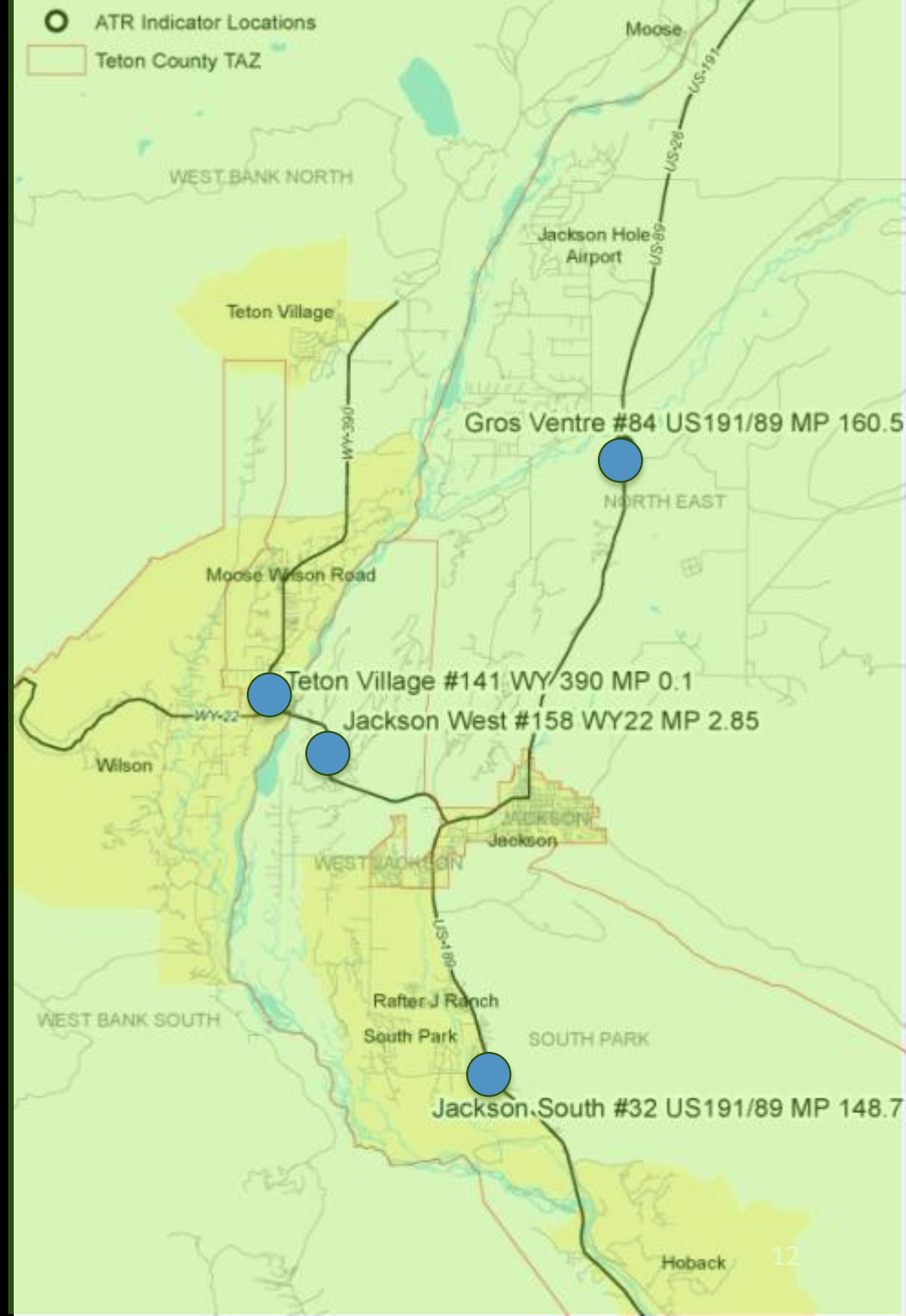
# Traffic Benchmarks Model<sup>1</sup>



\* TAZ = transportation analysis zone

# Traffic Indicator County Locations

WYDOT Permanent  
Traffic Recorder Locations



# Indicators and Benchmarks<sup>1</sup>

Month<sup>1</sup>

Jackson/Teton ITP Dashboard<sup>2</sup>

Year

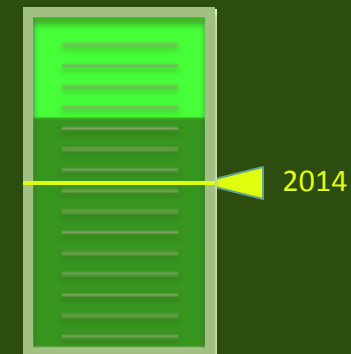


Vehicle Miles



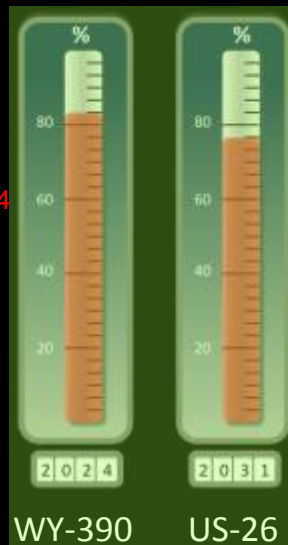
Person Miles

Transit Ridership<sup>3</sup>



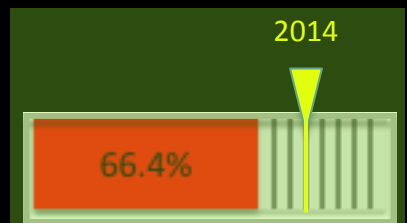
DAILY TRAVEL

CAPITAL BENCHMARKS<sup>4</sup>

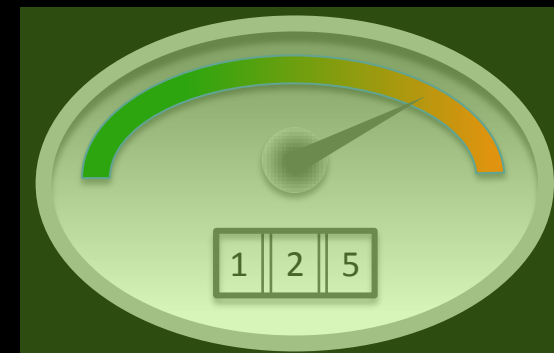


WY-390

US-26



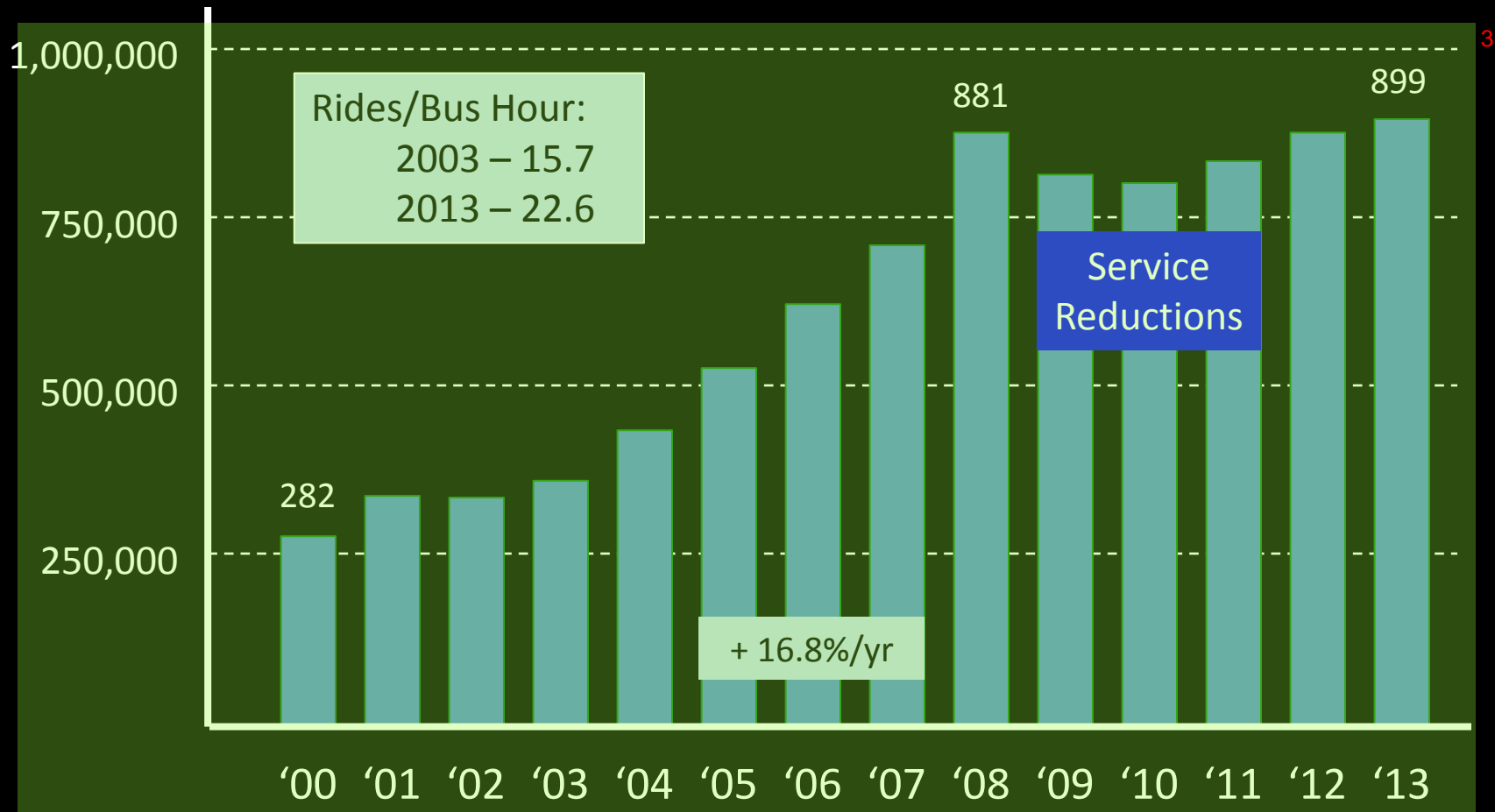
SOV MODE SHARE<sup>6</sup>



WILDLIFE HIGHWAY MORTALITY<sup>9</sup>

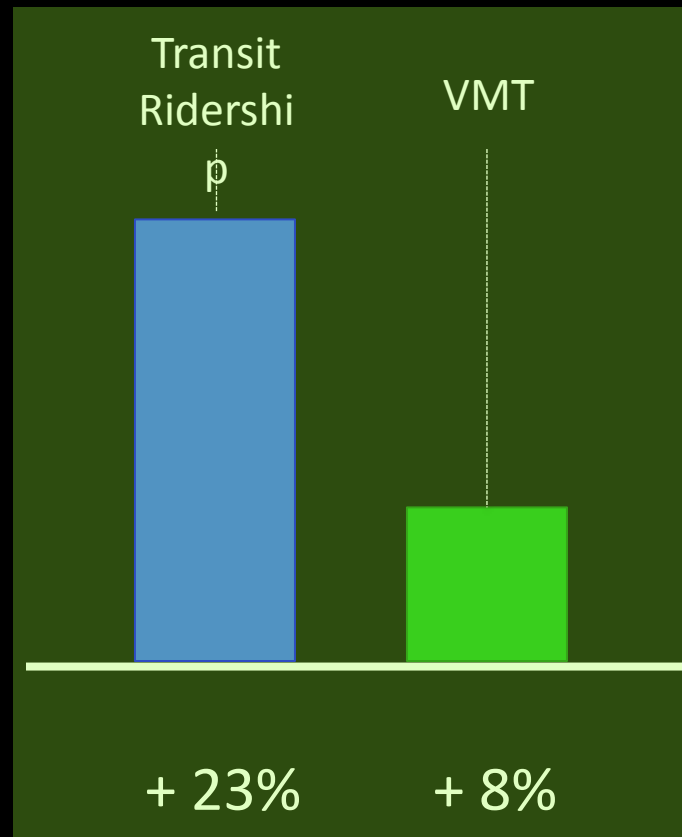
# Transit Ridership Trend<sup>1</sup>

(Annual Boardings)<sup>2</sup>



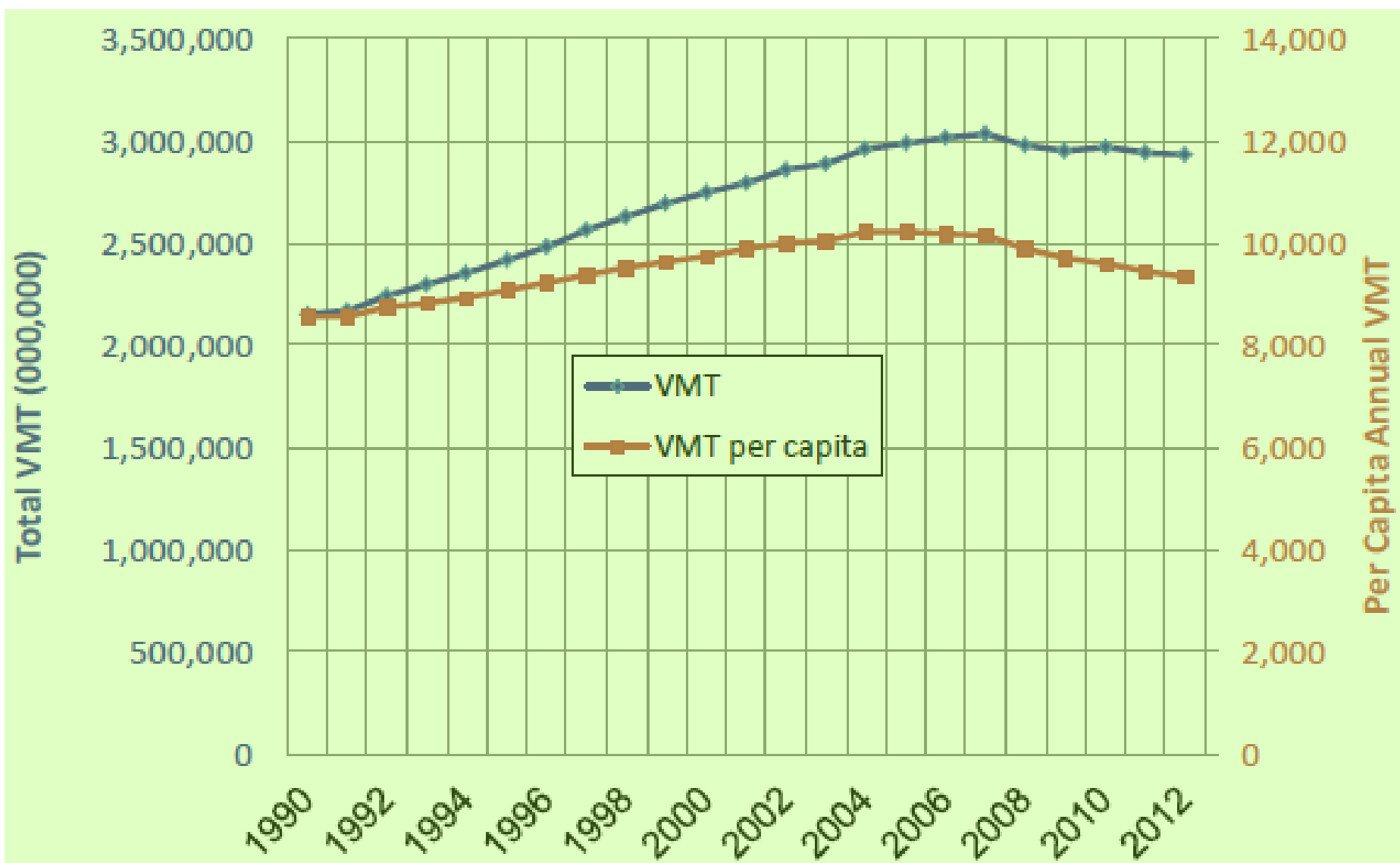
# Growth in VMT & Transit Ridership

## United States 2000 - 2012

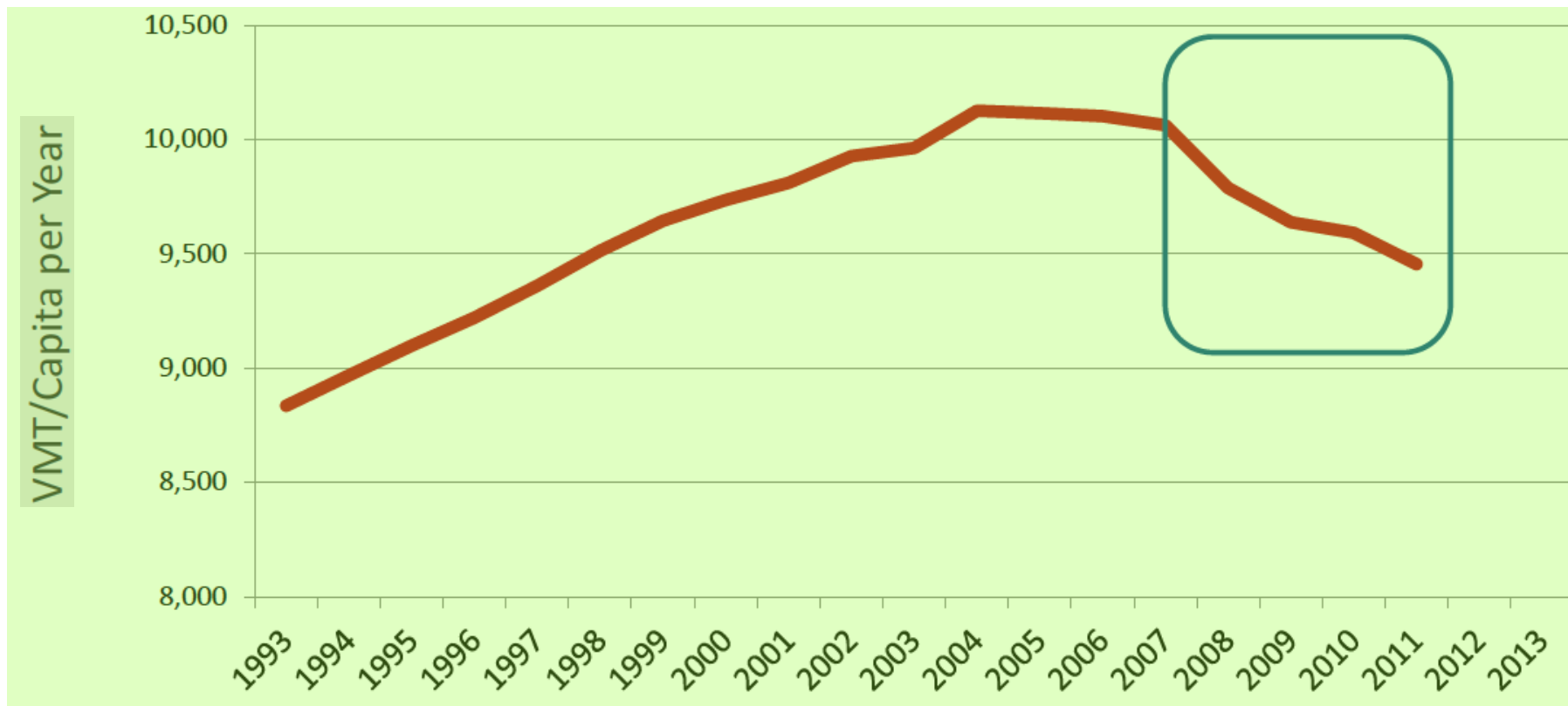




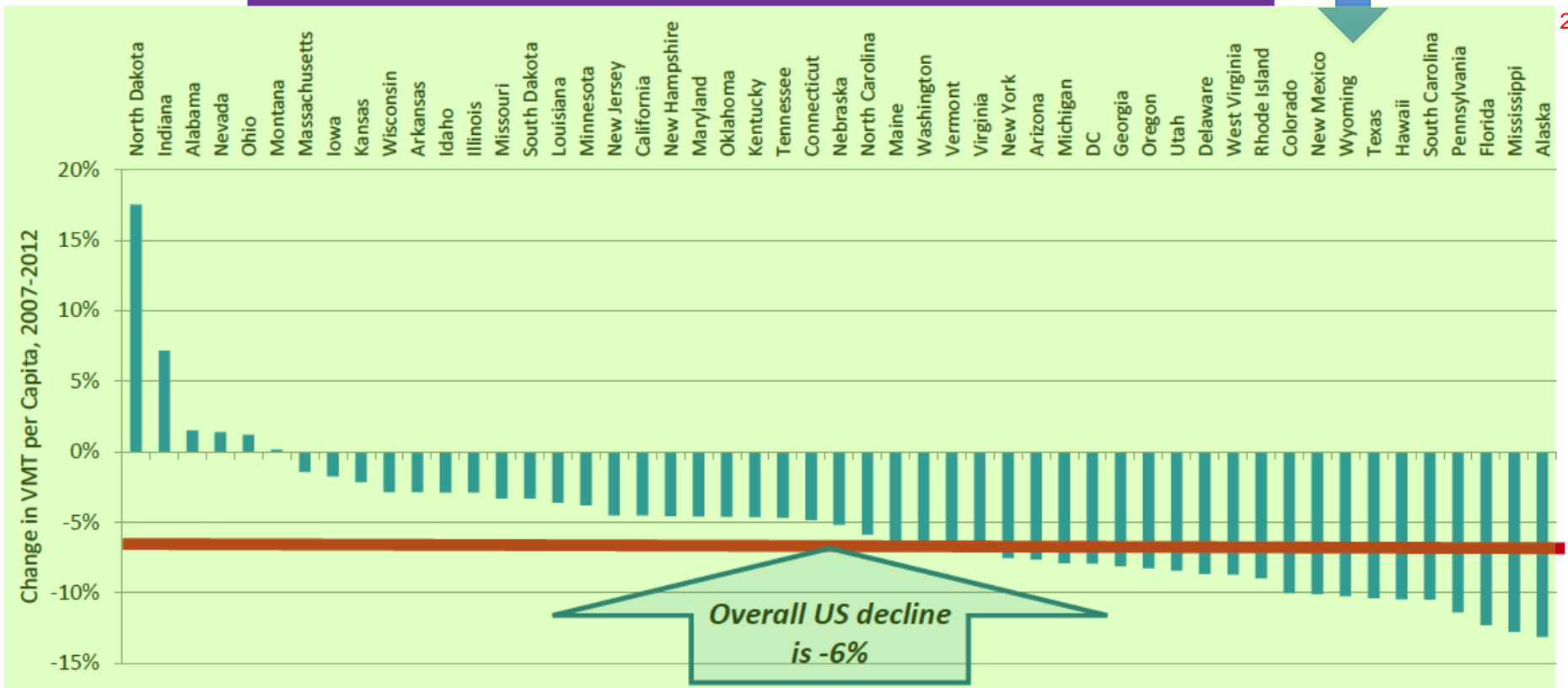
# VMT Trend – United States<sup>1</sup>



## VMT per capita: an unprecedented change:<sup>1</sup>



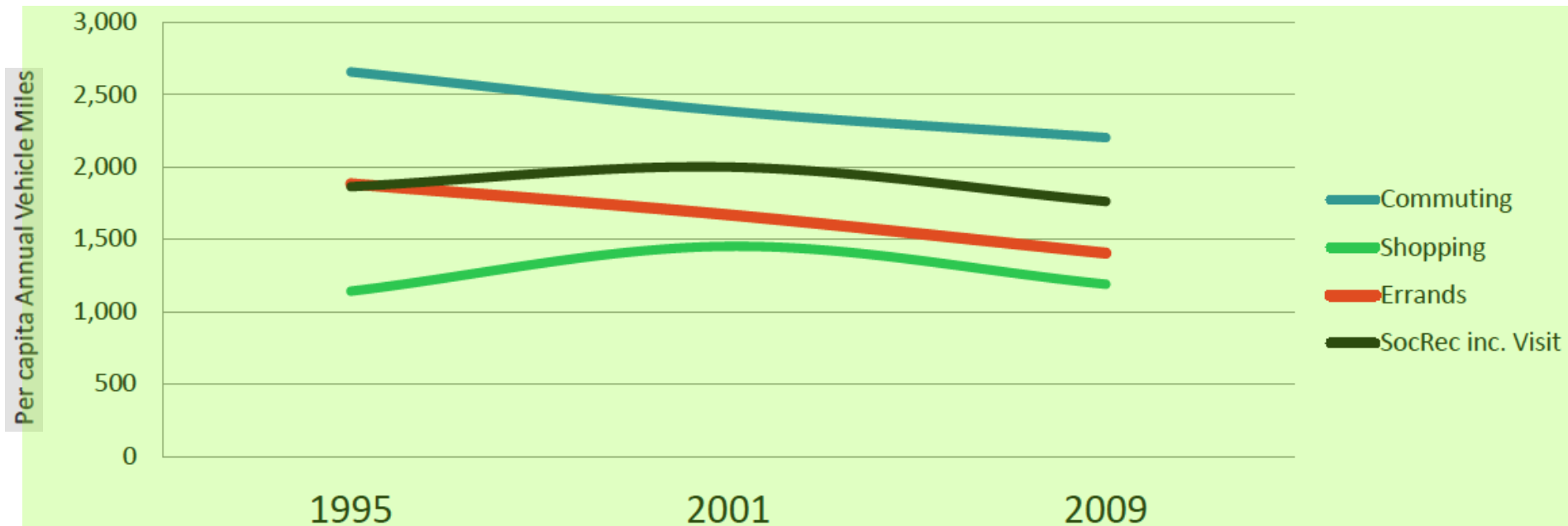
## Changes in per capita VMT by State 2007-2012: <sup>1</sup>



# Private vehicle travel for all purposes has declined:<sup>1</sup>

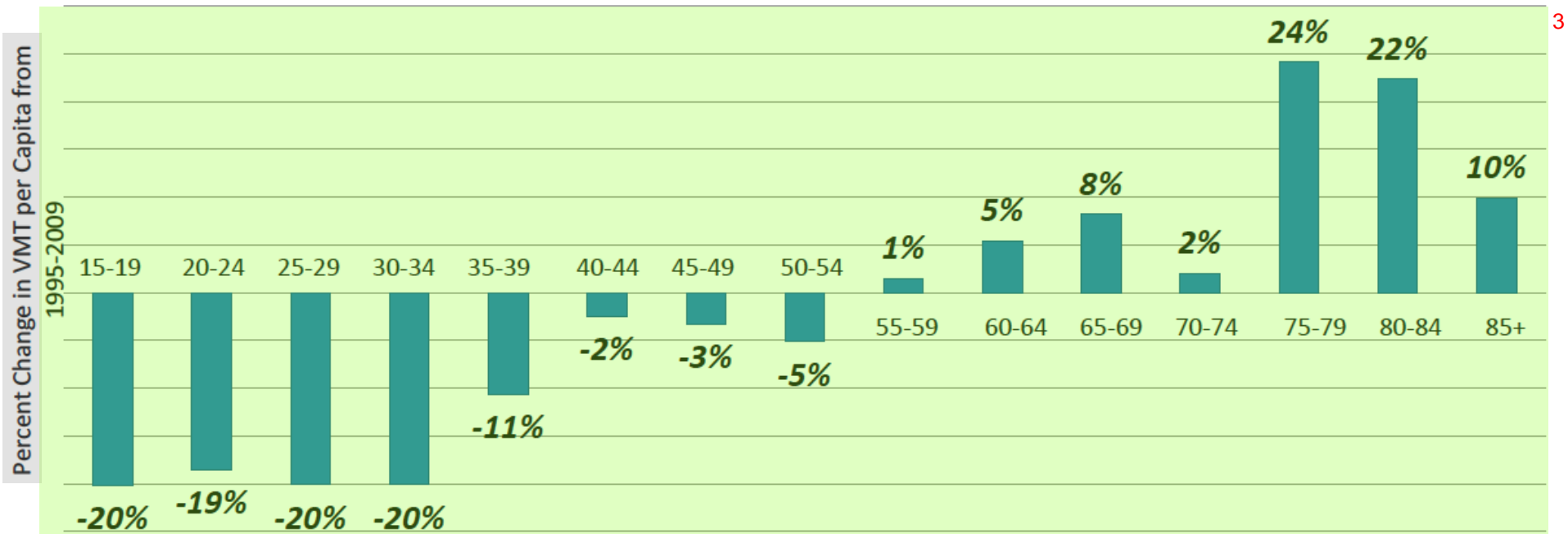
(Measured in VMT per Capita)<sup>2</sup>

## Trends in per Capita Annual Vehicle Miles by Major Purpose<sup>3</sup>



# Not Just Millennials<sup>1</sup>

Percent Change in VMT per Capita: 1995 to 2009<sup>2</sup>



# Trend-Line Forecasts Can Be Wrong<sup>1</sup>

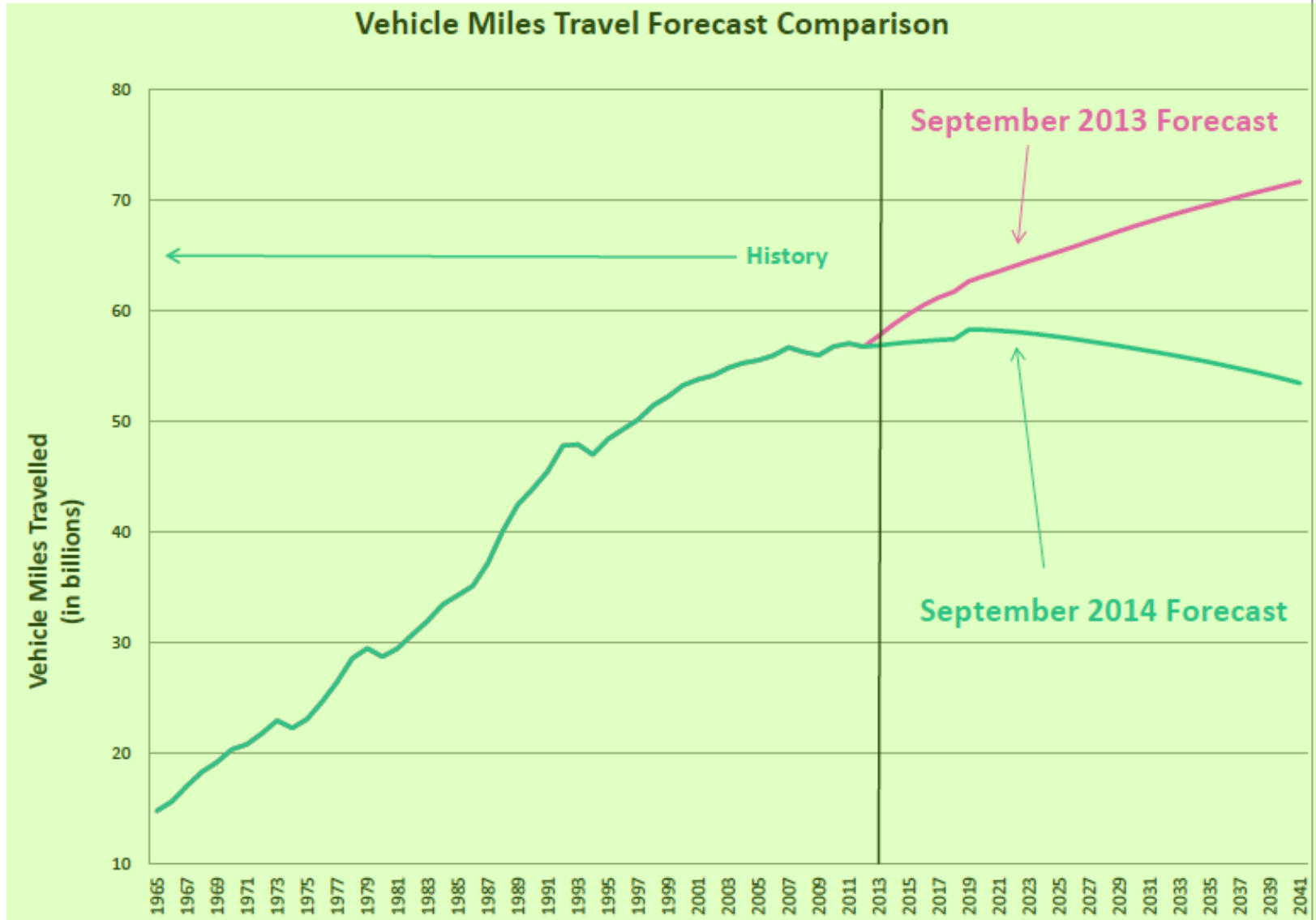


- 25%<sup>2</sup>

<sup>3</sup>

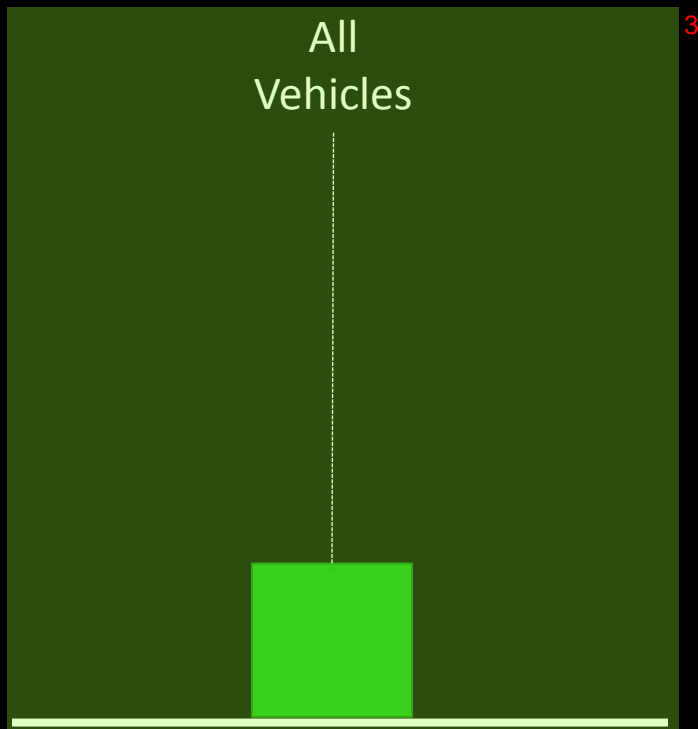
# State of Washington Transportation Revenue Forecast Council

## September 2014



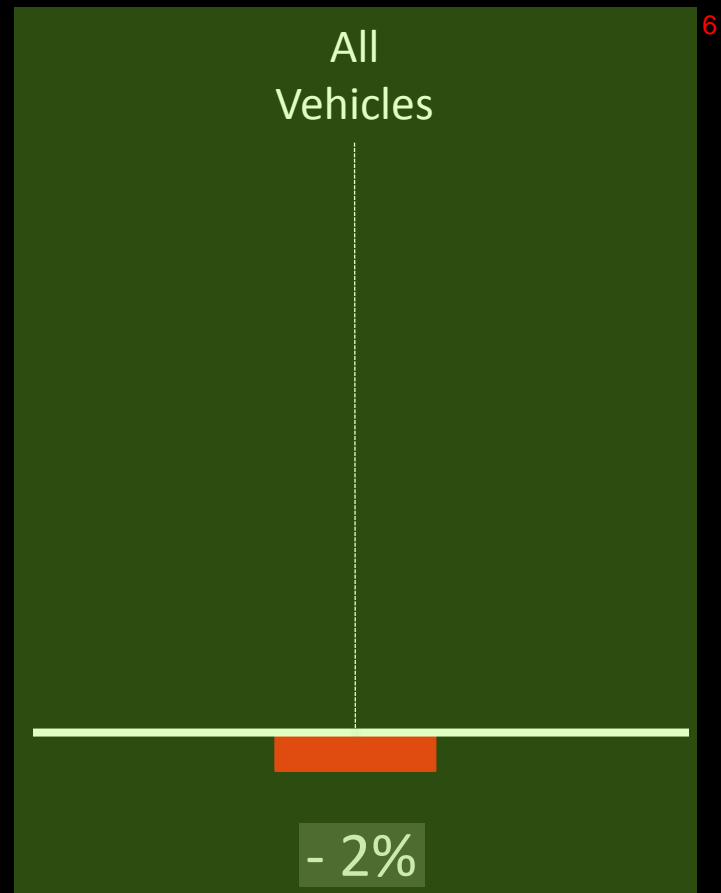
# Trends in Total US VMT<sup>1</sup>

2000 - 2012<sup>2</sup>



+ 8%<sup>4</sup>

2006 - 2012<sup>5</sup>

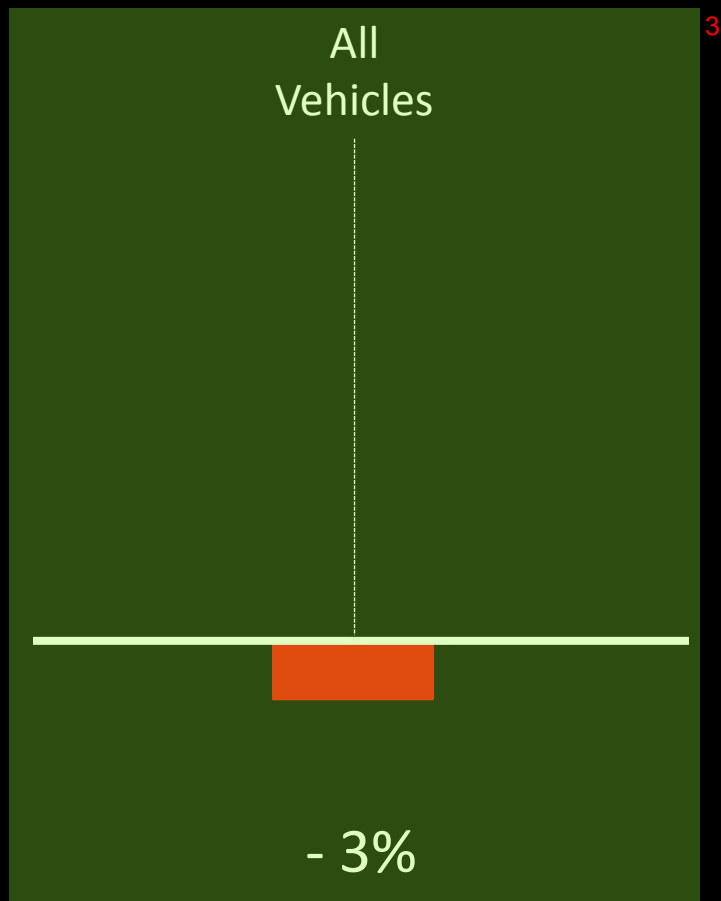


- 2%

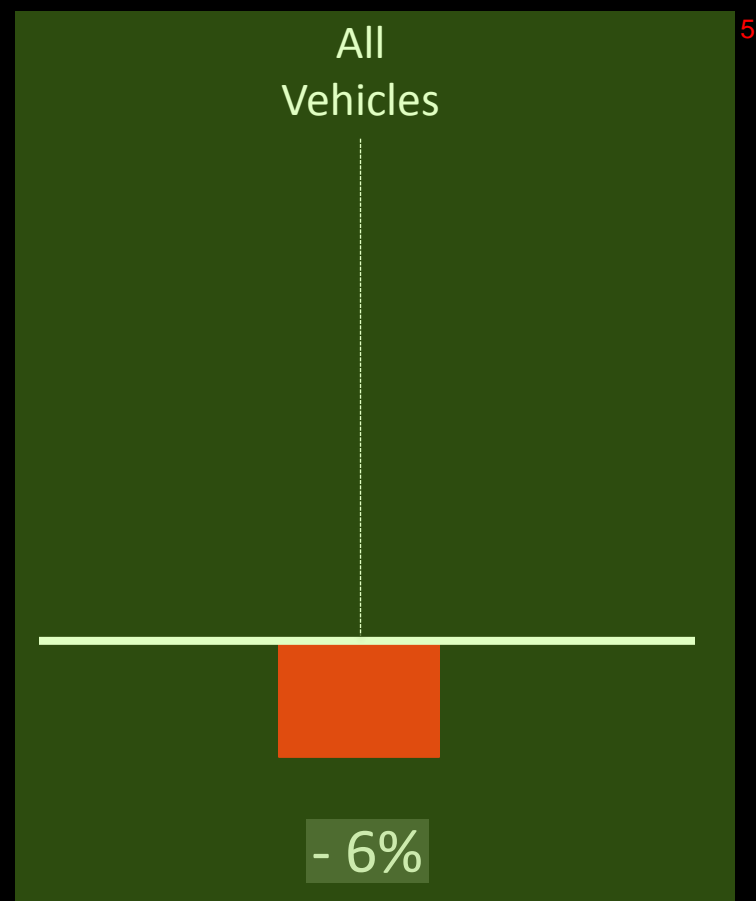


# Per Capita US VMT<sup>1</sup>

2000 - 2012<sup>2</sup>

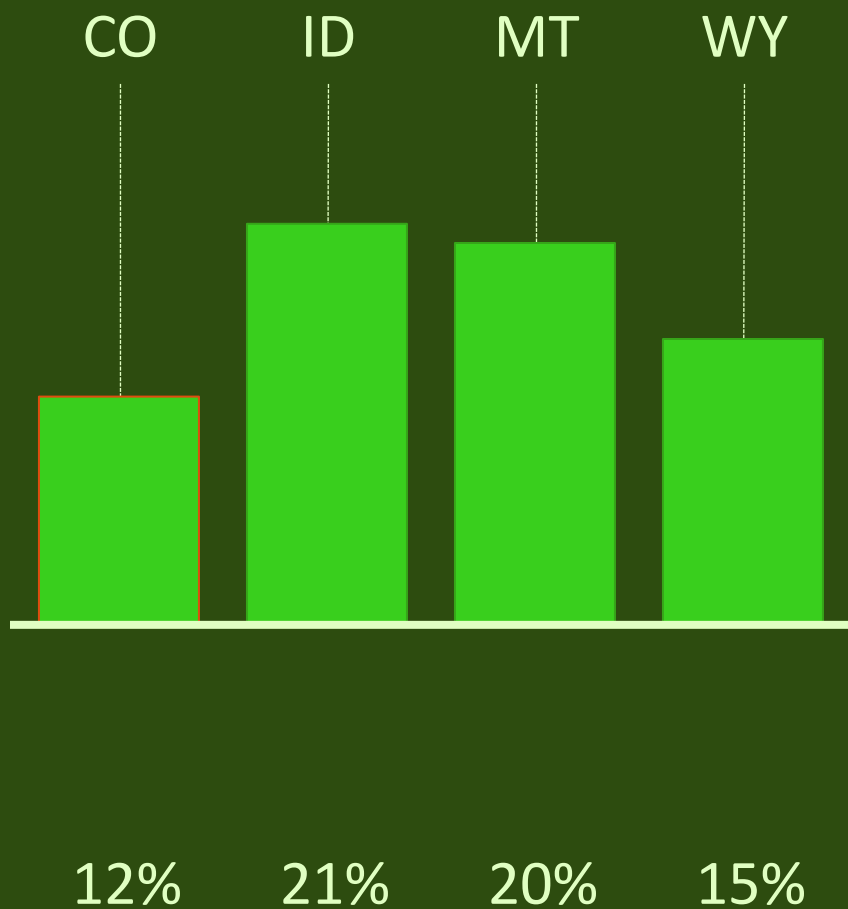


2006 - 2012<sup>4</sup>

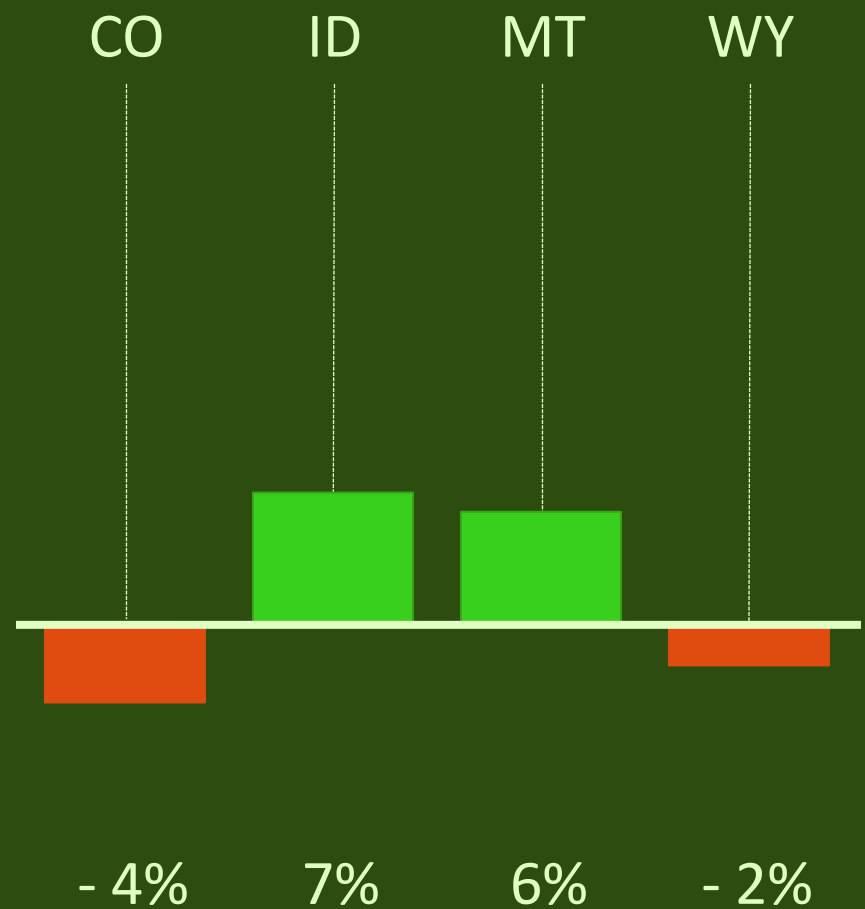


# VMT Trends – Interior West States<sup>1</sup>

2000 - 2012<sup>2</sup>



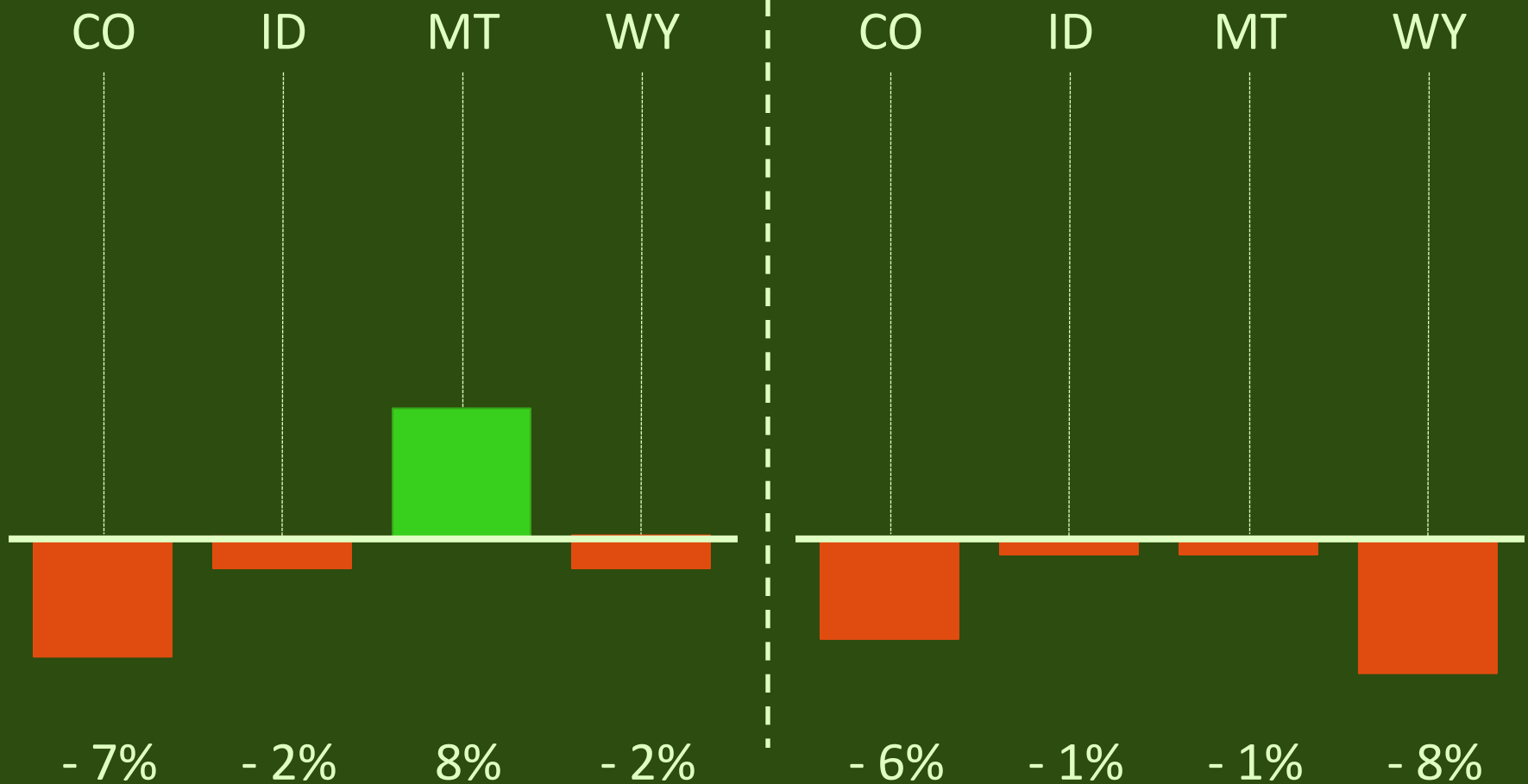
2006 - 2012<sup>3</sup>



# Per Capita VMT – Interior West States<sup>1</sup>

2000 - 2012<sup>2</sup>

2006 - 2012<sup>3</sup>



# What Drives VMT and What's the Trend?

## Demographics & Economics<sup>2</sup>

Labor Force  
Participation Rate



Household Income



Driver License Rate



Vehicle Ownership



Population



## Traffic Enablers<sup>3</sup>

Miles of Roadways



Energy Cost Subsidy



Road Subsidy



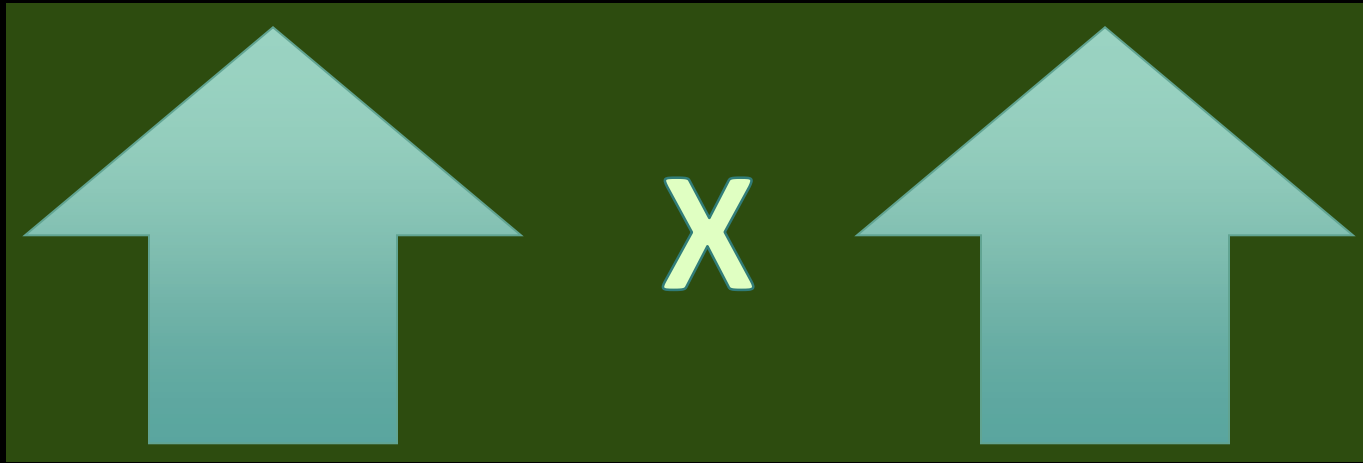
Sprawl



Auto Dependency



1984 VMT =

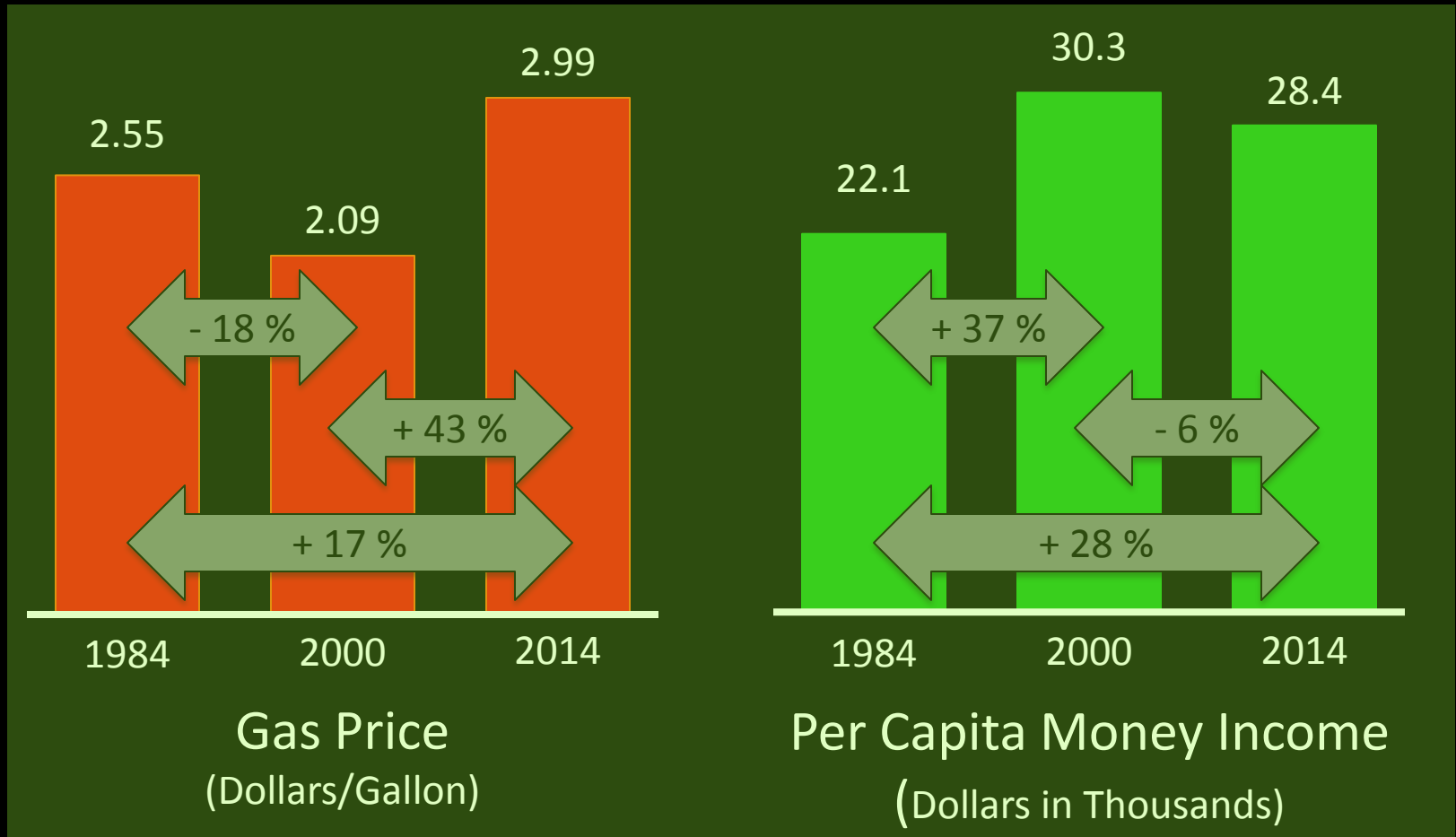


Per Capita VMT

Population

# US Gas Prices & Personal Income

(2014 Dollars)



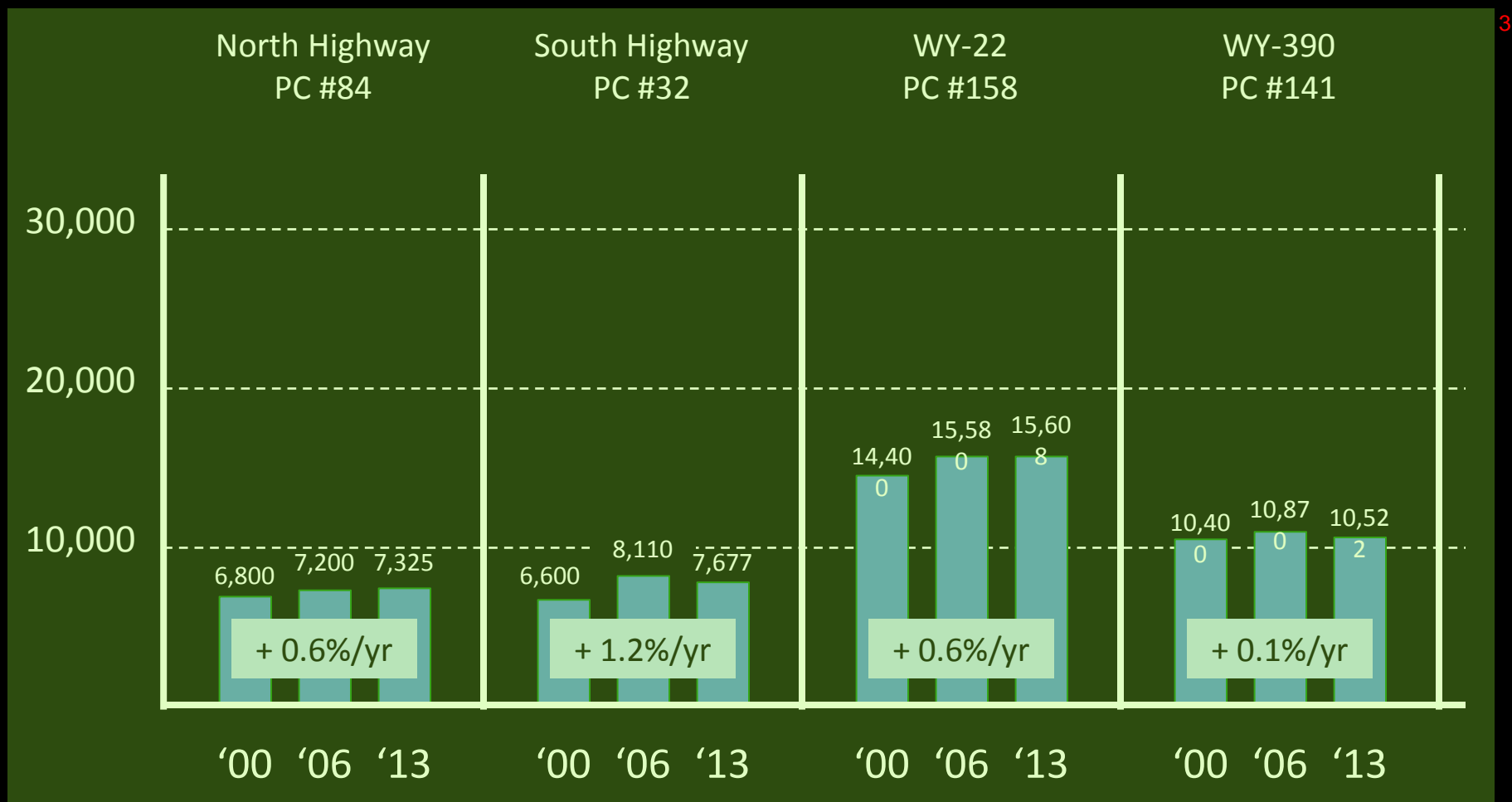
# 2013 Teton County VMT<sup>1</sup>

Annual VMT – Thousands of Miles<sup>2</sup>



# Traffic Trends – Indicator Count Sites\*

(Average Annual Daily Traffic, 2000 – 2013\*)

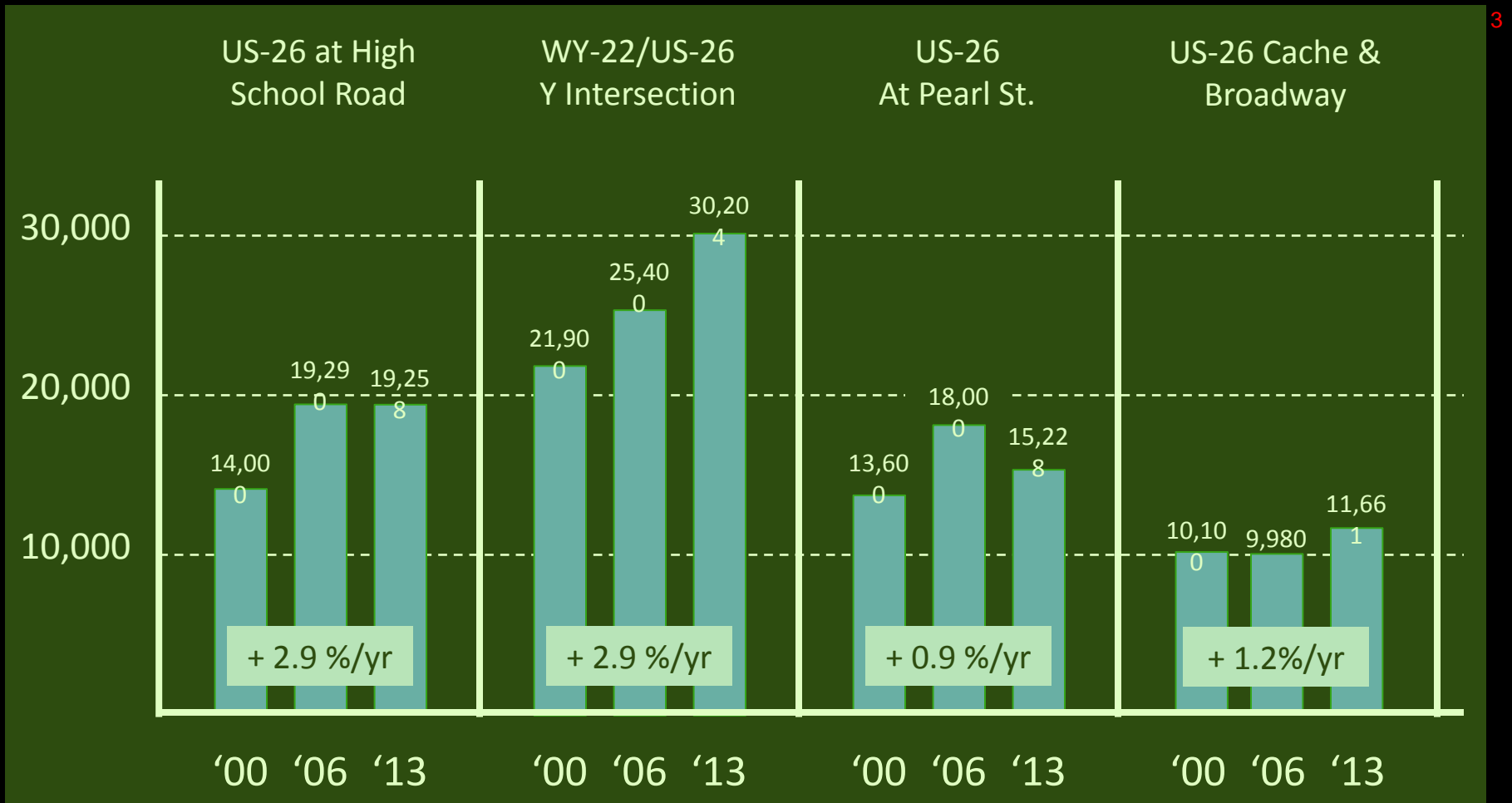


\*Permanent Count Locations



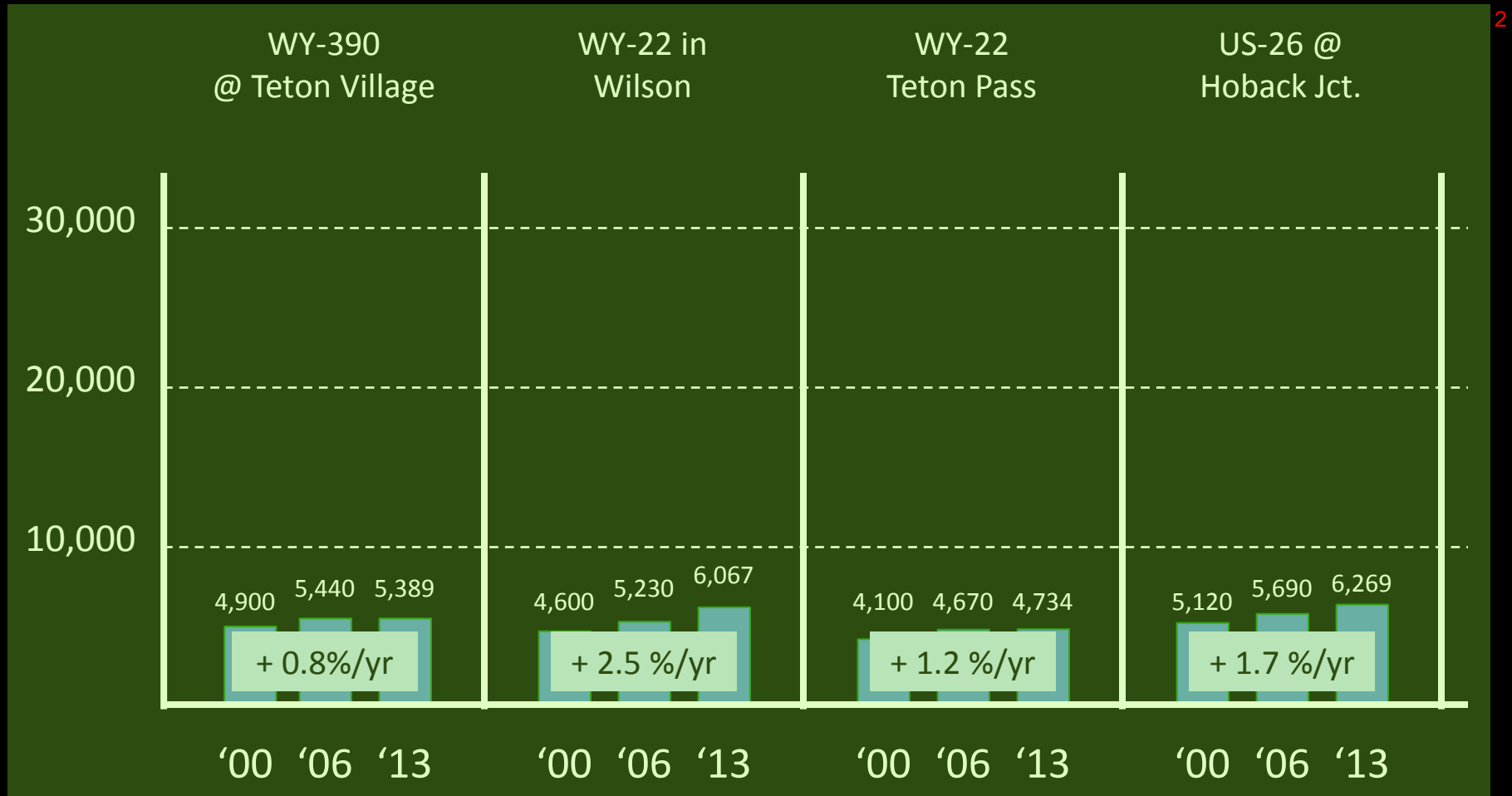
# Traffic Trends – In Town<sup>1</sup>

(Average Annual Daily Traffic, 2000 - 2013)<sup>2</sup>



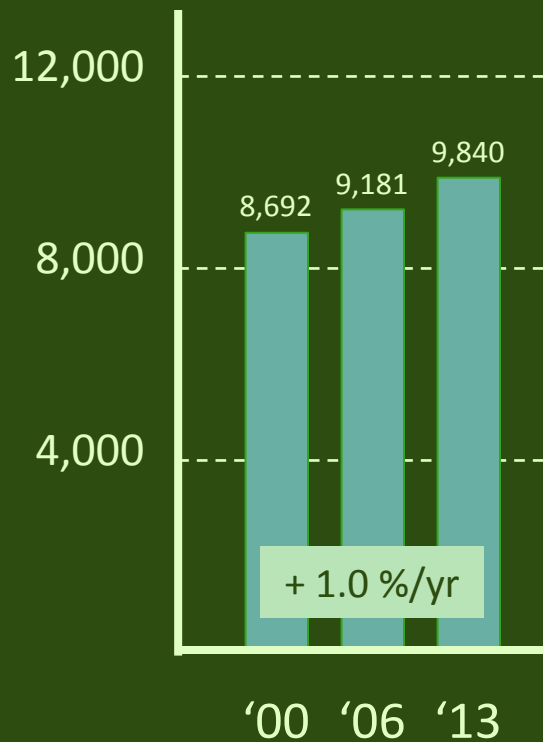
# Traffic Trends – Other Locations<sup>1</sup>

(Average Annual Daily Traffic)

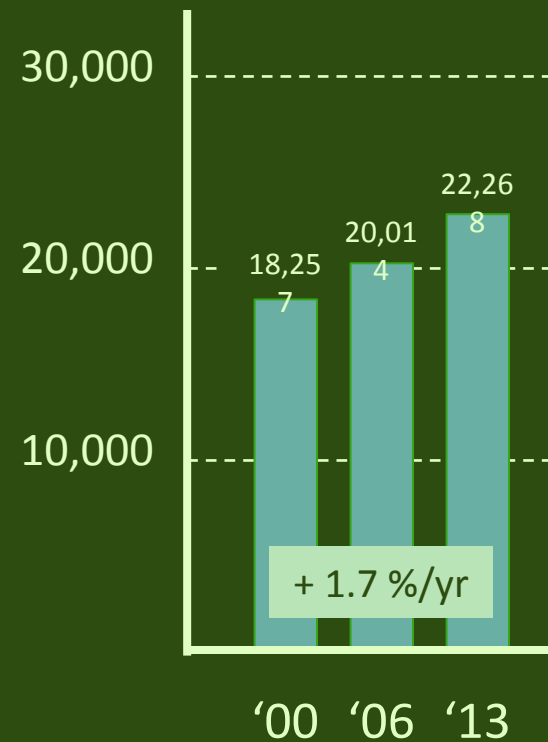


# Related Trends<sup>1</sup>

## Town Population



## County Population



# Average Annual Traffic Growth: 2000 - 2013<sup>1</sup>

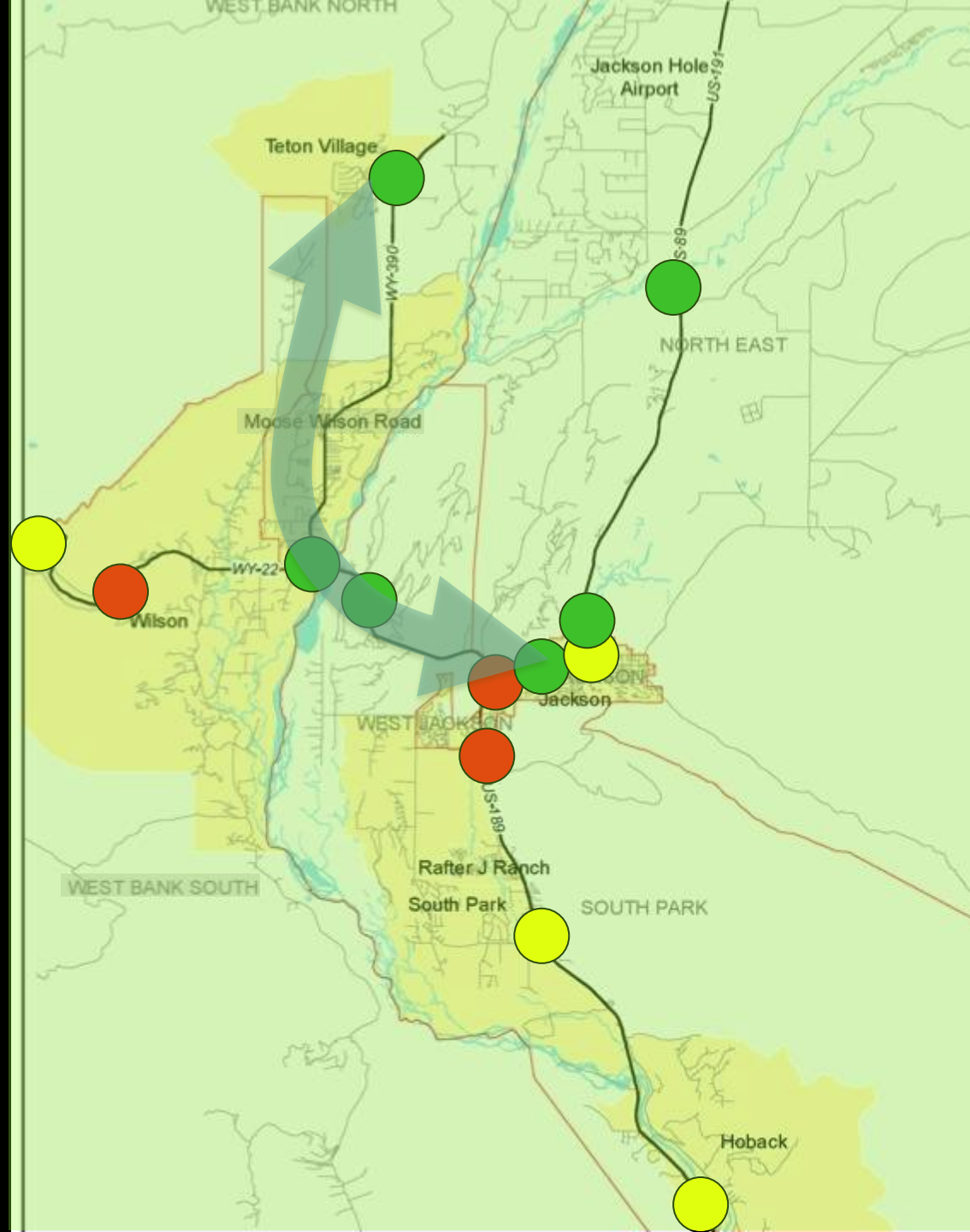
0% - 1% (doubles in 100+ years)<sup>2</sup>

1% - 2% (doubles in 50 - 100 years)<sup>3</sup>

2% - 3% (doubles in 33 - 50 years)<sup>4</sup>

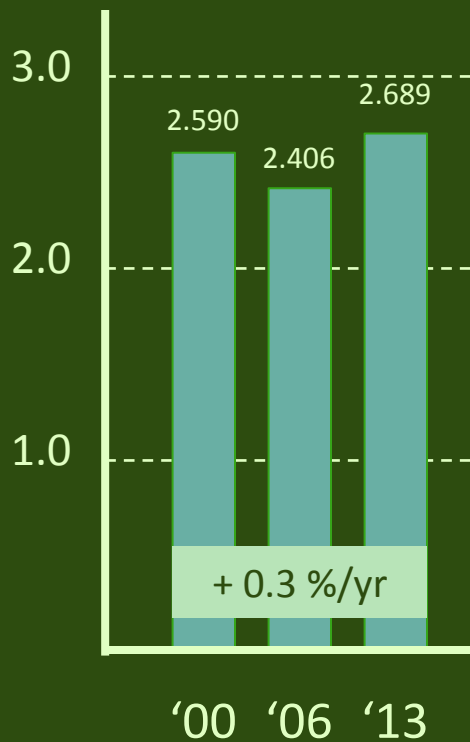
transit growth corridor<sup>5</sup>

(straight line growth rates, not compounded)<sup>6</sup>

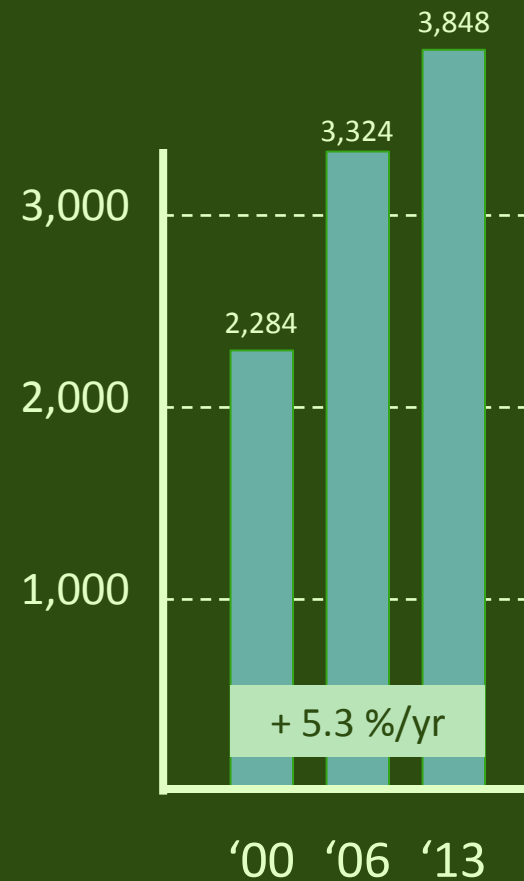


# Related Trends<sup>1</sup>

GTNP  
Attendance  
(Millions)



Daily In-Commuters<sup>2</sup>



# Observations – Traffic Trends<sup>1</sup>

- Where traffic growth on major roads has occurred:<sup>2</sup>
  - US-26 in West Jackson (at Y intersection & High School Rd)
  - WY-22 in Wilson
- Except at the Y Intersection, little traffic growth has occurred in Teton County since 2006
- Visitor traffic has grown less than 1% annually
- START service increases & Village TDM program have reduced traffic growth in the Town to Village corridor

# Conclusions<sup>1</sup>

- Traffic growth has been driven by economics<sup>2</sup>
  - increased commercial space + dwelling units in West Jackson<sup>3</sup>
  - increased in-commuting (both Teton Pass & Snake River)
- Visitorship has not been a source of increased traffic<sup>4</sup>
- Teton County population has been decentralizing
- Transit has been effective in Town – Village corridor
- Core area circulation – all modes – is an important need

# Baseline Scenario<sup>1</sup>



# Baseline Scenario<sup>1</sup>

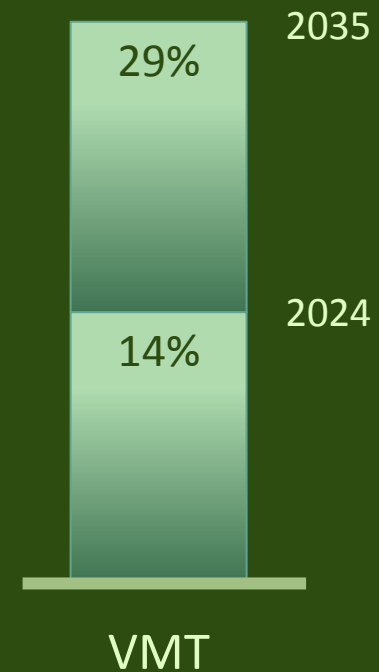
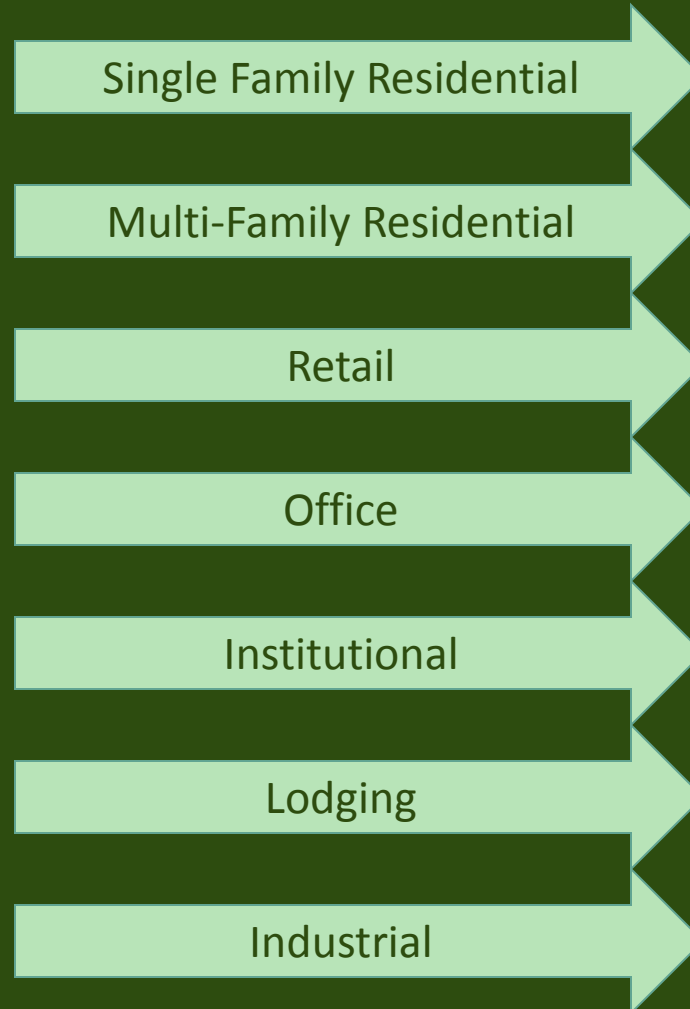
- No further change in per capita VMT
- Future land use:
  - consistent with Comprehensive Plan
  - growth rate based on past decade (2003 – 2013)
- VMT and traffic increase as:
  - population and commercial space increases
  - visitorship increases
  - in commuting increases

# Teton County Baseline Scenario<sup>1</sup>

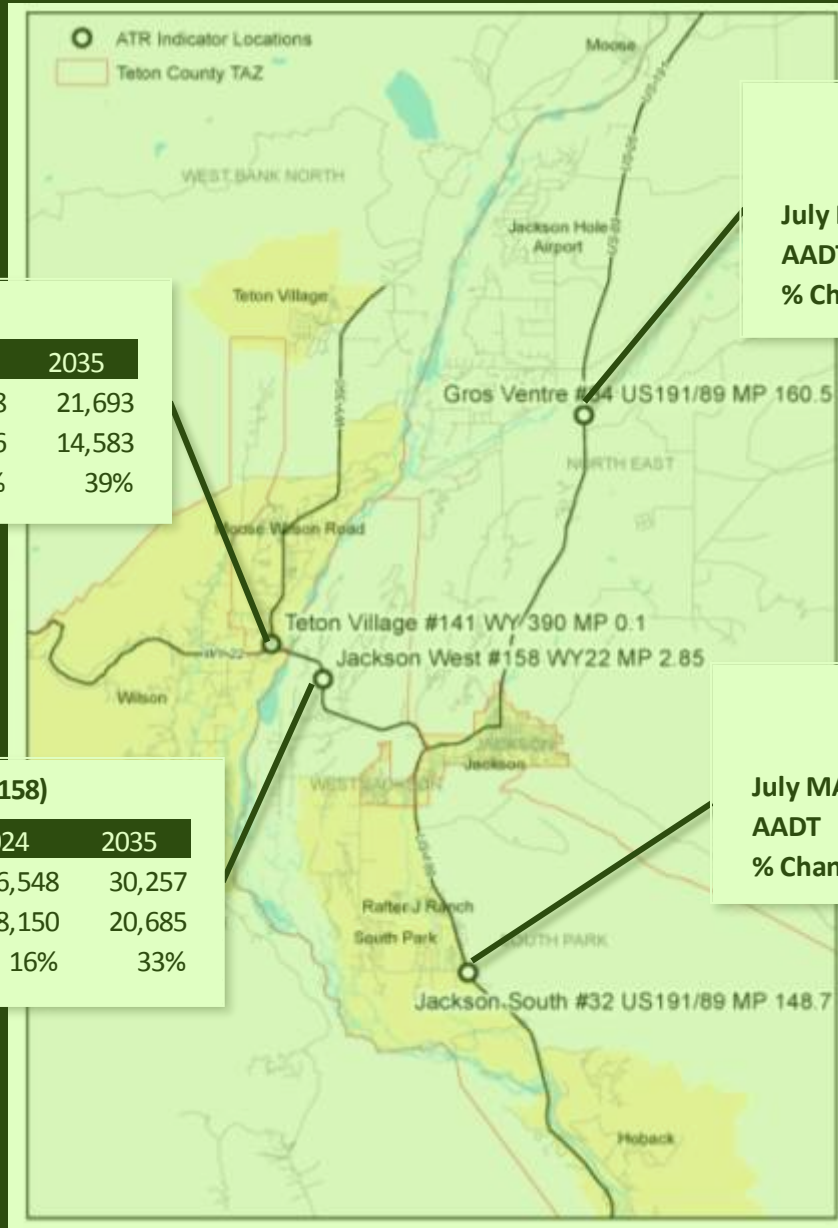
## Land Uses<sup>2</sup>

Basis:

- Comp Plan
- Trends



# Baseline Traffic Forecast



## TETON VILLAGE (#141)

	2013	2024	2035
July MAWDT	15,652	18,678	21,693
AADT	10,522	12,556	14,583
% Change		19%	39%

## JACKSON WEST (#158)

	2013	2024	2035
July MAWDT	22,829	26,548	30,257
AADT	15,607	18,150	20,685
% Change		16%	33%

## GROS VENTRE (#84)

	2013	2024	2035
July MAWDT	14,362	16,561	18,754
AADT	7,319	8,440	9,557
% Change		15%	31%

## JACKSON SOUTH (#32)

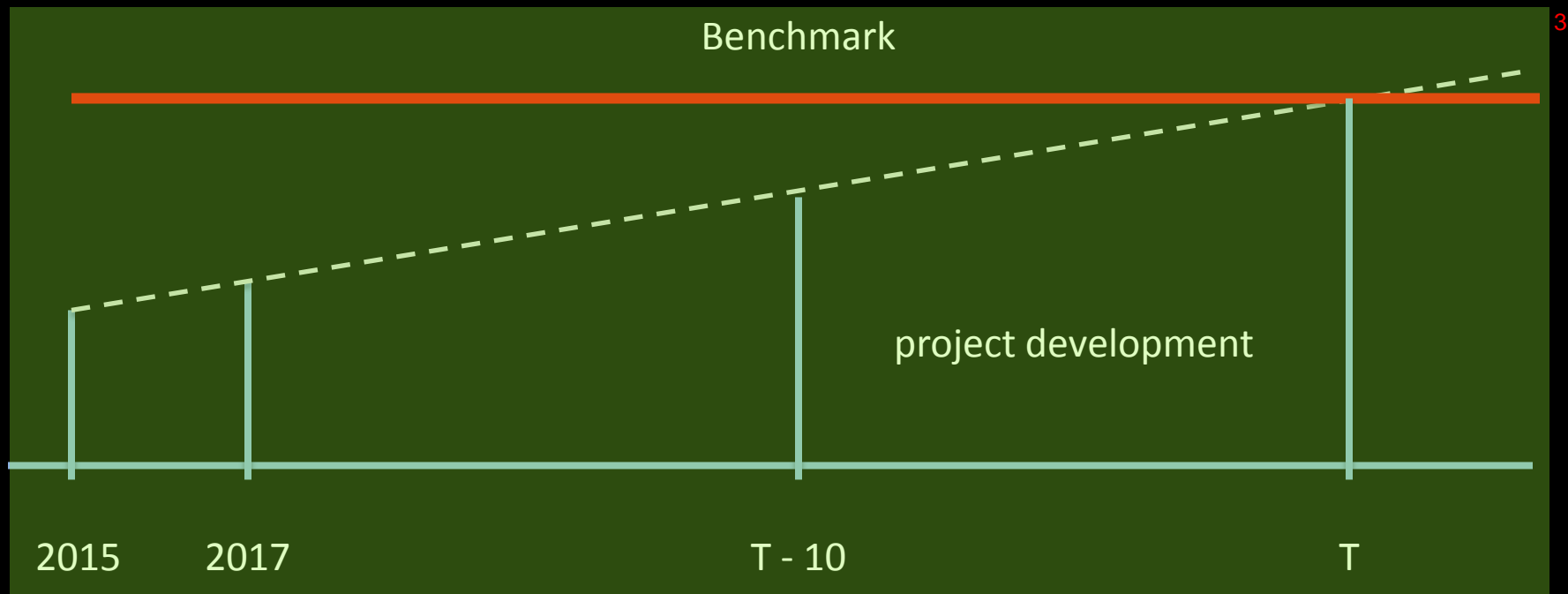
	2013	2024	2035
July MAWDT	12,192	13,992	15,788
AADT	7,676	8,809	9,940
% Change		15%	29%

AADT =  
Annual Average  
Daily Traffic

MAWDT =  
Monthly Average  
Weekday Traffic

# Major Capital Projects<sup>1</sup>

- Approach implementation strategically<sup>2</sup>
- Use a network approach (capital project groups)
- Begin with WYDOT's PEL study (WY-22 & WY-390)
- Use benchmarks to guide project development



# Policy Decision<sup>1</sup>

Com Plan Policy 8.2.b: Design critical infrastructure and facilities for the peak effective population. Critical facilities, as defined by the electeds through service level planning, should be designed to provide an acceptable level of service to the peak effective population. Other facilities will be designed to accommodate average demand. Temporarily reduced service levels may occur at times of peak population; however, reductions should not produce a meaningful threat to the public safety.<sup>2</sup>

## Major Project Benchmarks:<sup>3</sup>

- ✓ Annual average traffic?
- ✓ Average July traffic?

# Capital Group 1<sup>1</sup>

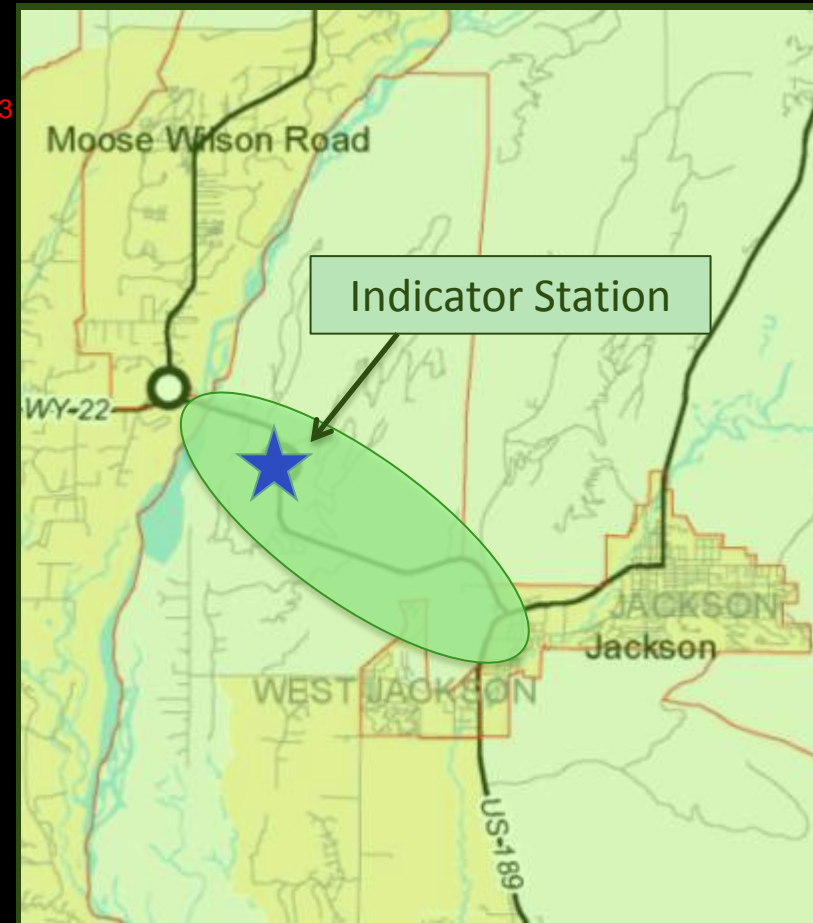
## WY-22<sup>2</sup>

- Y Intersection
- Tribal Trails Connector
- Wildlife permeability from PEL
- WY-22 Roadway: Jackson – WY-390
- WY-22 Pathway Wilson – Jackson
- Spring Gulch Intersection

**Benchmark: 20,000 VPD**

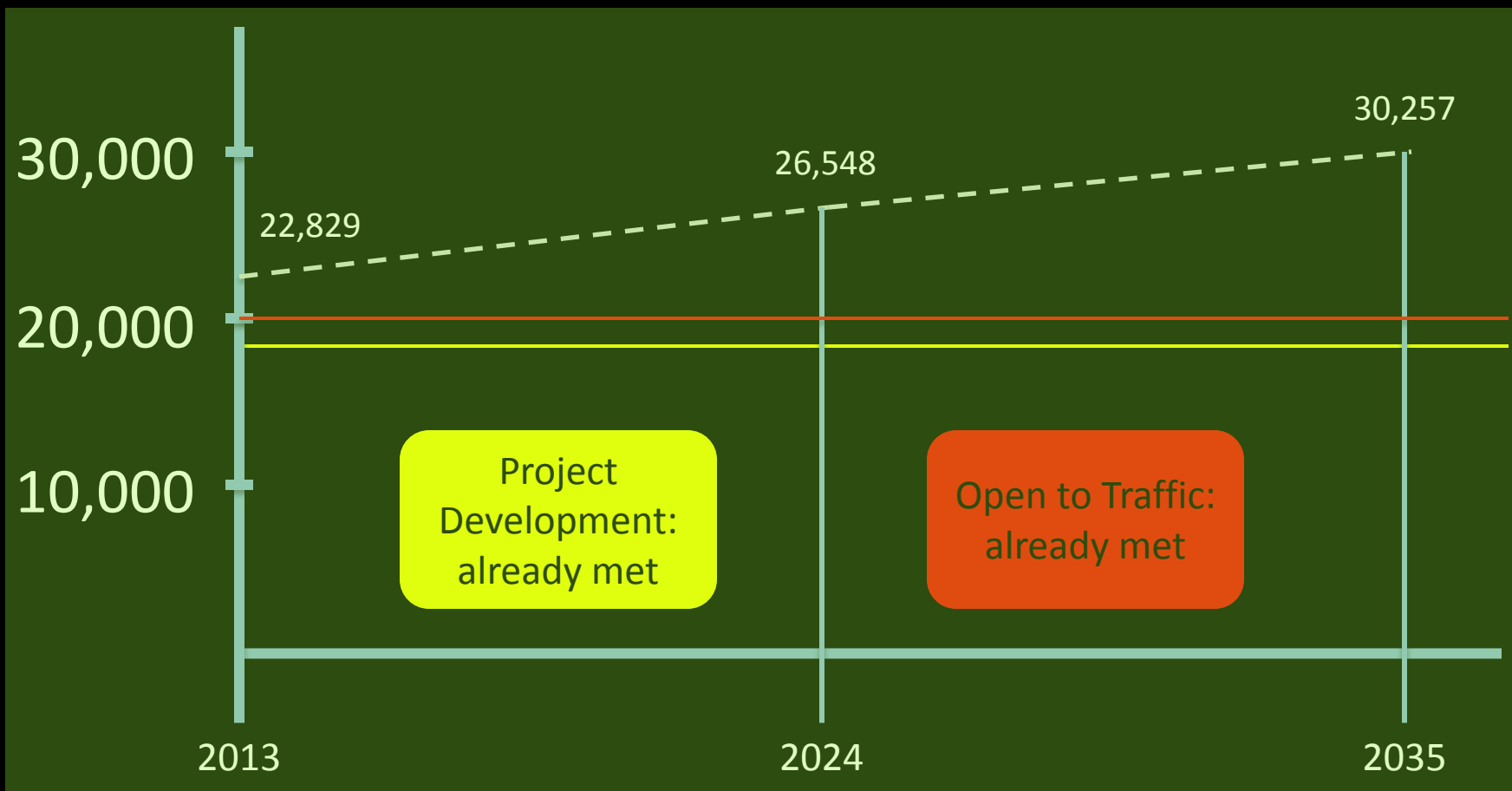
Based on average July day traffic

Start project development 5 years before



# Capital Group 1 Benchmarks<sup>1</sup>

(WY-22 – July)









# WYDOT PEL Evaluation: Y Intersection<sup>1</sup>

2



# WYDOT PEL Intersection Concepts<sup>1</sup>

## “Acceptable Operations”

### Inverted Continuous Flow Intersection

✓ Acceptable Traffic Operations? YES



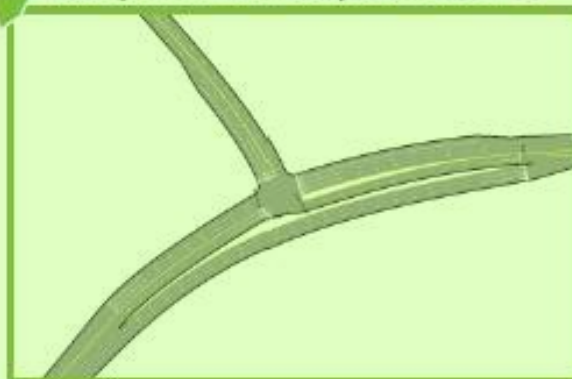
### Inverted Continuous Flow Intersection with 3-lane Broadway

✓ Acceptable Traffic Operations? YES



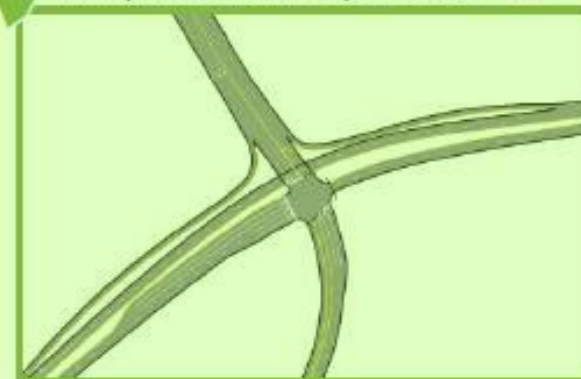
### Florida-T with Signalized Merge and 3-Lane Broadway

✓ Acceptable Traffic Operations? YES



### Westbound Broadway Grade Separated

✓ Acceptable Traffic Operations? YES



# Y Intersection Issues & Opportunities<sup>1</sup>

- Issues<sup>2</sup>

- Scale of project
- Cost of project
- Visual impacts
- Walk/bike barrier
- Transit operations

- Opportunities<sup>3</sup>

- Network approach
- Tribal Trails Connector
- Bus prioritization
- Longer service life
- WYDOT collaboration

- Recommended Approach<sup>4</sup>

- Project development based on network
- Address multimodal design

# Tribal Trails Issues & Opportunities<sup>1</sup>

- Issues
  - Neighborhood impacts
  - Lack of County funding
- Opportunities
  - Network approach
  - Local connectivity
  - Route redundancy
  - START operations
  - WYDOT collaboration
- Recommended Approach
  - Request WYDOT include in project development
  - Address design options to reduce impacts

- Impacts to neighborhood
- Impacts to South Park Loop Road and High School Road



# Capital Group 2<sup>1</sup>

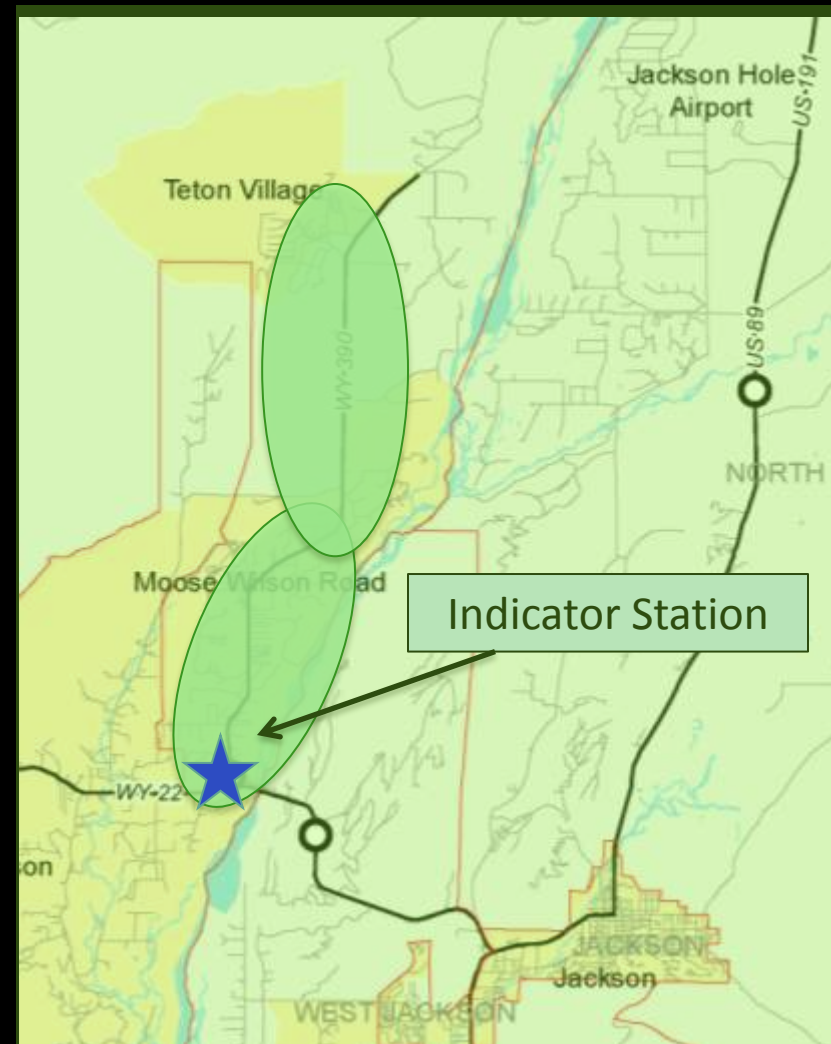
## WY-390<sup>2</sup>

- Intersection WY-390 & WY-22<sup>3</sup>
- WY-390 PEL Segment 5
- WY-390 PEL Segment 6
- Wildlife permeability from PEL

**Benchmark: 20,000 VPD**<sup>4</sup>

Based on average July day traffic

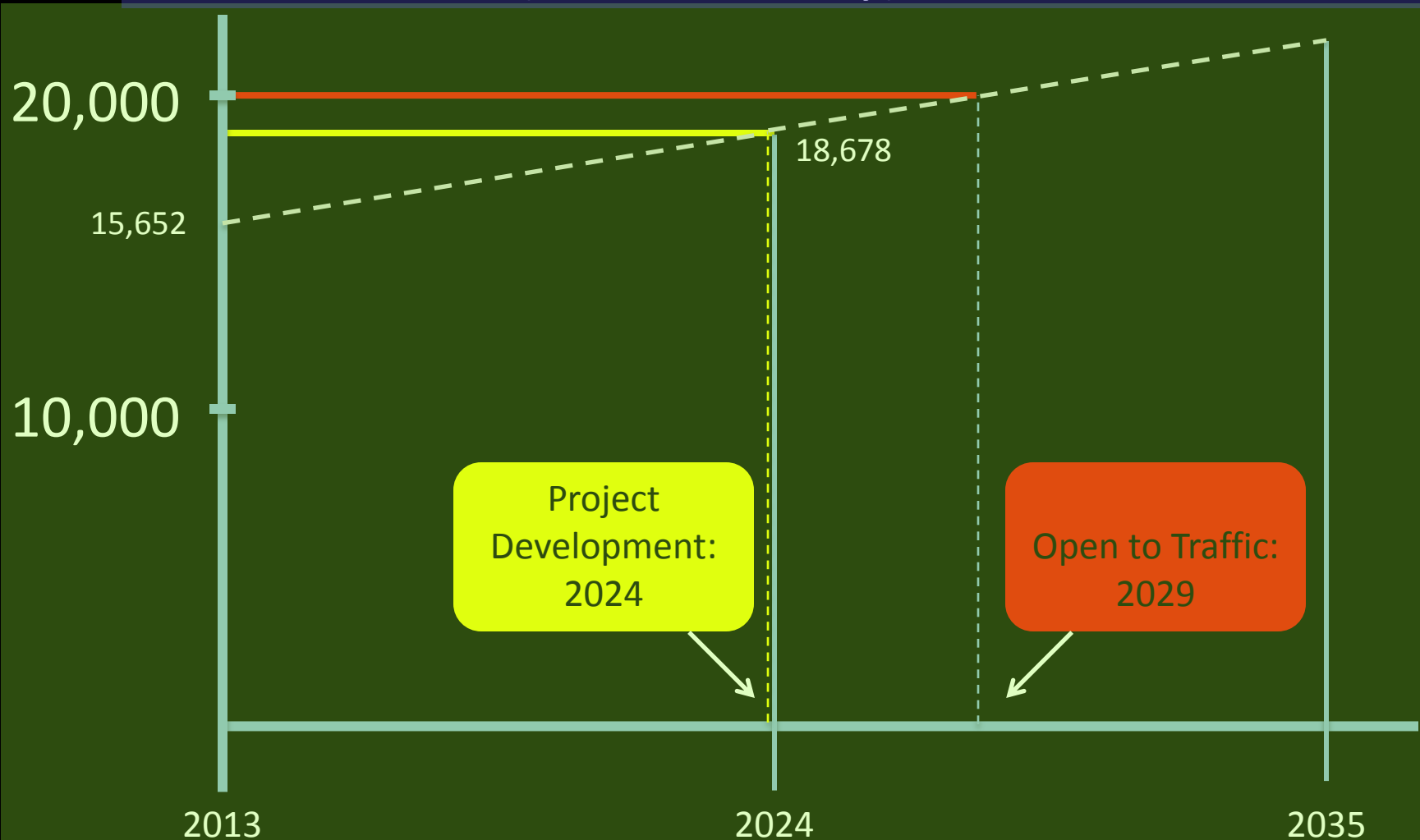
Start project development 5 years before



# Capital Group 2 Benchmarks

(WY-390 – July)

21,693<sup>2</sup>



# Capital Group 3<sup>1</sup>

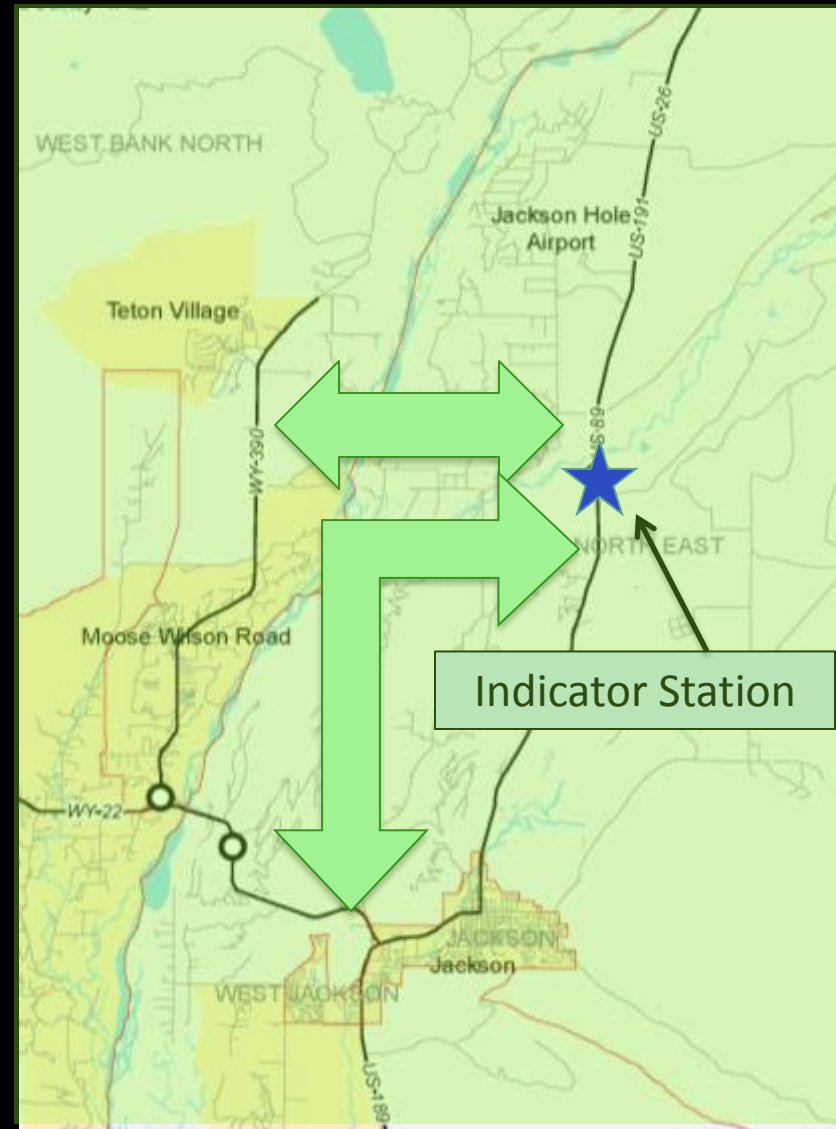
## US-26 (north)<sup>2</sup>

- Bypass highway concepts<sup>3</sup>
  - New north bridge/corridor<sup>4</sup>
  - Upgrade Spring Gulch
- High capacity transit concepts<sup>5</sup>

**Benchmark: 20,000 VPD**<sup>6</sup>

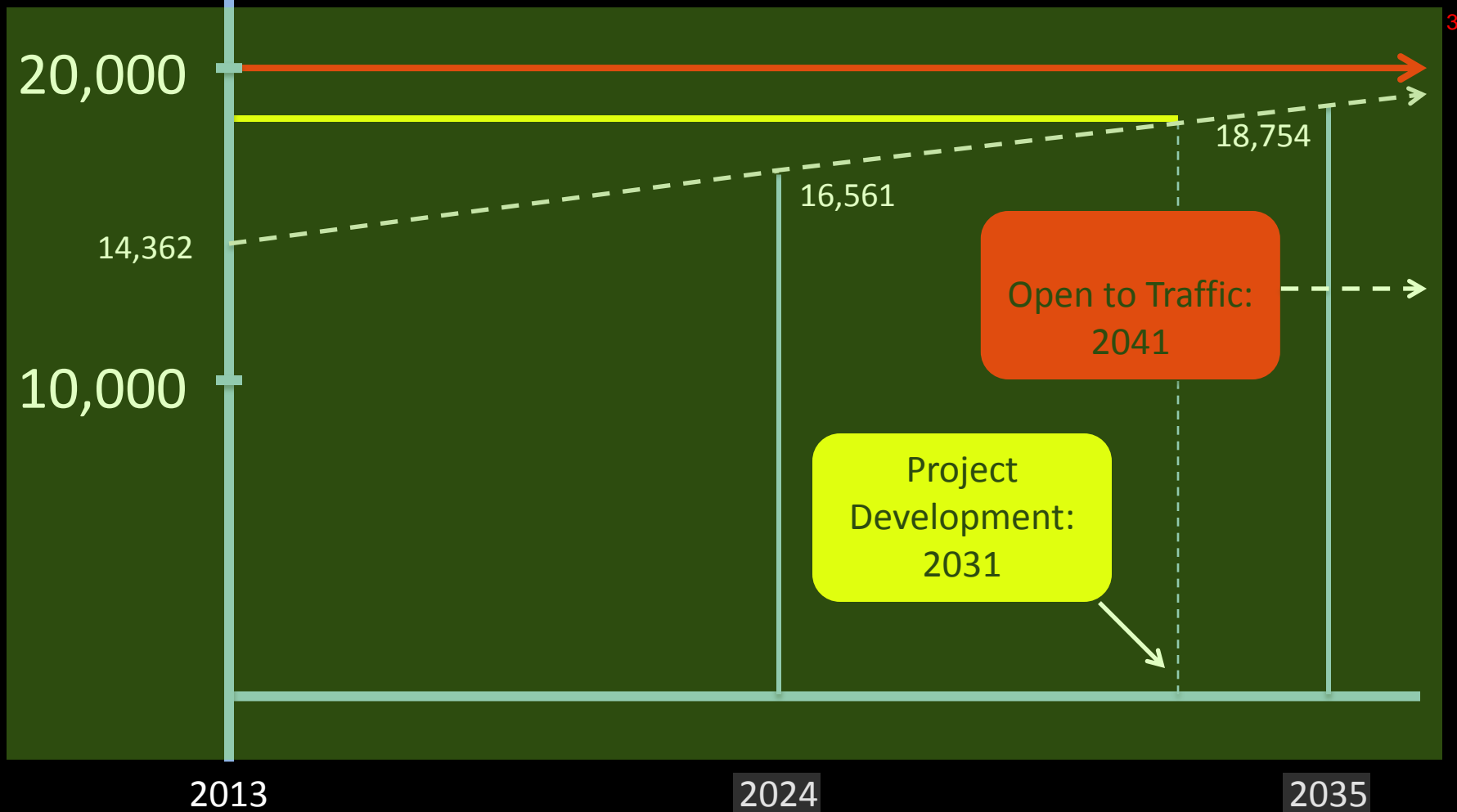
Based on average July day traffic

Start project development 10 years before



# Capital Group 3 Benchmarks<sup>2</sup>

(North US 26 – July)



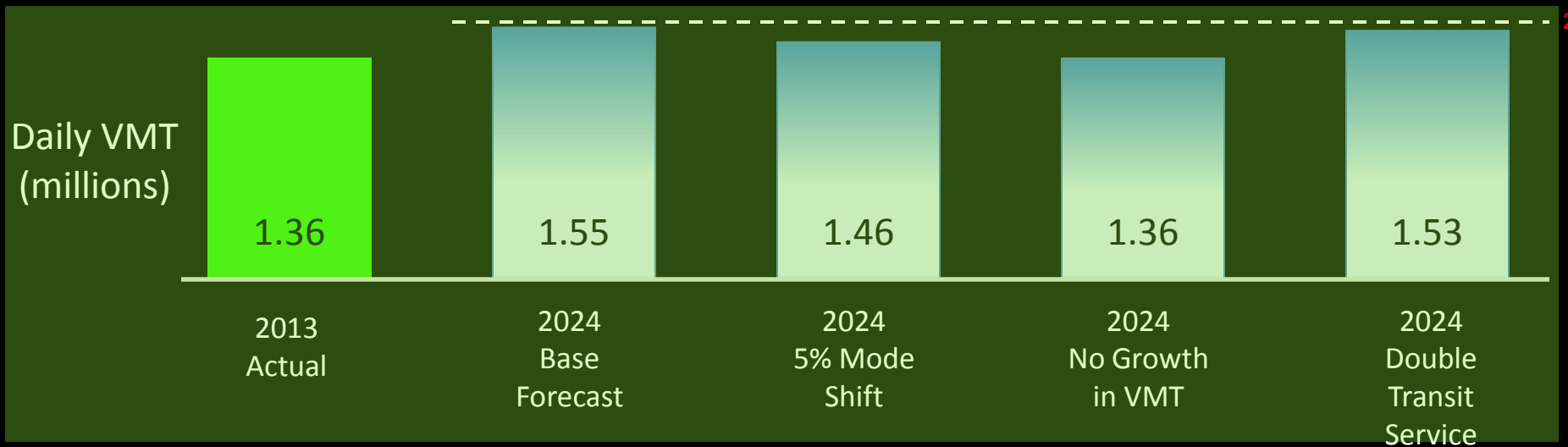


# Plan Scenario<sup>1</sup>

# Framing a Plan Scenario<sup>1</sup>

- Baseline Scenario – base forecast
- Plan Scenarios presented at public workshop<sup>2</sup>
  - 5% Mode Shift (same as in 2000 plan)?
  - No growth in VMT?
  - Double Transit Ridership?

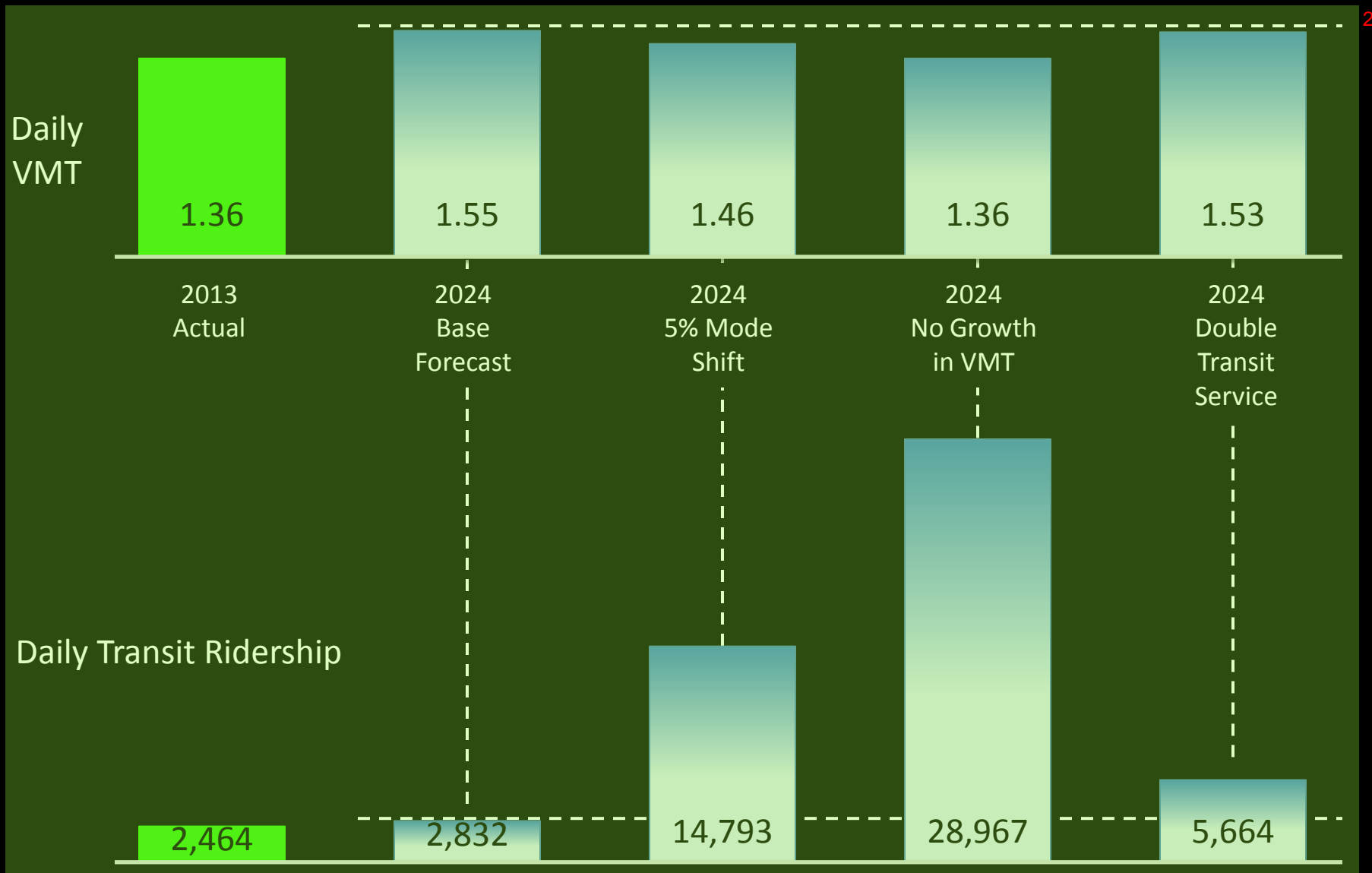
# Potential Plan Scenario/Frame<sup>1</sup>



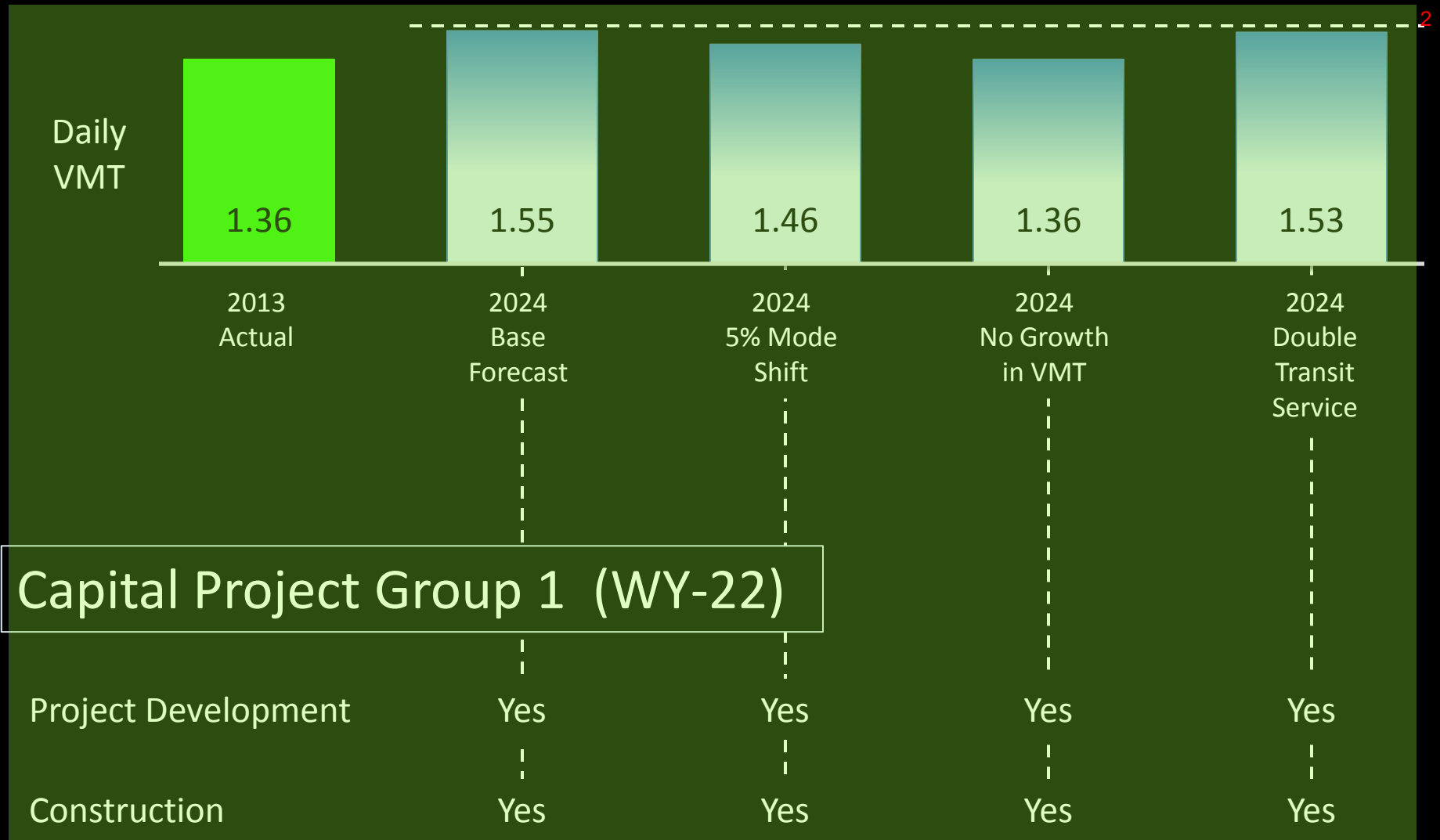
2013 Person Miles of Travel: 777 million<sup>3</sup>

2024 Person Miles of Travel: 888 million<sup>4</sup>

# Potential Plan Scenario/Frame<sup>1</sup>

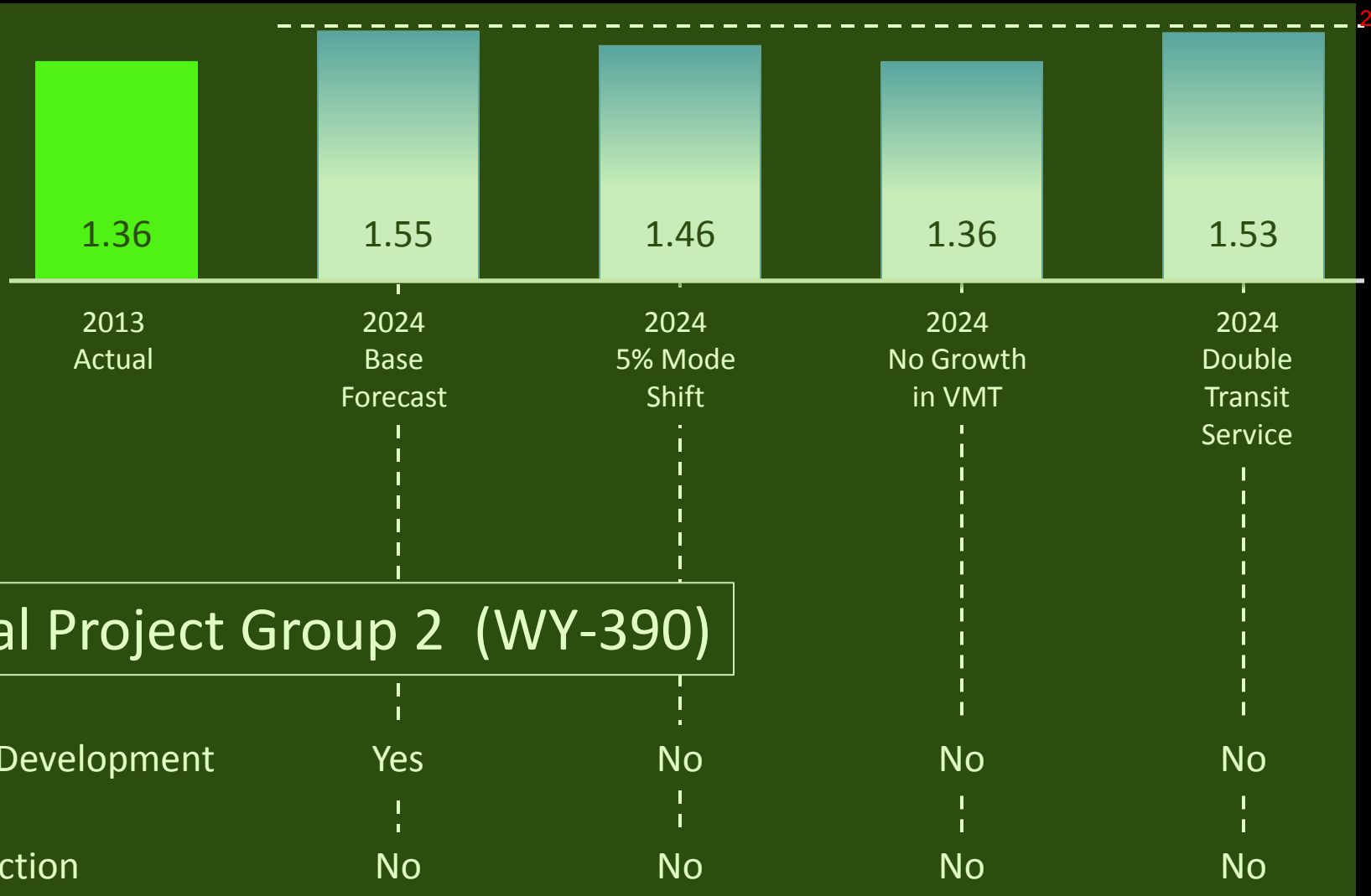


# Potential Plan Scenario/Frame<sup>1</sup>



# Potential Plan Scenario/Frame <sup>1</sup>

Daily  
VMT



# Potential Plan Scenario/Frame<sup>1</sup>

Daily  
VMT

1.36

1.55

1.46

1.36

1.53

2013  
Actual

2024  
Base  
Forecast

2024  
5% Mode  
Shift

2024  
No Growth  
in VMT

2024  
Double  
Transit  
Service

Capital Project Group 3 (US-26 Bypass)

NEPA

No

No

No

No

Construction

No

No

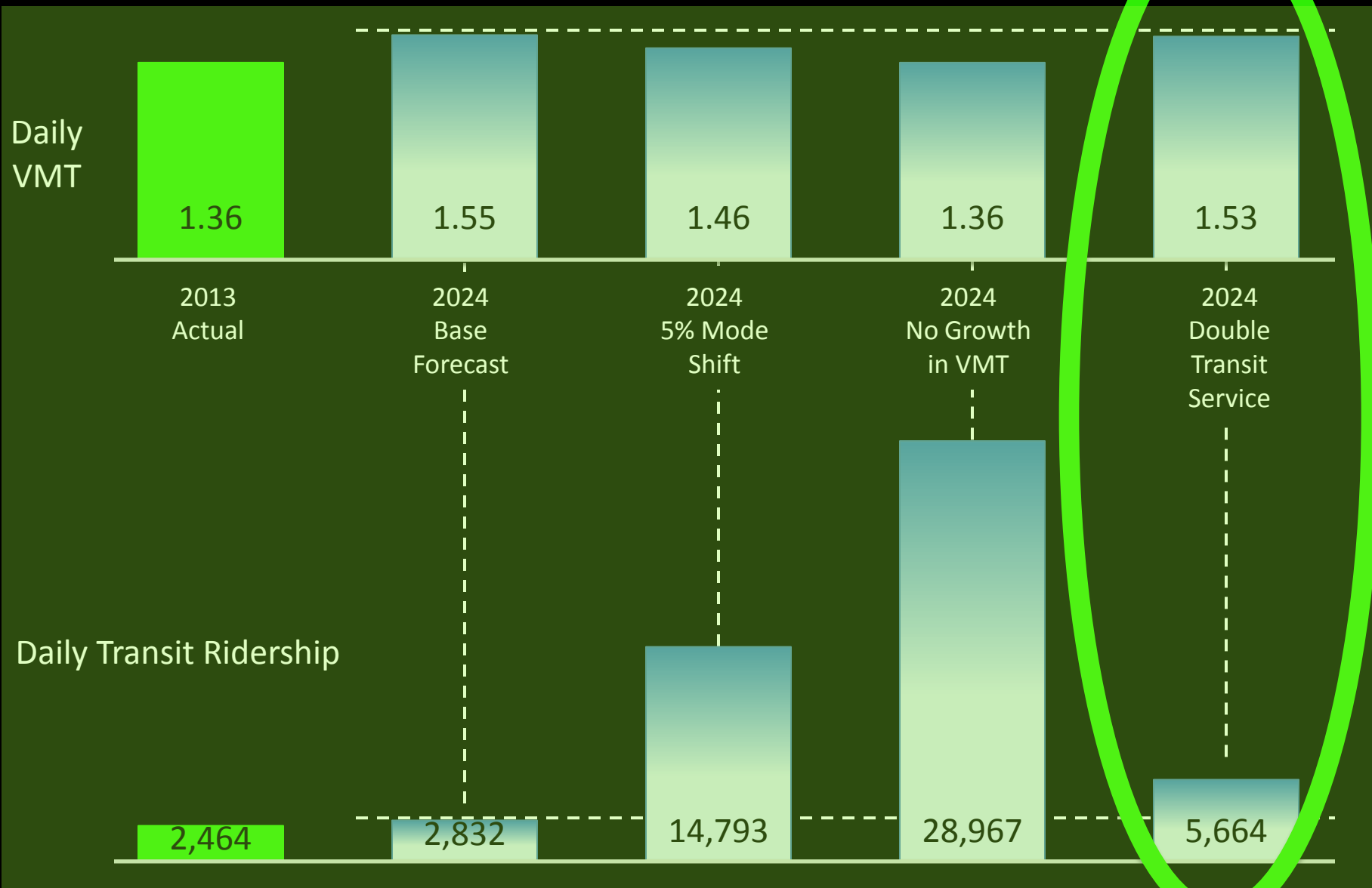
No

No

# Recommended Plan Scenario<sup>1</sup>



# Recommended Plan Scenario



# Basis for Recommendation<sup>1</sup>

- Feasible transit program (transit demand is already exceeding supply)<sup>2</sup>
- Helps avoid/postpone major highway projects that detract from local character
- Supports other local objectives

# Implementation<sup>1</sup>

# Implementation<sup>1</sup>

1. Double transit service by 2024
2. Implement a TDM\* program
3. Apply benchmarking system to major projects
4. Improve internal connectivity in town & villages
5. Establish an RTA\*\*

\* TDM = transportation demand management<sup>3</sup>

\*\* RTA = regional transportation authority

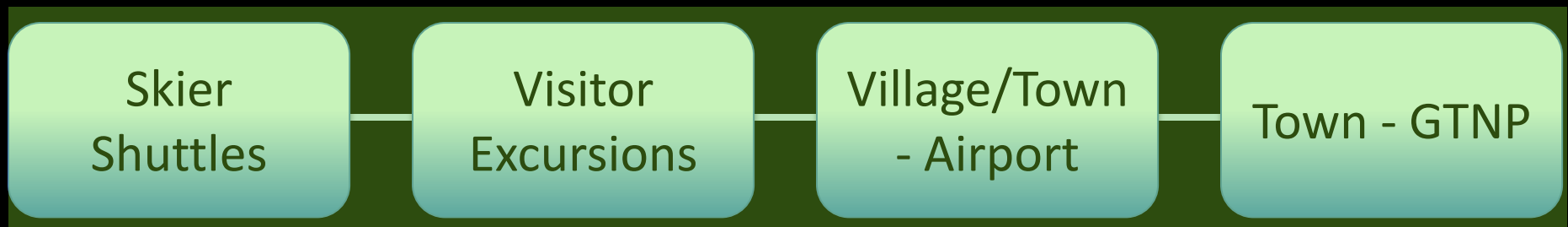
## IMPLEMENTATION

1. Significant Increase in Transit Service Levels<sup>1</sup>

## Existing START Services<sup>1</sup>



## Existing Private Sector Services<sup>3</sup>



# Circulator<sup>1</sup>



TOWN SHUTTLE HEADING WEST

FREE

FALL 2014

# Corridor<sup>1</sup>

**QUESTIONS?**  
call 307.733.4521  
www.startbus.com



**JACKSON → TETON VILLAGE \$3**

**FALL 2014**



# Commuter<sup>1</sup>



# Transit – Strategic Options<sup>1</sup>

## 1. Fares and Passes<sup>2</sup>

- Fare-free Valley services (\$1 million/year)<sup>3</sup>
- Implement bulk-rate discount commuter pass

## 2. Commuter Services<sup>4</sup>

- Increase service levels (# of runs/day)<sup>5</sup>
- Implement express runs + local runs

# Transit – Strategic Options<sup>1</sup>

## 3. Corridor Services<sup>2</sup>

- Further increases in level of service (runs/day)<sup>3</sup>
- New service to airport
- New service to Grant Teton National Park

## 4. Circulator Services<sup>4</sup>

- Split Town Shuttle into linear routes<sup>5</sup>

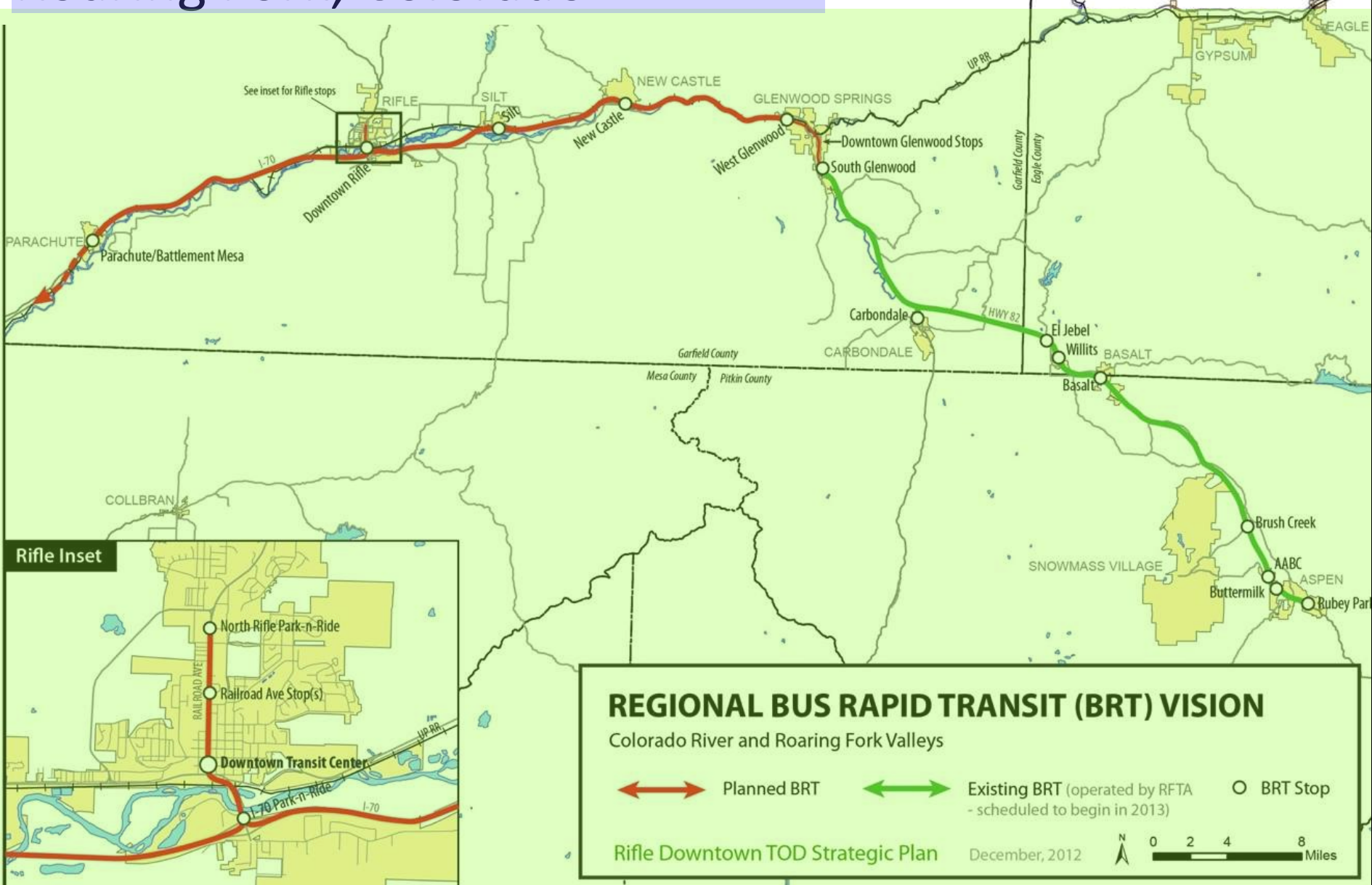
# Tentative 2024 Transit Plan<sup>1</sup>

- Add runs to both commuter routes<sup>2</sup>
- Increase summer service to Teton Village
- Break Town Shuttle up into linear routes
- Update pass and fare options
- Initiate a three-year pilot
  - Jackson to Grand Teton Park (Jenny Lake)
  - June 15 – September 15
  - Half-hour frequency each direction
  - Adjust and tweak each season
  - Look for partnerships

# Potential 2035 Transit Plan<sup>1</sup>

- Convert Town Village service to BRT (Bus Rapid Transit)
- Add remote “light” maintenance facilities at other end of commuter routes
- Include possible high capacity transit corridors in any environmental process to evaluate bypass alternatives

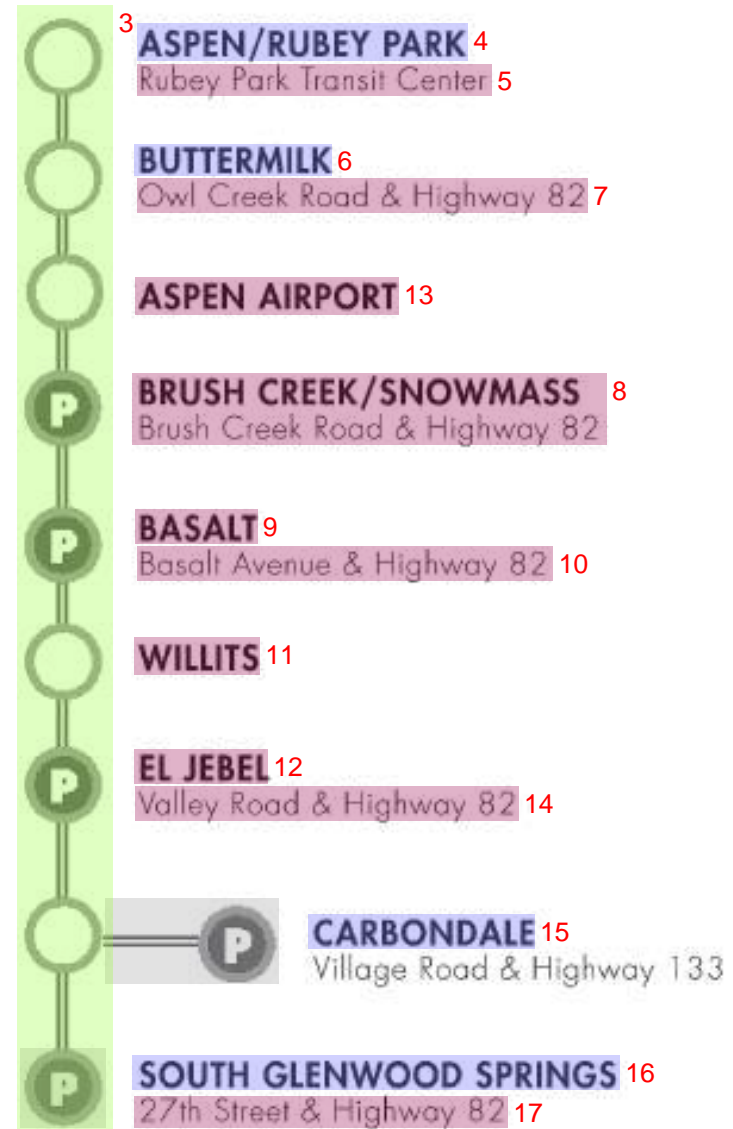
# Bus Rapid Transit (BRT) Example Roaring Fork, Colorado







- Express service
- Proof of payment
- Highly visible vehicles
- Rail-type stations
- Selected park 'ride lots



## IMPLEMENTATION

2. Implement a cooperative\*  
“transportation demand  
management” (TDM) program

\* Town, county, WYDOT, Park Service, major employers



# TDM Program Elements<sup>1</sup>

- Employer coordination
- Transit passes – commuter and visitor
- Guaranteed ride home for commuters
- Events, promotions
- Information clearinghouse – esp. transit
- Tourist and visitor outreach
- Bikeshare and car share
- Monitoring and reporting for ITP

<sup>2</sup>

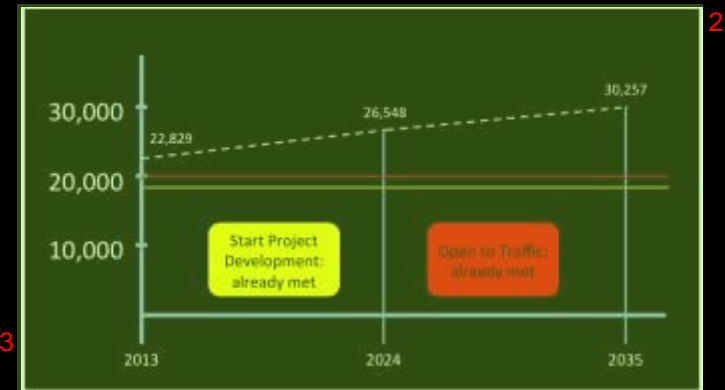
## IMPLEMENTATION

3. Use a benchmarking system to guide decisions about major corridor projects

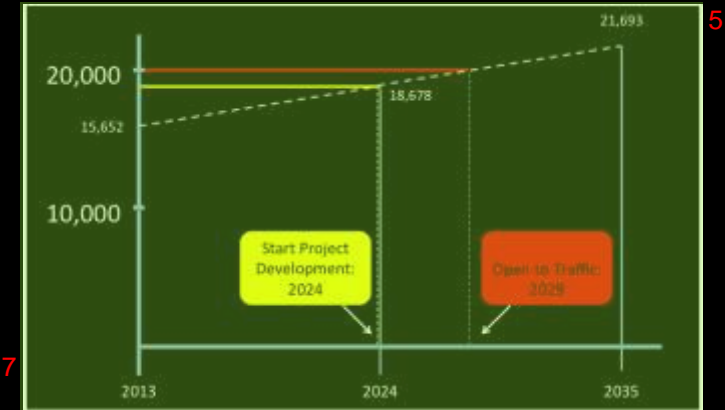
# Benchmarks<sup>1</sup>

- Strategic timing
- Systematic project development
- Public involvement

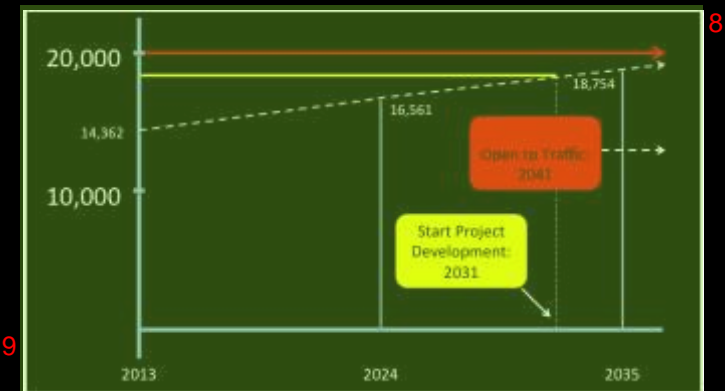
Capital Group 1<sup>3</sup>



Capital Group 2<sup>7</sup>



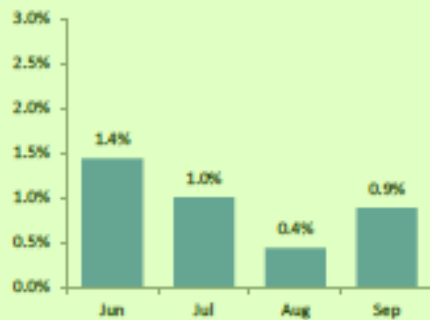
Capital Group 3<sup>9</sup>



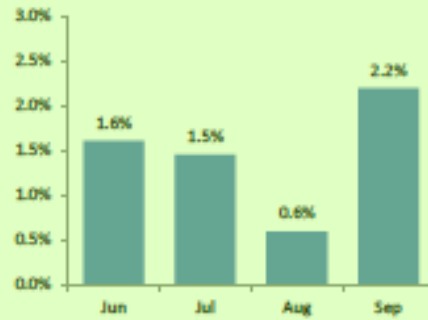
Annual traffic?  
or  
Peak monthly traffic?

# Seasonal Traffic Growth<sup>1</sup>

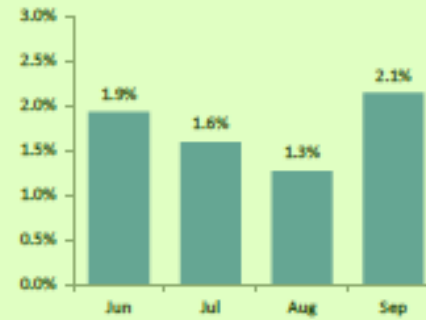
**US 26 at South Park**  
(\*10-'14 annual rate of traffic growth)



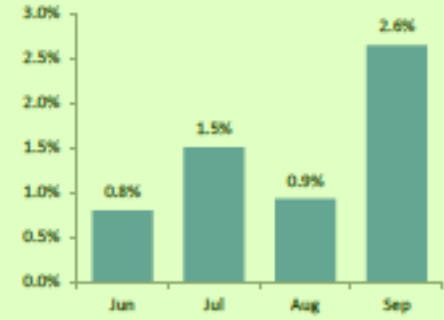
**WY 22 @ Snake River**  
(\*10-'14 annual rate of traffic growth)



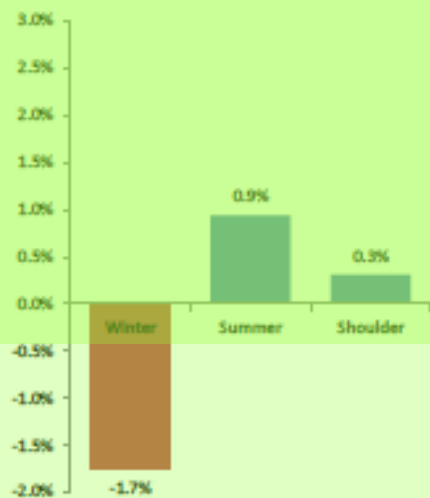
**WY 22 w/o WY 390**  
(\*10-'14 annual rate of traffic growth)



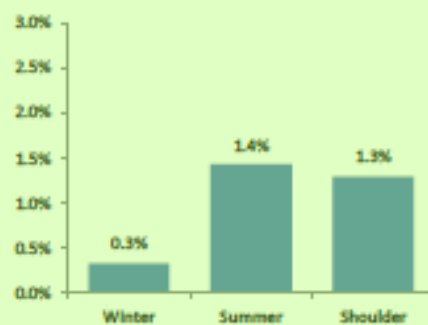
**WY 390 @ WY 22**  
(\*10-'14 annual rate of traffic growth)



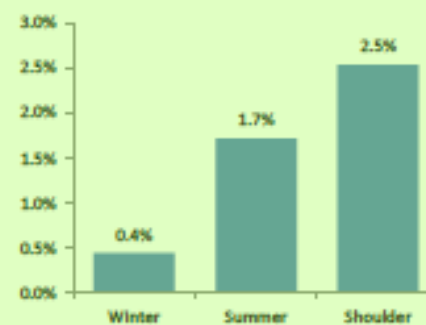
**US 26 at South Park**  
(\*10-'14 annual rate of traffic growth)



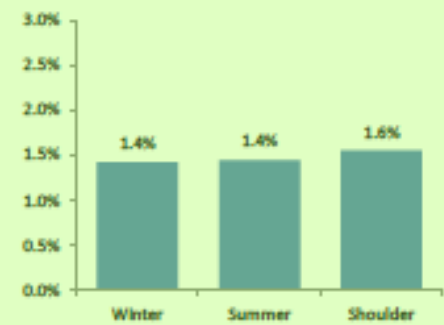
**WY 22 @ Snake River**  
(\*10-'14 annual rate of traffic growth)



**WY 22 w/o WY 390**  
(\*10-'14 annual rate of traffic growth)



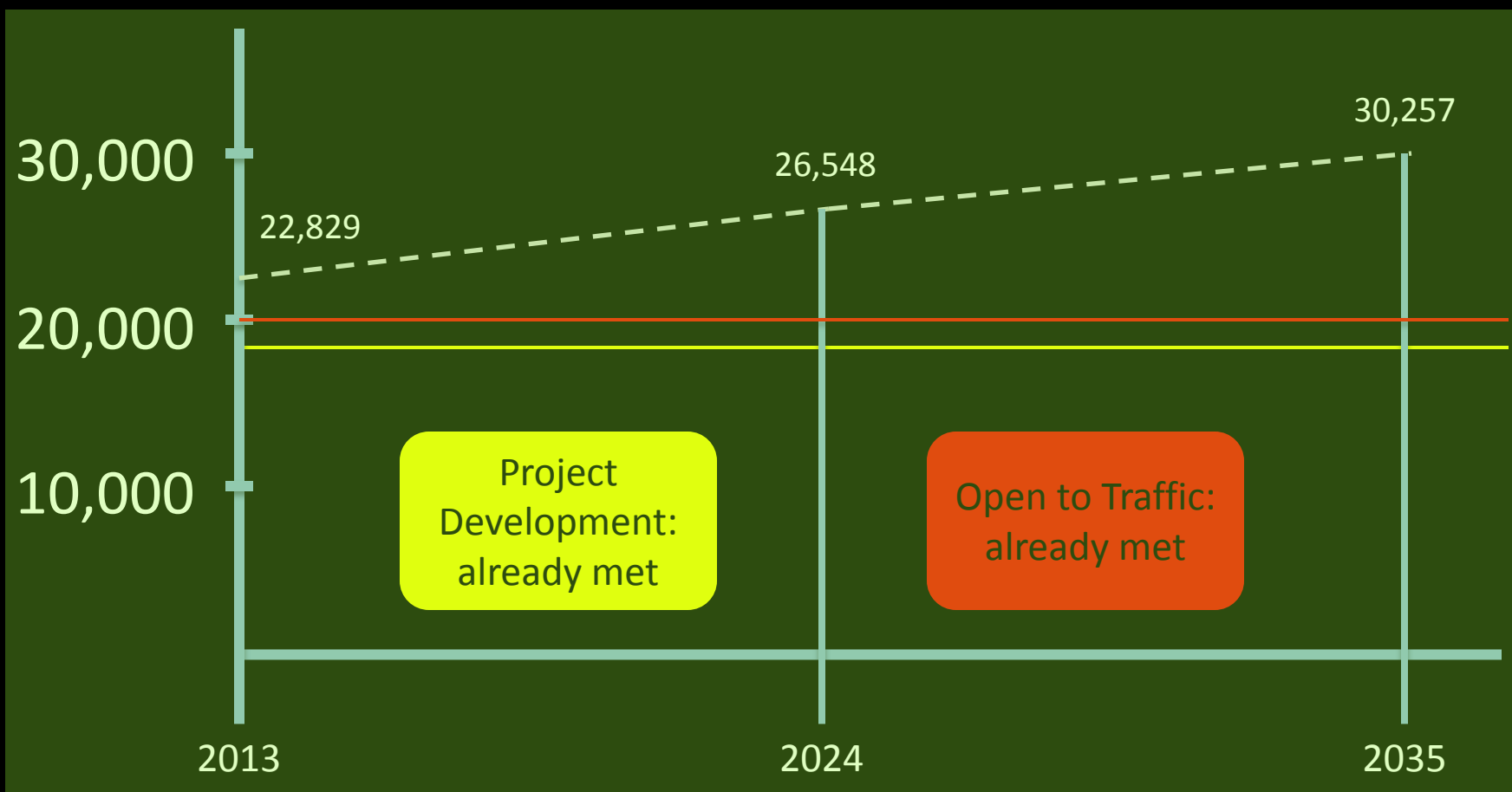
**WY 390 @ WY 22**  
(\*10-'14 annual rate of traffic growth)



3

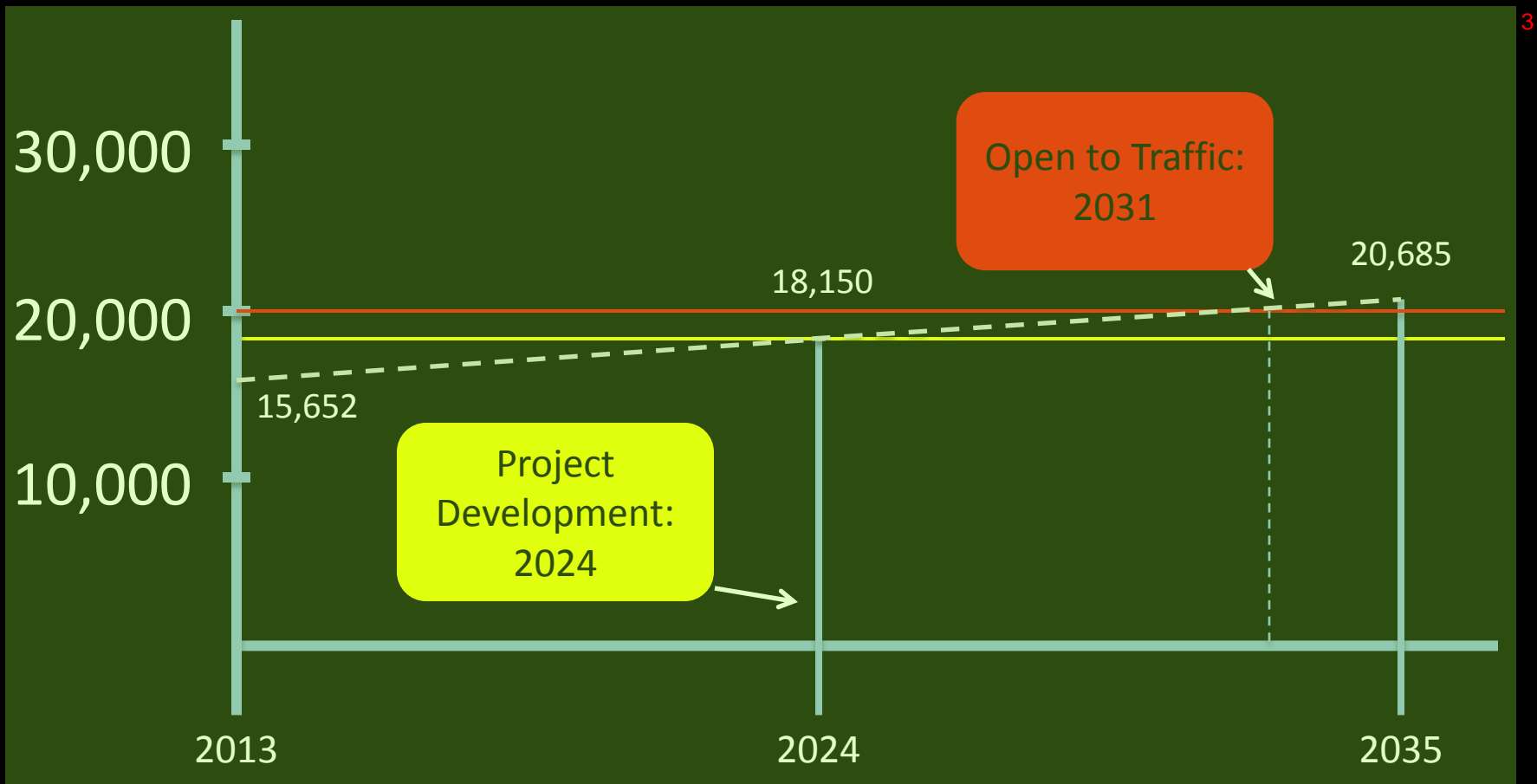
# Capital Group 1 Benchmarks<sup>1</sup>

(WY-22 – July)



# Capital Group 1 Benchmarks<sup>2</sup>

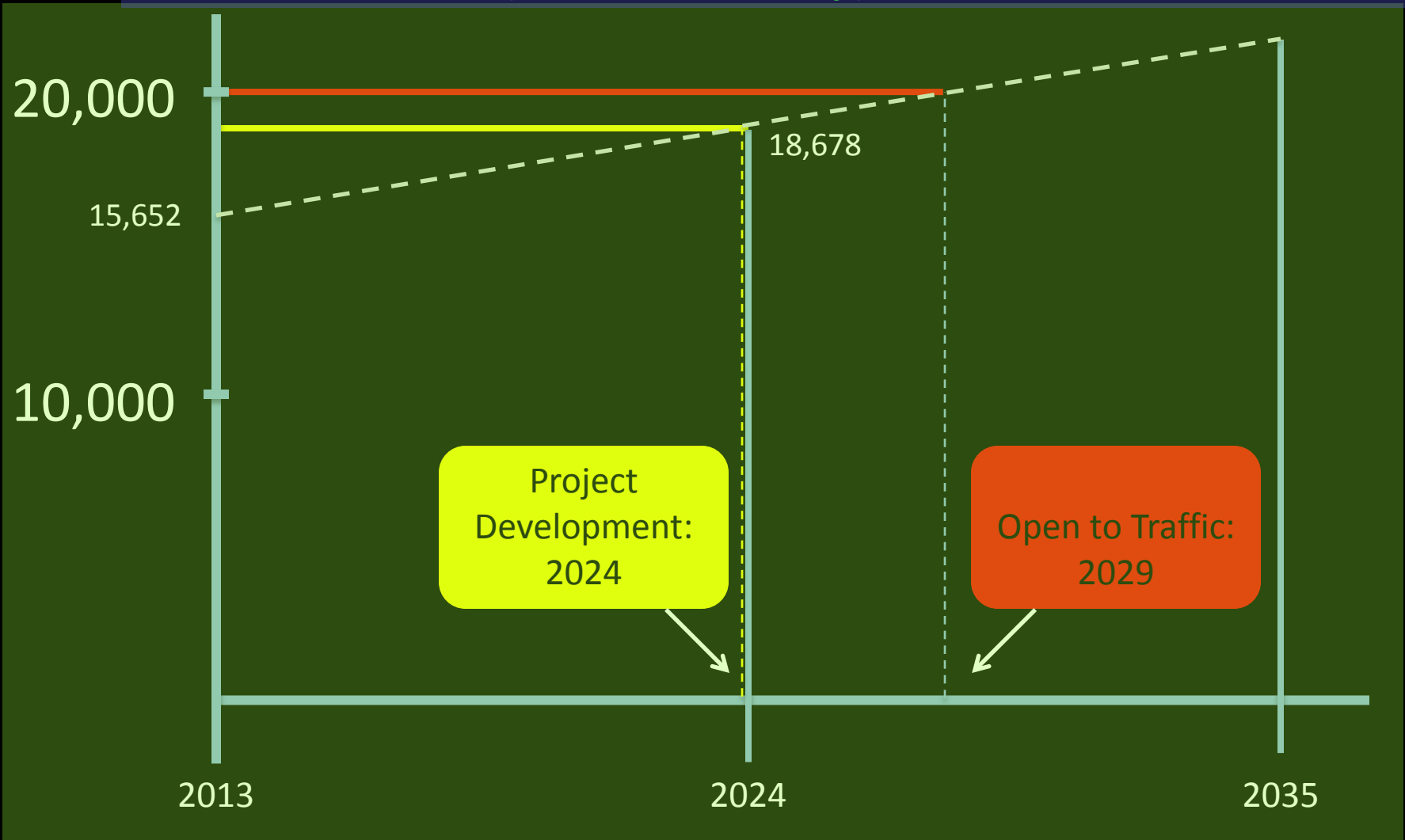
(WY-22 – Annual)



# Capital Group 2 Benchmarks

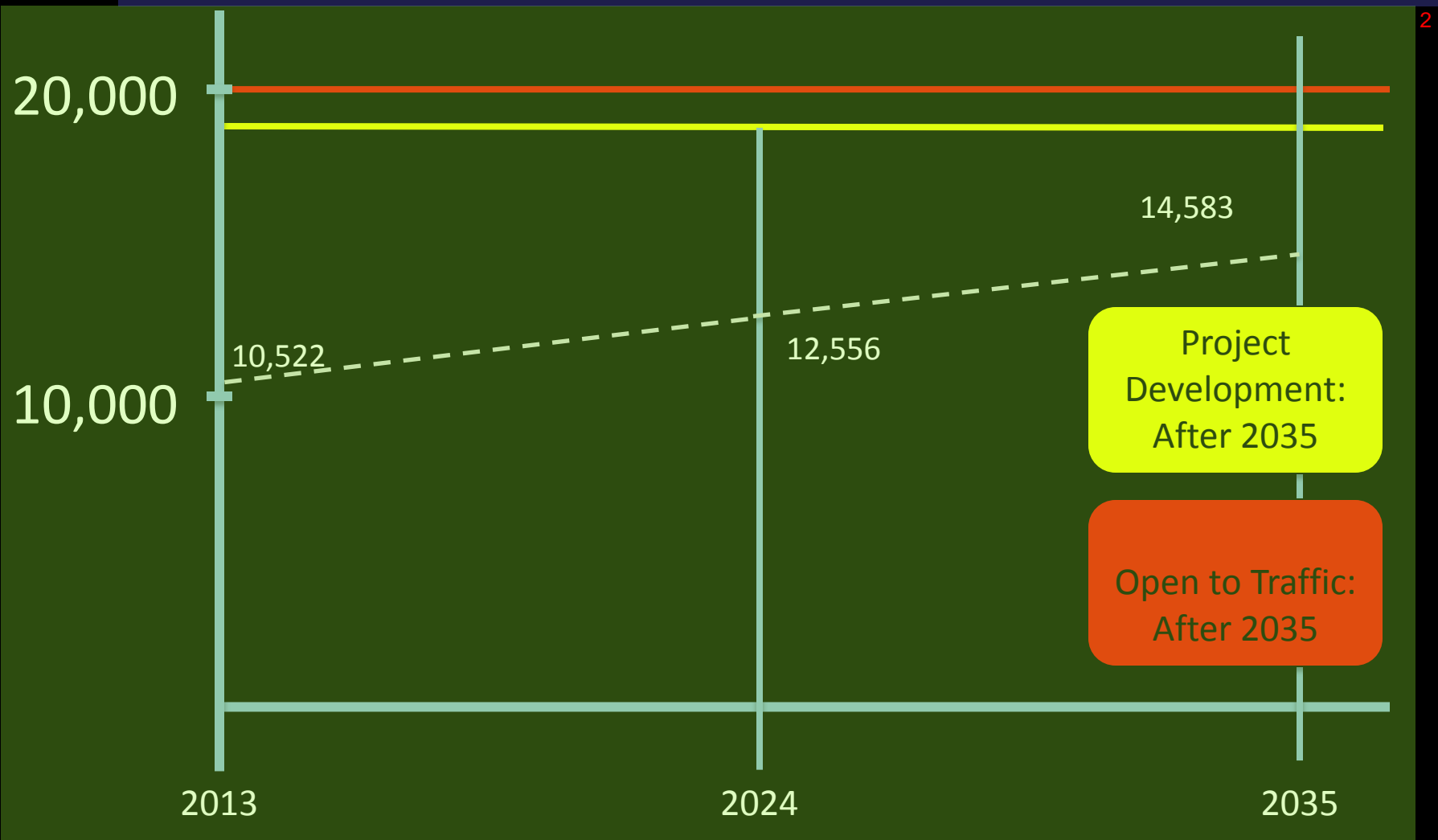
(WY-390 – July)

21,693



# Capital Group 2 Benchmarks

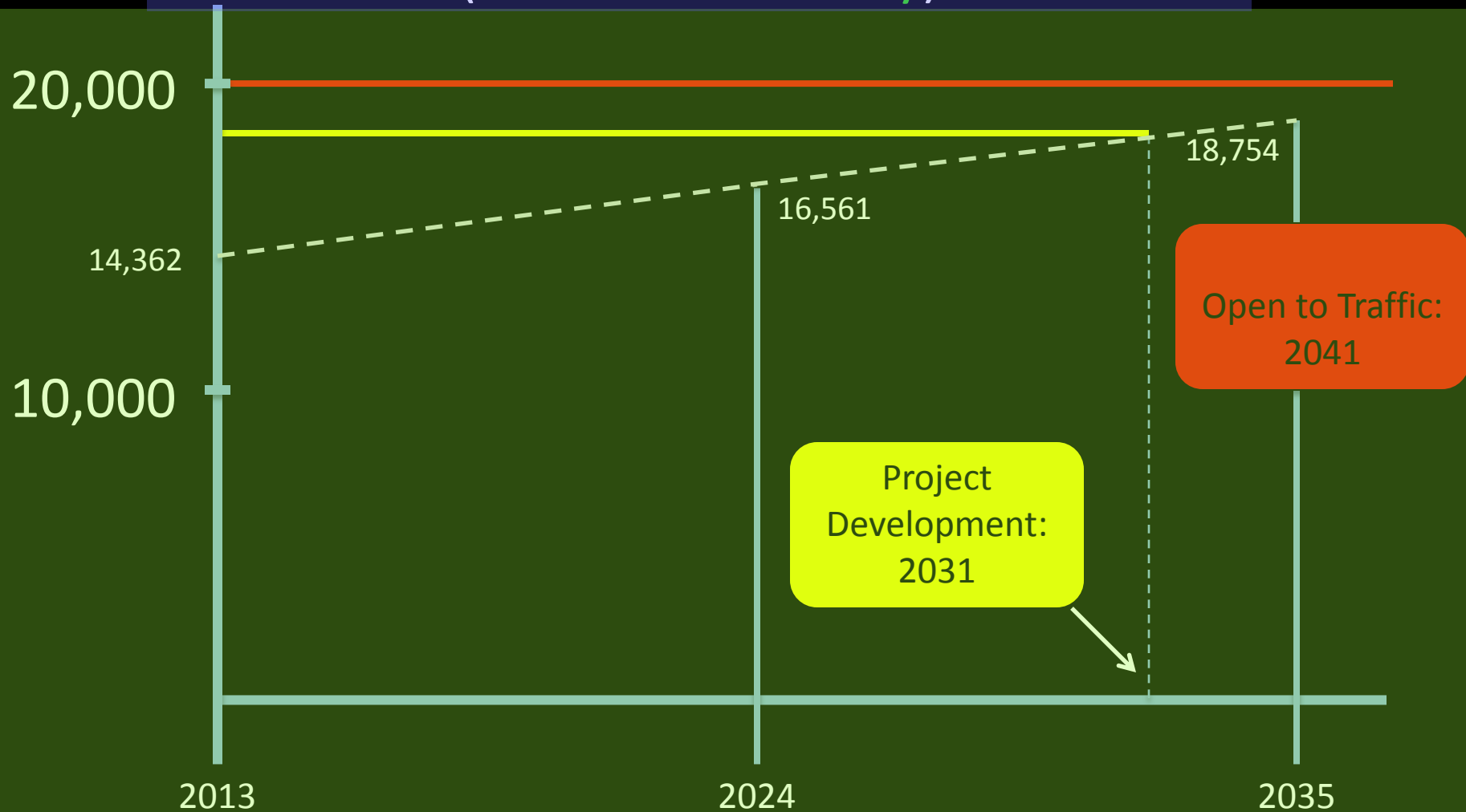
(WY-390 – Annual)





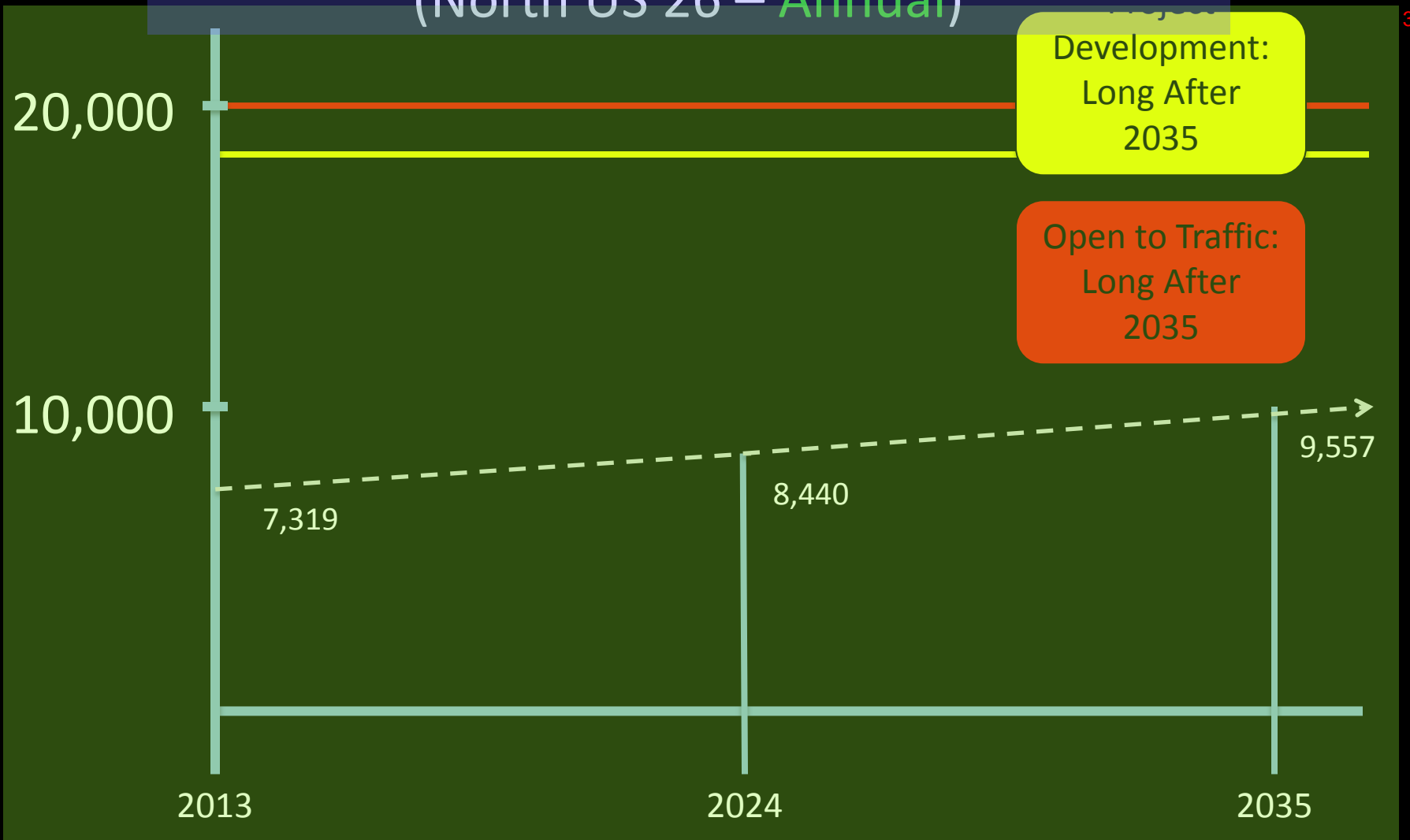
# Capital Group 3 Benchmarks<sup>2</sup>

(North US 26 – July)



# Capital Group 3 Benchmarks<sup>2</sup>

(North US 26 – Annual)



# Highway Network Development<sup>1</sup>

- All major corridors must be multimodal<sup>2</sup>
- Address BRT potential Town – Village
- Proactive approach to wildlife protection

# Proactive Approach to Wildlife Protection<sup>1</sup>

- Work with WYDOT to implement wildlife mitigation/protection measures in 22/390 PEL<sup>2</sup>
- Work with WYDOT to implement fencing and grade crossings as part of south US-26 projects
- Ask WYDOT to lower speed limits to 45mph on US-26, Hoback to Jackson
- Convene a partnership (federal, state, local) to address mitigation/protection measures along US-26 north of Jackson

## IMPLEMENTATION

4. Improve internal connectivity (all<sup>1</sup> modes) in towns and villages

# Internal Connectivity<sup>1</sup>

## Including:<sup>2</sup>

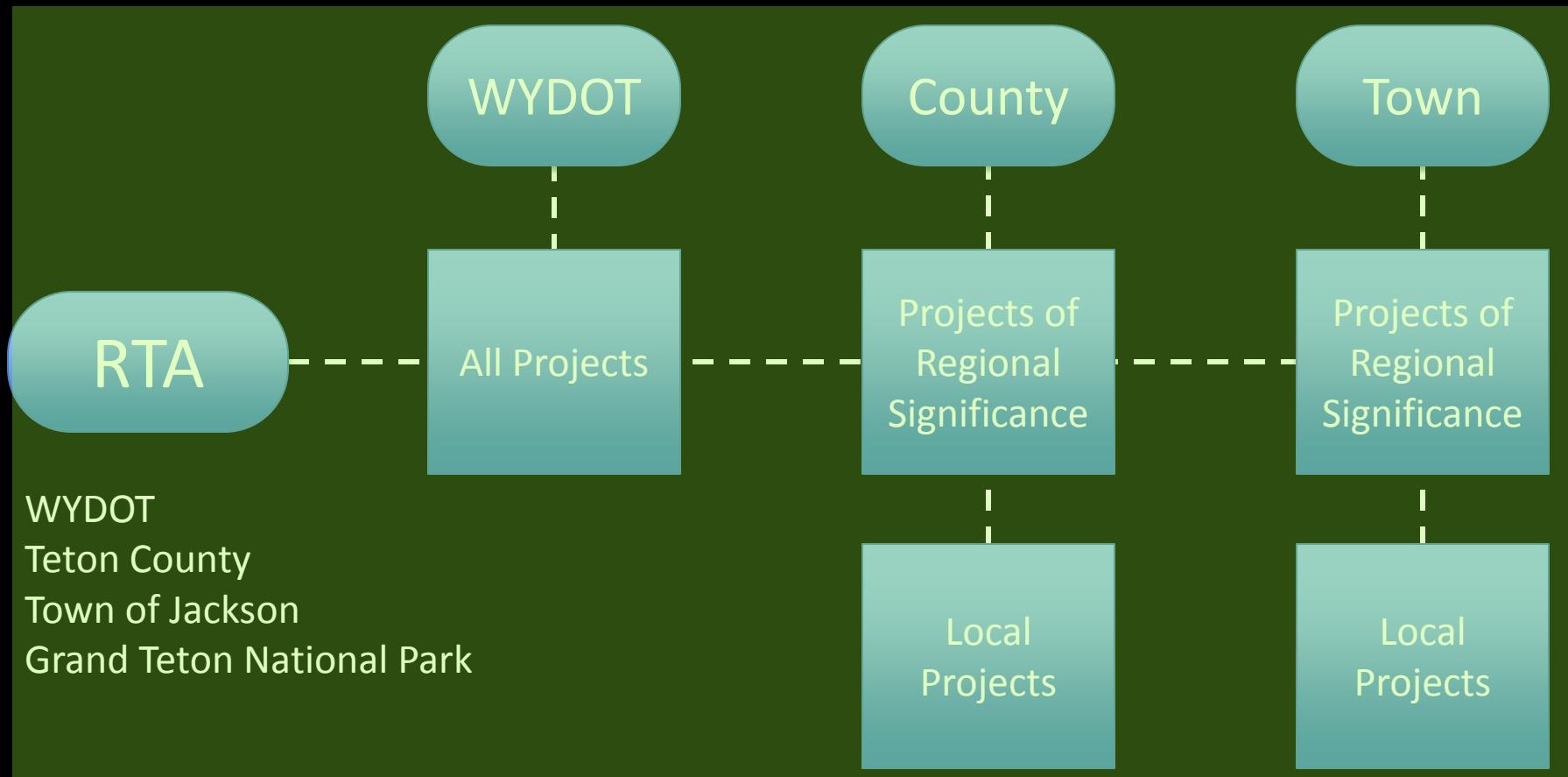
- Tribal Trails Connector
- Maple Way – Snow King Corridor
- Town – New Streets Plan
- County sidewalks and multi-use pathways
  - Wilson
  - South Park
  - West Bank

<sup>3</sup>

## IMPLEMENTATION

5. Establish a “Regional Transportation Authority” (Town/County/WYDOT)

# Potential Role of Regional Transportation Authority





# Revenue<sup>1</sup>

This plan cannot be funded<sup>1</sup>  
from existing sources

Net Additional Plan Cost (recurring annual)<sup>2</sup>

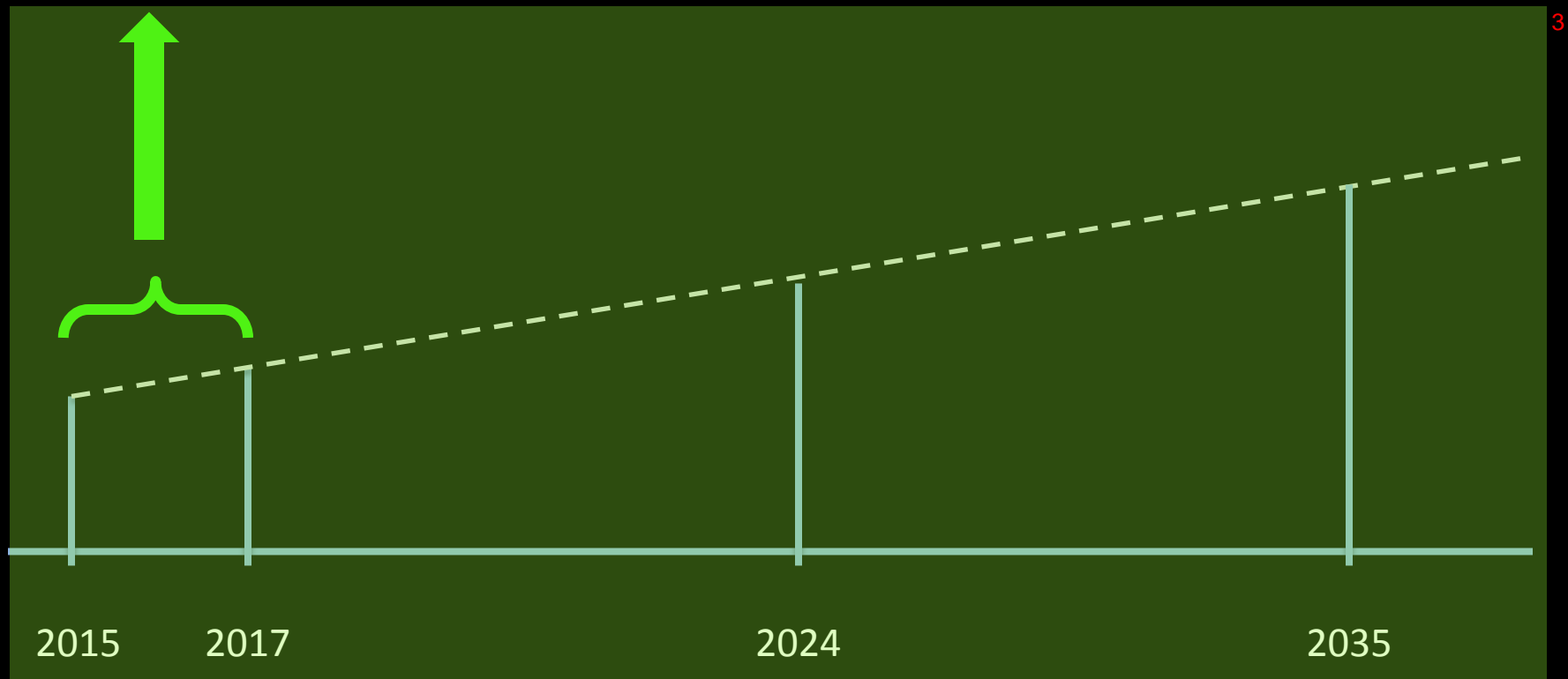
2018: \$1,800,000<sup>3</sup>

2024: \$5,000,000

(+ capital costs)<sup>4</sup>

# Recommended Action Plan<sup>1</sup>

- 2015 - Increase staff capacity – transportation planner<sup>2</sup>
- 2016 - Form RTA
- 2017 - Address revenues



# At the Table<sup>1</sup>

Town

County

WYDOT

Park Service

Major Employers

Transit Operators

School District

Local NGOs

# Questions, Discussion<sup>1</sup>



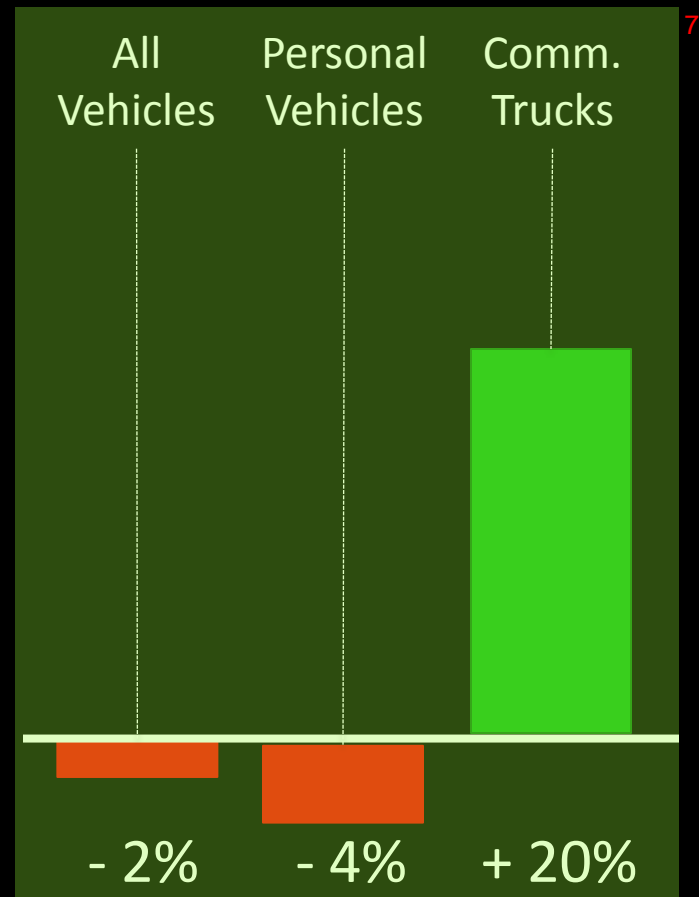
# Trends in Total US VMT<sup>1</sup>

2000 - 2012<sup>2</sup>



+ 8%   + 6%   + 30%<sup>6</sup>

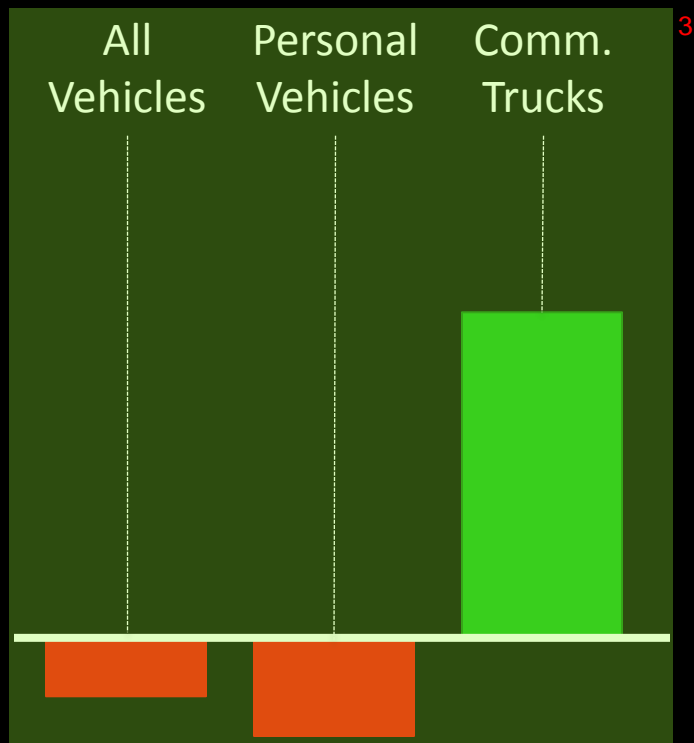
2006 - 2012<sup>3</sup>



- 2%   - 4%   + 20%

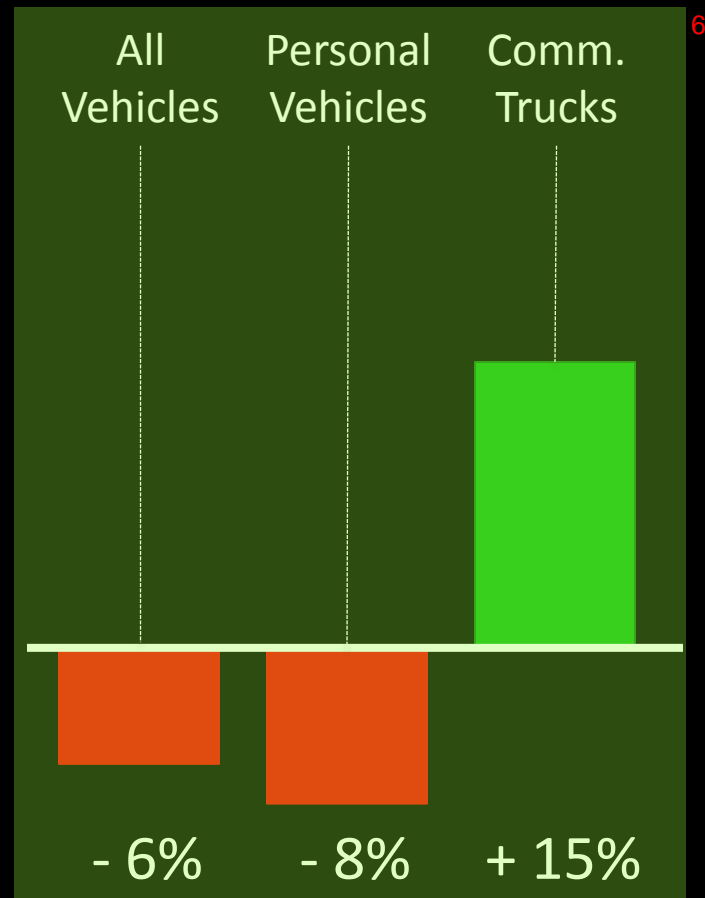
# Per Capita US VMT<sup>1</sup>

2000 - 2012<sup>2</sup>



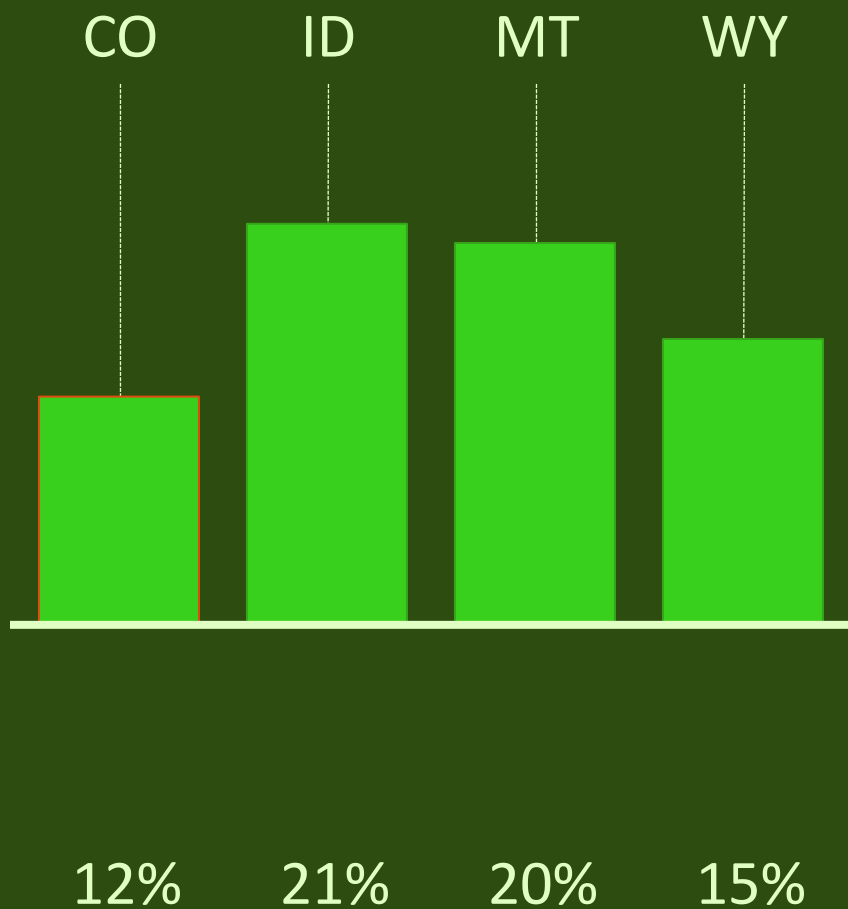
- 3%   - 5%   + 17%<sup>4</sup>

2006 - 2012<sup>5</sup>

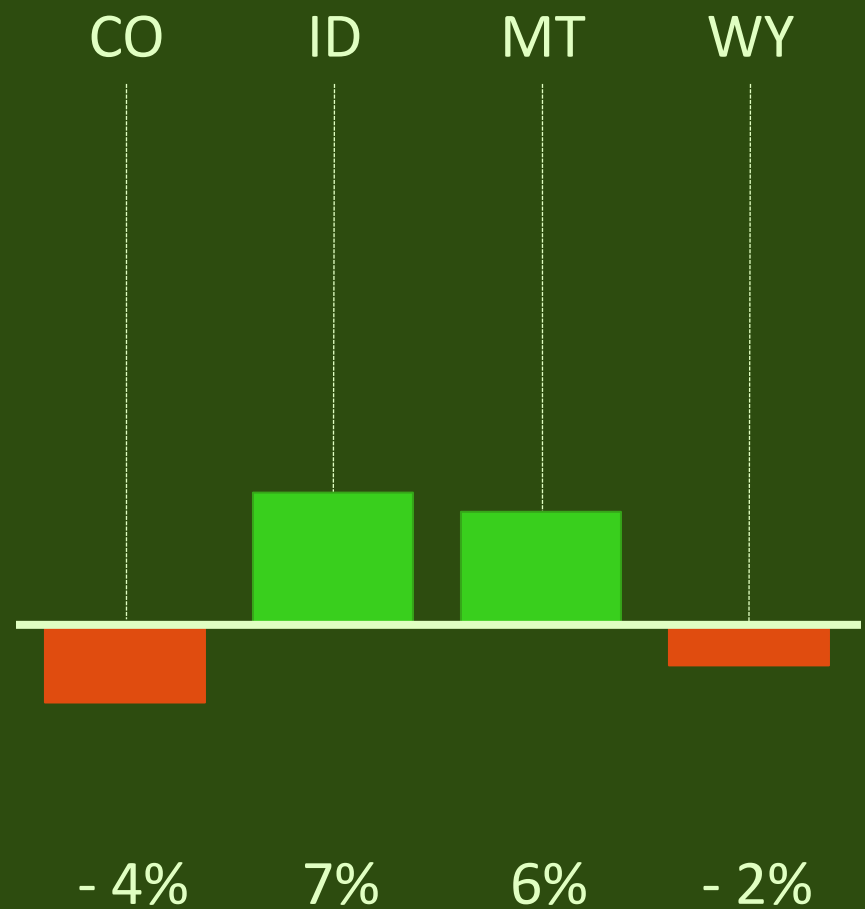


# VMT Trends – Interior West States<sup>1</sup>

2000 - 2012<sup>2</sup>



2006 - 2012<sup>3</sup>

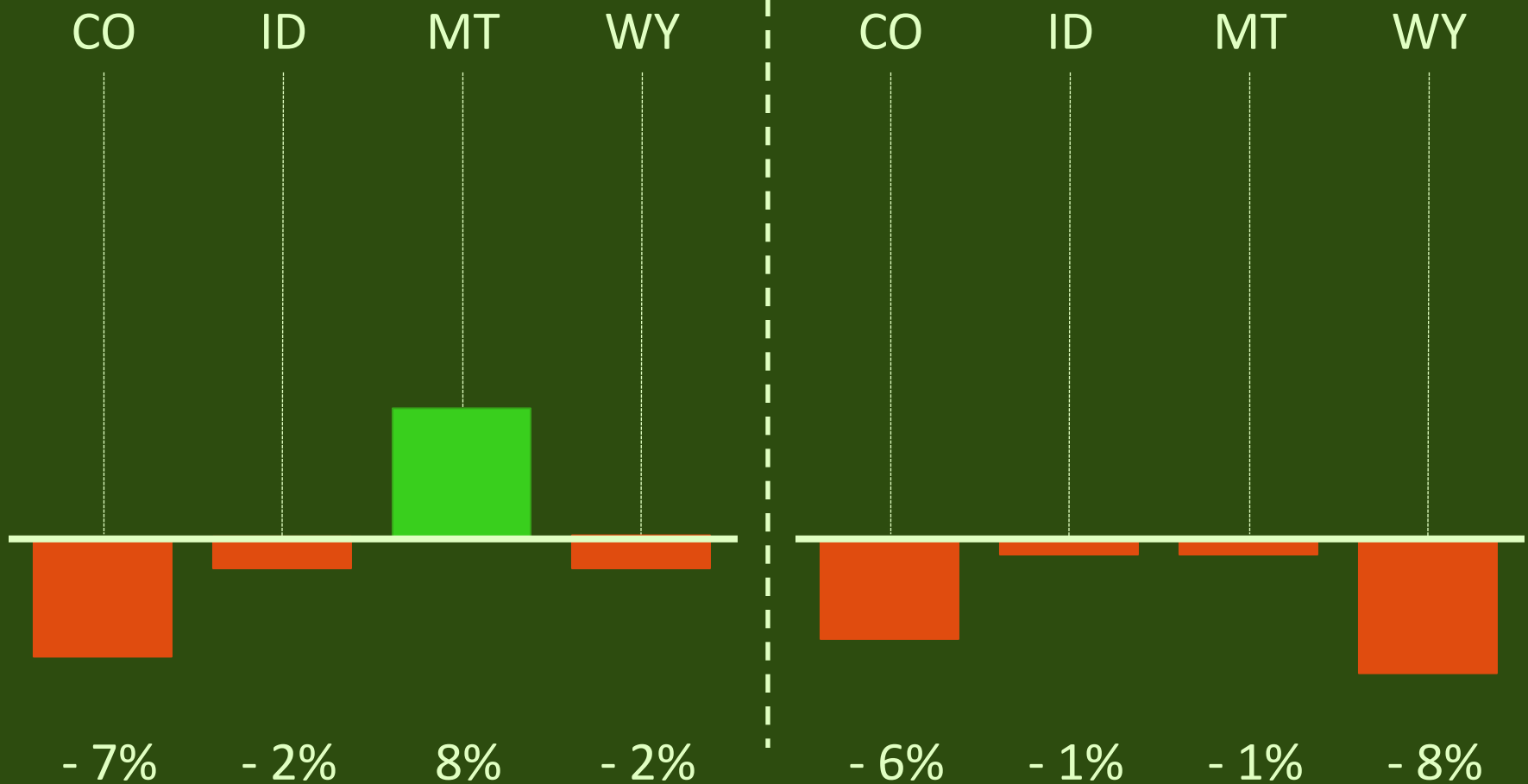




# Per Capita VMT – Interior West States<sup>1</sup>

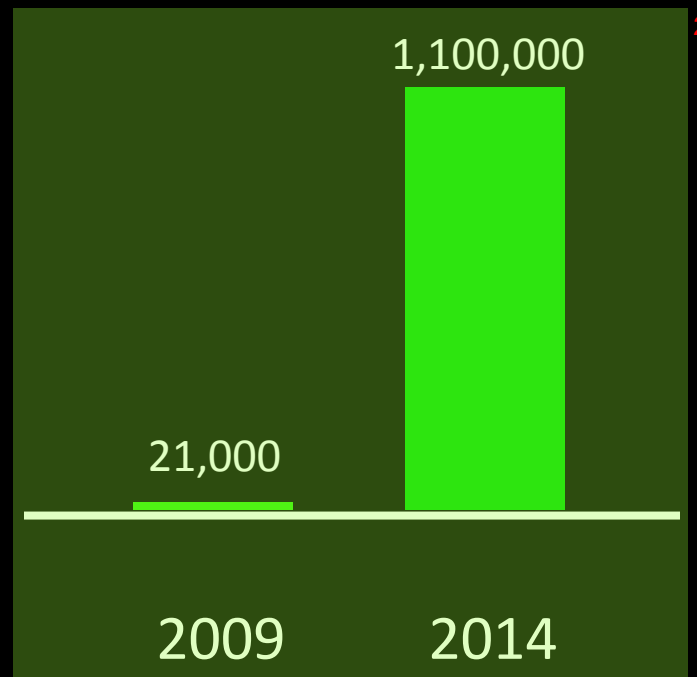
2000 - 2012<sup>2</sup>

2006 - 2012<sup>3</sup>



# Oil by Rail

## US – Barrels/Day



## WYOMING

In 2011, Wyoming produced 40% of all coal mined in the United States

## NORTH DAKOTA

Oil production in North Dakota increased 35% from 2010 to 2011

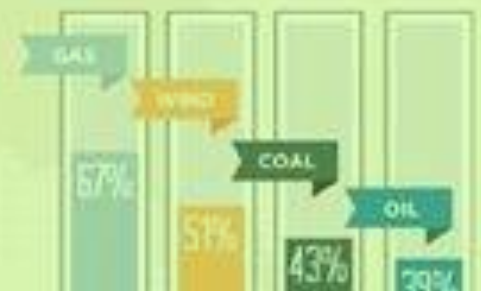
## COLORADO

Colorado's vast fossil fuel resources include the Niobrara shale, which is estimated to contain as much as 2 billion barrels of oil

## TEXAS

Texas will always be known as an oil state, but it's also the national leader in wind power production

## PERCENTAGE OF NATIONAL ENERGY PRODUCTION







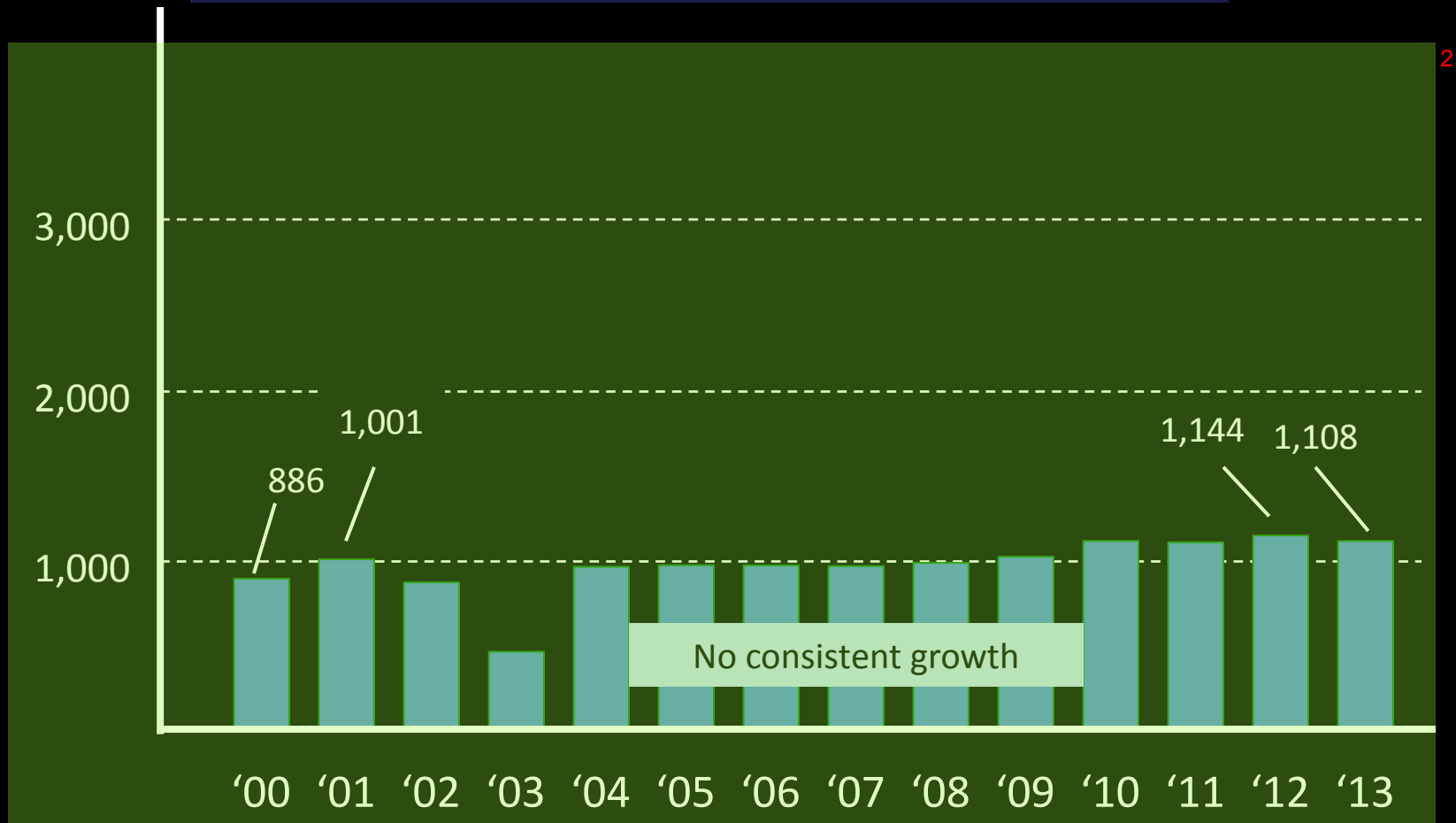
# GTNP Traffic Trend: Moose Entrance

(July Average Daily Traffic – Inbound Only)



# GTNP Traffic Trend: Moose-Wilson Entrance

(July Average Daily Traffic – Inbound Only)



# GTNP Annual Visitorship Trend<sup>1</sup>

(millions)

