



What Would it Take?

Transportation and Climate Change in the National Capital Region

Final Results

May 26, 2010

Presentation to the Climate, Energy, and Environment Policy Committee

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Why “What Would it Take”?

background

baseline

analysis

results

conclusions

1



Build off regional goals in COG Climate Change Report (November 2008)

2

Support local jurisdictions by identifying **effective and feasible** strategies

3

Determine the **type and scale of transportation strategies** necessary to meet regional goals

What Would it Take?

background

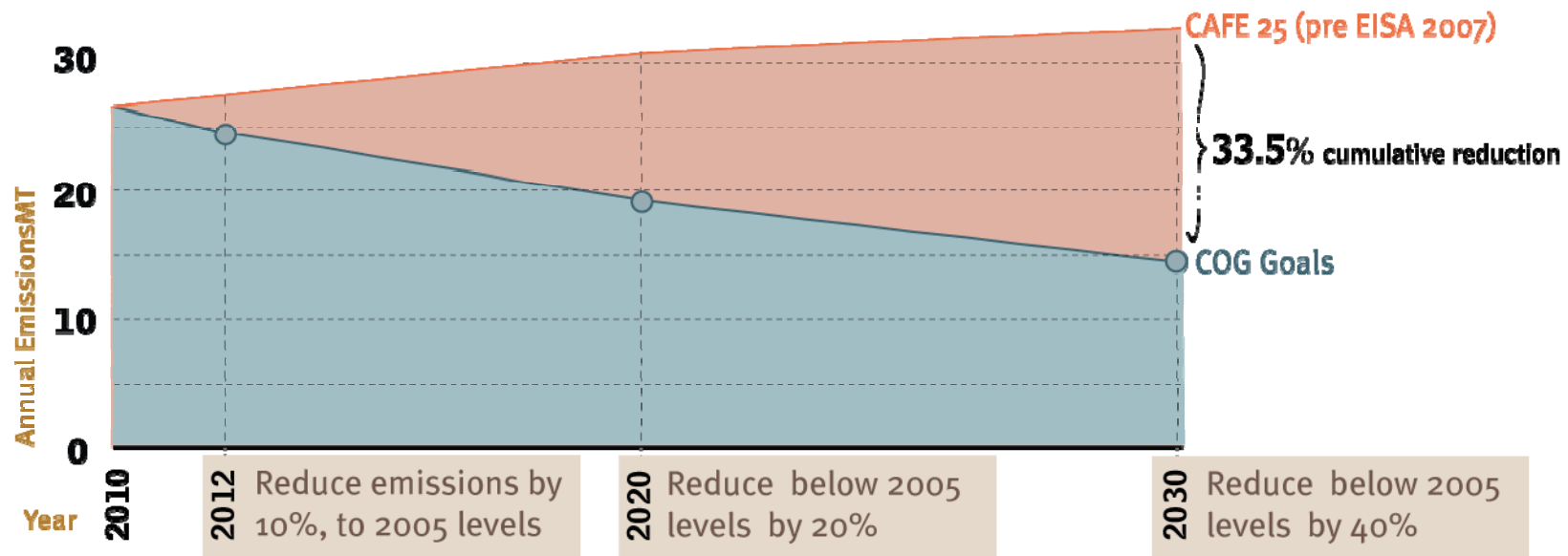
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What if we had to meet the regional goals in the transportation sector?



MT=Millions of Tons

CAFE=Corporate Average Fuel Economy Standard

What's Our GHG Baseline?

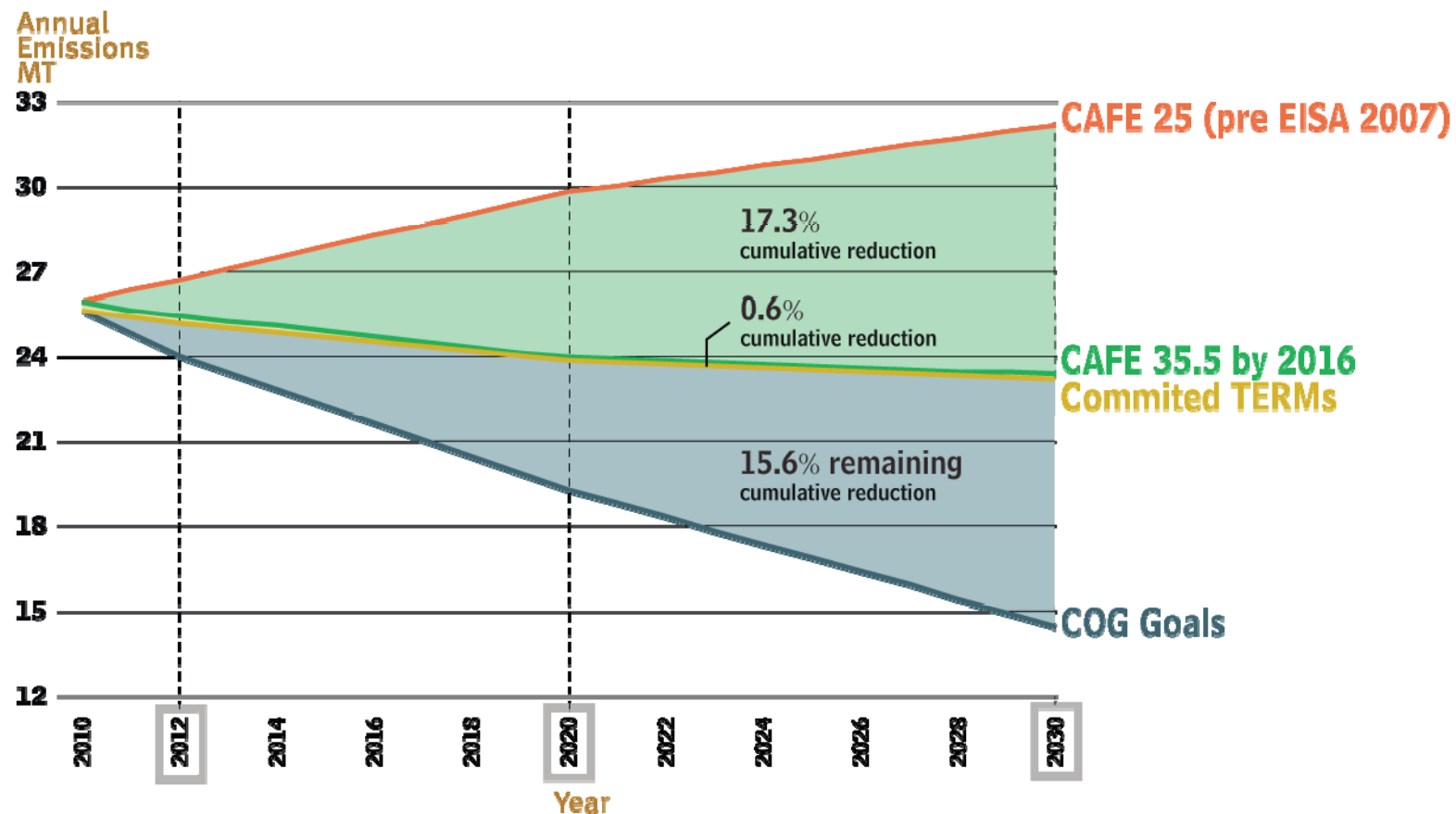
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Committed TERMS refers to the full TERM Tracking Sheet, including: Access and service improvements to transit, bike/ped projects, rideshare assistance programs, telecommute programs, traffic improvements, engine technology programs

What are the Emissions Sources?



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There are **3** major areas affecting transportation emissions

1



The composition of the fleet

fuel efficiency, heavy/light duty split

2



The fuel we put in our fleet

gasoline, diesel, alternative fuels (electricity, ethanol, biofuels)

3



How we use our fleet

trip lengths, purpose, and mode, vehicle occupancy, congestion

What Does Our Fleet Look Like?



background

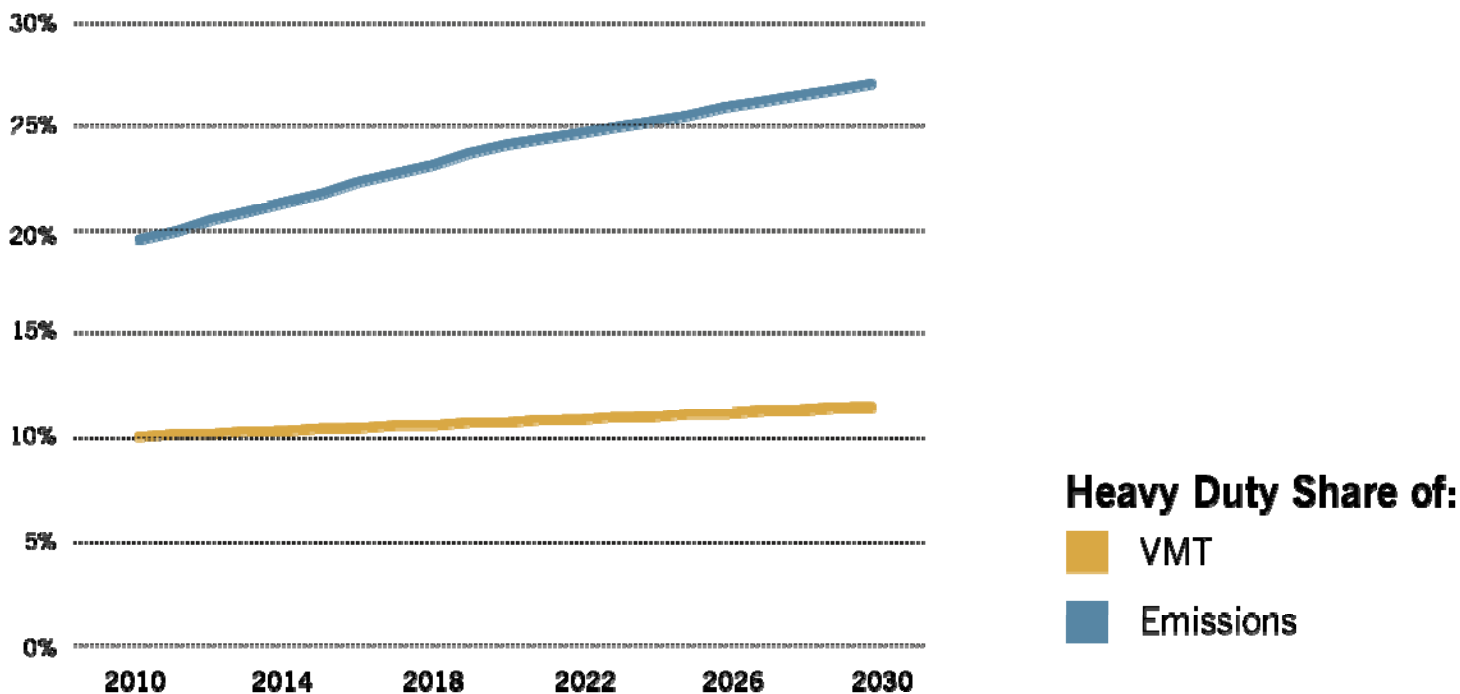
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Heavy Duty Share of Total Vehicle Miles of Travel (VMT) and CO₂ Emissions

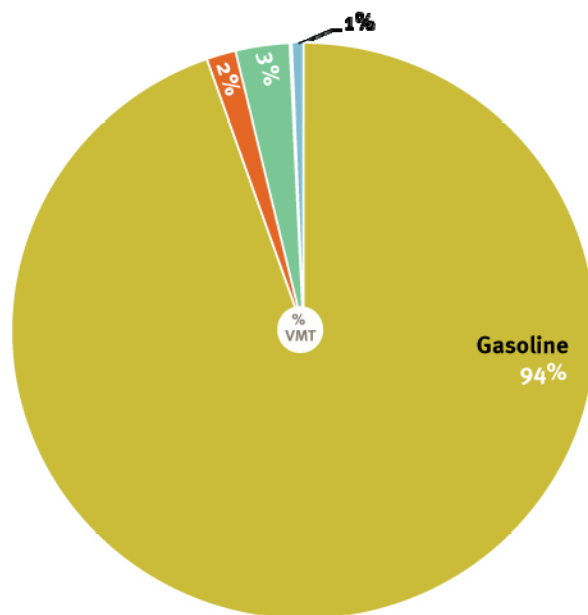


What's Our Fuel Mix?

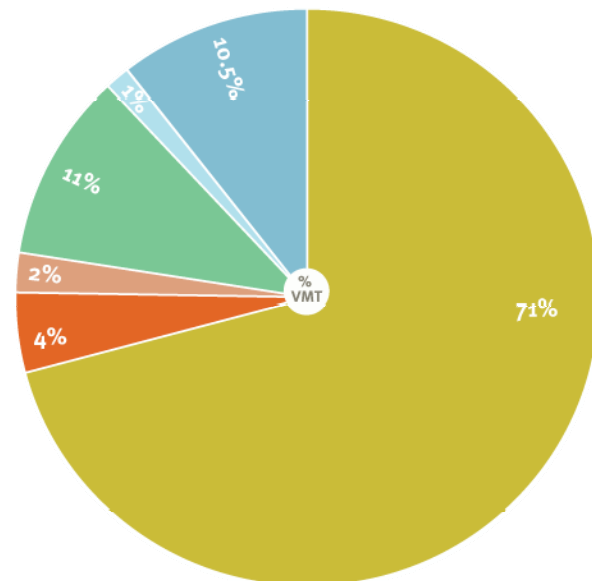
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National Light Duty VMT by Vehicle Type

Existing, 2009



DOE Forecast, 2030



Source: US DOE, EIA,
Annual Energy
Outlook (AEO) 2009

How Do We Use The Fleet?



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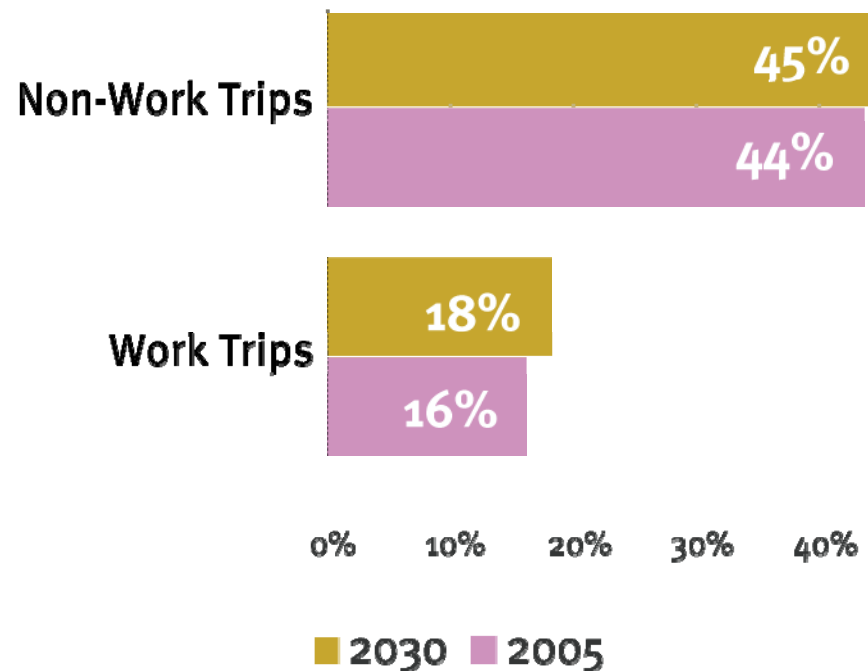
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Many of our trips are short.

% of Auto Trips <3 miles



How Do We Use The Fleet?



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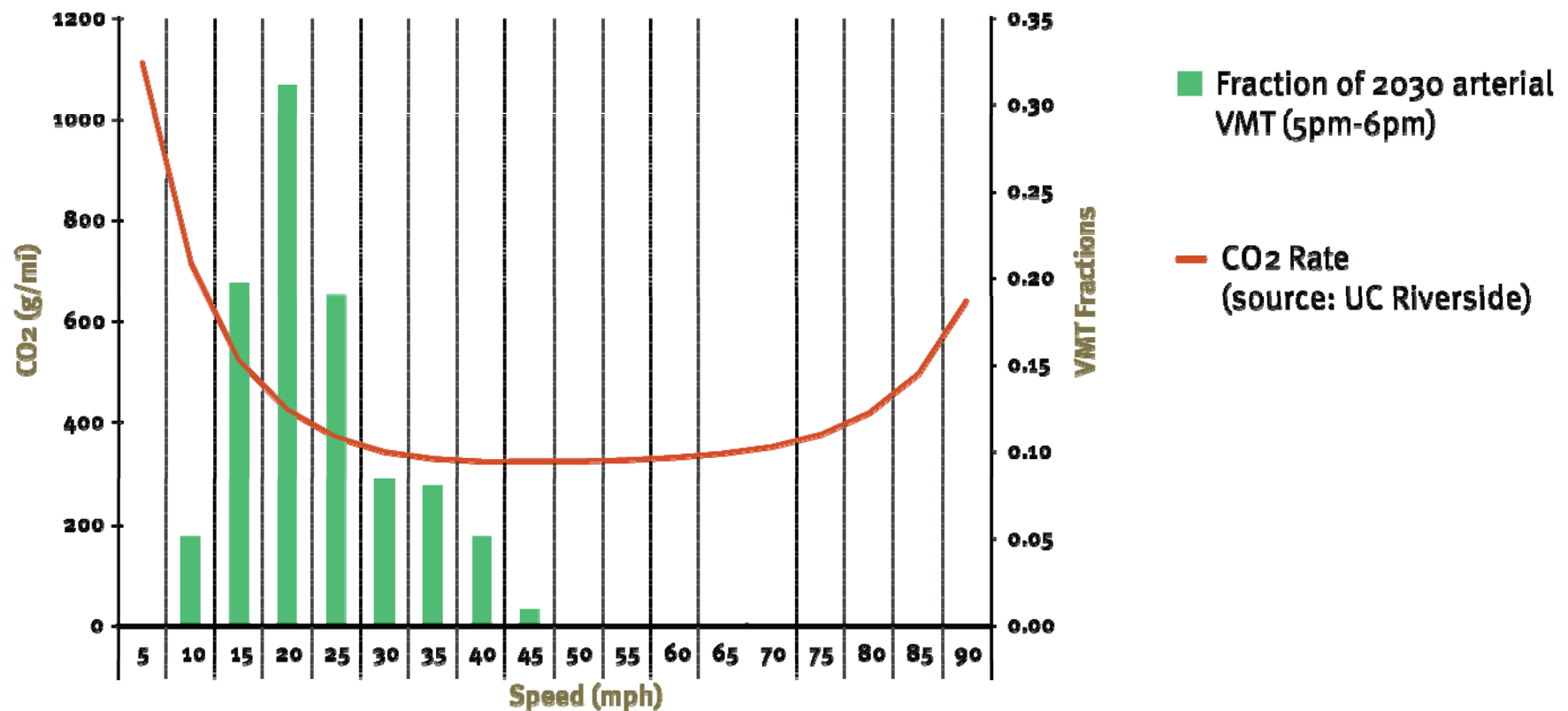
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Congestion affects CO₂ emissions and is widespread.



How Can We Reduce CO₂?



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1 fuel efficiency



Enhanced CAFE
HDV CAFE
Local tax incentives
Cash for Clunkers

2 alternative fuel



DOE Forecasts:
Current regulation
High price case

3 travel efficiency



Telecommuting
Bike/ped facilities
Improved transit
Bike and Car-sharing
Car and Vanpooling
Pricing
Eco-driving
Incident Management
Signal optimization

Categories of Strategies



background

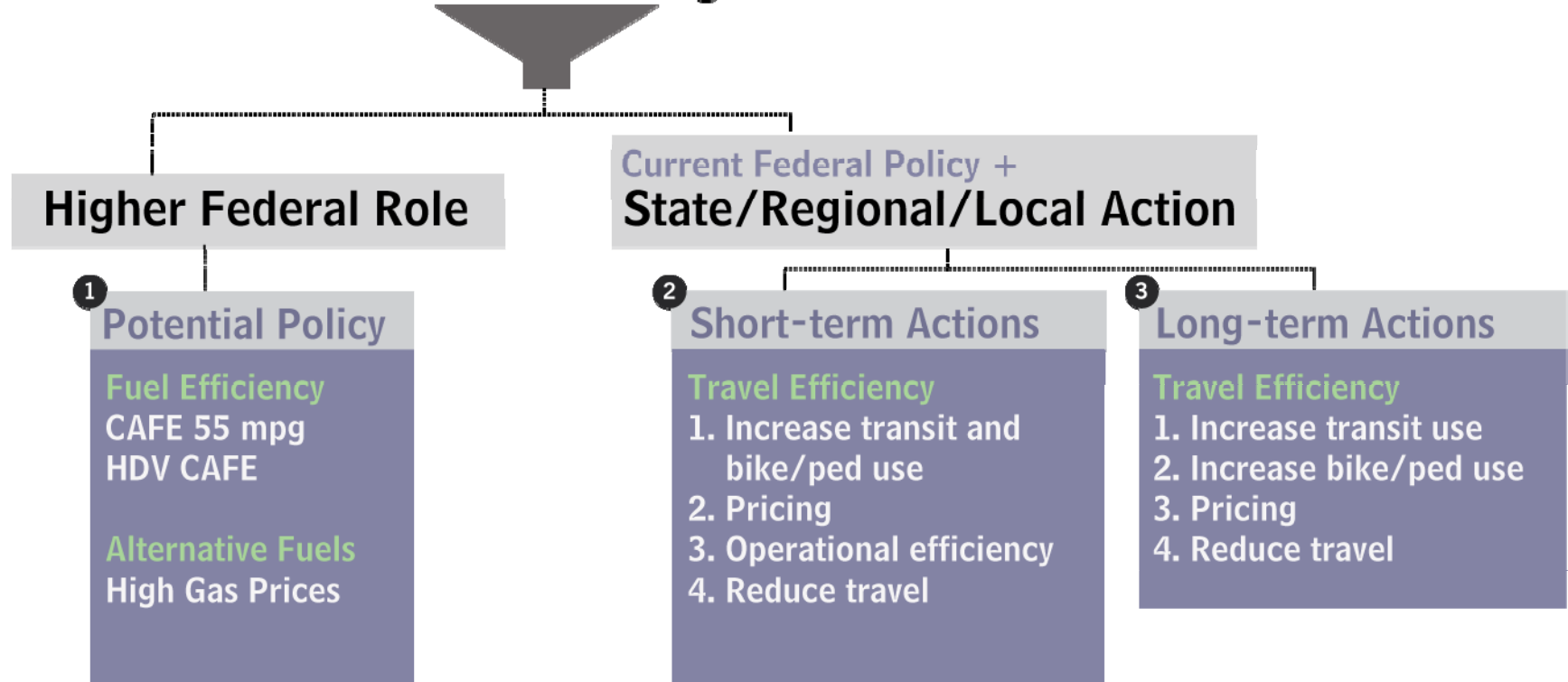
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Individual Strategies



All groups combine additive strategies to the full extent currently possible.

Higher Federal Role



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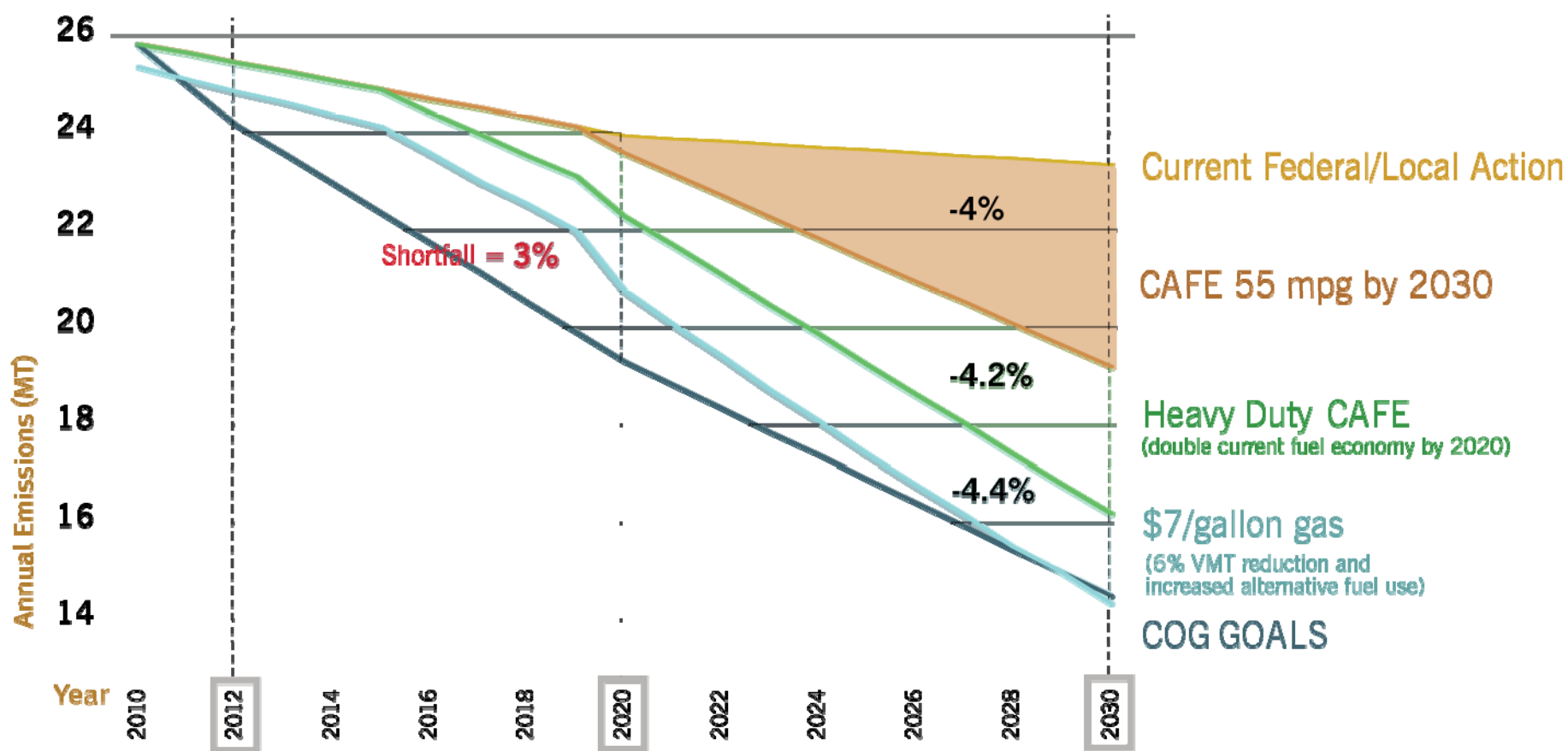
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Aggressive federal measures would *almost* get us there.



Current Federal Policy



background

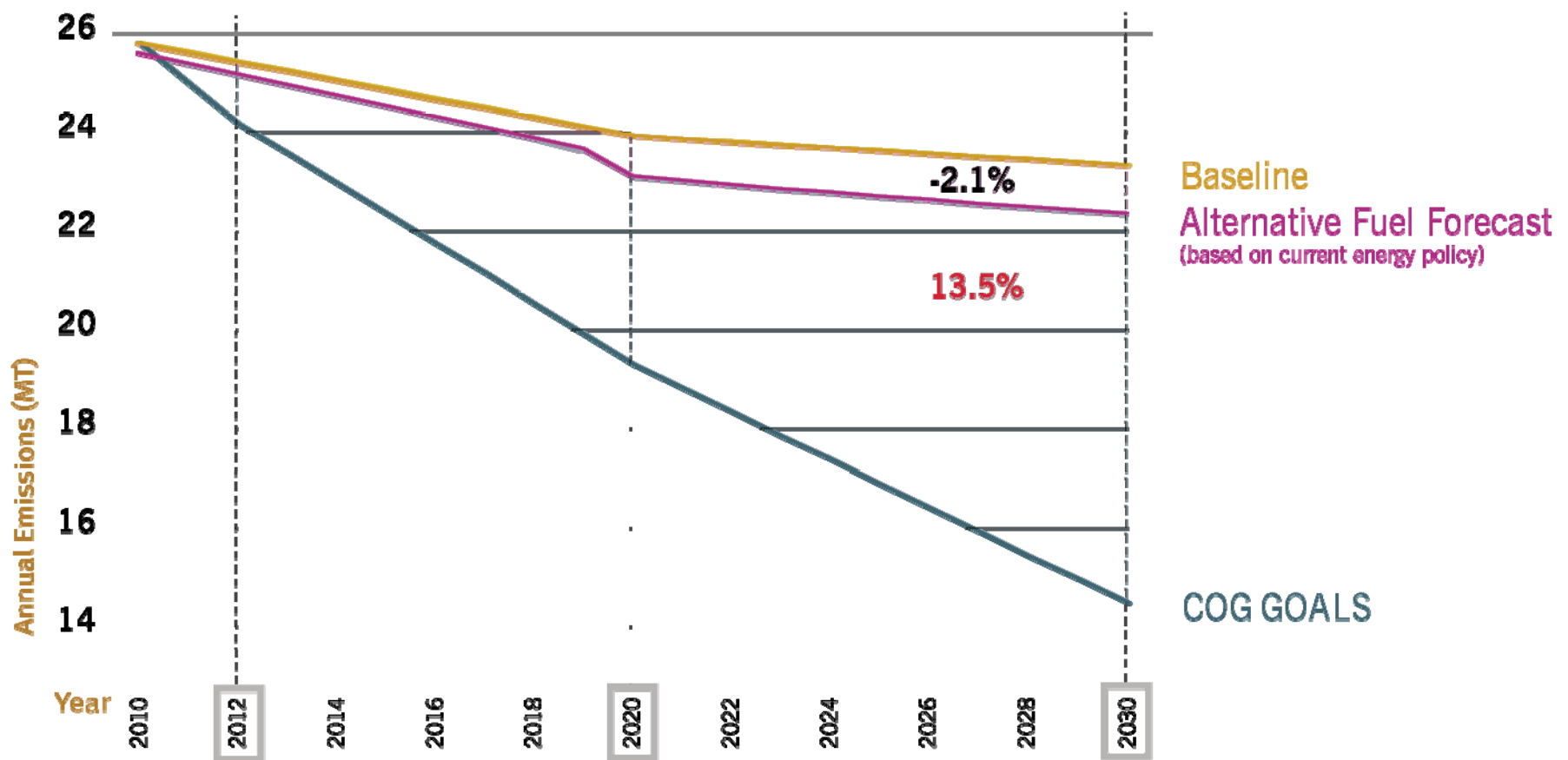
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We still have a long way to go based on current federal policy.



Short-term Strategies

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Some short-term strategies can be implemented now.

Category	Example Strategies	Reduction (% off BAU)
1. Increase transit and bike/ped use	Implement kiosks, feeder buses and circulators, real-time bus information, bus priority, free transfers, bike stations, improved bike/ped access to transit, bike sharing	-0.3%
2. Pricing	Implement parking impact fees, pay-as-you drive insurance, parking cash-out subsidies	-1.5%
3. Improve operational efficiency	Promote eco-driving (public education campaign), incident management, traffic signal optimization, idling reduction	-1.8%
4. Reduce travel	Expand telecommuting, carpooling and vanpooling, car-sharing	-0.3%
	TOTAL	-3.9%

Long-term Strategies

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We can begin the initial stages of implementation for some long-term measures.

Category	Example Strategies	Reduction (% off BAU)
1. Increase transit use	Major transit expansion, such as the Dulles Rail line, and park and ride lots at rail stations	-0.15%
2. Increase bike/ped use	Accelerated completion of the TPB Bicycle and Pedestrian Plan	-0.3%
3. Pricing	Variable pricing of new and existing freeway and select arterial lanes	-0.25%
4. Reduce travel	Land use strategy encouraging concentrated growth in activity centers and around transit	-0.15%
TOTAL		-0.85%

Short-term Strategies

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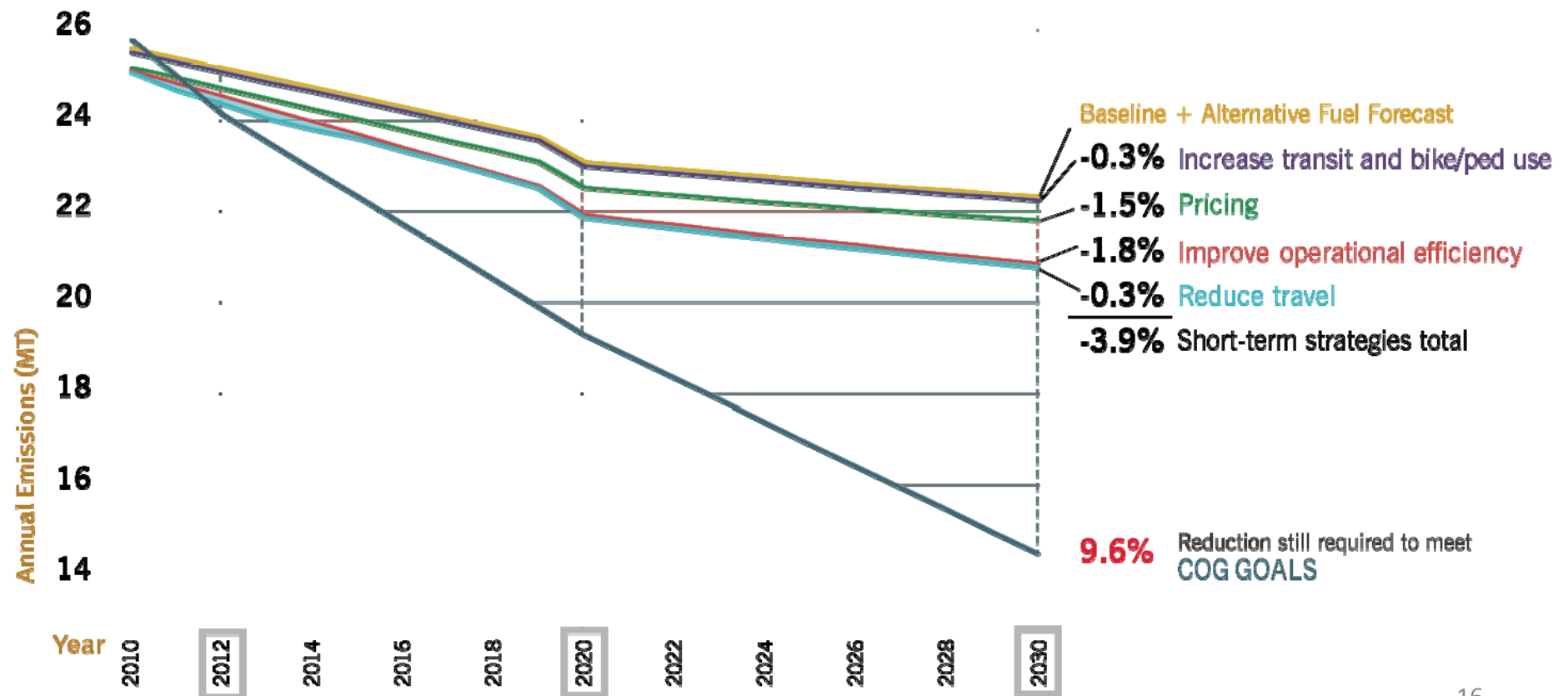
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Many strategies can be done soon, almost meeting early goals.



Longer-term Strategies



background

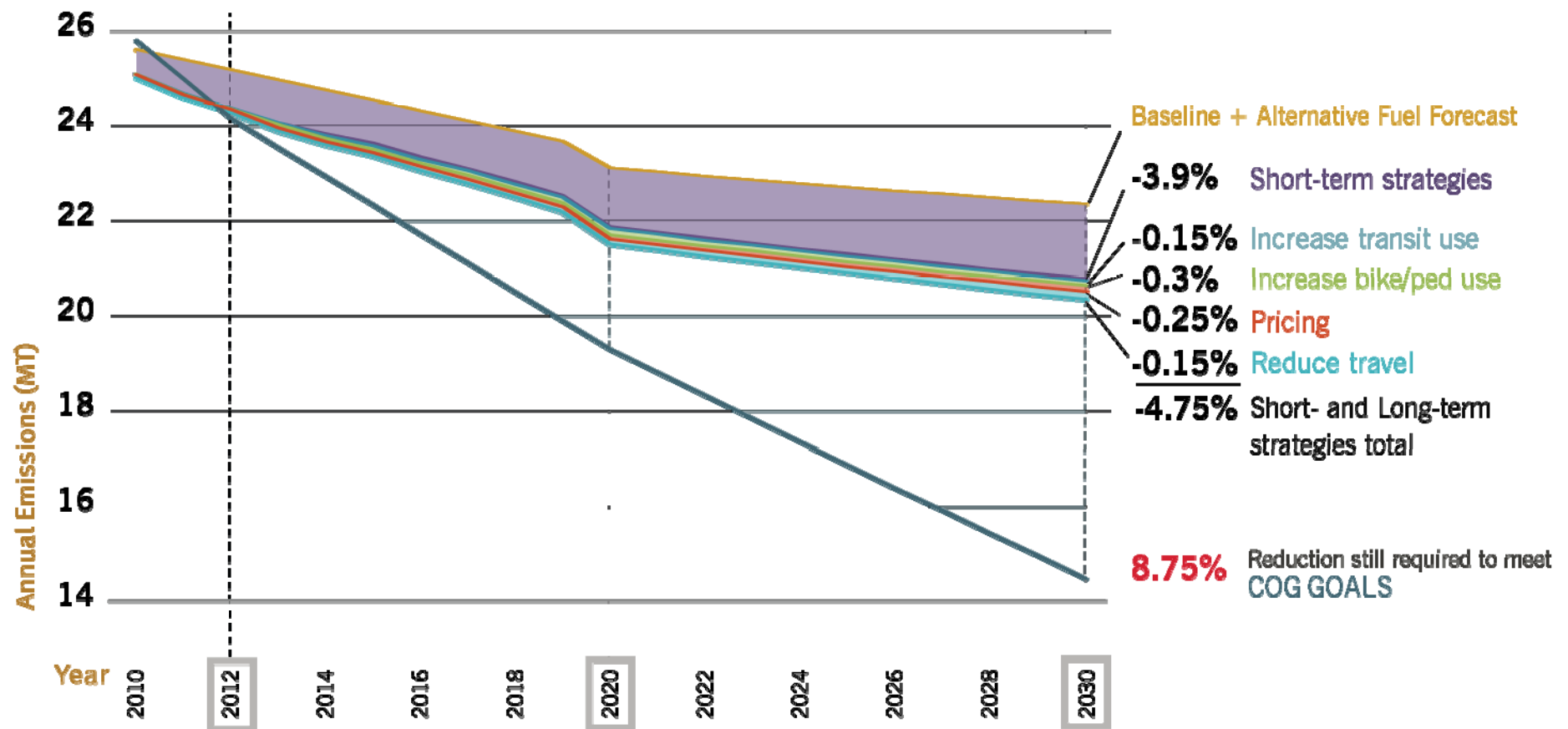
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A longer study timeframe for long-term impacts would help.



Meeting the Goals



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Can we combine the aggressive federal strategies with the regional strategies and meet the goals?

1. Danger of double-counting if VMT-reducing strategies are combined with the High Gas Price strategy, which results in a 6% VMT reduction.
2. The effectiveness of travel efficiency strategies is diminished if the fleet is cleaner.
3. If operations measures (incident management, signal optimization, hybrid buses, eco-driving, and idling reduction) are adjusted and added to the high federal role grouping, the 3% shortfall is reduced to 1.6%.

Cost-Effectiveness



background

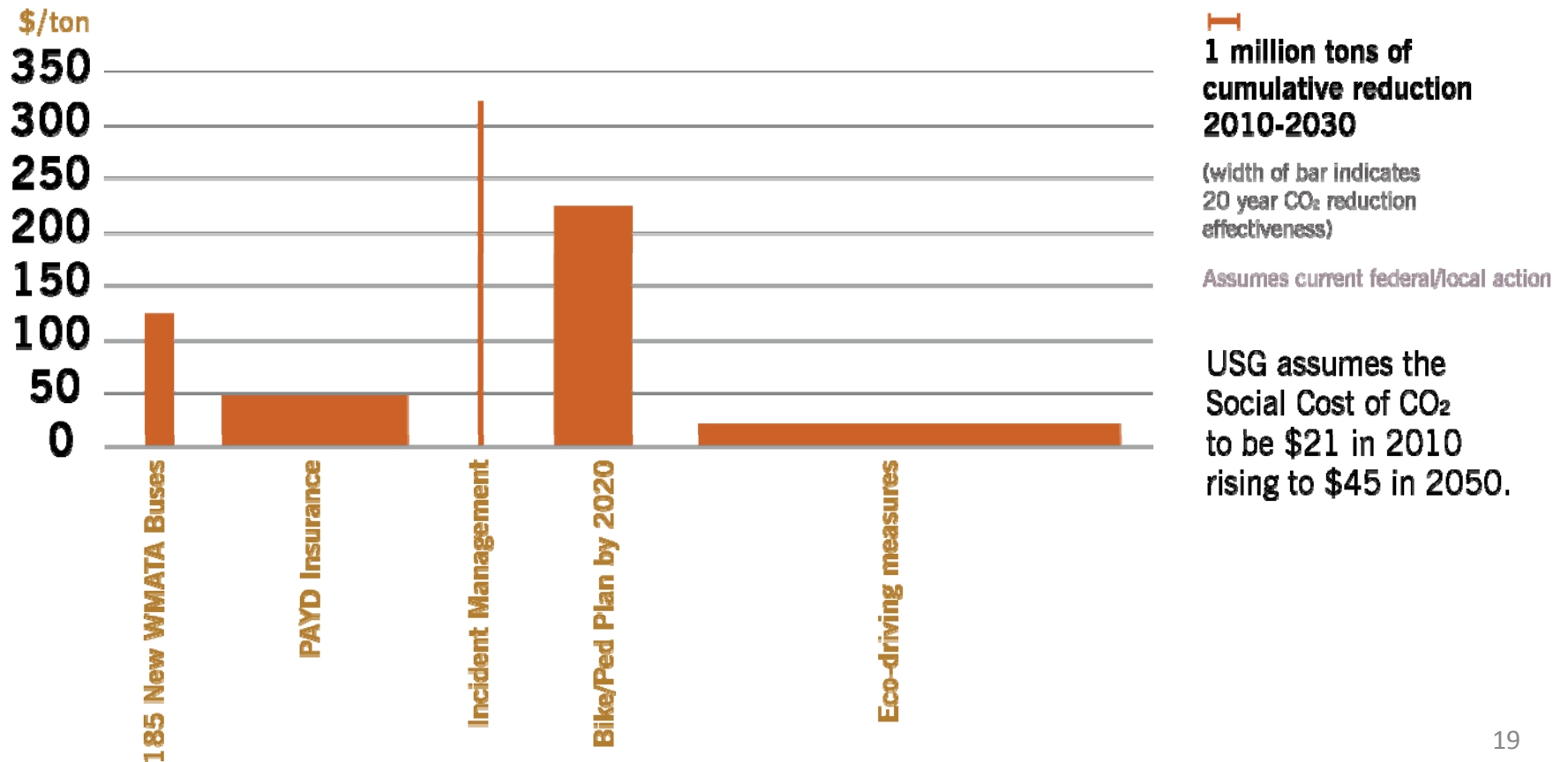
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Some strategies are both cost-effective and effective.



Next Step: Benefit Cost Analysis



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EXAMPLE

Bike-sharing

Modest CO₂ benefits are a contributing factor to large overall benefits.



Costs	\$231,000,000
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Capital	\$16,000,000
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Operating	\$75,000,000
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Increased Accidents	\$145,000,000
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Benefits	\$625,500,000
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User Cost Savings	\$197,000,000
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Travel Time Savings	\$378,000,000
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Reduced Accidents (from reduced VMT)	\$1,300,000
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Public Health	\$2,000,000
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Increased Access	\$38,000,000
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Congestion Reduction	\$3,500,000
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Environmental Benefits	\$5,700,000
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CO₂	66,000 tons
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All numbers over 20 year horizon from 2010-2030

Supporting Further Federal Action



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The region could express support for high pay-off measures that require further federal action.

- 1** Heavy duty CAFE
- 2** 55 mpg by 2030 CAFE
- 3** Pricing of carbon-intensive fuels

We should research various legislative and administrative proposals to determine what the region may wish to support.



Emerging Federal Planning Requirements

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How should the TPB as the Metropolitan Planning Organization (MPO) develop regional goals for transportation?

Current legislative proposals would incorporate GHG reduction requirements into the MPO planning process (Kerry-Lieberman, Waxman-Markey, Oberstar-Mica)

MPOs to develop GHG reduction targets and strategies and show progress in MPO plans

MPO plans to be approved by DOT and EPA

What Next?

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TPB can begin designing some actions that the region could consider for the near-term:

- 1** Expand **pay-as-you-drive insurance** to the whole region
- 2** Accelerate the **TPB Bike/Ped Plan** completion
- 3** Begin an **eco-driving** public education campaign (potentially through Commuter Connections)
- 4** Promote state/local incentives to accelerate use of **fuel efficient/alternative fuel vehicles** for both public fleets and private use
- 5** Strengthen long-term focus on **mixed use activity centers** and **transit-oriented development**