

ITEM #8



What Would it Take?

Transportation and Climate Change in the National Capital Region

Draft Results

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Presentation to TPB

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Why “What Would it Take”?

purpose

baseline

analysis

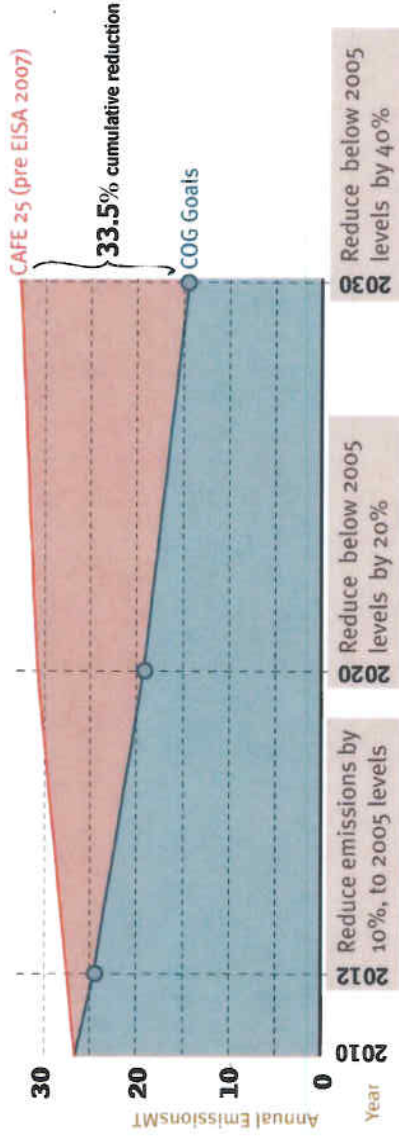
results

conclusions



1 Build off regional climate action momentum

2



To see how we can meet these goals in transportation

3 Support local jurisdictions by identifying **effective, cost-effective, and feasible** strategies to adopt

What's Our GHG Baseline?

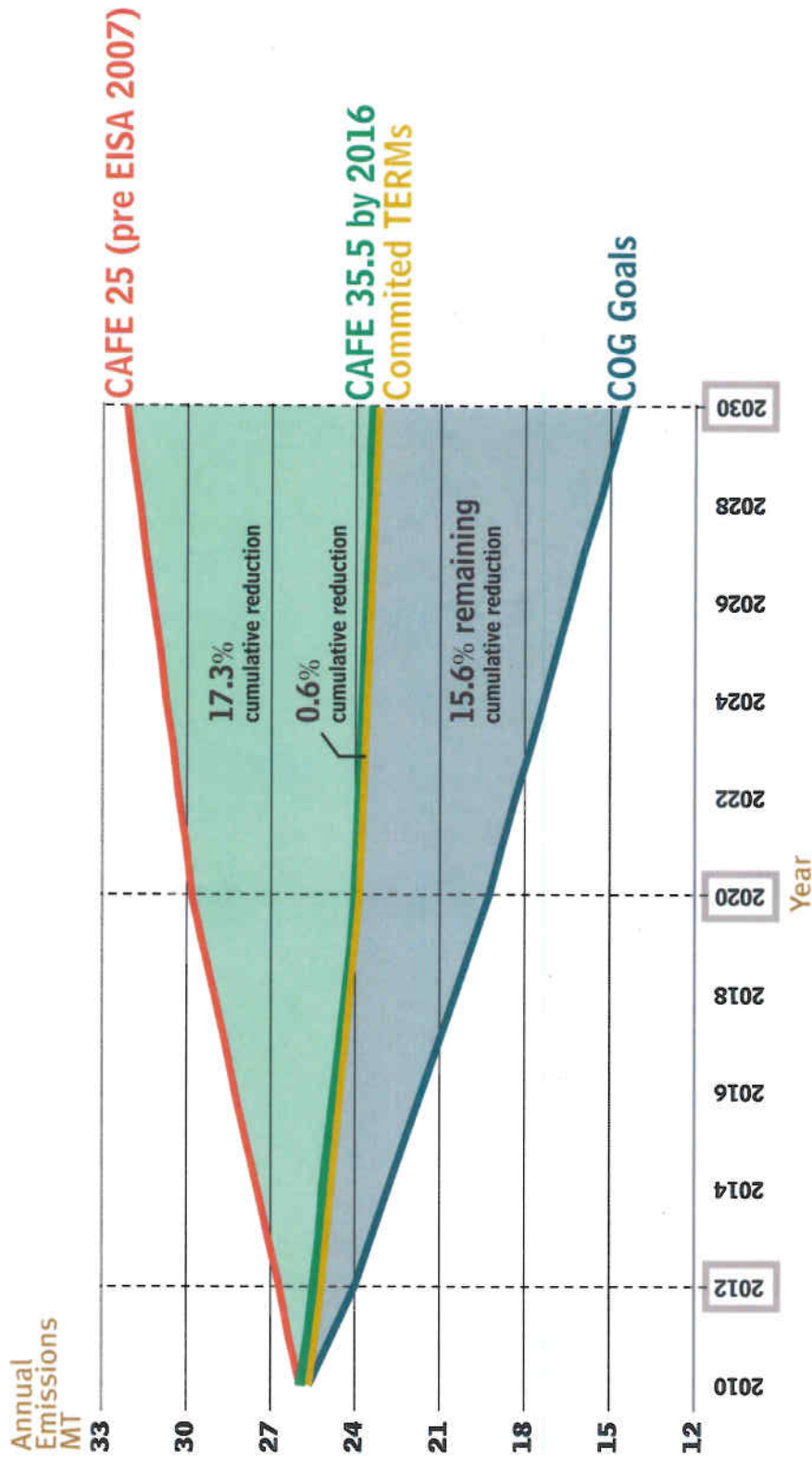
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Committed TERMS refers to the full TERM Tracking Sheet, including: Access and service improvements to transit, bike/ped projects, rideshare assistance programs, telecommute programs, traffic improvements, engine technology programs

What are the Emissions Sources?

purpose

baseline

analysis

results

conclusions



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?

purpose

baseline

analysis

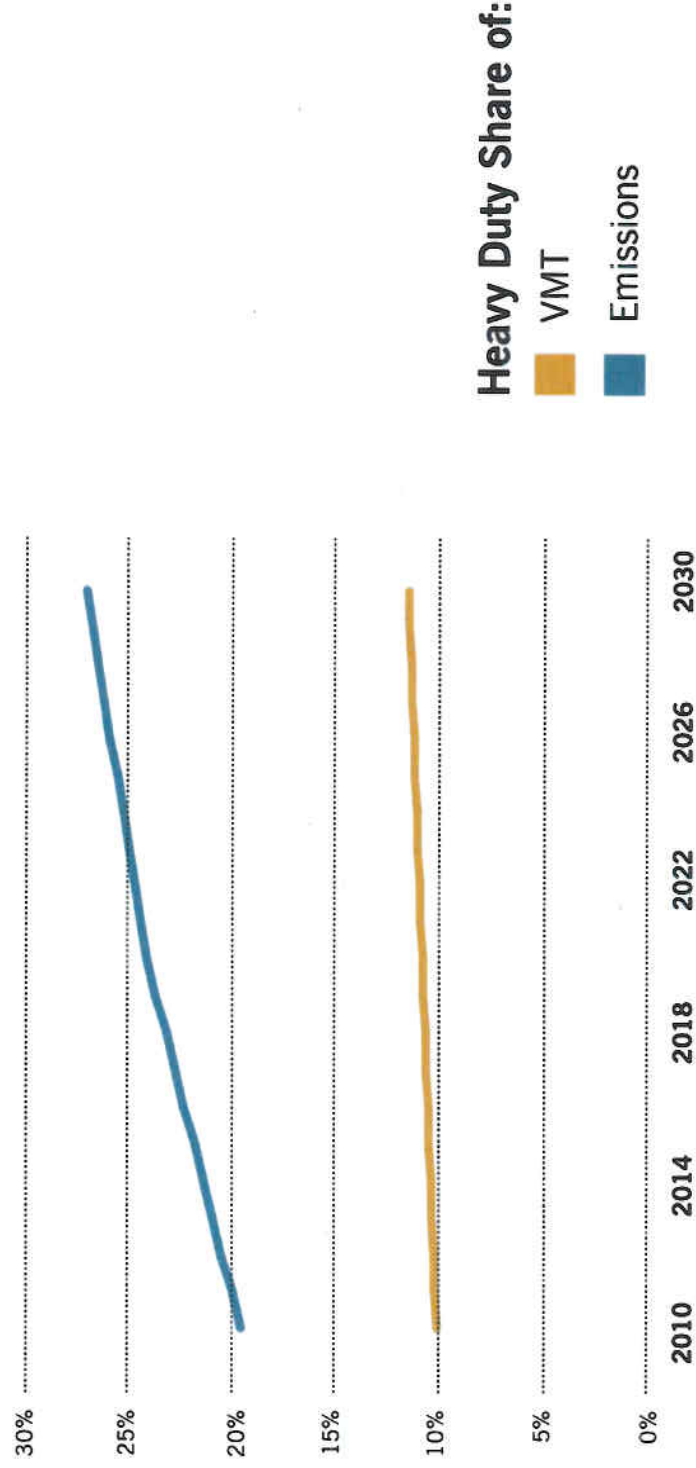
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Trucks account for a growing share of CO₂ emissions

Heavy Duty Share of Total VMT and CO₂ Emissions



What's Our Fuel Mix?

purpose

baseline

analysis

results

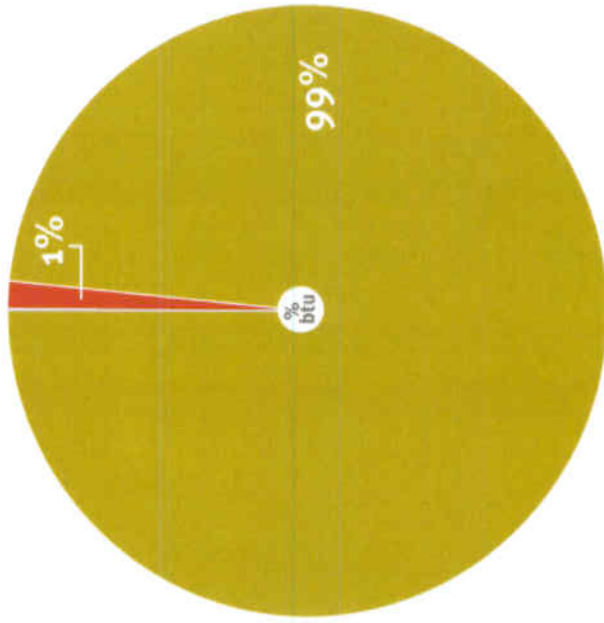
conclusions



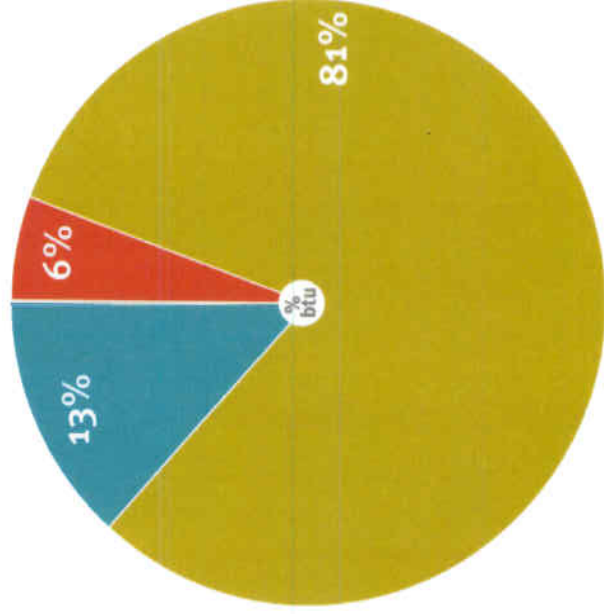
There is a lot of room for increasing alternative fuel use

National Light Duty Fuel Mix

Existing, 2009



DOE Forecast, 2030



▲ Gasoline
▲ Diesel
▲ Ethanol

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

How Do We Use The Fleet?

purpose

baseline

analysis

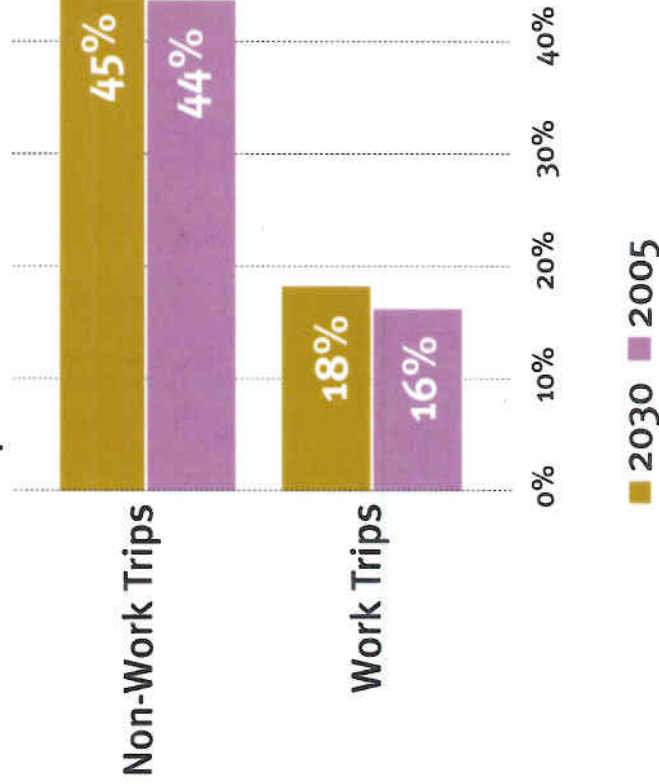
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Many of our trips are short.

% of Auto Trips <3 miles



Shifting 10% of these auto trips to non-polluting modes now, gets us 4% closer to the 2030 goal (shifting 50% gets us 18% closer)

How Do We Use The Fleet?

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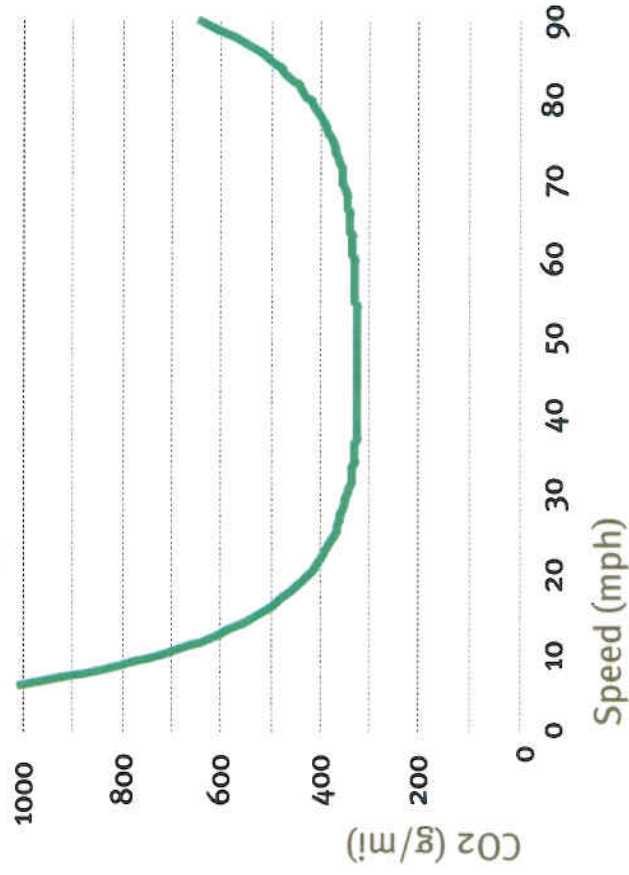
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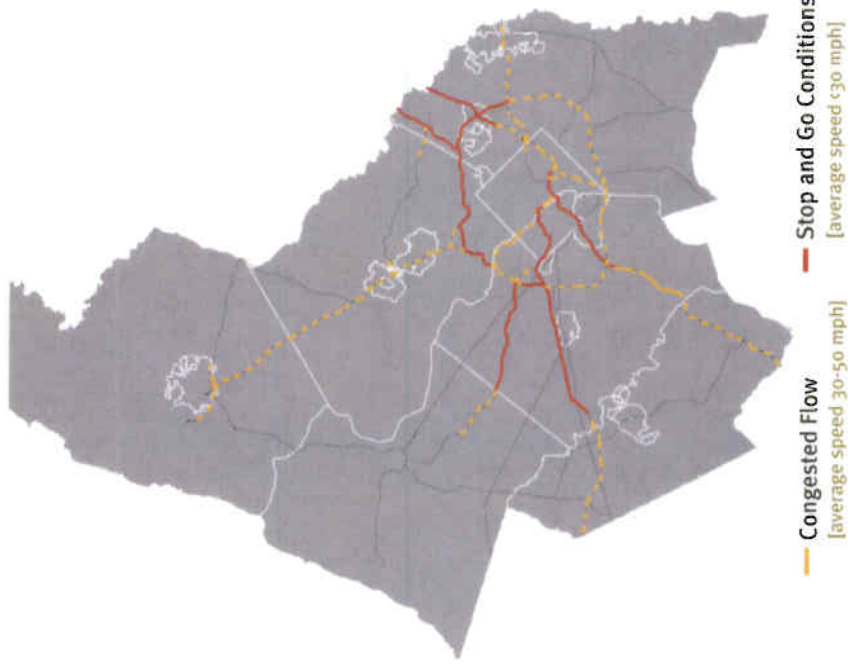
Congestion affects CO₂ emissions and is widespread.

CO₂ Emissions Rates by Speed



Source: UC Riverside

Forecast Congestion, 2030



How Can We Reduce CO₂?



purpose

baseline

analysis

results

conclusions

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
- Eco-driving
- Pricing
- Incident Management
- Signal optimization
- Bike and Car-sharing
- Commuter services

Grouping Strategies

purpose

baseline

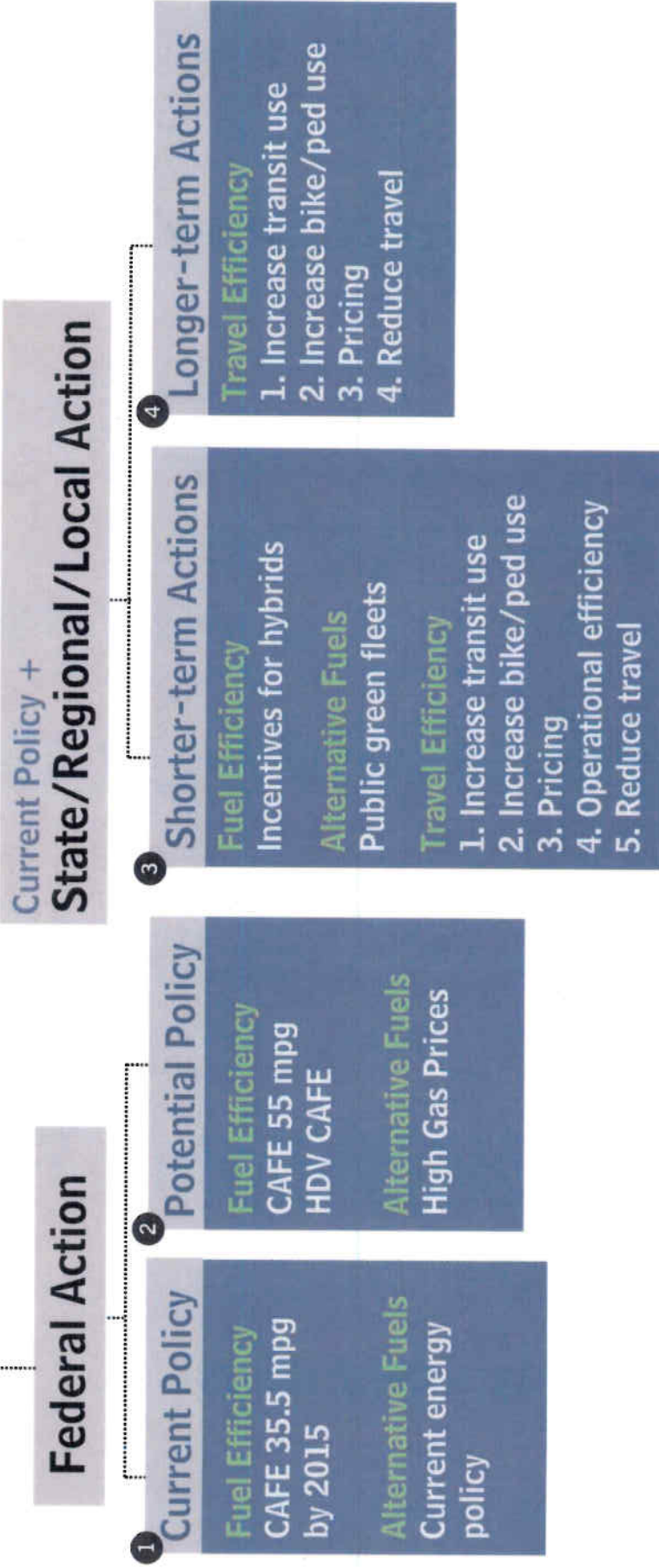
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Individual Strategies



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

The Baseline

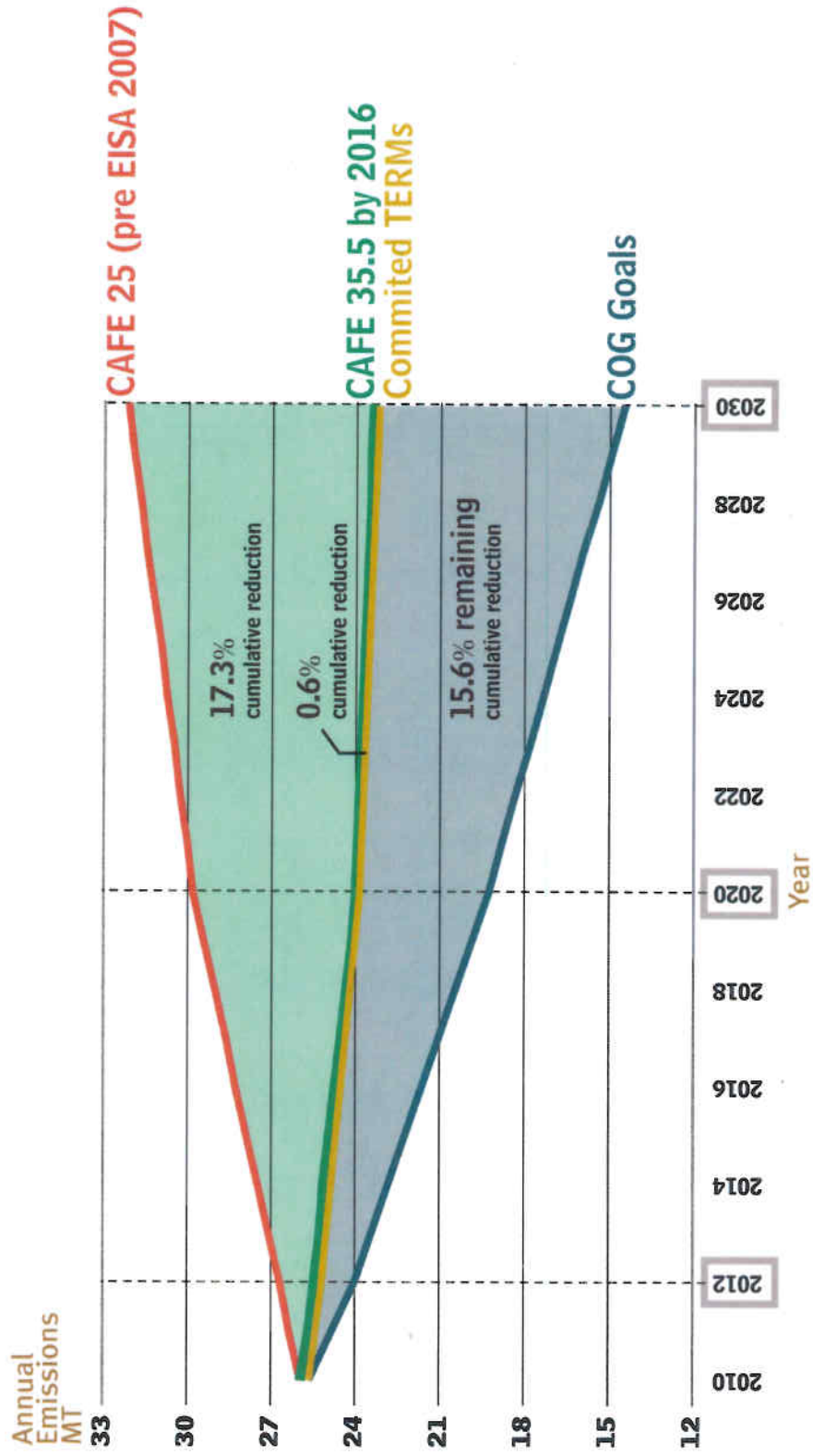
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No Further Federal/Local Action

purpose

baseline

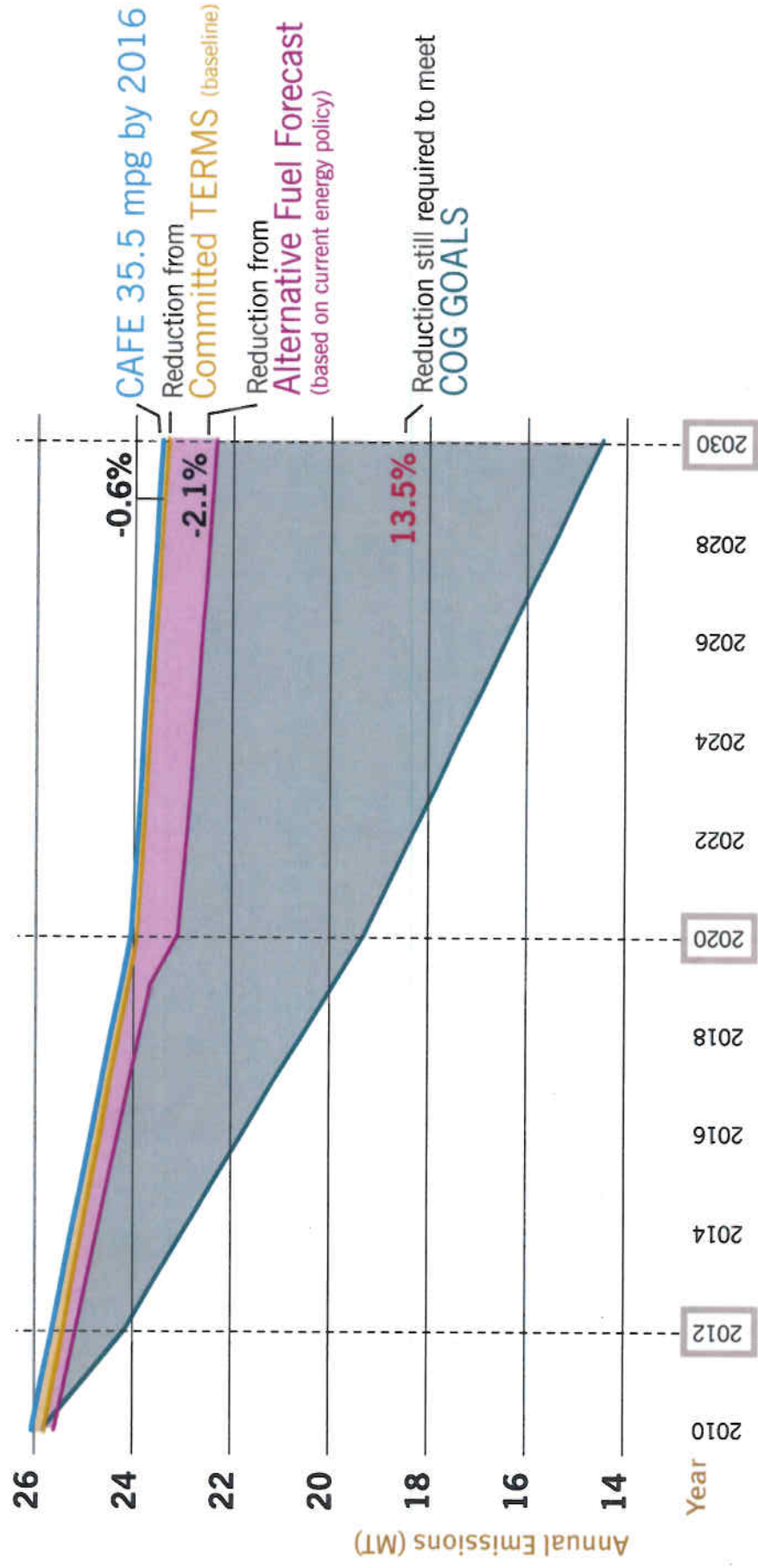
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We still have a long way to go based on current action.



Higher Federal Role

purpose

baseline

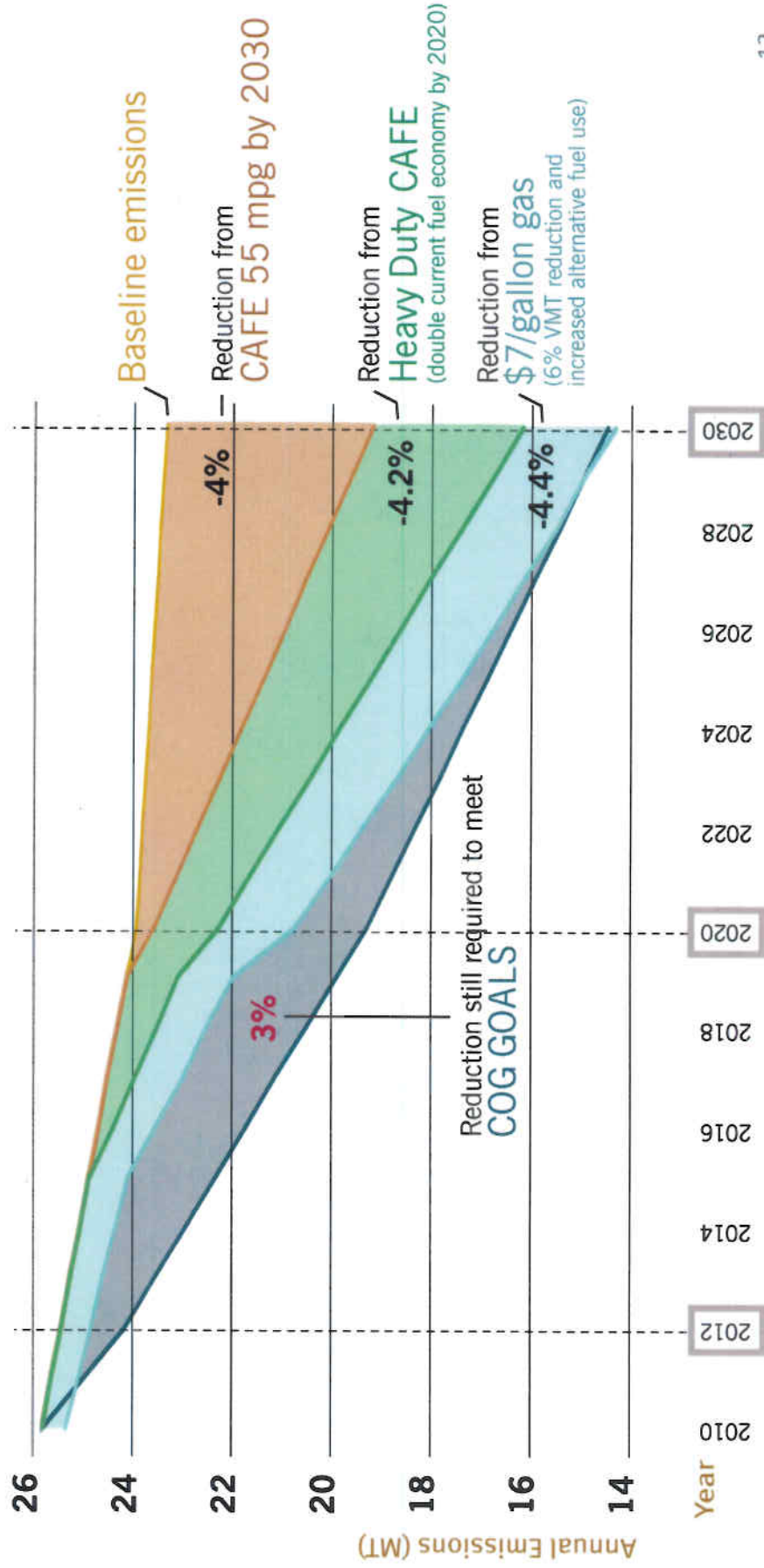
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Significant measures in all 3 categories almost get us there



Shorter-term Strategies

purpose

baseline

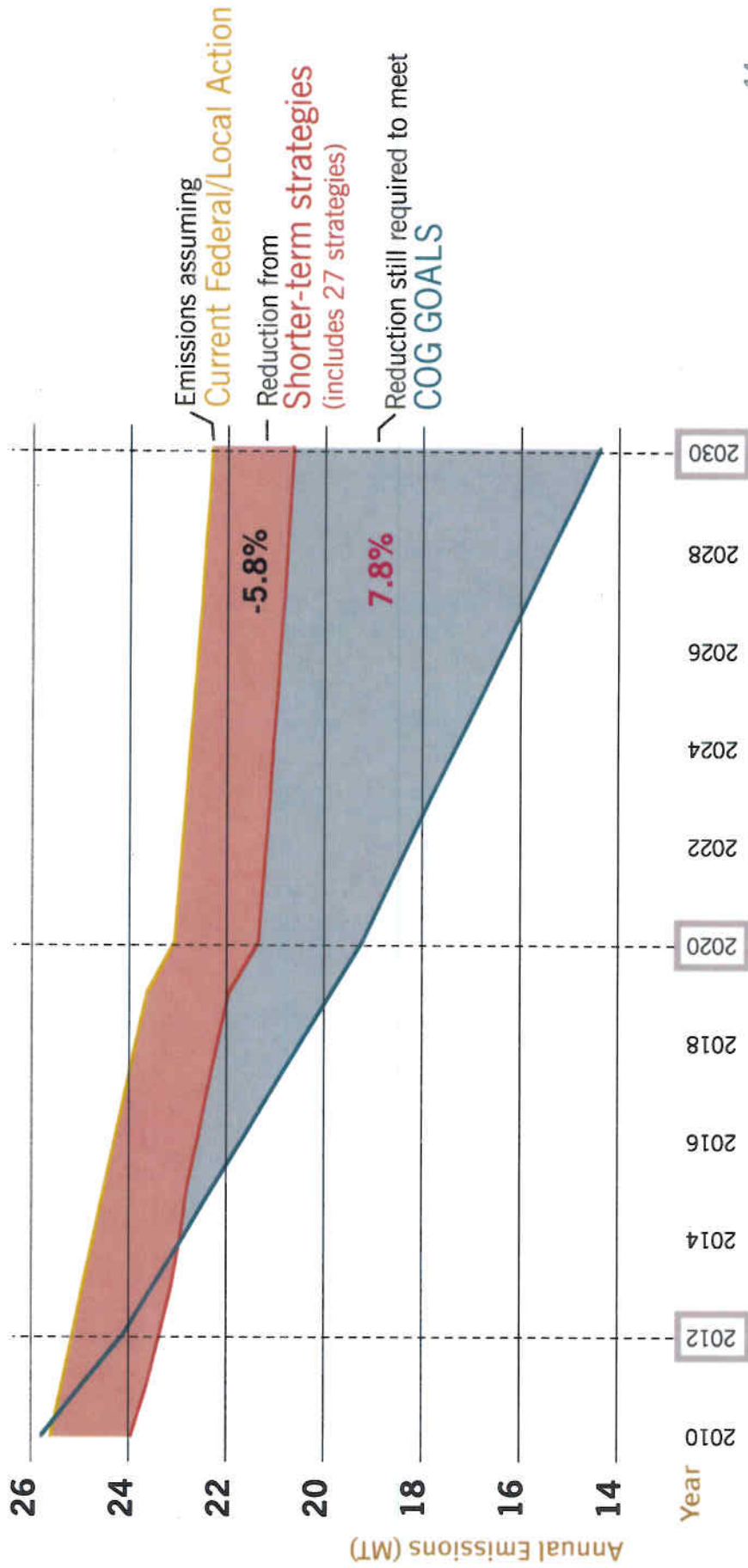
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Many strategies can be done soon, meeting the 2012 goal



Longer-term Strategies

purpose

baseline

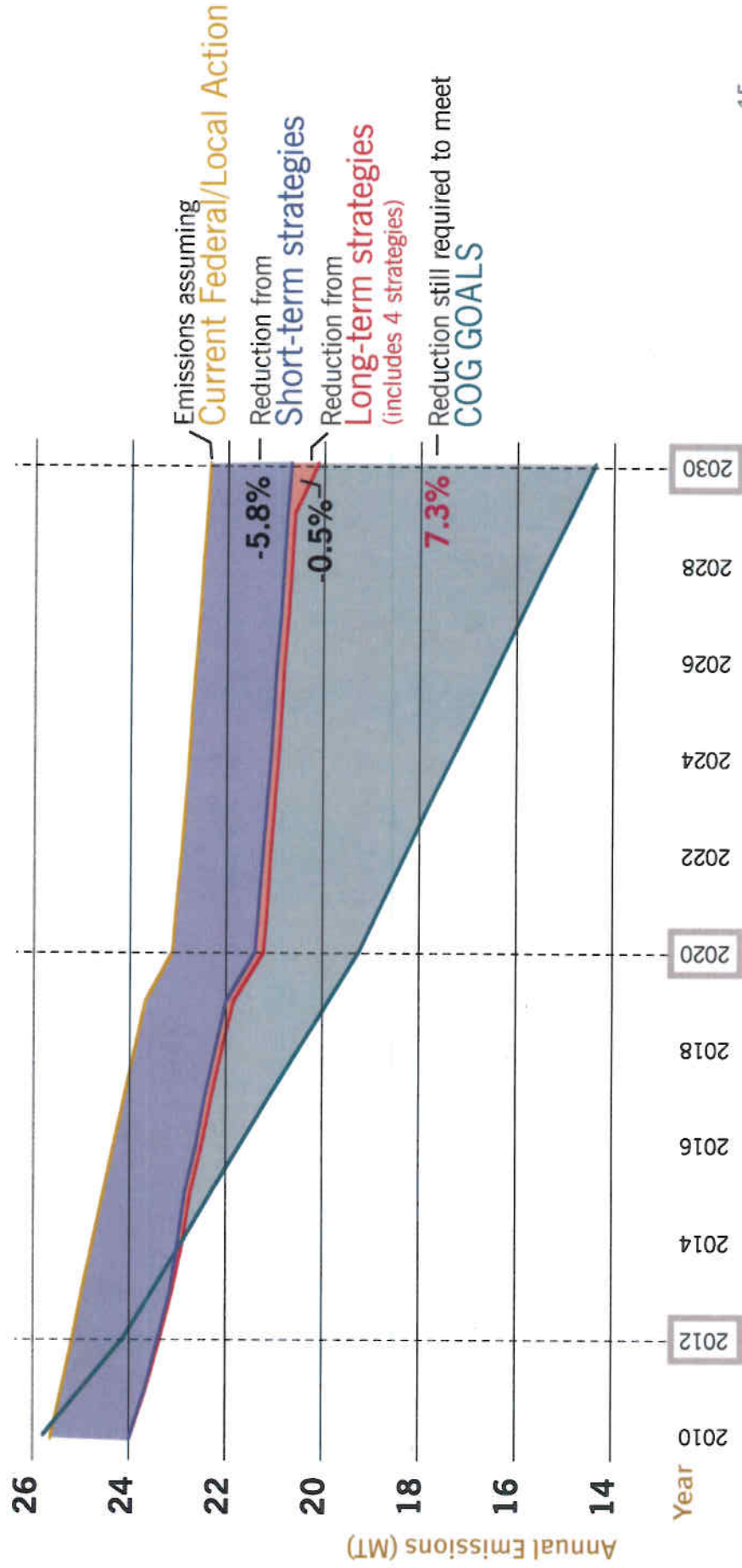
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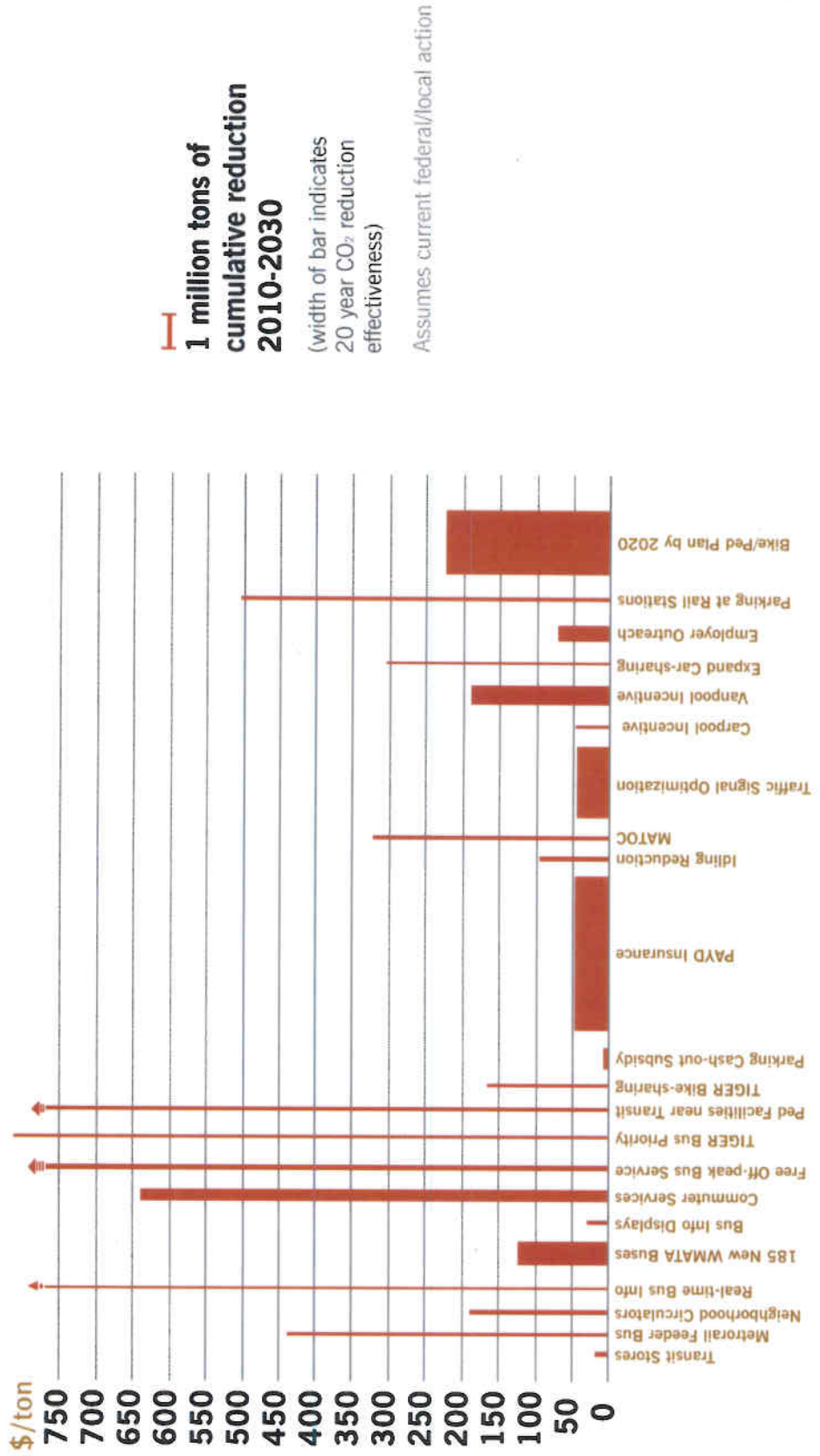
A longer study timeframe for long-term impacts would help.



Cost-Effectiveness



Several strategies are both cost-effective and highly effective.



Next Step: Cost Benefit Analysis

purpose

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EXAMPLE

Bike-sharing

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



Costs

Capital	\$16,000,000
Operating	\$75,000,000
Increased Accidents	\$145,000,000

\$231,000,000

Benefits

User Cost Savings	\$197,000,000
Travel Time Savings	\$378,000,000
Reduced Accidents (from reduced VMT)	\$1,300,000
Public Health	\$2,000,000
Increased Access	\$38,000,000
Congestion Reduction	\$3,500,000
Environmental Benefits	\$5,700,000

\$625,500,000

CO₂

66,000 tons

All numbers over 20 year horizon from 2010-2030

What Would it Take?

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- 1** Strategies analyzed to date do not achieve regional goals—**additional strategies can and should be analyzed.**
- 2** Goals are difficult to meet--and will require reductions in **all 3 categories**
- 3** While major reductions can come from federal energy policies, **local governments can make significant reductions quickly**
- 4** Some strategies may not have major GHG reduction potential, but have **multiple benefits worth exploring through benefit-cost analysis**

Potential Local Actions to do Now



- 1** Incentivize **eco-driving** [free air at service stations, public and private driver training, public messaging, eco-driving checklist mailings]
- 2** Expanded **telecommuting** and compressed work week
- 3** Incentivize increased **carpooling** and vanpooling
- 4** Increase **bicycle** mode share [bike-sharing, bike racks, stations, and lanes]
- 5** Increase **transit** use [bus priority treatments, technology, lowering fares, parking cash-out subsidies]
- 6** Promote **compact, mixed use development** around transit
- 7** **Incident management** and regional coordination
- 8** **Signal** optimization
- 9** Incentivize purchase of **fuel efficient** cars