

# Climate Action Planning in Seattle

Evaluating land use and transportation strategies for achieving carbon neutrality

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# Climate **Action** Planning in Seattle

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- Introduction
- Climate Goals and Progress in Seattle
- Climate Action Plan Approach
- Evaluation Criteria
- Guiding Considerations
- Transportation Strategies Evaluated
- Land Use Strategies Evaluated
- Analysis of VMT and GHG Emissions Reduction
- Analysis of Combined Impact
- Results & Recommendations
- Steps to Implementation



- *Projects*
  - **Portland** Bureau of Transportation GhGE Analysis
  - **San Francisco** BART Climate Action Planning
  - **Seattle** Climate Action Plan, Transport & Land Use Strategies
- *Planning Tools*
  - **URBEMIS** Model, for context-specific eval. of dev. impacts
  - **Trip Reduction Impact Analysis (TRIA)** Tool
- *Approach*
  - Rigorous **technical evaluation**, grounded in the literature
  - Focus on **cost-effectiveness** and **feasibility** of alternatives
  - Connect climate protection/ GhGE impact analysis to other **community goals and objectives**

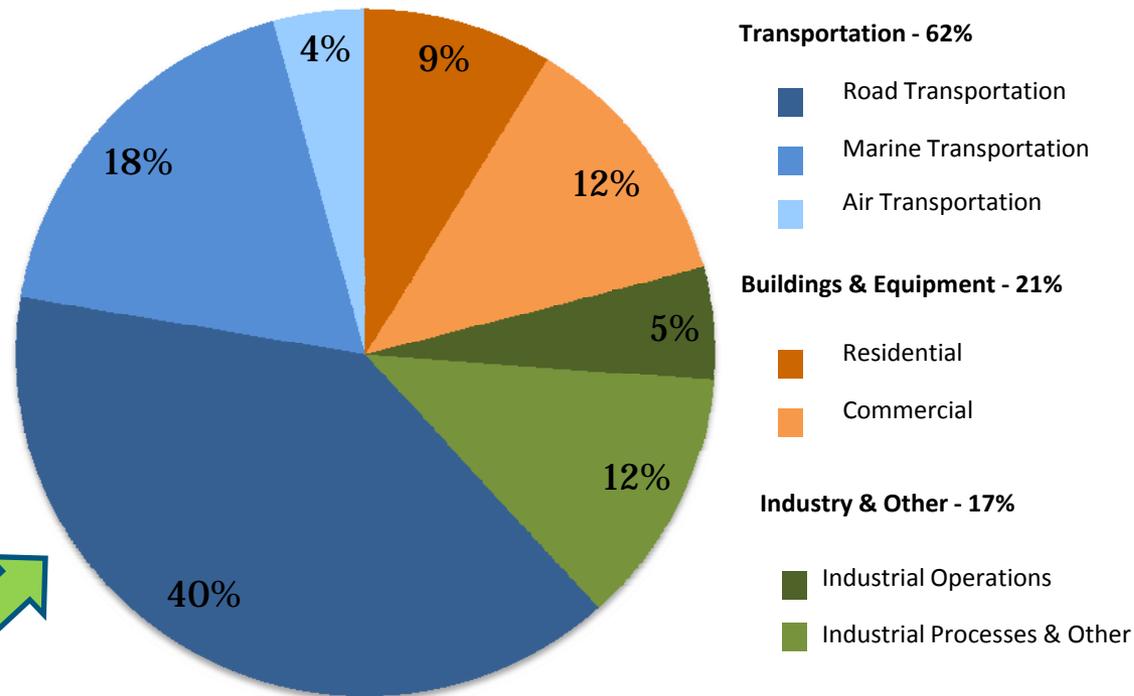
# Climate Action Planning in Seattle – Goals & Progress

- 2005 – Seattle committed to meet Kyoto targets
- 2008 – City *achieved* 2012 goal of reducing GhG emissions to 7% below 1990-levels



# Seattle's Carbon Neutral Challenge

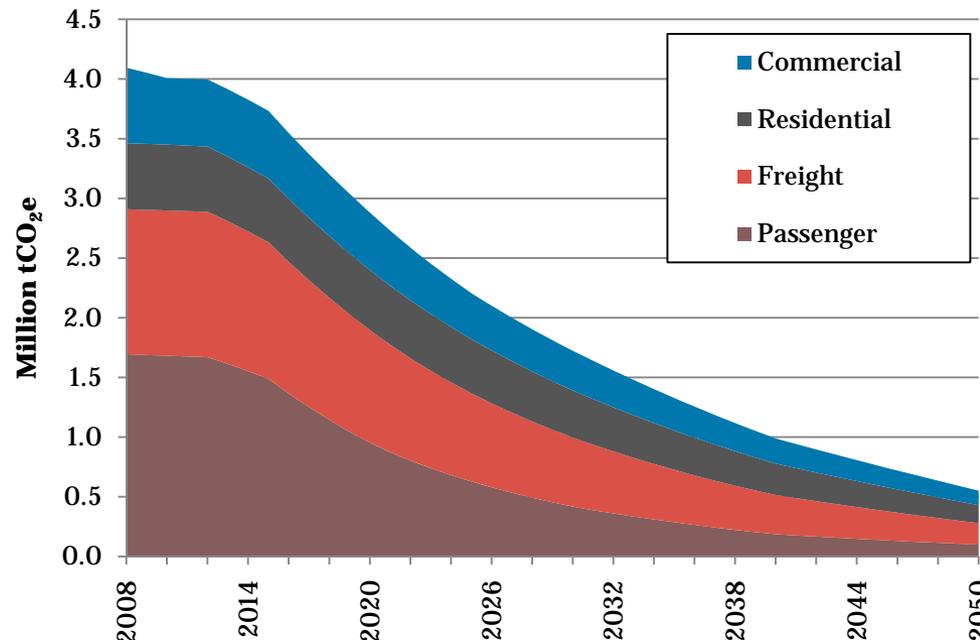
- Target: Net zero emissions by 2050
  - Road Transportation represents 40% of GHG emissions in Seattle and 29% of those most directly within City's sphere of influence



Transportation  
& land use strategies aim  
to reduce...

# Seattle's Carbon Neutral Analysis

- Technical feasibility assessment
- Proof of concept
- Action planning adds funding and political feasibility considerations



# City of Seattle – Preliminary VMT & GhGE Targets

Sector	2020 Targets (% reduction compared to 2008)	2030 Targets (% reduction compared to 2008)
<b>Transportation</b>  Passenger	- 14% reduction in total vehicle miles traveled (VMT) - 35% reduction in GHG emissions per mile of Seattle vehicles (all trip purposes)	- 20% reduction in total VMT  - 75% reduction in GHG emissions per mile of Seattle vehicles (all trip purposes)
Freight	- Maximum 7% increase in VMT - 25% reduction in GHG emissions per mile of Seattle vehicles	- Maximum 15% increase in VMT - 50% reduction in GHG emissions per mile of Seattle vehicles

# Seattle CAP– Land Use & Transporta

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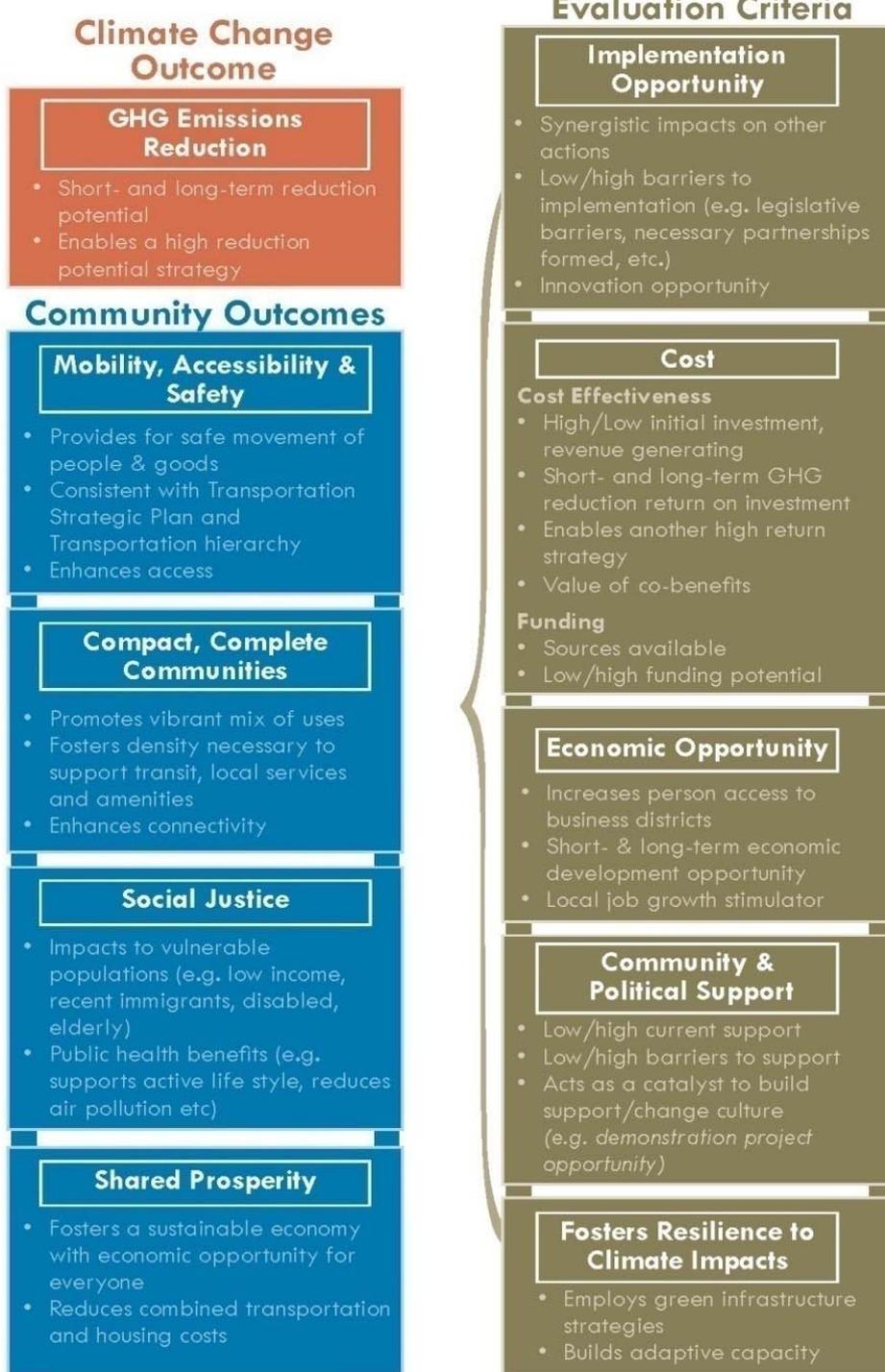


1. Form Technical Advisory Groups
2. Assess current City, regional and state policies, plans & programs
3. Identify full range of strategies
4. Screen strategies
5. Evaluate stand-alone & combined GhGE impacts of 'top tier' strategies
6. Identify funding opportunities and co-benefits
7. Recommend strategies to Green Ribbon Commission
8. Proceed: Update plans & procedures

# Evaluation Framework

**Guidance** for (1) evaluating transportation and land use strategies, and (2) prioritizing projects, policies & programs

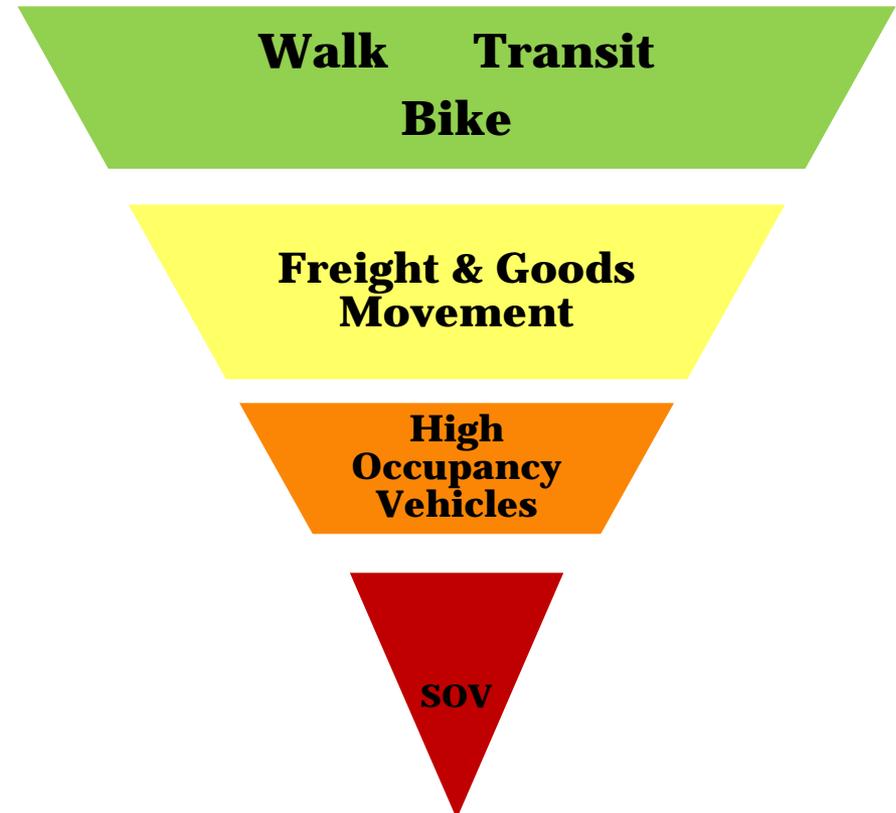
**Screening** for technical feasibility, funding opportunity, cost-effectiveness, catalytic potential & political opportunity



# Seattle CAP - Transportation Strategies Evaluated

1. Expand pedestrian, bicycle & transit facilities and services
2. Implement TDM, marketing & education programs
3. Adopt congestion pricing & other motor vehicle user fees
4. Support transition to more efficient fuels & vehicle technologies
5. Expand market-based parking pricing & management

## ■ Transportation Hierarchy



# Seattle CAP – Land Use Strategies Evaluated

1. Adopt “Transit Communities Policy” to allow/support transit supportive development in walking distance of frequent transit
2. Create a Transit Communities Development Authority
3. Update zoning (flexible, performance-based) to foster/allow complete transit communities
4. Provide incentives & outreach to support climate-friendly districts
5. Expand parking pricing/management (eliminate off-street minimums in wider area)



# Seattle CAP – Preliminary Evaluation

Transportation Sector Strategies	GHG Emissions Reduction Potential[1]	Cost Effectiveness[2]	Local Control[3]	Estimated Reduction in Metric Tons of GHGe/Year (by	Estimated Cost/Year (2011 dollars)	Estimate Cost Per Ton of GHGe Reduced
<b>Invest in Transit, Bicycle, and Pedestrian Facilities</b>						
Implement HCT in 5 Priority Transit Corridors in Transit Master Plan (TMP)	Medium	Low	Medium	8,200	\$76,000,000	\$9,000
Implement Bus Priority Treatments in 12 Priority Corridors per TMP	Medium	Low	High	7,670	TBD	TBD
Expanded Electrification of In-City Transit Routes (Expand Beyond Trolley Routes in TMP)	TBD	TBD	High	TBD	TBD	TBD
Increase Density and Priority of Bicycle Facilities (Expand Bike Facilities Beyond BMP)	High	Low	High	50,000	\$42,500,000	\$850
Accelerate Implementation of Ped. Master Plan (PMP); Expand Ped. Facilities Beyond PMP	Medium	Low	High	8,550	\$66,075,000	\$7,728.07
<b>Develop Dense, Transit-oriented Neighborhoods</b>						
Develop Dense, Transit-oriented N'hoods (Encourage Walking, Cycling, Use of Transit)	High	High	High	103,000,000	\$76,569,000	\$1
<b>Pricing Vehicle Travel</b>						
Promote Transition to Pay-As-You-Drive Auto Insurance	High	High	Low	22,000	TBD	TBD
Variable Tolling: All Freeways	High	High	Low	82,650	(\$397,965,000)	(\$5,000)
Variable Tolling: All Freeways + Major Arterials	High	High	Low	142,500	(\$1,277,646,000)	(\$9,000)

# Seattle CAP – Key Assumptions of Land Use Analysis

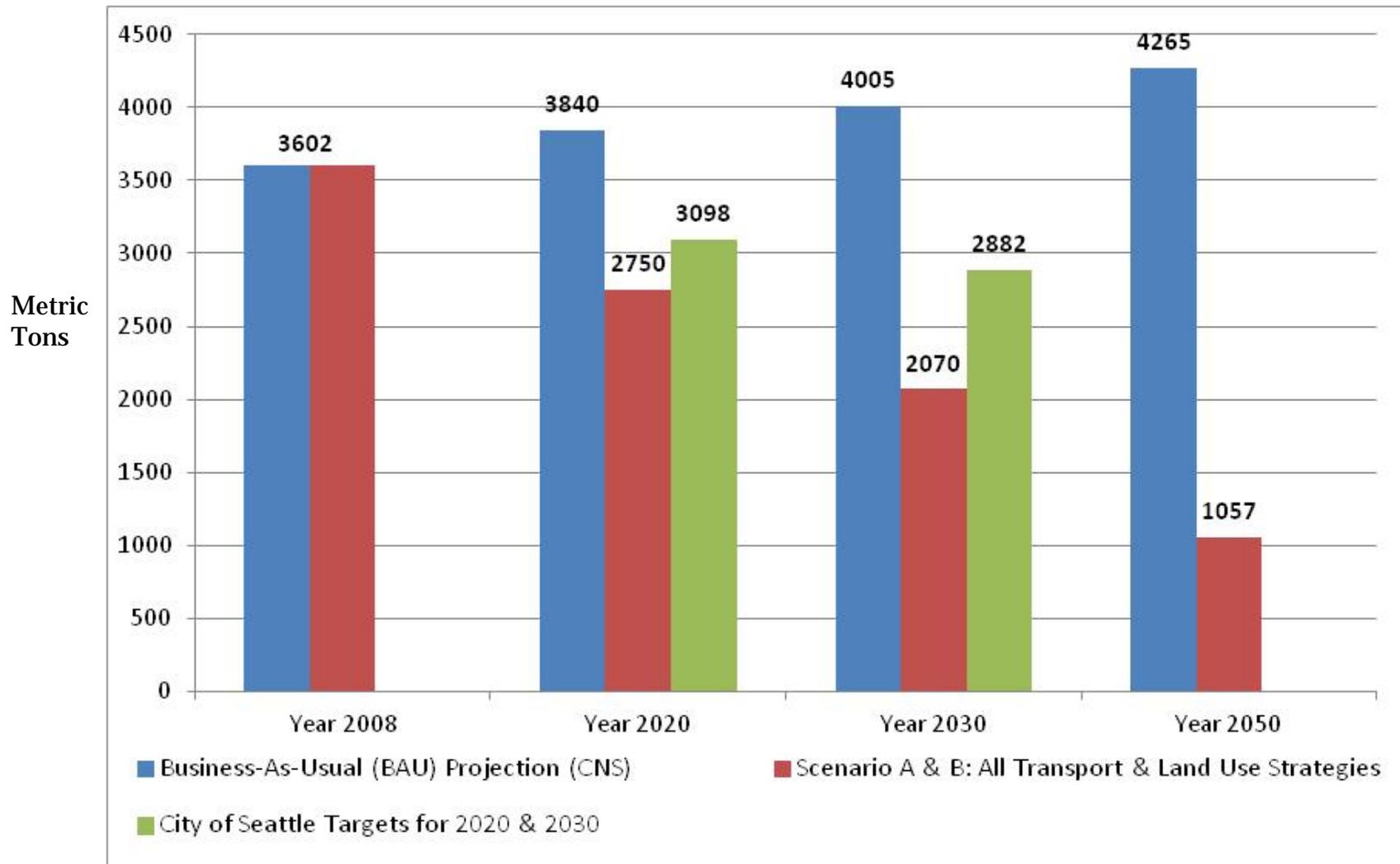
Land Use Assumptions	2020	2030	2050
Estimated Market Share of "Compact Development" in Seattle	95.0%	100.0%	100.0%
Reduction in VMT/Capita with "Compact Development"	30.0%	30.0%	30.0%
Share of Built Environment Constructed Since 2008	24.0%	44.0%	84.0%
Estimated Percent reduction in VMT/Capita w/ Recommended LU Strategies	6.8%	13.2%	25.2%



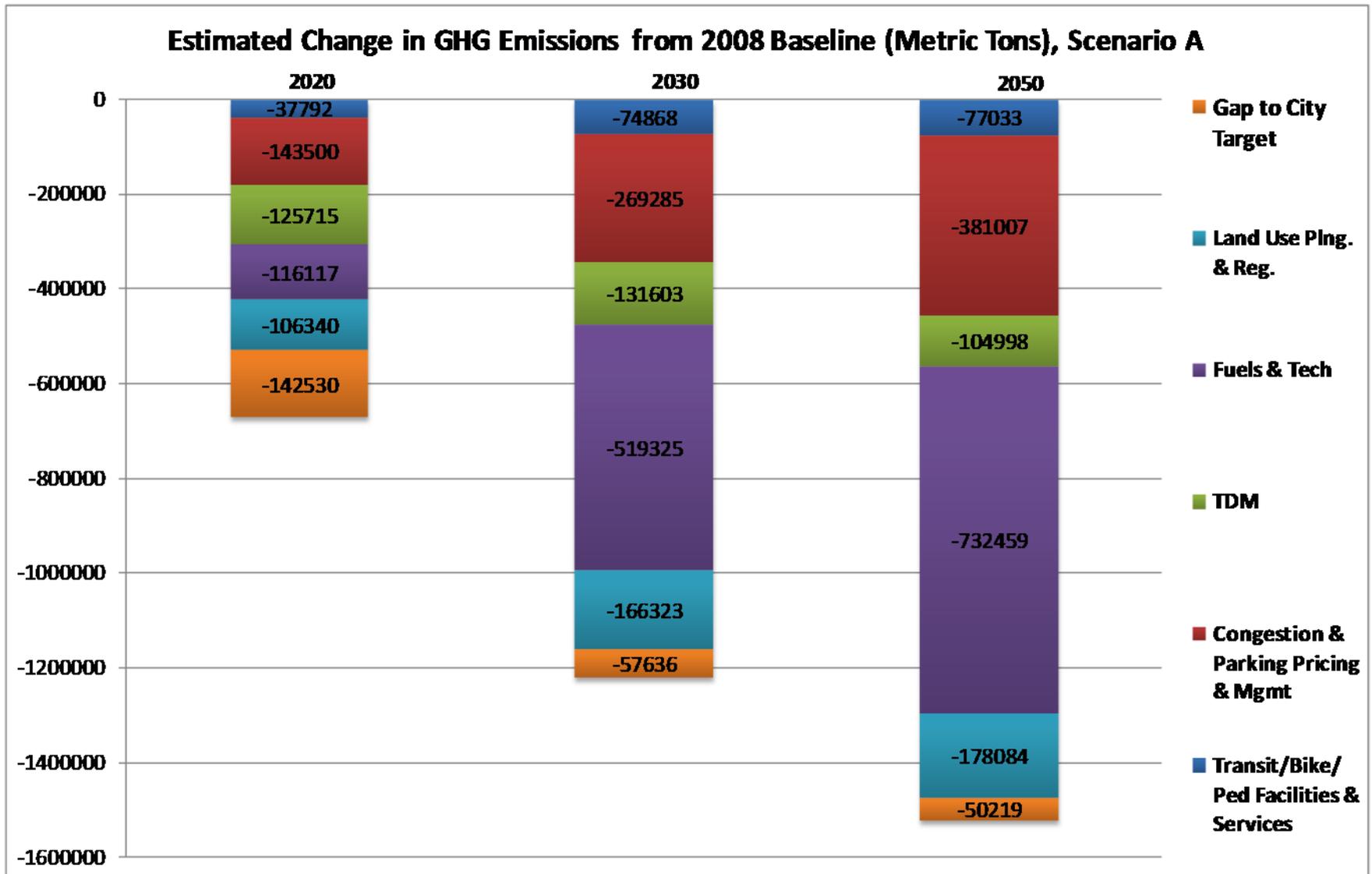
Seattle, WA

*Photo by Dan Bertolet, Via Architecture*

# Seattle GhGE Reduction Analysis



# Seattle Climate Action Plan – Projected Results of Recommended Land Use & Transportation Strategies



# Seattle CAP, Co-Benefits

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- Better Access
- Affordable housing choices
- Transportation choices
- Economic development
- Shared prosperity
- Social justice
- Public health
- Air & Water quality



# Seattle Climate Action Plan – Next Steps

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## Next steps:

1. Green Ribbon Comm. Recommendations
2. Council adoption
3. Policy guidance for updates to:
  - Comp Plan
  - Bike Master Plan
  - Ped Master Plan
  - Transit Master
  - New Freight Plan
- Project, program & policy planning & development



# Seattle Climate Action Plan – Key Findings & Lessons

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- Focus on sectors/strategies within City's sphere of influence
- Screen for technical/political feasibility, funding opportunity & cost-effectiveness
- Apply available data/projections to localize analysis based on academic/professional literature
- Identify interdependence, synergies and overlaps between strategies
- Evaluate & highlight impacts and **co-benefits**





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