Overview

- Transportation
  - Characteristics
  - Reduction strategies
  - ‘Action’ & ‘Enabling’ Measures

- Municipal Operations
  - Characteristics
  - Reduction strategies
  - ‘Action’ & ‘Enabling’ Measures
  - Green buildings
Transportation Emissions

Passenger cars and heavy-duty trucks:

- 1990 Baseline Emissions: 138 MMTCO2E
- 2004 Baseline Emissions: 172 MMTCO2E
- 2020 Preliminary Forecasted Emissions: 216 MMTCO2E

*ARB GHG Inventory, 2004 Baseline Data
On-Road Transportation Sources

Passenger Vehicles
136 MMTCO2E

Heavy Duty Vehicles
36 MMTCO2E

ARB GHG Inventory, 2004 Baseline Data
Transportation GHG

\[ \text{Transp. GHG} = F \left( \text{Vehicle Technology} \right), \left( \frac{\text{GHG}}{\text{Mile}} \right), \left( \frac{\text{GHG}}{\text{Gallon}} \right), \left( \text{VMT} \right) \]

- AB 1493 Regulation
- Low-Carbon Fuel Standard
- Transp. & Land Use Strategies
Vehicle Miles Traveled (VMT): Trends

- Billions in transportation investment
- Existing land use patterns and driving behavior
- Vehicle miles traveled per capita projected to continue growing
VMT Reduction: It Matters for Climate Change

Emissions Impact of Reducing a Vehicle Trip

- **CO2**
- **Smog-forming ROG+NOx**

Relative change from 1990

1990 2000 2010 2020

Source: EMFAC
Drivers of VMT Reduction

Integrated Strategies

Alternate Mode Infrastructure
- Transit
- Carpool/Vanpool
- Bike
- Walk

Land Use
- Density
- Diversity
- Design
- Destinations

Pricing Signals
- Cost per mile
- Cost per gallon
- Parking costs

Transportation Conservation
- Education
- Incentives to drive less
- TDM Programs
<table>
<thead>
<tr>
<th>Community type</th>
<th>Household VMT/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-oriented Suburban</td>
<td>28,000 +</td>
</tr>
<tr>
<td>Smarter Growth Suburban</td>
<td>17,000 – 23,000</td>
</tr>
<tr>
<td>Urban</td>
<td>10,000 – 16,000</td>
</tr>
</tbody>
</table>
Population: By 2020 (+13%). By 2040 (+39%).

Land use strategies mostly impact new growth.
## Regional Impacts Modeled

### Sacramento Region -- 2050

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Base Case 2050</th>
<th>Adopted Plan 2050</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMT per household per day (excludes commercial vehicles)</td>
<td>47.2</td>
<td>34.9</td>
<td>12.3 fewer miles per household per day, a 25% reduction</td>
</tr>
<tr>
<td>People Living in Areas with Good Mix of Jobs and Housing</td>
<td>26%</td>
<td>53%</td>
<td>27% increase</td>
</tr>
<tr>
<td>Growth Near Transit</td>
<td>5% New Jobs</td>
<td>41% New Jobs</td>
<td>36% more new jobs and homes near transit</td>
</tr>
<tr>
<td></td>
<td>2% New Housing</td>
<td>38% New Housing</td>
<td></td>
</tr>
<tr>
<td>Additional Urbanized Land</td>
<td>666 square miles</td>
<td>304 square miles</td>
<td>362 fewer square miles urbanized</td>
</tr>
<tr>
<td>Daily Vehicle Minutes of Travel (per household/day)</td>
<td>81 minutes</td>
<td>67 minutes</td>
<td>14 fewer minutes per day</td>
</tr>
<tr>
<td>Per Capita CO2 and PM Emissions from vehicles</td>
<td>Set at 100%</td>
<td>85% of Base Case</td>
<td>15% less than the Base Case per capita</td>
</tr>
</tbody>
</table>

Source: SACOG, Regional Blueprint Program, 2005
VMT Reduction and Efficient VMT

• Per capita VMT Reduction
  – A good surrogate for reducing GHGs
  – Effective performance measure for planning

• Efficient VMT
  – Speed affects GHG emissions
  – Reduce extreme congestion through intelligent transportation systems, other approaches
  – Research emphasizes need to limit adding lane miles
Existing Approaches

• Consensus: Fundamental Change Needed

• Current actions:
  – Blueprint Planning Process
  – Integrated Land Use and Transportation Planning
  – Attorney General’s CEQA Actions
  – OPR and CEQA Guidelines (SB 97)
  – Proposed Legislation (SB 375)
  – General Plans Incorporating Climate Change
What We’ve Heard

- California Transportation Commission (CTC) Regional Transportation Planning (RTP) Guidelines Work Group
- Metropolitan Planning Organizations (MPOs) / Regional Transportation Planning Agencies (RTPAs)
• Regional GHG reduction strategy
• VMT per capita and measurable performance measures
  – Transportation investment
  – Land use strategies
  – Pricing signals
• Move toward better modeling
• Ready to help
• Good planning vital
  – Bay Area Smart Growth
  – Sacramento Region Blueprint
  – San Diego Regional Planning
  – Southern California Compass (2% Strategy)
  – SJV Valley Blueprint Planning Process
• Land use (locals), Pricing (legislature)
• Mitigating Energy Needs with Smarter Growth -- Recommendations
  – Statewide growth plan
  – GHG levels to guide local planning
  – Local plans to reduce GHGs
  – State technical and financial assistance
  – Legislation recommendations
Land Use Subgroup of CAT (LUSCAT)

- State interagency team:
  - CEC
  - HCD
  - ARB
  - Cal/EPA
  - IWMB
  - PUC
  - Caltrans
  - OPR
  - Water Board

- Coordinate the State’s Climate Change land use strategies

  - 2008 CAT Report
  - Stakeholder Input
    - Advisory Group
  - Tool and Resources
LUSCAT Stakeholders’ Initial Input

- Housing Element and Housing Finance
- CEQA and General Plan Guideline Update
- State Agency Climate Change Guidelines
- Energy Aware Planning Guide Update
- Regional Transportation Plan Guideline Update
- Regional Blueprint Planning
- GHG criteria for Grant Programs
Potential Emission Reduction Measures

**Action Measures**
- Enhance and expand transit
- Infill development; TOD; Smart growth

**Enabling Policies**
- Align federal/state/local funding mechanisms
- CEQA relief; incentives for Blueprint and Blueprint implementation
Perspective on Approaches

Incentives

Voluntary Actions
- Tax breaks

CEQA relief
- Transit, bike, walk infrastructure

Requirements

Urban limit lines
CEQA thresholds

Mandatory regional and local targets
Municipal Operations
Municipal Operations GHG Sources

- Government Building and Facility Energy Use
- Government Fleet Vehicles
- Water Treatment and Landfill Operations
- Urban Forestry
- Port/Airport Operations
- Other Operations
GHG Emission Reduction Opportunities

- Energy Conservation and Efficiency
- Waste Reduction
- Clean Energy Use
- Storing and Offsetting Carbon Emissions
- Promoting Community and Individual Action
Current Activities

- ICLEI – Local Governments for Sustainability
- US Conference of Mayors – Climate Protection Agreement
- Institute for Local Government - California Climate Action Network
- LUSCAT
- CCAR Local Government Protocol
Current Emission Reduction Measures for Municipal Operations

**Action Measures**

- Increase agency and commercial buildings built to LEED Silver Certified standards
- Decrease waste from agency operations
- Community education

**Enabling Policies & Tools**

- Green Building ordinance
- Funding incentives
- Permitting relief
- Design assistance
- Incentivizing recycling facilities
- Waste audit and reduction plans
- Climate-friendly purchasing
- School curriculum
- Energy efficiency consultations
- Local Green Award program
Potential Scoping Plan Measures

**Early Action Measure:** Toolkit for Local Government and Businesses (measurement tools, best practices, verification)

**Scoping Plan:**
- Comprehensive Climate Action Plans
- Green Building Standards
- Cool Communities
- Climate Neutral Policies
- Climate-friendly operations
- Climate-friendly transportation
- Community education and outreach
Climate Action Plans

• Components of a climate action plan
  – Conduct a baseline emissions inventory and forecast
  – Adopt an emissions reduction target for the forecast year
  – Develop a local action plan
  – Implement policies and measures
  – Monitor and verify emission reductions
Green Buildings

- Leadership in Energy and Environmental Design (LEED) Green Building Rating System provides standards for environmentally sustainable construction
- Cost-effective
  - No significant difference in average construction cost
  - Reduces operating costs (30-40% in energy savings)

Cal/EPA Headquarters
Sacramento, CA
Energy savings add up to
~ $1.5 million a year
(LEED EB platinum certified)

West Valley Branch
Library, San Jose
### Potential Emissions Reduction Measures for Municipal Operations

<table>
<thead>
<tr>
<th>Action Measures</th>
<th>Enabling Policies and Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase Climate Action Plans (CAPs) developed by local agencies statewide</td>
<td>• Target Development</td>
</tr>
<tr>
<td></td>
<td>• Funding Mechanism</td>
</tr>
<tr>
<td></td>
<td>• CCAR Protocol</td>
</tr>
<tr>
<td>Increase <em>implementation</em> of CAP projects, programs, and policies statewide</td>
<td>• Community Footprint Calculator</td>
</tr>
<tr>
<td></td>
<td>• Funding Mechanism</td>
</tr>
<tr>
<td></td>
<td>• CCAR Protocol</td>
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<tr>
<td></td>
<td>• CEQA Relief</td>
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<tr>
<td></td>
<td>• Community Education Initiative</td>
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Perspective on Approaches

Incentives

Voluntary Actions
Tax breaks
Funds for CAPs
Urban limit lines
CEQA thresholds

Requirements

CEQA relief
Transit, bike, walk infrastructure
CAPs for Funds
Mandatory regional and local targets
Next Steps

• Workshops in February 2008

• Join local action listserv:
lclaction@listserv.arb.ca.gov
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