Sustainability 3: Green Transportation and Smart Growth

Thursday, January 15, 2009

Start Time:
8:00 am PST  10:00 am CST
9:00 am MST  11:00 am EST

Upcoming Web-Based Training Programs

February 26
Sustainability 4: Low Impact Development for Public Works

Visit www.apwa.net/Education for more Education Opportunities.

Sustainability 3: Green Transportation and Smart Growth

Today’s Moderator…
Doug Brown
Director of Public Works
City of Overland Park, KS

Polling Question #1
How many people are listening at your site today?

a. 1-3
b. 4-7
c. 8-20 all one agency
d. 8-20 multiple agencies
e. 21+

Today’s Speakers…
Jeff Weir
Air Pollution Specialist
Air Resources Board
Sacramento, CA

Matt Carpenter
Manager of Transportation Planning
Sacramento Area Council of Governments
Sacramento, CA
Today’s Speakers…

Coleen Clementson
Principal
San Diego Association of Governments
San Diego, CA

Ron Norris
Public Works Director
City of Lenexa, Ks

The Transportation, Smart Growth, and Climate Change Connection

Projected Global Warming Impacts


Magnitude of the Challenge: California’s GHG Goals

California Climate Change (AB 32) Scoping Plan

- Key elements:
  - State Government
  - Transportation
  - Energy
  - Industrial sources
  - High “global warming potential” GHG measures
  - Recycling and waste reduction
  - Agriculture and forests
  - Water efficiency
  - Local Government Actions
  - Regional Passenger Vehicle GHG Targets
Local Government Actions

- Community energy
- Community waste and recycling
- Community water and wastewater systems
- Community transportation
- Community design

All Emissions are “Local”

- Meeting AB 32 goals means emissions in every community being reduced an average of 15% from today’s levels by 2020.
- Broad partnership needed to reach goal
  - State, regional, local, and individual effort

Working Together to Reduce GHG Emissions

<table>
<thead>
<tr>
<th>State</th>
<th>Regional/Local</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>Reduce technology regulations</td>
<td>Reduce vehicle miles</td>
</tr>
<tr>
<td>Energy</td>
<td>Building &amp; appliance standards</td>
<td>Influence carbon content of municipal utility</td>
</tr>
<tr>
<td>Waste</td>
<td>Landfill methane control</td>
<td>Collection system improvements</td>
</tr>
<tr>
<td>Water</td>
<td>Developinky plans to reduce per capita water use 25%</td>
<td>Reduce municipal operation use</td>
</tr>
</tbody>
</table>

Local Climate Action Plans

- Local Climate Action Plans
  - Keep track of emissions
  - Take actions to reduce emissions
- Develop tools and support system:
  - Local Government Protocol
    - ICLEI – Local Governments for Sustainability
    - CA Climate Action Registry
  - Community-Wide Protocol
    - In development stage

Support: ICLEI

Support: California Climate Action Network
Transportation GHG Emissions
California: 2020

- Electric Power: 23%
- Industrial: 18%
- Agriculture and Forestry: 6%
- Others: 15%
- Transportation: 36%

*Preliminary ARB GHG Projections for 2020; Other Transportation: trains, planes, ships

On-Road Transportation Sources
California: 2020

- Passenger Vehicles: ~ 160 MMTCO2E
- Heavy-Duty Vehicles: ~ 50 MMTCO2E

*Preliminary ARB GHG Projections for 2020

Transportation GHG

\[ \text{Transp. GHG} = \frac{\text{GHG Mile}}{\text{GHG Gallon}} \times \frac{\text{VMT}}{\text{Transp. & Land Use Strategies}} \]

- Vehicle Technology
- Fuels
- Vehicle Use
  - Clear Car Regulations
  - Low-Carbon Fuel Standard
  - Transp. & Land Use Strategies

VMT Reduction: It Matters for Climate Change

Source: California EMFAC2007

Drivers of VMT Reduction

- Integrated Strategies
  - Alternate Mode Infrastructure
  - Transit
  - Carpool/Vanpool
  - Bike
  - Walk
- Land Use
  - Density
  - Diversity
  - Design
  - Destinations
- Transportation Conservation
  - Education
  - Incentives to drive less
  - TDM Programs
- Pricing Signals
  - Cost per mile
  - Cost per gallon
  - Parking costs
  - Congestion relief costs

Long-Range Benefits

Source: Median VMT impact values from over 20 modeling studies reviewed by UC Berkeley's Transportation Sustainability Research Center
SB 375: Landmark California Legislation

“In order to reach California’s greenhouse gas goals we must rethink how we design our communities”

(From Governor Schwarzenegger’s Fact Sheet on 2008 Senate Bill 375)

SB 375: Sustainable Planning

- Coordinates California transportation, land use, housing and greenhouse gas planning
- Requires ARB to establish regional passenger vehicle greenhouse gas reduction targets for 2020 and 2035
- Requires regional planning efforts to identify ways to meet the targets
- Gives builders incentives to provide sustainable developments that help plans meet the targets

Impacts of Growing Smarter
Sacramento Region -- 2050

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Base Case 2050</th>
<th>Adjusted Plan 2050</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMT per household per day</td>
<td>47.2</td>
<td>34.9</td>
<td>12.3 fewer miles per household per day, a 26% 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, 2% New Housing</td>
<td>8% New Jobs, 3% New Housing</td>
<td>150 fewer new jobs and homes near transit</td>
</tr>
<tr>
<td>Additional Urbanized Land</td>
<td>660 square miles</td>
<td>32 square miles</td>
<td>528 fewer square miles urbanized</td>
</tr>
<tr>
<td>Daily Vehicle Minutes of Travel (per household)</td>
<td>81 minutes</td>
<td>87 minutes</td>
<td>6 fewer minutes per day</td>
</tr>
<tr>
<td>Per Capita CO2 and PM Emissions from Vehicles</td>
<td>Set at 110%</td>
<td>85% of Base Case</td>
<td>25% less than the Base Case per capita</td>
</tr>
</tbody>
</table>

Source: Sacramento Area Council of Governments, Regional Blueprint Program, 2005

For More Information

- ARB Climate Change Web Site
  [www.arb.ca.gov/cc/cc.htm](http://www.arb.ca.gov/cc/cc.htm)
- Local Government Protocol
- ICLEA - USA
- Institute for Local Government

Regional Smart Growth & Transportation Planning in Sacramento

Matt Carpenter
Manager of Transportation Planning
Sacramento Area Council of Governments
Sacramento, CA
Sacramento Area Council of Governments

- 6 counties
- 22 cities
- 2.4 million people

Information-driven Planning

- Base Case Scenario: (MEPLAN - Land Economics)
- Alternative Scenarios: (PLACE’S - Relative impacts)
- Regional Transportation: (Activity-Based Travel Model)

Extensive Citizen Input: Workshops & Public Opinion Research

Elected Officials Workshops

Key Regional Planning Efforts

- Blueprint growth strategy, 2004
- New Metropolitan Transportation Plan (MTP2035), 2008
- Rural-Urban Connections Strategy, launched in 2008

Blueprint: How to Best Manage Growth?

- People: 1.7 Million
- Jobs: 1 Million
- Dwellings: 840,000

AMOUNT OF GROWTH
Through 2050

Sacramento Area Council of Governments • Valley Vision
Blueprint: Seven principles of smart growth

Transportation Choices  Compact Development  Mixed Land Uses
Housing Choices  Use Existing Assets  Conserve Natural Resources  Quality Design

Blueprint Base Case
Urban Footprint — 2050

Blueprint Preferred Scenario
Urban Footprint — 2050

Blueprint: Less Urban Land

ADDITIONAL URBANIZED LAND Through 2050
(in square miles)

<table>
<thead>
<tr>
<th>Base Case Scenario</th>
<th>Preferred Blueprint Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 175 350 525 700</td>
<td>0 175 350 525 700</td>
</tr>
</tbody>
</table>

Sacramento Area Council of Governments  •  Valley Vision

Blueprint: Less Farmland Conversion

AGRICULTURAL LAND CONVERTED TO URBAN USES
(in square miles)

<table>
<thead>
<tr>
<th>Base Case Scenario</th>
<th>Preferred Blueprint Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>165 sm</td>
<td>102 sm</td>
</tr>
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</table>

Sacramento Area Council of Governments  •  Valley Vision

MTP 2035: Next Step in Blueprint

A Corridor at the Start of the MTP Planning Process...

Source: UrbanAdvantage

7
MTP 2035: Next Step in Blueprint

Future Potential of the Corridor
Source: UrbanAdvantage

Green Solutions: Future Land Uses = Shorter Trips
- budget % increase is greatest for bike/pedestrian and Blueprint supportive programs to encourage smart growth
- increased $ support for road maintenance & transit operations

Green Solutions: Emphasis on Transit
- New Transit Options
- 62% of local bus routes with 30min or better service (vs. 8% in 2005)
- 58% of Environmental Justice households living within ½ of a 15min transit line (vs. 21% in 2005)
Green Solutions: Emphasis on Transit

2035 Jobs and Dwelling Growth within 1/2 Mile of Rail Transit

- 2035 Job Growth: 120,000 (28%)
- 2035 Dwelling Unit Growth: 67,000 (13%)

Sacramento Area Council of Governments

Green Solutions: Roads Strategy

- Complete arterial grids for local trips and strategic freeway improvements for longer distance travel
- Focus on cost-effective operational improvements (e.g., ITS) and fixing critical bottlenecks (e.g., interchanges)

Green Solutions: MTP Investments & GHG Reductions

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Weekday VMT (MIO)</th>
<th>Daily Gas +Diesel (Gal)</th>
<th>Daily CO2 (ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTP</td>
<td>84,979</td>
<td>5,053,100</td>
<td>50,200</td>
</tr>
<tr>
<td>No Project</td>
<td>90,864</td>
<td>5,584,100</td>
<td>56,280</td>
</tr>
<tr>
<td>Savings</td>
<td>5,885</td>
<td>511,000</td>
<td>5,080</td>
</tr>
</tbody>
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Regional Planning & Climate Change

California Climate Change Requirements

- Assembly Bill 32 – 1990 Greenhouse Gas (GHG) levels by 2020
- Executive Order – 80% reduction by 2050
- California Environmental Quality Act (CEQA) – plans and projects required to assess GHG impacts (Attorney General actively enforcing)
- Senate Bill 375 – coordinates California transportation, land use and greenhouse gas planning

Sacramento Area Council of Governments
**Green Solutions: MTP Policies & GHG Reductions**

- Condition funds on green construction practices
- Develop regional climate action plan
- Create alternative fuel vehicle and infrastructure toolkit
- Regional parking policy
- Complete Streets policy
- Rural-Urban Connections strategy

**Regional Planning & Climate Change**

- Senate Bill 375 Implementation
- MTP Investments to Reduce VMT
- CEQA Reform to Encourage Smart Growth
- Supportive Housing Policies & Planning
- Reduce Greenhouse Gases

**Q&A**

**Program will resume in 30 seconds**

Coleen Clementson
Principal
San Diego Association of Governments
San Diego, CA
Regional Planning in the San Diego Region

Overview

- What is the San Diego Region?
- Who Plans for the San Diego Region?
- What is the “Regional Comprehensive Plan”?
- What are the benefits and challenges?

San Diego Jurisdictions

A Look at the Future
San Diego Regional Comprehensive Plan
Adopted by SANDAG in 2004
- Urban Form
- Transportation
- Housing
- Healthy Environment
- Economic Prosperity
- Public Facilities
- Borders

2030 Regional Vision
“Preserve and enhance the San Diego region’s unique features – its vibrant and culturally diverse communities, its beaches, deserts, mountains, lagoons, bluffs, and canyons, and its international setting – and promote sustainability, economic prosperity, and an outstanding quality of life for everyone.”

A Regional Approach
- Connect land use and transportation plans
- Guide infrastructure investments
- Provide incentives and collaboration

Land Use-Transportation Connection

Where We’ve Been… Past 30 Years
System Facts
- 53 miles of light rail transit
- 42 miles commuter rail
- Local bus service
- Transit centers
- Dial-A-Ride and ADA Services
- 95.5 million annual riders
  - 29 million trolley
  - 1.5 million Coaster
  - 85 million bus

Growth 1975 – Present
- Transit ridership ≥ 150%
- County population ≥ 75%
Defining “Smart Growth”
- Compact mixed use development
- Good urban design and walkable
- More travel and housing choices
- Protected open space and habitat areas

RCP Smart Growth Place Types
- Metropolitan Center
- Urban Center
- Town Center
- Community Center
- Mixed Use Transit Corridor
- Special Use Center
- Rural Village

Smart Growth Concept Map

Use Our Transportation & Land Use Plans To Guide Our Investments

Make It Happen Through Incentives and Collaboration
**TransNet 40 Year Expenditure Plan**

(In Billions, 2002 Dollars)

- **Major Highway & Transit Projects (47)** $4.65
- **Environmental Mitigation** $0.6
- **Environmental Mitigation Local** $0.25
- **Smart Growth** $0.28
- **Oversight Committee (Non-Issued)** $0.01
- **Administration** $0.14
- **Bike & Pedestrian** $0.39
- **Local Streets** $3.95
- **Transit Services** $2.24
- **New BRT/Rail Operations** $1.1

**Total Program: $14 Billion**

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**Smart Growth Incentive Program**

**Capital Improvements:**
- Sidewalks, plazas
- Streetscape enhancements
- Improvements to transit stations
- Other community initiatives

**Planning Grants:**
- General plan updates
- Specific plans
- Zoning regulations

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**Environmental Mitigation Program**

(Fe In Millions, 2002 Dollars)

- **Transportation Project Mitigation Fund** $650
- **Major Highway & Transit Project Mitigation** $450
- **Regional Habitat Conservation Fund** $200
- **Local Transportation Project Mitigation** $100

**Total Program: $850 Million**

Plus up to $350 in financing costs for advanced habitat acquisition

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**Smart Growth Tool Box**

**Planning Tools**
- Outreach Program
- Web Based Smart Growth Concept Map
- I-PLACE'S Sketch Model
- Visualization Tools
- Pedestrian Design Guidelines
- Smart Growth Design Guidelines
- Trip Generation/Parking Study
- Regional Bike Master Plan

**Financing Tools**
- TransNet Smart Growth Incentive Program
- TransNet Bike/Ped Neighborhood Safety Program
- Regional Housing and Smart Growth Financing Strategy
- Transit Station Area Joint Development Study

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**E Street near Bayfront/E Street Trolley Station – Chula Vista, CA**

Existing | Conceptual
Marshall Avenue at the El Cajon Transit Center – El Cajon, CA

Cesar Chavez Prkwy and Main St. near Barrio Logan Station – San Diego, CA

Tracking our Progress

SANDAG Regional Planning

Benefits
- One County- One Region
- Regional Approach
- Leverage Resources
- Incentive Based

Challenges
- Local Land Use Decisions
- Fair Resource Distribution
- Short Term v. Long Term
Overview of this Presentation
- A review of Smart Growth concepts and sustainability
- Transportation issues in relation to Smart Growth
- A specific example showing application of Smart Growth principles

Sustainability
A community is sustainable when it meets the needs of the present without compromising the ability of future generations to meet their own needs. To be sustainable is to achieve a blending between a positive impact on people, economic vitality, and the environmental health of a community. (Triple Bottom Line)

Smart Growth
Lenexa's approach:
- Applying Smart Growth principles to traditional suburban standards
- Supplying choices for more compact mixed use centers
Smart Growth

Smart Growth incorporates:
- A more compact mix of housing, commercial and retail
- Planning around transit, pedestrian and bicycle needs
- Environmental infrastructure, including open space, BMPs and other environmental tools

Transportation Design

Traditional Approach
- Automobile-oriented transportation and land use patterns
- Not as well suited for walking, cycling and transit

Smart Growth Approach
- Multi-modal transportation and land use patterns
- Designs support walking, cycling and public transit
- Narrower streets with street parking

Transportation Challenges

- Resolving the personality conflicts of streets.
- Creating connectivity with roads, sidewalks and paths
- Designing streets that will accommodate a variety of activities.
- Creating beauty (amenities) that will enhance the quality of life and that the public will want to sustain.

City Center Overview

Set Design Standards

Lenexa’s Approach City Center

- Walkability
- Mixed land use – Live, Work, Play
- Compact development
- Streets designed for a variety of activities
- Incorporate transit into the overall plan
- Emphasis on public space and amenities
- Creating an urban feel in a suburban area
Transportation Challenges

Transportation has multiple goals that must be accommodated:

- Travel
- Walkability
- Creating a “close-knit” feel.

Transportation Challenges

- Do no harm.
  - Don’t become a barrier to the connectivity you are trying to achieve

- Congestion is not necessarily the enemy.
  - It could be a sign of success!

Transportation Challenges

When key regional streets bi-sect your City Center, you end up with roadways that have personality conflicts.

- What do they want to be?
- How do you resolve?
87th Street

87th and Renner
Intersection Challenges
- Connectivity
- Walkability
- Visual separation

A Possible Solution

A Possible Solution

Creating Amenities
87th Street & I-35 Interchange

Creating Amenities
Prairie Star Parkway
Creating Amenities
Monticello Rd at Prairie Star Parkway

Conclusion
Key Take Away Points:
- For Smart Growth – all modes of transportation are in play (transit, walking, cycling, etc)
- Congestion is not necessarily the enemy
- Be inventive in the way streets honor their purpose
- Be deliberate in stating those purposed

Final Q&A

Today’s Speakers...
Jeff Weir
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Air Resources Board
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Matt Carpenter
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