



Scenario Planning

Developing, Analyzing, & Evaluating Scenarios

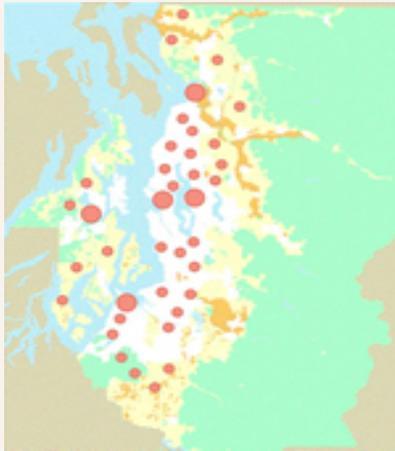
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July 13, 2010
Michigan

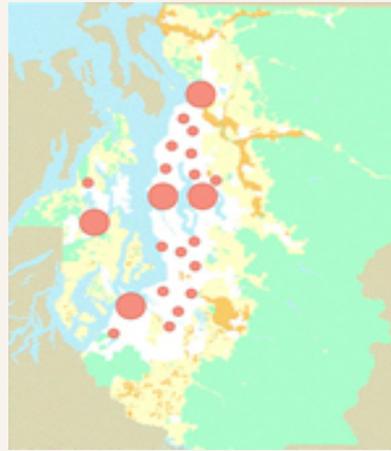
Scenario Planning – Six-Phase Framework



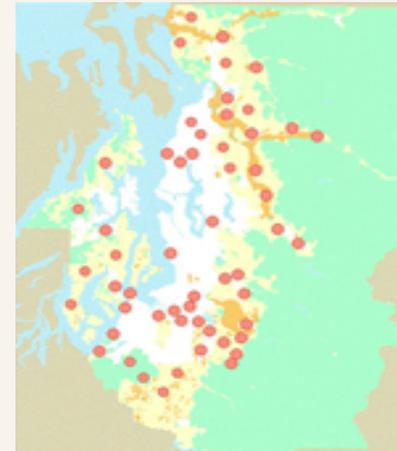
Developing Scenarios



Continue as planned

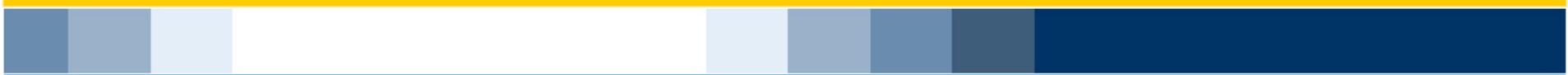


Focus growth in bigger cities



Focus growth in smaller cities and towns

Puget Sound Regional Council



INFORM

CONSULT

INVOLVE

COLLABORATE

EMPOWER

PUBLIC PARTICIPATION GOAL

PROVDE
BALANCED
AND
OBJECTIVE
INFORMATION

OBTAIN PUBLIC
FEEDBACK ON
ANALYSIS AND/OR
DECISIONS

WORK WITH PUBLIC
THROUGHOUT
PROCESS TO
ENSURE PUBLIC
ISSUES ARE
UNDERSTOOD AND
CONSIDERED

PARTNER WITH THE
PUBLIC IN EACH ASPECT
OF THE DECISION
INCLUDING THE
DEVELOPMENT OF
ALTERNATIVES AND
IDENTIFICATION OF
PREFERED SOLUTION

TO PLACE FINAL
DECISIONMAKING
IN THE HANDS OF
THE PUBLIC

PROMISE TO THE PUBLIC

WE WILL KEEP
YOU INFORMED

WE WILL KEEP YOU
INFORMED, LISTEN
TO AND
ACKNOWLEDGE
CONCERNS AND
PROVIDE FEEDBACK
ON HOW PUBLIC
INPUT INFLUENCED
DECISIONS

WE WILL ENSURE
YOUR CONCERNS
AND ISSUES ARE
DIRECTLY
REFLECTED IN THE
ALTERNATIVES
DEVELPED AND
PROVIDE FEEDBACK

WE WILL LOOK TO YOU
FOR DIRECT ADVICE
AND INNOVATION IN
FORMULATING
SOLUTIONS AND
INCORPORATE YOUR
ADVICE AND
RECOMMENDATIONS
INTO SOLUTIONS

WE WILL
IMPLEMENT WHAT
YOU DECIDE

EXAMPLE TOOLS

- FACT SHEETS
- WEB SITES
- OPEN HOUSES

- FACT SHEETS
- WEB SITES
- OPEN HOUSES

- WORKSHOPS
- DELIBERATE
POLLING

- CITIZEN ADVISORY
COMMITTEES
- CONSENSUS BUILDING
- PARTICIPATORY
DECISION-MAKING

- CITIZEN JURIES
- BALLOTS
- DELEGATED
DECISIONS

Identify Public Values

- Small group break-outs/report-backs
- Electronic polling
- Public opinion surveys
- Focus groups with specific audiences
- Individual interviews with key community leaders

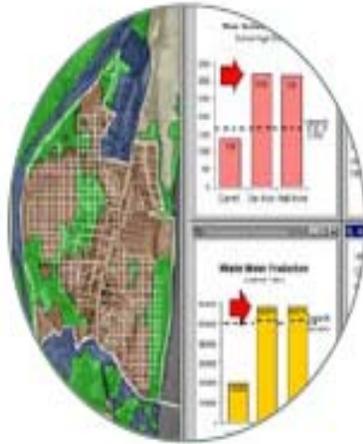


Capitol Region Council of Governments



Tri-County Regional Planning Commission

PlaceMatters.org
www.placematters.com



Placemaking

tools for community action

Tools that engage the community
to create a future that works for everyone

CONCERN, Inc.
Environmental Simulation Center
Denver Regional Office of the U.S. Department of Energy
U.S. Department of Housing and Urban Development

Tools and Techniques

- Data Gathering
 - Primary data through field work
 - Secondary data sources (like U.S. Census)
- ➔ ■ Workshop Facilitation Techniques
- Wireless Key Pad Polling
- Web based Survey and Response Tools
- GIS based Planning Tools
 - Paint the Town
 - Paint the Region
- Scenario Modeling Tools
 - Spreadsheet based modeling (UIC)
 - Land Use Evolution and Impact Assessment Model (LEAM), UIUC
 - Transportation Modeling - Chicago Area Transportation Study (CATS)



Develop Scenarios



Envision Utah



Courtesy City of Fort Worth

What Type of Scenario?

- Baseline
 - (the Trend continues)
- Growth/Socio Economic
 - what if vary where and how live
- Policy Options
 - implications of different policies, strategies
- Environmental
 - what if different environmental trends, constraints
- Economic
 - what if boom or bust or something else
- Some combination of above
 - Hybrid scenario



Considerations in Developing Scenarios



- Determine the types of scenarios (issues) to address.
- Quantitative or Qualitative Approach, or both
- Data and software needs: existing, refine, new
- Identify potential strategies to address the key issues or trends
- Package issues and strategies into plausible scenarios – remember plan goals
- Communicate scenarios to stakeholders

SHRP 2 -

<http://shrp2visionguide.camsys.com/index.htm>



Please provide feedback through this [online questionnaire](#) or by [e-mail](#).

Transportation – Visioning for Communities

[Home](#)

[What is Visioning?](#)

[Visioning and Transportation](#)

[Vision Guide](#)

[Learn More](#)

[Technical Resources](#)

Strategic Highway Research Program 2 Linking Community Visioning and Highway Capacity Planning

Transportation – Visioning for Communities is intended to advance the practice of visioning in support of transportation decision-making.

The web site and accompanying [Technical Report](#) have been developed in support of Strategic Highway Research Program (SHRP2) research on collaborative decision-making to integrate environmental, economic, and community considerations into the analysis, planning, and design of new highway capacity.

Visioning processes are significant sources of information for transportation planning processes, which must now range well beyond topics of connectivity and design to consider community context and a host of interrelated issues. Visions may help illuminate how highway decisions interact with community livability or how investments intersect with desired economic, environmental, and community resources.

The information available within this site is intended to assist transportation agency practitioners in assessing the possibilities of visioning, in identifying practical steps when engaging in visioning, and in establishing links between vision outcomes and transportation planning and project development processes.

Welcome to the site. To explore the Vision Guide please click the image, or for more information, navigate the tabs above.



The basis for this work is the **Vision Guide**, an interactive, visual depiction of the phases and activities of any visioning process.

This **DRAFT** website and its contents were developed by Cambridge Systematics, Inc.; TRB makes no representation or warranty of any kind (see [disclaimer](#)). We invite your comments/concerns about this website and its contents. Please send us an e-mail at shrp2vision@camsys.com

SHRP 2 -

<http://transportationforcommunities.com/shrpc01/>



This draft website and its contents were developed by ICF International; TRB makes no representation or warranty of any kind (see [disclaimer](#)). We invite your comments/concerns about this website and its contents. Please send us an email at transportationforcommunities@gmail.com.

DRAFT- For Review Only

Transportation for Communities

Advancing Projects through Partnerships

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Home Collaboration Assessment Practical Applications Case Studies Decision Guide Basics

The price for failure to work together is endless redo loops in the planning process, lawsuits, delays, and cost escalation.

Transportation for Communities - Advancing Projects through Partnerships (TCAPP) has been created to enhance collaboration in transportation decision making. Anyone involved in transportation plans or projects can benefit from the information and resources accessible here. The basic building block of TCAPP is the Decision Guide. This structure of key decisions common to all transportation agencies contains data to support an understanding of collaboration: *why it is necessary, what is needed to support it, and how to make the changes necessary for a truly collaborative process.*

It is absolutely essential to have the right people at the table at the right time with the right information to make decisions that stick.

Upcoming Events

TCAPP will be presented during ERC's "Environmental Collaboration and Conflict Resolution - Evolving to Meet New Opportunities" conference May 25-27 in Tucson, AZ. For more information, please visit [the website](#).

1 2 3

Collaboration Assessment

[Not sure exactly what is missing or wrong?](#)

It is often difficult to identify what is going wrong when plans and projects hit roadblocks. Collaboration Assessment helps to highlight specific ways in which collaboration might help. This is particularly useful when:

- Scoping a plan or a project
- Participants are not fully engaged
- Leadership is not supportive
- Gaining consensus has become a barrier

Decision Guide Basics

The Decision Guide represents a new way of considering key decisions within transportation planning, programming, and environmental review. This short tutorial answers the following questions:

How will [Understanding the Decision Guide](#) improve my process?

How might I use the [Decision Guide](#)?

[How Does My Agency Fit In?](#)

[FHWA](#) | [MPO](#)
[State DOT](#) | [Resource Agency](#)

Practical Applications

The best place to start improving collaboration can start with small improvements that help address a special challenge or need of the agency. [Practical Applications](#) shows how to use this site to tackle relevant interest areas or challenges. Some current topics are:

- Linking MPO planning and NEPA
- Programming integrated with fiscal constraint
- Streamlining

New topics will be added in the future or you may develop your own

Select Policy Questions

- Are the scenarios sufficiently different for meaningful comparison?
- Based on preliminary land use and environmental screening, are any of these scenarios fatally flawed?
- How do these scenarios address our vision and goals? Are the scenarios sufficient to address the full range of vision and goals?
- How well do each of the scenarios address deficiencies?

MWCOG



- Greater Washington 2050
- One Day Scenario Thinking Exercise
- Focus group interviews provided themes for scenarios
- Themes: economy, energy prices, technology
- Scenarios:
 - High Tech Green
 - Federal Government Dispersal
 - Hot and Gridlocked
 - Cooperation in Hard Times
- One day workshop to discuss scenarios (11/08)

MWCOG



- Workshop participants identified possible strategies to address each scenario.
- MWCOG distilled Ten Big Moves from workshop discussions.
- Building blocks for policies the region could use to address emerging issues and challenges.

Pursue Transit Oriented Development
Leverage Emerging Sustainable Technologies
Emphasize Green Economic Development
Develop Greater Washington as a Knowledge Hub
Strengthen Regionalism
Use Financial Innovations
Ensure Availability of Moderate and Low-Cost Housing
Focus on Quality of Life
Improve Public Education
Promote Health

Delaware Valley Region



Scenario Category	Phase I Scenario
2025 Plan	<ul style="list-style-type: none"> • 2025 Plan Prevails
Spatial	<ul style="list-style-type: none"> • Urban Core Repopulates • Sprawl Accelerates • Information Technology [IT] Amenities Grow
Economy	<ul style="list-style-type: none"> • Regional Economy Strengthens • Global Trade Intensifies • Energy Cost Rises • Infrastructure Investment Expands
Demographics	<ul style="list-style-type: none"> • In-Migration Increases • Out-Migration Increases
Others	<ul style="list-style-type: none"> • "Green" Region Emphasized • Crisis of National Significance Occurs / Homeland Security Tightened

TABLE 1. WHAT-IF SCENARIOS FOR PHASE I

Delaware Valley Region



➤ Phase I Scenarios

● 12 Scenarios Identified

- ◆ 2025 Plan Prevails
- ◆ Urban Center Repopulates
- ◆ Sprawl Accelerates
- ◆ Information Technology Amenities Grow
- ◆ Regional Economy Grows
- ◆ Global Trade Intensifies
- ◆ Energy Cost Rises
- ◆ Infrastructure Investment Expands
- ◆ In-Migration Increases
- ◆ Out-Migration Increases
- ◆ “Green” Region Emphasized
- ◆ Homeland Security Tightened

● Qualitative Assessments

● Perceptions of the Future

Delaware Valley Region



➤ Phase II Scenarios

● 5 Scenarios Defined

- *2025 Plan*
- *Recentralization*
- *Sprawl*
- u *In-Migration*
- u *Out-Migration*

● What is:

- Best for the region?
- Most likely to happen?
- Worst situation? (Are we prepared?)

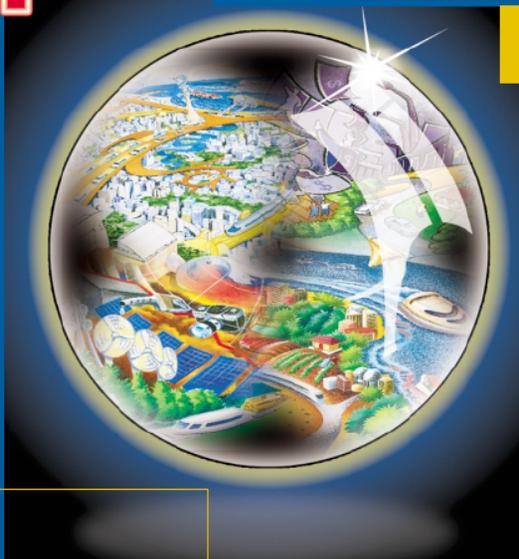
Not the ultimate final future statement

Open ended by design

Policy – not scenario(s) recommendations

Queensland

4 SEEABLE FUTURES



Transport Portfolio Scenario-Based
Planning for the Queensland
Department of Transport and the
Queensland Department of Main Roads
2000 - 2025

SuperCity

- ⇒ 4M+ people in SEQ
- ⇒ High quality of life
- ⇒ Growth economy Australia's second city
- ⇒ Travel demand growth equals population growth
- ⇒ Pressure on the urban transport system

Coastal Bloom

- ⇒ SEQ quality of life decreases
- ⇒ Migration from interstate, SEQ and overseas to coastal Queensland
- ⇒ Growth concentrated along coast — Noosa to Cooktown
- ⇒ Economy based on global services and tourism
- ⇒ Travel demand is higher than population growth
- ⇒ Major new demands on transport infrastructure

Carbon Crunch

- ⇒ Global warming occurs
- ⇒ Increased natural disasters cause insurance cost to rise
- ⇒ Kyoto Protocol ratified
- ⇒ Global Carbon Trading
- ⇒ Low carbon technology
- ⇒ Coal market collapses
- ⇒ Urban form and urban transport patterns change

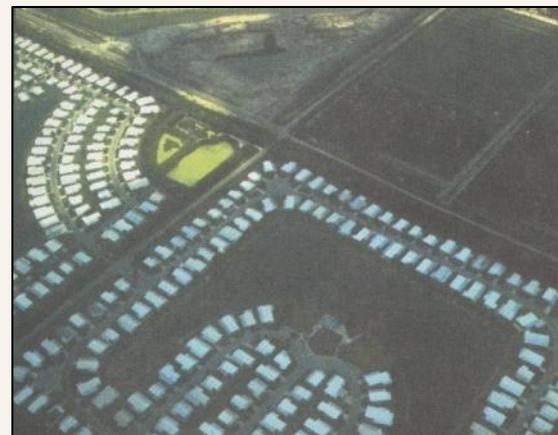
Global Bust

- ⇒ Initial globalisation of Queensland economy
- ⇒ Social & environmental concerns reglobalisation
- ⇒ Protectionism introduced
- ⇒ Global computer network failure — global market crash
- ⇒ Shrinking export markets
- ⇒ Low capability re manufacturing
- ⇒ Rise in localism and sustainability
- ⇒ Triple bottom line for business — people, planet, profit (social, environmental & economic costs and benefits equally important)

What is Scenario Planning?



*Rip Van
Winkle
Technique*

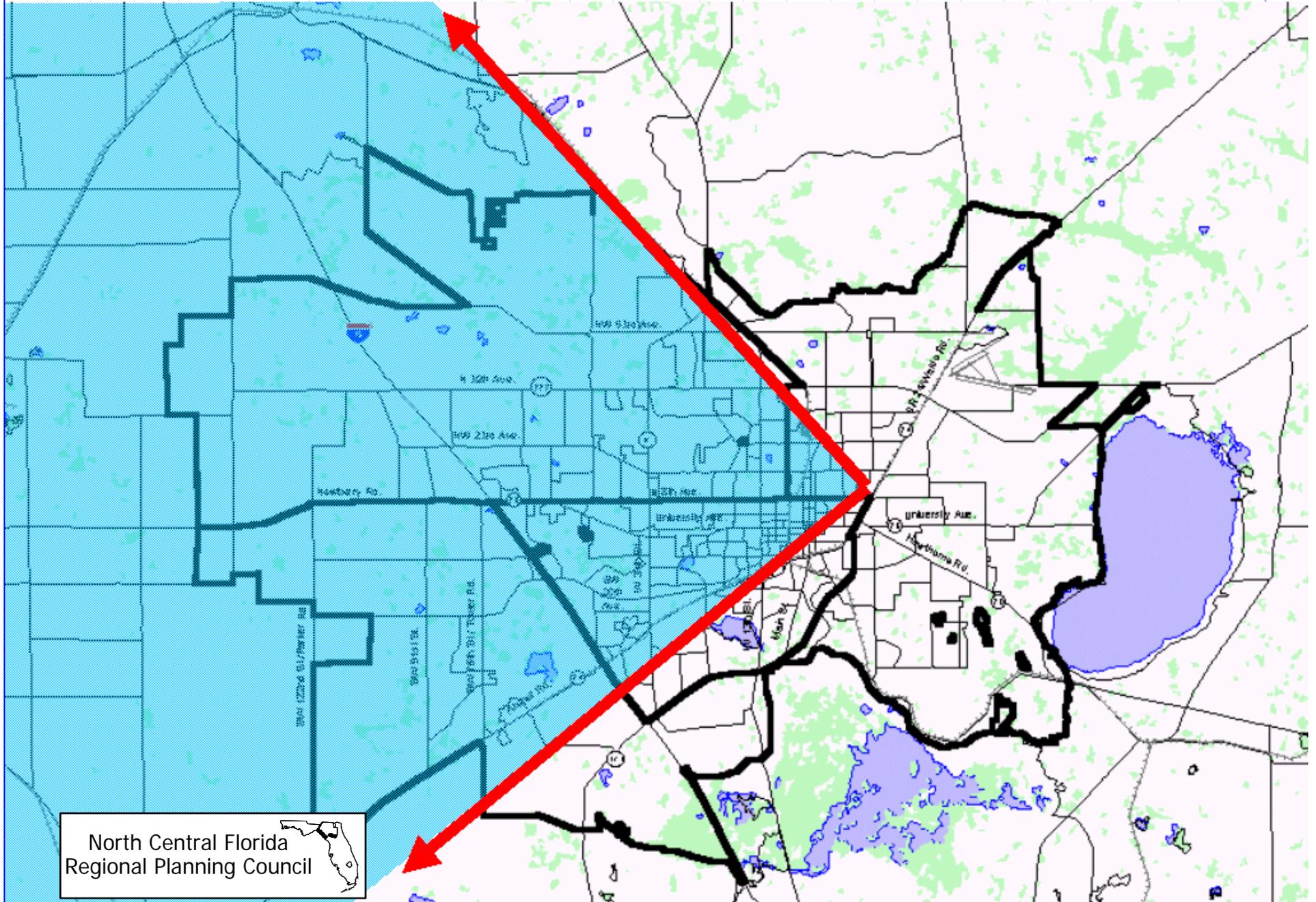


Marlie Sanderson

Director of Transportation Planning

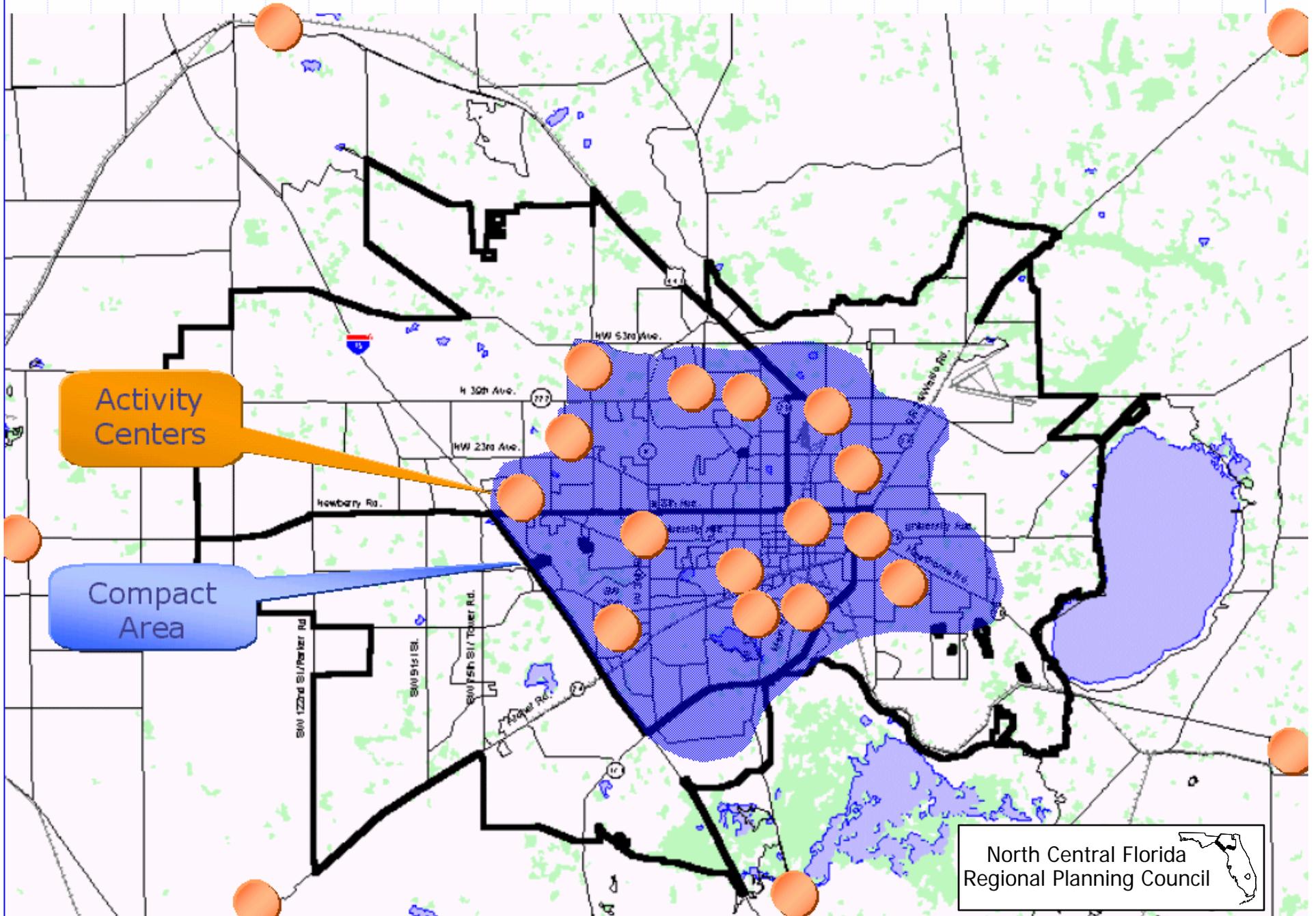
North Central Florida Regional Planning Council

Westward Growth Concept

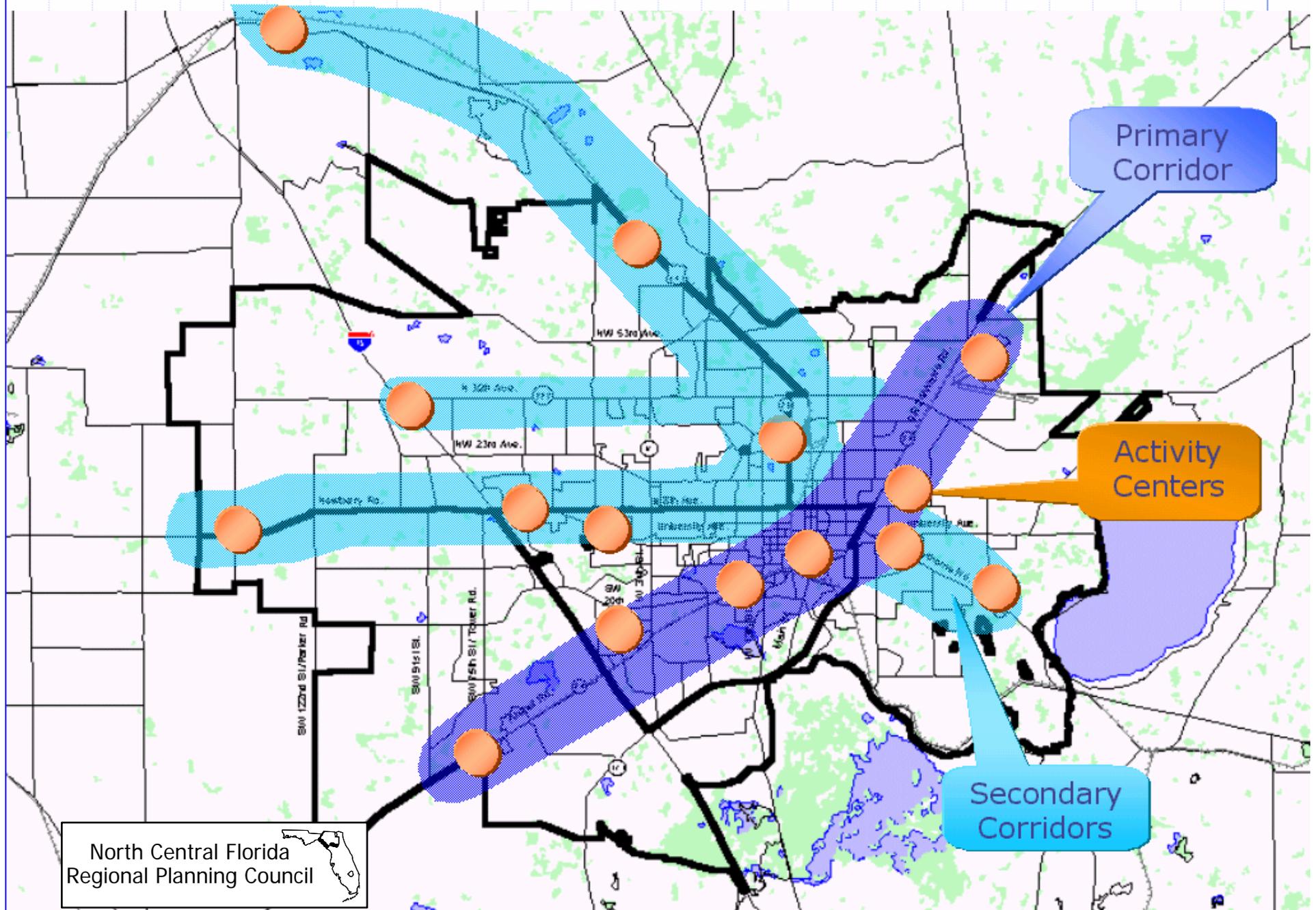


North Central Florida
Regional Planning Council

Compact Area Concept



Radial Development Concept





Community 2050 Update



SLOCOG

Steve Devencenzi - Planning Director

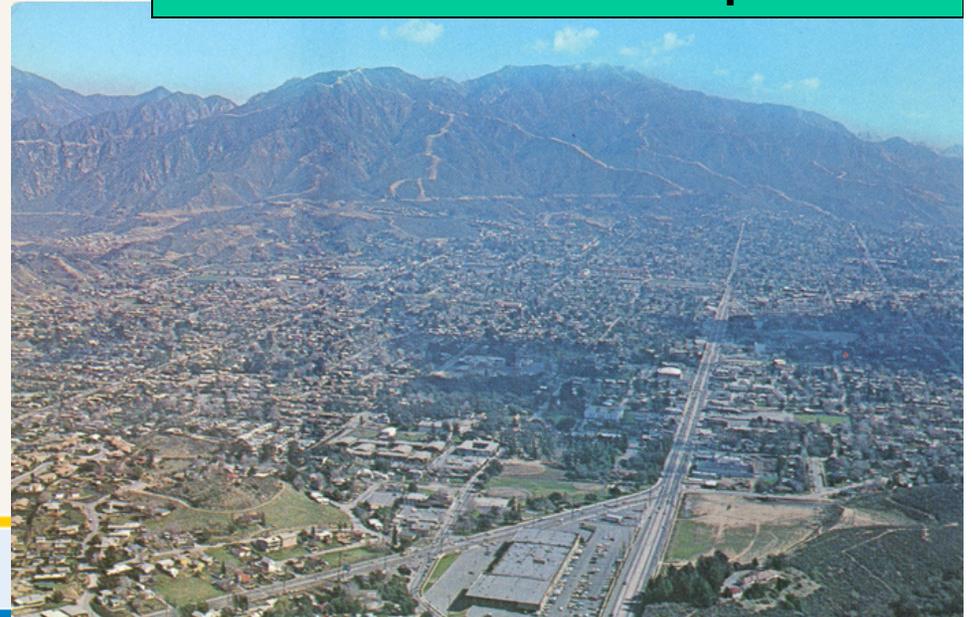
California Landscape 1937



San Fernando Valley from
Summit, Topanga, 37-

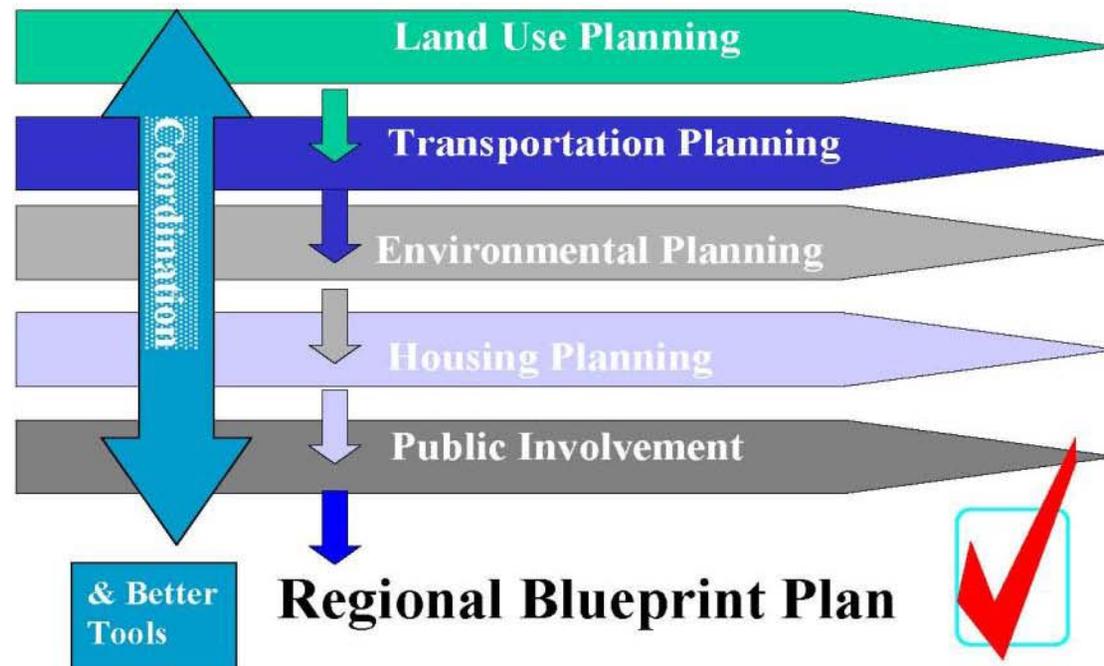
West Valley Museum

Same California Landscape @ 1997



Regional Blueprint Planning

Regional Blueprint Planning
Comprehensive, Collaborative, Integrated





COMMUNITY 2050: *Planning Tomorrow's Growth Today*

Community residents envision the future



Interactive Polling

Mapped Alternatives

Ranked Summary Concepts

Evaluated Next Steps



AT THE **WORKSHOP**

- Members of the community and stakeholders get together to review existing maps and brainstorm ideas for new development.
- Development Type menus enable participants to create alternative scenarios.
- The **scenarios are compared on the fly** to assist in developing new ideas.





COMMUNITY 2050: *Planning Tomorrow's Growth Today*

The Workshop Exercise

Participants build their own **growth scenario** for the region

1. Decide where **NOT to grow**
2. Choose a starter chip set
3. Arrange chips on map
4. Trade Chips
5. Draw in roads and transit needed
6. Present Map to Group



Workshop Game Pieces or “Chips”

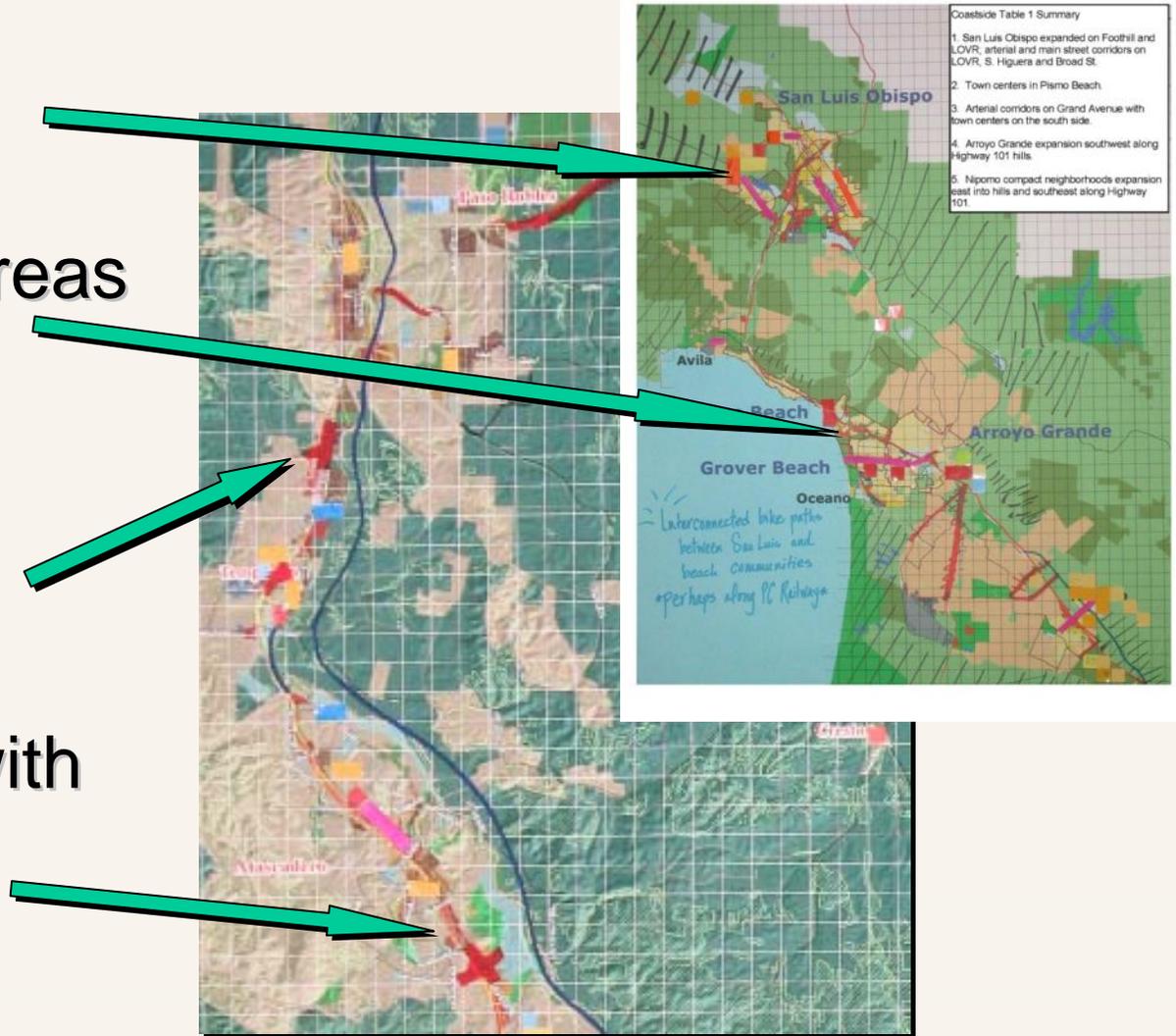
Development Types

The image displays ten development type chips overlaid on a map of Boise, Idaho. The chips are arranged as follows:

- Activity Center** (purple chip): Shows a sketch of a street intersection with buildings.
- Main Street** (orange chip): Shows a sketch of a city skyline.
- Large-Lot Subdivision** (yellow chip): Shows a sketch of a large lot with a building and trees.
- City** (red chip): Shows a sketch of a dense urban area with tall buildings.
- Office Park** (blue chip): Shows a sketch of a modern office building.
- Industrial** (grey chip): Shows a sketch of an industrial facility.
- Compact Neighborhood** (orange chip): Shows a sketch of a dense residential neighborhood.
- Rural Housing** (yellow-green chip): Shows a sketch of a large, open lot with a house.
- Residential Subdivision** (yellow chip): Shows a sketch of a residential subdivision with houses and trees.
- Town** (orange chip): Shows a sketch of a town with various buildings.
- Arterial Commercial** (pink chip): Shows a sketch of a commercial area along an arterial road.

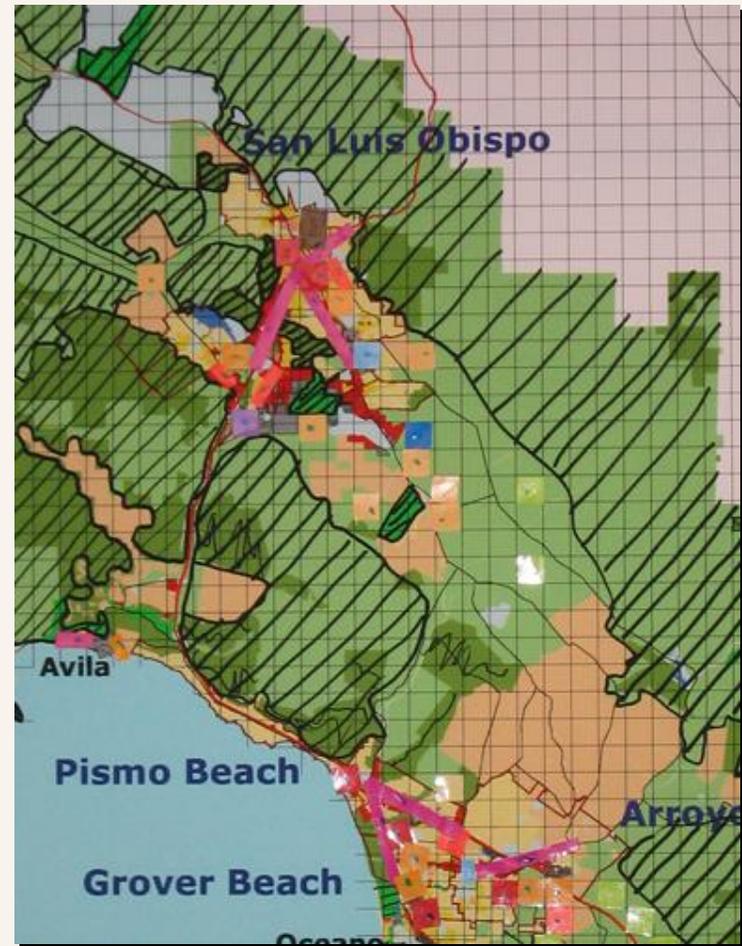
RESULTS - WHAT YOU TOLD US: WHERE TO GROW

- Near existing development
- Inside urban areas (infill)
- Along urban corridors
- Expand small communities with “New Town” features



RESULTS - WHAT YOU TOLD US: WHERE NOT TO GROW

- Steep Slopes
- Agricultural Land
- Open Space
- Scenic Viewsheds
- Away from Traffic Corridors
- Between Towns



TRANSPORTATION TOMORROW:2030

PLACEMAKING FOR PROSPERITY



BINGHAMTON METROPOLITAN
TRANSPORTATION STUDY

Source: Steven Gayle

SCENARIO DEVELOPMENT: WHAT CHANGES, WHAT STAYS THE SAME?

Invite the opportunities

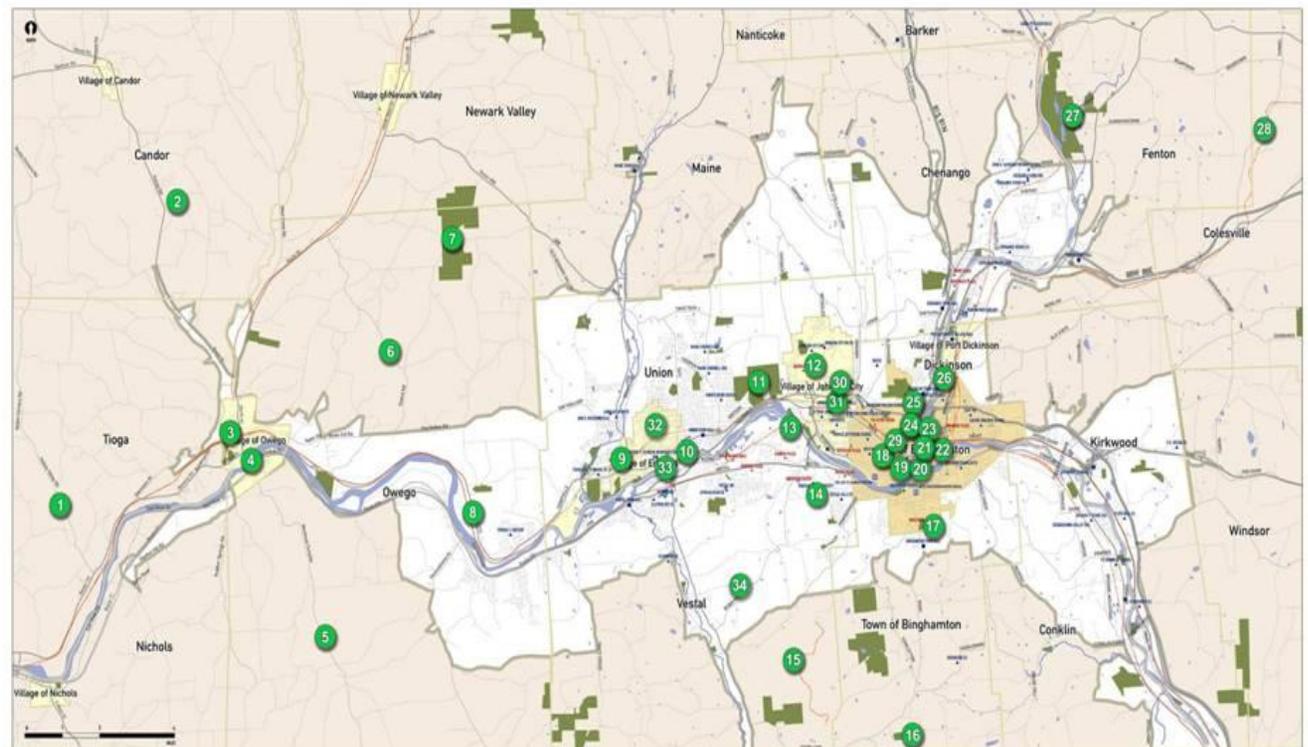
- ❖ Arts & tourism
- ❖ Manufacturing
- ❖ Health care
- ❖ R&D

Invite the people

- ❖ Students
- ❖ Young adults
- ❖ Families
- ❖ Retirees

BINGHAMTON METROPOLITAN TRANSPORTATION STUDY TRANSPORTATION TOMORROW 2030

Treasured Places Map



Regional Tourism Guide

Neighborhood health care

Downtown artisans

Office park public art

INVESTMENT IN THE REGIONAL TRANSPORTATION SYSTEM MUST BE USED TO HELP ACHIEVE REGIONAL AND COMMUNITY DEVELOPMENT GOALS

Revitalize and redevelop the urban core communities. A region with a hollow core cannot ultimately be successful.



TRANSPORTATION OUTCOMES

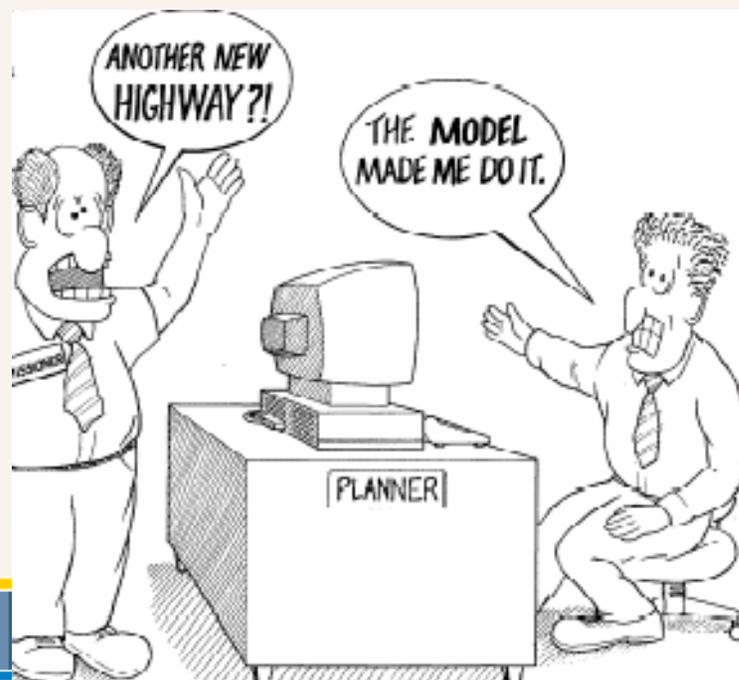
- Rebuild key urban arterials using the principles of placemaking and context sensitive solutions
- Support Broome County's economic development plan, but committing to improving access to identified development sites only in the core



TRANSPORTATION OUTCOMES

- Focus on the rivers by completing the Binghamton Metropolitan Greenway System and other riverside projects
- Safety focus: crash reduction through arterial safety audits; emphasize walkability and the special needs of elderly drivers and pedestrians
- Transit focus: rationalize and enhance transit operations

Analyzing Scenarios



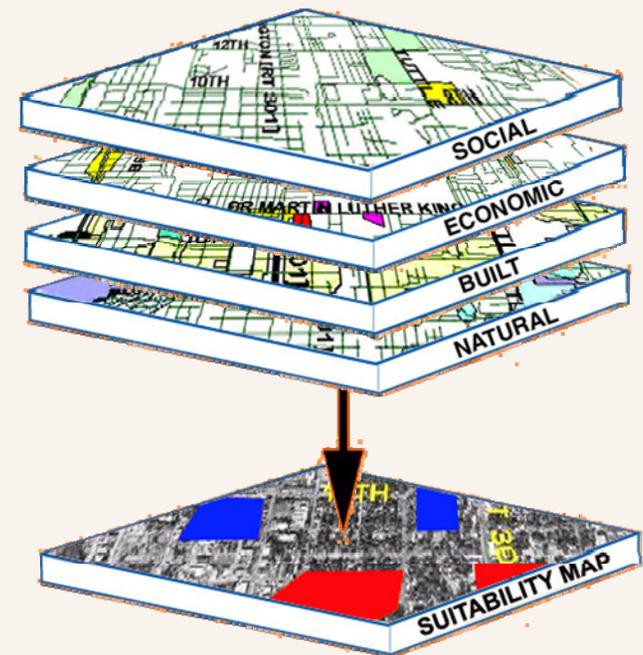
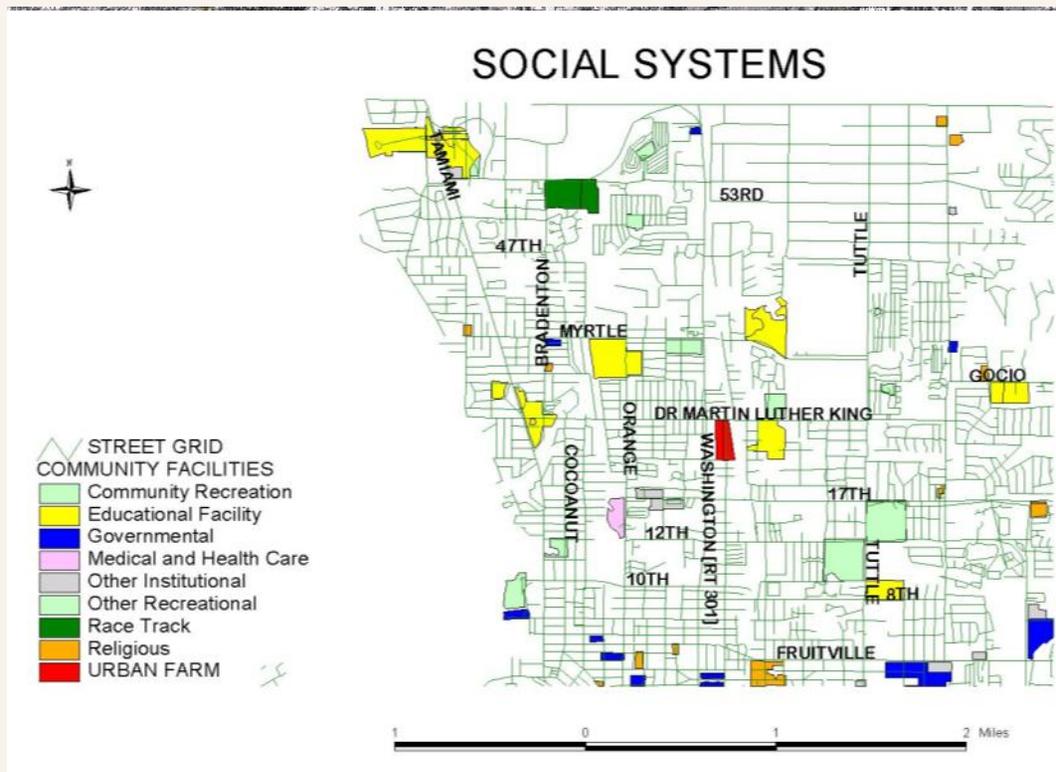
Scenario Planning – Six-Phase Framework



Considerations in Analyzing Scenarios

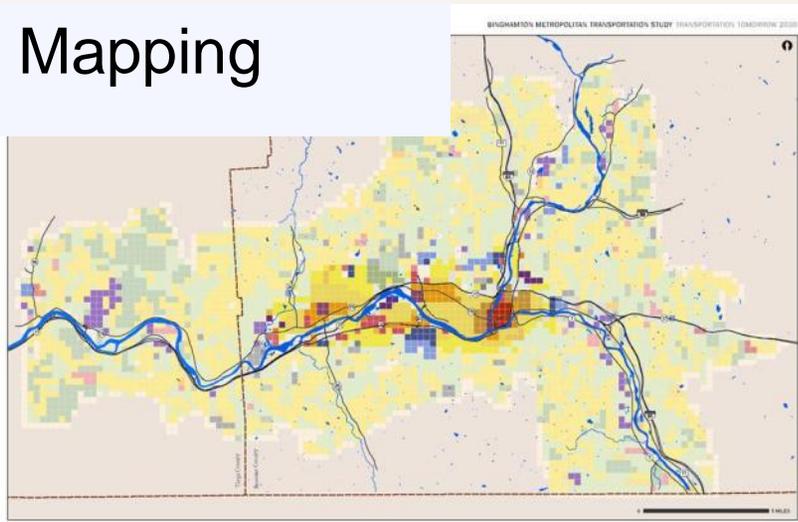
- Identify indicators to assess scenario performance
 - Relate to goals
 - Quantitative, Qualitative
 - Specific, Measurable, etc.
- Model scenario and measure performance using indicators
 - Use travel models, GIS, scenario planning tools
 - Supplemental analysis, depending on issues
- Feedback on analysis results, refine scenarios

GIS Helps Communities Look at Land Use and Development Issues Across Themes, and Across Spatial and Temporal Scales



GIS Tools – Visualization

Mapping



3-D/Dynamic Visualization

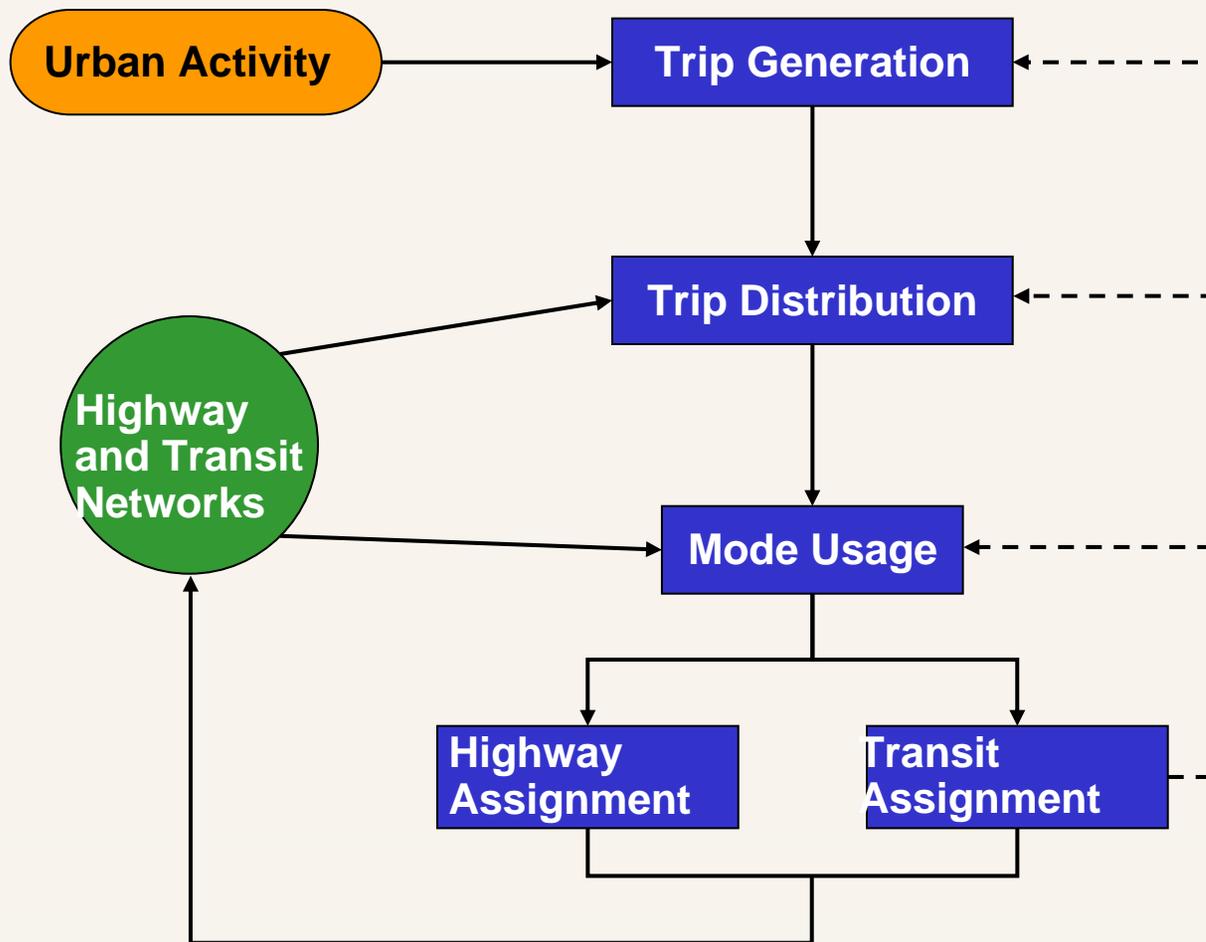


Source: Orton Family Foundation

Photos and Simulations



Basic Modeling Steps



Commonly-Used GIS Tools



INDEX

Smart Growth INDEX

Paint the Town/ Paint the Region

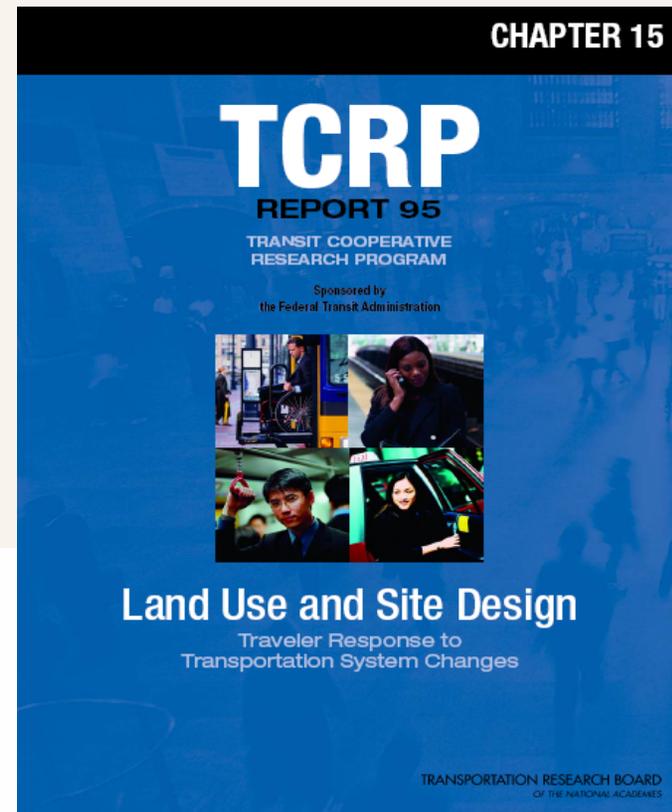
PLACE³S

CommunityViz

CorPlan

MetroQuest

What-If?



EPA/600/R-00/098
September 2000

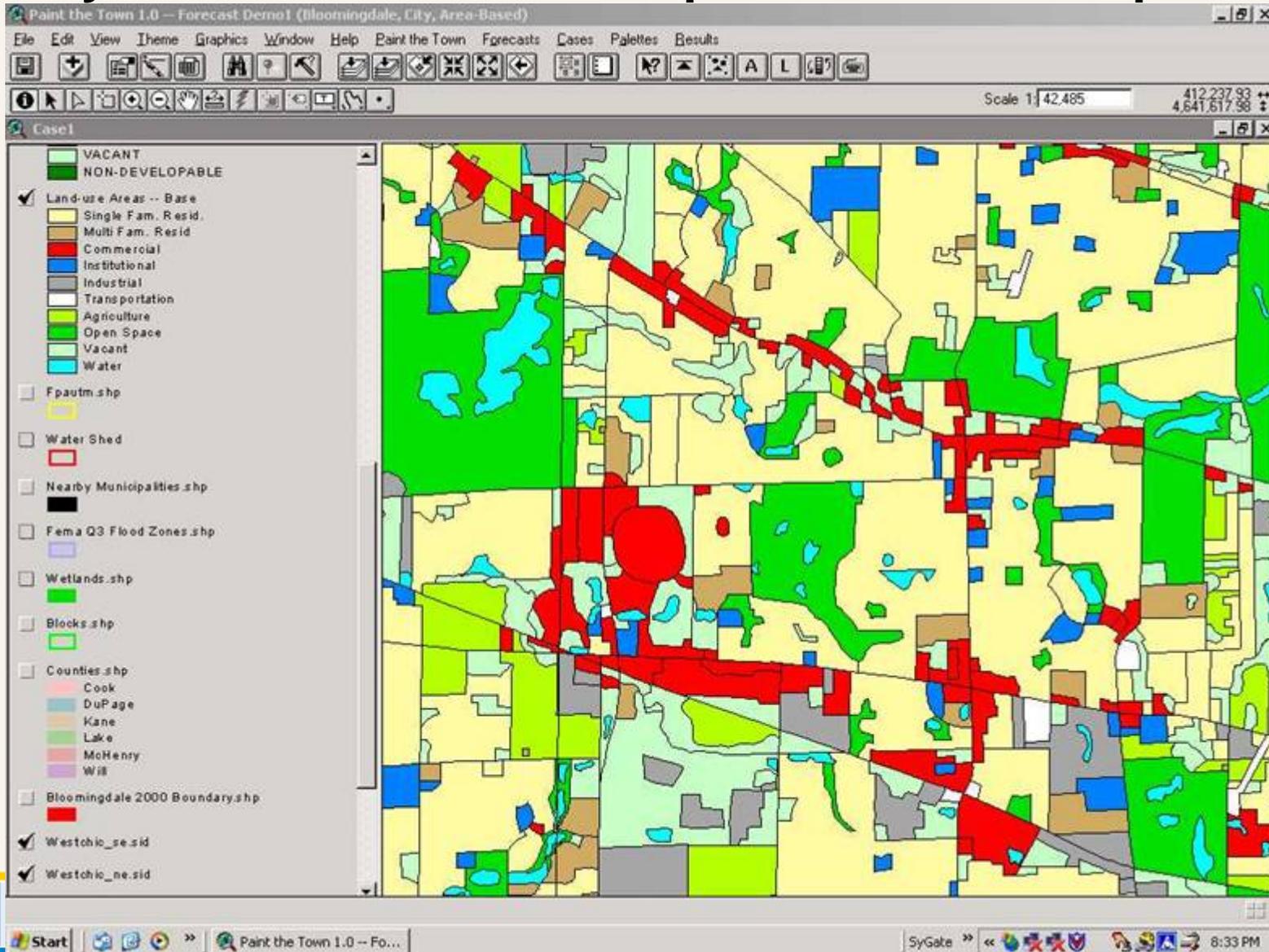
Projecting Land-Use Change:

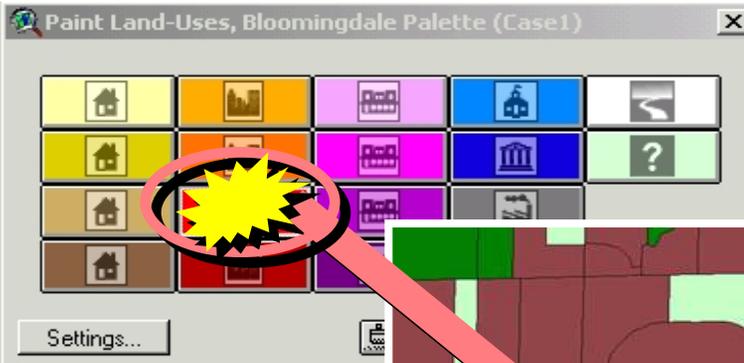
A Summary of Models for Assessing the Effects of Community Growth and Change on Land-Use Patterns

How “Paint the Town” Works..NIPC Example



Identify areas for future development or redevelopment...



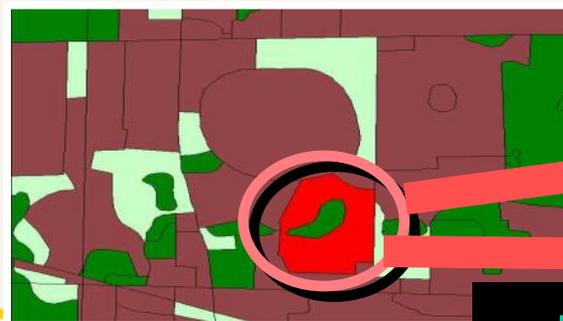


How "Paint the Town" Works..

...Select the polygon...

... "Paint" the polygon...

Assess the impact of the decision...

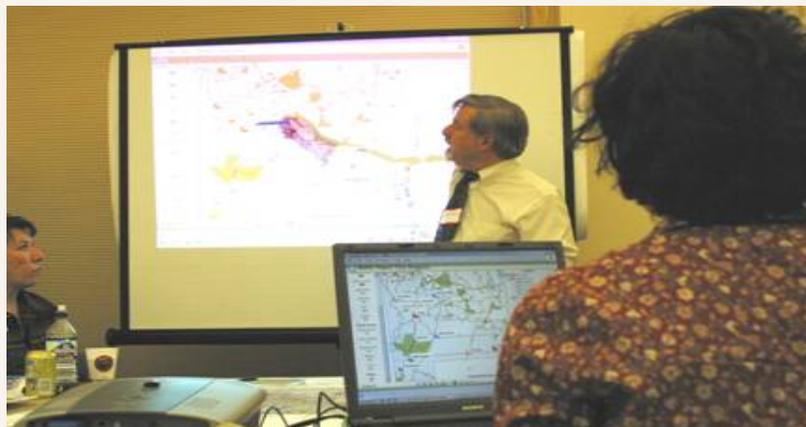


...How big an area?

Selected Land-Use Areas (Case1)	
Selected Areas:	
Area no. 361	Area: 40.53
Land-Use:	RESIDENTIAL-SUB
Residents:	0
Dwellings:	0
Households:	0
Jobs:	208

...How many new jobs?

Workshop Images - NIPC





Split Screen Interface

CommunityViz™
www.placeways.com/

The screenshot displays the ArcView GIS 3.1 interface in a split-screen mode. The left pane, titled 'Ascutney', contains a legend with the following categories and items:

- Ascutney Parcels
- Tree Line
- Ascutney Zoning
 - Conservation
 - Hamlet
 - Highway Commercial
 - Historic Preservation
 - Industrial
 - Ride of Way
 - Rural Residential
 - Rural Residential Reserve
 - US Corp of Eng.
 - Village
- Land Use
 - Brushland
 - Cemetery
 - Commercial, Services and
 - Controlled Access Highw
 - Cropland and Pasture
 - Farmstead
 - Forest Land
 - Forested Wetlands
 - Gravel Pits & Quarries
 - Indoor Cultural, Pub. Ass
 - Industrial
 - Lakes and Ponds
 - Mixed Urban
 - Non-Forested Wetlands
 - Other Commercial and S
 - Other Institutional
 - Other Institutional Specif
 - Residential
 - Road Transportation
 - Secondary Neighborhood
 - Truck Terminal
 - Utilities
- Land Cover
- Soils
- Aerial Photo

The right pane shows a 3D perspective view of the same geographic area, featuring a road network, buildings, and terrain. The bottom taskbar includes the following elements:

- [tc.adf]
- Adobe Photoshop
- C:\Program Files\Paradigm...



Impact Analysis

CommunityViz™
Orton Family Foundation

ArcView GIS Version 3.1

File Edit View Theme Graphics Window Help

Scale 1:17,482 507,238.19 101,365.75

Ascutney

- Adjusted Roads
- Proposed Roads
- One Acre Grid
- Half Acre Grid
- Quarter Acre Grid
- Village Outline
- Ascutney Buildings
- Water Lines
- Roads
- Ascutney Parcels
- Unsubdividable Parcels
- Tree Line
- Ascutney Zoning
- Aerial Photo

New Schools Required
School Age Children

Enrollment Type	Value
Current Enrollment	136
Projected Enrollment	316
Capacity	150

Water Demand
(gallons / day)

Enrollment Type	Value
Current	20,000
Projected	79,814
Need New Well Capacity	45,000

Waste Water Production
(gallons / day)

Enrollment Type	Value
Current	19,000
Projected	56,974
Capacity	50,000

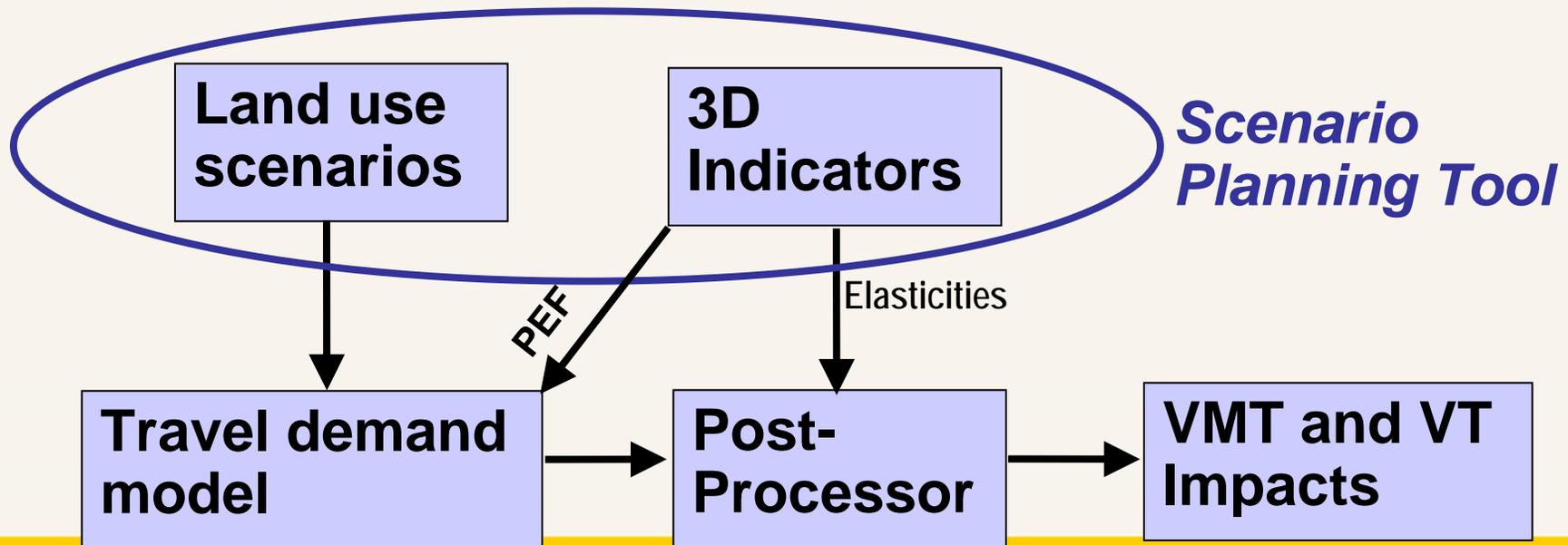
Cost Assessment

Category	One_Acre	Half_Acre
Road Construction	~5,000,000	~3,000,000
Road Maintenance	~1,000,000	~1,000,000
Utility Installation	~6,000,000	~6,000,000
Utility Maintenance	~1,000,000	~1,000,000
Total	~13,000,000	~11,000,000

Savings

Linkages?

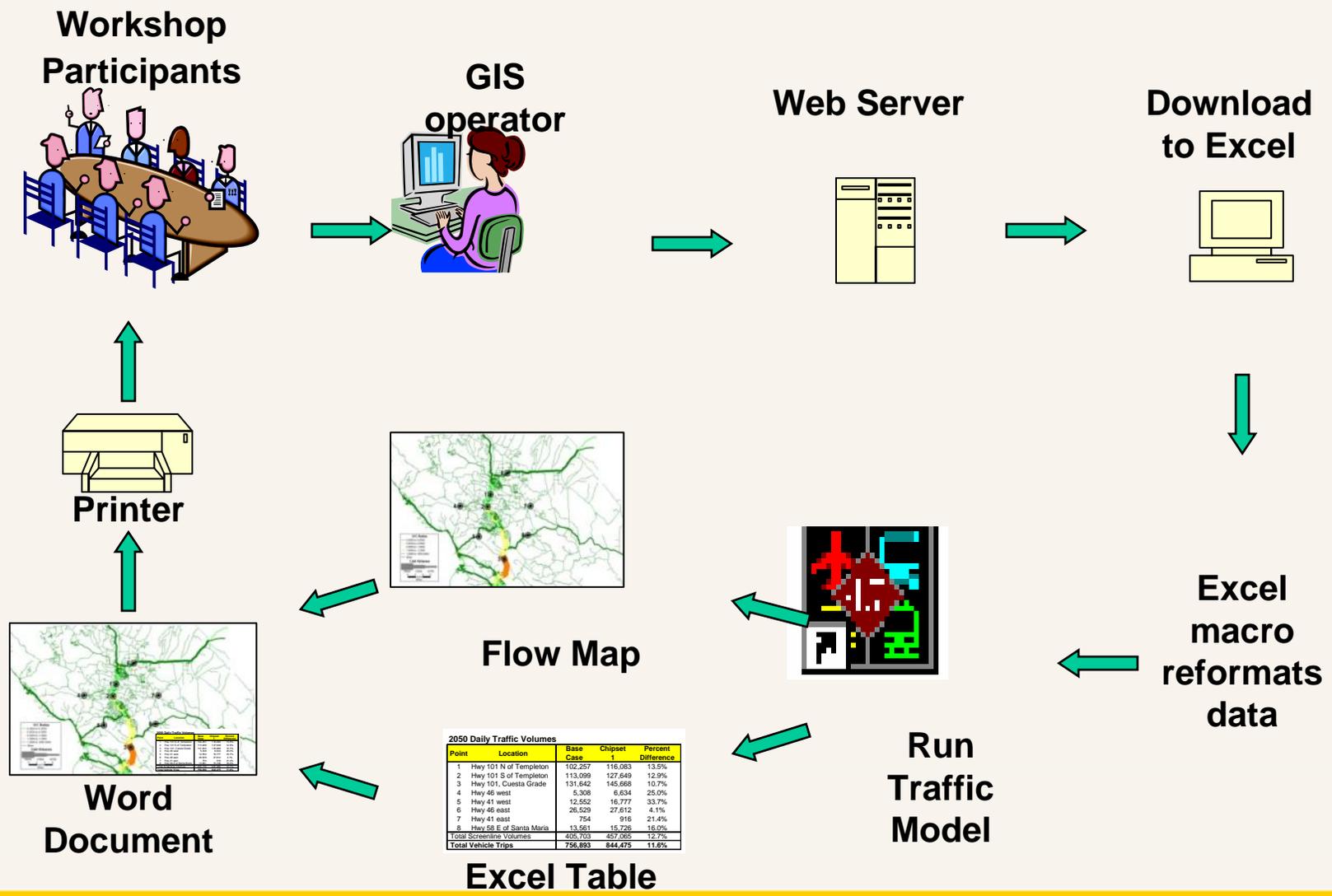
- Develop land use input to travel demand models
- Develop “3D” indicators for post-processing travel model output



Linking Models – Sacramento Blueprint

- Began with regional economic and demographic forecast
- MEPLAN used to produce district level land use forecasts for Base Case
- PLACE3S used for parcel-level allocation
- Aggregated to TAZs for regional travel model
- 4Ds post-processor used to modify vehicle trips, VMT, mode shares

The Process- for San Luis Obispo



2050 Daily Traffic Volumes

Point	Location	Base Case	Chipset	Percent Difference
1	Hwy 101 N of Templeton	102,227	116,053	13.5%
2	Hwy 101 S of Templeton	113,099	127,549	12.9%
3	Hwy 101, Cuesta Grade	131,842	145,668	10.7%
4	Hwy 46 west	5,309	6,634	25.0%
5	Hwy 41 west	12,552	16,777	33.7%
6	Hwy 46 east	26,529	27,612	4.1%
7	Hwy 41 east	754	916	21.4%
8	Hwy 58 E of Santa Maria	13,561	15,726	16.0%
Total Screening Volumes		406,703	457,065	12.7%
Total Vehicle Trips		756,693	844,475	11.6%

SLOCOG: Indicators In The iPlace³s Model



Jobs per Capita

Total Acres with Employment

Dwelling Units and Jobs by Sector

Employment Totals

Employees per Acre

Employees per Dwelling Unit

Dwelling Units per Employees

Floor Area Ratio (FAR) Density

Dwelling Unit Totals

Dwelling Units per Acre

Total Acres with Dwelling Units

Residents per Acre

Physical Displacement

**Potential Jobs & Housing Units
Through Redevelopment**

Jobs Housing Match

Tenure of Housing Stock

**Total VMT per Household and percent
Change in VMT from Base**

**Annual Health Related Costs and Percent
Change in Annual Vehicle Emissions**

Overall Pedestrian Friendliness

Pedestrian Environmental Quality

**Annual BTUs and Percent Change in Annual
BTUs**

Miles of Bikeways per Capita

Transit Stop/Line Dwelling Unit Densities

Transit Stop/Line Employment Densities

Overall Transit Friendliness

Transit Friendliness by Stops

Rail Boardings

Percent Change in Rail Boardings

Parks/Open Space per 1,000 People

Water Consumption

Example Indicators to Assess Scenarios



Environmental/land use indicators

- Acres of non-urbanized land.
- Percentage of farms and forests.

Community livability indicators

- Percentage of population living in clustered communities.
- Percentage of population with access to transit.
- Annual gallons of gas consumed.

Jobs/housing indicators

- Number and/or percentage of jobs located near affordable housing.

Transportation system indicators

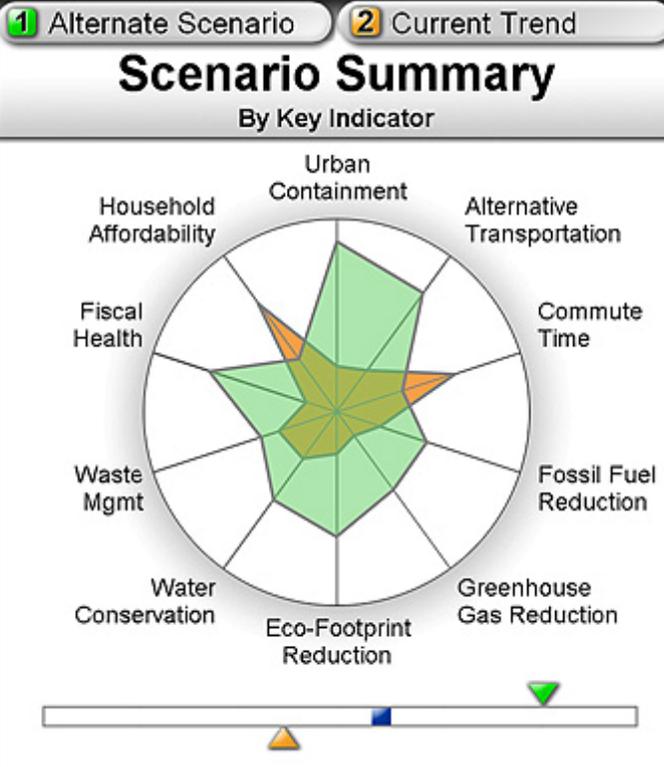
- Number of highway congested hours.
- Number of crashes per person and per vehicle mile traveled by crash severity and mode.
- Percentage of work or all trips by mode.

Climate change indicators

- GHG emissions by sector and county.

Evaluating Scenarios

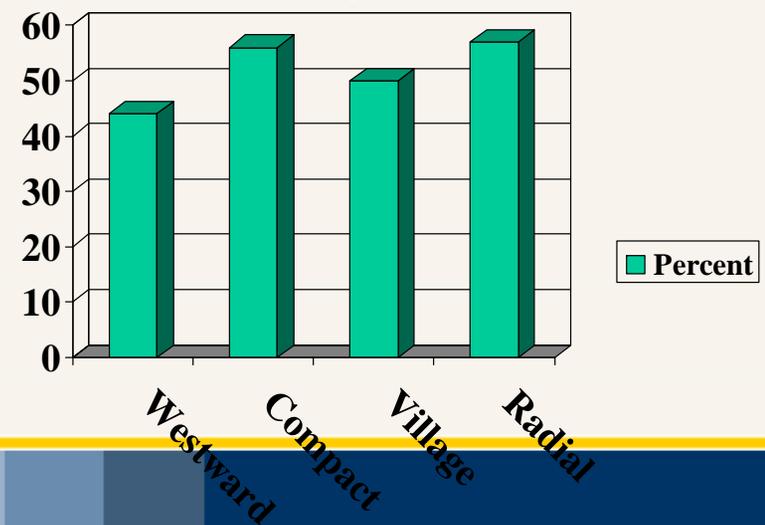
Population Location
Job Location
Development Density
Transit Plan
Transportation Options
Energy & Air Quality
Reduce & Recycle
Water Conservation
Population Growth
Economic Growth



ADDITIONAL URBANIZED LAND THROUGH 2050 (in square miles)



Percent Population Served by Transit



Charlottesville, VA

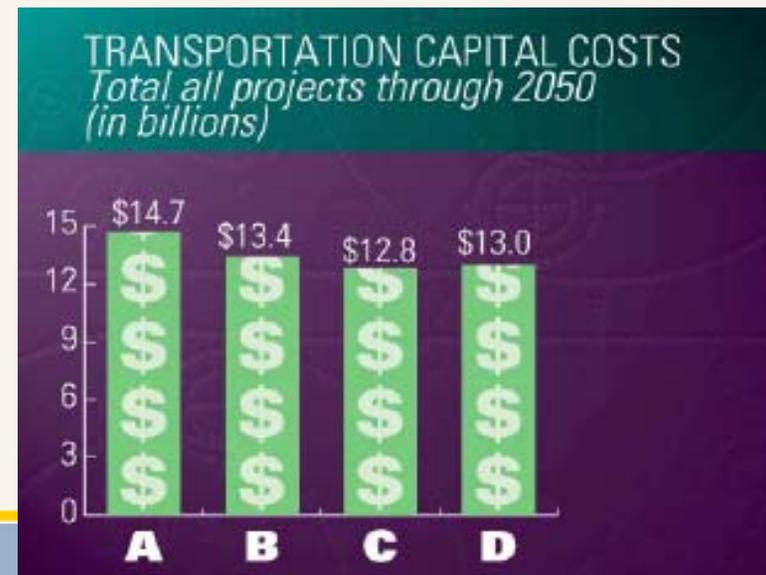
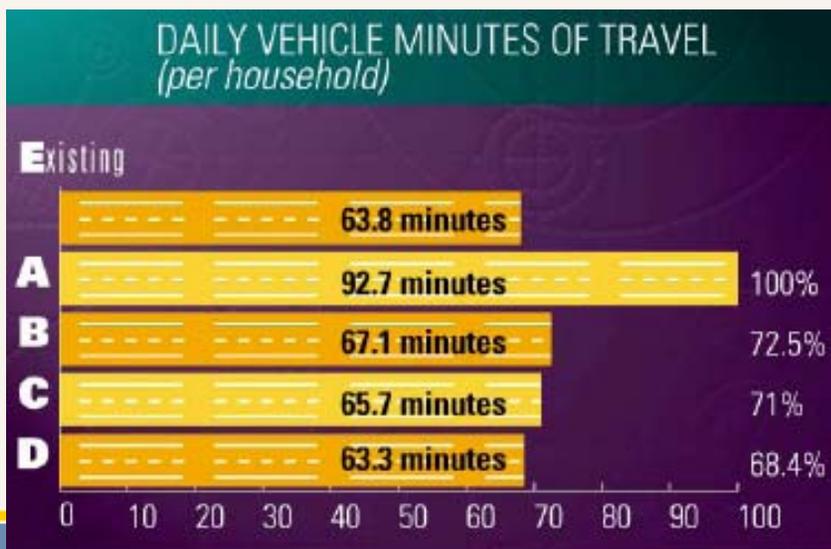
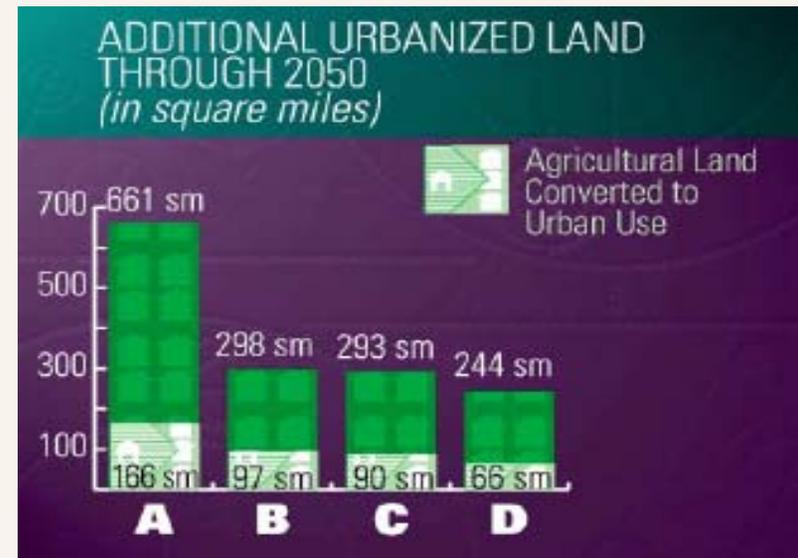
How the Scenarios Compare

All scenarios assume @ 330,000 population and 220,000 employment

Measure / Sustainability Accord	Disp-ersed	Town Ctr	CoreL	CoreM
Pct. Farms and Forests Retain resources/habitat/farms/forests	<i>55</i>	64	65	65
Pct. Developed Retain resources/habitat/farms/forests	<i>45</i>	36	35	35
Pct. Living In Clustered Communities Optimize use/cluster/human scale	<i>13</i>	61	68	68
Pct. Non -auto Trips Transportation Alternatives	<i>4</i>	15	18	18
Annual Gallons Gas Consumed (billions) Conserve Energy	<i>155</i>	121	110	114
Pct. Travel Congested Employment / Education Access	<i>44</i>	27	20	21
Water Quality and Quantity Water Quality and Quantity	<i>Poor</i>	Good	Good	Good

Red/italics– Comparatively lowest

Analyze Scenarios Blueprint Indicators



NCFRPC measures used to evaluate scenarios

Vehicle miles of travel

Average trip length

Transit ridership

Amount of farmland converted

Air quality

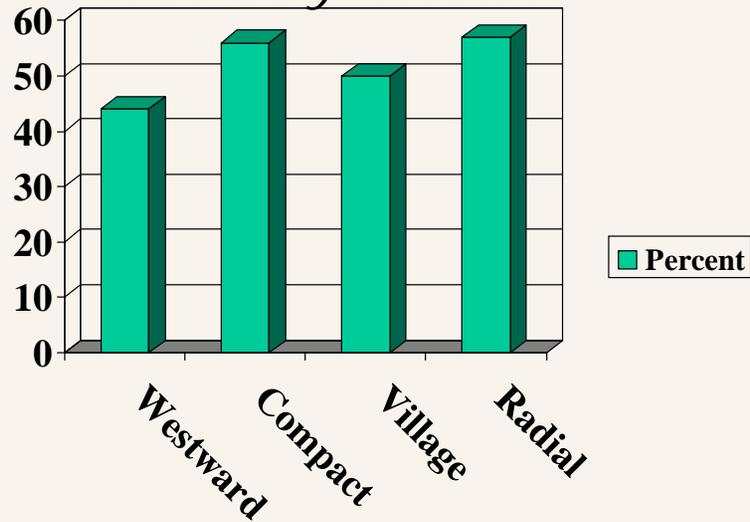
Energy consumption



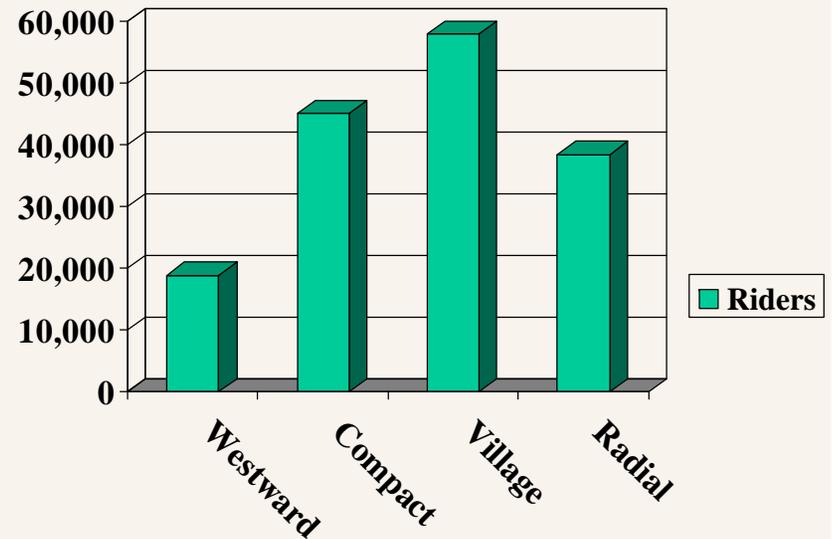
NCFRPC Evaluation



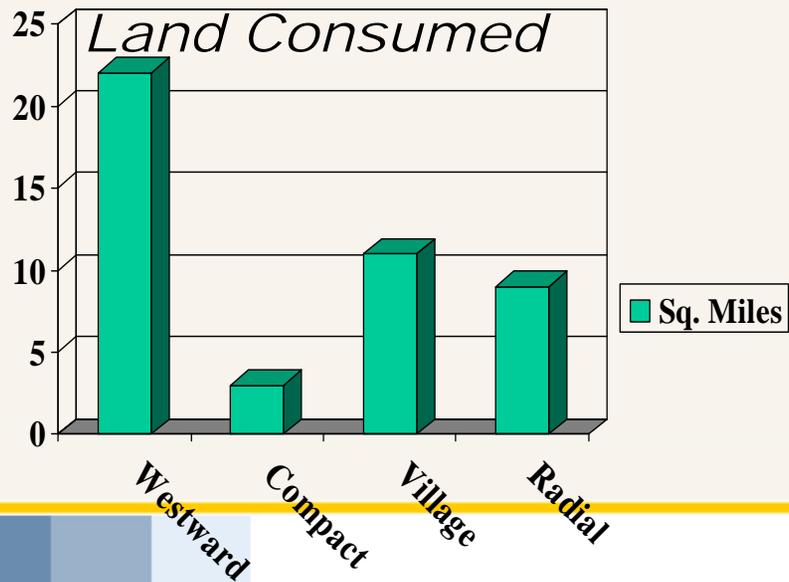
Percent Population Served by Transit



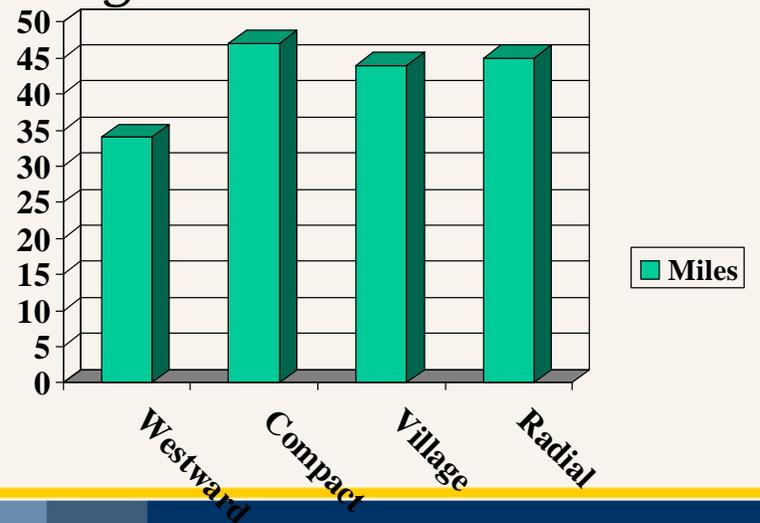
Daily Transit Ridership



Amount of New Land Consumed



Congested Lane Miles



Metro Vision 2020 Scenarios

Criteria	Dispersed Development	Compact Development	Satellite Cities	Corridor Focus
Land Use – housing close to jobs	2	4	3	1
Transportation – vehicle travel	4	1	2	3
Environment – air quality	1	2	1	1
Open Space – consumed	4	1	2	3
Implementation – costs of development	4	1	2	3

What types of NEW development will we encourage?

Development Mix

Development Location

Road Network

Transit System

Urban Form Policy

Environmental Policy

Favor low density

New development will favor detached homes with large yards, business parks and malls.



Maintain current mix *

Include homes with yards, business parks, malls, with some compact residential and commercial buildings.



More compact growth

Favor smaller homes, condos, compact offices and stores, with some larger homes, business parks and malls.



Mostly compact growth

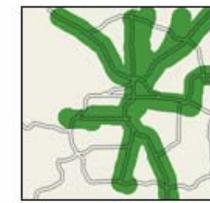
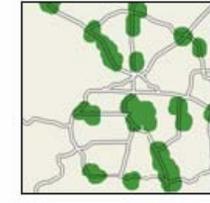
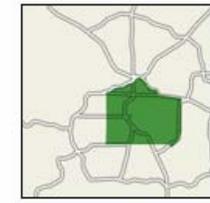
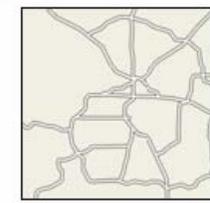
New development will mostly be smaller detached homes, row houses, condos and multi-storey commercial buildings.



- Development Mix
- Development Location
- Road Network
- Transit System
- Urban Form Policy
- Environmental Policy

Where will we focus NEW development?

- Unfocused ***
Encourage development throughout the region.
- Central city focused**
Encourage development mainly in and near the City of Denver.
- Multiple centers**
Encourage development in and near urban centers throughout the region.
- Corridor focused**
Encourage development in and near major transportation corridors.



Development Mix

- Favor low density
- Maintain current mix *
- More compact growth
- Mostly compact growth

Development Location

- Unfocused *
- Central city focused
- Multiple centers
- Corridor focused

Road Network

- Maintain existing network *
- Moderate network upgrade
- Significant network upgrade

Transit System

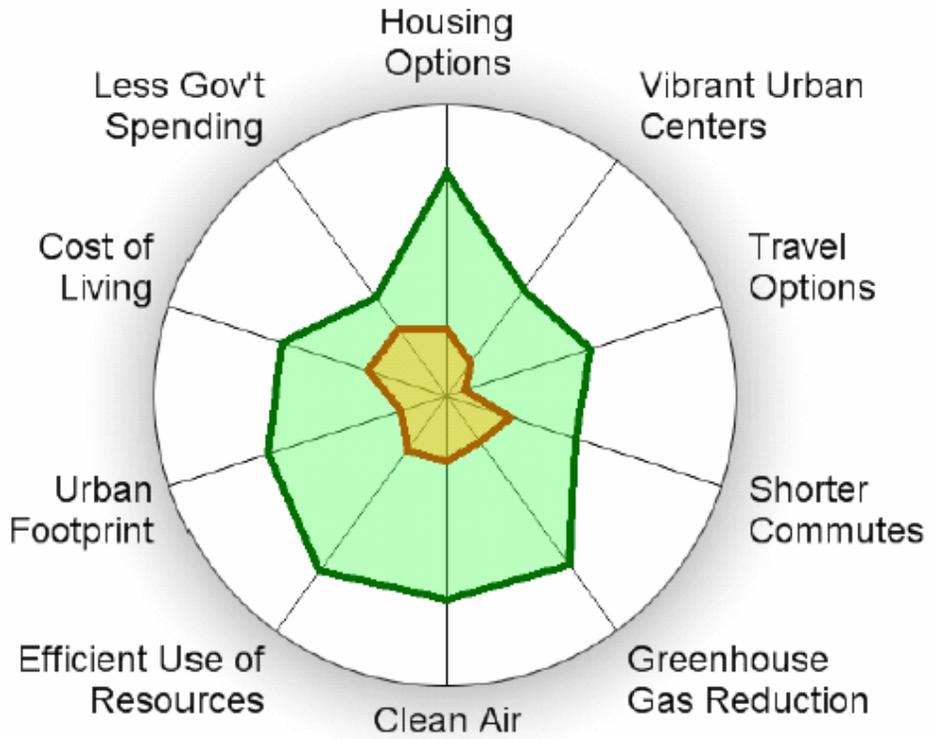
- Maintain existing system *
- Moderately expand system
- Significantly expand system

Urban Form Policy
Environmental Policy

Your Vision
 Current Trend

Scenario Summary

By Key Indicator



Development Mix

- Favor low density
- Maintain current mix *
- More compact growth
- Mostly compact growth

Development Location

- Unfocused *
- Central city focused
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- Corridor focused

Road Network

- Maintain existing network *
- Moderate network upgrade
- Significant network upgrade

Transit System

- Maintain existing system *
- Moderately expand system
- Significantly expand system

Urban Form Policy
Environmental Policy



Your Vision



Metro Vision

Scenario Summary

By Key Indicator

