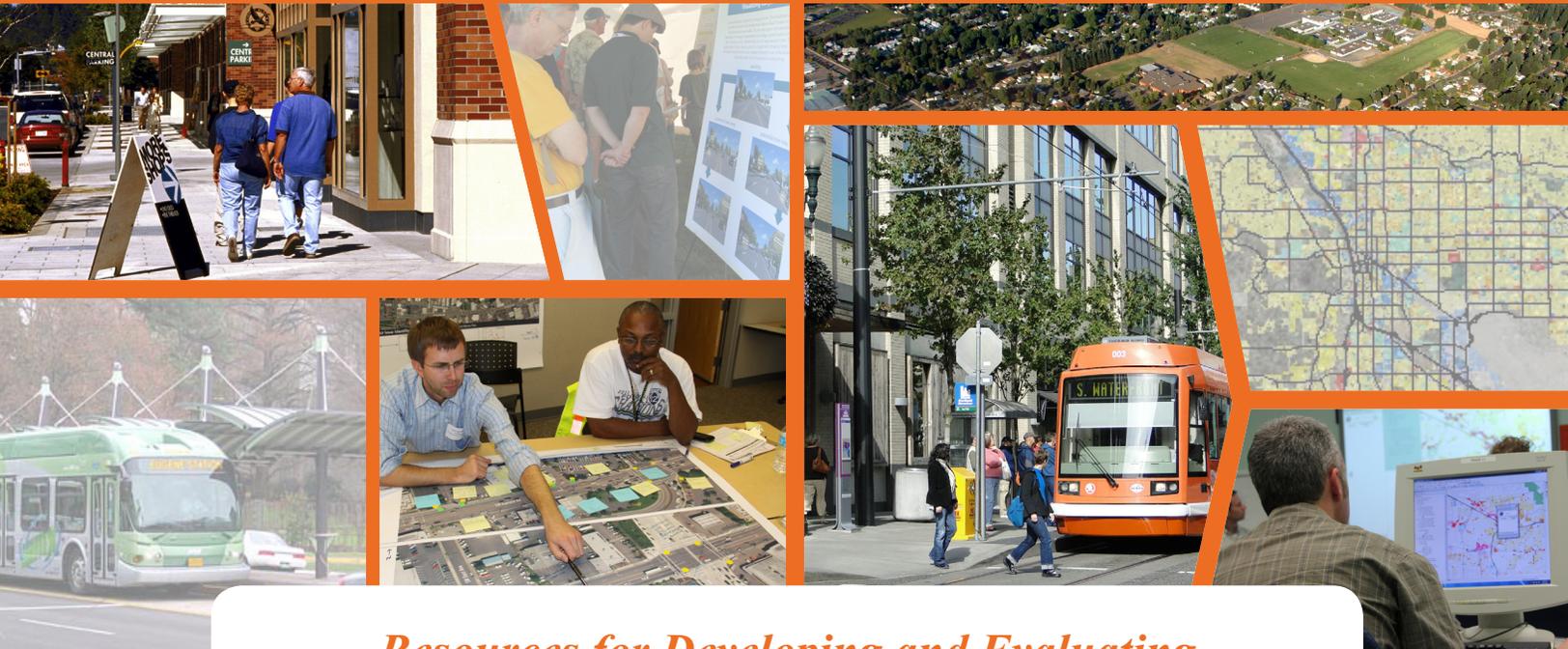


Scenario Planning Guidelines *Executive Summary*



*Resources for Developing and Evaluating
Alternative Land Use and Transportation Scenarios*

Oregon Sustainable Transportation Initiative (OSTI)

Executive Summary

Scenario Planning Guidelines

Oregon communities have a long history of planning to make and keep our communities great places to live. Scenario planning is a new opportunity to build on and refine existing plans and better prepare for the future. Scenario Planning offers local communities powerful new analytical tools to estimate how well communities will do in meeting important local needs given different assumptions about the future. It also provides a way to evaluate how well communities are prepared to deal with new issues and changing circumstances such as rising energy costs and changing demographics.

The Scenario Planning Guidelines present recommendations about how metropolitan areas can use new tools to conduct scenario planning. The guidelines are set forth in six steps, recognizing that scenario planning is voluntary. Communities are faced with a number of important decisions as they consider scenario planning – including the decision about whether to or not to move forward with scenario planning.



What are the Benefits of Scenario Planning?

The reasons to embark on scenario planning are plentiful; however the primary benefit is to uncover better information about future conditions to help communities make decisions. This is done using powerful new tools to estimate likely effects of growth and development patterns over the next 20-25 years. Information from these tools can help local governments evaluate how well existing plans will do in meeting a community's needs and the likely results from implementing these plans. Scenario planning will help identify issues or needs and explore options for refining plans to ensure the community and citizens are better off in the future.

The world is changing rapidly in a number of respects, such as climate, technology, economy. These are forces that will greatly affect communities in the future and to which little attention has been paid in most areas. We have a substantial challenge ahead of us and community action will play an important part. Scenario planning gives communities a way to assess where the path they're following leads, how it intersects with emerging trends, and changes they may consider to cope with and perhaps benefit from those changes.

What Will Scenario Planning Accomplish?

While the applications of land use and transportation scenario planning are plentiful, the specific use envisioned by SB 1059 is to measure greenhouse gas (GHG) emission reductions from light vehicle travel. These calculations are a key output from the scenario planning process. In addition to measuring GHG reductions, the topics that are most important to each community can be addressed—such as regional economic development strategies, regional fiscal impacts, and resource use.

Scenario planning is helpful at both regional and local levels, enabling communities in metropolitan areas to work together to consider how regional needs and issues affect individual communities. A discussion among all local jurisdictions about their goals and visions provides everyone in the region a comprehensive look to see where there are matching or conflicting goals and visions. Scenario planning helps local decision-makers and the public understand local and regional impacts of different choices, providing an opportunity for regional dialogue on issues of mutual interest, to better coordinate local planning decisions.

Additional important accomplishments include producing goals and objectives for plans and actions that will help the community to reduce GHG emissions and cope with coming changes.

The greatest benefit scenario planning offers is more informed decision making.



What are the Tools?

While scenario planning may be a familiar concept to local jurisdictions, there are some new tools available to enhance the potential results and the speed of evaluation. Recommended scenario planning tools include the state’s newly developed transportation GHG model, **Metropolitan GreenSTEP**, and **sketch planning tool(s)**.

Metropolitan GreenSTEP allows planners and decision makers to analyze the effects of a large number of factors on transportation GHG emissions (e.g. land use, transportation system, pricing, technology). Metropolitan GreenSTEP functions at a high level geography for setting community goals and objectives, providing a high-level regional view of likely effects of different policies or programs. Metropolitan GreenSTEP has the ability to quickly test hundreds of high-level policy scenarios, such as implementing tollways or car pool marketing. It predicts GHG emissions as a result of these different policy levers based on individual habits. It can also be coupled with a sketch planning tool to estimate transportation GHG emissions from more detailed land use scenarios.

Sketch planning tools use detailed information about different types of land uses in a community – both existing and planned – to estimate outcomes of different land use and transportation policies. It paints a detailed picture of land use patterns and transportation systems - using “building blocks” that represent the different types of land in the community. Detailed information about each “building block” enables planners to estimate a range of outcomes based on different land use and transportation scenarios. Better informed by the rapid testing the tools provide, staff can move programs forward, enacting change based on what was tested.

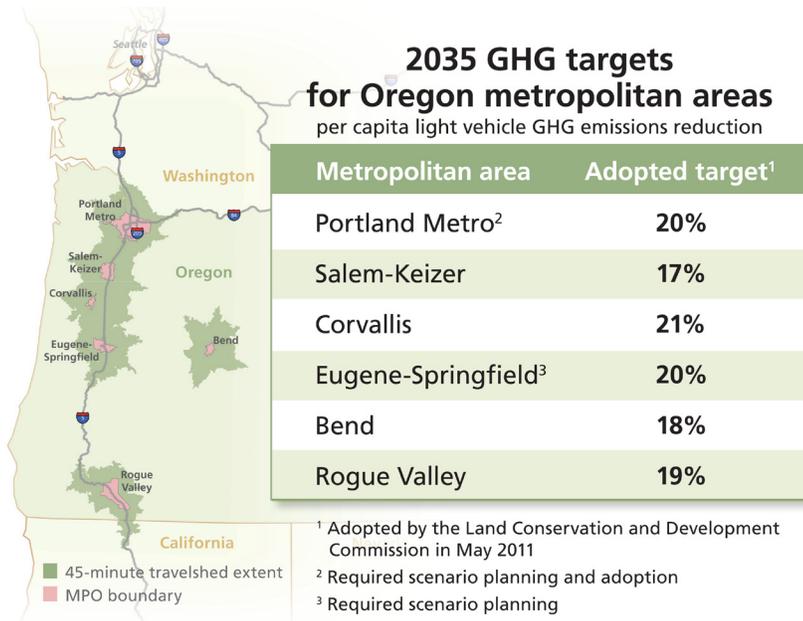
Why the Guidelines?

The Guidelines were developed as a resource to help Oregon metropolitan organizations and local governments conduct metropolitan land use and transportation scenario planning. Scenario Planning may seem unfamiliar and daunting. The Guidelines are intended to present the scenario planning process in a way that feels approachable, exciting and useful. Metropolitan areas are encouraged to use the handbook as guidance to design a scenario planning process that best addresses local conditions and builds on other concurrent or recent planning efforts.

Metropolitan GHG Reduction Targets

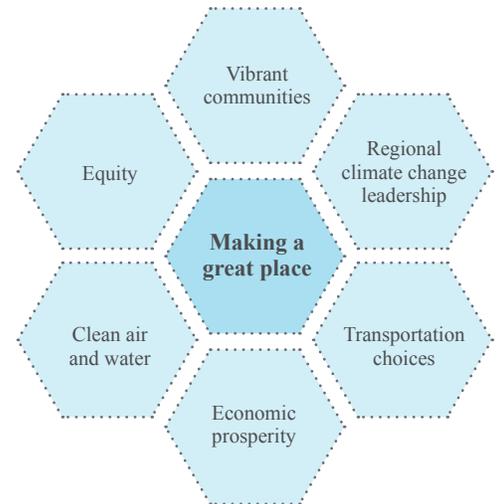
Metropolitan scenario planning is part of a statewide effort to reduce greenhouse gas emissions from the transportation sector. In 2007, Oregon, like many other states, adopted goals to reduce GHG emissions. Oregon’s goal is to reduce all GHG emissions to 75% below 1990 levels. In 2011, LCDC adopted GHG reduction targets to help guide metropolitan areas as they conduct scenario planning. The targets were set based on the assessment of what could be accomplished at the metropolitan level and what needed to be accomplished, given what is now known. The targets call for a 17-20% reduction – representing the amount of reduction that each metropolitan area needs to achieve by 2035 for the state to be on track to meet its 2050 goal.

Figure 1: Metropolitan Area Light Vehicle GHG per Capita Reduction Targets for 2035 – Based on Percent Reductions from 2005 Levels



Metro’s Scenario Planning Process

The practice of linking community goals to measurable evaluation criteria is expanding as modern technology introduces new data and tools for analysis. One example can be seen in Metro’s Climate Smart Communities scenario planning process. Metro’s honeycomb graphic illustrates the six desired regional outcomes which serve as guiding principles for its Climate Smart Communities project and its ongoing *making a great place work*. Metro’s scenario planning process identified evaluation criteria that could assess scenario performance on all of the region’s six desired outcomes.¹



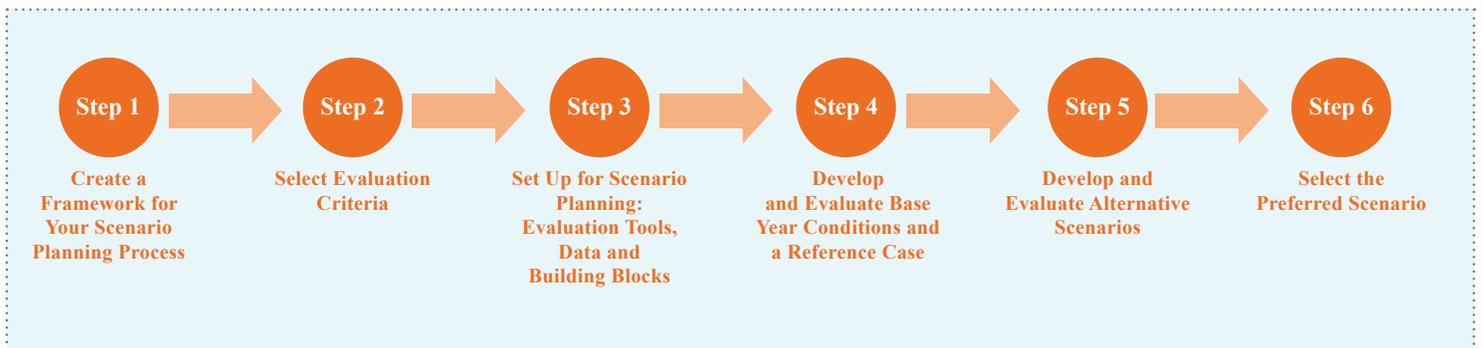
Metropolitan Scenario Planning in Oregon

HB 2001 requires Metro and the Portland metropolitan area local governments to develop and select a preferred land use and transportation scenario that achieves the GHG emissions reduction targets. Eugene-Springfield metropolitan area is directed to conduct scenario planning and develop two or more alternative land use and transportation scenarios that achieve the targets. While SB 1059 directed LCDC to set GHG reduction targets for all of the state’s metropolitan areas, scenario planning for metropolitan areas other than Portland Metro and Eugene-Springfield, although encouraged, is not required.

¹ Metro’s Climate Smart Communities, www.oregonmetro.gov/index.cfm/go/by.web/id/36945

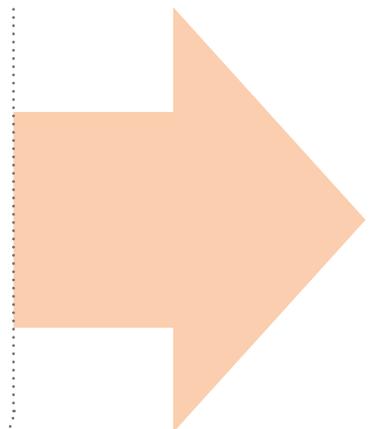
The Scenario Planning Process Steps: *A Step-by-Step Framework Recommended for Conducting Scenario Planning*

The Guidelines are presented in the form of six recommended steps. Each step corresponds with an important element in the scenario planning process. Although a scenario planning process will not always be linear, using the seven basic steps as a guide will help create a successful process.



Step 1: Create a Framework for Your Scenario Planning Process

A good scenario planning process requires a solid foundation and this step sets the stage for the entire process. Explore and evaluate potential issues that the community wants to explore. Decide on the geographic planning area and who should be involved in the process. Also consider who will lead and garner support and momentum in the process. Reach agreement on how scenario planning fits with other planning efforts in the community and region.

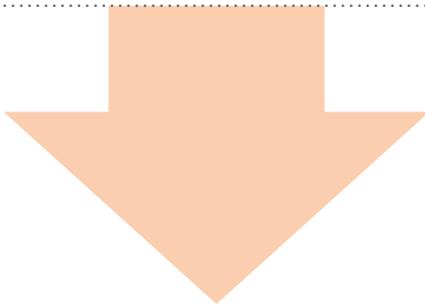


Step 2: Select Evaluation Criteria

This step involves making decisions about outcomes the metropolitan area wants to measure to objectively compare a range of possible futures. Generally, evaluation criteria should reflect adopted community goals – including those in existing plans. Evaluation criteria may also address new or emerging community goals or issues: such as public health, household transportation costs, or energy consumption. Use the evaluation criteria to communicate the benefits, impacts and tradeoffs of different policy choices and investments within each alternative scenario.

Example evaluation criteria:

- Reduction of GHG emissions
- Public health
- Stronger local economy
- Average household fuel expenditures
- Access to transit
- Access to bicycle and pedestrian paths and trail
- Preservation of natural areas



Step 3: Set up for Scenario Planning: Evaluation Tools, Data and Building Blocks

Step 3 involves collecting data and developing building blocks to help run the tools. Compile data from existing plans and depending on local conditions and tools used, this may also involve some new data collection. Apply the two new evaluation tools, sketch planning tools and metropolitan GreenSTEP. Metropolitan GreenSTEP is now available from the state and uses existing

information. It provides a high-level analysis of different policy options for the entire region. There are various sketch planning tools available. Envision Tomorrow, which Metro is using, involves developing “building blocks” to represent the range of land use types in the community – or that are called for in existing plans.

Figure 2: Using Metropolitan GreenSTEP with the Sketch Planning Tool



Metro Building Blocks

Metro developed 16 building blocks that represent different development types in their region.

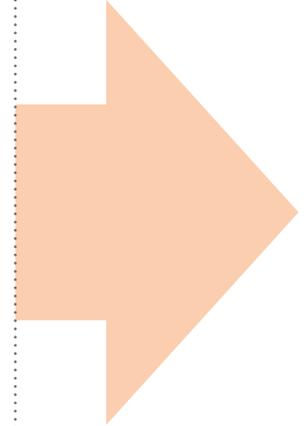
- Central Business District
- Central Residential District
- Office District
- Urban Residential District
- Regional Commercial District
- Commercial Node
- Neighborhood Node
- Historic downtown
- Urban Transit Corridor
- Regional Corridor
- Main Street
- Urban Neighborhood
- Transitional Neighborhood
- Suburban Neighborhood
- Heavy Industrial
- Light Industrial

Step 3 continued...

Building Blocks

Sketch planning tools rely on building blocks as the basis for scenario development. They describe the different types of land uses that exist within the metropolitan area or are planned for the future. Each building block is comprised of a mix of different types of buildings along with assumptions about characteristics such as the amount of land devoted to streets, parks, and civic areas. The building blocks represent the places people are familiar with, such as main streets, town centers, and residential neighborhoods. Comprehensive plan land use categories will inform the building blocks.

Once the building blocks are constructed they are painted onto the metropolitan area’s base map using the sketch planning tool. Each building block carries values that describe the land use and transportation characteristics of the places they represent.



1

Use prototype building spreadsheets to:

Key Building Stats			
Housing Units		2	
Housing Unit Density		12.9	
Jobs		-	
Job Density		-	
FAR		0.63	
Net Building Square Feet		3,422	
Site area	7,000	square feet	
	0.16	acres	
Site gross-to-net ratio	100%	(enter percentage)	
Landscaping or open space	36%	(enter percentage)	
Building height (stories)	1	stories	
Under-build	100%	(enter percentage)	
Building Uses			
Residential	Multifamily		select single family, multifamily
	Owner		select owner, renter
Market-Rate	100%		
Affordable	0%		
Retail	0%		
Office	0%		
Industrial	0%		
Public	0%		
Total (Check)	100%		
Average residential unit size or gross square footage per employee by sector			
Market-Rate Residential (Unit Size)	1,650	net square feet/unit	
Affordable Residential (Unit Size)	750	net square feet/unit	
Retail	1,246	gross square feet/employee	
Office	434	gross square feet/employee	
Industrial	601	gross square feet/employee	

2

Create a range of buildings



3

Mix those buildings in a spreadsheet to create building blocks

Development Type Name	MU Residential 30	MU Residential 15	MU Residential 6	MU Residential 3	Multifamily 15	Multifamily 6	Garden Apartment	Cottage Homes
Metropolitan Center	3%	11%	15%	5%	8%	15%	8%	
Urban Center		6%	20%	10%	6%	16%	10%	3%
Town Center		2%	10%	18%		10%	22%	9%
Community Center							35%	20%
Rural Village								5%
Multi-Family Residential					5%	10%	37%	10%
Traditional Neighborhood							12%	15%
Master Planned Community								
Single Family Residential								

Step 4: Develop and Evaluate Base Year Conditions and a Reference Case

The best feedback the public, stakeholders, and decision makers can receive to help make decisions about the future is to understand where they are today and where they are headed in the future. This step involves using the new tools to document existing conditions and estimate the likely outcomes from existing plans. The results of this analysis can help the community identify needs and issues that might be explored further through alternative scenarios and decide whether to go on to next step.

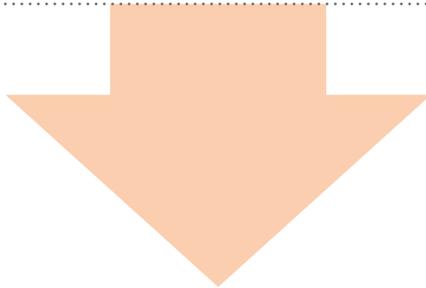
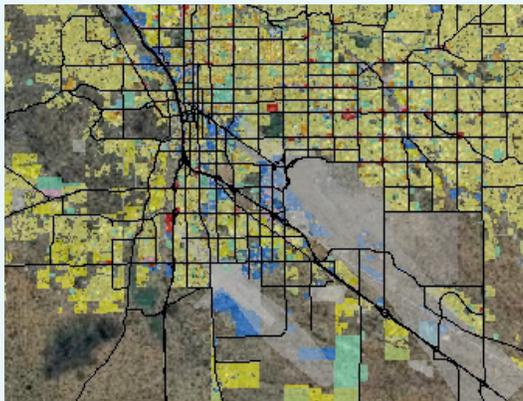
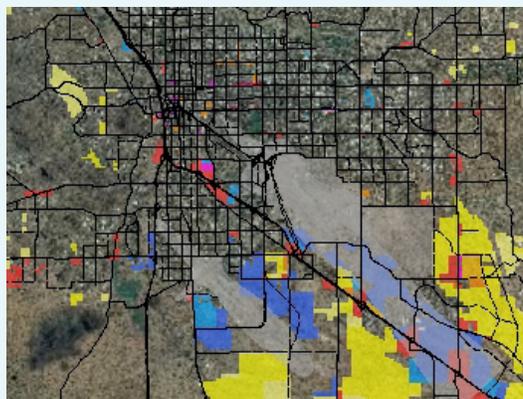


Figure 3: Base Year Conditions and Reference Case Scenario for Tucson, Arizona



Base Year Conditions

Base year conditions paint a picture of current building blocks in the metropolitan area that can be used to calculate GHG emissions and other factors. This information provides the benchmark from which to compare the reference case and alternative scenarios.



Reference Case

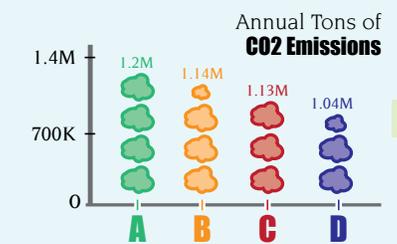
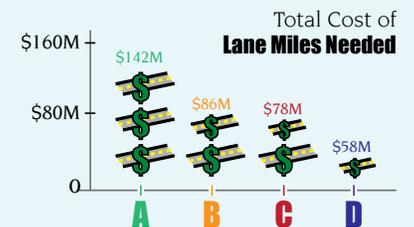
A reference case reflects what you would expect to happen if existing plans are successfully implemented. Measuring the results of planned development patterns can gauge whether or not these plans will meet GHG reduction targets and other community goals.

Communicating the Base Conditions and Scenario Results

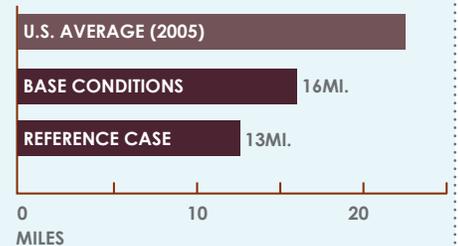
Evaluation of the base year and reference case provide a clear picture of how the metropolitan area is doing now and is expected to do in the future – in terms of what matters most to the community – housing affordability, jobs-to-housing balance, amount of open space, and GHG reduction, for example.

Transportation Indicators

The following charts show each scenario's performance relating to getting around the region.



VEHICLE MILES TRAVELED PER PERSON PER DAY

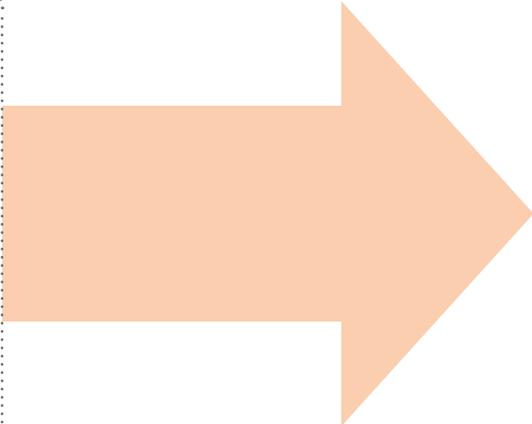


Step 5: Develop and Evaluate Alternative Scenarios

Step 5 captures the essence of scenario planning; engaging the public, stakeholders and decision makers in a discussion about different options for the area’s future. It involves developing scenarios that address issues and concerns identified in Step 4.

Scenarios involve different combinations of changes to land use and the transportation system. Land use options include accommodating expected growth in different parts of the metropolitan area or in different types of development, such as the amount of mixed use development. Transportation options include varying assumptions about the level of transit service, roadway expansion, and incentives for use of alternative modes. The sketch tools and GreenSTEP are then used to estimate outcomes of the scenarios.

The theme of a scenario is the basis, or focus, of its design. The selection of a theme is essentially the selection of an action or policy to test in the scenarios. Engage the public in developing ideas for scenario themes.



Engage the Public

Hands-on workshops allow the public to design maps and help to develop the scenario themes to be considered.



What Do Land Use and Transportation Scenarios Look Like?

This is the creative part of the process; it involves developing and evaluating alternative scenarios to better understand the long-term results of different policy decisions and assumptions.

NEW GROWTH



TRANSPORTATION INVESTMENTS

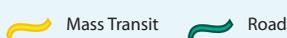


Figure 5: Alternative Scenarios for Tulsa, Oklahoma



Step 6: Select a Preferred Scenario

Comparing the evaluations of the alternative scenarios helps the public and stakeholders select a preferred scenario. This step will draw a great amount of public participation in the scenario planning process. In this phase of public engagement, the community will have an opportunity to review the results of evaluation of the alternative scenarios, give their feedback and preferences, and identify policies or actions they feel are popular and effective in achieving community goals. This public input will be used, along with the results of the alternative scenario evaluations, to refine alternatives and inform the development of a preferred scenario.

Capturing Public Preferences

Printed and/or online newsletters, which include a scenario performance “report card” along with a survey, is one way to capture public feedback and allow them to weigh in on their preferred scenario.

Figure 6: Scenario Newsletter from Grand Traverse, Michigan

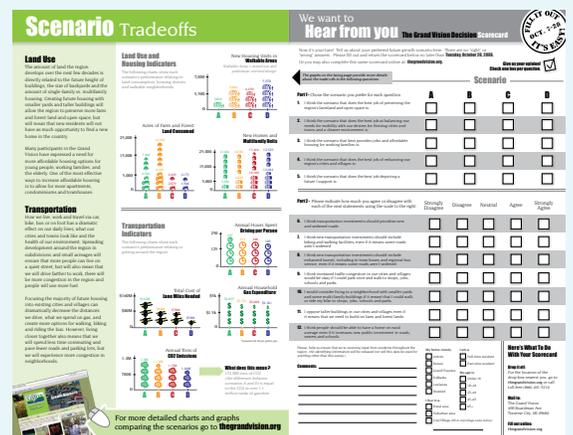
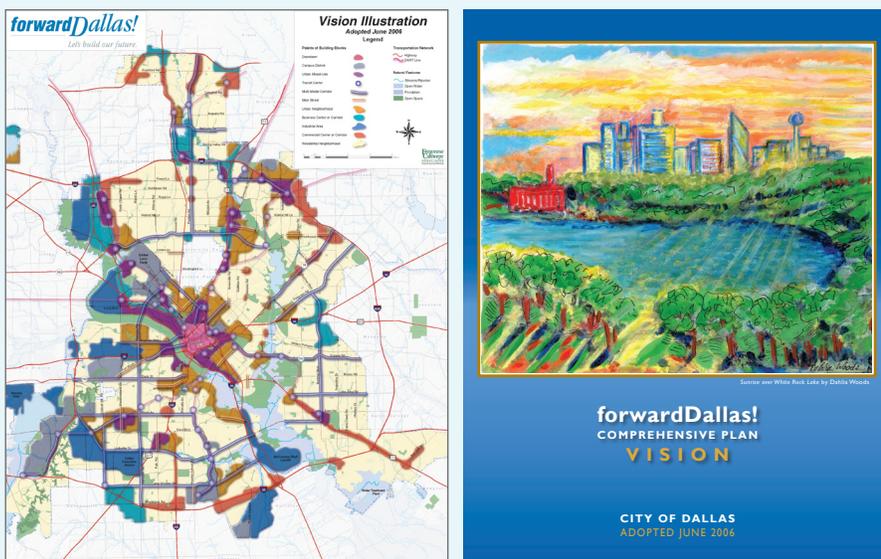


Figure 7: forwardDallas! Vision Map and Document



Using a Vision Map and Document

The preferred scenario captures the vision of the community which can be communicated in a vision document and vision map. The illustrative vision document captures the community goals expressed during the planning process, and describes the anticipated outcomes based on the selected scenario. It moves from the detailed analysis of the scenarios into general concept and descriptions of places and outcomes.

Next Steps & Implementation

This part of the guidelines describes additional steps that local governments can take to make the preferred scenario a reality. Appropriate actions will vary depending on the preferred scenario selected. The preferred alternative identifies a future vision and key actions that locals need to take to make it a reality. While the preferred scenario should identify changes to land use and transportation plans that are needed to realize the scenario, a preferred scenario is also an opportunity to:

- *Identify key short-term actions with immediate pay-offs.*
- *Reaffirm importance or effectiveness of existing plans or strategies.*
- *Identify policies, actions or issues that need further study.*
- *Help inform plan updates.*

Conclusion

Scenario planning provides powerful new tools that provide communities with much improved information about what future might look like. The process enables the public and decision-makers to better understand likely outcomes of existing land use and transportation plans and to evaluate options that can make communities better off. Scenario planning provides an opportunity to build on existing plans and provides a foundation for plan updates and refinements. Scenario planning is often only the beginning of a longer endeavor of utilizing the power of regional collaboration to move toward success on a range of shared goals, including GHG reduction.

