

Appendix C

Scenario Planning Modeling Methodology

Addressing Workshop Feedback in the Modeling of the Preferred Scenario

The Futures 2040 and Climate Change Scenario Planning workshops resulted in the development of a “Preferred Scenario” that represents departure from anticipated growth patterns reflected in the “Trend Scenario.” The feedback revealed a great deal of common ground among the various stakeholders and included specific recommendations for implementing change in the region. Many of the specific recommendations that MRMPO received can be simulated and evaluated within a modeling framework. MRMPO uses an integrated land use model (UrbanSim) and travel demand model (CUBE Voyager) environment. These models are tools to help us understand the anticipated benefits and costs associated with different land use and transportation decisions. By translating recommendations from the stakeholders into policy changes that can be modeled, we are able to construct our Preferred Scenario and discuss the potential implementation strategies that are necessary to attain shared goals.

MRMPO has simulated alternative policy decisions and developed different “futures” within our modeling environments by modifying three areas: 1) zoning, 2) transportation networks, and 3) development incentives.

Zoning

Zoning sets the parameters for development related to the land uses and densities allowed on a particular parcel. Developing alternative zoning required the spatial selection of targeted areas in the region and redefining the growth potential in terms of allowable uses, maximum units per acre, and maximum floor-to-area ratio (FAR). Changes to allowable use affects what type of development may be pursued for the parcel. Changes to units per acre and FAR affects the remaining developable capacity for an area. While zoning dictates what projects and intensities might occur in a specific area, it is site attractiveness and market demand that determine whether or not a parcel is actually developed.

Transportation Networks

Roadway projects identified by member agencies form the basis for future-year transportation networks. Alternative road and transit networks require coding new networks within CUBE Voyager. After the networks are developed they are introduced into a travel model simulation. Alternative networks will have an impact on mode split, travel times, vehicle miles traveled and land development patterns.

Policy Incentives

The ability to simulate policy incentives and their effects is possible within the UrbanSim model through the adjustable levers that can be pulled in order to increase the development probability of an area that has been targeted for additional investment. These incentives may be related to the development process with expedited approvals or waived or reduced permitting fees, for example. Or, they may be regulatory: density bonuses, parking reductions, or relaxed design criteria. They may also be financial with incentives such as tax increment financing districts, impact fee reductions, or shared infrastructure costs.

The policy levers implemented in UrbanSim do not represent a specific type of incentive. Rather, they simulate a relative magnitude of any type of incentive, financial, regulatory, or otherwise. The levers are essentially assigned a value (e.g., 1, 2, or 3) that can be attached to a point (e.g., a transit node) and a radius around that point or a zone (e.g., an activity center) that increases the probability that there will be new development. The modeler can choose the value: the higher the value the heavier the probability. The values assigned are based on a variety of testing along with an idea of an expected or desired impact. If a value of 3 is necessary to arrive at a desired impact (e.g., 2,000 more jobs in downtown), we may not be able to say which specific policy needs to be enacted to make that happen; however, we have a better understanding of the relative level of investment that may be necessary in order to realize certain outcomes.

It is important to note that areas that are incentivized in UrbanSim are still subject to all of the other modeling inputs and influences. For example, if a parcel has no remaining capacity, or if it is not zoned for certain types of development, the policy lever will have no effect. The lever increases likelihood but does not ensure future development. It is also important to note that locations for which no shifter has been applied may still experience

considerable development. This is especially true where areas exhibit multiple favorable criteria that have historically factored into development decisions or if there are known development plans in the future growth assumptions.

Feedback and Scenario Refinements

Following is a summary of the feedback from participants of the workshops related to specific strategies that might be used to achieve the Preferred Scenario. Each section describes how the strategies were addressed within the modeling environments using one of the three instruments described above.

Expand Transit Opportunities

- Provide transit service improvement and expansion beyond the limited improvements in the Trend scenario.
- Assume new sources of revenue for public transit, in particular an infusion of capital funding through the FTA Small Starts program and an increase in the transit-specific GRT from 0.125 cents to 0.5 cents.

Increase Transit Node Attractiveness

- Increase the mix and intensity of allowable uses in the zoning assumptions surrounding key transit nodes to promote key corridors and greater use of transit.
- Simulate incentives that will increase the probability of housing and commercial activity surrounding key transit nodes.

Increase Activity Center Attractiveness

- Increase the mix and intensity of allowable uses in the zoning assumptions within key activity centers that have been identified by member jurisdictions in order to concentrate and shorten trip origins and destinations and promote multi-modalism.
- Simulate incentives that will increase the probability of housing and commercial activity in and around key activity centers and implement a prioritized approach that recognizes three specific tiers of centers.

Achieve Greater Balance of Housing and Jobs

- Increase the mix and intensity of land uses, particularly commercial development, in targeted areas west of the Rio Grande where employment opportunities are limited and dramatically outpaced by new housing.
- Increase the opportunity for multi-family housing in close proximity to job centers east of the Rio Grande.

Prioritize Growth within Existing Water Service Areas

- The existence of water service infrastructure is imbedded in the probability equations that affect both the Trend and Preferred scenarios. That is, the water service boundary is found to be statistically significant in its ability to explain historical growth. As such, it can be applied as an influential factor for predicting future development.
- The inclusion of a water service boundary not only represents the increased cost of development involved in expanding infrastructure to service locations outside of the boundary, but also the recurring sentiment from participants in the scenario planning process that water availability will be the region's single-greatest future challenge.

Reduce Parking Requirements

- Zoning specifications determine what the UrbanSim model will allow on a particular parcel. Therefore, parking lots are considered available for future development as long as there is an alternate zoned use and there is existing market demand.
- In the Preferred Scenario, zoning was bolstered near transit nodes and activity centers thereby allowing the intensity of uses on all parcels including parking lots. Several additional parking lots were targeted for redevelopment through zoning and their maximum floor-to-area ratios (FAR) were raised by 20 percent.

Preserve Open Space

- Areas that are designated as parks, recreational fields, forest lands, drainage, and all other publically owned open spaces are recognized within the UrbanSim model and prohibited from development in both the Trend and Preferred Scenarios.

Reduce Development in High-Risk Floodplain Areas

- Currently high-risk floodplain areas are developable and their potential use and intensity is determined by zoning. These conditions are reflected in the Trend Scenario.
- In the Preferred Scenario, parcels that lie within floodplains that are not currently developed were given a 20 percent reduction in allowable densities in the zoning specifications. This reduction simulates the higher costs of insurance and development that exist within designated 100-year floodplains.

Preserve Agricultural Lands

- If an agricultural property has been specifically targeted for preservation by a local jurisdiction it is recognized by UrbanSim and will not be developed. For example, this is the case on several agricultural properties in the Village of Corrales.
- In the Preferred Scenario, MRMPO down-zoned agricultural parcels by 20 percent if they lie within floodplains. This reduction in the redevelopment potential of agricultural land in high-risk areas rests on the assumption that increased awareness of the vulnerability of these lands will guide future preservation efforts.

Interface/Intermix

- In the Trend Scenario, wild land interface and intermix areas that are sensitive to wildfire and other extreme events are developable and their potential use and intensity is determined by the zoning code.
- In the Preferred Scenario, undeveloped parcels within the intermix area that were confirmed as located in a potentially sensitive area and are not within a floodplain were given a 20 percent reduction in zoning densities. This reduction attempts to simulate the challenges to developing in these areas, financial or otherwise, and the additional costs associated with protecting development from fire risks.

Reduce Development in Wildlife Crucial Habitat Areas

- Large swaths of developed land within our urban core are designated as crucial wildlife habitats. While it is not feasible to limit development in established areas such as Old Town and the University of New Mexico, the performance measure has been redefined to monitor the extent to which the land use scenarios are expected to impact critical wildlife habitats outside of the existing urban footprint.

Preserve Historic Districts & Neighborhoods

- Historic landmarks, structures, and overlay zones are scattered throughout the region. Future development potential for these sites is often on a case-by-case basis. More research must be done in order to craft a standard approach to address these areas through the MRMPO modeling environment.