

Information Item

Land Use Advisory Committee



METROPOLITAN
COUNCIL

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Topic

Scenario Planning Consolidated Findings and Connections to Policy

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Introduction

As part of preparing for Imagine 2050, the Metropolitan Council initiated a scenario planning process to ensure that it can advance toward its regional goals in the face of uncertainties. The main purpose of this process was to identify policies and investments that can help the Council navigate those uncertainties and be prepared for them.

In 2023, Council staff from various technical areas presented findings of this scenario analysis, showing the impacts of alternative futures on transportation, housing, water supply and quality, wastewater, parks, climate, and natural systems. This memo brings those findings together in a holistic fashion to identify the main takeaways of the scenario analysis. These takeaways are meant to support policy conversations about the region's future as the Council continues to discuss high-level policy guidance for Imagine 2050.

Analysis

The scenario process started by identifying uncertainties that the Council should explore. Staff from multiple divisions collectively examined a set of uncertainties and settled on two that had the most impact on the Council's main role of planning for regional growth: "How much will the region grow?" and "Where will residents and employers decide to locate in the region?"

Most of the region's growth depends on external factors such as immigration rates and the performance of the national economy. Since the region has very little impact on these larger-scale factors, the amount of growth in the region presents an uncertainty for which the region needs to be ready. Council staff simulated alternative futures with varying levels of regional growth to explore the future impacts of this uncertainty. They analyzed three growth levels - business as usual (continuation of current growth levels), higher growth, and lower growth.

Similarly, the Council and local jurisdictions do not know exactly where people and businesses will decide to locate and what demand in real estate markets will look like. While the Council works with local jurisdictions to make land available for development, unforeseen dynamics in the real estate markets play a big role in determining where actual development occurs. Once again, planners need to be prepared for alternative futures where market demand plays out differently in the region.

Council staff examined two different growth patterns to investigate the uncertainties associated with the locational preferences of residents and businesses: compact and dispersed growth. In compact growth scenarios, more residents and businesses will decide to locate in the already built and relatively denser areas of the region, mostly in and around the region's center. In dispersed scenarios, more of the region's population and employment growth will take place in the region's less built, lower density areas in suburban and rural locations. In all scenarios, each part of the region grows but to different extents.

Scenarios contain two components: growth and development. Growth refers to the location of growth

across the region (compact or dispersed). Development refers to the built form of growth *within each community*.¹ While compact development is an essential part of compact growth, compact development could also happen in dispersed growth. Given differences in the density ranges between jurisdictions, however, development in the region's center will likely look very different than development in the region's suburban and rural areas.

Staff used the Council's regional land use model to simulate variations in market demand that lead to alternative regional growth patterns. To simulate compact growth in the region, they used the higher end of density ranges in existing comprehensive plans. To simulate dispersed growth, they used the lower end of density ranges in existing comprehensive plans.

These variables yielded five future scenarios: business-as-usual growth; high growth compact; high growth dispersed; low growth compact; low growth dispersed. In forming these scenarios, staff used the region's current Comprehensive Plan density ranges, its existing transportation and wastewater infrastructure as well as its current housing and land use policies.

To ensure plausibility, staff utilized the Council's forecast and land use models and simulated alternative futures with realistic growth rates based on conditions experienced in the past. While plausible, the simulated scenarios were also different enough from each other that staff could identify significantly different impacts on the Council and the region.

Modelers from different divisions used quantitative and qualitative models to study the impacts of these scenarios on the Council and the region. The findings of the impact analysis are summarized below.

Findings

This section summarizes the scenario impacts on individual council areas, focusing on their alignment with the Council's goals. The findings discussed here are high-level; details are covered in the presentations made to Council members throughout 2023.

Land Use

Compact development uses land more intensely and efficiently, regardless of how much the region grows. It also puts less pressure on the region's agricultural areas and natural systems. These findings suggest that compact development makes it easier to protect the region's natural systems by reducing the footprint of development. They also imply that compact growth patterns can make the region more dynamic and resilient by preserving its agricultural economy.

Transportation

Compared to dispersed growth, compact growth results in lower vehicle miles traveled, lower transportation-related greenhouse gas emissions, greater job accessibility, and better transit access, regardless of how much the region grows. These findings show that compact growth patterns are in alignment with the Council's goal of being leaders in climate mitigation, adaptation, and resilience. They also imply that compact growth is more conducive to generating a more dynamic and equitable region.

Housing

The cost of meeting the affordable housing needs of the population is lower in compact growth scenarios than dispersed ones. As such, compact growth promotes a more dynamic and equitable region. However, compact growth might lead to gentrification and displacement of low-income residents in areas where growth pressures make housing more expensive. If not addressed, gentrification and

¹ Built form includes a development's density; its location in relation to existing infrastructure; the size of its footprint; its contiguity and connectedness to other development; and the extent to which it encourages alternative modes of travel. Communities have the land use tools to promote compact or dispersed built form in their jurisdictions.



displacement risks can undermine equity in the region.

Water Quality

One type of growth is not better in terms of surface water runoff and quality. Each pattern of growth generates different types of pollutants and the results of each scenario depend on the type of pollutant. For instance, dispersed growth scenarios produce larger reductions in nitrate runoff while compact growth scenarios produce lesser amounts of chloride runoff. Regionwide differences in scenario results don't tell the whole story since surface water impacts occur locally on small streams and lakes.

Water Supply

In all scenarios, industrial development increases in very highly vulnerable areas of water supply. More industrial development occurs in high-growth scenarios. In dispersed growth scenarios, the region relies more on groundwater than surface water and this brings the region closer to the sustainable groundwater limits. These scenarios also increase the pressure to use additional private wells in areas not served by municipal systems. In compact growth scenarios, the region relies more on existing water systems such as the Mississippi River, which has higher monitoring, treatment, and costs. These scenarios create higher risk of impact from sudden drought, making the region less resilient.

Wastewater Management

In compact growth scenarios, the region utilizes its existing wastewater infrastructure more efficiently. Dispersed growth scenarios have the greatest potential to shift resources toward early and unplanned expansion efforts. They also increase the use of septic tanks and rural, local treatment plants, which can lead to long-term environmental degradation. This implies that the region's goal of protecting natural systems in the region is harder to achieve in dispersed growth scenarios.

Parks and Trails

The amount of growth rather than its location plays a more important role in determining park and trail acquisition, protection, and use outcomes. High growth scenarios increase the cost of acquisition, constitute a challenge for conservation, and might lead to overuse of parks and trails. In addition, higher growth could imply higher visitation, which might lead to increases in funding appropriations. The specific challenges and opportunities associated with acquisition, protection, and use of parks and trails depend on where growth happens, in mature or developing parks and trails.

Climate

Compact growth produces lower GHG emissions than dispersed growth, no matter how much the region grows. This is also the case for transportation and residential building energy related GHG emissions. These findings suggest that compact growth patterns would serve the region better in terms of reaching its climate goals.

Natural Systems

Dispersed development patterns pose a higher risk of natural systems loss, fragmentation, and species loss than compact patterns. This means that compact growth patterns are better aligned with the region's goal of protecting and restoring natural systems.

The Cumulative Impact of Scenarios on Regional Goals

The impacts of scenarios on the region affect the Council's ability to move toward its regional goals.

The analysis above measured scenario impacts on individual Council areas and explored their alignment with the Council goals. This section looks at these alignments cumulatively to identify how well each scenario serves the region. Would a scenario stand in the way of achieving the region's goals? Or would it bring opportunities to move the region toward these goals?

This cumulative analysis of each scenario's impact on regional goals also signals how the Council could respond to each scenario. By giving high-level policy guidance that reflects this cumulative analysis, the region can prepare for each future. The analysis also presents a unique opportunity to integrate and coordinate the Council's policies to move toward its regional goals regardless of the scenario it faces. Both the results of this analysis and their policy implications are discussed below.



Results

The analysis revealed that, compared to dispersed scenarios, compact growth scenarios would bring the region closer to achieving its goals in the following ways:

- By leading to more efficient land use and reducing the amount of fragmentation and natural degradation associated with growth, compact growth would help protect the region's natural systems.
- By consuming less agricultural land, compact growth would help protect the region's agricultural economy, making the region more dynamic and resilient.
- By generating lower GHG emissions, compact growth would serve the Council's goal of climate mitigation.
- By providing higher job accessibility, compact growth would help promote a dynamic and resilient region.
- By making transit more viable, especially for transit-dependent low-income residents, compact growth would make the region more equitable and dynamic.
- By reducing the cost of meeting the region's affordable housing need, compact growth would promote a more dynamic region.
- By generating less chloride run-off, compact growth would pose a smaller risk of this type of pollution, which would align well with the region's goal of protecting and restoring our natural systems.
- By providing more efficient use of our wastewater infrastructure, compact growth would make the region more dynamic.
- By posing a lesser risk of environmental degradation, compact growth would promote a healthy region.
- By leading to lesser fragmentation and degradation of natural systems, compact growth would help the region protect its natural systems.

The analysis also showed that, compared to compact scenarios, dispersed scenarios would help the Council move closer to its goals in two ways.

- By posing a lesser risk of gentrification and displacement of low-income residents, dispersed scenarios would promote a more equitable region.
- By generating larger reductions in nitrate run-off, dispersed growth would pose a smaller risk of this type of pollution, which would align well with the region's goal of protecting and restoring our natural systems.

Main Takeaways

The main takeaways of the analysis of the impact of scenarios on the regional goals can be summarized as follows:

Regional goals are easier to achieve in compact scenarios.

The findings suggest that, compared to dispersed scenarios, compact growth scenarios offer more opportunities for achieving the Council's regional goals. However, compact growth scenarios also pose some challenges, such as gentrification and displacement risk, that can get in the way of achieving these regional goals. These challenges need to be addressed for the Council to be sufficiently prepared for all scenarios.

We face more challenges to achieving our regional goals in dispersed scenarios.

The findings show that dispersed scenarios offer few opportunities for achieving our regional goals as they are not well aligned with these goals. In these scenarios, the region faces a long list of challenges that need to be addressed for the region to be fully prepared for this future. These challenges cover most policy areas including land use, transportation, housing, wastewater services, climate, and natural systems.

High-Level Policy Guidance

The main takeaways support the following high-level policy guidance:

- Guide the region toward compact growth and development to move the region closer to our regional



goals.

- Promote compact development to address the challenges present in dispersed scenarios.

Conclusion

The findings of the scenario analysis suggest that there are robust policies that can help us move toward our goals under all futures. Policies that encourage compact growth and development can move the region in the right direction.

Policies that promote compact development can mitigate many of the challenges present in dispersed futures as well. For instance, suburban and rural communities that grow a lot can guide development in compact ways in their communities. The Council could collaborate with communities to encourage compactness regardless of where people decide to live.

This analysis is meant to inform policy conversations about the region's future as the Council develops its objectives, policies, and action in Imagine 2050.

