Supplement C: Scenario creation and process

A major element of the FUDA process was to create and evaluate future growth scenarios. The scenarios are intended to provide public participants and the steering committee with information about the positive and negative consequences of future growth to make more knowledgeable decisions about preservation and growth options in their communities.

The scenarios were derived from a land demand analysis that was created by the staff team. This used a similar methodology as CARPC's state approved land demand methodology for urban service areas, though it differed in a couple significant ways. First, it utilized Wisconsin Department of Administration (DOA) population projections at the municipal level (CARPC's USA population projections, which frequently cross municipal lines, are calculated using regression-based formula based on county-wide growth). Second, historic residential development patterns were evaluated to determine how much of the municipal growth would urban (served by sewer) and how much would be rural. The urban population combined with recent residential density trends and non-residential development patterns yielded the baseline land demand.

After initial demands were established, a redevelopment inventory established the quantity of new space that could be accommodated on sites identified in existing redevelopment plans. This value was then factored based on existing site characteristics, such as assessments, the amount of built space on the site, and the age of buildings, to establish an estimated amount redevelopment that would be likely. The redevelopment was then translated into acres required for the equivalent amount of greenfield development and deducted from the overall land demand for greenfield development.

Prior to scenario evaluation, two rounds of public involvement were used to gain community input on future growth. The first round utilized a visual preference survey, where participants rated and discussed various development images. In the second round, participants created their own scenario by placing icons representing a specific amount of new development on the map where they deemed appropriate.

Initially, five different scenarios were envisioned, including baseline/trends, adopted plans, public input, dispersed and compact scenarios. They would all utilize an equal population and amount of commercial and other non-residential development, but would vary the density, levels of environmental protection, amount of open space, and other factors. The number of scenarios was eventually reduced to three (Adopted Plans, Compact and Dispersed Characters) because of the difficulty in comparing and selecting a scenario.

Steering committee members expressed concern that DOA population projections may not reflect as high of growth as could likely happen. steering committee members cited several reasons:

- Improved inter-governmental relations between DeForest and Windsor (which previously may have hindered growth),
- Highway 51 expansion and realignment increasing regional traffic,

- Limited remaining development potential between Madison and Sun Prairie prompting growth to shift to Highway 51, and
- Energized focus on TIFs and joint community marketing.

Staff and committee members explored other potential growth rates and because consensus could not be reached on an appropriate growth rate, the committee decided to shift to a boundary based scenario evaluation exercise. Using a fixed boundary would create scenarios of different populations and build-out dates, most beyond 25 years, and still allow comparisons of other factors. For comparison purposed an alternative growth rate assuming the highest 5-year growth was developed.

The three scenarios were developed based on the existing future land use plans, comments made during public outreach meetings, and input from the staff team and steering committee. Scenarios contained land use designations for every parcel within the defined scenario evaluation area (note the scenario evaluation area differed from the FUDA study area). A range of residential districts were used in each scenario, and each district defined density for single family, multifamily and their mix (ie % of all residential units that are single family). Mixed-use, commercial and industrial areas were also located and varied in each scenario. The amount of open space and environmental protection varied in each scenario. Certain scenarios featured community separation areas, expanded environmental corridors and other areas that could be appropriate for preservation.

- Adopted Plan Scenario: This scenario generally followed various residential density patterns established in the communities' future land use plans and recently approved developments. Overall residential density averaged to 5.25 units per acre (net) with 73% single family housing. The Adopted Plan scenario also includes preserved areas to provide community separation.
- Compact Character Scenario: This scenario takes a more compact approach to future growth, using higher density residential and commercial development and more areas that would be classified as mixed-use. Placing more residence in closer proximity to frequently visited destinations, including commercial areas, parks, schools and natural areas, creates a more walkable/bikeable pattern and increased the long-term potential for transit service. Residential density averaged 7.2 units per acres and the portion of single family units decreases to 69%. Commercial density is assumed to increase from an assumed FAR of 0.2 to 0.28, allowing for a greater amount of commercial space per acre. In addition, the amount of redevelopment projected to occur is assumed to increase by 50% because policies will encourage reutilization. The Compact Scenario includes a larger community separation area at the periphery of the communities and incorporates a potential environmental corridor expansion area that would protect environmentally sensitive area beyond environmental corridors.
- Dispersed Character Scenario: This scenario shows a more dispersed future development pattern, with lower densities and fewer areas that mix uses. The residential density drops to 3.3 units per acre (which includes multi-family), and the portion of single family homes increase to 77%. Commercial density decreased to an assumed FAR of .16 from .2). The scenario also sees a 50% decrease in the amount of redevelopment, as the density required for these project would not be consistent with dispersed community growth. No additional preservation efforts are contained in this scenario beyond environmental corridors.

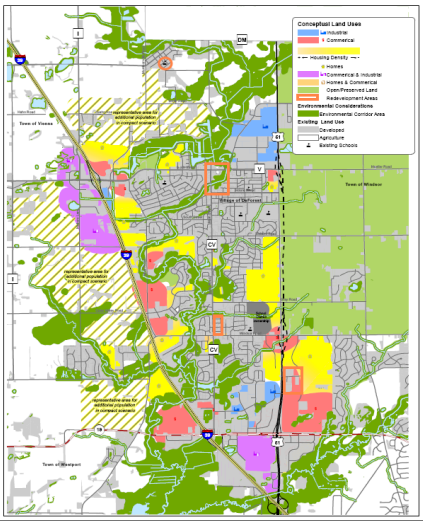
Scenario Summaries and Public Responses

Scenario A: Dispersed Character

These are the outcomes if DeForest, Vienna, and Windsor pursue less compact development in new growth areas, less environmental protection, and greater separation of land uses than adopted plans.

1 What's new

3 Here is where new construction could be



2 New construction could look similar to this

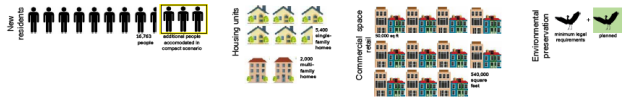
Typical Street layout

3rd choice for 58% of participants, lowest overall ranking

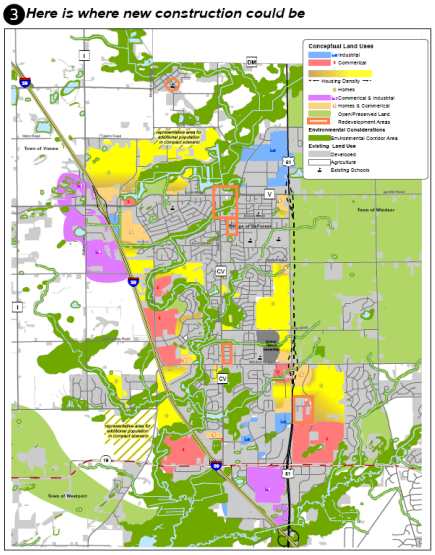
Scenario B: Adopted Plans

The DeForest, Windsor and Vienna comprehensive plans shape this scenario and new growth areas would be similar to recent development.

1 What's new



3 Here is where new construction could be



2 New construction could look similar to this

Typical Street layout

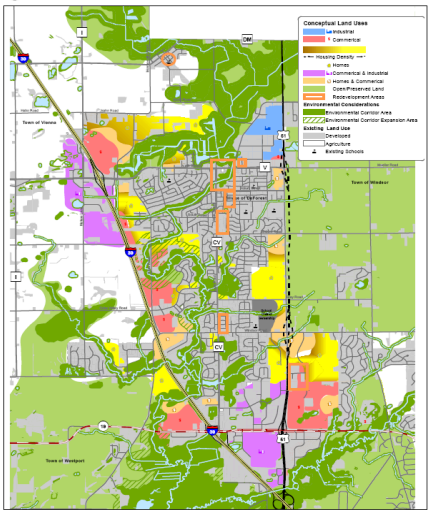
2nd choice for 64% of participants, highest overall ranking

Scenario C: Compact Character

These are the outcomes if DeForest, Vienna, and Windsor develop new growth areas more compactly, more environmental protection, and greater mix of land uses than adopted plans.

1 What's new

3 Here is where new construction could be



2 New construction could look similar to this

Typical Street layout

1st choice for 48% of participants, middle overall ranking

Additional scenarios were requested in public comment. These scenarios included all projected 2035 growth within the 2012 USA boundary and a build-out using projections out to 2060. The steering committee did not elect to evaluate these scenarios. The official comment and steering committee response are in Supplement B as part of the public participation record.

While the scenarios were being created, a series of indicators were developed to evaluate the potential impacts of future growth. These are the indicators and how they were calculated:

- **Population and Housing:** Population and housing counts are based on the number of residential acres planned in each scenario and the number of homes built on each acre (density). Each acre is assumed to have a certain number of single-family and multi-family homes attributed to it, and these numbers change in each of the scenarios. An average household size is matched with single family homes and multi-family homes to calculate the population.
- **Acres of Development Per New Resident:** The FUDA joint planning process uses a defined growth area from the DeForest, Vienna, and Windsor comprehensive plans. Because of this methodology, total developed area is generally constant and population and time horizon changes across the scenarios.
- **Amount of Redevelopment:** Redevelopment potential is estimated on a site-by-site basis, with guidance from existing plans and local staff. The likelihood of redevelopment on each site was evaluated, and assigned a hypothetical to derive the anticipated amount of redevelopment. For example, if a redevelopment site could have a 10,000 square foot building, and has a 50% chance of redevelopment, 5,000 square feet would be anticipated. Different scenarios alter the amount of redevelopment by changing the likelihood of redevelopment, based on the idea that more compact development would accompany policies that encourage greater redevelopment.
- **Approximate Build Out Date:** The build out date for the planning area is estimated by growth projections (additional residents per year) from the Wisconsin Department of Administration (DOA). The DOA growth rate is based on their 2035 population projection and recent population estimates (similar to census counts). The growth rate from local communities is faster and is based on the five highest growth years in recent history. The scenarios' total populations is compared to these growth rates to determine the build out year, or the year when the defined geographic area would fill with urban development.
- **Yearly Tax Revenue Per Person:** Tax revenue is estimated from an average value for each single family and multi-family home and an average commercial and industrial use value per acre. Total revenue is divided by the new population to determine the per-capita revenue. This is not the amount of tax paid by each resident. Rather, a higher revenue per person reflects a greater amount of commercial and industrial uses (residential tax revenue is generally constant).
- **Infrastructure Costs Per Person:** This estimates the costs of new roads, sewer and water lines associated with new development. The amount of new roads needed is an analysis of the length of road and housing units in 4,500 census blocks in Dane County. Costs were estimated by reviewing several infrastructure replacement projects in the City of Madison.
- **Commercial Space and Stores:** Future commercial space is estimated in a couple of ways. First, the communities' future land use plans identify where commercial is to go and the amount of acres it will occupy. An average ratio of commercial building space to land area (known as floor area ratio or FAR) estimates building square feet. This ratio changes between the scenarios; more building space on the same amount of land is used in the compact scenario and less building in the dispersed scenario. Secondly, concepts discussed in existing community plans are used to estimate commercial redevelopment space. Finally, retail space is determined using an average of how much retail each household could support.
- **Jobs:** The total number of jobs is estimated by using employment data reported in the 2007 Economic Census and the number of acres used by employers, including commercial and industrial uses. Increases or decreases in the scenario's commercial space per acre were reflected.

- **Change in Driving Miles and Air Pollution:** The change in driving miles per person is based on findings of multiple studies evaluating how the built environment impacts peoples' driving habits. Generally, these studies conclude that people in more compact neighborhoods drive less because more destinations are closer. Trips in the car are shortened and some can be made by walking or biking. The reduction/increase in driving miles is used to calculate the impact on air pollution.
- **Yearly Water Use:** Yearly water use measures the total water use of the community, attributable to residential, commercial and industrial uses. This is based off water usage reports submitted by local utilities to the Public Service Commission. The statistic is presented per-resident though much of the water is sold to commercial and industrial users, not residential; it is not the amount of water used by each person. Greater water use will generally reflect a greater amount of commercial and industrial users.
- **Open/Protected Area:** The scenarios have a varying levels of environmental protections in them. All include existing legal standards that protect environmental corridors and other sensitive areas. The Adopted Plan and Compact scenarios require less land per person, and therefore are able to incorporate a community separation area that is envisioned to remain open in the future. The Compact scenario also includes recommendations to incorporate additional lands into the legally-protected environmental corridor, based on the findings of a restoration biologist.
- **Farmland and Annual Agricultural Revenue Lost:** This measure the amount of farmland consumed by future development and the estimated revenue loss attributed to that farmland. Revenue loss is estimated by the average revenue per agricultural acre in Dane County.
- **Health:** Physical Activity and Livability for persons at or above 65 years of age. These summary indicators were prepared by staff at the Wisconsin Department of Health. Several aspects of the scenario are incorporated into these indicators, including factors that encourage physical activity and overall well-being (such as the ability of to walk between destinations, proximity of parks and open spaces, etc).