DEVELOPING THE BUSINESS AS USUAL (BAU) SCENARIO FOR VIBRANT NEO 2040

The Business As Usual (BAU) scenario was developed during the early part of 2013 as part of the NEOSCC Vibrant NEO 2040 initiative to show residents and other stakeholders of Northeast Ohio what the future may look like in 2040 if current trends and policies continue. The BAU output included maps showing the likely type of development and its disbursement throughout the region based on running current trends out through 2040. Additionally, the BAU also included other graphics depicting themes and quantitative analysis of key indicators, including fiscal impacts, which would likely be experienced under this scenario. The BAU was presented at a round of workshops in late April and early May 2013 to elicit feedback and comments from the people of Northeast Ohio about what they did and did not like about the BAU that will be used to build alternative scenarios of what the future could be for the region.

Summary of Scenario Inputs: The team of consultants working on the project, in consultation with researchers from Northeast Ohio, created a methodology for developing the baseline forecasts and inputs that drive the scenario. These include historic trends that drive expected control totals, development typologies, drivers of development, drivers of abandonment, development constraints, and indicators. This methodology was vetted with NEOSCC Board of Directors and staff and local experts between February and April 2013 so that it was tailored to the conditions in Northeast Ohio.

Historic Trends: For most variables, the team determined there was not a ‘general accepted’ forecast for the region, so the decision was made to generate a set of forecasts by projecting out demonstrated growth trends for the region. The NEOSCC Technical Steering Committee chose to use the 20-year time period from 1990-2010 to use as the baseline from which to forecast future growth. This time period was selected as the best representation of the region as ‘stabilized yet challenged’ and was long enough to capture several ‘market cycles’, a critical factor for a long-range forecast. The team generated a set of growth forecasts for the 12-county northeast Ohio region over the next 30 years. The forecasts cover population, households, employment, building permits and units of residential abandonment.

Control Totals for 2040: One of the fundamental scenario inputs was the set of expected number of future households and employment through the region, called control totals. Control totals were also established for population, building permits, and abandonment. Beyond establishing net-change totals, building the BAU required an understanding of the spatial patterns of new construction and abandonment and how these relate to macro socio-economic forecasts.

- **Population Control Totals**: The consultant team used the 1990-2010 trend (US Census data) as the basis to forecast the future. Specifically, the percent annual population growth/decline is run-out over the 30-year forecast period to determine the net growth/decline figure for each of the counties. The forecast yields a net population increase of approximately 93,000 people for the region by 2040.

- **Employment Control Totals**: The consultant team used the 1990-2010 trend (Bureau of Labor Statistics data) to drive the forecast. Like the population forecast described above, the percent annual employment growth/decline is run-out over the 30-year forecast period to determine the
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net growth/decline figure for each of the counties. The forecast yields a net employment increase of approximately 108,000 jobs for the region by 2040.

### Employment

<table>
<thead>
<tr>
<th>Year</th>
<th>Ashtabula</th>
<th>Cuyahoga</th>
<th>Geauga</th>
<th>Lake</th>
<th>Lorain</th>
<th>Mahoning</th>
<th>Medina</th>
<th>Portage</th>
<th>Stark</th>
<th>Summit</th>
<th>Wayne</th>
<th>TOTAL</th>
<th>Net</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>31,922</td>
<td>24,074</td>
<td>9,274</td>
<td>100,092</td>
<td>98,788</td>
<td>13,335</td>
<td>156,989</td>
<td>265,402</td>
<td>15,976</td>
<td>80,606</td>
<td>1,767,556</td>
<td>243,507</td>
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</table>

### Annual Rate 1990-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>1990-2010</td>
<td>0.4%</td>
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</tbody>
</table>

### Forecast

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2040</td>
<td>41,751</td>
</tr>
</tbody>
</table>

### Abandonment

- **Households Control Totals:** The forecast for households uses a slightly different methodology in that it ‘pivots’ off of employment forecast rather than using a historic trend. The logic used by the consultant team and panel of advisors was that the rapid level of household expansion over the past twenty years, in the face of declining population, is a trend that cannot extend unabated. For this reason households are forecast using the average regional jobs to household ratio (1.2) for the past 20 years. This means that for every 1.2 new jobs that are expected to come to the region over the next 30 years, the region will grow by 1 household. This methodology yields a forecast of 90,000 new households by 2040.

### Building Permits Control Totals

- **Building Permits Control Totals:** The team established a ratio of building permits to household growth for each county in the region. This metric is applied to the forecast for household growth in order to predict the level of building permits over the next thirty years. One exception to the methodology is for counties that had significant building over the last 20 years despite a significant decline in households. For these four counties, the forecast assumes that building permits will happen at a rate of 80% of what occurred during the 2000’s. This methodology yields a forecast of 292,000 new building permits by 2040, a rate slightly below 100,000 per decade.

### Abandonment

- **Abandonment:** The forecast is calculated as the difference between building permits and net new household growth. The forecast also accounts for natural vacancy and unit replacement at a level of 7%. This means that a county forecast to have 10,000 new permits over the next decade and 8,000 new households would generate approximately 1,300 units of abandonment. The forecast assumes that as the new units come online and there are not enough new households to fill them, that existing households will transfer into newer properties leaving a portion of the older housing stock abandoned. This methodology yields a forecast of 180,000 additional abandoned units by 2040, about 60,000 per decade.
Development Typologies: The team used typical kinds of development styles, also called typologies, which are prevalent or emerging throughout Northeast Ohio as one of the building blocks for the scenario model. This ensured that future development shown in the BAU was firmly rooted in the types of communities, neighborhoods, and blocks that exist here and are representative of the region.

Drivers of Development: In order to locate new typologies accurately in the BAU scenario, the team had to understand the drivers of development in Northeast Ohio. Many of these drivers follow generalizable patterns and were relatively straightforward for the team to analyze and summarize, but other drivers were unique to Northeast Ohio and required local knowledge. Existing parcel zoning for the region was used at face value to distribute growth under the BAU. Driver, which include things like known large residential or commercial developments and major infrastructure investments, were translated into mapping inputs for scenario allocation.

Drivers of Abandonment: The BAU assumes that current household trends will continue, resulting in abandonment in tracts that lost households over the past two decades. For the BAU, “residential abandonment” occurs when a household leaves a residential structure and the structure remains unoccupied or is demolished and remains a vacant through 2040, the end date of the scenario. “Abandonment risk” means that a census tract is likely to see abandonment in the future. County-level control totals were used to determine the total quantity of abandoned units per county. See below for a more detailed explanation of what this means and how it was developed.

Development Constraints: Identifying locations where development is prohibited was an essential step in creating the BAU scenario. These constraints, which include things like land that is highly prone to flooding, public park systems, or lands in conservation, were used as inputs into the model.

Indicators: Spatially based indicators provide a way to measure the scenario outputs and compare them against current conditions to understand the impacts of the policies and assumptions used to construct the BAU and the alternative scenarios that will be developed. Fiscal impacts are the most prominent of the indicators used to see how the way in which the region develops in the future affect long-term individual, township, municipal, county, and regional costs. A group of local experts helped identify key inputs into the fiscal impact model so that it would be tailored to the situation in Northeast Ohio. It is driven by data from the State Auditor of Ohio - summarized 2011 Annual Financial Data for all jurisdictions; the Ohio Department of Taxation - sales tax and property tax rates for all jurisdictions; County Assessor’s Offices - assessed land and building valuation at the parcel level as an input to property tax calculations; and Longitudinal Employer-Household Dynamics Data (US Census) - counts of employment by location as an input to municipal income tax calculations.

VIBRANT NEO 2040 BAU ABANDONMENT METHODOLOGY DETAIL

The abandonment risk methodology is the result of intensive mapping, data analysis, and feedback from the NEOSCC staff and other local experts between February and April 2013. This included initial research with the consultant team and NEOSCC staff. After this preliminary analysis and comparison of factors that contribute to locations of abandonment risk at the census tract level, the review team was widened to include the following local experts: Dr. Ziona Austrian (Cleveland State University), David Beach (GreenCityBlueLake Institute at the Cleveland Museum of Natural History), Dr. Tom Bier (Cleveland State University), Tom Finnerty (Youngstown State University), Frank Ford (Neighborhood Progress...
Incorporated), Jim Rokakis (Western Reserve Land Conservancy), and Dr. Mark Salling (Cleveland State University) and the NEOSCC Technical Steering Committee. During this period, the methodology was refined to be focused on household change as the primary variable for possible future risk, noting that abandonment is the result of household loss combined with over-building, and it is abandonment most likely to occur at the weakest areas in the real estate market. The NEOSCC Board of Directors vetted the methodology and results at its March meeting, including “ground-truthing” areas of high abandonment risk, resulting in adjustments to the outputs.

The Household Change Method was decided upon to drive the location of vacant units in the BAU scenario. The relative amount of household decline, furthermore, correlates with the magnitude of abandoned units. The higher the percentage of household decline per census tract, the greater the number of abandoned units predicted through 2040. For instance, more vacant units will be “painted,” or added, in a census tract that lost 30% of its households than one that lost 5%. Manual adjustments were made to household totals for census tracts that changed between 1990-2010 so that the data available for this method included the entire region. The Household Change Method, therefore, allows all census tracts to be evaluated for future population change, whether or not tract boundaries changed between 1990 and 2010, allowing for the most accurate prediction of future abandonment risk (tracts that will have abandoned units created 2010-2040 as households leave). The map below is a visual representation of this abandonment risk.