EXPLORING TRANSIT ORIENTED DEVELOPMENT IN LOUISVILLE

Data Analysis, Case Studies, and Best Practices

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1 INTRODUCTION

The following report presents the analysis and discussion concerning transit oriented development opportunities in Louisville, Kentucky as outlined in the project scope and assignment criteria documents distributed by Dr. Kelly Kinahan.

1.1 PROJECT PURPOSE AND CONTEXT

The purpose of this project, in broad terms, is to conduct data-based analysis at the nine potential transit oriented development (TOD) identified in Metro Louisville’s transportation plan, Move Louisville, and assess these areas’ potential to support TOD. That plan analyzed current transportation conditions as well as outlined future goals and objectives for the region’s transportation network through the plan’s sunset in the year 2035.

The Move Louisville plan did not explicitly delineate boundaries for these potential TOD nodes. Instead, the plan identified a catalyst project or area transformation in each of the nine areas that could further spur nearby development and achieve transit oriented objectives. The identification of these nine areas can be found on page 58 in the Move Louisville report. These nine areas and their associated projects identified in Move Louisville will be discussed in Section 2 (Overview of Project Geographic Focus Areas) of this report.

Louisville is a member of the national non-profit organization STAR Communities. This organization developed the STAR Community Rating System, which utilizes a benchmark-based framework aimed at making communities more transparent, accountable and sustainable. STAR boasts a “clear, data-driven approach to assessing communities’ sustainability efforts.” (STAR Communities). The STAR rating system is divided into eight goal categories: 1) Built Environment; 2) Climate and Energy; 3) Economy and Jobs; 4) Education, Arts and Community; 5) Equity and Empowerment; 6) Health and Safety; 7) Natural Systems; and 8) Innovation and Process. Each goal has evaluation measures, which in turn, each have a number of associated community-level outcomes and local action recommendations.

STAR Communities are assigned a rating based on a cumulative score with a 750 point maximum score. The STAR rating system allows local governments to choose which measures they would like to report on and does not mandate that all measures are taken, with the idea being that the localities can decide which measures are “most important and relevant to their communities.” There are three levels of STAR Community certification: 3-STAR Community, 4-STAR Community and 5-STAR Community.

Louisville began working towards their STAR Certification in January 2014. On April 20, 2015, Louisville was awarded a 4-STAR Community certification. At this time, the city earned a cumulative score of 404.5 and chose to report on all STAR metrics.

One area that city officials have identified as an opportunity for improvement is the Built Environment evaluation measures. Specifically, the city scored 5.2 of a possible 20 points for the evaluation measure titled Compact and Complete Communities (BE-3 in the STAR Rating framework). This low score was due in large part to zero points being awarded for community-level outcomes.
The analysis contained in this report evaluated two of the four community-level outcomes discussed above within the context of the proposed transit oriented development nodes identified in Move Louisville. These outcome categories are titled “Density, Destinations and Transit” and “Affordable Housing.” The outcomes and their metrics are listed in Table 1 below. In lieu of analyzing the third Affordable Housing metric outlined in Table 1, this report instead observed the “private market” of affordable housing. While analysis of the third metric could provide valuable information, it was determined it would be more beneficial to observe whether market rate rental options existed for individuals in Louisville classified as low, very low, and extremely low income by the United States Department of Housing and Urban Development.

The TOD boundaries used in this report were created for the purpose of conducting analyses at each location. These boundaries do not reflect a commitment from Metro Louisville. The boundaries for each TOD were generally constructed using the catalyst project identified for each area in Move Louisville as a center point, with the boundaries extending roughly ½ of a mile from the center. In some instances, boundaries were extended beyond this ½-mile radius to include pertinent land uses. Details on the boundaries used for this analysis can be found in Section 2 of this report.

Table 1: STAR Community Analysis Metrics

<table>
<thead>
<tr>
<th>BE-3 Built Environment – Compact and Complete Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome: Density, Destinations and Transit (TODs must meet all thresholds)</strong></td>
</tr>
<tr>
<td>Residential Density: Average of at least 12 dwelling units per acre within a 1/4-mile walking distance of bus stops in the TOD area and an average of at least 7 dwelling units per acre within the rest of the TOD area</td>
</tr>
<tr>
<td>Employment Density: At least 25 jobs per acre in the TOD area</td>
</tr>
<tr>
<td>Diversity of Uses: At least 7 diverse uses present in the TOD area</td>
</tr>
<tr>
<td>Transit Availability: At least 60 weekday trips and 40 weekend trips provided in TOD area</td>
</tr>
<tr>
<td>EPA Smart Location Calculator(^1): Score for each TOD greater than or equal to 70.0</td>
</tr>
<tr>
<td><strong>Outcome: Affordable Housing (TODs must meet at least 2 of the 3 thresholds)</strong></td>
</tr>
<tr>
<td>10% of total residential units in TOD area are affordable</td>
</tr>
<tr>
<td>10% of residential units built or substantially rehabilitated in the TOD area within the last 3 years are dedicated as subsidized affordable housing</td>
</tr>
<tr>
<td>Some of the dedicated long-term affordable housing in the TOD area are deeply subsidized or deeply affordable for very- and extremely-low income households</td>
</tr>
</tbody>
</table>

\(^1\) The EPA’s Smart Location Calculator (SLC) was developed to address the growing demand for data products and tools that consistently compared the location efficiencies of workplace locational efficiencies. The SLC gives a score from 0 to 100 that is calculated using several demographic, employment and built environment variables compiled to the Census block group level for the entire US.
2 OVERVIEW OF PROJECT GEOGRAPHIC FOCUS AREAS (TOD AREAS)

2.1 DOWNTOWN/CENTRAL BUSINESS DISTRICT

The Downtown/Central Business District TOD area is the second largest of our proposed boundaries at 1.27 square miles. The location in the central portion of the city makes it an ideal area to support TOD. With the relocation or reconfiguration of the 9th street interchange and the extension of Waterfront Park west of downtown, this area will make the land currently occupied by the interchange accessible in order to provide improved connectivity for a larger area west of 9th street. Already a walkable, mixed-use area that serves as a central hub for TARC’s bus services, transit oriented development could expand the western boundary of the traditional Downtown/Central Business District neighborhood boundary past 9th street to include and leverage existing multifamily developments and to reconnect West Louisville with the downtown core. We propose extending the existing eastern boundary of the urban neighborhood to include Slugger Field and its’ associated development. The redevelopment of the numerous surface parking lots will continue to provide space and opportunities for residential infill and other TOD-related activities.

Figure 2: Proposed Downtown/CBD TOD Area Boundary
2.2 **Heritage West**
The Heritage West TOD area is the third largest of the nine areas at 1.15 square miles. Previous plans for the development of the West Louisville Food Port within one of Louisville’s historic industrial corridors have failed. However, this potential TOD area promises to bring reinvestment to the commercial areas on Market Street, the industrial areas to the west and east and the surrounding residential neighborhoods. This will provide a prime opportunity for TOD-related activities in West Louisville. Once development begins, transit, highway and rail access near the site will also bring significant investment to the surrounding area. The elevated interstate to the west (I-264) could provide a natural boundary for this area, while the existing rail uses in the northeastern portion of the site will continue to occupy a large amount of land that must be incorporated into any future land use plans. Already a community with significant commercial, industrial and single family uses, mixed-use development will create a more walkable site with better amenities and multifamily housing options.

*Figure 3: Proposed Heritage West TOD Boundary*
2.3 LEXINGTON ROAD

The Lexington Road TOD area is the smallest of our nine proposed areas at 0.76 square miles. With the redevelopment of the vacant, industrial property on Lexington Road, former industrial and commercial tracts will be transformed into housing, offices and retail throughout the corridor. Meanwhile, a new public connection over Beargrass Creek will link the site from Lexington Road to Mellwood Avenue, enabling pedestrians, bikes and cars to better access the area. Opportunities also exist for connecting the Beargrass Trail, which originates in Cherokee Park, to the Butchertown Greenway, which begins in Champions Park. Such a connection would establish the Lexington Road TOD area as a connection between the Butchertown and Highlands neighborhoods. These opportunities will provide an ideal environment for mixed-use and TOD activities with walkable and bikeable connections. This area has high potential to be one of the most compact and dense of the nine proposed areas.

Figure 4: Lexington Road Industrial Redevelopment Proposed in Move Louisville

Figure 5: Proposed Lexington Road TOD Boundary
2.4 DIXIE AT VALLEY STATION

The Dixie at Valley Station TOD area is the third smallest of the nine at 0.80 square miles. With the proposed redevelopment of the strip shopping area located near Valley Station and along Dixie Highway, buildings will be moved to the street, dangerous driveways will be eliminated and sidewalks and crosswalks will be improved. This medium density, mixed-use and walkable area could serve as a model for TOD in Louisville, as it will connect existing single family residents (and a school) with existing multifamily residences and commercial uses. Such a redevelopment will reimagine growth and development patterns on the outskirts of Jefferson County by showcasing how transit oriented development can transform urban sprawl and add value for property owners and the community. By including the multifamily properties on the southern and eastern edges of the site, this TOD area is more likely to have the density required to support increased bus service and other TOD activities and development patterns. Due to the relatively small size of this TOD area, it has a high potential to be an extremely compact development node.

Figure 6: Dixie at Valley Station Redevelopment Proposed in Move Louisville

Figure 7: Proposed Dixie at Valley Station TOD Boundary
2.5 **ST. MATTHEWS REDEVELOPMENT**

The St. Matthews TOD area is the fourth largest of the nine proposed areas at 1.14 square miles. With the proposed redevelopment of the suburban-style strip buildings currently located at the intersection of Westport Road and Frankfort Avenue/Shelbyville Road, transit oriented development could provide an opportunity to create a much more walkable community. By moving buildings to the street, improving sidewalks and creating more connectivity (potentially through a new street network), pedestrians will thrive in this location and the current traffic congestion could be eased. There is currently a considerably large multifamily area located within these boundaries, which will benefit the nearby commercial businesses and help contribute to TOD strategies. Increasing density in the existing single family areas will also add to the population necessary to leverage TOD strategies to the fullest of their potential.

*Figure 9: Proposed St. Matthews Redevelopment TOD Boundary*
2.6 **POPLAR LEVEL/INDIAN TRAIL**

The Poplar Level/Indian Trail TOD area is the largest of the nine proposed sites at 2.27 square miles. With the redevelopment of the intersection of Poplar Level Road and Indian Trail, a convenient and natural central gathering place for shopping and interacting will add economic and community value. New street connections could help alleviate traffic at the intersection. Already an area that contains multiple uses, this intersection provides a prime opportunity for implementing transit oriented development within a community that currently includes multifamily, commercial and industrial uses with single family residential properties. This area was drawn to include such a large area because of the lack of residential density surrounding the existing commercial strips. To support TOD strategies, density would likely have to be added in the existing single family areas. Although there is some existing multifamily near the commercial areas, higher residential densities would contribute to more sustainable TOD strategy implementation.

*Figure 11: Proposed Poplar Level/Indian Trail TOD Boundary*
2.7 **SHELBYVILLE ROAD CONNECTIVITY**

The Shelbyville Road area is the fourth smallest of the nine at 0.90 square miles. With the redevelopment of commercial properties and a potential new network of streets in Middletown, this site provides a model for reimagining commercial corridors in suburban Louisville. This new network of streets could reduce traffic at the intersection of Shelbyville Road and Old Shelbyville Road if redevelopment results in a walkable, transit oriented community. Within this area, multifamily, commercial and industrial uses currently exist. By focusing redevelopment efforts on the economically underutilized commercial areas that current take up a large amount of space, this intersection could incorporate TOD with the surrounding single family and multifamily uses.

![Figure 12: Shelbyville Road Connectivity Proposed in Move Louisville](image)

![Figure 13: Proposed Shelbyville Road Connectivity TOD Area Boundary](image)
2.8 HURSTBOURNE PARKWAY AT I-64

The Hurstbourne Parkway at I-64 TOD area is the fifth largest of the nine areas at 0.94 square miles. With the redevelopment of the intersection of Hurstbourne Parkway and I-64, this TOD will create a walkable transit node that benefits the existing commercial, industrial and residential uses. There already exists a large amount of multifamily housing in this area. By enabling mixed-use development, creating a more connected community and providing for additional forms of transit, the extensive commercial and industrial uses within the boundaries of this TOD will become better incorporated with the surrounding residential uses. The boundary of this area was extended to the north to include existing multifamily capacity in the area in hopes of increasing residential density.

Figure 14: Hurstbourne Parkway Redevelopment Proposed in Move Louisville

Figure 15: Proposed Hurstbourne Parkway at I-64 TOD Area Boundary
2.9 JEFFERSONTOWN VILLAGE REDEVELOPMENT

The Jeffersontown Village Redevelopment TOD area is the second smallest of our proposed boundaries at 0.79 square miles. With infill development on the southern end of the Bluegrass Commerce Park and adjacent to downtown Jeffersontown, transit oriented development will enhance one of Louisville’s premiere economic hubs. Adding multifamily capacity and mixed-use development to this area will expand the footprint of downtown Jeffersontown. Transit oriented development will also provide key transportation connections to frame this redevelopment, which will help create a walkable community within this largely single family, commercial and industrial area.

Figure 16: Jeffersontown Village Redevelopment Proposed in Move Louisville

Figure 17: Proposed Jeffersontown Village Redevelopment TOD Area Boundary
### Table 2: Summary of TODs

<table>
<thead>
<tr>
<th>Name of TOD</th>
<th>Size (Square miles)</th>
<th>Location*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>1.27</td>
<td>Core</td>
</tr>
<tr>
<td>Heritage West</td>
<td>1.16</td>
<td>Core</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>0.76</td>
<td>Core</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>0.80</td>
<td>Inner Ring</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>1.14</td>
<td>Core</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>2.28</td>
<td>Inner Ring</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>0.90</td>
<td>Inner Ring</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>0.94</td>
<td>Inner Ring</td>
</tr>
<tr>
<td>Jeffersontown Village</td>
<td>0.79</td>
<td>Inner Ring</td>
</tr>
</tbody>
</table>

*Location identifications are taken from the Louisville Metro Demographic and Economic Forecasts 2010-2040 report. This report divided the county into 21 market areas and identified them as part of the Core, the Inner Ring, or the Outer Ring. These market areas along with their location classification can be found in Figure 18 below.

**Figure 18: Market Areas Outlined in Louisville Metro Demographic and Economic Forecasts 2010-2040**
3 SUMMARY OF METHODOLOGICAL APPROACHES

3.1 KEY DATA SOURCES
A large amount of the data utilized in this report was obtained from the Louisville/Jefferson County Information Consortium (LOJIC). Spatial data retrieved from LOJIC included Jefferson County address points, Jefferson County parcels, Jefferson County land use, Jefferson County street centerlines, Transit Authority of River City (TARC) bus stops and TARC routes. TARC trip information was obtained directly from that organization.

Most of the affordable housing data used in this report was obtained from the United States Department of Housing and Urban Development (HUD). Spatial data obtained from HUD included public housing buildings, Low Income Housing Tax Credit (LIHTC) properties and Section 8 properties. Supplemental information was obtained from the Metropolitan Housing Coalition and the Louisville Metro Housing Authority. Information on the private market of affordable housing was collected from the American Community Survey estimates and Fiscal Year 2017 HUD Section 8 Income Limits.

Employment data was obtained from the US Census Longitudinal Employer-Household Dynamics (LEHD) dataset. Specifically, this analysis utilized LEHD’s Longitudinal Origin-Destination Employment Statistics (LODES) accessed through the OnTheMap online interface.

The US Environmental Protection Agency’s (EPA) Smart Location Database was utilized to determine scores for the TOD areas.

Single and multifamily building permit data was obtained in spreadsheet format from Metro Louisville government.

3.2 METHODOLOGICAL PROCESSES

3.2.1 Residential Density
Discussion of the methodological processes used in this report will begin with the Density, Destinations and Transit metrics. This report measures residential density by using address points as a proxy for housing units because housing unit data does not exist at the parcel level. Although housing unit data is available through the American Community Survey at larger units of geography (i.e. Census blocks, blocks groups and tracts), the analysis in this report was conducted at the parcel level, making it necessary to approximate housing units at this level. The address points were filtered to include only single family and multifamily land uses. However, there are several limitations to this approach. Upon manual inspection of the data, it was discovered that some buildings known to have multiple units only showed a single address point. The problem seemed to be specific to single family homes that had been subdivided into multiple units. This problem did not occur at all locations, and larger, multifamily buildings appeared to be appropriately addressed. Although this approximation of housing units is not exact, it is believed to be the best approximation immediately available. Due to the limitations to the method described above, the results of this residential density analysis are likely biased toward a more conservative estimate.
To determine the number of housing units within a ¼-mile walk of TARC bus stops, a ¼-mile boundary around each TARC stop was established using network distance. Network distance accounts for the existing street network and provides a more realistic representation of the distance a pedestrian could walk. To begin, a network dataset was created from the street centerline file. Using this network dataset along with a shapefile of TARC stops clipped to the TOD boundaries, a service area network analysis was run for a ¼-mile distance.

Next, the address points falling within this quarter mile TARC stop buffer were selected and tabulated. The areas of these buffers were also calculated and tabulated. To determine the residential density in the remainder of the TODs, the area of the ¼-mile buffers were subtracted from the total areas of each of the TODs. Then, the number of housing units within the ¼-mile buffers was subtracted from the total number of housing units in each TOD. Results were tabulated and are reported below.

3.2.2 Employment Density
To evaluate Employment Density, this analysis utilized the online OnTheMap interface for LEHD data. To retrieve data, the user can upload spatial data (shapefiles) that define an analysis area. Each of the nine TOD areas were uploaded to OnTheMap individually. Once imported, analysis parameters were set to produce a report with employment data including the total number of jobs. The total number of jobs was tabulated for each TOD and divided by the previously calculated area of each TOD to measure the number of jobs per acre.

3.2.3 Diversity of Uses
The Diversity of Uses analysis was based on spatial land use data obtained from LOJIC. Metro Louisville officially categorizes land use into seven classes: commercial, farmland, industry, multifamily, parks/open space, public/semi-public and single family. The LOJIC data also included right-of-way and vacant parcels, which was excluded from the diversity of uses analysis. As discussed above, the desired STAR rating threshold is a total of seven diverse uses. It was assumed that every TOD area would not individually have all seven of the applicable land use classes. For the purposes of this report, some of the LOJIC land use classes were further broken down into sub-classes.

The industry use category was further subdivided into manufacturing and warehousing. Further, the LOJIC-identified commercial uses were subdivided into three sub-groups: retail, restaurant and office. Additionally, this report included land use classes representing recreational amenities and religious institutions. The breakdown of uses identified in this analysis, and their definitions, can be found in Table 3 below. Land uses within each TOD were manually observed using ArcGIS, Google Earth and Google Maps. These results were recorded and tabulated for use in this analysis.

3.2.4 Transit Availability
To analyze Transit Availability, a tabulation of TARC trip data was required, which was not publicly available. To obtain this information, it was necessary to conduct a manual scrape of TARC trip information from publicly posted route schedules. First, TARC stops within the TOD boundaries were identified. After pertinent TARC stops were identified, manual tabulation took place for each stop, as follows. A trip was recorded for each stop for every scheduled stop listed on TARC schedules. Separate trips were recorded for each stop if the same TARC route made multiple stops at the same location. A trip was defined as a one-way movement along a scheduled route. As such, a route
running east/west in a circular, round trip fashion would be counted as two trips at stops along that route.

3.2.5   EPA SLC Scores
The EPA’s Smart Location Database (SLD) information comes pre-tabulated to the Census block group level, which do not align with the TOD boundaries established for this analysis. Due to the fact that the TOD boundaries for this report were drawn without regard to block group boundaries, it was necessary to weight the EPA SLD data to arrive at a composite score for each individual TOD area. To begin, the portions of each block group that fell within the TOD boundaries were selected using ArcGIS. Next, the areas of each of these portions of block groups were calculated and divided by the total area of each TOD to produce a weight for the score. The weights are equivalent to each block group’s proportion of the total area of its TOD area.

After these weights were calculated, they were multiplied by the block score for each group. These products were then summed by TOD to produce a single, weighted composite score for each TOD area.

3.2.6   Affordable Housing
This analysis was observed subsidized affordable housing (public housing, LIHTC properties, Section 8 properties), as well as the private market of affordable housing. The private market of affordable housing includes market rate units that are affordable to low, very low and extremely low (80%, 50%, and 30%) income residents as defined by the HUD Section 8 income classifications, which are based on the percentage of local area median income that is earned by an individual.

The first STAR metric for Affordable Housing requires the calculation of the percentage of each TOD’s residential units that are affordable. To begin, the total number of single family and multifamily units (address points) as classified by LOJIC were summed and tabulated for each of the TOD areas. Next, the total number of public housing, LIHTC and Section 8 units were summed and tabulated for each TOD. Finally, by dividing the total number of affordable units by the total residential units in each TOD, we arrived at a percentage of total units that are affordable for each area.

The second Affordable Housing metric measured in this analysis deals with the percentage of units built or substantially rehabilitated in the past three years that were dedicated as subsidized affordable housing. To accomplish this, the spreadsheets of single and multifamily building permit data were geocoded using ArcGIS. This allowed for the mapping of where these building permits were issued. The 670 multifamily building permit locations were geocoded with a 100% match rate and the 2,966 single family permits had a match rate of 95% (135 permits were not located). The 5% unmatched rate for the single family permits is likely due to the construction of new subdivisions or roads that have not previously been updated in the data by the county. The address located used for the geocoding of the permit data is derived from LOJIC’s road network and address points. As such, the newest subdivisions around the county may not have been updated in the LOJIC data, causing them not to match an existing location.
<table>
<thead>
<tr>
<th>Land Use Name</th>
<th>Definition (created for the purpose of this analysis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>Industrial use that creates products on a large scale using machinery. Does not include wholesalers, distributors or utility companies.</td>
</tr>
<tr>
<td>Multifamily</td>
<td>Multiple separate housing units for residential inhabitants are contained within one building or several buildings within one complex</td>
</tr>
<tr>
<td>Office</td>
<td>A structure used to conduct of business related to administration, clerical services, consulting and other client services not related to retail sales. Office buildings can hold single or multiple firms. This use does not include government services, which are instead included within the Public classification.</td>
</tr>
<tr>
<td>Park</td>
<td>An area of natural, semi-natural or planted space set aside for human enjoyment and recreation or for the protection of wildlife or natural habitats. Must be officially designated and inventoried by the local, regional, state or federal government. Does not include school facilities, which are instead included in the Public classification. Also does not include greenfields or brownfields owned by private interests.</td>
</tr>
<tr>
<td>Public</td>
<td>Buildings or facilities that are owned and operated by government entities, and are either used by the public or provide services to the public. These include public schools, government service buildings, government agency buildings, post offices, courthouses, community centers, etc.</td>
</tr>
<tr>
<td>Recreational</td>
<td>An amenity is a desirable or useful feature or facility of a place. Recreation is an activity of leisure. Recreational amenities are used for enjoyment, amusement, or pleasure, such as theatres, museums, comedy clubs, sporting/athletic facilities, gyms, etc.</td>
</tr>
<tr>
<td>Religious Institution</td>
<td>Places of religious worship</td>
</tr>
<tr>
<td>Restaurant</td>
<td>A place where people pay to sit and eat meals that are cooked and served on the premises. Includes fast food restaurants as well as bakeries, cafes, dessert shops, etc.</td>
</tr>
<tr>
<td>Retail</td>
<td>Includes commercial businesses or ventures where a service provider fills the small orders of a large number of individuals as well as commercial businesses or ventures where a service provider fills the large orders of a small number of wholesale, corporate or government clientele.</td>
</tr>
<tr>
<td>Single Family</td>
<td>A free-standing, single family residential building</td>
</tr>
<tr>
<td>Warehousing</td>
<td>A building designed for the storage of commercial inventory by manufacturers, importers, exporters, wholesalers, transport businesses, etc.</td>
</tr>
</tbody>
</table>

Due to the relatively small sample of building permits falling within a TOD boundary, visual comparisons of permit locations and affordable housing locations was used to determine the percentage of new construction and substantial rehabilitation in the past three years that was dedicated as subsidized affordable housing. The results of this manual inspection were tabulated for use in the analysis.
The third and final affordable housing metric analyzed, as stated above, is not part of the STAR framework. Instead, it was determined that observing and analyzing the private market of affordable housing would be more beneficial to this analysis overall. The private market of affordable housing includes market rate units that are available to individuals falling within the HUD-defined Section 8 Income Limits. To begin this analysis, Section 8 Income Limits were obtained from publicly available HUD information for fiscal year 2017.

The most recent American Community Survey estimates for contract rent amounts by Census block group were obtained in a spatial format. This dataset contained contract rent ranges and the number of units that fell in each of those ranges. This block group shapefile was clipped to include only those block groups falling within one of the nine TOD areas. Once the data was clipped to the TODs, the number of rental contracts that would be achievable to low, very low, and extremely low income families as defined in Table 13 in Section 4.1.6 were tabulated for each block group. Once that number had been determined for each TOD, it was multiplied by a weighting factor. That weighting factor was calculated as the area of the block group contained in the TOD divided by the overall area of the block group. By doing this, an approximation of each block group’s contribution towards each TOD’s private market of affordable housing was established. These values were then summed by TOD area to arrive at final values estimating each TOD’s stock of private market of affordable housing.
4 DATA ANALYSIS

4.1 COMPARATIVE ANALYSIS ACROSS TOD AREAS

This report will first look at the rankings of the nine TOD areas across the seven metrics that have been measured. This begins to paint a picture of each individual site’s strengths and weaknesses in comparison to one another, which is further discussed in Section 4.2. Tables 4 and 5 below show each TOD’s ranking for each of the metrics presented, and whether each metric currently meets the STAR threshold.

Table 4: Summary of Density, Destinations, and Transit Metric Rankings by TOD Area

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>Residential Density (in ¼-mile Walk of TARC)</th>
<th>Residential Density (outside ¼-mile buffer)</th>
<th>Employment Density (Jobs per acre)</th>
<th>Diversity of Uses</th>
<th>Transit Availability (scheduled TARC stops)</th>
<th>EPA SLC Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>2</td>
<td>N/A</td>
<td>1</td>
<td>T2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Heritage West</td>
<td>1</td>
<td>5</td>
<td>8</td>
<td>T1</td>
<td>T4</td>
<td>3</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>T1</td>
<td>T3</td>
<td>4</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>8</td>
<td>3</td>
<td>9</td>
<td>T2</td>
<td>T4</td>
<td>6</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>T2</td>
<td>T4</td>
<td>2</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>T7</td>
<td>6</td>
<td>4</td>
<td>T4</td>
<td>T3</td>
<td>9</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>5</td>
<td>4</td>
<td>7</td>
<td>T2</td>
<td>T4</td>
<td>8</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>T7</td>
<td>2</td>
<td>3</td>
<td>T1</td>
<td>T5</td>
<td>5</td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td>4</td>
<td>7</td>
<td>6</td>
<td>T4</td>
<td>T5</td>
<td>7</td>
</tr>
</tbody>
</table>

Denotes metric meets or exceeds STAR threshold
Denotes metric fails to meet STAR threshold
Table 5: Summary of Affordable Housing Metric Rankings by TOD Area

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>% of Residential Units that are Subsidized</th>
<th>% of New Construction or Rehabbed Residential Units Dedicated as Subsidized (past 3 years)</th>
<th>% of Rental Units Available to HUD-Defined Low Income Residents²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>1</td>
<td>T3</td>
<td>1</td>
</tr>
<tr>
<td>Heritage West</td>
<td>3</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>7</td>
<td>T3</td>
<td>3</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>8</td>
<td>No Data</td>
<td>7</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>4</td>
<td>T3</td>
<td>5</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>5</td>
<td>T3</td>
<td>9</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>9</td>
<td>No Data</td>
<td>8</td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td>6</td>
<td>No Data</td>
<td>6</td>
</tr>
</tbody>
</table>

Denotes metric meets or exceeds STAR threshold
Denotes metric fails to meet STAR threshold

4.1.1 Residential Density

STAR Metric: Average of at least 12 dwelling units per acre within a ¼-mile walking distance of bus stops in the TOD area and an average of at least 7 dwelling units per acre with the rest of the TOD. 0/9 TODs currently meet this threshold

As outlined in Section 1.1, there are two pertinent residential density thresholds required by STAR. The first is that within a ¼-mile walking distance of TARC stops, there is an average residential density of 12 dwelling units per acre. The second threshold is that in the remainder of the TOD area, residential density is at least 7 dwelling units per acre. The results of this analysis measuring these two metrics can be found in Table 6 below.

Of the 409 TARC bus stops that fell within a TOD boundary, only 9 stops individually met the STAR threshold, all of which are located in the Downtown/CBD TOD.³ Once the average number of dwelling units per acre within a ¼-mile work of TARC stops was calculated for each TOD, zero of the nine areas met the STAR threshold of 12 dwelling units per acre. The TOD with the highest average density around TARC stops was Heritage West with an average density of 4.06 dwelling units per acre.

² This metric is not included in the STAR framework.
³ Of the top 25 stops as far as dwelling units per acre across all TODs, all 25 stops came from the Downtown/Central Business District TOD area.
For the area of the TODs not within a ¼-mile walk of a TARC stop, again, zero of the nine areas met the STAR threshold of seven dwelling units per acre. Since 100% the Downtown/CBD TOD area was within a ¼-mile walk of a TARC stop, this second metric was not applicable. Of the eight remaining TODs, five have higher residential densities beyond a ¼-mile walk from TARC stops than they do within that distance. The three TODs (excluding Downtown/CBD) that have higher residential densities near TARC stops are Heritage West, Lexington Road and Jeffersontown Village.

Table 6: Residential Density Analysis Results

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>Area (Acres)</th>
<th>% of TOD in ¼-mile Walk of TARC Stop</th>
<th>TARC Stops</th>
<th>Total Dwelling Units</th>
<th>% of Dwelling Units in ¼-mile Walk of TARC Stop</th>
<th>Avg. Dwelling Units per Acre in ¼-mile Walk of TARC Stop</th>
<th>Avg. Dwelling Units per Acre in the Remainder of TOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>815</td>
<td>100%</td>
<td>153</td>
<td>2,706</td>
<td>100%</td>
<td>3.37</td>
<td>N/A</td>
</tr>
<tr>
<td>Heritage West</td>
<td>742</td>
<td>90%</td>
<td>72</td>
<td>2,898</td>
<td>94%</td>
<td>4.06</td>
<td>2.45</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>458</td>
<td>89%</td>
<td>51</td>
<td>1,054</td>
<td>96%</td>
<td>2.34</td>
<td>0.85</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>509</td>
<td>40%</td>
<td>10</td>
<td>1,413</td>
<td>15%</td>
<td>1.07</td>
<td>3.93</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>732</td>
<td>53%</td>
<td>48</td>
<td>2,691</td>
<td>45%</td>
<td>3.12</td>
<td>4.31</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>1,459</td>
<td>31%</td>
<td>32</td>
<td>4,201</td>
<td>27%</td>
<td>2.49</td>
<td>3.05</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>577</td>
<td>37%</td>
<td>9</td>
<td>937</td>
<td>27%</td>
<td>1.19</td>
<td>1.88</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>601</td>
<td>46%</td>
<td>16</td>
<td>1,689</td>
<td>19%</td>
<td>1.19</td>
<td>4.20</td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td>505</td>
<td>53%</td>
<td>18</td>
<td>1,076</td>
<td>68%</td>
<td>2.72</td>
<td>1.45</td>
</tr>
</tbody>
</table>

4.1.2 Employment Density

STAR Metric: At least 25 jobs per acre in the TOD area

1/9 TODs currently meet this threshold

Of the nine TOD areas, the Downtown/CBD TOD has, by far, the highest concentration of jobs, as well as the highest total number of jobs. This is expected as, traditionally, downtown urban cores across the country often display the highest concentrations of employment in their regions. The Downtown/CBD TOD is also the only TOD that currently meets the STAR threshold of 25 jobs per acre. As such, focused development aimed at bringing a higher concentration of jobs to the other eight TOD areas should be a strategy going forward.
Table 7: Employment Density Analysis Results

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>Total Jobs</th>
<th>Area (Acres)</th>
<th>Jobs per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>66,661</td>
<td>815</td>
<td>81.82</td>
</tr>
<tr>
<td>Heritage West</td>
<td>897</td>
<td>742</td>
<td>1.21</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>4,396</td>
<td>486</td>
<td>9.05</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>586</td>
<td>509</td>
<td>1.15</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>4,193</td>
<td>732</td>
<td>5.73</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>2,777</td>
<td>1,459</td>
<td>1.90</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>3,472</td>
<td>577</td>
<td>6.02</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>5,054</td>
<td>601</td>
<td>8.41</td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td>1,657</td>
<td>505</td>
<td>3.28</td>
</tr>
</tbody>
</table>

4.1.3 Diversity of Uses

**STAR Metric:** At least 7 diverse uses present in the TOD area

9/9 TODs currently meet this threshold

The Heritage West, Lexington Road and Hurstbourne Parkway at I-64 TOD areas have the highest number of diverse uses, each recording at least one instance of ten of the eleven uses defined in Table 3. The data indicates the high potential for sites located near the urban core (Heritage West and Lexington Road) as well as a site further east at the Hurstbourne Parkway at I-64 TOD.

The Shelbyville Road and Jeffersontown Village TODs have the fewest number of diverse uses, each recording a total of seven. The Jeffersontown Village TOD has, by the accounts of this analysis, a single bakery satisfying the restaurant use. Both of these sites are located along major corridors in the eastern part of the county, potentially indicating a weakness of the exurban and suburban communities east of the downtown core. However, a score of seven diverse uses meets the STAR threshold, indicating that all nine TODs meet or exceed this STAR metric.

Table 8: Diverse Uses by TOD Area

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>Land Use</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>9</td>
</tr>
<tr>
<td>Heritage West</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>10</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>10</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>10</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>9</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>9</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>7</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>10</td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>7</td>
</tr>
</tbody>
</table>

Land Use Key

1. Manufacturing
2. Multifamily
3. Office
4. Park
5. Public
6. Recreation
7. Religious Institution
8. Restaurant
9. Retail
10. Single Family
11. Warehousing
4.1.4 Transit Availability

**STAR Metric:** At least 60 weekday trips and 40 weekend trips provided in the TOD area

2/9 TODs currently meet this threshold

Although there are a total of 409 TARC bus stops within the TOD boundaries, only 88⁴ of those stops were used for the purpose of this analysis. Due to a lack of available information, data was not collected for all 409 stops. Of those 88 stops, only five currently meet the STAR standard of 60 weekday trips and 40 weekend trips available. Four of the five compliant stops are located in the Downtown/Central Business District TOD, with the other compliant stop located in the St. Matthews TOD area.

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>TARC Stops With Scheduled Stops</th>
<th>TARC Stops Meeting STAR Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>76</td>
<td>4</td>
</tr>
<tr>
<td>Heritage West</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

4.1.5 EPA Smart Location Scores

**STAR Metric:** EPA SLC score for each TOD greater than or equal to 70

7/9 TODs currently meet this threshold

Of the nine TODs measured, only two do not meet the SLC score threshold of 70 or greater: Poplar Level/Indian Trail and Shelbyville Road Connectivity. These two areas which do not meet the STAR SLC metric are both in the inner ring of Louisville Metro, typically associated with suburban development patterns. Considering larger employers’ propensity to locate in downtown cores, this lack of efficiently located jobs in these two suburban TODs is not surprising. The Downtown/CBD, St. Matthews, and Heritage West sites all scored relatively well, each posting scores greater than 80.

⁴ The 88 stops that were considered for this analysis were those stops for which an exact time was denoted on publicly available TARC schedules. Due to having to manually tabulate the number of trips based on these schedules, it was not feasible within the scope of this project to conduct this analysis across all 409 TARC bus stops occurring in the nine TOD areas.
### Table 10: EPA Smart Location Scores

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>SLC Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>92</td>
</tr>
<tr>
<td>Heritage West</td>
<td>83</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>80</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>74</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>84</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>64</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>67</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>76</td>
</tr>
<tr>
<td>Jeffersonville Village Redevelopment</td>
<td>70</td>
</tr>
</tbody>
</table>

#### 4.1.6 Affordable Housing

**STAR Metric (Must meet at least 2 of 3):**
1. At least 10% of total residential units are affordable; 2. At least 10% of residential units built or substantially rehabilitated in the TOD area within the last 3 years are dedicated as subsidized affordable housing; 3. Some of the dedicated long-term affordable housing in the TOD area are deeply subsidized or deeply affordable for very- and extremely-low income households.

The first Affordable Housing metric analyzed is the total percentage of residential units in each TOD that are subsidized affordable housing. The results of this analysis are summarized in Table 11. As is evidenced by the table, the Downtown/CBD TOD area has the highest percentage of total housing units that are subsidized (64%), more than double the second highest proportion (24% in the Poplar Level/Indian Trail TOD).

The second Affordable Housing metric analyzed was the percentage of newly constructed or substantially rehabilitated residential units in the previous three years that were dedicated as subsidized affordable housing. During the calendar years 2014, 2015 and 2016, a total of nine single family and 35 multifamily building permits were issued for locations inside one of the TOD boundaries. Of the nine single family permits issued, six were used in this analysis. Three single family permits were excluded because they were issued to construct a garage. Of the 35 multifamily building permits falling in TOD areas, 23 were used in the analysis. Twelve of the multifamily permits were excluded because renovations were primarily of an interior nature and had no material impact on housing stock availability.

Of the nine TOD areas, three (Dixie at Valley Station, Hurstbourne Parkway at I-64 and Jeffersonville Village) had no single or multifamily building permits issued within their boundaries between 2014 and 2016. The Downtown/CBD TOD has the highest number of permits with 12 over that time frame. The Downtown/CBD also ranked first in total residential units newly constructed or substantially rehabilitated in the past three years with 270. However, as can be seen in Table 12 below, none of those 270 units were dedicated as subsidized housing. Only two of the nine TOD areas added subsidized units. The Poplar Level/Indian Trail TOD saw the addition of 62 subsidized units at Jacob’s Landing apartments. The only other TOD area that added dedicated affordable units was the Heritage West location, adding 3 new units.
### Table 11: Percentage of Total Residential Units that are Subsidized

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>Total Residential Units</th>
<th>Section 8 Units</th>
<th>LIHTC Units</th>
<th>Public Housing Units</th>
<th>Total Subsidized Units</th>
<th>% Of Total Units Subsidized</th>
<th># of Subsidized Units Needed to Meet STAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>2,706</td>
<td>85</td>
<td>503</td>
<td>1,149</td>
<td>1,737</td>
<td>64%</td>
<td>N/A</td>
</tr>
<tr>
<td>Heritage West</td>
<td>2,898</td>
<td>327</td>
<td>361</td>
<td>15</td>
<td>703</td>
<td>24%</td>
<td>N/A</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>1,054</td>
<td>13</td>
<td>0</td>
<td>4</td>
<td>17</td>
<td>2%</td>
<td>89</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>1,413</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>1%</td>
<td>125</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>2,691</td>
<td>47</td>
<td>303</td>
<td>10</td>
<td>360</td>
<td>13%</td>
<td>N/A</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>4,201</td>
<td>398</td>
<td>622</td>
<td>1</td>
<td>1,021</td>
<td>24%</td>
<td>N/A</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>937</td>
<td>24</td>
<td>0</td>
<td>12</td>
<td>36</td>
<td>4%</td>
<td>58</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>1,689</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>169</td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td>1,076</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>2%</td>
<td>88</td>
</tr>
</tbody>
</table>

### Table 12: Percent of Newly Constructed and Substantially Rehabilitated Residential Units Dedicated as Subsidized Housing 2014-2016

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>Total Permits Issued</th>
<th>Total Units Built or Rehabilitated</th>
<th>Total Units Dedicated as Subsidized</th>
<th>% of New Construction/Rehabilitation Dedicated as Subsidized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown/CBD</td>
<td>12</td>
<td>270</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Heritage West</td>
<td>6</td>
<td>11</td>
<td>3</td>
<td>27.27%</td>
</tr>
<tr>
<td>Lexington Road</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td></td>
<td></td>
<td></td>
<td>No single family or multifamily building permits issued between 2014 and 2016</td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>1</td>
<td>9</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>2</td>
<td>63</td>
<td>62</td>
<td>98.41%</td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td></td>
<td></td>
<td></td>
<td>No single family or multifamily building permits issued between 2014 and 2016</td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td></td>
<td></td>
<td></td>
<td>No single family or multifamily building permits issued between 2014 and 2016</td>
</tr>
</tbody>
</table>
Government subsidized housing will continue to be a cornerstone of US housing policy for the foreseeable future. However, the private market of affordable housing must not be overlooked. The private market of affordable housing is defined in this analysis as the stock of market rate rental units that are available to individuals and families who qualify for Section 8 housing vouchers. The following analysis of Louisville’s private market of affordable housing is based on income limits for an individual. The HUD classifications and income limits for low, very low, and extremely low income individuals are outlined below in Table 13. Additionally, an attainable monthly rent was calculated for each of these income classifications based on 30% of monthly income. These estimates can also be found in Table 13.

### Table 13: HUD Section 8 Income Limits and Attainable Monthly Rent Levels for Louisville

<table>
<thead>
<tr>
<th>Louisville HUD-Defined Local Area Median Income</th>
<th>Income Limit as a % of Local Area Median Income&lt;sup&gt;5&lt;/sup&gt;</th>
<th>Income Limit for an Individual</th>
<th>Attainable Monthly Rent Level Based on 30% of Income&lt;sup&gt;6&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Income</td>
<td>80%</td>
<td>$37,200</td>
<td>$930</td>
</tr>
<tr>
<td>Very Low Income</td>
<td>50%</td>
<td>$23,250</td>
<td>$580</td>
</tr>
<tr>
<td>Extremely Low Income</td>
<td>30%</td>
<td>$13,950</td>
<td>$350</td>
</tr>
</tbody>
</table>

Table 14 below provides estimates of the number of private market rental units that are available to low, very low, and extremely low income individuals in Louisville. Using the same data, Table 15 summarizes these figures as a percentage of each TOD’s total residential units. Three TODs (Downtown/CBD, Heritage West, and Lexington Road) have at least 50% of their total units attainable for low income residents. The Shelbyville Road TOD area has the smallest percentage available for low income earners (3%).

The Downtown/CBD TOD is the only one of the nine that has more than 9% of their total residential units attainable to very (58%) and extremely low (58%) income individuals. Five of the nine TODs (Dixie at Valley Station, St. Matthews, Shelbyville Road, Hurstbourne Parkway at I-64, and Jeffersontown Village) have 2% or fewer of their residential units available to very and extremely low income residents. In the Dixie at Valley Station TOD, 0% of total residential units are attainable to very and extremely low income individuals.

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<sup>5</sup> Percentage thresholds are based on a family of 4. HUD outlines income thresholds for family sizes ranging from one to eight individuals and actual percentages vary for family sizes other than four.

<sup>6</sup> Individuals spending more than 30% of monthly income on housing expenses are widely considered to be “rent-burdened.” A goal of sound housing policies around the country is to limit and reduce the number of residents that are considered rent-burdened.
Table 14: Private Market Housing Stock Estimation by TOD

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>Total Residential Units&lt;sup&gt;7&lt;/sup&gt;</th>
<th>Rental Units Available to Residents Classified as:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low Income ($1-$899)</td>
<td>Very Low Income ($1-$549)</td>
<td>Extremely Low Income ($1-$349)</td>
<td></td>
</tr>
<tr>
<td>Downtown/CBD</td>
<td>2,706</td>
<td>2,193</td>
<td>1,559</td>
<td>1,559</td>
<td></td>
</tr>
<tr>
<td>Heritage West</td>
<td>2,898</td>
<td>1,534</td>
<td>201</td>
<td>201</td>
<td></td>
</tr>
<tr>
<td>Lexington Road</td>
<td>1,054</td>
<td>531</td>
<td>93</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>1,413</td>
<td>268</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>2,691</td>
<td>640</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>4,201</td>
<td>2,025</td>
<td>198</td>
<td>198</td>
<td></td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>937</td>
<td>31</td>
<td>14</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>1,689</td>
<td>285</td>
<td>32</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td>1,076</td>
<td>246</td>
<td>15</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

As discussed below, these estimates are likely overstated. This fact suggests that the areas of interest in this analysis should be those with a low percentage of their residential units available to the most vulnerable individuals in Louisville. By pricing low, very low, and extremely low income individuals out of the private market of affordable housing, these sites run the risk of foregoing the benefits that have been shown to accrue to mixed income communities.

Table 15: Percentage of Total Residential Units in Private Market of Affordable Housing by TOD

<table>
<thead>
<tr>
<th>TOD Name</th>
<th>% of Rental Units Available to Residents Classified as:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low Income ($1-$899)</td>
<td>Very Low Income ($1-$549)</td>
<td>Extremely Low Income ($1-$349)</td>
<td></td>
</tr>
<tr>
<td>Downtown/CBD</td>
<td>81%</td>
<td>58%</td>
<td>58%</td>
<td></td>
</tr>
<tr>
<td>Heritage West</td>
<td>53%</td>
<td>7%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Lexington Road</td>
<td>50%</td>
<td>9%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Dixie at Valley Station</td>
<td>19%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>St. Matthews Redevelopment</td>
<td>24%</td>
<td>2%</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Poplar Level/Indian Trail</td>
<td>48%</td>
<td>5%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Shelbyville Road Connectivity</td>
<td>3%</td>
<td>1%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Hurstbourne Parkway at I-64</td>
<td>17%</td>
<td>2%</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Jeffersontown Village Redevelopment</td>
<td>23%</td>
<td>1%</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

While estimations of private market affordable housing stock can be valuable when crafting city-wide housing policies, the methods employed in this analysis have limitations. The private market affordable housing stock estimates in this report are likely overstated due to duplication. Subsidized housing units are included in the contract rent data used to formulate the private market affordable housing estimates. However, these units would not be included in our definition of this market are

<sup>7</sup> Total residential units were used for comparison because these estimates were determined to be more reliable than estimates of total rental units interpolated from block group geographies.
likely lead to overstating the market. Additionally, the weighting techniques used likely do not reflect the true number of private market affordable units contributed by each block group. The contract rent data was analyzed at the block group level because geographies with finer spatial resolutions contained outdated information.

4.2 **INDIVIDUAL TOD AREA ANALYSIS**

The following section contains an analysis of each individual TOD area’s strengths and weaknesses. This section builds on the TOD rankings previously presented in Tables 4 and 5, and further inform the reader on the pros and cons of transit oriented development in each of the nine TODs.

4.2.1 **Downtown/Central Business District**

Downtown urban cores in metropolitan areas around the country are often prime candidates for introducing transit oriented development. These areas typically share a number of TOD-supportive characteristics: high residential density, high employment density, a strong mix of uses and a relatively pedestrian-friendly built environment.

The Downtown/Central Business District ranks first in transit availability (as measured by the number of TARC bus stops) and second in residential density surrounding those stops. With such a high level of bus service, this area has high potential to leverage that service for TOD investment. As would be expected, this TOD area has the highest employment density. As such, this is a prime location to establish an ever-strengthening transit node. This TOD also boasts the highest EPA Smart Location score, indicating it is an efficient workplace location.

The Downtown/CBD TOD area also ranks first in the share of affordable residential units. This is a good sign, as low income residents are at higher risk of not having personal automobiles and often times benefit the most from transit-minded development. A lack of market-rate residential units in this TOD could pose an opportunity for infill development.

4.2.2 **Heritage West**

As discussed in Move Louisville (page 60), the formerly proposed development of the West Louisville Food Port (located on a 24-acre parcel of land located at the Northwest corner of Muhammad Ali Boulevard and 30th Street) was to serve as a catalyst project for this TOD area. Plans for the Food Port development have been abandoned since the publication of Move Louisville. The proposed development was to bring activity to the long-vacant site and provide an opportunity to spur additional investment in the commercial areas along Market Street and the surrounding neighborhoods. The project was expected to bring 200 jobs along with a mix of shipping, local food processing, education and retail activities.

As noted earlier in this report, the Heritage West TOD area is the fourth largest of the nine proposed TODs. This area is tied with two others for the most diverse land uses. The zoning districts found in the area of Heritage West are R-6 (which also allows uses permitted in the R-1 zoning district in which uses range from Assisted Living Facilities to Two-Family Dwelling), EZ-1 (which allow uses permitted in both the C-2 and M-3 zoning districts, which range from agricultural uses to wood processing), C-2 and M-3. The form districts in this TOD area are Traditional Marketplace Corridor, Traditional Neighborhood, Traditional Workplace and Town Center.
The Heritage West area has the highest average dwelling units per acre within a ¼-mile walk of TARC stops (4.06 dwelling units per acre). It has the third highest number of affordable units (24.26%) and has one of the highest EPA Smart Location Calculator scores (83.3). These facts indicate that this area has strong potential to support TOD investments and other compact community development approaches.

Heritage West ranks 8th of the 9 TOD areas for employment density (1.21 jobs per acre) and it does not have any TARC stops that meet the standard of 60 weekday trips and 40 weekend trips. Since this site is no longer the proposed site for the Food Port project, the need for affordable housing could serve as a catalyst for development. Although the Food Port project is not proceeding to the development stage, we bring attention to it to illustrate the potential that exists at the large site in an existing urban neighborhood. The high number of TARC stops in this area (ranked 2nd in total TARC stops) could serve future subsidized and market-rate residential capacity added through the use of development incentives. The existing number of affordable housing units within a ¼-mile walk of TARC bus stops could support the incentives for development, as well as the cost of land and parking which have put some areas out of reach for competitive development.

4.2.3 Lexington Road

While the Lexington Road site has a low level of residential density and affordable housing, it does have a relatively high level of employment density, diversity of uses, transit availability, and EPA Smart Location score. This TOD has the second highest employment density (9.05 jobs per acre) and is tied for the highest number of diverse uses. Meanwhile, the EPA Smart Location score shows that the site has good workplace location efficiency, and its score of 79.79 is the fourth highest score of the nine TODs.

These metrics indicate that the Lexington Road site is a bustling activity center with an efficient location, many diverse uses, and many employment opportunities. Located between the NuLu, Highlands, Clifton, and Butchertown neighborhoods, it is in a prime location to serve as a transportation hub that connects these prominent neighborhoods in the east urban core to downtown and the rest of Jefferson County. With the development of new connections between Lexington Road and Mellwood Avenue, as well as between Cherokee Park and Champions Park, this site could become a much more walkable area that facilitates transit and pedestrian movement across the east urban core.

On the other hand, it is a small site compared to our other TOD areas (only 0.76 square miles), and is characterized by vacant industrial and commercial properties that help explain the low levels of residential density and affordable housing. If these tracts were transformed into housing, offices, and retail throughout the corridor, the site would receive an immediate boost in residential density as the community became more habitable. By developing residential density and emphasizing place-making strategies that would encourage people to relocate to this hub, the Lexington Road site could become a mixed-use community that provides walkable, transit-oriented connections throughout this section of Jefferson County.

Overall, this site is a promising candidate for transit oriented development and for compact growth strategies, although its weaknesses of residential density and affordable housing options need to be addressed through targeted redevelopment projects. Its location at the intersection of many of
Louisville’s prominent urban neighborhoods demonstrates its strong potential as a major transit hub of the county.

It is important to note that the neighborhoods previously mentioned are largely dominated by white and high-income residents, which may discourage future affordable housing options in this area. Active and well established neighborhood organizations, which many of these neighborhoods possess, have a history across the country of pushing back against affordable, and specifically multifamily, projects. These considerations must be taken into account when developing strategies for affordable and low-income residents to also gain from these new community investments.

4.2.4 Dixie at Valley Station

With Dixie Highway being full of strip shopping centers and aging economic assets, there is an opportunity to provide this TOD area with greater community value. The idea is that this TOD area will have development that removes dangerous driveways, locates buildings closer to the street, and improve the walkability of sidewalks and crosswalks with the area. Within the 509 acres of this TOD, a goal for this area is to become medium density and have mixed-uses.

In order to provide the community with greater opportunity, there needs to be additional routine public transit stops. Currently, only 40% of the TOD’s area is within a ¼ mile walk to a TARC bus stop. Of these bus stops, none of them meet the requirement of 60 weekday trips and 40 weekend trips as seen by the STAR metric.

Currently, only 14% of dwelling units are located within a ¼ mile walk of a TARC stop. One way to increase density is through the addition of affordable housing. Since this area severely lacks affordable options (less than 2% of housing options in this TOD area are deemed affordable), this would be a good strategy to pursue.

Currently, only 586 jobs are available within the area, which equates to roughly 1.15 jobs per acre. This is the lowest ratio of jobs per acre in all of the TOD areas. If this area is to become a TOD that values walkability, medium density, and with mixed-uses, there needs to be an improvement in the availability of jobs, public transit, and affordable housing.

Table 6 shows the lack of density within this TOD Area. Residential density within ¼ mile walk of a TARC stop and the employment density (jobs per acre) rank 8 and 9 respectively. There is also very little affordable housing located in this area. Affordable housing ranks 8 in this TOD. If an increase in affordable housing units were available to residents, the issues of employment and residential density would see a much needed improvement.

4.2.5 St. Matthews Redevelopment

The St. Matthews site is a strong candidate for transit-oriented development. It has the second highest EPA Smart Location score (at 84.3), the fourth highest percentage of affordable housing units (13.37%), the second highest percentage of TARC stops complying with Transit Availability measures, and very high residential density numbers. Its weaknesses are its employment density, which remains in the middle of the pact with the fifth most jobs per acre (5.72), as well as its number of diverse uses, which do not include manufacturing, park, or warehousing uses.

If infill development and compact growth strategies were implemented at this TOD site, employment density could see drastic increases as more mixed-use projects were encouraged and
transit options brought more people to the hub. With the redevelopment of the suburban-style strip buildings, by moving them closer to the street, improving sidewalks, and creating more connectivity throughout the area, this hub could become much more walkable and pedestrian friendly. There is already a large multifamily area located within its boundaries, and the single family areas within this community have the opportunity to increase their density if more employment and transit opportunities were to be made available.

Due to its location, it is unlikely that large manufacturing and warehousing uses could be brought to this area, cutting down on a large segment of potential employment density. Building on the area’s retail agglomeration would be a viable option, as would be adding more office uses. Parks and public spaces are also troublesome in this regard, although targeted opportunities for small urban parks, pocket parks, and green alleys are always available within compact urban areas. If this area is targeted for transit-oriented development strategies, the community is encouraged to continue to build upon its strong workplace efficiency, affordable housing presence, and residential density. If the metrics analyzed here are emphasized, it will be much easier for transit to service these communities and employment density will natural rise as this site becomes a thriving activity center.

Although this hub has several weaknesses, overall it is a strong candidate for transit-oriented development in Jefferson County. With the right policies and planning, the St. Matthews site could be transformed into a more walkable, pedestrian friendly site that emphasizes transit and compact growth. As a site located closer to the downtown core than its fellow East End TODs, this location should be considered a very promising option for infill and compact growth that would help to develop a strong transportation corridor that aided in connecting the urban core to the eastern portion of the county.

4.2.6 Poplar Level/Indian Trail

As discussed in Move Louisville, future mixed-use development at the intersection of Poplar Level Road and Indian Trail would serve to help alleviate traffic congestion. As this area possesses the highest number of vehicle crashes, the redevelopment will serve as the catalyst for the development as it will seek to reduce the number of vehicle crashes in that area.

The Poplar Level and Indian Trail TOD has the second highest percentage of available affordable housing units (24.30%) and it ranks 5th for number of dwelling units per acre within ¼-mile walk of a TARC stop (2.49 dwelling units per acre). The area has the 6th highest employment density (1.90 jobs per acre), but does not have any TARC stops that currently meet the STAR standard threshold. The Poplar Level/Indian Trail TOD area has one the lowest EPA Smart Location Calculator scores, which also does not meet the threshold set forth by STAR for addressing the growing need for products in
this area. Although this site does not meet the STAR standard for transit stops, the redevelopment of the intersection could be pivotal for a more pedestrian friendly site that highlights transit and compact growth for this community.

4.2.7 Shelbyville Road Connectivity

The network of streets in Middletown creates an opportunity for a walkable, pedestrian friendly TOD along Shelbyville Road. This TOD is imagined as a commercial corridor within suburban Louisville. The development of this area could relieve congestion at the intersection of Shelbyville Road and Old Shelbyville Road, while providing pedestrians a safer alternative to driving a car.

In order to be a more transit ready node outlined by Move Louisville, future development should focus on improved transit infrastructure and increased residential density. This TOD area is currently lacking routine public transit stops as well as affordable housing options. Within this area, only 37% of the TOD is within a ¼-mile walk of a TARC stop. Currently, only 27% of dwelling units are within a ¼-mile walk to a TARC stop. None of the TARC stops located in the TOD area meet the STAR requirement of 60 weekday trips and 40 weekend trips.

Less than 4% of the housing options in this TOD area are considered affordable. In order to increase density, and recognizing the lack of affordable options in this TOD, adding affordable multifamily capacity could be a strategy. However, recent trends suggest mixing income levels within a development provides superior outcomes. With a concerted effort to focus development around TARC stops, the number of residents near TARC stops will increase. The area also provides 6.02 jobs per acre, which is relatively strong compared to the other eight areas. If this number were to increase, the additions of affordable housing and TARC stops may be easier to implement due to the number of individuals working in the TOD area.

The Shelbyville Road site is tied for second in the diversity of uses. The variation of land use allows for individuals to live, work, and play in a way that is unique for the city. However, employment density ranks near the bottom. The addition of new jobs could further catalyze innovations in development. Providing more jobs allows for a potential increase in population density and even affordable housing units. Both metrics rank near the middle, and therefore, provide an opportunity for improvement.

4.2.8 Hurstbourne Parkway at I-64

The Hurstbourne Parkway TOD has a long way go in order to become a viable TOD in the future. This area offers a unique opportunity for transit oriented development. Its close proximity to the interstate as well, as commercial and residential uses, presents a convenient location to function as a transit connection point. The TOD already exceeds the STAR requirement for diverse uses with 8. It ranks third in employment density of all TOD study areas (8.4 jobs per acre) but there still is need for improvement to reach the required 25 jobs per acre goal. Residential density is a concern, particularly near TARC stops there is just over 1 unit per acre, although the TOD ranks second in residential density outside of the ¼ mile-TARC buffer. As such, future residential development should be focused on increasing density around TARC stops. Alternatively, rearranging transit routes to better service the densest parts of this TOD could also be a viable strategy. Transit availability is also a problem in this location as it is currently underserved by TARC stops and trips. The TOD is moderately efficient as a workplace location with a SLC score of 75.8. The TOD will need increased transportation
options in order to become viable. The study area also is lacking in access to affordable housing ranking last with no subsidized options currently available within its boundaries. This is a significant finding as it is the only of the nine TODs that does not currently have subsidized affordable units. This area also has a very low stock of private market affordable rental units. As such, focused efforts to provide affordable options in the Hurstbourne Parkway at I-64 TOD should be a priority.

4.2.9 Jeffersontown Village Redevelopment
The Jeffersontown Village TOD area already contains a walkable town center adjacent to a powerful economic force in the Bluegrass Commerce Park. However, infill opportunities still abound. Creation of a new mixed-use infill project could increase population and employment density to meet STAR standards. Ranking toward the bottom in all categories of the potential TOD sites, the Jeffersontown Village TOD has the most potential for improvement. Residential and employment density are among Jeffersontown’s weakest points. Residential density within ¼-mile of a TARC stop is 2.72 dwelling unit/acre and would require an increase of 9.28 dwelling units/acre to satisfy STAR requirements. The rest of the TOD measured at an average of 1.45 dwelling units/acre, requiring an increase of 5.55 dwelling units/acre. Similarly, employment density for Jeffersontown falls well short of STAR requirements. This TOD would need to add roughly 11,000 jobs to meet its STAR goal. Measuring in a score of 70, the Jeffersontown TOD just meets the EPA SLC score requirement. The Jeffersontown Village area does contain some subsidized affordable housing, but at only 1.86% of total housing stock, it does not come close to meeting the STAR requirement of 10%. Additionally, the TOD area contains no recently rehabilitated affordable housing options. Jeffersontown’s highest ranked metric is in the diverse uses category.

4.3 Synthesis of Key Findings
Figure 19 summarizes how each TOD area ranks according to two metrics – compactness (y-axis) and affordability (x-axis). The matrix in Figure 19 is based on the relative rankings of each TOD to the other eight areas and helps to visual which sites are currently most suitable for TOD implementation. The most promising sites in terms of the metrics used in this report are Downtown/CBD, Heritage West, and St. Matthews sites. Due to its size and significance to the city of Louisville, it should be no surprise that the Downtown/CBD site is included as a promising site. The Downtown TOD ranks comparatively high in each metric, with its lowest ranking in any category being 3rd (in the percentage of newly constructed or substantially rehabilitated units dedicated as subsidized housing over the past three years). The Downtown/CBD area currently meets or exceeds five of the seven STAR metrics measured. Each of these three areas currently provide affordable housing, have strong workplace location efficiency, provide good transit availability, and have high levels of residential density. Policies that encourage redevelopment and infill could help remediate the employment density weaknesses, as employers would be attracted to these vibrant, walkable, and diverse communities. Although Heritage West and St. Matthews both have low levels of employment density, and St. Matthews also has a low number of diverse uses.
The Downtown/CBD, Heritage West, and St. Matthews sites form a nearly straight line, west to east, anchored by Heritage West in the West End and St. Matthews in the east. Although each of these three sites have similarities in their propensity to support transit oriented development, the built environment of each displays a distinct form: urban neighborhood at Heritage West, urban core at the Downtown/CBD location and suburban development patterns at St. Matthews. If their connections to downtown were solidified and bolstered through improved transit and density, this stretch could become a major transportation corridor capable of moving people from all over the county in and out of the urban core. With the Central Business District serving as a transit hub, these connections could redefine Jefferson County and more efficiently move people throughout the region. If dense, diverse, and mixed-use communities are built simultaneously, additional opportunities for employers and real estate developers to transform these areas will emerge.

As evidenced by Figure 19, the Downtown/CBD, Heritage West and Poplar Level/Indian Trail sites have relatively high affordable housing rankings and the Downtown/CBD and St. Matthews sites have relatively high levels of compact urban form. These sites therefore present opportunities for policymakers to leverage based on the sites’ strengths and weaknesses. For example, if a major transit corridor was to be developed from Heritage West to St. Matthews, the Lexington Road site’s location in the middle of this route would present itself as a natural choice for expanded policies to remediate some of its current weaknesses so that it could better serve as a TOD site. In this sense, redevelopment projects that encouraged compact growth, infill development, and better transit options could provide major boosts to the TOD sites that are already affordable, while affordable
housing projects and policies could provide major boosts to the diversity and equality of communities that are already compact.

Although these sites may not all receive public sector support for TOD redevelopment, they each provide unique urban contexts that can serve a role in a larger transit-oriented development strategy. By selectively capitalizing on their unique urban forms, amenities, and locations within the wider multi-modal transit networks, Metro Louisville Government can transform the city and the county into a more walkable, compact, and transit-oriented city.

The Poplar Level/Indian Trail site has unusually high levels of affordable housing as compared to the other TOD sites. This is due to the completion and opening of the Jacob’s Place Apartment, all 62 units of which are subsidized. With affordable housing already in place, future policies should focus on increasing transit availability in this community. Incentivizing new amenities and planning for better urban form at this site could also create a more vibrant community with affordable housing as its backbone. Such a community could become a major asset for Louisville as it grows and develops into a metropolitan region that emphasizes multi-modal transportation.

Additionally, the Dixie at Valley Station TOD is the only site to fall in the 3rd quadrant of the matrix. This indicates that the site has relatively low levels of compact form and of affordable housing. Although our metrics suggest that the location is currently not well suited for transit-oriented development, it also demonstrates the importance of a community-wide TOD strategy for Jefferson County. The purpose of transit oriented development is to move residents efficiently throughout the entire region and to create equitable opportunities for community investment. As such, despite the existing impediments, this site is a key point of connectivity for residents in the neighborhoods of West and South Louisville.
5 TOD Case Studies and Best Practices

Transit oriented development is a community development strategy that seeks to reconnect communities throughout large metropolitan areas by promoting compact growth and infill development. Rather than allowing uninhibited urban sprawl to define the development patterns of the 21st century, smart growth advocates utilize Transit Oriented Development strategies to promote human scale communities that foster healthy urban form and are generally located within a half-mile of quality public transit stations.

By promoting these strategies, local and regional planners hope to reduce the substantial costs of sprawl within urban regions. These costs include the ever expanding need for infrastructure, utilities, and public facilities, as well as the fractured sense of cohesion and connectivity for urban residents who cannot afford their own automobile and who live in blighted urban communities that do not receive the public investment that new, wealthier communities on the periphery of urban regions so often do. By promoting these strategies, local and regional planners also hope to capture the benefits of a more connected urban community, which includes a more integrated local economy that benefits from efficient and accessible public transit options, as well as the place-making, sustainability, and human health and psychological benefits that are associated with vibrant and walkable communities.

As Louisville drafts its Comprehensive Plan update, city officials, developers, and community stakeholders have emphasized the need to pivot towards a path that will transform Jefferson County. This path must attract new employment opportunities to the region and encourage young people to work, play, and (most importantly) continue to live in Louisville after they graduate and enter the job market. By incorporating Transit Oriented Development strategies within the Comprehensive Plan update, the Jefferson County Metropolitan Government hopes to begin embarking down this path to create more livable, connected communities that provide better opportunities for social equality and integration within the urban region.

Such lofty place-making and planning goals require leadership and excellence in the provision of sustainable affordable housing options, efficient and accessible transportation networks, and transformational land use policies that will create the community form that Transit Oriented Development relies upon. As a product of the University of Louisville Capstone Studio Community Form Group, this report provides case studies and best management practices that the Metropolitan Government can draw upon in order to facilitate the growth and development of a community form at key transportation nodes that is defined by a mixture of housing, office, retail, and other amenities integrated into a walkable neighborhood and located within a half-mile of quality public transportation.

This report examines case studies from two cities with similar geographies, populations, and transit options to Louisville: Indianapolis and Nashville. These case studies describe the founding documents for Transit Oriented Development in these metropolitan regions – a task that was begun by the Move Louisville document but that will require a more in depth planning process once the Comprehensive Plan update is complete. We examine strategies that each case study city has utilized through its Transit Oriented Development plans, and then extrapolate from these strategies six best management practices that could be replicated in Jefferson County. These best management
practices can be organized within two broad categories: developer incentives and financing mechanisms.

In order to create the demand within Jefferson County for compact development and infill growth that is apparent in Indianapolis and Nashville, Louisville must craft its own Transit Oriented Development Plan that provides strategies for funding TOD and redevelopment projects while also incentivizing developers to engage in sustainable forms of urban development. Lessons learned from these Indianapolis and Nashville must be leveraged to create more connected, vibrant, and equitable communities, and the best management practices that Louisville utilizes in pursuit of these goals will determine the level of individual demand that is generated by public and private investment for living in compact urban communities and utilizing public transit as a primary form of transportation.

Both Indianapolis and Nashville are cities with similar geographies, populations, and transit options, and both possess regional economies that the Jefferson County Metropolitan Government hopes to emulate. Although both cities have experienced relatively higher levels of growth and development in recent years, this separation provides Louisville with an opportunity to learn from their experiences and avoid repeating their mistakes.

The Louisville/Jefferson County MSA has a 2010 US Census Bureau designated population of 1,235,708, 2016 US Census Bureau estimated population of 1,283,430, and a percent MSA population change from 2010 to 2016 of +3.86%. The Indianapolis-Carmel-Anderson MSA has a 2010 US Census Bureau designated population of 1,887,877, 2016 US Census Bureau estimated population of 2,004,230, and a percent MSA population change from 2010 to 2016 of +6.16%. The Nashville-Davidson-Murfreesboro-Franklin MSA has a 2010 US Census Bureau designated population of 1,670,890, 2016 US Census Bureau estimated population of 1,865,298, and a percent MSA population change from 2010 to 2016 of +11.63%.

In 2014, Smart Growth America released an updated study measuring sprawl within 193 census-defined Metropolitan Statistical Areas and 994 metropolitan counties, based on 2010 data. Development in these MSAs was evaluated using four main factors: development density, land use mix, activity centering, and street accessibility. These four factors were combined in equal weight and controlled for population to calculate each area’s Sprawl Index score. The average index is 100, meaning that areas with scores higher than 100 are relatively more compact and connected, while areas with scores lower than 100 are relatively more sprawling.

The Louisville/Jefferson County MSA Sprawl Index score was reported as 82.92 (density score of 98.44, land use mix score of 89.48, activity centering score of 93.12, street connectivity score of 102.87). The Indianapolis-Carmel-Anderson MSA was reported as having a Sprawl Index score of 83.89 (density score of 98.11, land use mix score of 99.65, activity centering score of 98.42, street connectivity score of 102.31). The Nashville-Davidson-Murfreesboro-Franklin MSA was reported as having a Sprawl Index score of 51.74 (density score of 91.54, land use mix score of 63.92, activity centering score of 96.17, street connectivity score of 77.00).

Meanwhile, Jefferson County’s Sprawl Index score was reported as 122.42 (density score of 109.11, land use mix score of 119.34, activity centering score of 118.64, street connectivity score of 123.85). Marion County (Indianapolis) was reported as having a Sprawl Index score of 126.5 (density score of 108.63, land use mix score of 123.19, activity centering score of 125.02, street connectivity score of
Davidson County (Nashville) was reported as having a Sprawl Index score of 115.76 (density score of 104.68, land use mix score of 111.86, activity centering score of 121.78, street connectivity score of 111.57).

Governing Magazine provides a list of fiscal year 2015 public transportation agency data that has been reported to the federal Department of Transportation. For its direct and purchased bus ridership statistics, the Transit Authority of River City (Louisville) reported 14,130,368 unlinked trips, 54,519,132 passenger miles, and $60,907,171 in operating expenses. For its direct bus ridership statistics, the Indianapolis Public Transportation Corporation reported 9,666,605 unlinked trips, 40,734,431 passenger miles, and $53,812,975 in operating expenses. For its direct and purchased bus ridership statistics, the Nashville Metropolitan Transportation Authority reported 9,907,581 unlinked trips, 53,315,727 passenger miles, and $47,953,524 in operating expenses. In addition, the Tennessee Regional Transportation Authority provides statistics for purchased rail transit ridership statistics, which include 265,527 unlinked trips, 3,851,426 passenger miles, and $4,680,864 in operating expenses. Unlinked rips measure a trip every time a person boards and exits a vehicle, while linked trips capture the entire journey as one trip even if there is a transfer in the middle.

Together, this data shows that, while the Louisville MSA has a significantly smaller population and growth rate than the Indianapolis and Nashville MSAs (Census Bureau), it also has similar a similar Sprawl Index score as Indianapolis and a superior Sprawl Index Score than Nashville, as well as more bus ridership unlinked trips, passenger miles, and operating expenses than both Indianapolis and Louisville. Although Nashville is beginning to experiment with commuter train services (unlike Louisville or Indianapolis), these statistics are very encouraging for Jefferson County. They indicate that Louisville is in a prime position to match these two peer cities in their efforts to reduce sprawl and increase ridership levels, and even to surpass the results of their smart growth strategies over time.

### 5.1 Indianapolis, Indiana Case Study

In April 2015, Indianapolis adopted the “Transit Oriented Development Strategic Plan.” This plan addresses the projections of long-term growth in population and employment within the region through 2040. Indianapolis and the region understands the need for TOD areas and the importance they have on a community’s density and economic potential. The TOD Strategic Plan is part of the Indy Connect initiative and evaluates four transit corridors as potential TOD areas. This plan explains and summarizes several concepts that will be used to facilitate the creation of TOD areas within Indianapolis. Since this is a relatively new plan, the ability to analyze data to determine if this plan is a success or failure is still premature.

Throughout the city, four corridors were set as the foundation for the TOD areas. These corridors are labeled as Red, Blue, Green, and Purple Lines and correspond to the IndyGo bus routes throughout different portions of the city. These corridors were selected as TOD areas because of their ability to provide individuals opportunity to live, work, and travel to these areas with ease. Within these areas, there were 129 nodes that were examined. There are 47 on the Red Line, 32 on the Blue Line, 32 on the Purple Line, and 18 on the Green Line. The plan suggests that key stakeholders include business leaders, community members, and local officials. Funding for the implementation of this plan is designed through different management practices and include Average Assessed Value (AV) Growth
per year, AV Impact, Gross AV per (unit) (new job) and percent net, Special Assessment District, Development Impact Fee, and Transportation Utility Fee. There is no single general funding mentioned in this plan that covers all of the city. The following examples and explanations are taken from Indianapolis' TOD Strategic Plan. The specific examples in different cities show how Indianapolis will implement these ideas.

Development Impact Fees

One tool that Indianapolis will use is implementing development impact fees. The TOD Strategic Plan describes a development impact fee as a charge that is placed on a new development in order to offset the cost of the city expanding required public services to the area. The idea is that the fees collected will pay for the additional facilities that are needed for development. Examples of these facilities may include police, fire, schools, parks, and increasing roadway capacity. These fees are not connected to values of the property or the new development and are usually collected during zoning reviews and permit approvals. In order to implement these fees, an impact fee advisory committee must be created to assist and advise with the adoption of an impact fee ordinance. In order to have this ordinance approved, there must be a region or city wide comprehensive plan that discusses zoning.

An example of a development impact fee can be seen in Boston, MA and their linkage fees for affordable housing and land acquisition. In Boston, developers must pay a fee to enter into an agreement with the city's redevelopment authority. The redevelopment authority, Neighborhood Housing, and Neighborhood Jobs Trust use the fees paid from developers to fund affordable housing and job training.

Joint Development

Joint development is another concept described by the TOD Strategic Plan that will implemented by Indianapolis to create TOD areas. A joint development is essentially a partnership between the private developers and the public sector to provide improvements for the community. Within joint development situations, the public sector usually owns all or part of the land that will be developed. Negotiations take place between the public sector and the private developer(s) in order to come up with an agreement for the site. Typically, projects that use joint development are transit related. Projects of joint development, according to the TOD Strategic Plan, include building parking structures to replace parking lots and can increase public transit ridership. These developments are generally used in areas where large amounts of land are available to and owned by the city. The city usually plans on using these lots to provide transit and other related improvements. Both the private and public sector can benefit from joint developments by sharing the cost and profit with each other. The public sector must decide what type of developments are eligible for joint development projects. Deciding on what the project will look like early on in the design phase can speed up the negotiation process and other contractual agreements with private developers as well as produce greater cost-effective results that benefit both sectors.

An example of a joint development project is The Highlands at Morristown Train Station in New Jersey. New Jersey's public transportation corporation wanted to redevelop a parking lot that is alongside of a commuter rail line. The private developer developed a proposal that created a mixed-use building with retail on the first floor and over 200 apartments as well as a five story parking
garage. The garage would have specific parking for tenants as well as having a designated number of spaces for commuters and shoppers. The public agency receives portions of rent revenue and owns more than half of the parking spaces in the garage.

**Tax Increment Financing**

A third tool that the city of Indianapolis will use is tax increment financing (TIF). TIF allows for an increase in overall revenue for capital and operating costs by diverting increased property tax revenue that is generated by an increase in current property values as well as new development. TIF is able to obtain the total value of the growth in property taxes and use this revenue within the designated area. The areas usually range from a single site to an entire district. Where areas are focusing on new development, TIF can create large amounts of revenue because this tax increment is based on the total amount of increase in taxes generated. New developments have a greater impact on TIF compared to existing developments that increase in value. The revenue collected by TIF can be used on infrastructure that does not generate revenue such as sidewalks, street lights, parks, and public works utilities. Transit agencies that do not have the authority to tax must work with other local agencies that have the ability to tax. TIF districts can excel when established in areas where transit is part of the focus in an area. Through development and redevelopment, TIF districts can then increase public transit ridership through improvements in access for public transit and pedestrians.

The City of Dallas has an example of a TIF district. The city approved multiple TIF districts around eight areas of the city that total 559 acres. The revenue generated by the TIF district will be used for infrastructure that supports new development and enhances connectivity in these areas. TIF districts were considered very appealing for the city because the real estate market conditions and community needs varied among different areas of the city.

**Transportation Utility Fee**

Another tool to implement TOD areas within the region is through a Transportation Utility Fee. These are fees that are based on estimated transportation demand given from a specific property use. For example, residents living and the businesses located in a mixed-use building along one of the transit lines would pay a fee, usually through a utility bills. These fees are placed on residents and businesses along the corridor by the city to help with improvements in roadways but can also be a source of funding for transit as a whole which allows for these fees and generated revenue are able to be applied city-wide.

An example of an existing transportation utility fee can be seen in the City of Corvallis in Oregon. The city describes these fees as sustainability initiative fees and was created in February 2011. These fees allow for free bus services as well as proper maintenance of sidewalks and some public trees. The city earns revenue from residents and businesses through water bills. A single family residential property is charged $2.75 per month based on the number of trips that are projected and $1.30 for sidewalk and public tree maintenance. This is an assumption that businesses and all residents of the area benefit equally from sidewalks and public trees.
5.2 Nashville, Tennessee Case Study

Nashville recently adopted a plan in 2016 titled, “Middle Tennessee Connected: 2016-2040 Regional Transportation Plan.” The plan focuses on improving mobility, which is a key strategy to achieving other community goals and objectives, which include: livability, prosperity, sustainability, and diversity. The Nashville Metro Planning Organization understands that it is important to encourage neighborhood infill development and housing developments closer to employment centers. The Transportation Plan evaluates several corridors. It details and summarizes concepts that will be applied to begin the creation of transit-oriented development within Nashville. The corridors within the several counties that this plan focuses on are Nashville, Lebanon, and Hamilton Springs. It is recommended that the completion of the station at Hamilton Springs, additional passenger train siding along the route, equipment upgrades, and increased frequency along the route to support more intense transit-oriented development. Stakeholders include various agencies, those in the community. Implementation of this plan would be funded by State and local funding sources that include, State Gasoline and Motor Fuels Tax; local sources of transportation funding include state street-aid fund, property tax, sales tax, wheel tax, and development impact fees.

Based on the data collected for each proposed TOD, Nashville is a city that Metro Louisville can adopt best management practices from upon choosing an area best-fit for transit oriented development. Based on the data, each proposed TOD area lacks transit availability. The main component of the Strategic Plan for Nashville is improving mobility, and it rests on the belief that mobility allows us to achieve other community goals. The plan addresses that mobility enhances the quality of life by prioritizing initiatives that increase opportunities for housing, learning, employment, recreation, and civic involvement while maintaining affordability. Another component is that it contributes to the region’s economic well-being by targeting solutions that attract talent, connect workforce with jobs, and reduce the cost of doing business and leverage additional investment. Mobility also supports growth and prosperity without sacrificing health, the natural environment, historical, and cultural assets, or financial stability of future generations. Lastly, mobility respects the multitude of backgrounds and variety of perspective of Middle Tennesseans by pursuing an array of strategies that are customized to local community needs and character.

Based on the analysis of all the proposed TOD areas, they are all strong candidates for transit oriented development. Where they may be weak in one area, they’re strong in another area. Nashville rests on the belief that mobility improvements, period, enhance the life of human beings, and because the Downtown/Central Business District is the only TOD that meets the STAR threshold for number of TARC stops, transit definitely needs to improve if the second scenario recommended by MOVE Louisville is going to be implemented.

Urban Design

One of the primary concepts of a TOD is to sustain quality of life, maximizing development potential without making a large physical footprint. The Nashville Metro Planning Organization collaborated with the Nashville Civil Design Center to integrate good urban design guidelines with transportation policies and investment strategies. The first publication of the partnership was released in the Spring of 2012. The publication is intended to help provide a better understanding of the importance of linking good urban design with transportation and land use policies. As the plans for Nashville’s future public transportation infrastructure develop, new ideas for creating urban development
incorporating unique public spaces are starting to come forward. To transform from an idea to reality, projects should include studies of recent successful examples in other cities that have achieved similar outcomes. The direction of focus at the split of 21st avenue and Broadway resembles similar street conditions in other cities, where diagonal streets may cut through the traditional grid, usually creating triangular-shaped spaces. Various organizations and cities across the United States have begun addressing these unused spaces, transitioning them into functioning outdoor pedestrian plazas. An example addressed in the plan is San Francisco’s Pavement to Parks is one successful example. Building off lessons learned during the trial, Seth Boor of Boor Bridges Architecture designed this new space, providing a greater sense of enclosure, more seating, and more greening opportunities. In collaboration with Flora Grubb Gardens, a beautiful palette of low-water, wind tolerant plants have been added, including a variety of palms, olives, and succulents. Seth contributed his design services pro bono while Flora Grubb provided materials at a significant discount. Paul Cesewski fabricated the movable gates over the unused Muni tracks using rail and other metal donated to the project by the Port of San Francisco. Nibbi General Contractors, who installed the concrete planters, provided their services at reduced cost to the CBD.

**Development Patterns**

One device that Nashville will use is a change in development patterns. Nashville’s project growth population will bring in more people to the Middle Tennessee area over the next 20 years. The region of Nashville will be, roughly, the same size as the Denver Metropolitan population is today. Denver’s recent accomplishments with TOD highlight what is possible in a city that suffered from sprawling land use patterns similar to Nashville. Denver’s political leaders saw the need for a change in development patterns and moved quickly to implement light rail infrastructure. Their fast-paced light rail construction displays how public-private investments, incorporating public transportation and pedestrian-friendly spaces with new development, can translate into higher qualities of life for people of all income levels. A similar case exists for Nashville to begin implementing similar concepts set forth in the 2035 Regional Transportation Plan now, to prevent last-minute reactionary plans to future, more costly congestion problems.

**Land Use Zoning Changes**

Nashville plans to use strategies implemented by Charlotte, NC that has utilized land use zoning changes in conjunction with strategic planning for transit to help create numerous TODs along its 9.5 mile LYNX light rail line. LYNX, which opened in 2007, records 15,000 daily users. Charlotte has seen ROI well over 300% since the rail line’s completion. The $1.87 billion in private investment and development along the south corridor spurred $515 million in additional real estate tax value, an increase of 121% since 2000. The city established an acquisition fund to purchase land near the stations planned along its South Corridor light rail line to ensure the development of mixed-income, mixed-use TOD. Charlotte’s City Council capitalized the fund with an initial grant of $5 million.

**Funding**

Federal funding for transit is generated by a national fuel tax at 18.4 cents per gallon and is administered by the United States Department of Transportation (USDOT). The Nashville area is one of the largest communities in the entire nation without a single cent dedicated to transit and is a long list of communities much smaller that have had dedicated funding for decades. While the exact
source of revenue varies based on the unique circumstances of each jurisdiction, the most common types are sales tax, property tax, development impact fees, fuel tax, and the wheel tax. In the Nashville area, local public funding for transit projects and services comes from the general funds of contributing cities and counties. As such, funding for transit is determined annually through the local budgeting process which limits opportunities for expanding the Nashville MTA, RTA, or other transit offerings. Moreover, this uncertainty in funding makes it difficult to compete for large federal grants or finance long-term capital investments.

**TIGER Grant**

The US DOT Federal Highway Administration and Federal Transit Administration each provide grants based on formulas to the State of Tennessee, the Nashville Area MPO, or local transit agencies that can be used for transit projects. The MPO is the agency responsible for ensuring those funds are programmed into the regional plan and short-term work program. In addition, when appropriated by Congress, the US DOT administers competitive grant programs like the Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant program supports innovative projects, including multi-modal and multi-jurisdictional projects, which are difficult to fund through traditional federal programs.

**Tax Increment Financing**

Another tool used is Tax Increment Financing or TIF, is a public-private financing technique employed for over 50 years in the United States to enable redevelopment and community improvement projects. When new development is proposed, higher future property tax revenues are generally anticipated. This difference, called the tax increment, can be captured within designated redevelopment areas under this financing technique, and utilized to pay for initial infrastructure and other front-end development costs that enable a project to become viable, which otherwise would not be feasible. Such costs can include land acquisition, parking facilities, and streetscape improvements.

**Joint Public-Private Development**

Joint development is a form of TOD that is often project specific, taking place on, above, or adjacent to transit agency property. The most common joint development arrangements are ground leases and operation-cost sharing. Most often, joint development occurs at rail stations surrounded by a mix of office, commercial and institutional land uses. However, examples of public-private joint ventures can be found among bus-only systems as well, normally in the form of joint intermodal transfer and commercial-retail space at central city bus terminals.

**Connecting People to Places**

As cities across the country continue to redevelop their downtowns and urban neighborhoods, effective public transportation systems are becoming more critical in providing people with alternatives to driving single occupancy vehicles. A well-designed transportation should function to serve the needs of a diversity of ridership, ranging from commuters, students, seniors, and families, to tourists and shoppers. Nashville currently has a circulator that moves people around the urban core free of charge. In March 2010, the Nashville Metropolitan Transit Authority launched a new service in downtown Nashville, the Music City Circuit. With federal assistance via the American
Recovery and Reinvestment Act (ARRA), this bus service moves people around the urban core free of charge. The MTA identified two primary routes for its initial stage, connecting areas from the Riverfront to the Gulch, and another from SoBro to the Farmers’ Market. MTA has since added a third route extending from the Riverfront station to the Metro Government’s Fulton Campus. These buses run every 15 minutes, increasing frequency to every 10 minutes during mid-day peak hours. The green route extends its operation until midnight to dual-serve the vibrant, bustling night life (bars, restaurants, and live music venues) of both lower Broadway and the Gulch. In the first eight months, the Music City Circuit successfully provided nearly 120,000 rides around downtown, many of which include first-time transit riders. Other cities mentioned are Charlotte, NC and Portland, OR. Charlotte operates a special type of bus route circulating in seven different neighborhoods, connecting residents to shopping centers, institutions, and retail and transfer points to other transit routes. These neighborhood connectors are comprised of modern buses with shorter dimensions that allow them to more easily maneuver throughout urban residential areas. Portland recently pursued construction of a 3.3 mile extension of its streetcar; extending service to neighborhoods across the river, to sports arenas and the city’s convention center. The Plan calls for an increase in circulators.

Stakeholders

A well-designed transportation system should function to serve the needs of a diversity of ridership, ranging from commuters, students, seniors and families, to tourists and shoppers. These are the stakeholders of determining Transit Oriented Development. With overlapping schedules and a multitude of destinations, incorporating all users requires an extensive, frequent and efficient model that functions throughout the day and night. Using public transportation should be easy and inviting for all, creating an equal, if not better, alternative to the personal vehicle. The circulator and neighborhood connector routes become an important component to meeting peoples’ needs, mitigating challenges related to access and convenience.

5.3 Case Study Comparison and Analysis

Cities across the United States all have different strategies to enhance the quality of life of its residents, whether it’s through transit or employment. The strategic plan of Indianapolis focuses on enhancing the quality of life through increasing employment by mobility, whereas the strategic plan of Nashville focuses on enhancing mobility, which would inevitably enhance the way of life. Both cities are centered on enhancing mobility, but each is used for different purposes. While Indianapolis focuses on increasing employment, Nashville focuses on improving mobility.

While both cities are focused on enhancing the quality of life of its residents, both Nashville and Indianapolis deal with this fact differently. Nashville explores several corridors for implementation, and has teamed up with students from the University of Tennessee to help improve the design at four sites within the Greater Nashville area. Improving the designs would help to create connections between these four corridors, and to help Nashville to become a more walkable, pedestrian-friendly community. The Wedgewood-Houston corridor addressed in the plan is an emerging artisan ‘maker’ community, adjacent to two major transportation modes: Interstate 65 and a busy rail line. The city has identified the area between the rail line and interstate as a potential ‘Innovation Corridor,’ which essentially means that this area could be developed into a site for artisan and technological innovation for the city of Nashville and its surrounding neighborhood. This project seeks to
redevelop two areas of the Wedgewood-Houston area, also including the medium to low density residential area positioned to the east of the rail line, and the industrial area between the rail line and the interstate to the west. For the residential areas, vehicular connectivity is increase, while also integrating bike lanes, to emphasize multi-modal transportation through the neighborhood.

While Nashville focuses on the design of the corridor to improve connections for transit oriented development, Indianapolis is focused on improving connections with line routes to facilitate the creation of transit-oriented development. Indianapolis introduced four transit lines, and along those transit lines there are nodes are assessed to determine, based on 19 variables, which areas have the most potential for transit oriented development. The study area for the Red Line corridor centered around Madison Avenue, Meridian Street, Capitol Avenue/Illinois street, and College Avenue through Marion County, and the cities of Carmel and Greenwood. The study assessed land use and market characteristics of the region and the proposed corridors in relation to each other using a methodology based on research approaches developed by the Center for Transit Oriented Development. The Phase 1 potential station scoring process critically analyzes various data for regional market dynamics and land use characteristics to assess the potential for TOD within the Central Indiana region. The Phase 3 analysis evaluates half-mile radius nodes at key intersections along the proposed Red, Blue, Purple, and Green Lines, encompassing several potential alignments starting at the core of downtown Indianapolis. A total of 129 nodes are assessed: 47 on the Red Line, 32 on the Blue Line, 32 on the Purple Line, and 18 on the Green line. The nineteen variables are weighted on a scale of 1 to 10 according to the relative impact as a driver for Tod readiness and Market Strength. The highest weighted variables address the demographic market characteristics of the area, followed by physical conditions.

While both Nashville and Indianapolis want to enhance the quality of life through transit, whether it’s enhancing life by increasing employment, or enhancing life through mobility to ensure residents have access to employment, they both find ways to enhance the quality of life through transportation. Louisville should use the practices mentioned in both strategic plans; improving mobility to enhance the quality of life. Like Indianapolis, Louisville’s plan is encompass metrics that will determine which TODs are high in ranking, and would make the area most suitable for transit oriented development. Also, like Nashville, Louisville’s plan encompasses plans to improve design by connect streets to create more walkable, bikeable, and pedestrian friendly communities.

5.4 Best Management Practices
Two categories of best policy practices have been identified as highly attractive options for Louisville to consider when exploring ways of expanding TOD in the city. The first set of practices are financing mechanisms, which include Transportation Utility Fees, Tax Increment Financing and Developer Impact Fees. As with most projects funding is often in short supply, but adding financing mechanisms of these sort allows Metro the funds to make real investments in the proposed TOD areas.

The second category of best policy practices are implantation approaches, which includes Joint Development and Flexible Land Use Zoning. It is important to remember that when developers consider a project they will keep their bottom line mind at all times, but by utilizing creative and flexible implantation approaches the developer reduces the risk associated with unique
development trends. In a city like Louisville where TOD is not an established practice proper incentives offered by Metro Government encouraging denser transit node development are a necessity, otherwise developers will continue expanding into the periphery of the county.

5.4.1 Transportation Utility Fee (TUF)
A Transportation Utility Fee (TUF) is a monthly fee based on use of the transportation system. Fees are typically assigned proportionately to road usage based on land use generation, trip intensity, vehicle miles traveled (VMT) or, in some cases, a flat rate. Like any other public utility fee, it is collected from residential and commercial property owners through a regular local utility bill.

In most states fuel taxes pay for transportation related expenses and services, but an unwillingness to increase taxes and ever improving gas mileage in modern vehicles fuel taxes are making this practice unsustainable. It then falls on use of general funds to make up the difference. A TUF represents an additional revenue source to pay for road and sidewalk maintenance. The Transportation Utility Fee is applied on a jurisdiction wide basis and provides a dedicated and stable funding source to finance local transportation maintenance and improvements. Utilizing fees in this manner helps to ensure that users of the road system share the cost required to keep streets operating sufficiently.

The use of a TUF to fund road maintenance has one major advantage over reliance on general funds from property taxes for road upkeep and improvements. When municipalities rely on property tax alone, a significant percentage of roadway users and traffic generators pay nothing due to tax exempt status. A TUF on the other hand requires every local traffic generator pay into the local road support funds. Since TUF’s are based on use they also help shift the burden of supporting transportation networks from residential base to more commercial and industrial businesses.

Because the TUF is assessed on all transportation system users, they provide a stable revenue source for backlogs, operations and maintenance. TUFs can be used in urban centers and along transit corridors to fund localized mobility needs including transit operating expenses (Montana Transportation and Land Use). By supporting expansion of all modal alternatives, TUFs may help reduce overall vehicle-miles traveled (VMT) and foster compact, mixed-use development.

There are several potential risks involved in the introduction of Transportation Utility Fees especially in areas where they are uncommon. The first and largest challenge is whether the fee will be able to withstand a legal challenge against it. Many TUFs have faced tough legal opposition contending that they are not actually “fees” but rather a form of “property tax”. The practice of using TUF for additional income has become widely used in Oregon and state law allows for cities to introduce reasonable fees. Currently there are no examples of successful TUF implementation in Kentucky, but the Kentucky Transportation Cabinet has identified this practice as a potential finance source for local communities to pursue when seeking funding for pedestrian projects.

To make the implementation process run as smoothly as possible it is vitally important for the city to initiate an educational effort early and often. In addition to the standard public hearing many cities conducted presentations to business and community leaders explaining the science of trip generation and showing that the fee was equitable across the various groups.
It is important for cities to undergo a thorough analysis of their transportation needs ahead of time and use these findings to determine the best methodology to calculate the fee, most commonly used methods include collection of a flat fee or one based off estimated use.

The city of La Grande, Ore does not have a large influx of outside motorists, so residents are the primary users, going to and from their homes, to work, and to other businesses. The city felt that a flat fee for residential and non-residential users was the fairest way to charge customers for the use of city streets. A flat fee is also very easy to administer. However, the city only collects about $200,000 annually, which is substantially lower than what would be collected using a trip generation methodology. The business community, however, has had no complaints about La Grande’s street user fee (orcities.org).

By contrast, Medford, Ore has a substantial amount of street traffic coming from outside the city. Many people living outside of Medford come into the city for work, shopping, etc. A trip generation methodology allows the city to charge businesses for the extra traffic they generate. While trip generation methodologies can be initially confusing to the public, and can be controversial with the business community, Medford worked to educate the business community and the public at large, and everyone accepted the resulting fee without controversy (orcities.org).

The funding potential of implementing a TUF system is an important consideration for cities like Louisville that are struggling to finance TOD projects. By implementing a TUF in the proposed TOD areas Louisville can raise the funds required to improve infrastructure and access to transit that are currently lacking in many of the proposed TOD areas.

5.4.2 Tax Increment Financing
Currently, Louisville has a number of existing TIF districts, although none of the existing arrangements attempt to leverage transit oriented development outcomes. With the establishment of a clear TOD strategy for the City of Louisville, TIF districts could be implemented in a manner which encourages compact development near designated transit nodes. These arrangements could raise the necessary revenues to accomplish true TOD strategies in the city.

As discussed above, both the Indianapolis and Nashville transit oriented development plans include provisions for tax increment financing (TIF). Tax increment financing is an economic development tool available to local governments that is intended to bring development or re-development to an area that would likely not see such investment absent a development incentive such as TIF. Tax increment financing is also utilized by financially-burdened municipalities and local jurisdictions who may not have the monetary resources available to provide other development incentives.

The first step when using tax increment financing is to establish a geographic area that will be eligible for TIF incentives, referred to as a “TIF district.” Once the TIF district has been established, the existing tax base within the boundary is frozen for a number of years. State laws, as well as local regulations, set guidelines for how long TIFs may remain in force. This level of frozen tax value is directed to the normal taxing bodies in the way it would without the TIF. A basic assumption of TIF financing is that tax revenue in the TIF district will increase during the time that the TIF is in force. The difference between projected future levels of tax revenue and the “frozen” revenue level established at the beginning of the TIF is called the “increment.” These incremental taxes are then
diverted from their normal taxing bodies and are directed into a special fund for the TIF. Often, an additional sales tax is placed on purchases in the TIF district to help raise these tax revenues.

How TIFs are applied varies from case to case. One typical use of a TIF is to use the expected tax increment to secure a bond issue to fund immediate infrastructure improvements in the TIF district. The idea behind this approach is that these improvements will help to catalyze future development in the TIF district and keep the TIF economically viable. As the TIF matures, the incremental taxes placed into the TIF fund are used to pay down the bonds issued for these improvements. Although many TIF districts issue bonds at the beginning of the TIF, not all do. Alternatively, some local governments choose to forego the bond issue and instead direct future TIF funds towards other development incentives in the TIF district.

Once a TIF district expires, tax revenues start to flow back to their normal taxing bodies. If tax revenues indeed increase over the duration of the TIF, the total pool of tax revenue will be greater than it was before the TIF was established, making the TIF a success.

Tax increment financing can be a beneficial tool to encourage development in areas where it is most needed. However, irresponsible use of this tool can lead to poor outcomes for local residents. The structure of a TIF and where the incremental revenues are directed can be susceptible to political favors. Another commonly cited drawback of TIF districts is that they prevent normal taxing bodies (such as school districts) from collecting more money as tax revenues rise during the life of the TIF as they are locked in at the frozen revenue level. Additionally, if revenue from the TIF district does not meet the expectations that the TIF was based on, the TIF district could run into financial trouble and require more taxpayer money to save it. Due to these drawbacks, the implementation of TIF districts often face political and resident pushback.

As noted above, both the Nashville and Indianapolis TOD plans point to the potential use of TIF districts in forming transit or TOD nodes. A number of other cities around the country have used TIF districts (or some form of them) to catalyze transit oriented development including, but not limited to, Dallas, Fort Worth, Pittsburgh, Portland and Chicago. In 2015, the Illinois state legislature passed a bill allowing for a specific form of TIF that was geared toward transit oriented development to be utilized in Chicago. Additionally, the EPA’s publication titled Infrastructure Financing Options for Transit Oriented Development mentions TIF financing as a mechanism through which to facilitate TOD strategies.

5.4.3 Developer Impact Fees

“Impact fees are payments required by local governments of new development for the purpose of providing new or expanded public capital facilities required to serve that development. The fees typically require cash payments in advance of the completion of development, are based on a methodology and calculation derived from the cost of the facility and the nature and size of the development, and are used to finance improvements offsite of, but to the benefit of the development (APA Policy Guide on Impact Fees).”

Traditionally, costs of growth have been financed by property taxes; however, one-time charges against new development are another method used to pay these costs of growth. This financing mechanism is intended to shift more of the costs of financing public facilities from the general taxpayer to the more direct beneficiaries of those new infrastructure projects, and is intended to
represent an exaction on the incremental value of the land attributable to the higher and better use made possible by public spending. These fees supplement local government resources that have decreased as a result of diminished state and federal funding for public infrastructure and have been used to delay or substitute general property tax increases.

The debate concerning who ultimately pays for these fees (or who should pay for them) – the original landowner, the developer, or the consumer – lies at the heart of the ongoing debate regarding the efficacy of this funding mechanism. Across the county, rulings at the state court level have defined how impact fees may be applied and utilized, as individual states have passed their own enabling legislation for impact fees with specific language for governing these programs. A general trend in state courts has been to require a rational nexus between the impact fee and the needs created by development, as well as between the impact fee and the benefits incurred by the development. Local governments must therefore ensure that their impact fee program is carefully designed and well documented in order for it to be legally defensible and effective.

The most common use of this funding mechanism has been to provide for sewer and water facilities, parks, and roads. Impact fees have also been used to provide for schools, libraries, and public facilities. Impact fees do not have the ability to fund every general capital improvement in a community on their own, nor do they have the ability to eliminate growth in a market dictated by supply and demand. It is important that impact fees are used alongside zoning and other land use regulations, consistent with a comprehensive plan and capital improvement plans, in order for the local government to influence patterns of growth, to more accurately predict where new infrastructure will be needed, and to increase the legitimacy of the planning process.

Supporters of developer impact fees argue that they enable a new method for investing in the community (American Planning Association Policy Guide on Impact Fees; Brookings Institute’s Paying for Prosperity: Impact Fees and Job Growth). By providing new infrastructure and better ensuring that the supply of buildable land grows with the market, developer impact fees further spur economic growth in areas that are already experiencing surges in growth and development. Rather than the lack of adequate public facilities hindering or temporarily prohibiting growth and development, developer impact fees act as growth facilitator that helps ensure adequate infrastructure to accommodate growth where and when it is anticipated.

In analyzing the relationship between impact fees and local economic development, a 2003 report from the Brookings Institute (“Paying for Prosperity: Impact Fees and Job Growth”) found that impact fees are a practical and valuable tool for financing local infrastructure needs. This financing mechanism can directly fund vital infrastructure improvements while increasing the supply of buildable land, improving the predictability of the development process, and indirectly promoting local employment at the same time. The report concludes that, faced with a growing demand for investment in public facilities and the simultaneous public resistance to local tax increases, growing communities that institute impact fees may become more prosperous in the long run than communities that do not make this shift.

To support its argument, the report found that:

- Property tax revenues increasingly fail to cover the full costs of the infrastructure needed to serve new development.
- Impact fees offer a more efficient way to pay for and provide infrastructure than general taxes, and ensure benefits to those who pay them,
- Impact fees increase the supply of buildable land by providing the revenue necessary to accommodate growth while also reducing uncertainty and risk for developers by giving them a reasonably predictable supply of buildable land.
- Impact fees have complex effects on housing prices, as they lower raw land prices by the amount of fees paid but also raise finished house prices by about half again the fee amount.
- Impact fees do not slow job growth and are instead a mechanism that helps sustain job growth in the local economies.

Opponents of developer impact fees argue that they constrain local economic development by imposing a tax on capital that constrains local economic development, stifles investment, and drives job growth to other fee-free communities (American Planning Association Policy Guide on Impact Fees; Brooking Institute’s Paying for Prosperity: Impact Fees and Job Growth). If set too high, the impact fees can hinder growth – a delicate balance that opponents argue is disrupted when local governments begin experimenting with nontraditional taxes. In addition, opponents state that these fees are an inequitable funding mechanism for developers, who must now pay for new facilities upfront rather than through property taxes that provide for traditional, long-term contributions toward public facilities. Accordingly, developers should not be forced to contribute to public goods that should be financed by the entire community, such as government, police, or school facilities; rather, they should be paid for by those who are most likely to benefit from those public facilities.

The American Planning Association Policy Guide on Impact Fees recommends that impact fees should be used as a means to provide additional resources for adequate public infrastructure and services only as they relate to the accommodation of new development, rather than as a resource to cover the costs of maintaining and repairing the existing infrastructure. The Guide also recommends that impact fee programs are used as a standardized method for ensuring that new development pays its fair share of the cost of public infrastructure, representing a planning process for capital improvements to meet the infrastructure needs of new development that improves the predictability and consistency of the permitting and approval process.

This recommendation is compared to processes that have no rational nexus, whereby the local government attempts to obtain off-site improvements that do not relate to the impacts of a specific development or the new infrastructure needed to accommodate that development through a system of negotiating exactions with developers. The Guide argues that impact fees from new development should not be used to finance improvements that are desired by the local government primarily to benefit the community-at-large, and that new development should never be responsible for financing an inordinate share of the cost of the future facilities and services needed by the those communities. In order to avoid these pitfalls, developer impact programs require continuous dialogue between local planning agencies, the general public, and the development community in order to discuss the public costs associated with new development and to reach an understanding on the calculation of impact fees needed to finance those costs.

As part of its Transit Oriented Development strategy, Louisville should utilize this financing mechanism only as it relates to new development. These fees are intended to pay for new infrastructure projects such as sewer and water facilities, parks, and roads, but it is more difficult to
argue that they should also pay for specific public services such as schools or libraries. It is therefore important that Louisville does not envision Developer Impact Fees as a solution to every problem. Instead, the Metro Government should utilize them only when there is a rational land use nexus for a legitimate need that will directly benefit the new development. Otherwise, stakeholders and developers may begin harboring a negative opinion of these fees as unfair concessions rather than as an important tool for ensuring that the available land in Jefferson County is suitable for its best and highest use.

As part of his planning efforts, the developer of Norton Commons, a prominent New Urbansim neighborhood in Jefferson County, donated land to the public school system in order to bring the benefits of this public facility to his community. While this was not a Developer Impact Fee, it does represent an example of the important discussions and negotiations that Louisville must strive to facilitate within its TOD nodes. Through this understanding of mutual needs and benefits, the Metro Government can work with communities, landowners, and developers to unleash growth and development within these markets that otherwise could not be achieved.

5.4.4 Public Private Partnerships/Joint Development
Joint Development began as early as the 1950’s, but use was sparse outside of New York and California, it wasn't until the Federal Transit Administration (FTA) streamlined its definition in 2013 making the program significantly more approachable to developers that the practice started becoming more mainstream. The FTA now defines Joint Development as “Any formal agreement or arrangement between a public transit agency and a private individual or organization that involves either private-sector payments to the public entity, or private-sector sharing of capital costs in mutual recognition of the enhanced real estate development or market potential created by the siting of public transit facility.” The critical aspect of Joint Development is the financial aspect can include air rights, ground leases, station connection fees, and other initiatives that promote real estate development at or near transit stations to the mutual benefit of both public and private interests.

Miami-Dade County, FL has embraced the practice of joint development working in conjunction with developers three sites have been successfully implemented. The Brownsville Station is a mixed-use development located on 5.8 acres of adjacent to a metro station in Northwest Miami. The site was previously occupied by a large surface area parking lot. A non-profit approached the transit authority to build affordable housing in a joint development. The result was a property lease of 59 years with options of two 20 year renewals. The project consists of five midrise apartment buildings with 467 affordable housing units, a shopping center, and a parking garage for residents along with replacement spaces for the old parking lot. Completion of the Brownsville Station resulted in ridership increasing by 30%. Prior to the development only about 15 to 30 of the 300 parking spots at the station were utilized on a typical day. Cost sharing is another benefit realized in the development, the agency was able to hand over maintenance responsibilities for escalators and elevators to the private developers thereby reducing the overhead costs of operating a transit station.

Joint developments often have delays, higher financing costs and few local examples and because of this developers often expect to pay less than market value for the land. It is not uncommon to offer discounts of more than 50% in joint development projects. This is especially important when working
to enable affordable housing and infrastructure improvements as in the Brownsville Station. Deep land price discounts not only helps to reduce the risks taken on by developers it also helps make depressed local markets more attractive options. Joint Development might still take place in parts of the city, but as in the Brownsville Station example, without the deeply discounted pricing options the mixed-use expansion may never have come to the area where need was greatest.

The FTA prefers the use of ground leases but developers often resist and prefer to buy, especially in areas where air rights and ground leases are uncommon. Buying the land allows the developer to put it up as collateral when obtaining finances. In order for the joint development to be successful it is important for the transit agency to work closely with the FTA and developer partners to convey the land in a manner that will allow them to attract the best financing options.

Successful projects are backed by a strong vision, political will, proactive planning and zoning and marketing. These elements are especially important in markets where joint development is a novel concept. In these markets, strong support from transit agencies will help to attract developer partnerships. In Miami for example potential TOD joint development sites are identified ahead of time and much of the bureaucratic obstacles are taken care of in advance. They have developed protocols and teams to guide each project through the process from concept to construction, but even with such proactive steps being taken it still takes two to three years from the first meeting with the developer to the ground breaking.

5.4.5 Land Use Zoning Changes and Flexible Codes
Transit oriented development requires more than just placing development near transit. The densest residential and commercial buildings should be placed closest to transit stations, buildings should face the street, retail and other commercial uses should be accessible and visible, residences and offices should be located on upper stories overlooking the street, open space for pedestrians should be provided, parking requirements should be eased and relegated away from the front of businesses, and Complete Streets should be designed to provide wide sidewalks, bicycle and pedestrian safety measures, street parking, canopy shade trees, and vehicle drop-off zones.

Successful TOD nodes rely on these community form strategies to develop a sense of place and to create an urban environment where people want to simultaneously live, work, and play. In addition, land uses should be regulated in a flexible manner that allows developers and business owners to be more responsive to near-term market demand and rapidly changing space needs.

Land use zoning changes are one way to address these requirements and provide the flexibility needed to facilitate mixed-use, compact, and infill growth. Some types of flexible codes include mixed-use zones, form-based codes, and expedited zoning review procedures for the reuse of existing buildings.

These flexible codes may specify the exterior form of buildings but should allow a broad range of uses. If demand increases for one use, flexible zoning and building codes allow owners to change a building’s use with minimal permitting burdens (Citylab’s “The Right Way to Zone for Transit Oriented Development”). Flexible codes are useful for distressed markets where demand for infill is weak and rigid requirements might scare off potential developers (EPA’s Attracting Infill Development in Distressed Communities: 30 Strategies). Flexible codes are also useful for planning communities with
Complete Streets and many different types and scales of development that are created incrementally over time by different developers with varying circumstances and objectives.

Rather than attempting to control every element of design, a local government can use these flexible codes to stipulate a few major objectives or design features that it wants infill development to achieve at its designated Transit Oriented Development nodes. The developer can then design a project that suits their needs while also meeting the Transit Oriented Development objectives. Flexible codes can be applied communitywide or to a specific area through an overlay zoning district, and should be considered when the local government is updating its comprehensive plan. When an unsupportive regulatory framework is not conducive to Transit Oriented Development, it can be amended to better suite Transit Oriented Development needs through methods such as overlay zoning, creating distinctly new zoning classifications, and the adoption of trip reduction ordinances.

One such flexible code that Louisville implemented through the original Cornerstone 2020 Comprehensive Plan and has been experimenting with since is its form-based zoning code. Form-based codes are ideally suited to the task of creating Transit Oriented Development (Citylab’s “The Right Way to Zone for Transit-Oriented Development”). While traditional Euclidean zoning emphasizes permissible land uses in a given location, form-based coding emphasizes the scale and form of buildings and how they relate to the street and to each other. This greater emphasis on physical form can be utilized to produce safe, attractive, and enjoyable public spaces that are complemented with a wide variety of uses; therefore, proper urban form can facilitate the greater integration of building uses in a natural and comfortable way. Such a form-based code should utilize simple and clear graphic prescriptions and parameters for height, siting, and building elements to address the basic necessities for forming good public space.

Transit Oriented Development requires incrementally assembled clusters of smaller buildings and the human scaled places between them, which results from the actions of many development interests and diverse projects over time. Form-based codes offer predictability by establishing the building, open space, landscape, and right of way standards that deliver an orderly urban form while also regulating uses in a flexible manner. By supporting phased, incremental design actions, form-based codes maximize the performance of private projects while creating a vibrant public realm. These flexible codes should be used to set the bounds for urban form by articulating space in a way that facilitates walking and makes best use of the presence of transit, rather than using it to emphasize a certain architectural style (Citylab’s “The Right Way to Zone for Transit-Oriented Development”).

In addition, Louisville already has a Euclidean zoning district in place that was designed to provide more flexible building use and density parameters, although it has not yet been applied anywhere throughout Jefferson County. Known as a Planned Transit Development District (PTD), according to the Land Development Code, this zoning districts classification is intended to promote Transit Oriented Development around advanced transit facilities. A PTD District is a compact, high to medium density/intensity, mixed-use, transit and pedestrian oriented activity center that promotes local economic activity in developers that are diverse, livable, sustainable, and enhance and maintain quality of life.

This distinct pattern of development is facilitated by flexible site and community design standards that are necessary for Transit Oriented Development. These include:
• Varying the types of residential and commercial units provided in order to optimize density/intensity.
• Reducing parking requirements and the provision of park and ride lots near advanced transit facilities in order to encourage public transit use.
• Improving the pedestrian environment with amenities.
• Protecting pedestrians and cyclists from traffic.
• Orienting buildings to make pedestrians comfortable by minimizing walking distances, enhancing visibility, and clustering buildings.
• Encouraging attractive building facades by including street-level display windows and varying setback.
• Situating parking to the rear of the structure with proper screening or in a parking garage which possesses storefronts on any side facing an urban corridor.
• Minimizing curb cuts/driveways.
• Providing mixed land uses that are compatible and mutually supportive.
• Integrating new development with existing development in order to ensure compatibility and to respect and reinforce existing communities.

As part of its Transit Oriented Development strategy, Louisville should strategically merge its form-based code with its Planned Transit Development District zoning classification at the TOD nodes. While this is a process that will require some trial and error, over time the Metro Government will learn how best to utilize flexible codes to create the community form that is required for complete streets and mixed-use districts. Nodes in the urban core and nodes along transportation corridors in the county will require different management strategies and varied form-based codes, but in general the community form goals in both types of nodes should be shared.

It is important that Jefferson County incorporates these flexible zoning ideas into its comprehensive plan update. Its form-based code and its Planned Transit Development District were established by Cornerstone 2020 and already exist within the current land use code, but efforts to create synergy between these tools should continue to be emphasized throughout the process.
6 CONCLUSIONS

As the sustainability movement continues to push development toward more walkable and pedestrian-conscious outcomes, TOD is finally gaining the political momentum necessary to facilitate it. Introducing TOD to a region for the first time is often met with pushback from elected officials and NIMBY mentalities from local residents. As such, it is incumbent upon the planners and applicable government staff to inform the public on the perceived and expected benefits of TOD. Without public support, it is difficult to plan large-scale development strategies such as transit oriented development.

When local residents come to accept and embrace an idea, it becomes much easier to clear the other political hurdles necessary to implement that idea. It is widely accepted that Metro Louisville does not currently have the density (with the exception of a few select locations) to support transit activity such as light rail. That does not mean that the city does not have existing opportunities to lever their existing multi-modal transit network. Improving bus service efficiency and coverage has always been a goal of TARC, but more concentrated efforts geared towards these nine TOD areas around the county could service to benefit TARC. Additionally, leveraging existing bike and pedestrian infrastructure in the city can encourage travel behavior that is friendlier to TOD strategies (and the environment) than single-occupancy automobile travel.

Louisville is in the unique position of having the opportunity to formulate a large-scale transit oriented development strategy from scratch. Identification of potential TOD nodes (as was accomplished in Move Louisville and furthered in this report) is a key first step towards this goal. City leaders must be diligent in their work on TOD, as opportunities can disappear quickly.

Without public financing, communities will not receive the catalyst necessary to jumpstart Transit Oriented Development, be it through a redevelopment project or systematic transit improvements. As financing mechanisms for Transit Oriented Development and related redevelopment projects, Tax Increment Financing, Developer Impact Fees, and Transportation Utility Fees can all be utilized in Jefferson County to fund the infrastructure improvements, transit enhancements, and public facilities that are necessary to create a community form that facilitates mixed-use, compact and infill growth. These funding mechanisms are also important for affordable housing projects and the creation of equitable Transit Oriented Development nodes, as well as for the amenities, public space enhancements, and open space conservation that is crucial for smart growth policies.

Louisville need only look to Indiana or Tennessee to see these funding mechanisms in action. Although proposing additional taxes or nontraditional fees is often an unpopular political move, the familiarity of Louisville communities with the growth and development of Indianapolis and Nashville should aid the Metro Government in working with state law makers, developer interests, and their constituents to overcome these initial hurdles. It will be much easier for the public sector to begin funding Transit Oriented Development nodes if the local examples of Indianapolis and Nashville are reiterated and emphasized throughout outreach and negotiation processes.

On the other hand, developers and the private sector must be energized to engage in compact development and infill redevelopment projects. The public sector cannot extract developer or taxpayer concessions within TOD nodes and expect the private sector to support their smart growth
strategies. Developers choose projects that are in their own best interest, and it is often easier and less risky for them to develop on greenfields or near suburbs on the periphery of the county where space is not a constraint and market demand is concentrated as a default.

With this reality in mind, the public sector must make it easier for the private sector to develop within Transit Oriented Development nodes by incorporating developer incentives into the land development code and the Comprehensive Plan. Land use changes or flexible codes are one such incentive that make infill development and compact growth less risky and more responsive to the changing market. These flexible codes are also important tools for encouraging higher employment density and business relocation to mixed-use, walkable areas, as a business will choose the urban core over the suburbs when the tradition, single-family zoning is raised and if they gain more economic activity, visibility, or convenience as a result of the new options.

Meanwhile, joint development and public-private partnerships are a different type of incentive that can help catalyze transformational growth without exacting concessions from developers to pay for public projects. Instead, the public sector partners with the private sector to make possible large-scale projects that otherwise might never be financially feasible. In return, the public sector can leverage its contribution or role in the partnership to request an increase in the affordable housing stock, open space conservation, and many other pedestrian and transit oriented amenities.

Financing mechanisms and developer incentives are both important for creating denser, multi-family housing options near employment centers and transit corridors. Transit Oriented Development relies on the Metro Government’s ability to foster a sufficient amount of transit users that are located in dense nodes in order to justify expanded transit expenditures. Transit Oriented Development also relies on the Metro Government’s ability to create the demand for the dense communities that must be located around these nodes in order to grow the property taxes at these locations that will justify the financial expenditure needed for enhanced infrastructure projects. Public policy can undeniably influence supply and demand, but without stakeholder consultation and legitimate planning processes, it will continue to be more convenient for communities to sprawl out into the County.

Although the city of Louisville may wish to be more like Indianapolis or Nashville in many ways, Jefferson County currently has a unique opportunity to study its peer cities and to gauge the best management practices that it should implement in the future. By gauging the effectiveness of the Transit Oriented Development best management practices that these larger and faster growing metropolitan areas have already implemented, Louisville can leverage its long range planning efforts, financial mechanisms, and developer incentives to showcase regional leadership in the smart growth arena. Such leadership will make Louisville a more economically prosperous place to live and will create happier, healthier, and more connected communities that attract higher levels of infill development and compact growth. In this way, Louisville’s condition as a smaller, slower growing city is present advantage, although this current stage will not last forever.

In time, the Louisville will be injected with the level of growth and development that its peer cities in this geographic region of the country are currently experiencing. If (and when) Louisville’s population growth trends increase to the levels of Indianapolis and Nashville, it is crucial that the Metropolitan Government’s planning processes are prepared to build upon its robust transit system and to implement well thought out Transit Oriented Development policies that are equally or more effective than Indianapolis’ or Nashville’s own policies. Before Jefferson County begins experiencing
the runaway growth that have caught other cities off guard, it must ensure that its infrastructure, public transit, and community form is prepared to provide the backbone for a sustainable and equitable metropolitan region. Transit Oriented Development is the community development strategy by which Jefferson County must meet these challenges and plan for the future that its citizens expect and deserve, as well as the lens it must view its ambitions for the future, its Comprehensive Plan update, and its future policies through.

6.1 **Policy Recommendations**

6.1.1 **Explicit Boundary Delineation**
In order to fully implement TOD strategies in Metro Louisville, the onus is on the Metro government to first delineate hard boundaries for these TOD areas. Although explicit boundaries may be politically charged and may upset property owners whose property falls inside or outside the boundary, it is imperative to identify the areas to signal to the development community where these types of development patterns are wanted. Establishing boundaries will also aid in identifying areas that are available to receive any development incentives or funding mechanisms Metro might choose to encourage transit oriented development.

6.1.2 **Assessment and Revision of Land Development Code**
As discussed in the best practices section above, TOD can be encouraged through development codes that are friendlier to TOD strategies and flexible codes that allow developers in TODs the type of flexibility needed to accomplish TOD. Using the information in this analysis to inform their decisions, Metro government can revise the existing Land Development Code to further induce TOD implementation.

6.1.3 **Adoption of Comprehensive TOD Plan**
Although transit oriented development is explicitly discussed in Move Louisville, a comprehensive TOD plan would benefit the city moving forward if it chooses to aggressively pursue transit oriented development. The data analysis contained in this report, and the brief overview of case studies and best practices, are a strong foundation on which to build an evidence and data based TOD plan. If TOD implementation reaches this point of the process in Metro Louisville, it will require hard boundary delineations.


(In conjunction with efforts for extension of mass transit networks across the Greater Nashville area, the University of Tennessee School of Architecture urban design students worked as teams to illustrate best practices and concepts to provide guidance to the region.)


United States, Environmental Protection Agency, Office of Sustainable Communities. (January 2013). Infrastructure Financing Options for Transit-Oriented Development.

United States, Environmental Protection Agency, Office of Sustainable Communities. (February 2017). Smart Location Database.


