



## 9.01 INTRODUCTION

This section briefly summarizes local land use plans, demographics, as well as population forecasts that could affect the Beltline study. There are uncertainties with any forecast or plan. The intention of this section is to document planned future development as identified by community leaders and relate those future plans to the Beltline.<sup>1</sup>

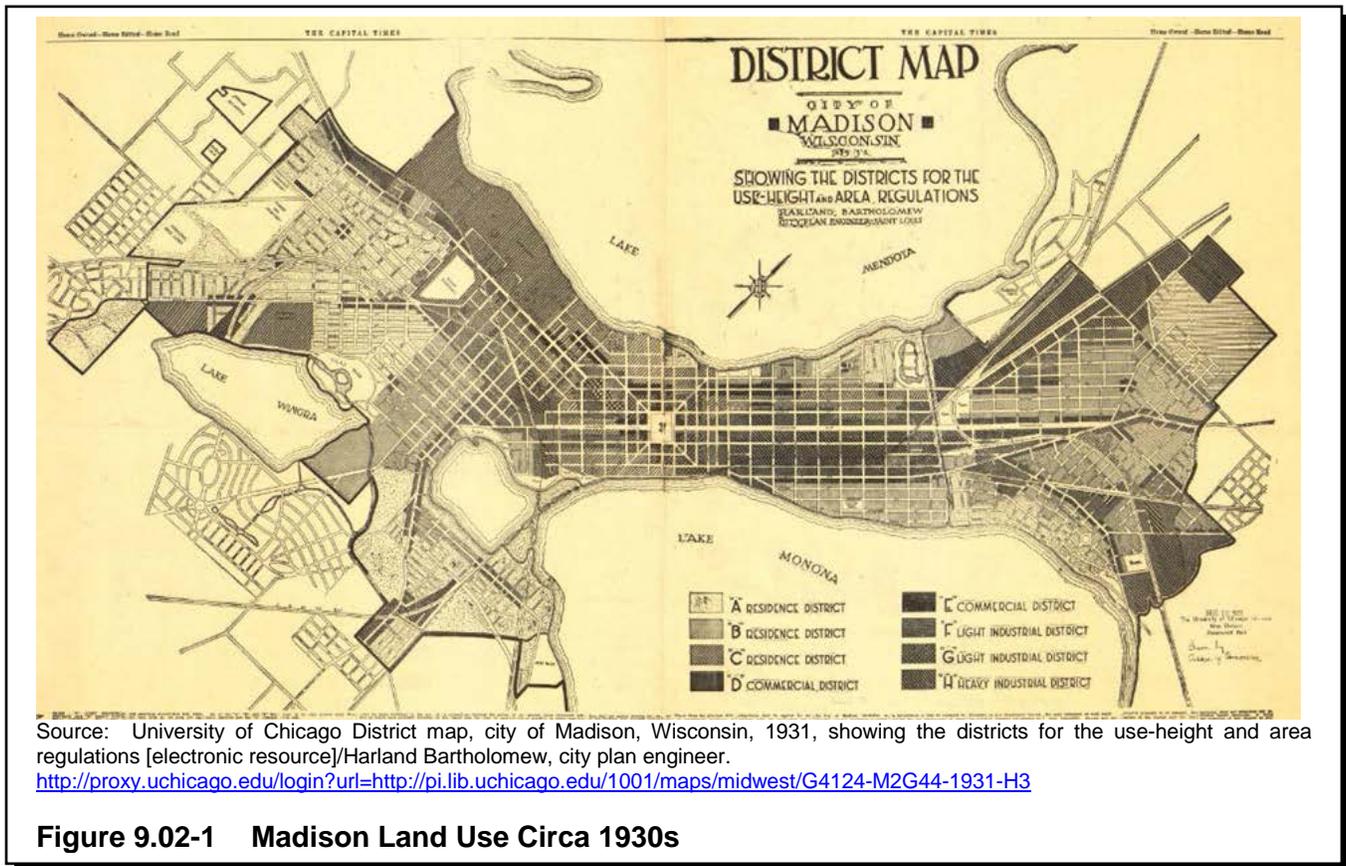
## 9.02 LAND USE TRENDS

### A. Historic Context

From its founding through 1950, employment in Dane County was concentrated in central Madison. State agencies, professional offices, and shopping were focused on the Capitol Square and the surrounding Central Isthmus area. Industrial employment was focused on the East Isthmus area centered on East Washington Avenue (east of Blair Street) and its parallel rail spurs to just beyond the Yahara River, north to Oscar Mayer, with a smaller industrial area located north of Regent and Proudfit Streets. Development on the University of Wisconsin campus generally ended at the Stock Pavilion. Light industrial and medical employment was focused on the South Isthmus along Park Street. Residential patterns mirrored this employment pattern and spread beyond the employment centers north to Warner Park, east to Stoughton Road, south to Badger Road and Broadway Drive, and west to Midvale Boulevard. Madison's population was about 100,000, and with the exception of Maple Bluff, Monona and Shorewood Hills, all other Dane County cities and villages were freestanding farm market centers.

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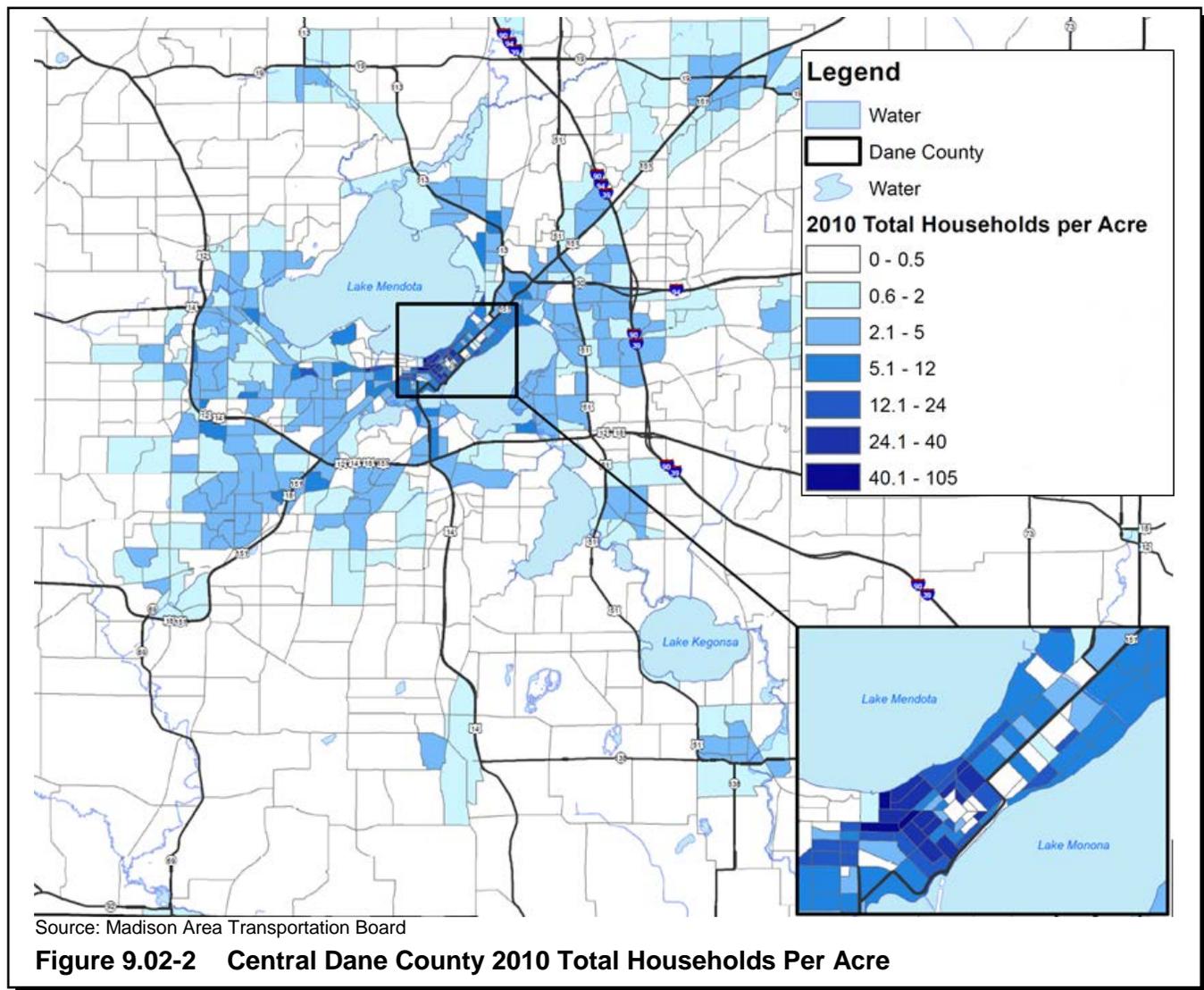
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At that time, US Highways 12, 14, 18, and 151 converged at the Capitol Square. During the mid-1950s, plans for I-90 connecting Madison to LaCrosse and Chicago via Janesville and Rockford and I-94 connecting Madison to the Twin Cities and Milwaukee were completed. At the same time, plans for the Beltline were completed. The East Beltline was planned for the Stoughton Road corridor, the South Beltline along today's East and West Broadway, and the West Beltline in its current location. With a few short exceptions, the I-90 corridor and the entire Beltline were new roadways. At its time of construction in the late 1950s, virtually all industrial, commercial, and residential development in the cities of Madison, Monona, and Middleton was located inside of the East, South, and West Beltlines. Madison's population was about 125,000 in 1960, and regional shopping was beginning to disperse from the Capitol Square. The Northgate, Eastgate, Burr Oaks, Westgate, and Hilldale Shopping Centers were under development in the early 1960s, and East Towne and West Towne Malls opened in the early 1970s. With the exception of Hilldale, all of these centers were oriented to interchanges on the Beltline or the Interstate. By 1970, Madison's population had reached about 170,000, and substantial residential development was occurring east of the East Beltline and south and southwest of the South Beltline. Substantial suburban development in Sun Prairie, Cottage Grove, McFarland, Fitchburg, Verona, and Middleton was also occurring. Beginning in the 1970s, more residential development was occurring outside of the city of Madison than within. Rapid suburbanization was beginning in Waunakee, DeForest, Oregon, and Cross Plains.

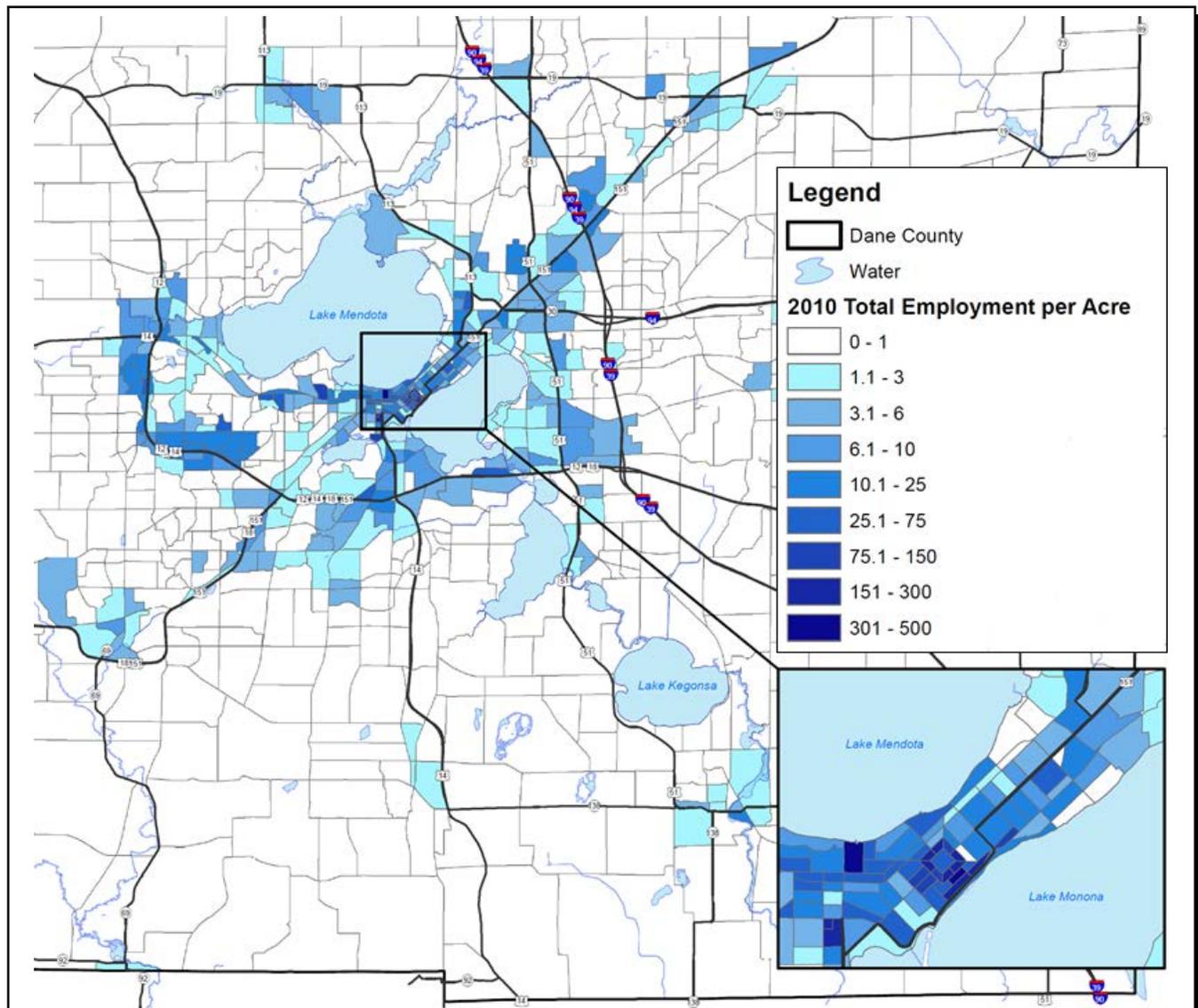
B. Current Land Use

By the year 2000, residential development in central Dane County had developed almost all lands out to the Interstate corridor on the east and the West Beltline corridor on the west. New commercial and employment areas located west of the West Beltline along Junction Road, Old Sauk Road, and Greenway Cross and at the American Center and High Crossing Boulevard east of the I-39/I-90 I-94 corridor. Figure 9.02-2 shows the household density in central Dane County by acre.



These trends have continued to the present with much recent commercial development occurring west of the West Beltline and north of US 14 in Middleton and in the County C corridor in western Sun Prairie. All suburban communities have successfully implemented industrial parks. Substantial office development has occurred at the Epic headquarters on the west side of Verona and along Fish Hatchery Road in central Fitchburg. A cluster of light industrial and warehousing has occurred in DeForest's southern triangle east of the Interstate, west of US 51, and on both sides of WIS 19.

As of 2010, central Madison remains the dominant employment center focused on the Capitol Square and the UW Madison Campus. Medical employment at UW Hospital, Meriter Hospital, St. Mary's Hospital, and the Dean Clinic strongly contribute to this employment cluster. Other employment centers remain within the Beltline on the west side along Parmenter Road in Middleton, at West Towne Mall and areas to the west, in the CUNA/UW Research Park I/Odana Road corridor, and at Hilldale/Sheboygan Avenue. On the south side, substantial retail and light industrial employment remains along the north side of the Beltline. On the east side, the Stoughton Road, East Washington Avenue, and Packers Avenue/Northport Drive corridors also remain strong employment centers. Beyond the Beltline, substantial new retail development is occurring in northwestern Middleton, along CTH PD in Madison and Fitchburg, and in western Sun Prairie. Figure 9.02-3 shows the total employment per acre, illustrating current employment centers in the Madison Metropolitan Area.



Source: Madison Area Transportation Board

**Figure 9.02-3 Central Dane County 2010 Total Employment per Acre**

C. Projected Employment and Households

Looking into the future to 2050, regional planning entities including Dane County, Capitol Area Regional Planning Commission (CARPC), and the Madison Transportation Board (MPO) have projected both employment and residential development, which reflects the pattern of development resulting from municipal plans, and the amount of development resulting from municipal population and household projections done by the Wisconsin Department of Administration. This first growth projection, which will be referred to as Scenario A, is an extrapolation of recent development trends, largely dispersed around the periphery of the central urban area, with modest infill and redevelopment along the Beltline corridor and Madison Isthmus.

The city of Madison is also in the process of adopting a new Transportation Master Plan (TMP), Madison in Motion, that considers a “compact” development scenario, which is based on substantially greater development within the Beltline, and which is more consistent with the City’s adopted plans and development since 2010. The Project team felt it was important for the Planned and Environmental Linkage’s (PEL) traffic modeling to create a second MPO scenario, Scenario B, that reflected the compact development patterns used in the City of Madison’s TMP, although still matching the overall city and county employment and household totals found in Scenario A.

In Scenario A, Major employment growth is projected for areas west of the West Beltline from Airport Road in Middleton to Watts Road in Madison, with a particular focus on the Mineral Point Road corridor west of County M and Pleasant View Road, and centered on UW Research Park II. About 15,000 additional jobs are projected in this corridor with another 5,000 focused around US 12 to the north. Large employment gains are also expected in a third large growth center on the west side of Verona at Epic, with more modest employment growth along the County PD corridor east and west of US 151.

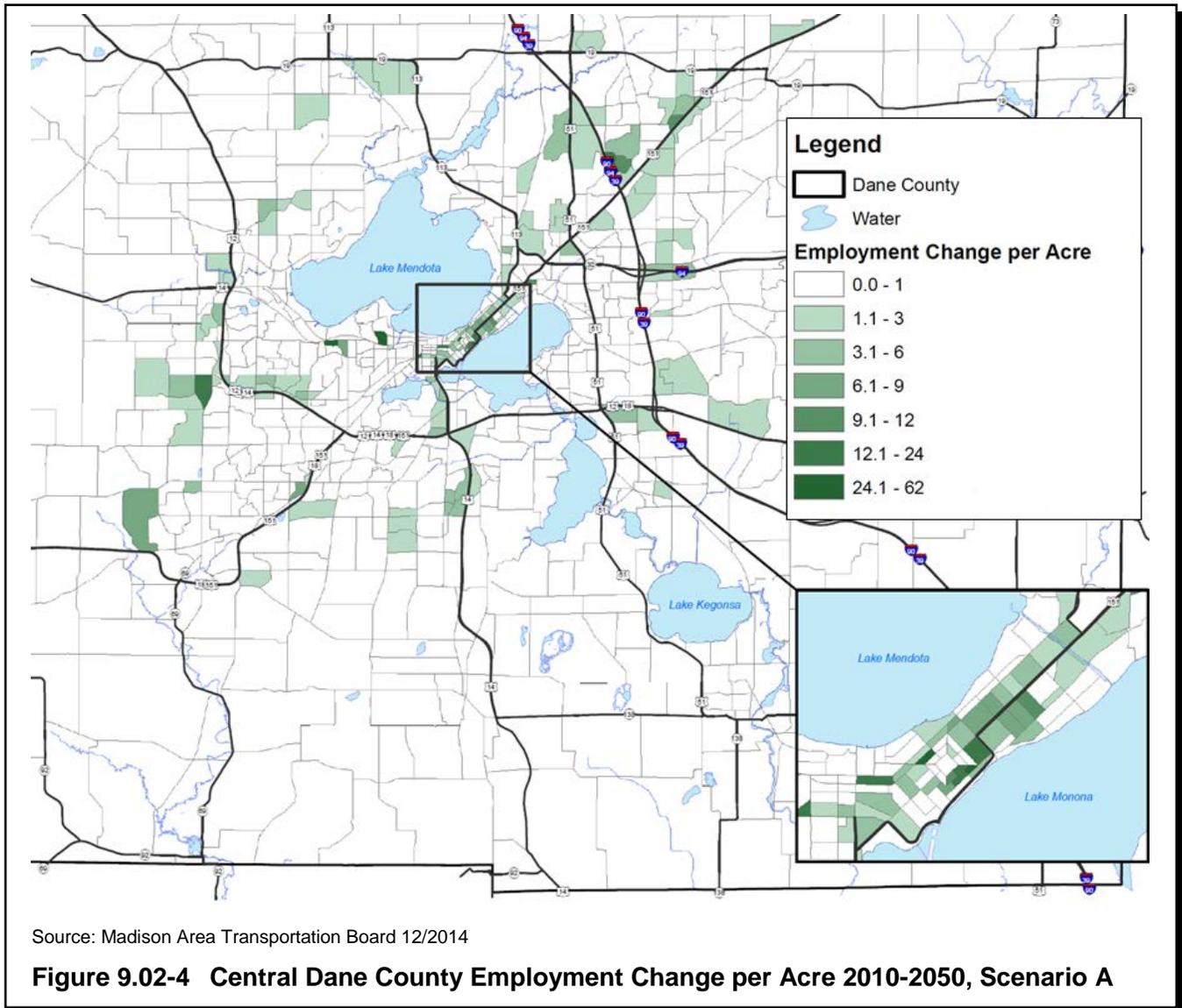
A fourth large cluster of employment growth of about 6,000 jobs is expected in the Lacy Road corridor in northeast Fitchburg, including at the new interchange on US 14. Another 6,000 new jobs is expected in a fifth large growth area located along both sides of the South Beltline between Stoughton Road and the Interstate corridor in Madison and McFarland. A sixth large cluster of about 7,500 new jobs is forecasted for the areas just east of the Badger Interchange served by Sprecher Road, Reiner Road, Milwaukee Street, and County TT, with a smaller growth cluster at the County N Interchange with I-94 on the north side of Cottage Grove.

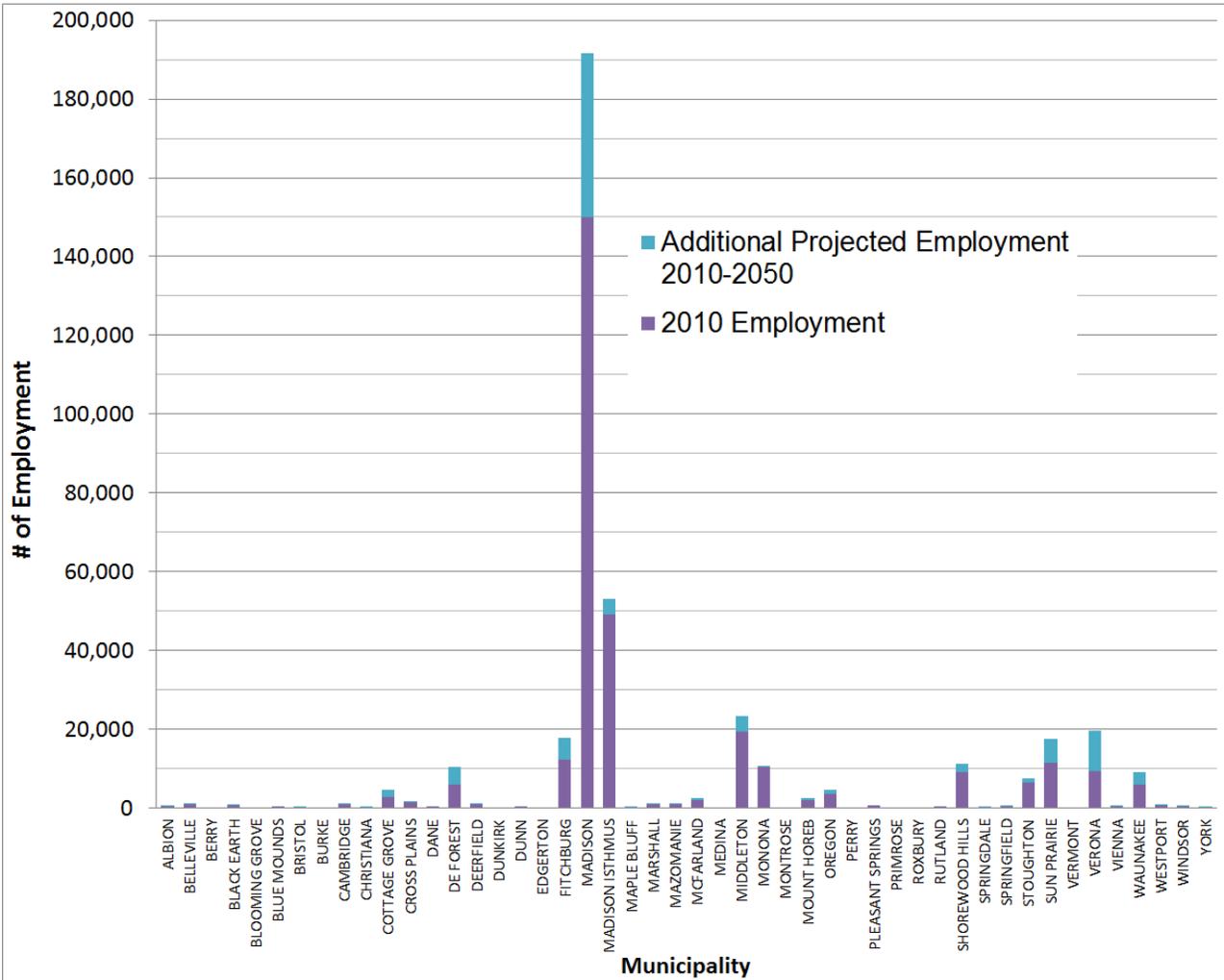
The Stoughton Road corridor near Madison College is expected to add about 2,000 jobs, with another 5,000 new jobs in a seventh large employment cluster near the west ends of Hanson and Hoepker Roads west of the Interstate. The American Center/High Crossing Boulevard area is expected to add about 12,000 new jobs in an eighth large growth area, with another 4,500 jobs projected in a ninth large growth area in southwestern Sun Prairie focused on County C, US 151, and WIS 19.

Municipal business and industrial parks in surrounding communities are all projected for additional employment of between 250 and 3,000 additional jobs.

Additional employment growth is also projected for central Madison, focused on the medical centers, infill development on the northwest side of the UW campus, and the John Nolen and East Washington

Avenue corridors. Figures 9.02-4 and -5 depict 2010 to 2050 employment change per acre as projected by the MPO under Scenario A.

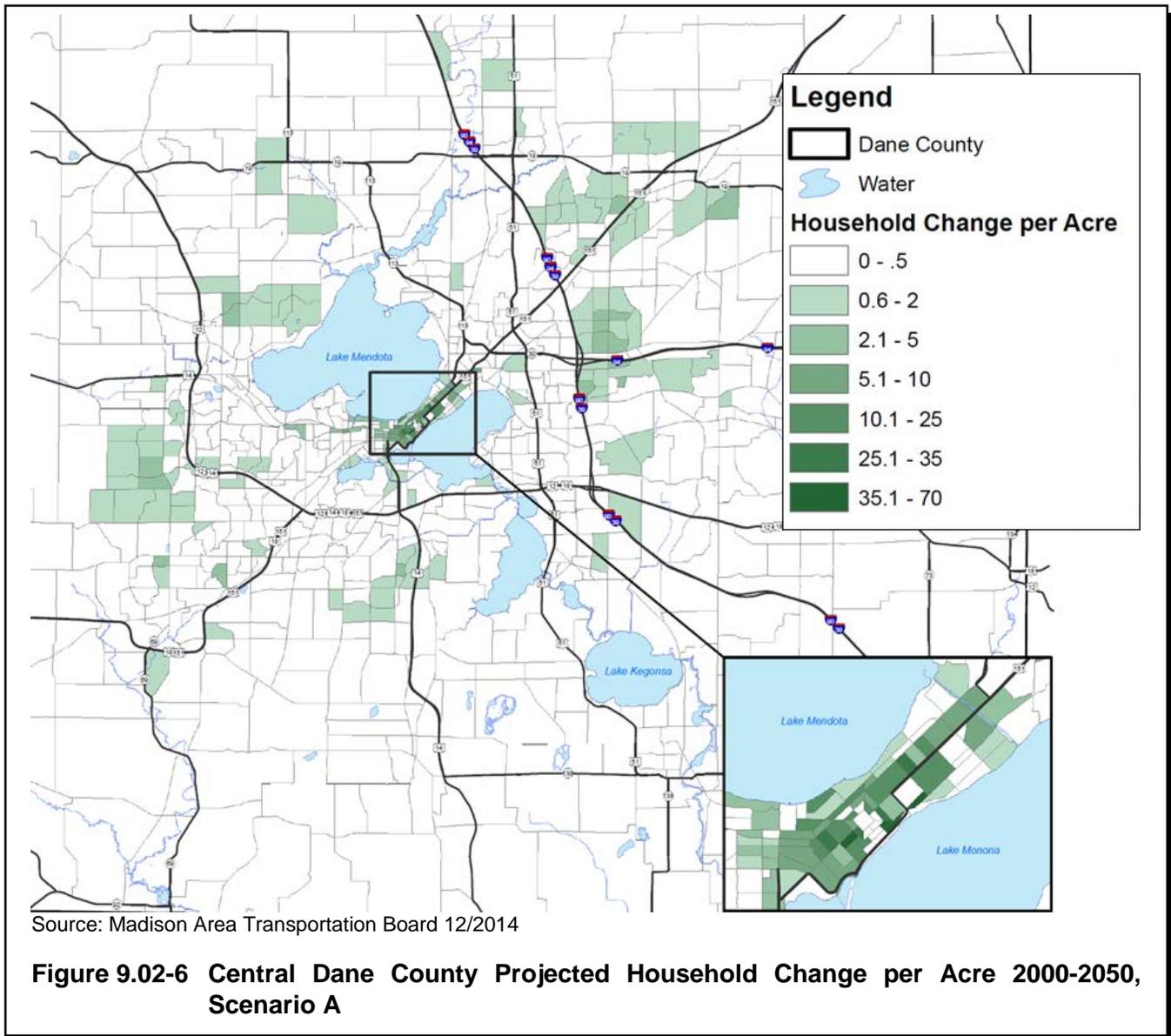


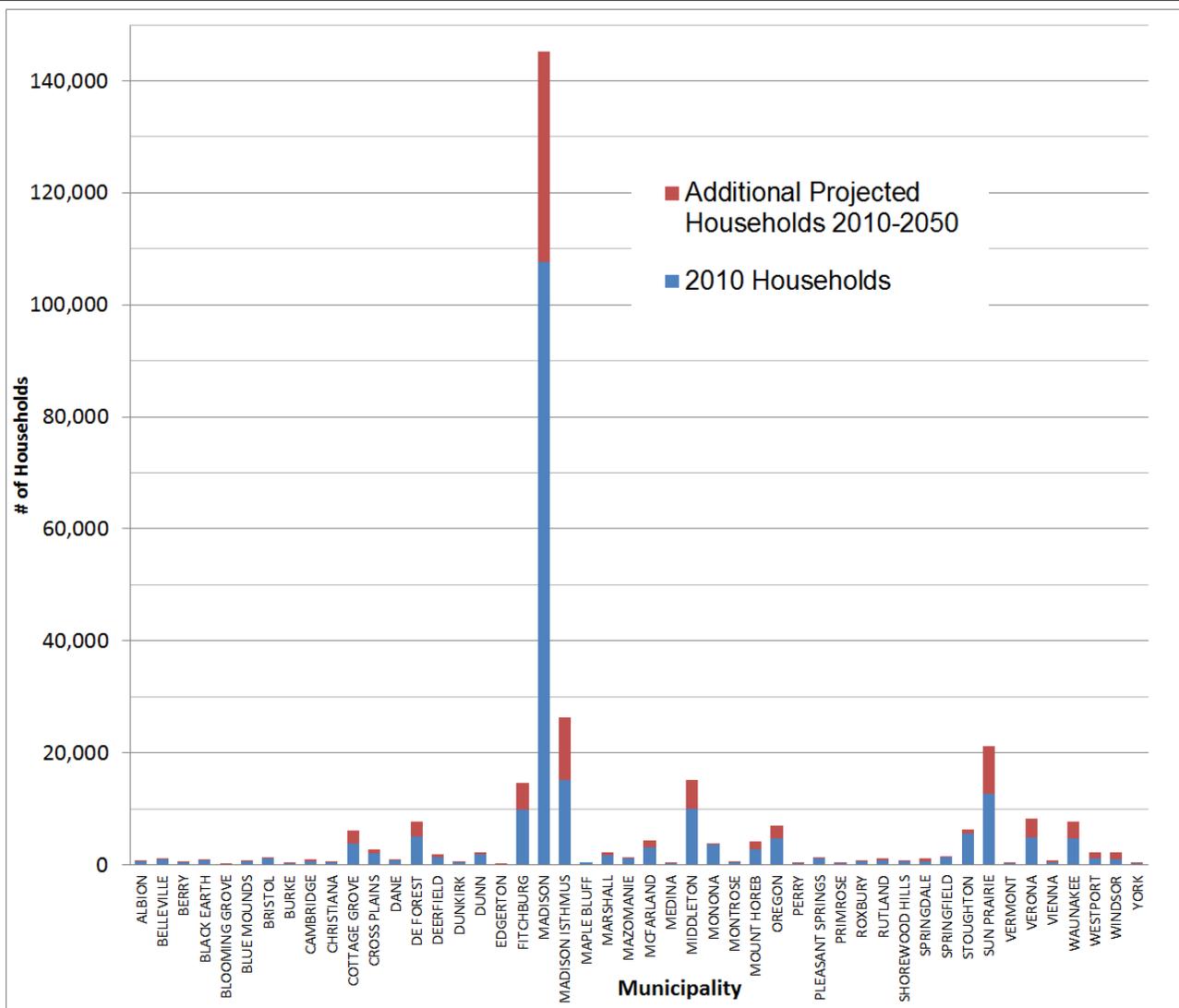


Source: Madison Area Transportation Board 12/2014

**Figure 9.02-5 Dane County Projected Employment Change 2000-2050, Scenario A**

This pattern of employment growth in all directions, as well as within the central urban area, is echoed by the projected pattern of new residential development. For the past 20 years, most suburban cities and villages have added between 1,500 and 3,000 people per decade, with more substantial population growth in Sun Prairie. Figures 9.02-6 and -7 illustrate the areas that experience household growth, because of the increased population, per acre between 2010 and 2050.



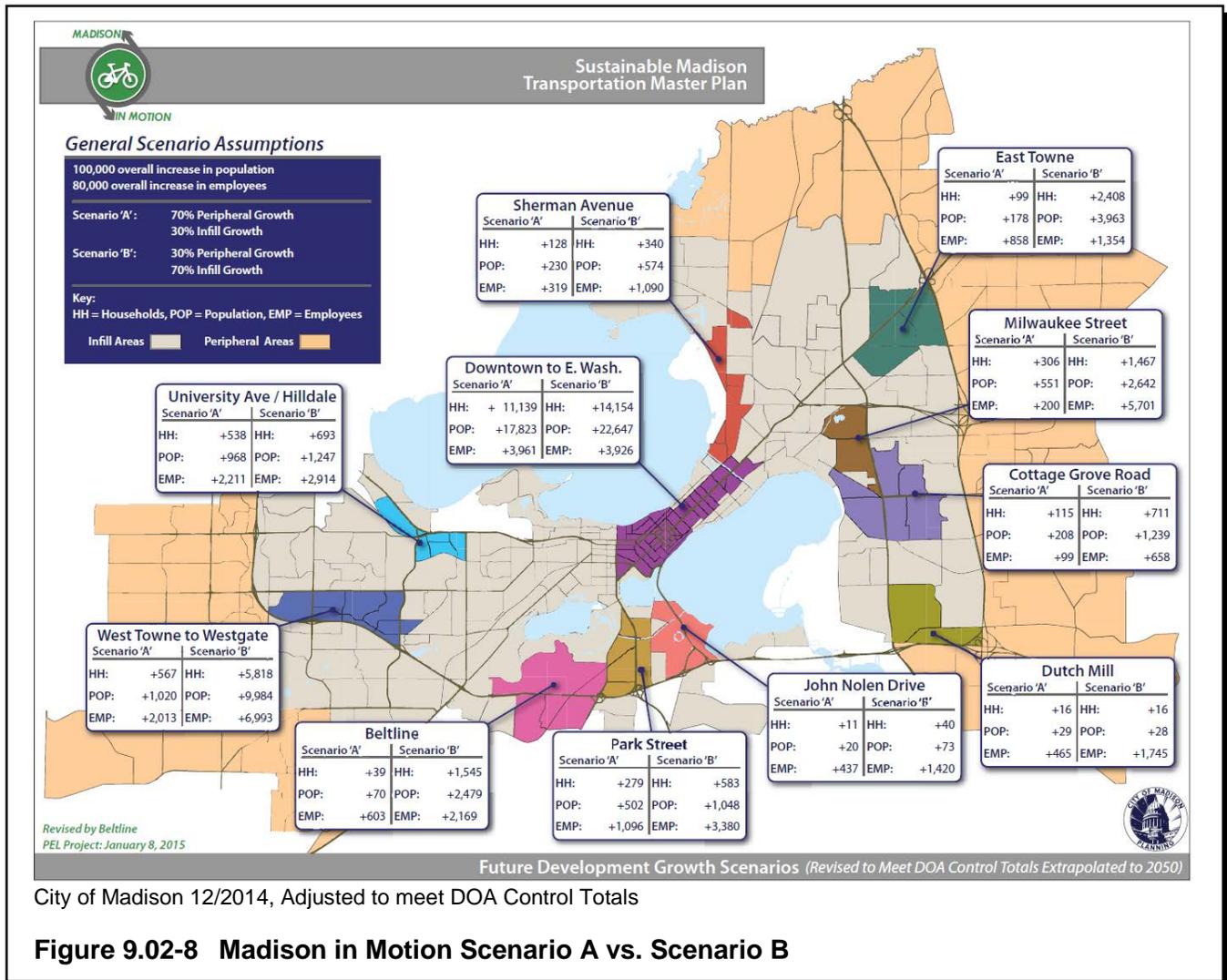


Source: Madison Area Transportation Board 12/2014

**Figure 9.02-7 Central Dane County Projected Household Change 2010-2050, Scenario A**

In Scenario B of the Madison in Motion Transportation Plan, many of the same areas as Scenario A are projected for significant employment growth, though to a lesser degree on the urban edge and a greater degree inside the Beltline. Scenario B uses activity centers that foster higher densities of residential redevelopment and employment growth. Figure 9.02-8 illustrates Madison in Motion’s Scenario B household and employment growth, adjusted to meet DOA control totals.<sup>2</sup>

<sup>2</sup> Madison in Motion used higher overall 2050 employment and household growth than that projected by DOA and CARPC. The figure proportionately decreases Madison in Motion’s figures to match DOA household and CARPC employment projections as of December 2014



Major employment growth is projected for areas west of the West Beltline from Airport Road in Middleton to Watts Road in Madison, with a particular focus on the Mineral Point Road corridor west of County M and Pleasant View Road, and centered on UW Research Park II. About 8,000 additional jobs are projected in this corridor. Around 6,000 employment gains are also expected on the west side of Verona at Epic, with more modest employment growth along the County PD corridor east and west of US 151.

Another cluster of employment growth of about 6,000 jobs is expected in the Lacy Road corridor in northeast Fitchburg, including at the new interchange on US 14. Even more jobs than in Scenario A are expected along both sides of the South Beltline between Stoughton Road and the Interstate corridor in Madison and McFarland. Fewer jobs, around 1,500, are forecast for the areas just east of the Badger Interchange served by Sprecher Road, Reiner Road, Milwaukee Street, and County TT, with a smaller growth cluster at the County N Interchange with I-94 on the north side of Cottage Grove.

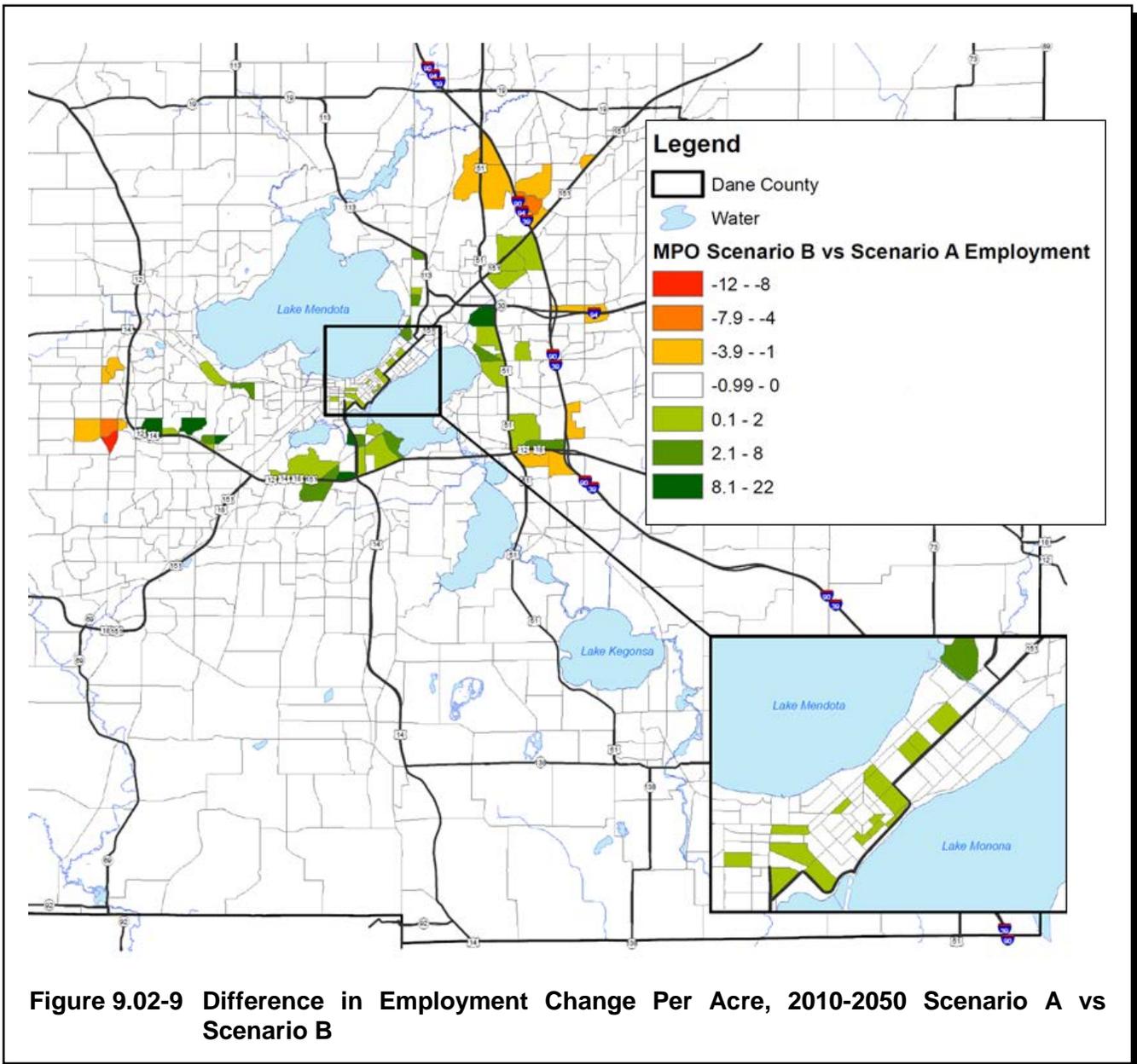
The Stoughton Road corridor near Madison College is expected to add about 1,000 jobs, with another 2,000 new jobs in a large employment cluster near the west ends of Hanson and Hoepker Roads west of the Interstate. The American Center/High Crossing Boulevard area is expected to add about 5,000 new jobs in a large growth area, with another 3000 jobs projected in a ninth large growth area in southwestern Sun Prairie focused on County C, US 151, and WIS 19.

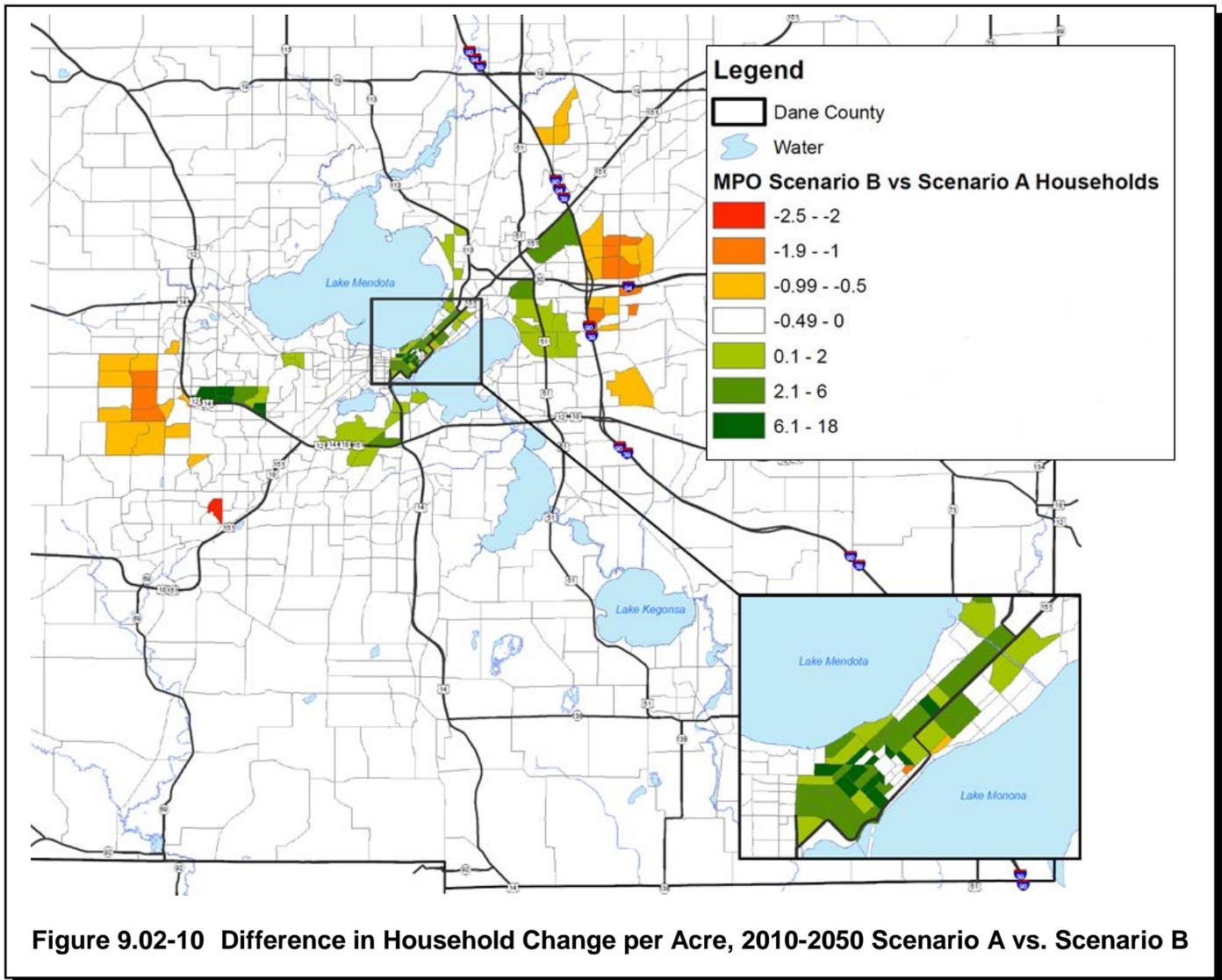
Municipal business and industrial parks in surrounding communities are all projected for additional employment of between 250 and 3,000 additional jobs.

Many of the areas most likely to see additional growth in Scenario B in Central Dane County are those targeted for redevelopment or infill by the City of Madison and the MPO in the 2035 Regional Transportation Plan. These sites can be seen on Figure 9.02-6. Some targeted sites are focused on the medical centers, infill development on the northwest side of the UW campus, and the John Nolen and East Washington Avenue corridors. South John Nolen Drive is expected to gain around 1,500 new jobs, East Washington Avenue around 3,000, and the northwest UW Campus/University Avenue corridor around 5,000 jobs.

The southwest corner of Stoughton Road and Highway 30 is also slated for significant growth of around 5,000 additional jobs, in Scenario B. The Odana Road corridor in Southwest Madison is projected for 7,000 new jobs.

The differences in projected household and employment growth between Scenario A and B can be seen in Figures 9.02-9 and 9.02-10.





In terms of pure population, Dane County is projected to add about 150,000 people between 2010 and 2050. This represents a total absolute growth of over 50 percent and an annual growth rate of over 0.75 percent. Additionally, counties within the Madison Metropolitan Statistical area (see Figure 9.02-11), all of which have substantial numbers of Dane County workers, are also expected to grow (see Table 9.02-1).

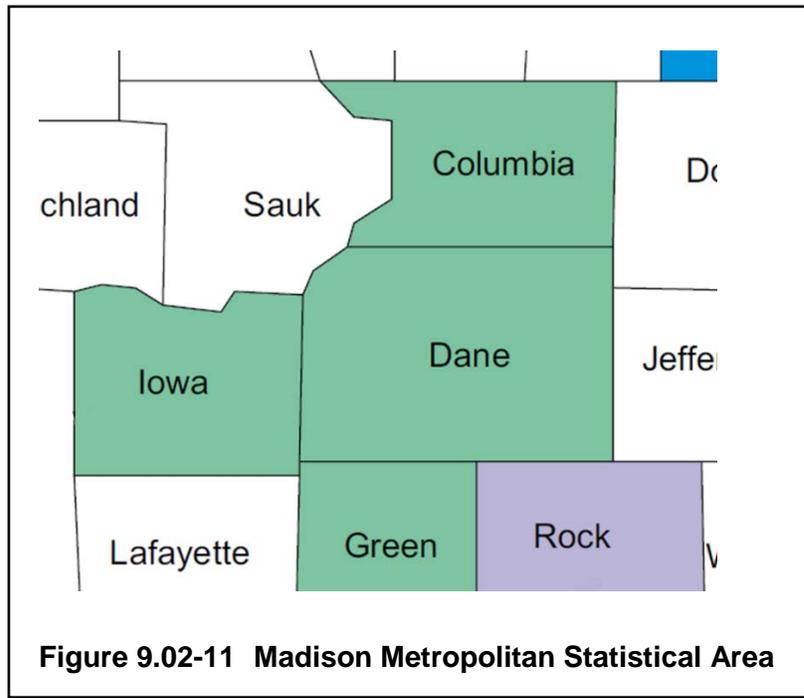


Figure 9.02-11 Madison Metropolitan Statistical Area

County	2000 <sup>^</sup>	2010 <sup>^</sup>	2020	2030	2040	2050	Increase 2010-2050
Dane	426,526	488,073	530,620	577,300	606,620	660,652+ 637,300	172,579+ 149,300
Columbia	52,468	56,833	61,410	67,455	68,450	74,099	17,266
Iowa	22,780	23,687	25,035	27,105	26,990	28,671	4,984
Green	*	*	39,270	42,125	42,555	45,818	8,976
<b>Madison Metropolitan Statistical Area Total</b>	<b>501,774</b>	<b>568,593</b>	<b>656,335</b>	<b>713,985</b>	<b>744,615</b>	<b>809,240</b>	<b>240,647</b>
Sauk	55,225	61,976	68,075	75,660	77,815	85,409	23,433
Rock	*	*	169,130	179,360	182,860	192,838	32,507
<b>All 2013 Primary Statistical Area Total</b>	<b>556,999</b>	<b>630,569</b>	<b>893,540</b>	<b>969,005</b>	<b>1,005,290</b>	<b>1,087,487</b>	<b>456,918</b>

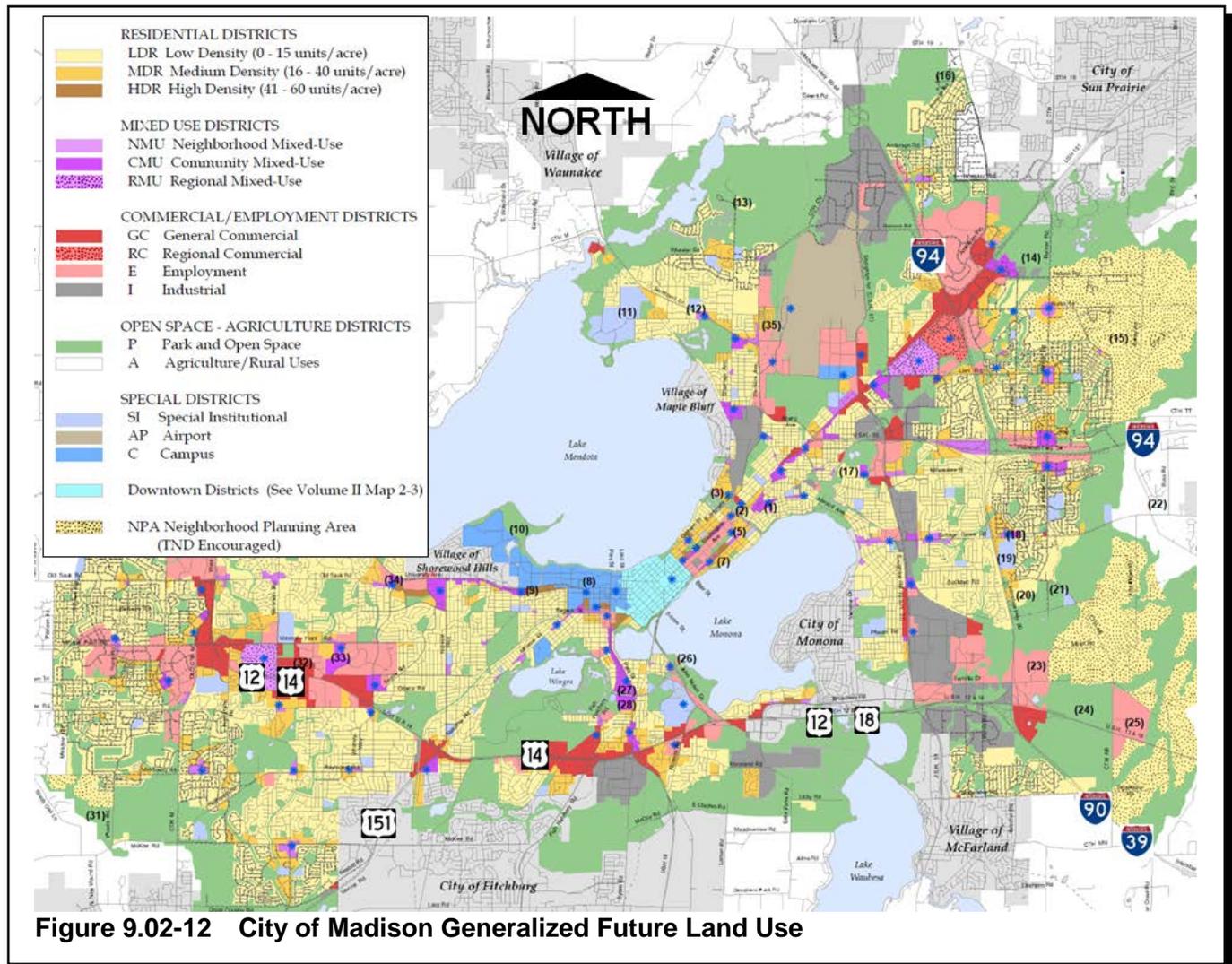
Source: Vandewalle & Associates based on data from US Census and Wisconsin Department of Administration 2013.  
 +Note: Revisions in November of 2015 put this projection closer to 637,400, which would make the increase from 2010 to 2050 at 149,300

\*Added to Primary Statistical Area in 2013 by U.S. Census Bureau. <sup>^</sup>2000 and 2010 Census.

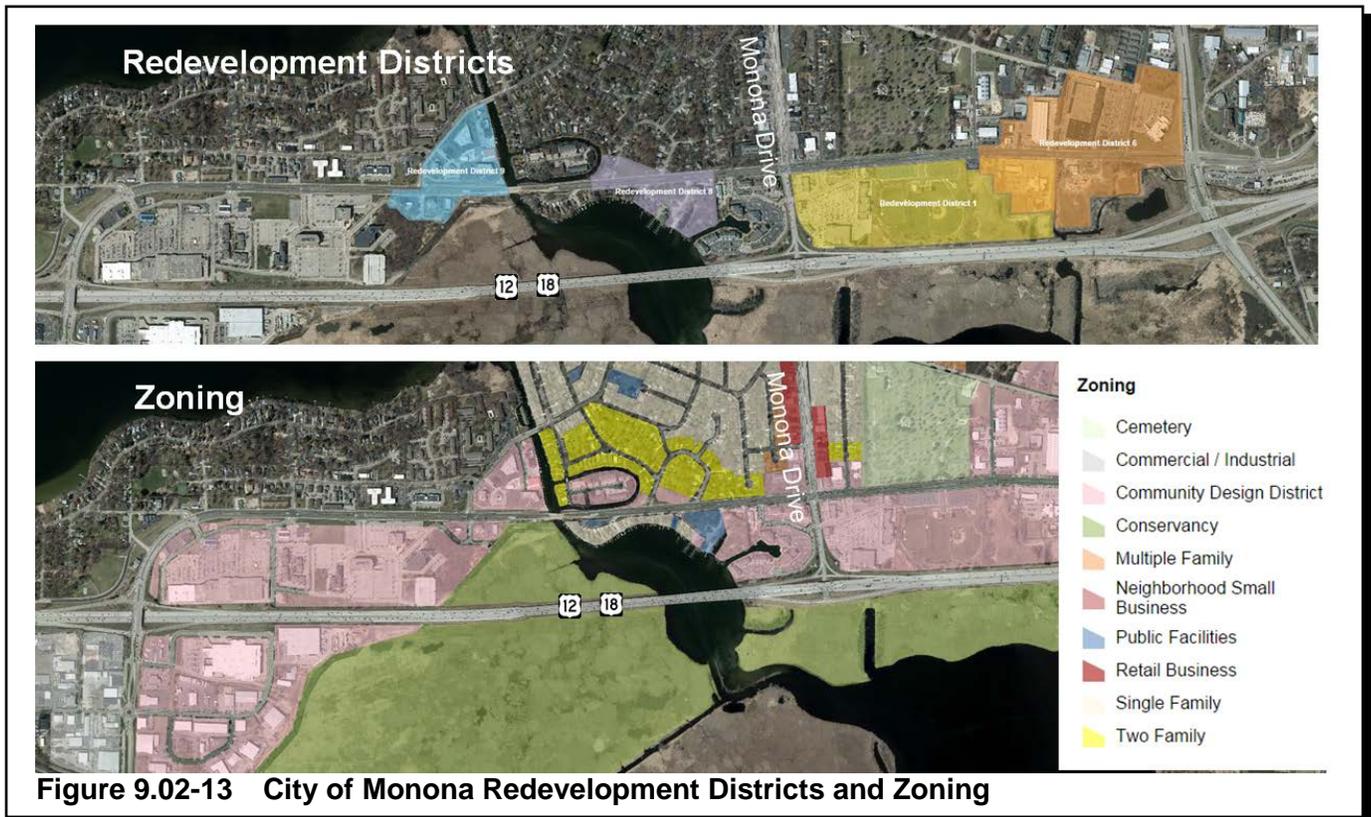
Table 9.02-1 Population Projections for Madison Metro Statistical Area

D. Future Land Use

The city of Madison will begin the process of updating its 2006 Comprehensive Land Use Plan in 2016. City staff regularly refine the future land use map to reflect current city actions. Figure 9.02-12 shows the generalized future land use map created in March 2012 from city of Madison planning website. Generally the red hues represent commercial and employment districts, while the tan hues represent housing. Planned land uses adjacent to the Beltline are primarily commercial and employment districts. Exceptions include the residential areas east of the Beltline between University Avenue and Mineral Point Road, the residential areas between Whitney Way and Verona Road, and the several parks and open spaces associated with the UW Arboretum and Capital Springs State Recreation area.



The city of Monona is also in the process of revising its 2004 Comprehensive Plan. Currently Monona has not updated its future land use map, yet the existing zoning and redevelopment maps are online. Figure 9.02-13 shows the city of Monona’s redevelopment districts and zoning near the Beltline obtained from its website in October 2015.



**Figure 9.02-13 City of Monona Redevelopment Districts and Zoning**

The city of Middleton is in the process of updating its 2006 comprehensive plan. Currently Middleton does not have future land use maps available.

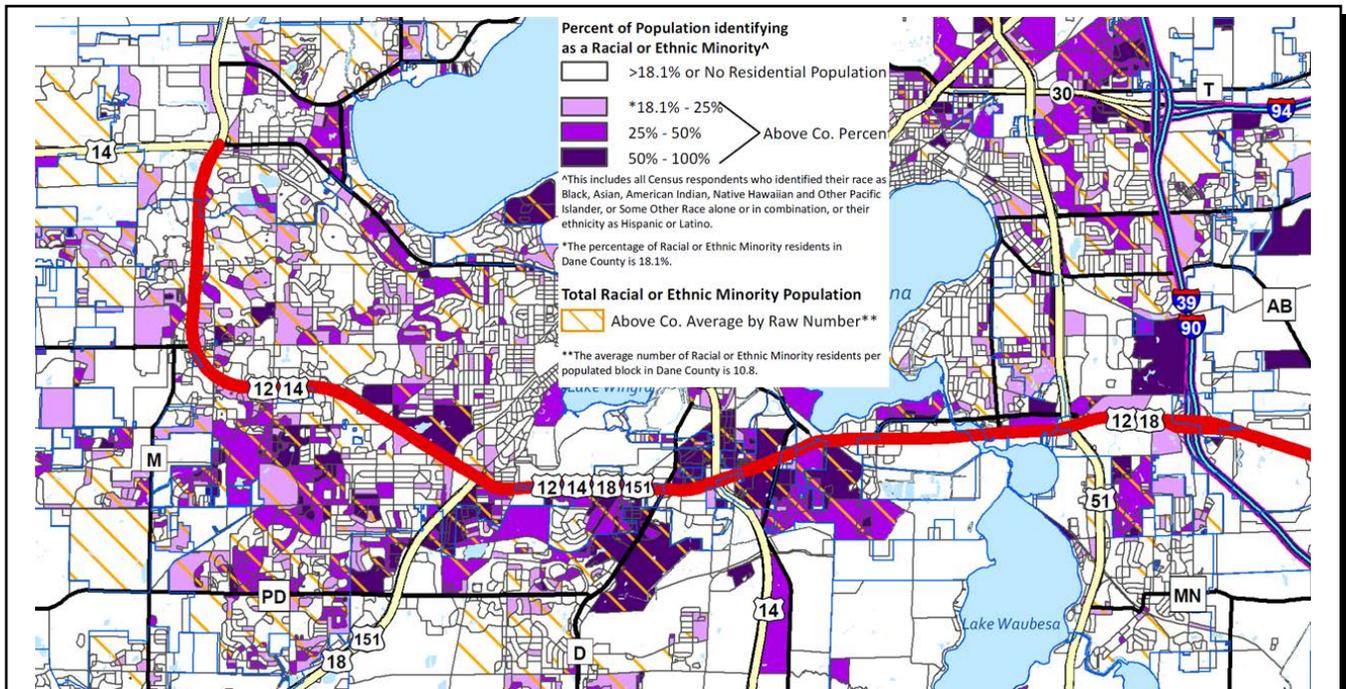
### 9.03 DEMOGRAPHICS

Executive Order 12898 addresses Environmental Justice and its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities. Residential areas along the Beltline tend to include higher percentages of Environmental Justice populations. Environmental Justice populations include racial or ethnic minorities and low-income populations. While not part of Environmental Justice, elderly and disabled civilian populations are also of interest in the environmental process. Readily identifiable groups are most easily identified from census blocks, block groups, or tracts that contain a proportion of racial or ethnic minority.

#### A. Race/Ethnicity

Concentrations of racial or ethnic minorities are depicted on Figure 9.03-1. This category includes all 2010 Census respondents who identified their race as Black, Asian, American Indian, Hawaiian and Other Pacific Islander, or Some Other Race (alone or in combination), or their ethnicity as Hispanic or Latino. In Dane County, approximately 18.1 percent of people or 88,585 persons are racial or ethnic minorities. There are a number of concentrations of racial or ethnic minorities located adjacent to or near the Beltline, including an estimated 26,905 racial or ethnic minority persons living within one mile of the Beltline study corridor.

In particular, many census blocks located immediately adjacent to the Beltline contain 25 to 50 percent or 50 to 100 percent racial or ethnic minorities. These include areas west of Park Street and north of the Beltline; both sides of US 151 on the north side of the Beltline; the east side of WIS 14 on both sides of the Beltline; and both sides of Stoughton Road on the north side of the Beltline. There are other concentrations located south of the Beltline between High Point Road and West Broadway and located west of I-39/90 just north of the Beltline. Many of these contain 25 to 50 percent and 50 to 100 percent racial or ethnic minorities. See Figure 9.03-1.

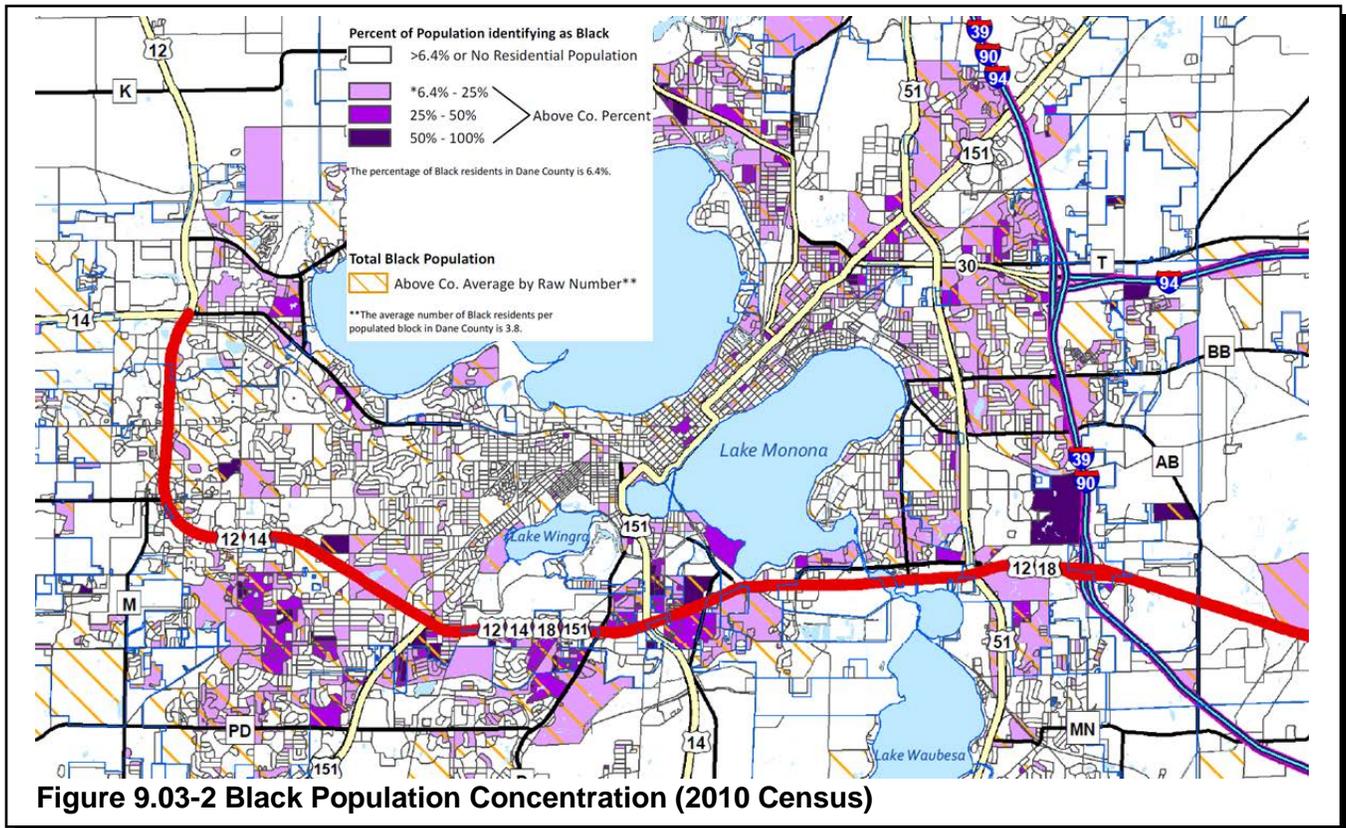


**Figure 9.03-1 Racial or Ethnic Minority Population Concentration (2010 Census)**

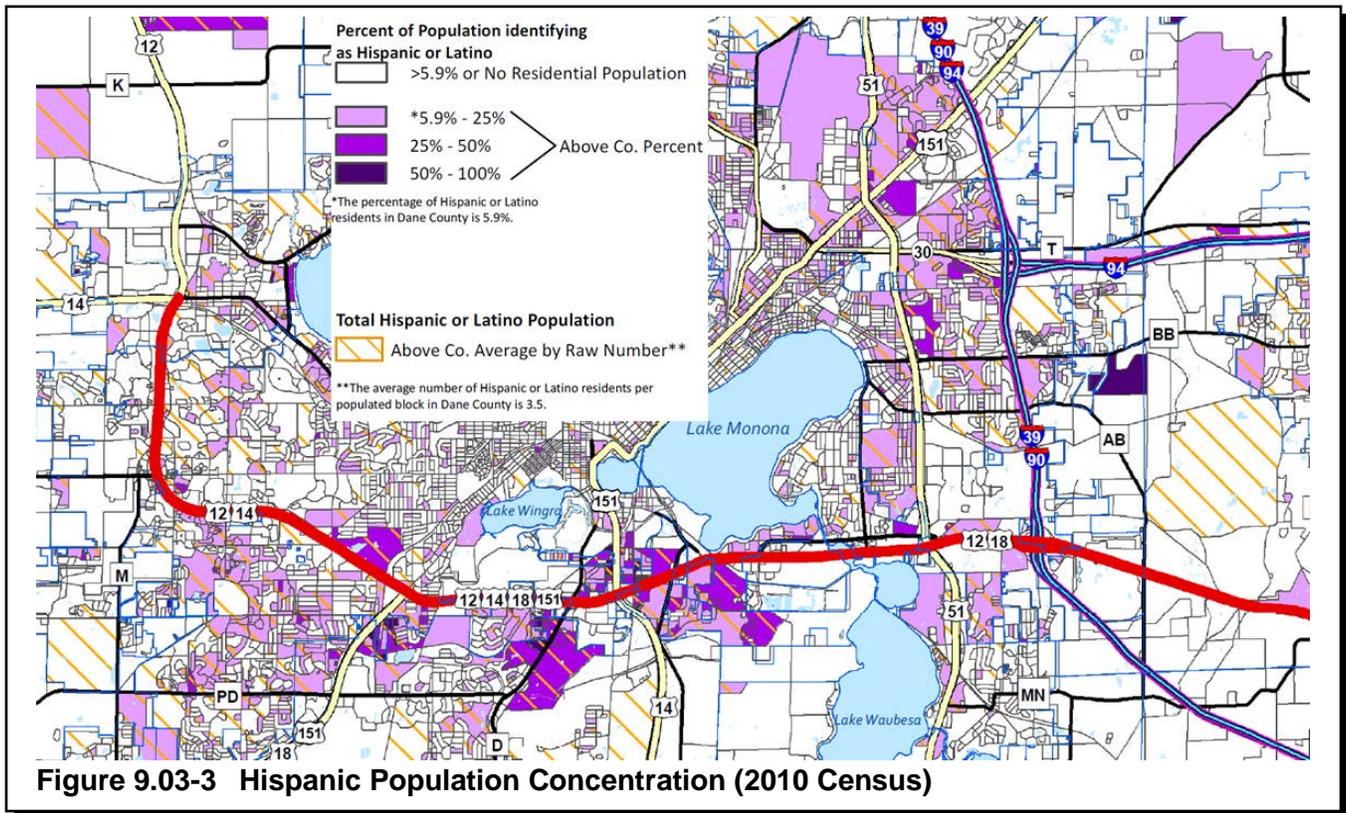
There are EJ populations adjacent to the Beltline corridor.

1. Many of the census block adjacent to the Beltline have localized concentrations of American Indians. These blocks contain American Indian populations of 0.9 to 25 percent. Two census blocks close to the Beltline have significant concentrations of American Indians, including one block with a population that is 25 to 50 percent American Indian and another that is 50 to 100 percent American Indian. These blocks are located in Monona near West Broadway and Stoughton Road.
2. Many of the census blocks adjacent to the Beltline have concentrations of Asians. In particular, most census blocks adjacent to the Beltline and west of Gammon Road have Asian populations of up to 25 percent. There are also several census blocks containing 25 to 50 percent Asian residents close to, but not adjacent to, the Beltline.
3. There are many concentrations of Black residents near the Beltline. Specifically, many of the census blocks east of US 18/US 151 and west of West Broadway have concentrations of Black residents, including a few blocks containing Black populations of

up to 50 to 100 percent. There is also a census block composed of 50 to 100 percent Black residents north of the Beltline and west of I-39/90. See Figure 9.03-2.



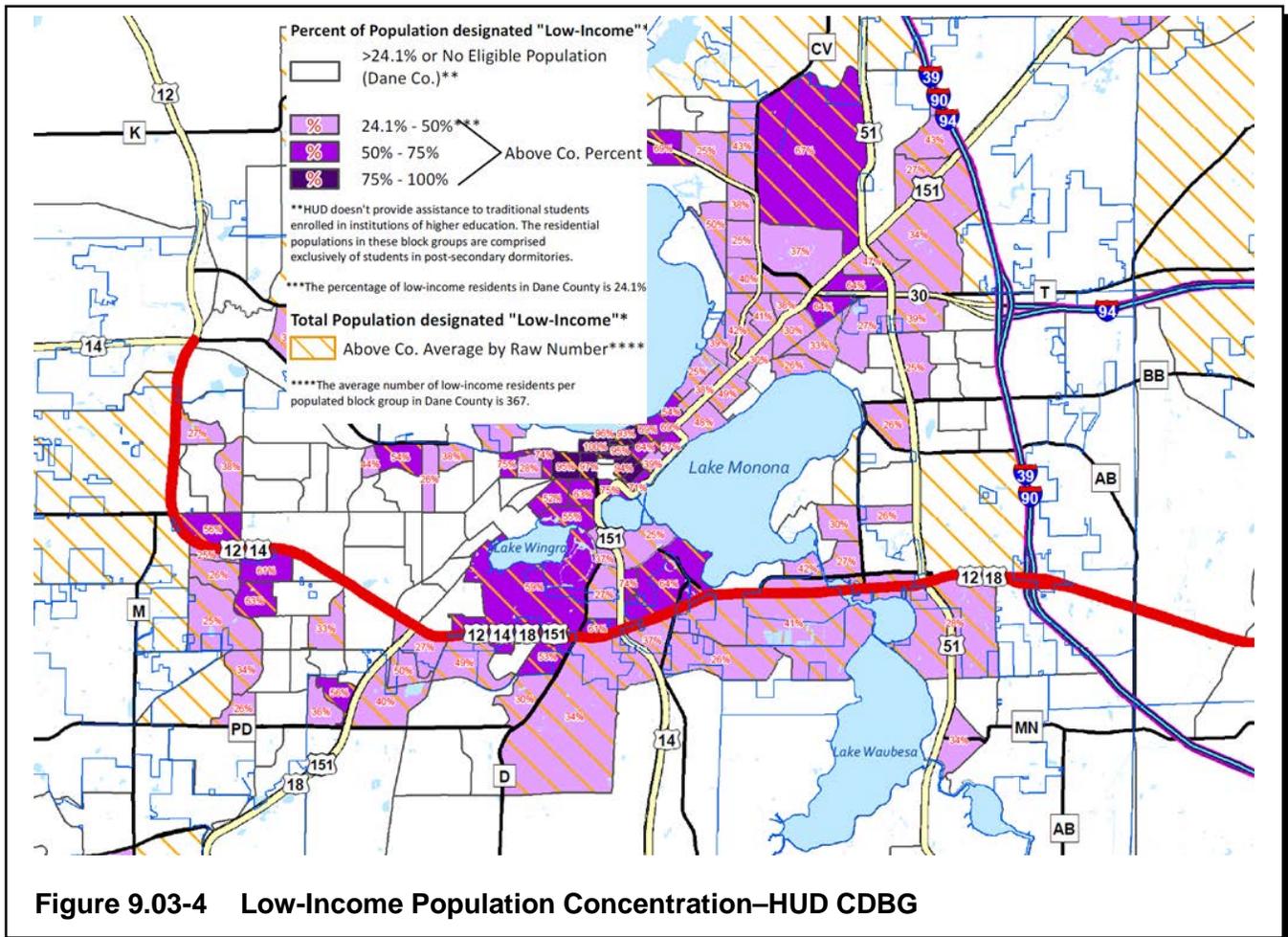
4. A few blocks with above average totals or percentages of Hawaiian or Other Pacific Islanders residents are adjacent to or near the Beltline. One of the largest such clusters runs from South Park Street to John Nolen Drive.
5. When responding to the 2010 Census, roughly 2.8 percent of the population in Dane County identified as “Some Other Race.” Many of the census blocks adjacent to and near the Beltline have concentrations of people identifying as Some Other Race. In particular, most census blocks between Verona Road and West Broadway have populations of 2.8 to 25 percent or 25 to 50 percent.
6. Many of the census blocks adjacent to the Beltline have concentrations of Hispanic residents. In particular, most census blocks adjacent to the Beltline between Verona Road and West Broadway have Hispanic populations of up to 6 to 25 percent or 25 to 50 percent. There are census blocks containing 50 to 100 percent Hispanic residents located adjacent to the Beltline near US 14/151. There are also numerous census blocks containing 25 to 50 percent and 50 to 100 percent Hispanic residents located south of the Beltline, between Verona Road and US 14, and north and south of the Beltline between Fish Hatchery Road and West Broadway. See Figure 9.03-3.



B. Low-Income

The percentage of low-income residents in Dane County, based on HUD CDBG and Census data, is approximately 24.2 percent<sup>3</sup>. Much of the Beltline corridor is adjacent to concentrations of low-income populations, with census block groups containing 24.1 to 50 percent low-income residents. Several block groups located along the Beltline at Gammon Road contain more than 50 percent low-income residents. Most block groups between Seminole Highway and Fish Hatchery Road adjacent to the Beltline contain low-income concentrations, with two containing over 50 percent low-income residents. Most areas between US 151 and I-39/90 contain concentrations of low-income residents, including several block groups adjacent to US 151 north of the Beltline that contain 61 to 74 percent low-income residents. See Figure 9.03-4

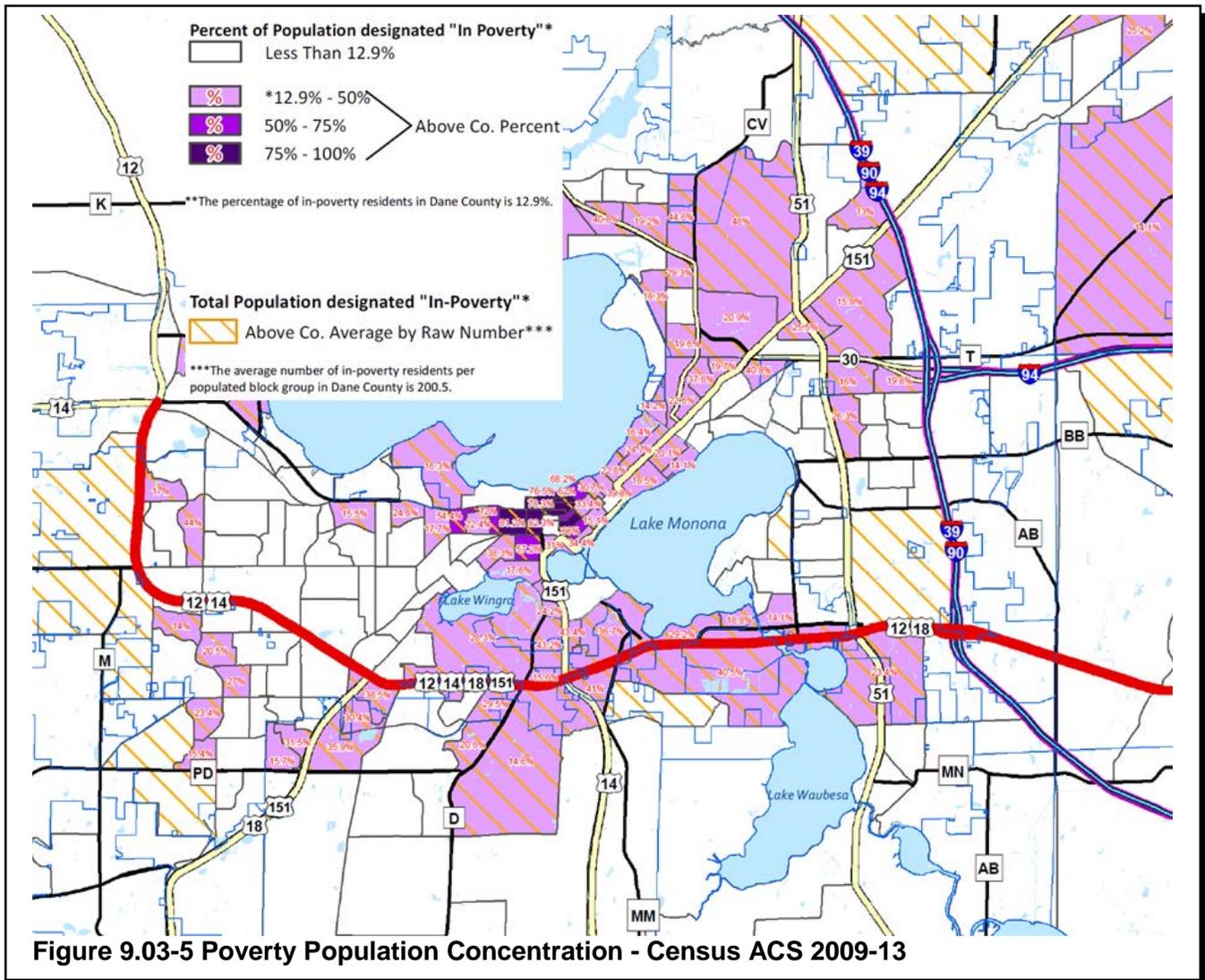
<sup>3</sup> Every year, HUD releases “income limits” that define, for each County, MSA (Metro or Micropolitan Area), or HUD Metro Fair-Market-Rent Areas (HMFA) in the country, “Moderate Income” and “Low-Income” limits to determine allocation of Community Development Block Grants (CDBG). The moderate and low income levels or respond to 80% and 50% of the area’s (County, MSA, or HFMA) median household income respectively. In its definition of “low-income individual” the Federal Transit Authority (FTA), “encourages the use of a locally developed threshold ... provided that the threshold is at least as inclusive as the US. Department of Health and Human Services (HHS) poverty guidelines.” For Dane County, at every size of household HUD’s 50% “Low-Income” limits exceeded those of the HHS guidelines, and so HUD’s “Low-Income” limits were used in this map. If a household’s income falls below 50% of HUD’s median income definition for its size, all the residents of that household are considered to be “low-income.” While HUD updates its income limits each year, at present the income data they compare them to are from the 2006-2010 ACS. The income limits used in this map are from 2014.



Another stricter measure of income level is the Census Bureau's Poverty Thresholds, seen on Figure 9.04-5<sup>4</sup>. By this measure, approximately 12.9 percent of Dane County has been designated as "in-poverty." And again significant concentrations are seen adjacent to the Beltline, with every block group from Seminole Highway to Stoughton Road fronting the Beltline possessing a higher concentration than the county percentage, with some containing a poverty rate of up to 43 percent. Unlike the HUD CDBG low-income limits, the Census Poverty thresholds are established at a nationwide scale, rather than a Metro-specific one. For a detailed description of both income measures and how they compare to FTA guidance on identifying potential impacts on environmental justice populations, see the figure legends, and Tables 9.03-1, 9.03-2, and 9.03-3.

The total number and percentage of estimated persons in poverty in Dane County has increased from 38,815 and 9.4 percent in 1999 to an estimated 62,168 and 12.9 percent during the 2009-2013 American Community Survey 5-year estimates. See Figure 9.03-5.

<sup>4</sup> The Census Bureau uses a set of dollar value thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the dollar value of the appropriate threshold, then that family and every individual in it are considered to be in poverty. The poverty thresholds do not vary geographically. They are updated annually to allow for changes in the cost of living (inflation factor) using the Consumer Price Index (CPI).



Persons in family/household	Poverty guideline
One person	\$11,770
Two people	\$15,930
Three people	\$20,090
Four people	\$24,250
Five people	\$28,410
Six people	\$32,570
Seven people	\$36,730
Eight people	\$40,890

For families/households with more than 8 persons, add \$4,160 for each additional person.

Source: US Dept. of Health and Human Services

<http://aspe.hhs.gov/2015-poverty-guidelines>

**Table 9.03-1 2015 Poverty Guidelines for the 48 Contiguous States and the District of Columbia**

US Census Bureau Poverty Thresholds for 2014 by Size of Family and Number of Related Children Under 18 Years									
Persons in household	Related children under 18 years								
	None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual)									
Under 65 years	\$12,316								
65 years and over	\$11,354								
Two people									
Householder under 65 years	\$15,853	\$16,317							
Householder 65 years and over	\$14,309	\$16,256							
Three people	\$18,518	\$19,055	\$19,073						
Four people	\$24,418	\$24,817	\$24,008	\$24,091					
Five people	\$29,447	\$29,875	\$28,960	\$28,252	\$27,820				
Six people	\$33,869	\$34,004	\$33,303	\$32,631	\$31,633	\$31,041			
Seven people	\$38,971	\$39,214	\$38,375	\$37,791	\$36,701	\$35,431	\$34,036		
Eight people	\$43,586	\$43,970	\$43,179	\$42,485	\$41,501	\$40,252	\$38,953	\$38,622	
Nine people or more	\$52,430	\$52,685	\$51,984	\$51,396	\$50,430	\$49,101	\$47,899	\$47,601	\$45,768

**Table 9.03-2 2014 US Census Bureau Poverty Thresholds**

Madison HMFA (HUD Metro Fair-Market-Rent Area) = Dane County		
Persons in household	Moderate Income (80% of Median)	Low Income (50% of Median)
One person	\$46,100	\$28,950
Two people	\$52,650	\$33,050
Three people	\$59,250	\$37,200
Four people	\$65,800	\$41,300
Five people	\$71,100	\$44,650
Six people	\$76,350	\$47,950
Seven people	\$81,600	\$51,250
Eight people	\$86,900	\$54,550

**Table 9.03-3 HUD CDBG Income Limits 2015**

C. Age

The elderly population is defined as individuals who are 65 years of age or older. Approximately 10.3 percent of the population in Dane County is elderly. There are census blocks adjacent to the Beltline containing 10.3 to 25 percent or 26 to 50 percent elderly populations located west of Verona Road on the south side of the Beltline and between Stoughton Road and I-39/90 on both sides of the Beltline. There are also census blocks containing 50 to 100 percent elderly located near Whitney Way, near the Arboretum, and near I-39/90. In addition, there are many more census blocks containing concentrations of elderly populations located close to the Beltline, although not immediately adjacent to the corridor.

D. Disability

The percentage of disabled civilian residents in Dane County is approximately 8.9 percent. Most of the Beltline corridor is adjacent to concentrations of disabled civilian populations, with census tracts containing 9 to 15 percent disabled residents, which is higher than the county average. One census tract located along the Beltline at Gammon Road contains more than 30 percent disabled residents.

E. Observations

There is a greater presence of environmental justice populations located near the Beltline as compared to Dane County as a whole. Therefore modifications to the Beltline are likely to affect environmental justice populations.