

**LINCOLN MPO 2040 LRTP**

**TECHNICAL REPORT:**

**APPENDIX E**

*Environmental Justice Analysis  
Report*



# Environmental Justice Analysis

## of the Lincoln-Lancaster County 2040 Long Range Transportation Plan

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### 1. Environmental Justice Overview

**Environmental justice** is an effort to ensure fair treatment and meaningful involvement of all people in the planning process regardless of race, color, national origin, or income. Fair treatment is characterized as no group being asked/required to bear a disproportionate share the negative environmental consequences resulting from the proposed actions (projects and programs) included in the long range transportation plan.

The roadway and transit projects identified and programmed in the proposed Lincoln-Lancaster County MPO 2040 Long Range Transportation Plan must address the principles of Executive Order 12898 relating to Environmental Justice. Specifically, the plan must identify and address disproportionately high and adverse human health or environmental effects of its programs and policies on minority and low-income populations. The basic principles addressed by the Environmental Justice analysis include:

- To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economics effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process, and
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

The methodology undertaken to analyze that the principles are being met entailed mapping census tract areas where the minority population and low-income concentrations exceeded the population averages for the Lincoln Metropolitan Planning Area (Lancaster County) as a whole, overlaying the proposed LRTP projects and visually analyzing the potential impacts. The maps located in this report are the result of this process. These maps are focused on the Lincoln Urban Area and Future Service Limits (the planned growth area over the life of the Plan) because the rural areas of Lancaster County do not show concentrations above the average.

Assessment of the potential for environmental justice concerns relies on relative measures, not specific thresholds or measures and relying only on relative measures brings into the overall equation professional judgment. This includes the judgment of the disproportionate impacts and judgment of efforts made during the planning process to inform people potentially impacted.

## **2. Population Definitions**

The *USDOT Order on Environmental Justice* and *Executive Order 12898* indicate that the Environmental Justice actions of the administrative organizations covered by these regulations are to address persons belonging to the following groups:

**Black** – A person having origins in any of the black racial groups of Africa.

**Asian and Pacific Islander**– A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

**American Indian and Alaskan Native** – A person having origins in any of the original people or North American and who maintains cultural identification through tribal affiliation or community recognition.

**Hispanic** – A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

**Low-Income** – A person whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines (\$22,050 for a family of four (2010)).

According to the 2000 U.S. Census, the countywide averages for the minority populations are as follows: African American 2.82%, Hispanic 3.37%, Asian 2.86%, and American Indian and Alaskan Natives 0.64% and Native Hawaiian 0.06%. This data is detailed in Table 3.

## **3. Environmental Justice Target Populations in the Lincoln MPO**

At the writing of this document, Census 2010 has been conducted throughout the United States; however, data will not be released for several months. Rather than delaying this document to early 2011, data is being gathered using the following sources.

### **AMERICAN COMMUNITY SURVEY:**

The US Census Bureau began collecting data on an ongoing basis in Lincoln and Lancaster County in 2005 as part of the American Community Survey (ACS). The ACS is conducted through a random sample of the population, not a complete count as the decennial census, and so there is a margin of error associated with the data that can be quite significant, especially for smaller populations. At the time of this writing, the smallest geography being reported is at the Place level (city or village). ACS data does not at this time provide data that can be used to show geographic distribution, however, it can give us a picture of overall changes seen in the City and County over the past 9 years. This data is provided in Table 1.

**CENSUS 2000:**

The PL 94-171 figures -- the Year 2000 Census initial data released by the Census Bureau for purposes of legislative redistricting -- for the greater Lincoln area were made available to the public in mid-March, 2001. The figures placed the population for the Lincoln Metropolitan Planning Organization planning area (i.e., the entirety of Lancaster County, including the City of Lincoln) at 250,291 persons.

This data also provided up to date information regarding the status of four of the five EJ targeted population groups – i.e., the racial and ethnic categories. Year 2000 Census data on income levels was released by the Census Bureau in late 2001 and has been used in this update to evaluate the status of the fifth group – low income.

This section of the report examines the overall number of individuals within the targeted populations and their geographic distribution within the greater Lincoln area. For purposes of this analysis, the Census Bureau’s definitions of race and ethnicity were used – that is, the figures reflect self categorization of race and ethnicity by the persons completing the Census 2000 form, and use the race and ethnicity categories indicated on the Census 2000 form.

Census 2000 data collection and tabulation procedures introduced a new “race categorization” concept into the Census process. For the first time, individuals completing the Census form were allowed to indicate identification with more than a single racial group. As such, the Census PL 94-171 and subsequent data releases included tabulation of persons with “two or more races.” For the purposes of this report, both the single race categories and combined race categories are shown where possible. Within the specific race categories targeted by the Environmental Justice criteria, the dual sets of figures are presented as separate tabulations.

**Overall Race and Ethnicity Profile**

Table 1 presents figures comparing the Census defined race and ethnicity groups for the City of Lincoln and Lancaster County for the years 1990, 2000 and 2009. Of the MPO’s Year 2000 population of 250,291 persons, 15,813 persons (6.3 percent) categorized themselves as being Black, American Indian and Alaskan Native, or Asian American, and 8,437 persons (3.4 percent) categorized themselves as being of Hispanic origin. An additional 4,225 persons (1.69 percent) categorized themselves as belonging to a single “Other Race” category, and 4,678 persons (1.87 percent) categorized themselves in the “Two or More Races” category.

2009 ACS estimates show significant changes for some populations. Overall, the population has grown by 12.6%. Black, American Indian and Alaskan Native, and Asian populations have all increased at 2 to 3 times this rate. Native Hawaiian and Pacific Islander and Other Race populations fell by ½ to ¼ respectively. As discussed earlier, the ACS data is based on a random sample and the error seen in the estimate can be very significant for smaller populations, such as those seen in the American Indian and Alaskan Native, Native Hawaiian and Pacific Islander, and Other populations. Hispanic populations grew by about 2/3. All of these increases represent a smaller percent increase than was seen in the 1990 – 2000 time period.

**Table 1**  
**Total Population by Race, City and County. Source: US Census 1990, 2000 and American Community Survey 2009**

	1990 (Census)		2000 (Census)		2009 (ACS)	
	Lincoln	Lancaster	Lincoln	Lancaster	Lincoln	Lancaster
Total	191,972	213,641	225,581	250,291	254,008	281,531
White alone	181,320	202,663	201,322	225,426	225,629	252,881
Black or African American Alone	4515	4659	6960	7052	9621	9708
American Indian and Alaskan Native Alone	1150	1207	1537	1599	1863	1863
Asian Alone	3212	3282	7048	7162	8724	8832
Native Hawaiian and Other Pacific Islander Alone	76	85	141	149	78	78
Some Other Race	1699	1745	4081	4225	3170	3170
Two or More races	NA*	NA*	4492	4678	4923	4999
Hispanic (Independent of Race)	3764	3938	8154	8437	13,729	14,088

\*The 1990 Census did not show “Two or More races” as a selection but asked individuals to identify a single race.

For those individuals categorizing themselves in the Year 2000 Census as belonging to two or more race groups, Table 2 shows the total number of persons within each of the five tabulation categories (i.e., two, three, four, five and six), as well as the three major EJ racial groups .

**Table 2. Summary Tabulations of Persons Within Two or More Race Category**

Census Tabulation Categories	Total No. of Persons Within Category	Race Group Noted By Respondent		
		<i>Black/African</i>	<i>Asian/Pacific</i>	<i>American</i>
Persons of Two Races	4,396	1,467	1,036	962
Persons of Three Races	258	190	74	159
Persons of Four Races	13	11	8	11
Persons of Five Races	11	11	10	11
Persons of Six Races	0	0	0	0
Totals	4,678	1,679	1,128	1,143

**Table 3. Year 2000 Census Tabulations  
Race and Ethnic Comparisons for County and City**

Race/Ethnic	Population		Total Change	Percent Change	Percentage of Total	
	1990	2000	1990-2000	1990-2000	1990	2000
<b>Lancaster County</b>						
<b>Total</b>	213,641	250,291	36,650	17.15%	100.00	100.00
White	202,663	225,426	22,763	11.23%	94.86%	90.07%
Black/African Am.	4,659	7,052	2,393	51.36%	2.18%	2.82%
American	1,207	1,599	392	32.48%	0.56%	0.64%
Asian	3,367	7,162	3,795	112.71%	1.58%	2.86%
Native Hawaiian	--	149	149	NA	NA	0.06%
Other (One)	1,745	4,225	2,480	142.12%	0.82%	1.69%
Two or More	--	4,678	4,678	NA	NA	1.87%
<b>Hispanic/Latino</b>	3,938	8,437	4,499	114.25%	1.84%	3.37%
<b>City of Lincoln</b>						
<b>Total</b>	191,972	225,581	33,609	17.51%	100.00	100.00
White	181,320	201,322	20,002	11.03%	94.45%	89.25%
Black/African Am.	4,515	6,960	2,445	54.15%	2.35%	3.09%
American Indian	1,150	1,537	387	33.65%	0.60%	0.68%
Asian	3,288	7,048	3,760	114.36%	1.71%	3.12%
Native Hawaiian	NA	141	141	NA	NA	0.06%
Other (One)	1,699	4,081	2,382	140.20%	0.89%	1.81%
Two or More	NA	4,492	4,492	NA	NA	1.99%
<b>Hispanic/Latino</b>	3,764	8,154	4,390	116.63%	1.76%	3.26%

**Blacks**

A total of 7,052 persons (2.8 percent) in Lancaster County indicated on the Census 2000 form that they are “Black, African American or Negro.” This represents an increase of 2,393 persons (51.4 percent) in this racial category between the year 1990 and the year 2000. As a percent of

the total population, Blacks increased from 2.18 percent in the year 1990 to 2.82 percent in the Year 2000. Blacks were the largest single minority population in 1990 but fell to second in 2000, with persons in the Asian and Pacific Islander category comprising the largest group at 2.92 percent. (Not included in the Year 2000 Census figures are the 1,679 persons from the “Two or More Race” category who indicated “Black” as one of their racial groups.)

A map showing the distribution of Blacks by Census tract (using PL 94-171 data) is presented in Figure 1.

### **Asian and Pacific Islander**

A total of 7,311 persons (2.92 percent) in Lancaster County indicated on the Census 2000 form that they are “Asian Indian, Japanese, Native Hawaiian, Chinese, Korean, Guamanian or Chamorro, Filipino, Vietnamese, Samoan, Other Asian, or Other Pacific Islander.” This represents an increase of approximately 3,944 persons (112.7 percent) in this racial category between the year 1990 and the year 2000. As a percent of the total population, Asian and Pacific Islanders increased from an estimated 1.58 percent in the year 1990 to 2.92 percent in the year 2000. (Not included in any of the Year 2000 figures are the 1,128 persons from the “Two or More Race” category who indicated “Asian or Pacific Islander” as one of the racial groups.)

A map showing the distribution of Asian and Pacific Islanders by Census tract (using PL 94-171 data) is presented in Figure 2.

### **American Indian and Alaska Native**

A total of 1,599 persons (0.64 percent) in Lancaster County indicated on the Census 2000 form that they are “American Indian or Alaska Native.” This represents an increase of approximately 392 persons (32.5 percent) in this racial category between the year 1990 and the year 2000. As a percent of the total population, American Indians and Alaska Natives increased from an estimated 0.56 percent in the year 1990 to 0.64 percent in the year 2000. (Not included in any of the Year 2000 figures are the 1,143 persons from the “Two or More Race” category who indicated “American Indian or Alaskan Native” as one of the racial groups.) A map showing the distribution of American Indian and Alaskan Natives by Census tract (using PL 94-171 data) is presented in Figure 3.

### **Hispanic**

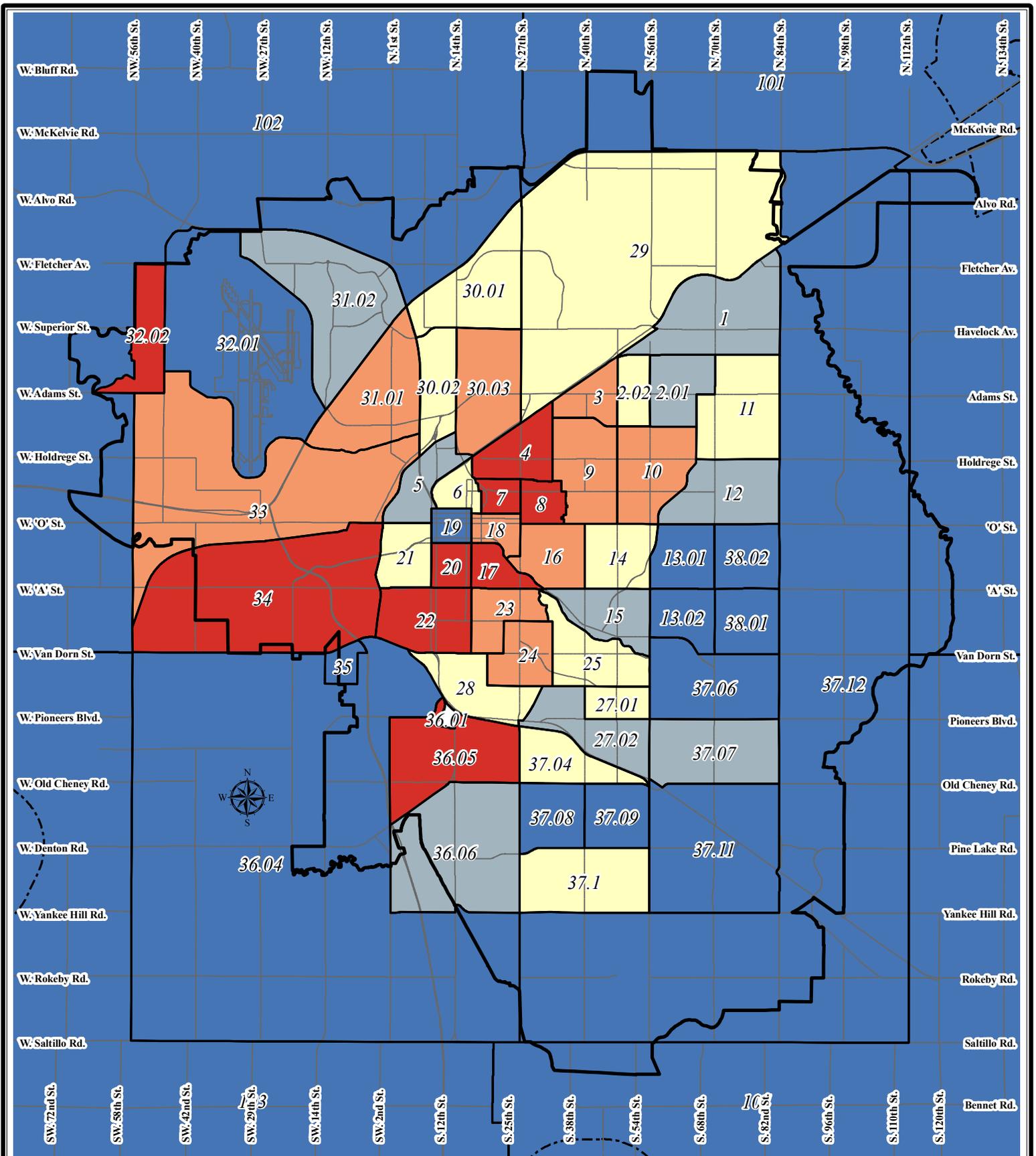
A total of 8,437 persons (3.37 percent) in Lancaster County indicated on the Census 2000 form that they are “Spanish/Hispanic/Latino.” This represents an increase of 4,499 persons (114.3 percent) in this ethnic category between the year 1990 and the year 2000. As a percent of the total population, Hispanics increased from an estimated 1.84 percent in the year 1990 to 3.37 percent in the year 2000. A map showing the distribution of Hispanics by Census tract (using PL 94-171 data) is presented in Figure 4.

## **Low Income**

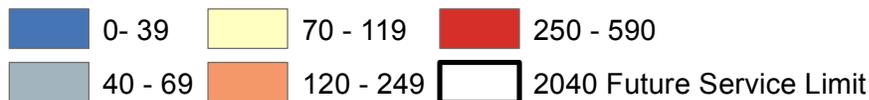
Figures for the Lincoln MPO area from the 2000 Census placed median household income at \$41,850, median family income at \$53,676, and per capita income at \$21,265. Among persons for whom poverty status was determined, approximately 9.5 percent County-wide were categorized as having incomes below the poverty level. This varied from 10.1 percent within the City of Lincoln to 4.5 percent for areas outside of Lincoln but within Lancaster County. Across the entire County, 78.7 percent of these persons were “White,” 7.4 percent “Black,” 1.8 percent “American Indian,” 3.9 percent “Asian or Pacific Islander,” 3.6 percent “Other Races”, 4.6 percent “Two or More Races”, and 6.6 percent “Hispanic or Latino”. Note: Persons indicating ethnic identity of “Hispanic or Latino” are also counted under one of the racial groups, hence the total percentage greater than 100%.

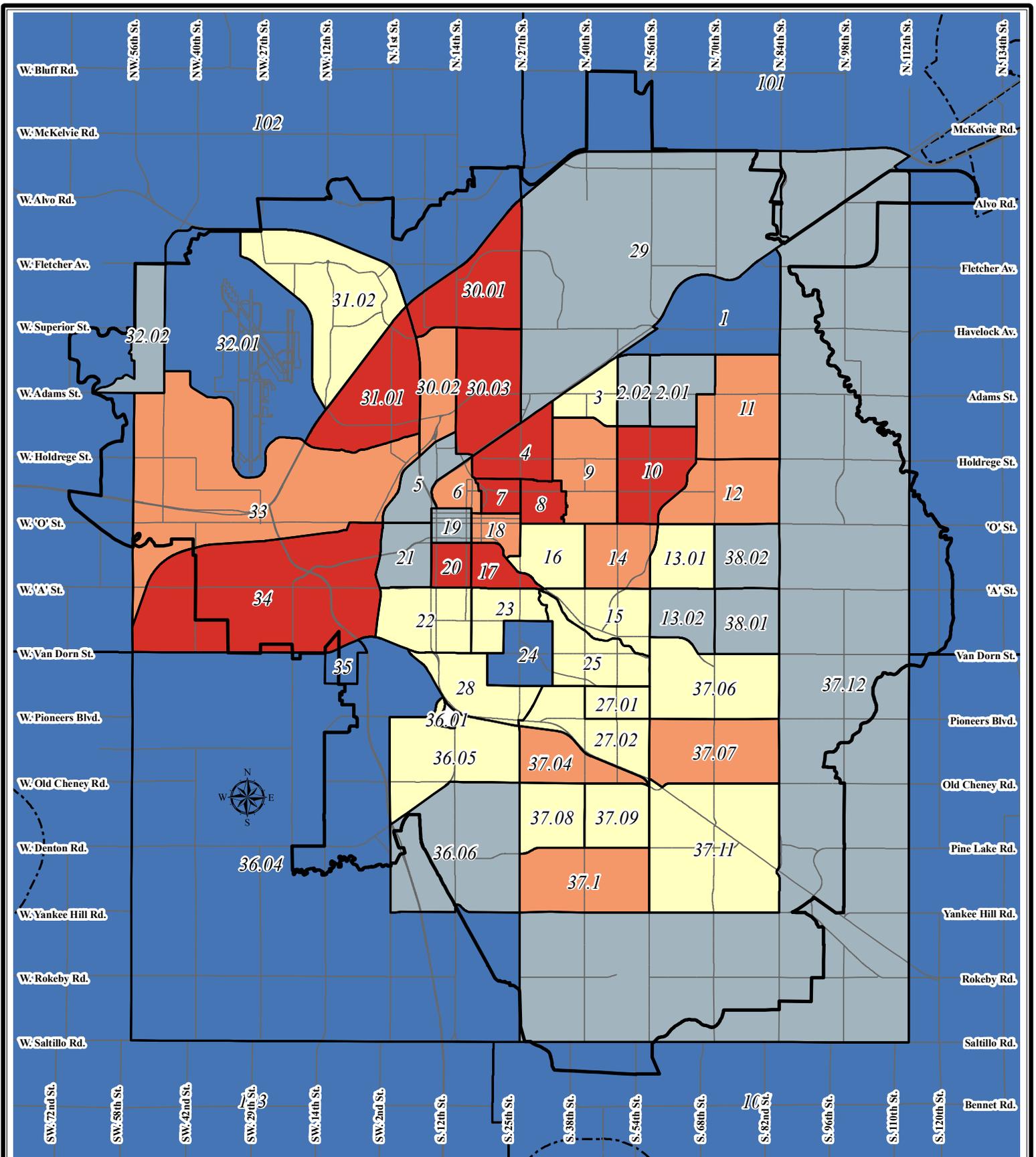
Figures 5 (Median Household), 6 (Median Family), and 7 (Per Capita) display 2000 income level indicators by census tract for the metropolitan area. (A number of tracts do not contain median household and median family income level data. These tracts contain persons living in “group quarters,” such as prisons or dormitories. Persons living in such facilities are not considered by the Census Bureau as belong to “households” or “families” for purposes of income calculation.)

Based upon our understanding and knowledge of Lincoln-area demographic and development trends and patterns during the 2000s, it would seem rational and prudent to utilize this information in determining the overall level and geographic distribution of low income persons in the Lincoln area until such time as more recent Census data are released. If distribution of income levels, for example, were to have remained approximately the same, the number of people estimated to be currently living below the poverty level in greater Lincoln-area would be 25,654 persons. The geographic distribution – again for purposes of formulating a new LRTP – would be assumed similar to that shown in Figures 5, 6, and 7.

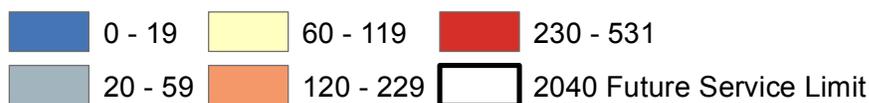


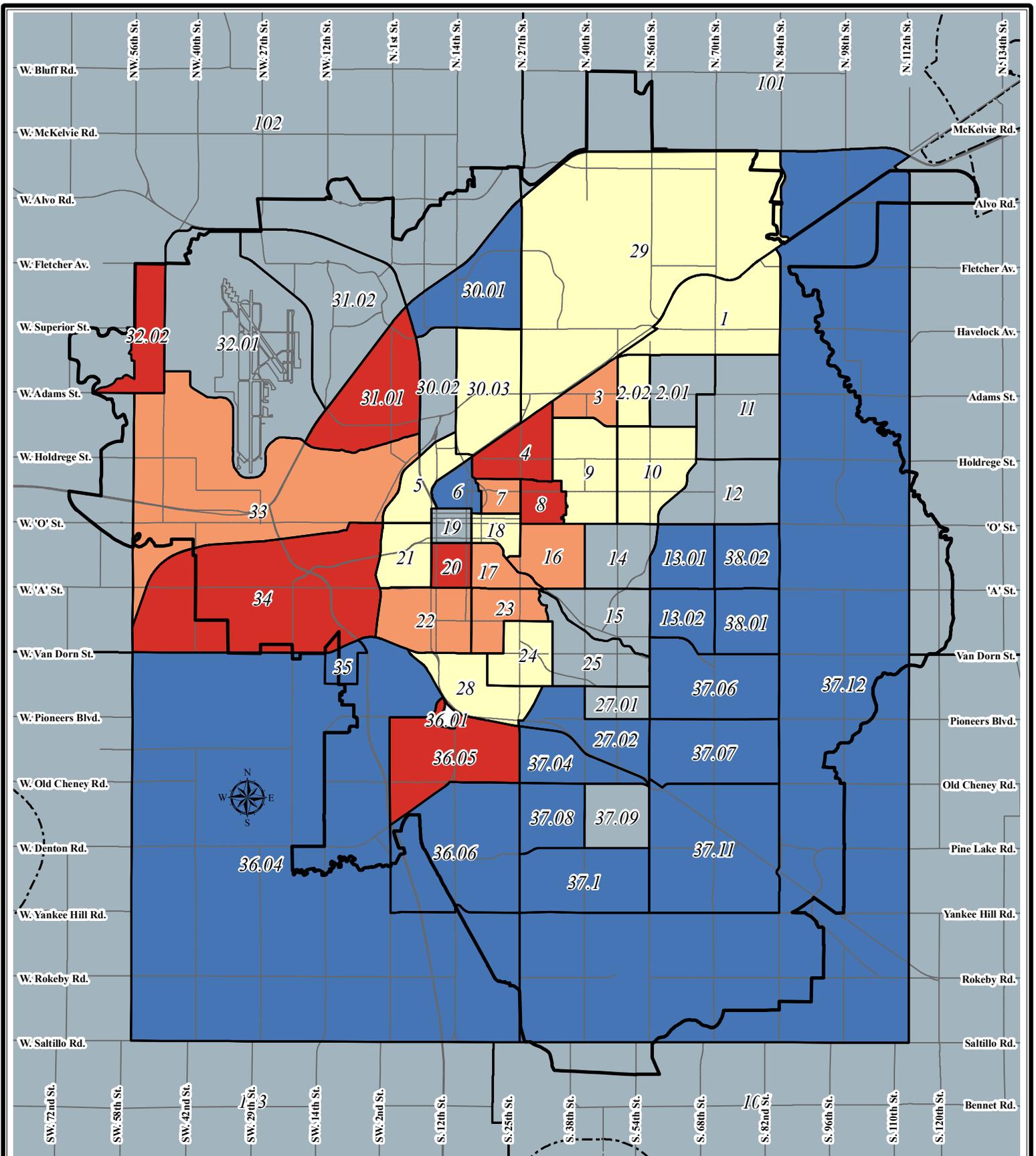
**Total Black/African American Population in 2000  
by Census Tract**



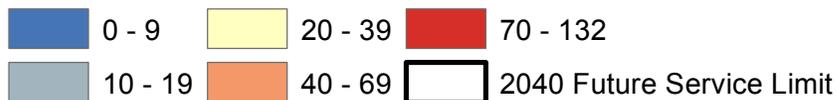


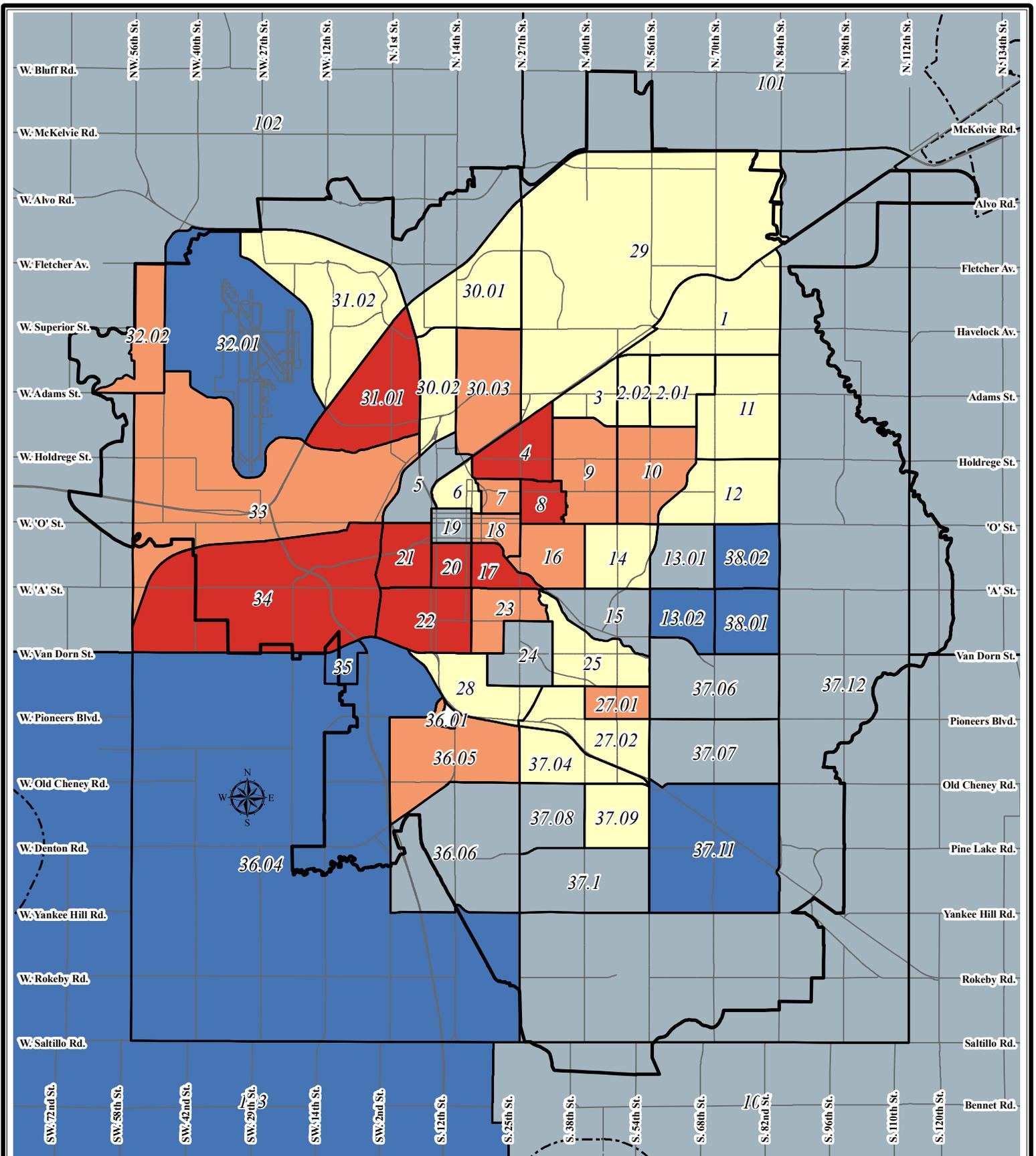
**Total Asian Population in 2000 by Census Tract**



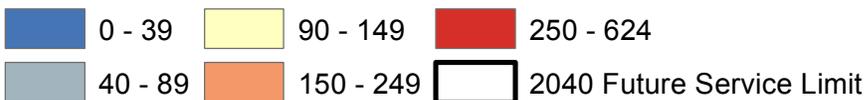


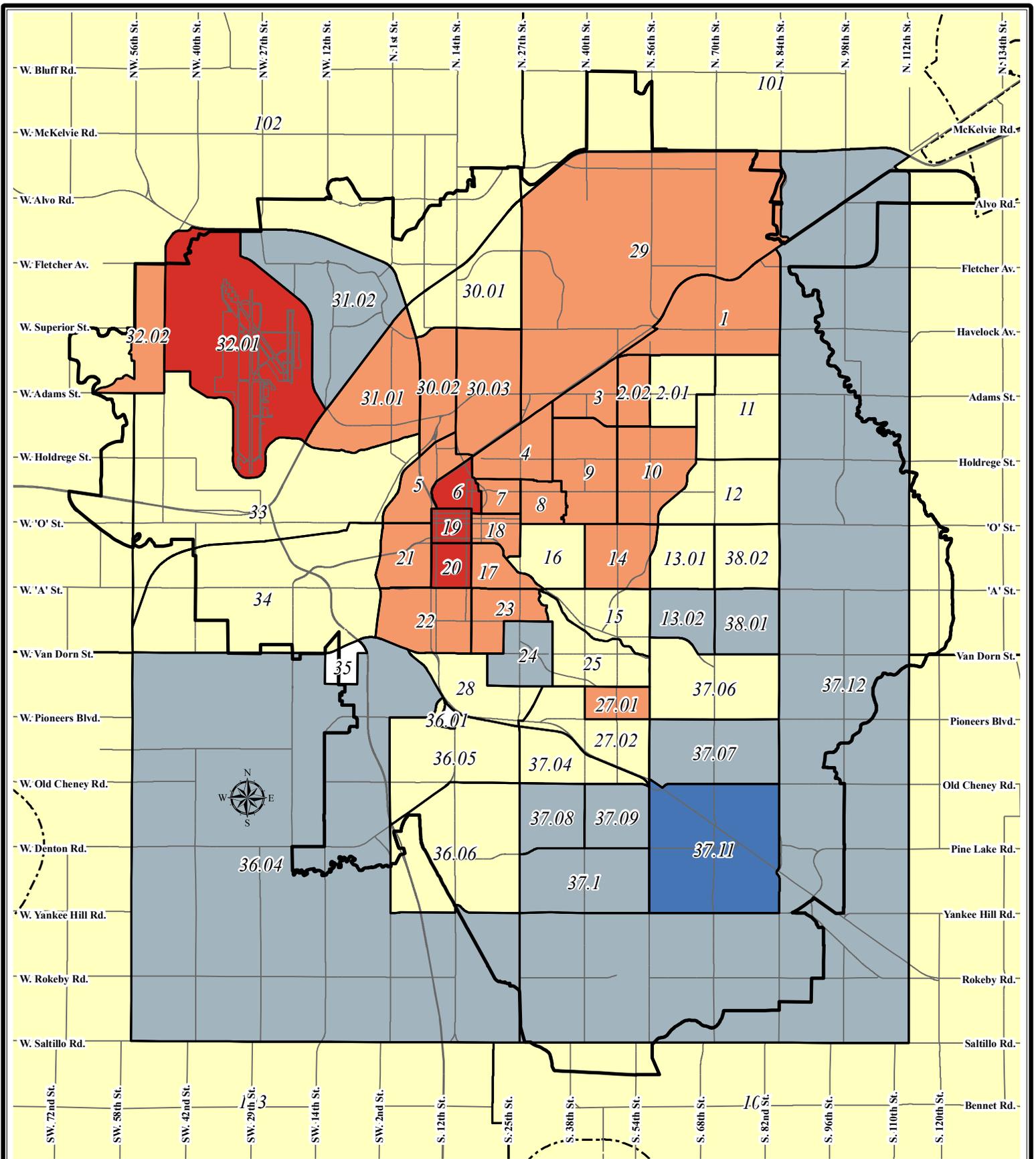
**Total Native American Population in 2000  
by Census Tract**





### Total Hispanic Population in 2000 by Census Tract



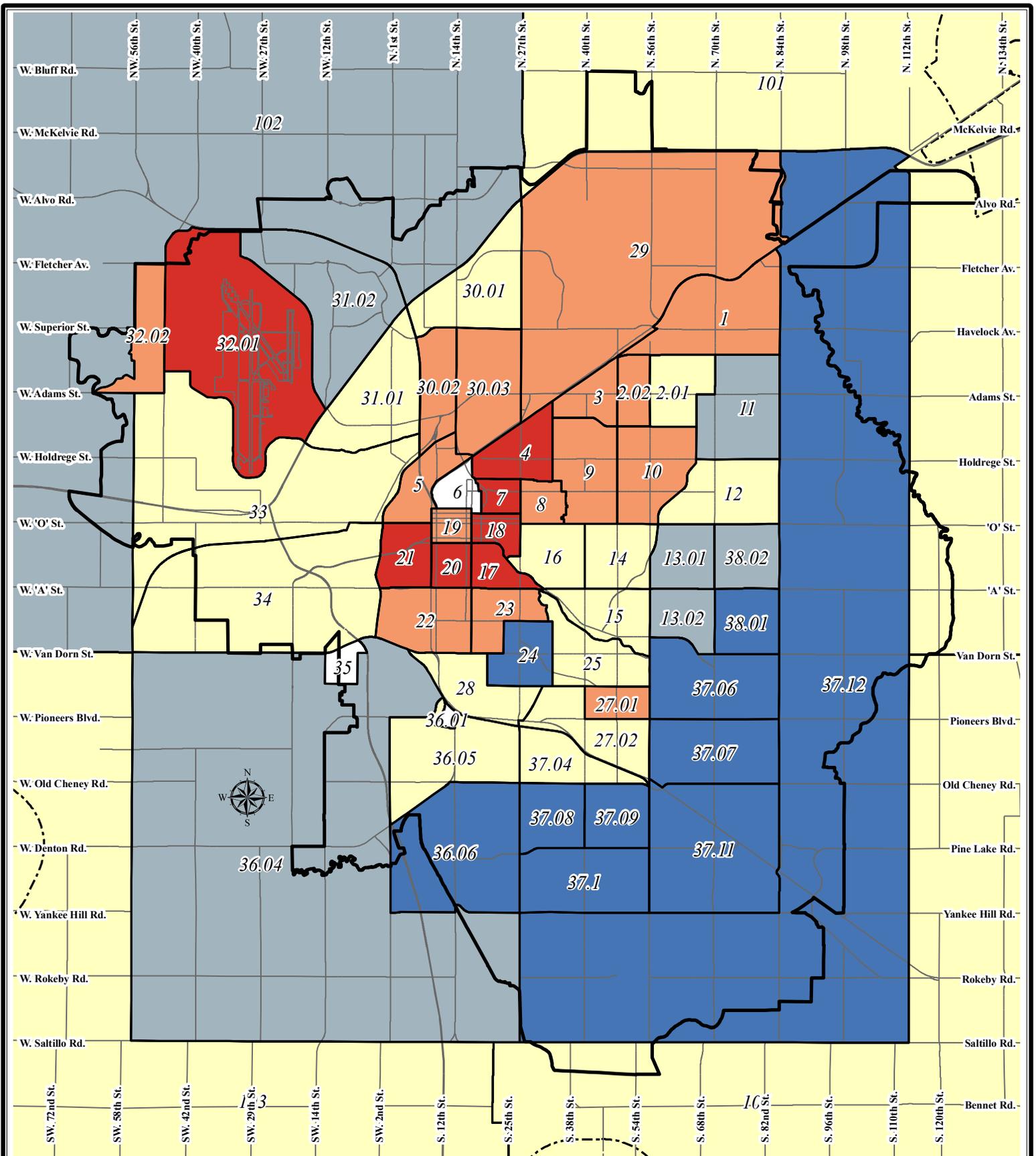


### Median Household Income in 1999 by Census Tract

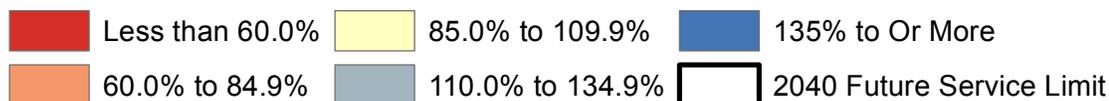


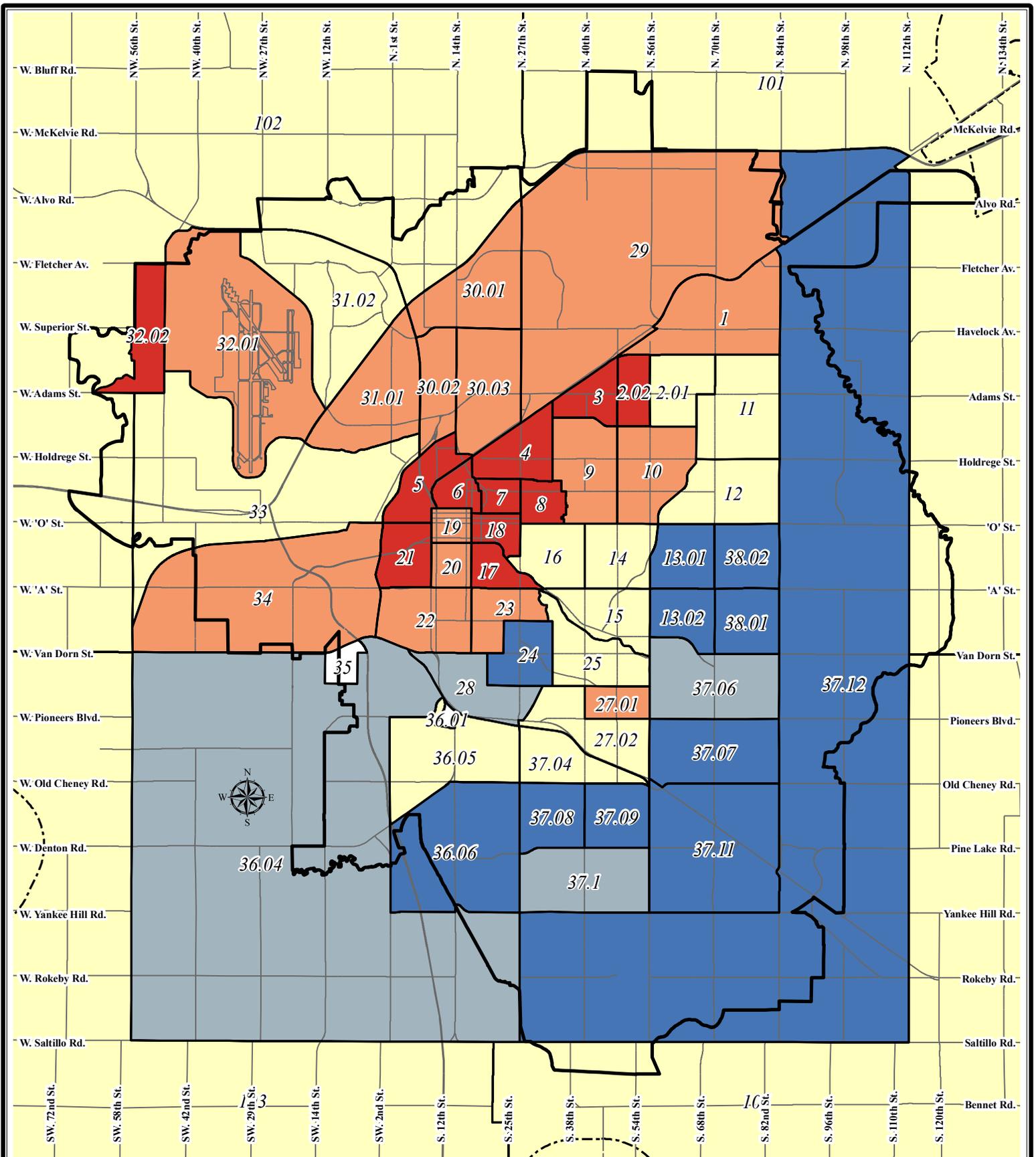
- Less Than \$20,000
- \$40,000 to \$59,999
- \$80,000 Or More
- \$20,000 to \$39,999
- \$60,000 to \$79,999
- 2040 Future Service Limit





**Median Family Income in 1999 by Census Tract  
as a Percent of Area-Wide Median Family Income**





### Per Capita Income in 1999 by Census Tract



- Less Than \$15000
- \$19500 - \$23999
- \$28500 - \$37162
- \$15000 - \$19499
- \$24000 - \$28499
- 2040 Future Service Limit



## **Methodology**

The Lincoln-Lancaster Planning Geographic Information System (GIS) was utilized to view and tabulate demographic information and analyze this information in relation to the Long Range Transportation Plan projects. ESRI's ArcView GIS software was used to do this work. Spatial and demographic data from the 2000 Census were used to conduct the Environmental Justice analysis. The base layer of spatial data consisted of 2000 Census tracts from Census 2000 Tigerline file data.

Only tracts that were completely or partially within the MPO urban area future service limits boundary were included in this analysis. Both income and minority population data were analyzed at the tract level. The demographic data was drawn from the Census 2000 P.L. 94-171 Summary File. It contains the total population as well as racial and ethnic counts, and median household income. The demographic data was pulled into a database table and then joined to the tract GIS layer using the tract number as the common field.

It was first necessary to identify minority and low-income populations within the study area. While any size population of minority and/or low-income persons may be subject to a disproportionate impact from a given transportation project, it was useful to determine the location of minority and/or low-income communities to understand the comparative effects throughout all of the affected populations. Therefore, both minority and low-income population benchmarks were set by census tracts to aid the analysis.

To determine threshold minority population levels, the average percentage of minority populations for all census tracts within the metropolitan planning boundary was calculated. Those tracts where the minority population was greater than the regional average were identified as tracts where environmental justice issues should be analyzed. According to the DOT Order on Environmental Justice, minority persons include Blacks, Hispanics, Asian Americans, American Indians and Alaskan Natives. Minority populations were calculated by subtracting the "Non-Hispanic, White Alone" population from the "Population Total" for each tract. Within the urban area future service limits boundary, the average percentage of minority populations is 10.75 percent of the total population and Hispanic is 3.26 percent. See Table 3: *Year 2000 Census Tabulations Race and Ethnic Comparisons for County and City* for a rural/urban summary of the average distribution of minorities within the Lancaster County.

Census tract information was linked to summary file information containing income data. Because poverty guidelines are defined by household size, the average household size for the Lincoln Urban Area was calculated and the poverty level for that household size was calculated as a percentage of the level for a family of three. It will be assumed that the household sizes are evenly distributed across the income brackets.

The Lincoln MPO area from the 2000 Census placed median household income at \$41,850, median family income at \$53,676, and per capita income at \$21,265. Among persons for whom

poverty status was determined, approximately 9.5 percent County-wide were categorized as having incomes below the poverty level. This varied from 10.1 percent within the City of Lincoln to 4.5 percent for areas outside of Lincoln but within Lancaster County. Therefore, if more than 10.1 percent of households in a census tract within the Lincoln future service area were in poverty then the census tract as a whole was considered in poverty.

Figures 5 (Median Household), 6 (Median Family), and 7 (Per Capita) display 2000 income level indicators by census tract for the metropolitan area. (A number of tracts do not contain median household and median family income level data. These tracts contain persons living in “group quarters,” such as prisons or dormitories. Persons living in such facilities are not considered by the Census Bureau as belong to “households” or “families” for purposes of income calculation.)

**Table 4 Environmental Justice Areas**

<b>Future Service Limit</b>	<b>Minority Household Areas</b>		<b>Low Income Household Areas</b>	
<b>Square Miles</b>	<b>Square Miles</b>	<b>Percent FSL</b>	<b>Square Miles</b>	<b>Percent FSL</b>
125.3	58.9	47.0%	22.6	22.8%

**Table 5 Environmental Justice Summary**

Projects	Total Miles	Ethnic and Racial Minority		Low-Moderate Income	
		Miles within Study Area	Percent of Total	Miles within Study Area	Percent of Total
<b>Transit</b>					
All Routes	177.6	111.4	62.7%	96.3	54.2%
<b>Trails</b>					
On-Street Bike Routes	86.3	50.6	62.7%	41.6	48.2%
Existing Bike Lanes	0.9	0.9	100%	0.9	100%
Planned Bike Lanes	1.6	1.6	100%	1.6	100%
Shared Lane Facility	1.7	1.7	100%	1.7	100%
Existing/Committed Trails	157.4	56.4	35.8%	37.6	23.9%
Existing/Committed Grade Separations	59	40	67.8%	32	54.2%
Future Recommended Trails	294.2	34.9	11.9%	13.5	4.6%
Future Recommended Grade Separations	66	12	18.2%	7	10.6%
<b>Committed Road Projects</b>					
NDOR Widening	42.3	2.5	5.9%	0	0.0%
2+1 CTL Program	19.8	12.0	60.6%	9.5	48.0%
Roadway Widening Projects	4.7	2.2	46.8%	0.7	14.9%
Developer Committed	4.2	0	0.0%	0	0.0%
Programmed County Paving (2025)	7.3	1.6	21.9%	0	0.0%
Programmed County Paving (2040)	1.7	0	0.0%	0	0.0%
<b>Recommended 2025 &amp; 2040 Roadway Improvement Projects (rev)</b>					
2012 - 2025 Improvements (Local)	28.7	10.0	34.8%	5.3	18.5%
2012- 2025 Improvements (NDOR)	30.4	9.1	29.9%	0.2	0.6%
2026 - 2040 Improvements (Local)	32.6	8.1	24.8%	3.1	9.5%
2026 - 2040 Improvements (NDOR)	18.5	0	0.0%	0	0.0%

## **Public Transportation**

The StarTran bus transit system is the primary means of public transportation available to residents of Lincoln. The regular fixed route transit system runs Monday through Friday from 5:15 am to 7:20 pm and Saturday from 6:30 am to 6:30 pm with 17 routes and a Downtown shuttle. In 2010, over 1.8 million trips were provided by this service. The fixed route system operates based upon a Downtown hub and is a coverage system, meaning it attempts to provide service to all areas of the City. In 2010, nearly 82% of Lincoln households were within . mile of a StarTran bus route.

To determine the accessibility of the existing transit system to the target populations, the existing fixed route system was overlaid on maps of income and minority census data. This analysis is focused on transit coverage and availability. **Figures 8 and 9** show the StarTran area's fixed-route transit service network coverage within the identified statistical environmental justice areas based upon minority and low income households. The minority data combines the census tract data from Figures 1 through 4 and the transit routes are projected over the census tracts with environmental justice protected populations.

Note that all transit investments are not illustrated on the maps showing LRTP projects since many transit projects cannot be geocoded. Transit projects that were not geocoded include new equipment purchases, transportation for elderly and persons with disabilities, passenger amenities, etc. While the data is not all quantifiable, transit investments do not appear to have any disproportionate adverse impacts. Benefits, as measured by transit access, are concentrated in the census tracts with the protected populations as that area has the greatest availability of transit service. As well, transit service, whether a fixed-route or demand-responsive service, is linked to the larger transportation system and is affected by land use decisions.

The maps demonstrate that areas of low-income and minority populations are currently well served by the bus route service. The existing concentration of bus routes in miles of transit route service is disproportionately higher in the environmental justice minority areas with 62.7 percent of the total bus routes serving the minority and 54.2 percent within the low-income population areas. To compare this coverage in relation to the projected Future Service Limit (FSL) area which covers 125.3 square miles, the minority areas cover 58.9 square miles (47.0% of FSL) and the low income area cover 28.6 square miles (22.8% of FSL).

Since the transit routing within the is basically a radial system, service within these areas is often double served with overlapping routes. Overlapping routes provides increase the frequency of service or lower headway during peak travel times. It is also calculated that the majority environmental justice populations live within 1/4 mile of a transit route. (Good access to transit is generally considered to be 1/4 mile distance from a transit route.) This analysis shows that the minority and low income areas are currently experiencing higher transit coverage than is being experienced in the new growth areas on the fringe.

The transit system improvements recommended in the LRTP build on the existing bus route structure. However, the LRTP recommendations to improve the existing bus system that will need to be taken up within the Transit Development Plan in the near future.

## **Pedestrian, Bike and Trails**

### **Existing Pedestrian**

The City of Lincoln has the long standing policy of requiring sidewalks on both sides of all City streets and connectivity between subdivisions. Because of this policy, the vast majority of homes and businesses are served by Lincoln's 1,500 miles of sidewalks. Sidewalks in the built environment where the majority environmental justice populations reside have fully developed sidewalk systems. However, rehabilitation of sidewalks, particularly in older residential and commercial areas, is a continuing challenge. During the early 1990s, the responsibility for rehabilitation of sidewalks was passed from the adjoining property owner to the City. The sidewalk rehabilitation program is proposed to continue to be funded.

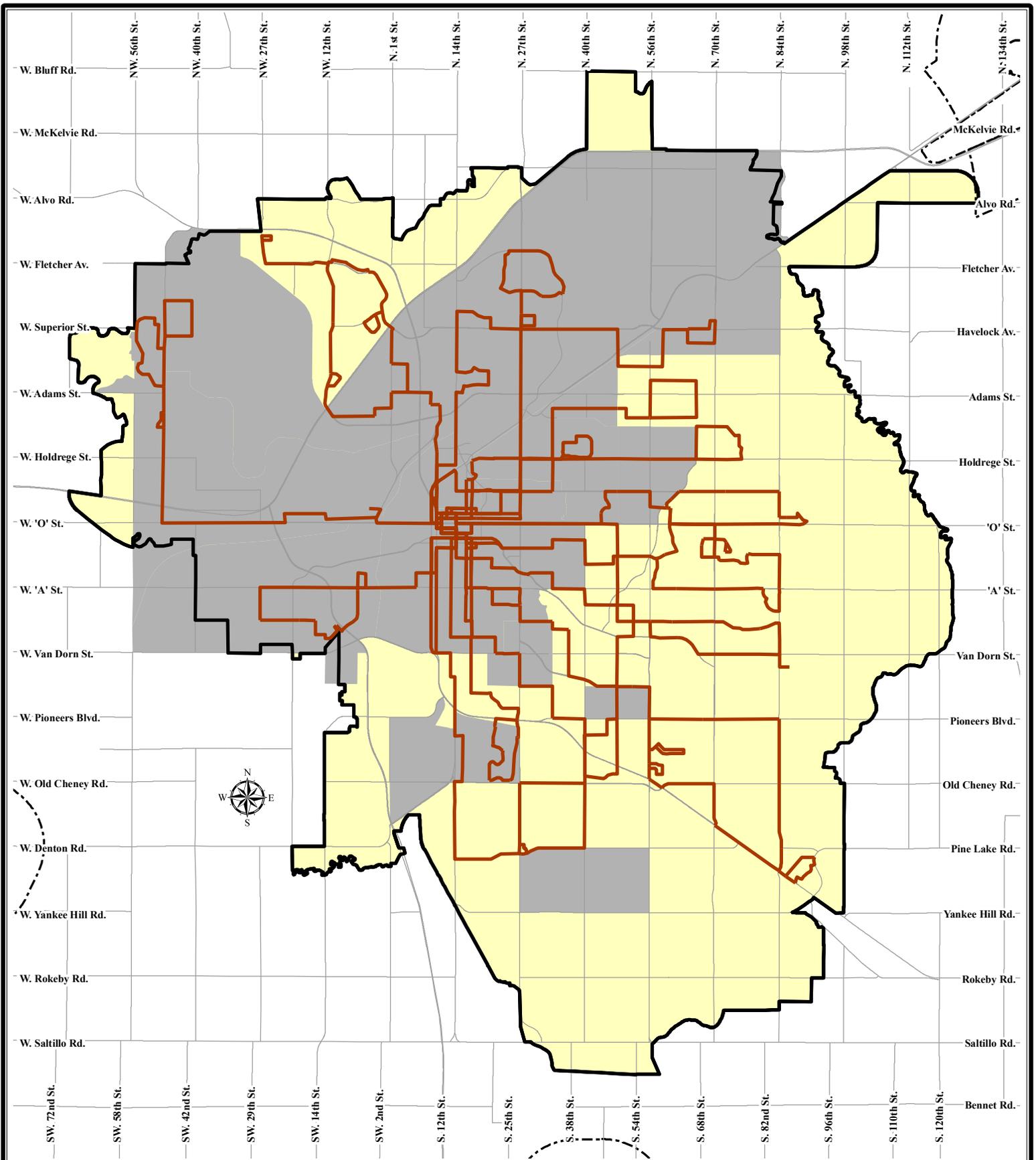
### **Bicycle Facilities and Multi-Use Trail System**

The community has an existing system of multi-use trails that currently provides a trail within one mile of 93% of dwelling units in the City. The present system serves both commuter bicyclists and pedestrians who use the trails daily for work and shopping trips and tend to travel from point to point, and recreational bicyclists and pedestrians who tend to use the trails on a more occasional basis.

Much of the current trail system is built in the right-of-way of abandoned railroad corridors. Others are built along streams in the floodplain, along one side of major arterial streets, or as part of residential development. Most of the existing trail system has been built over the last 30 years and some of the oldest trails are located within the environmental justice areas.

The concentration of existing and committed trails in miles of trails shown in **Figures 10 and 11** are proportionate in the environmental justice areas in relation to the remaining future service areas. The current environmental justice areas contain 35.8 percent of the trails serving the minority area and 23.9 percent within the low-income population areas. If we consider the existing and committed grade separations, this shows 67.8 percent of the trails serving the minority area and 54.2 percent within the low-income population areas. Based on the projected Future Service area, the minority areas are 47.0% of the planned growth area and the low income area is 22.8% of the planned growth area.

Future recommended trails and grade separations are identified to take advantage of opportunities within the built environment. The proposed trail extensions are to complete gaps in the system and complete connection to the growth areas. Proposals are considered low impact low impact solutions in highly developed areas.

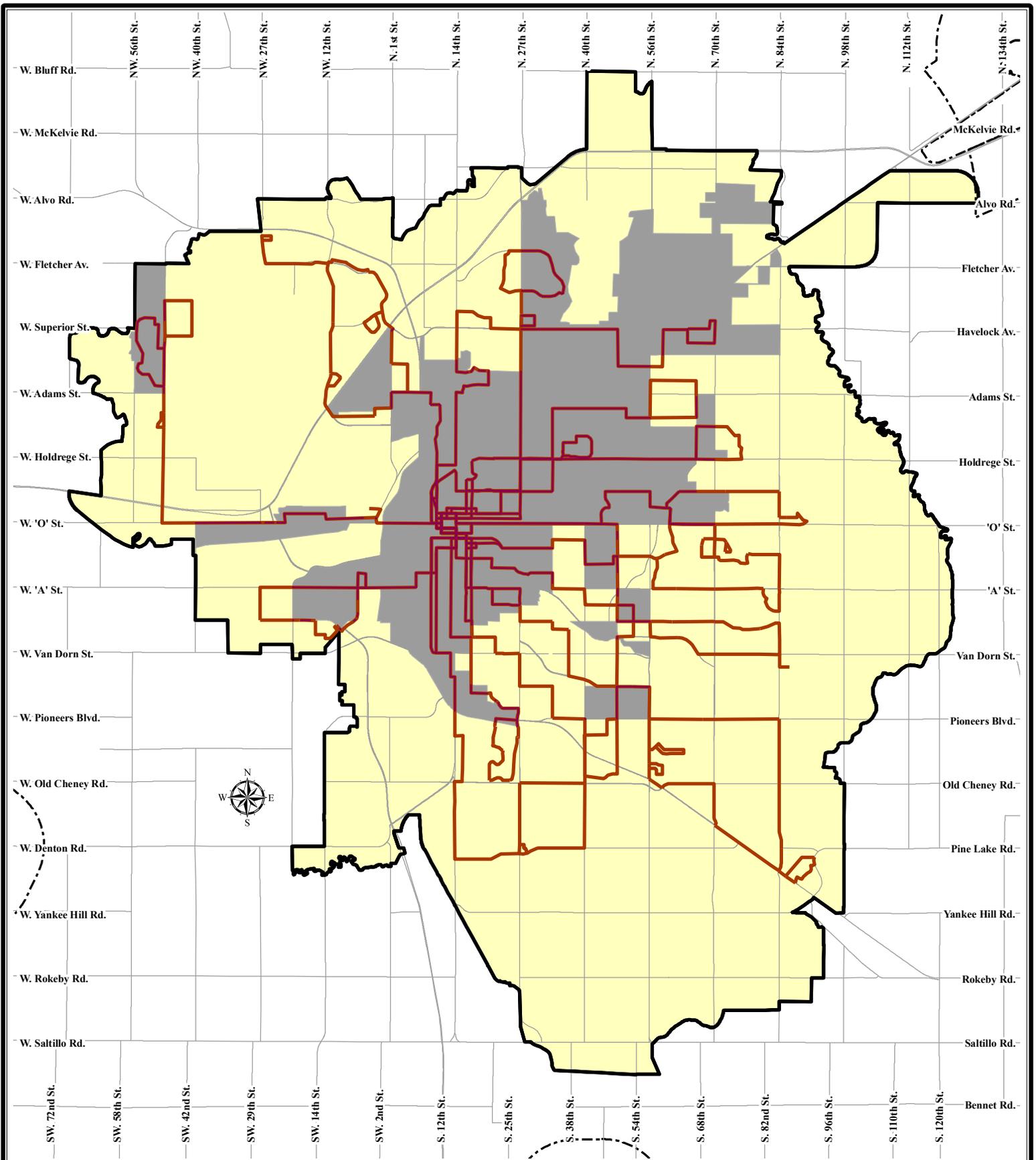


## Existing and Committed Transit Routes and Concentrations of Minority Households

TRANSIT ROUTES (Miles in Minority Areas / Total Miles)

- Transit Routes (111.4 / 177.6 Miles)
- Ethnic and Racial Minority Areas
- 2040 Future Service Limit



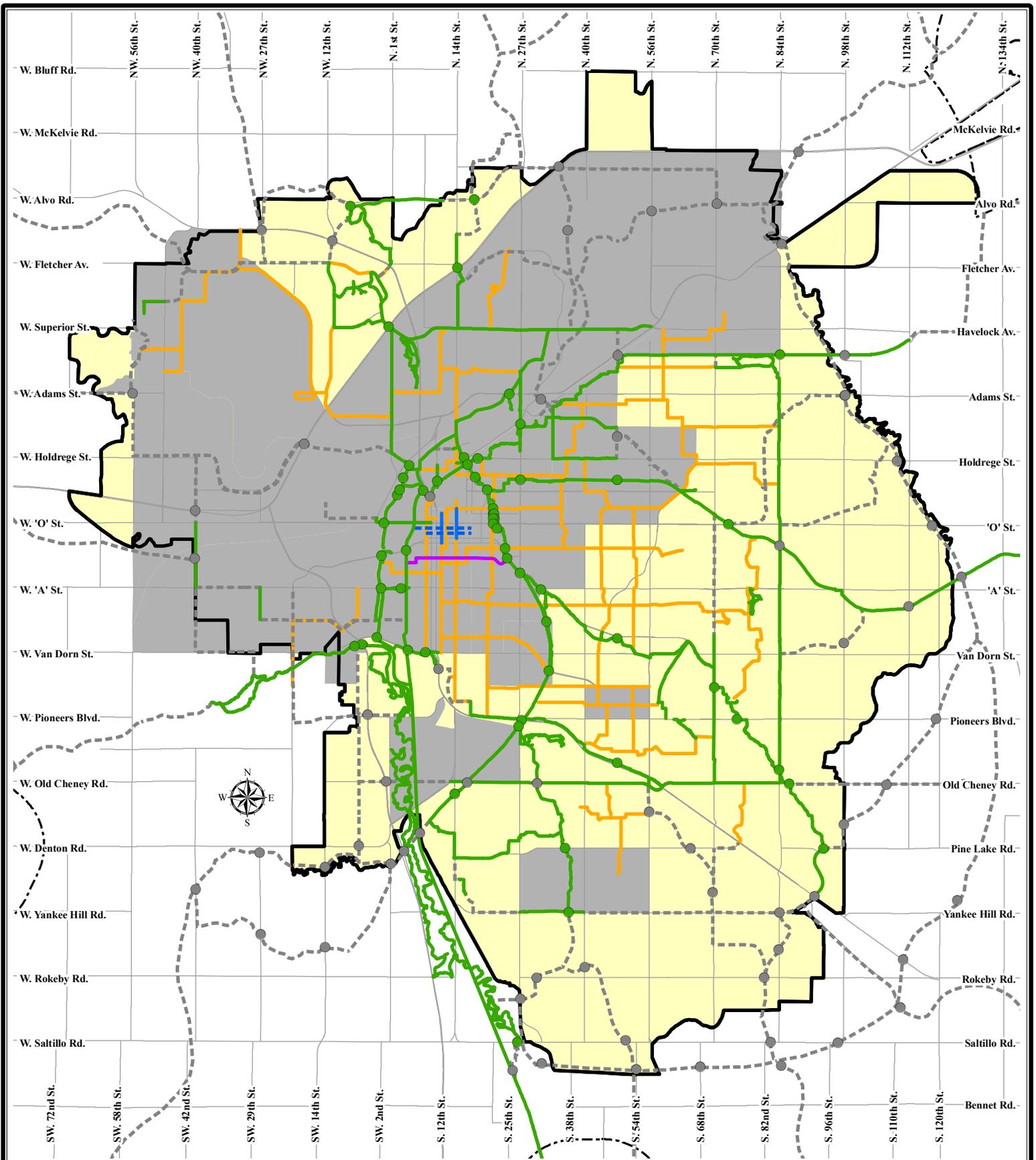


## Existing and Committed Transit Routes and Concentrations of Low-Income Households

TRANSIT ROUTES (Miles in Low-Income Areas / Total Miles)

- Transit Routes (96.3 / 177.6 Miles)
- Low and Moderate Income Areas
- 2040 Future Service Limit



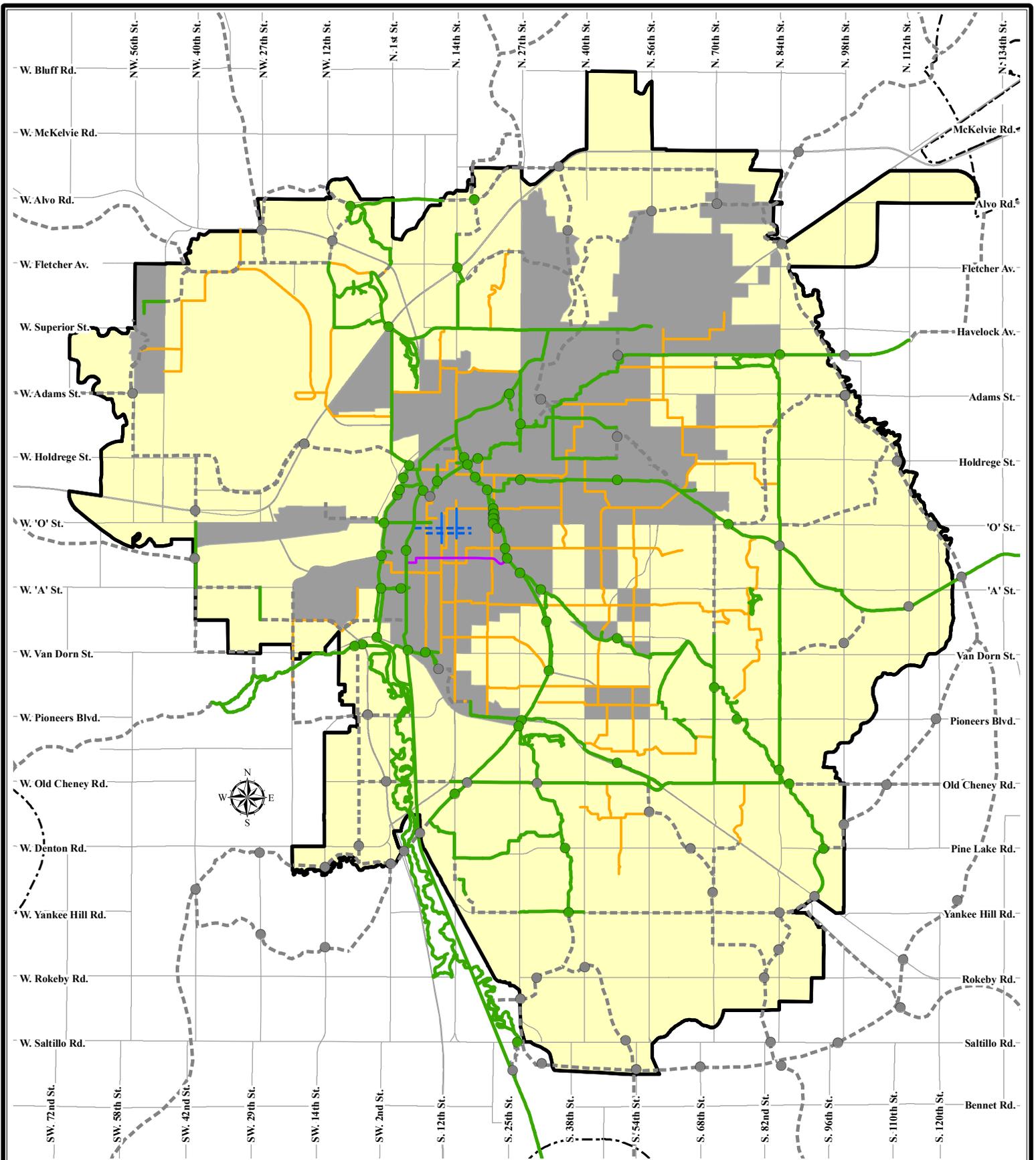


## Existing and Committed Trails and Concentrations of Minority Households

TRAILS (Miles in Minority Areas / Total Miles) & GRADE SEPARATIONS [Number in Minority Areas / Total]

- On-Street Bike Routes (50.6/86.3 Miles)
 — Shared Lane Facility (1.7/1.7 Miles)
 —●— Existing / Committed (56.4/157.4 Miles) [40/59]
- Existing Bike Lanes (0.9/0.9 Miles)
  Ethnic and Racial Minority Areas
  All Others (34.9/294.2 Miles) [12/66]
- Planned Bike Lanes (1.6/1.6 Miles)
  2040 Future Service Limit





## Existing and Committed Trails and Concentrations of Low-Income Households

TRAILS (Miles in Low-Income Areas / Total Miles) & GRADE SEPARATIONS [Number in Low-Income Areas / Total]

- On-Street Bike Routes (41.6/86.3 Miles)
- Existing Bike Lanes (0.9/0.9 Miles)
- - - Planned Bike Lanes (1.6/1.6 Miles)
- Shared Lane Facility (1.7/1.7 Miles)
- Low and Moderate Income Areas
- 2040 Future Service Limit
- Existing / Committed (37.6/157.4 Miles) [32/59]
- - - ● - - - All Others (13.5/294.2 Miles) [7/66]



The current bike route network for the Lincoln MPO is tied closely to the streets and trails network which includes existing paved and unpaved routes. The majority of on-street bike routes are located in the minority areas, 62.7 percent, and 48.2 percent within the low-income population areas. The other bike route facilities including existing bike lanes, planned bike lanes, and shared lane facilities are entirely located within these areas. Proposed bicycle lanes are for 11<sup>th</sup> and 14<sup>th</sup> Streets in the Downtown area, and a shared lane facility on G Street from Capital Parkway to 4<sup>th</sup> Street. These provide low impact solutions within the built environment.

Future recommended trails and grade separations are predominately located within the new growth areas. The growth areas offer opportunities for wider road corridors and easements through new developments the environmental justice areas do not have offer.

## **Roadway Improvements**

The recommended LRTP highway projects overlaid on maps showing minority and low-income areas. The plan has these divided into two basic groups Committed Road Projects and Recommended Roadway Improvement Projects. This analysis includes road improvements in the proposed LRTP and the improvements added to the proposed plan as a result of the additional funding added during the city budget process.

### **Committed Road Projects**

Committed projects are those either under construction or in the pipe line of programmed funding, design and engineering, and construction. Committed roadway projects as shown in **Figures 12 and 13** are federal, state and local projects that include road segments that are part of the two plus center turn lane (2+CTL) program, Developer Committed projects to be constructed, urban area rural paving projects that have been coordinated with the County Engineer's Office, Interstate 80 and U.S. and State Highway projects that are funded and programmed and scheduled to be constructed. These improvements are generally widening of existing roadways. All these projects are being carried over from the existing 2030 LRTP and this planning process. Generally, the right-of-way is in place or the impacts to adjacent properties have been accounted for in the project development phase.

Table 5 shows the distribution of projects by type. The minority population areas include 4.7 miles of these road improvement projects of which 2.5 miles is the Interstate 80 widening project. The other 2.2 miles include the last segment of the Antelope Valley project along 19<sup>th</sup> Street, the SW 40<sup>th</sup> Street project, 'O' to 'A' Street, and the North 14<sup>th</sup> Street project north of Superior Street. The right-of-way for these projects is accounted for and no adverse impacts exist. The County Engineer is paving 1.6 miles of rural roads with no added travel lanes involved.

The two plus center turn lane (2+CTL) road improvement program accounts for 12.0 miles of system improvements within the minority population areas. One of the challenges of improving transportation services in the built environment is the possibility of negative impacts to existing

neighborhoods. Widening an existing roadway in the minority and low-income areas which tend to be established neighborhoods can significantly impact the quality of life for those living there. At the same time, highly congested roads in these areas can cause noise, air quality and safety concerns. To help address this challenge, Lincoln has implemented the 2+CTL program where arterial streets in existing neighborhoods can be improved to increase a street's efficiency in moving traffic and improving safety, while minimizing the impacts on the adjacent neighborhood. This design is a benefit to these areas and often are able to fit within the existing right of way, or in other cases, only a minimal additions in right-of-way are needed.

All of the low-income area road projects are overlapping with the minority population areas projects with no adverse effect.

## **Recommended 2025 & 2040 Roadway Improvement Projects**

The major roadway projects identified in the LRTP for 2025 and 2040 build out, as identified in **Figures 14 and 15**, would have no to minimal impacts on adjacent neighborhoods of minority and low-income areas. The major projects within the minority and low-income areas include:

- ▶ Cornhusker Highway (U.S. 6), N. 20th Street to N. 33rd Street, 6 lanes,
- ▶ Sun Valley Blvd. (US-6 ), Cornhusker Highway to West "O" Street, 4 lanes,
- ▶ NW 48<sup>th</sup> Street, Adams to US-6 and Adams to US-34, 4 lanes,
- ▶ East 'O' Street (U.S. 34), 19<sup>th</sup> and 46<sup>th</sup> Streets, 6 lanes,
- ▶ North 48<sup>th</sup> Street, Adams Street to Cornhusker Highway and Superior Street, 4 lanes,

Of these projects, Cornhusker Highway, Sun Valley Blvd., and NW 48<sup>th</sup> Street are not expected to directly or negatively impact minority and low-income residential areas. These projects will reduce congestion by providing additional system capacity along these major arterials and provide better access to both the residential and commercial areas. These will be further evaluated for potential negative impacts within the design and engineering phase of the project.

The East 'O' Street (U.S. 34), 19<sup>th</sup> and 46<sup>th</sup> Streets, is planned to be widened to 6 lanes and may involve minor to severe negative impacts to adjacent properties. Land uses located along this corridor include commercial properties, residential areas, park land, and a cemetery. East 'O' Street is a U.S Highway, and a critical east-west arterial carrying significant traffic throughout the day without a corresponding alternative route. This project will by necessity be evaluated in detail for negative impacts within the design and engineering phase of the project. Project mitigation will need to be determined at that time.

The North 48<sup>th</sup> Street, is planned to be widened to 4 lanes connecting Adams Street to Cornhusker Highway and Superior Street. North 48<sup>th</sup> Street which is a four lane facility to Adams and this project will extend this four lane road north an additional mile. About one-half mile of the one mile North 48<sup>th</sup> Street improvement extends through a neighborhood. Access to the growing commercial areas north of this area is limited due to the existing major railroad line that crosses both North 48<sup>th</sup> Street and Adams Street. The RR crossing at Adams Street and 33<sup>rd</sup> Street is at-grade and blocked with train activity over six hours on a weekday and projected to increase as rail traffic continues to increase. Only North 48<sup>th</sup> Street provides a grade separated railroad crossing (underpass) in this area that is to be widened to accommodate a 4 lane crossing. The traffic using this crossing point is primarily is generated within the north environmental justice area as is it access's Cornhusker Highway and Superior Street. This is not an major roadway connection but an internal bottleneck within this area. Project impacts will by need to be evaluated design and engineering phase of the project and roadway designs will need to be tailored minimize neighborhood impacts. Improved traffic flow through this area is expected to directly benefit the area as a whole.

Other planned projects within the minority and low-income areas are considered to have either

low-impact or no-impacts include:

- ▶ West "A" Street, SW. 40th Street to Coddington Avenue and to Folsom, 2 lanes+TL,
- ▶ W. Van Dorn Street, SW 40th Street to Coddington Avenue to US-77, 2 lanes+TL,
- ▶ NW 56th Street, W. "O" Street to W. Holdrege and to W. Partridge Lane, 2 lanes+TL,
- ▶ Havelock Avenue, N. 70th Street to N. 84th Street 2 lanes+TL
- ▶ NW 40th Street, W. "O" Street to W. Adams Street, 2 lanes+TL and Overpass,
- ▶ NW 12th Street, Fletcher Avenue to W. Alvo Road, 2 lanes+TL and Overpass
- ▶ N. 10th Street, Cornhusker Hwy (US-6) to Military Road, 4 lanes+TL and Bridge
- ▶ S. 9th Street, Van Dorn to South Street 3-lanes + turn lanes

These projects touch on the environmental areas in some way, but will have minimal if any impact and offer the benefits of a new or improved facility. The first four projects are replacing either a 2 lane rural surfaced or gravel road with an urban facility. NW 40th Street and NW 12th Street are new 2 lane roads with overpasses and do not touch existing developments. The N. 10th Street project is to reconstruct the rural scissors intersection to a 4 lane facility and replace the 2 lane bridge with a 4 lane bridge. This project will need to be coordinated with the reconstruction of Sun Valley Blvd. (US-6 ). The South 9th Street improvement project is to add a travel lane for a 3 lane facility. This is not expected to require right-of-way but may impact the frontage of some properties. This project will need to be coordinated with the Highway 2 widening project.

### **Roadway Rehabilitation**

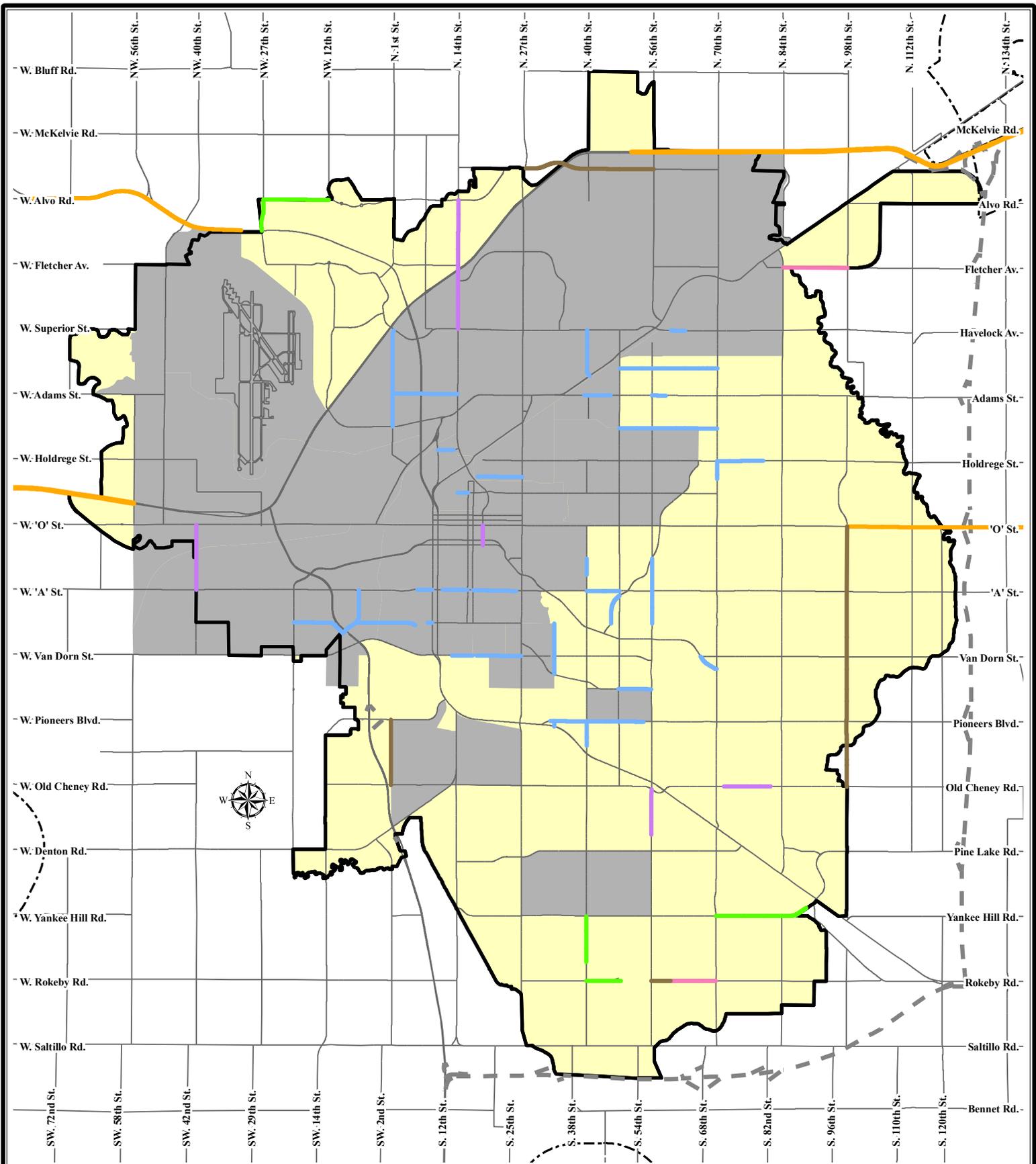
An expanded roadway rehabilitation program has been emphasized in this LRTP which will repair arterial and residential roads when the pavement conditions deteriorate to an unacceptable level. A pavement condition rating system is used to determine which road surfaces are in most need of repair. Also included in the Rehabilitation program is bridge rehabilitation and signal replacements. No significant impacts are anticipated with this program and significant benefits can be expected within the built environment and the adjacent neighborhoods of minority and low-income areas.

## **Findings**

### **Benefits and Burdens of LRTP Projects**

The LRTP contains many recommendations for transportation improvements, including street, highway, transit, pedestrian, bicycle, and transportation demand management strategies. Recommendations that have the greatest potential negative impact on low-income and minority populations are typically found in the road and public transportation sections of LRTP. Pedestrian, bicycle facility, trails and roadway rehabilitation improvements tend to be low impact and are developed in the built environment as opportunities are presented.

All regionally significant transportation projects were geocoded so that project location could be analyzed in relation to locations of minority and low-income populations. An examination of the



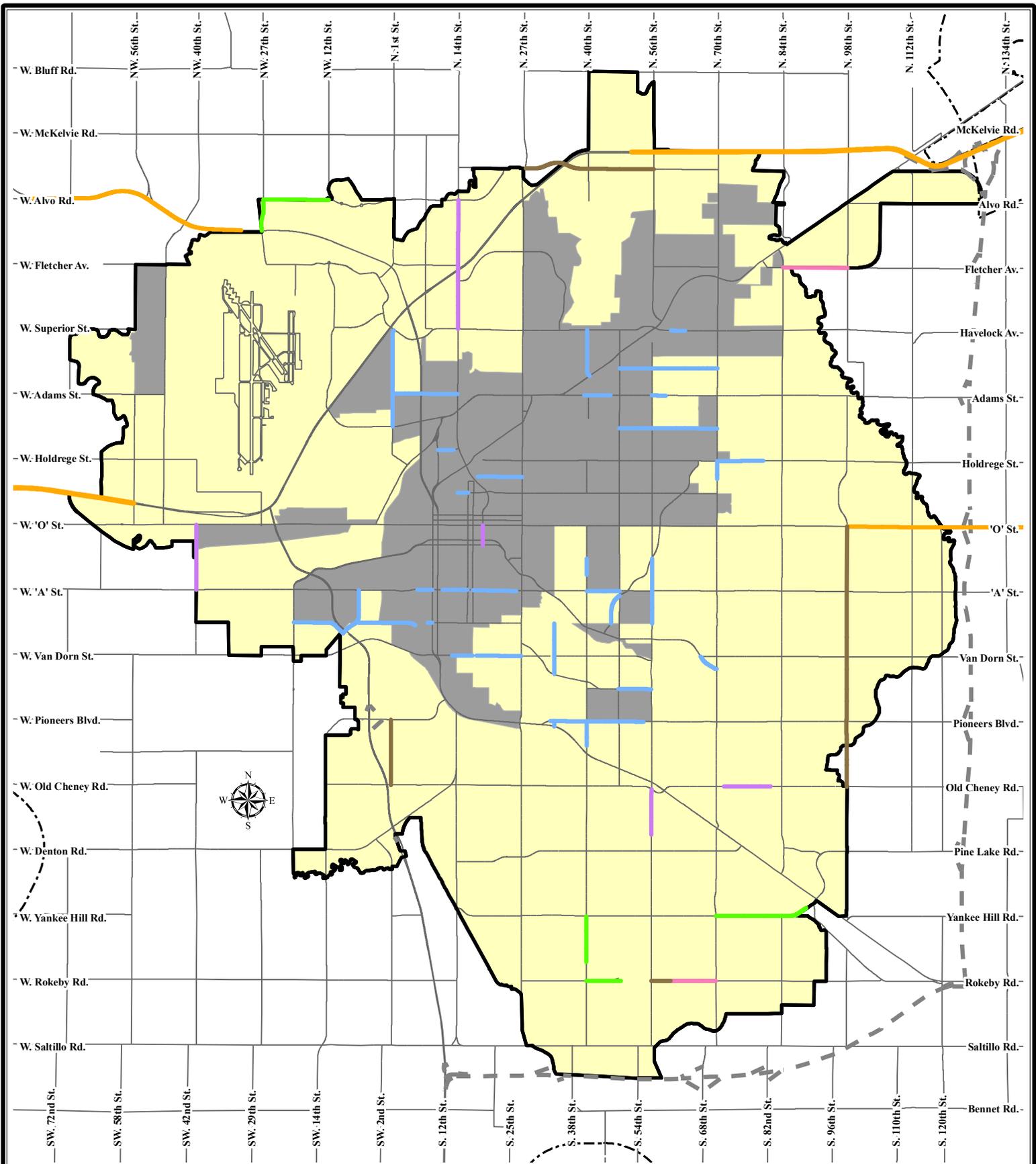
## Committed Road Projects and Concentrations of Minority Households

ROAD PROJECTS (Miles in Minority Areas / Total Miles)

- NDOR Widening Projects (2.5 / 42.3 Miles)
- 2+1 Program Projects (12.0 / 19.8 Miles)
- Roadway Widening Projects (2.2 / 4.7 Miles)
- Developer Committed (0 / 4.2 Miles)
- Programmed County Paving [2025] (1.6 / 7.3 Miles)
- Programmed County Paving [2040] (0 / 1.7 Miles)
- South & East Beltway Corridor Protection

- Ethnic and Racial Minority Areas
- 2040 Future Service Limit



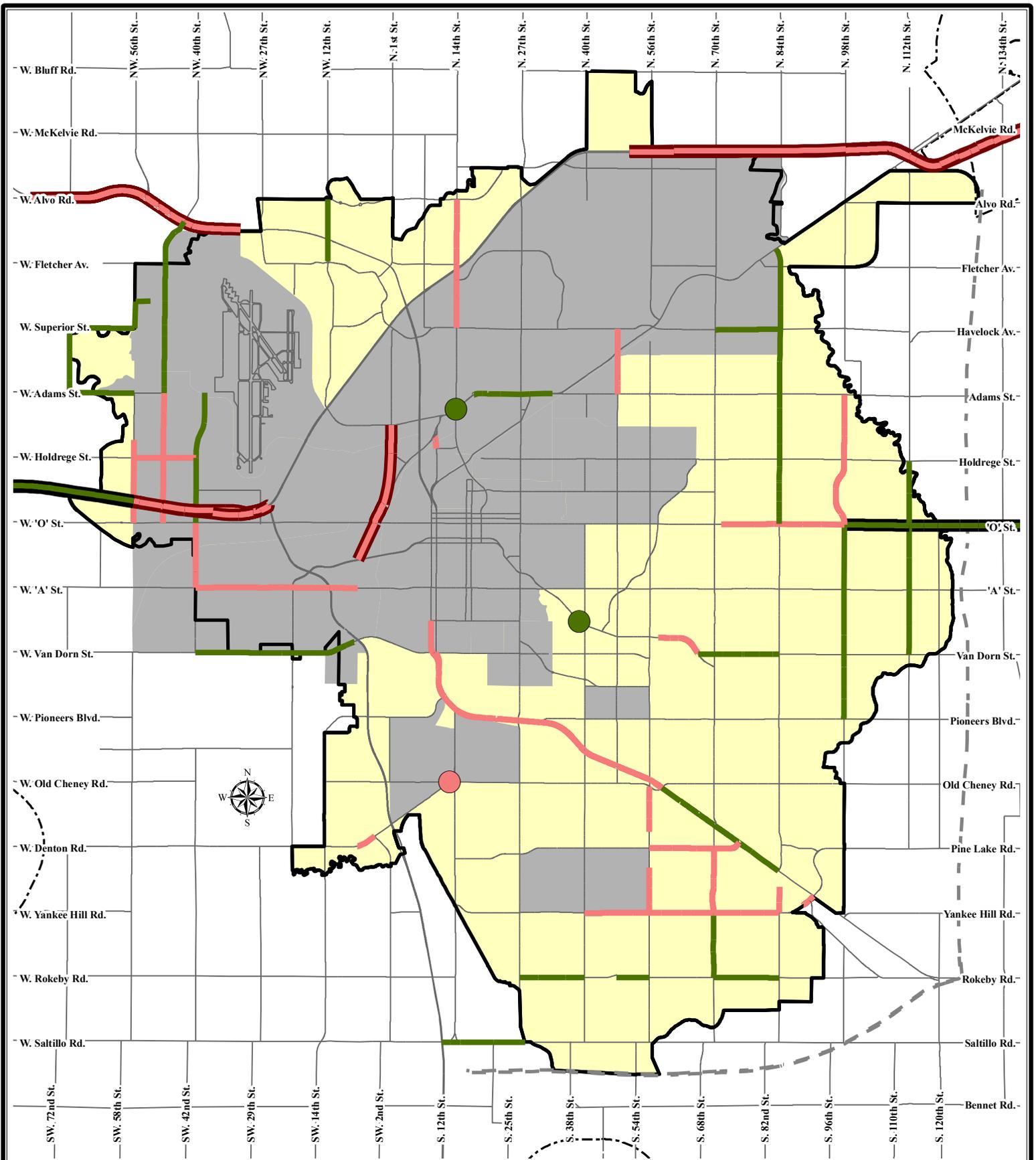


## Committed Road Projects and Concentrations of Low-Income Households

ROAD PROJECTS (Miles in Low-Income Areas / Total Miles)

- NDOR Widening Projects (0 / 42.3 Miles)
- 2+1 Program Projects (9.5 / 19.8 Miles)
- Roadway Widening Projects (0.7 / 4.7 Miles)
- Developer Committed (0 / 4.2 Miles)
- Programmed County Paving [2025] (0 / 7.3 Miles)
- Programmed County Paving [2040] (0 / 1.7 Miles)
- South & East Beltway Corridor Protection
- Ethnic and Racial Minority Areas
- 2040 Future Service Limit





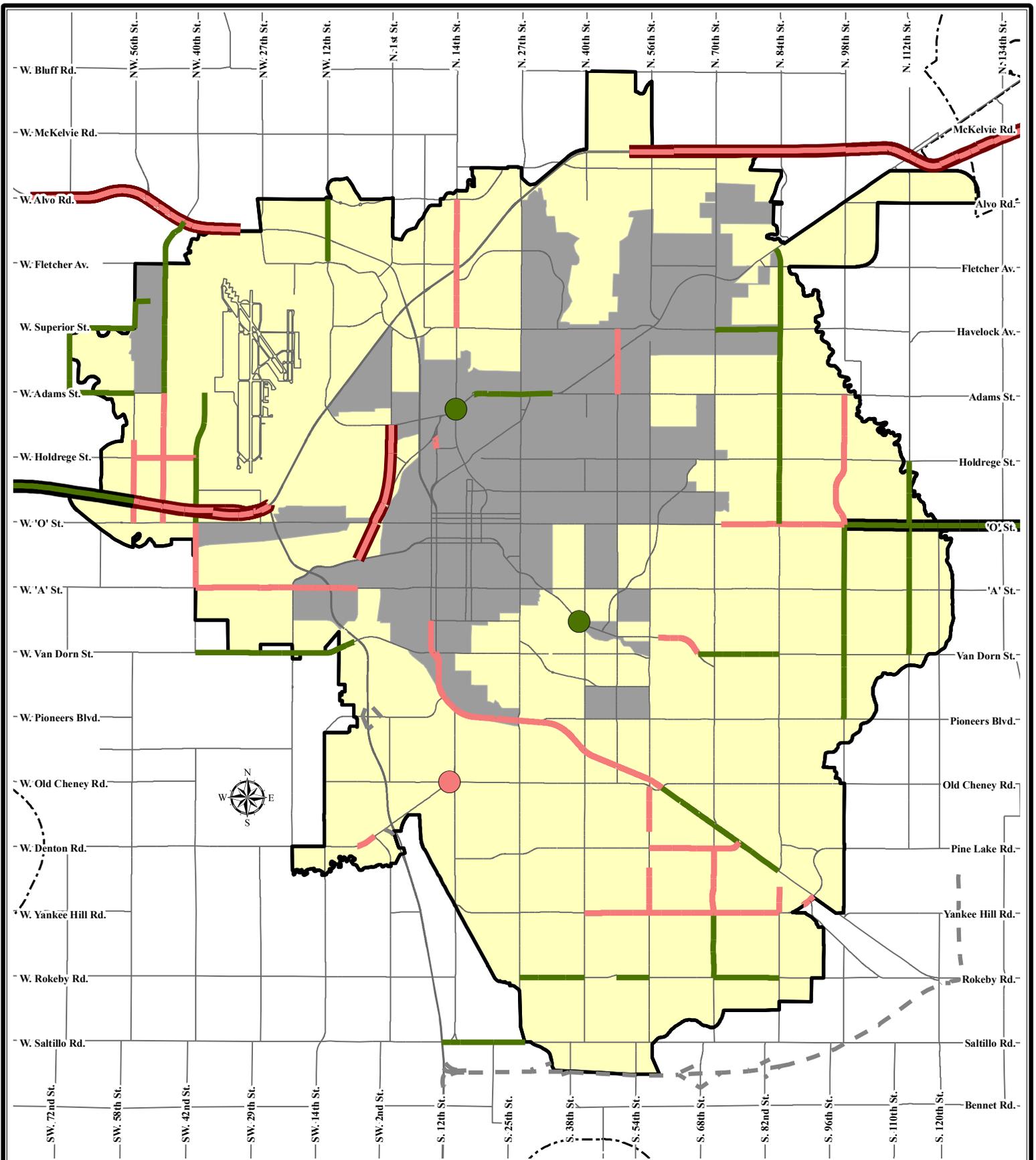
### Recommended 2025 & 2040 Roadway Improvement Projects and Concentrations of Minority Households

- Intersection Projects**  
(Count In Minority Areas / Total)
- 2012 - 2025 Funded Improvements (1 / 1 Project)
  - Projects Beyond 2040 (1 / 3 Projects)

- ROAD PROJECTS (Miles in Minority Areas / Total Miles)**
- 2012 - 2025 Funded Improvements (10.0 / 28.7 Miles)
  - 2026 - 2040 Funded Improvements (8.1 / 32.6 Miles)
  - 2012 - 2021 State Funded Improvements (9.1 / 30.4 Miles)
  - 2022 - 2031 State Funded Improvements (0.0 / 18.5 Miles)

- Ethnic and Racial Minority Areas
- 2040 Future Service Limit
- South & East Beltway Corridor Protection





## Recommended 2025 & 2040 Roadway Improvement Projects and Concentrations of Low-Income Households

Intersection Projects  
(Count In Minority Areas / Total)

- 2012 - 2025 Funded Improvements (1 / 1 Project)
- Projects Beyond 2040 (1 / 3 Projects)

ROAD PROJECTS (Miles in Low-Income Areas / Total Miles)

- 2012 - 2025 Funded Improvements (5.3 / 28.7 Miles)
- 2026 - 2040 Funded Improvements (3.1 / 32.6 Miles)
- 2012 - 2021 State Funded Improvements (0.2 / 30.4 Miles)
- 2022 - 2031 State Funded Improvements (0.0 / 18.5 Miles)

- Ethnic and Racial Minority Areas
- 2040 Future Service Limit
- South & East Beltway Corridor Protection

0 0.5 1 2 Miles



geographic distribution of projects indicates projects are distributed throughout the Lincoln Planning Area. This analysis also indicated that the character of the area whether in the built environment (older urban areas) or the developing fringe areas has a great influence on the character of the project proposed. Road widening projects are tailored to the character of the area to provide the greatest level of service with the lowest impacts to the adjacent land uses.

Within the environmental justice areas, there is a concentration of projects selected to be lower impact projects such as 2 plus center turn lane projects and the larger widening projects are located along existing principal arterials.

Overall this map indicates that protected environmental justice populations will benefit directly from the lower impact project and a number of the larger regional transportation projects as a result of their distance from them. Other areas of benefit to the environmental justice areas not able to be mapped is the higher level of roadway rehabilitation of the existing transportation system proposed in the LRTP. Since these populations tend to locate in the older areas where road rehabilitation is needed, there is expected to be greater direct in these areas.

### **Environmental Justice Analysis Conclusion**

On the basis of the Environmental Justice Analysis it does not appear that the transportation investment recommendations contained in the 2040 Long Range Transportation Plan have a disproportional adverse impact on areas of high concentration of low-income and minority populations. Additionally, the proposed plan duly considers the transportation needs of low-income and minority populations and provides many recommendations that will substantially benefit these populations.