
8.0 Environmental Justice

8.1 Chapter Purpose and Content

Wisconsin is committed to integrating the principle of environmental justice into all transportation planning programs and activities. For purposes of this chapter, environmental justice populations are defined as including minority, low-income, children (age 17 and under), seniors (age 65 and older) and zero-vehicle household populations. These environmental justice populations have been assessed in relation to their geographic location, and the presence and operations of the statewide airport system. The information contained in this chapter includes an evaluation of the relationship between the Wisconsin State Airport System Plan (SASP) recommendations and environmental justice populations. This environmental justice chapter also supplements the system plan environmental evaluation included in **Chapter 9**, which discusses the potential environmental and community impacts of implementing the SASP. Lastly, this chapter identifies areas for consideration during future planning and project-level activities.

It is important to note that this evaluation discusses the SASP recommendations at a state-wide system level. Prior to implementation of each individual project, individual project specific environmental reviews will be completed which will include an environmental justice evaluation. The implementation of any specific improvement identified in this plan remains the responsibility of local airport sponsors, and the projects identified do not constitute a commitment of either state or federal funding. The approval and project justification of local master planning efforts, environmental review processes and funding approvals remain a sponsor responsibility.

Similar to Wisconsin's Long-Range Transportation Plan (Connections 2030), the SASP is a policy-based plan developed to be flexible and responsive to shifts in investment priorities. While the SASP's recommendations provide the framework for decision making and for prioritizing investments, plan recommendations may be implemented as proposed, modified as BOA responds to changing statewide and local aviation needs, or delayed due to insufficient resources (staff and funding) or changing priorities. As a result, analysis of aviation-related decisions and investments that may disproportionately affect minority populations, low-income populations, children (age 17 and under), seniors (age 65 and older) and households with no vehicles is limited at the system level.

8.2 Environmental Justice Overview

Presidential Executive Order 12898, issued in 1994, directed each federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.” The order builds on Title VI of the Civil Rights Act of 1964 which prohibits discrimination on the basis of race, color or national origin.

There are three fundamental principles of environmental justice:

- To avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations.



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- To ensure the full and fair participation by all potentially-affected communities in the transportation decision-making process.
 - To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The executive order and subsequent orders by the U.S. Department of Transportation define minority and low-income populations as:

- Black – a person having origins in any of the black racial groups of Africa.
- American Indian and Alaskan Native – a person having origins in any original people of North America and who maintains cultural identification through tribal affiliation or community recognition.
- Asian – a person having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent.
- Native Hawaiian or other Pacific Islander – a person having origins in any of the original peoples of Hawaii, Guam, Samoa and other Pacific Islands.
- Hispanic – a person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture of origin, regardless of race.

The executive order also defines low-income populations as persons whose total 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.

While not specifically identified by title VI or the executive order, WisDOT chose to expand its environmental justice analyses to include children (age 17 and under), seniors (age 65 and older), and households with zero vehicles because these additional population groups have unique needs that could be affected as a result of implementing the SASP.

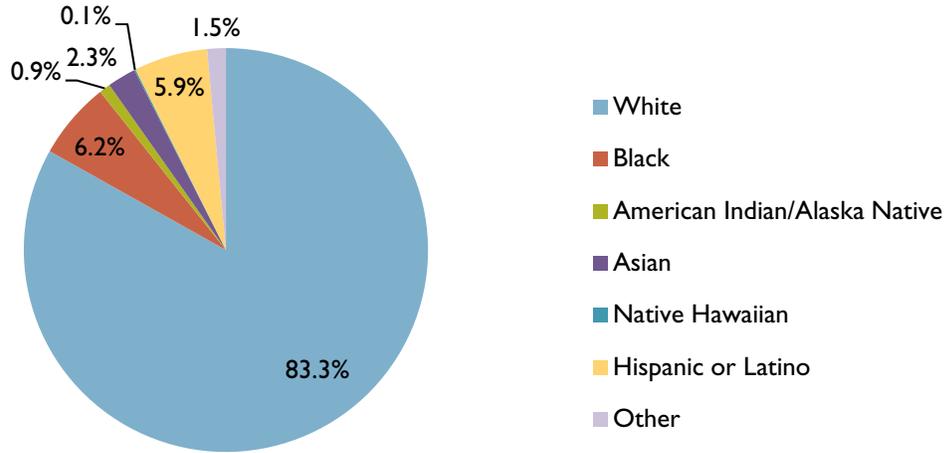
8.3 Summary of Wisconsin's Environmental Justice Populations

According to the U.S. Census Bureau, Wisconsin's total population was approximately 5.68 million persons in 2010. The chart below depicts Wisconsin's 2010 population based on race alone.

Chart 8-1 and **Table 8-1** on the following page depicts the state's population by race, ethnicity, age (17 and under, and 65 and older), income (below the poverty level) and zero-vehicle households. It is important to note that 2010 Census data does not list Hispanic/Latino as a racial category. Instead, Hispanic or Latino heritage is considered an ethnicity; a person of Hispanic or Latino origin can be identified with any racial group. Therefore, to avoid double counting, those individuals identified as having Hispanic or Latino ethnicity were subtracted from the appropriate racial category to generate the total Hispanic/Latino minority population.



**Chart 8-1
Wisconsin Demographics, 2010**



**Table 8-1
Wisconsin Demographics, 2010**

Population Group	Number of Persons (2010)	Percent of Total State Population
State of Wisconsin	5,686,986	100%
White	4,738,411	83.3%
Black	350,898	6.2%
American Indian/Alaska Native	48,513	0.9%
Asian	128,052	2.3%
Native Hawaiian	1,565	0.1%
Hispanic or Latino	336,056	5.9%
Other (including two or more races)	83,493	1.5%
Children (age 17 and under)	1,339,492	23.6%
Seniors (age 65 and older)	777,314	13.7%
Persons Below Poverty Level	725,797	13.1%
Zero-Vehicle Households ¹	169,751	7.5%

Notes: ¹ Wisconsin had 2,279,769 households in 2010

Sources: US Census Data (2010) and ACS Data (2011)

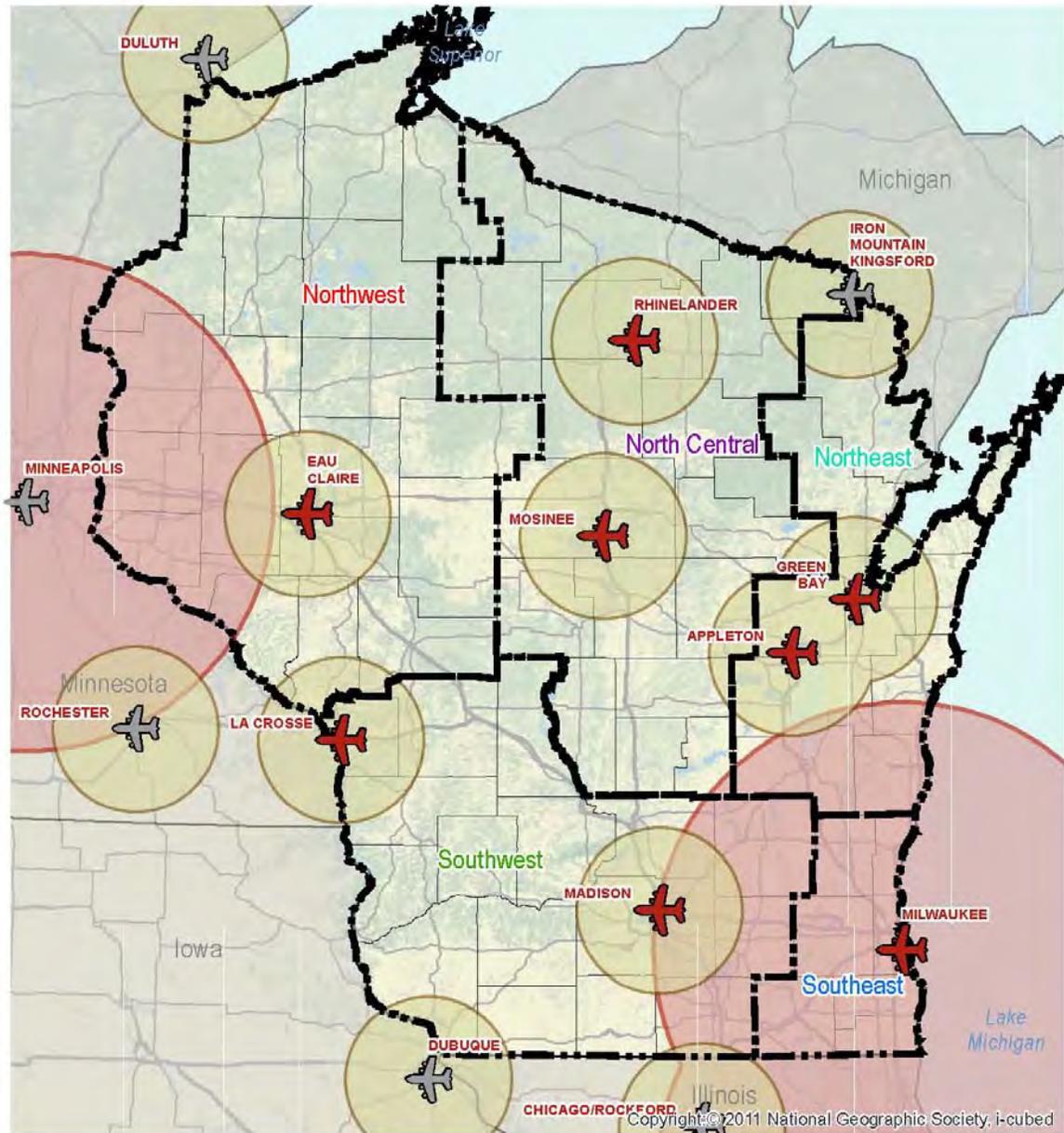


As shown in **Table 8-1**, approximately 83 percent of Wisconsin's population is white. The largest minority population is black accounting for approximately 6.2 percent of the population, followed by Hispanic or Latino at 5.9 percent of the total population. More than 37 percent of the state's population falls within the age categories of children (23.6 percent) and senior (13.7 percent). According to the census data, approximately 13.1 percent of persons are below the State poverty level and 7.5 percent of total households do not have a vehicle.

While **Table 8-1** provides a statewide overview, population is not evenly distributed across the state. **Tables 8-2** through **8-5** provide a breakdown of these populations based on the five WisDOT regions (Northwest, North Central, Northeast, Southwest, and Southeast). **Figure 8-1** illustrates the boundaries of the five WisDOT regions. The breakdown and calculation by region were necessary for establishing appropriate thresholds to determine readily-identifiable environmental justice populations located within 75 miles of medium/large hub airports (General Mitchell International Airport, Minneapolis St. Paul International, and Chicago - O'Hare International) and 25 miles of small/non-hub commercial service airports. As shown in **Figure 8-1**, there are vast areas of the state that do not fall within an airport study area, but only 16 of the 72 Wisconsin counties don't have at least a small portion of the county falling within one or more of the airport study areas. These counties are generally rural, less populous and could be considered as lacking sufficient air services. However, other shuttle, air charter or air taxi services at smaller airports across the state have the potential to provide the missing connections (services) to these areas.



Figure 8-1 – Base Map



Legend

-  In State Commercial
-  Out of State Commercial
-  Wisconsin DOT Regions
-  25 Mile Buffer
-  75 Mile Buffer




0 12.5 25 50 Miles

Source: WISDOT, ESRI, WisDNR, Wilbur Smith Associates



The stacked chart below and **Table 8-2** provide a breakdown of minority and ethnic populations within each of the five WisDOT regions.

**Table 8-2
Racial Populations Within Each WisDOT Region (2010)**

WisDOT Region	Region Population	White ¹	Black ¹	American Indian Alaska Native ¹	Asian ¹	Native Hawaiian ¹	Hispanic or Latino ¹	Other Race ¹
Northeast	1,067,017	954,664	13,679	11,892	25,620	284	43,607	596
		89.5%	1.3%	1.1%	2.4%	0.1%	4.1%	0.1%
North Central	597,198	548,364	3,593	12,705	11,595	173	12,600	214
		91.8%	0.6%	2.1%	1.9%	0.1%	2.1%	0.1%
Northwest	684,157	639,100	4,696	11,166	7,817	141	11,731	270
		93.4%	0.7%	1.6%	1.1%	0.1%	1.7%	0.1%
Southeast (Milwaukee)	2,019,970	1,437,105	288,550	7,917	50,831	595	185,947	1,968
		71.1%	14.3%	0.4%	2.5%	0.1%	9.2%	0.1%
Southwest	1,318,644	1,159,178	40,380	4,831	32,189	372	57,252	1,047
		87.9%	3.1%	0.4%	2.4%	0.1%	4.3%	0.1%

Note: ¹The percentage of the racial population for each Region was used to establish environmental justice thresholds, as described in Section 8.4

As shown in **Table 8-2**, the southeast region of Wisconsin, which includes the Milwaukee metropolitan area, has the largest minority population and the highest percentage of minorities, while the northwest region has the lowest percent of minorities making up the total population for that region of the state. The north central region has the largest American Indian population with 12,705 (2.1 percent), whereas the southwest region has the lowest American Indian population with only 4,831 (0.4 percent).

Table 8-3 shows the children (age 17 and under) and senior (age 65 and older) populations of each region.

**Table 8-3
Persons Age 17 and Under and Age 65 and Older**

WisDOT Region	Total Region Population	Age 17 and Under		Age 65 and Older	
		Population	Percent of Region Population ¹	Population	Percent of Region Population ¹
Northeast	1,067,017	251,377	23.6%	147,258	13.8%
North Central	597,198	130,421	21.8%	104,909	17.6%
Northwest	684,157	157,998	23.1%	100,651	14.7%
Southeast (Milwaukee)	2,019,970	498,275	24.7%	254,007	12.6%
Southwest	1,318,644	301,421	22.9%	170,489	12.9%

Note: ¹The percentage of the population (age 17 and under or 65 and older) for each region was used to establish environmental justice thresholds, as described in Section 8.4



The north central region of Wisconsin has the largest percentage (17.6 percent) and the southeast region has the smallest percentage (12.6 percent) of people ages 65 and older. According to the census data, the opposite is the case for persons age 17 and younger. The southeast region has the highest percentage (24.7 percent), while the north central region has the smallest percentage (21.8 percent) of those 17 and younger.

Table 8-4 depicts the numbers of people who fall below the U.S. Department of Health and Human Services poverty level.

**Table 8-4
Persons Below the Poverty Level**

WisDOT Region	Total Region Population	Population Below Poverty Level	Percent of Population Below Poverty Level ¹
Northeast	1,067,017	99,941	9.7%
North Central	597,198	65,659	11.3%
Northwest	684,157	82,741	12.5%
Southeast (Milwaukee)	2,019,970	264,172	13.4%
Southwest	1,318,644	149,142	11.8%

Note: ¹The percentage of the population below the poverty level for each region was used to establish environmental justice thresholds, as described in Section 8.4

As previously shown in **Table 8-1**, the Census Bureau estimated 13.1 percent, or approximately 725,797 people, were below U.S. Department of Health and Human Services poverty thresholds. **Table 8-4** shows the estimated number of persons below the poverty level by region. The southeast and northwest regions have the highest percentage of their populations below the poverty level, 13.4 percent and 12.5 percent, respectively. The northeast region of the state has the lowest percentage (9.7 percent) of people living below the poverty level.

Table 8-5 identifies the number of households without a vehicle.

**Table 8-5
Households with Zero Vehicles**

WisDOT Region	Total Region Households	Households With Zero Vehicles	Percent of Households With Zero Vehicles
Northeast	430,247	23,231	5.4%
North Central	252,138	12,898	5.1%
Northwest	276,982	14,736	5.3%
Southeast (Milwaukee)	793,536	72,403	9.1%
Southwest	526,835	32,517	6.2%

Note: ¹The percentage of households with zero vehicles for each region was used to establish environmental justice thresholds, as described in Section 8.4

Households with zero vehicles are another demographic variable that was used to identify populations that may have unique needs and may be affected by implementation of the SASP. **Table 8-5** shows the estimated number of Wisconsin households that have zero vehicles. The southeast region has the highest number of households (72,403 households or 9.1 percent of total households) that had no



vehicle, followed by the southwest region (32,517 households or 6.2 percent). The north central region had the lowest number of households (12,898 households or 5.1 percent of total households) that had no vehicle.

The census information presented in **Tables 8-2 through 8-5** will be used in the next section to establish environmental justice population thresholds. The data will be further divided by census block groups and isolated for the study areas surrounding each medium/large hub airport and small non-hub airport.

8.4 Establishing Environmental Justice Population Thresholds

Using the 2010 Census data, environmental justice population thresholds for each census tract or census block group were generated within the delineated airport study areas (75 miles around medium/large hub airports and 25 miles around small non-hub commercial service airports). The environmental justice thresholds determine if a minority, age range (17 and under or 65 and older), poverty level, and no vehicle household population exists that directly correspond to the population and household percentages for each WisDOT region presented in **Tables 8-2 through 8-5**. For example, the black, American Indian, Asian and Hispanic populations in the northeast region (see **Table 8-2**) account for approximately 1.3 percent, 1.1 percent, 4.1 percent, and 2.4 percent of the total population in that region, respectively. These percentages were assigned to be the environmental justice thresholds for minorities residing in the census block groups within the northeast region. This same approach was used for all environmental justice populations in the five regions.

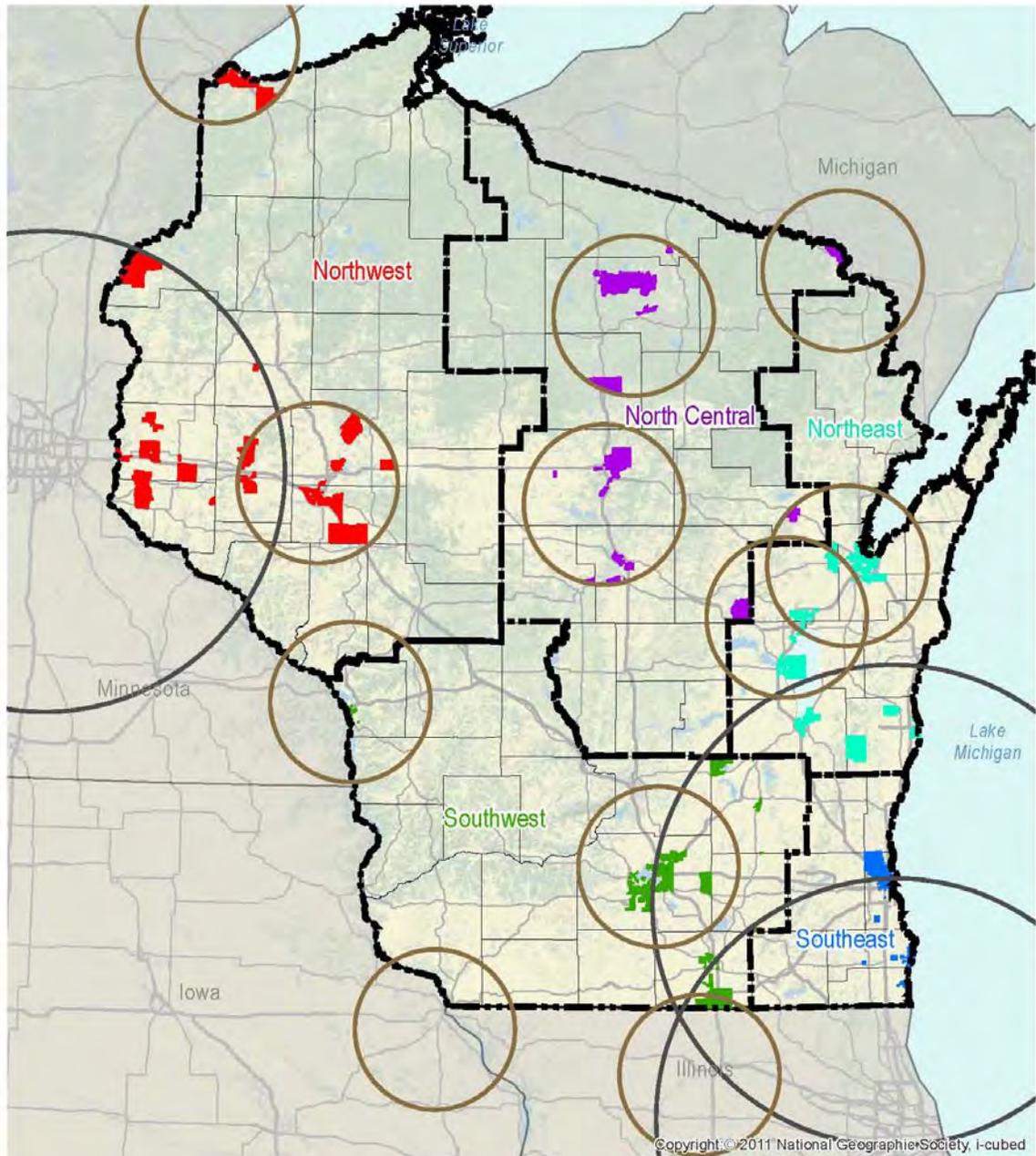
Using the identified environmental justice thresholds for each region, a simple determination was made as to whether a census block group located within a particular airport study area (e.g. 25-mile radius around Appleton) was above or below the threshold for each of the specified environmental justice populations. If the percentage is greater than the threshold, the census block group was considered to have a higher presence of the specified population and may require greater consideration of potential disproportionate impacts from implementing the SASP. If the percentage is equal to or less than the threshold, it is considered typical for the region or has a lower concentration of specified population within that census block group and no further consideration is necessary. Due to census data limitations, the populations below the poverty level and zero-vehicle households were assessed at the census tract level because it was the smallest geographic area for these categories.

8.4.1 Census Block Group and Census Tract Observations

Figures 8-2 through 8-9 depict the census block groups or census tracts (in the case of households below the poverty level and zero-vehicle households) within the airport study areas that exceeded the established thresholds for each of the environmental justice populations. **Figure 8-10** shows census block groups/tracts with a threshold exceeded for any (one or more) of the environmental justice populations (minority, age, low-income, or zero-vehicle households). It should be noted that this airport study area analysis considered the census tracts and block groups located in Wisconsin even though the La Crosse and Milwaukee study areas extend outside the state. Furthermore, these populations exist throughout the state but were only assessed in proximity to the medium/large hub and small non-hub airports.



Figure 8-2 – Census Block Groups that Exceeded the Blacks Threshold



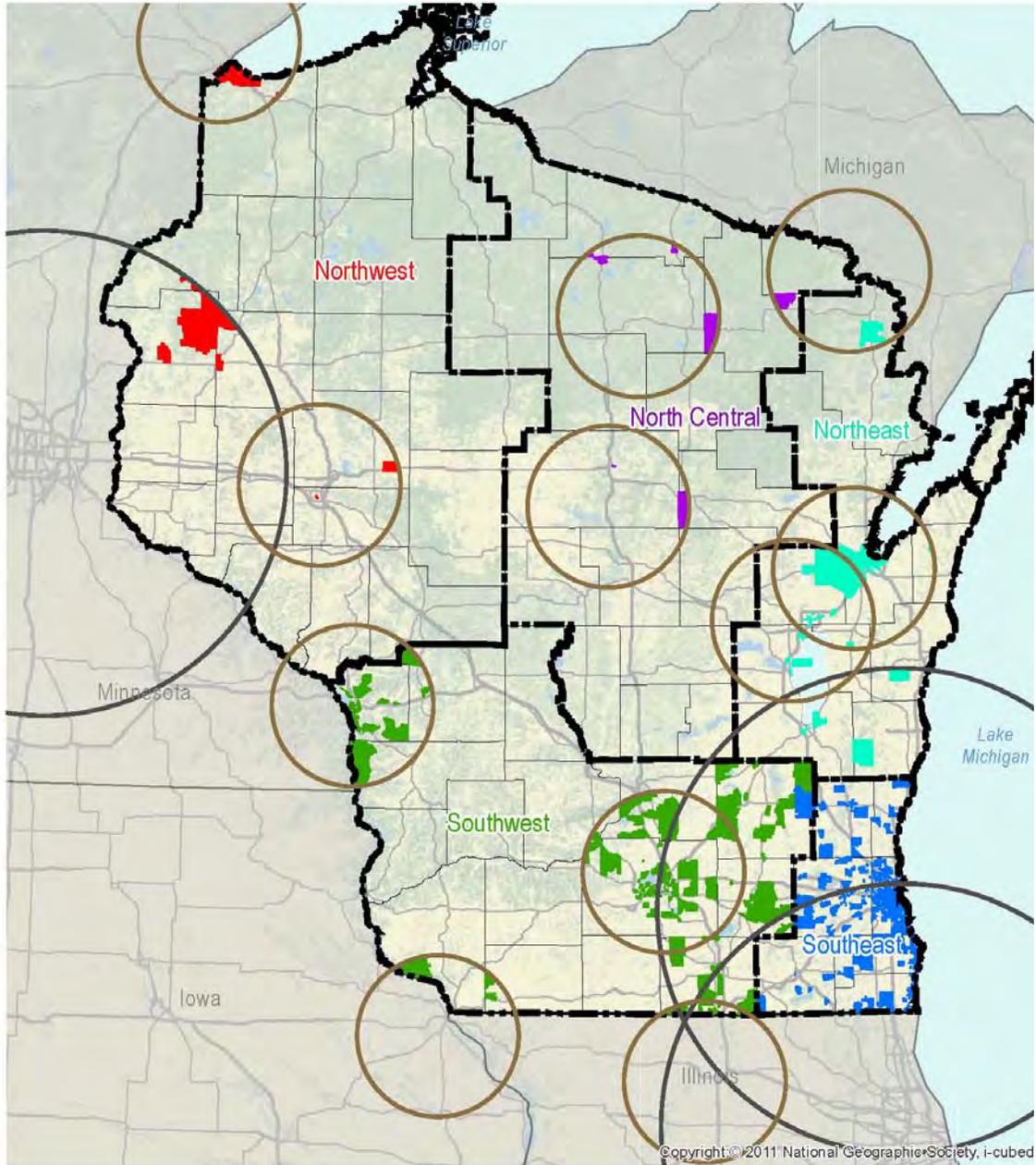
Tracts exceeding Regional Threshold

DOT Region

- North Central (0.60%)
- Northeast (1.28%)
- Northwest (0.69%)
- Southeast (14.28%)
- Southwest (3.06%)



Figure 8-3 – Census Block Groups that Exceed the American Indian Threshold



Tracts exceeding Regional Threshold

DOT Region

- North Central (2.13%)
- Northeast (1.11%)
- Northwest (1.63%)
- Southeast (0.39%)
- Southwest (0.37%)



Figure 8-4 – Census Block Groups that Exceed the Asian Threshold

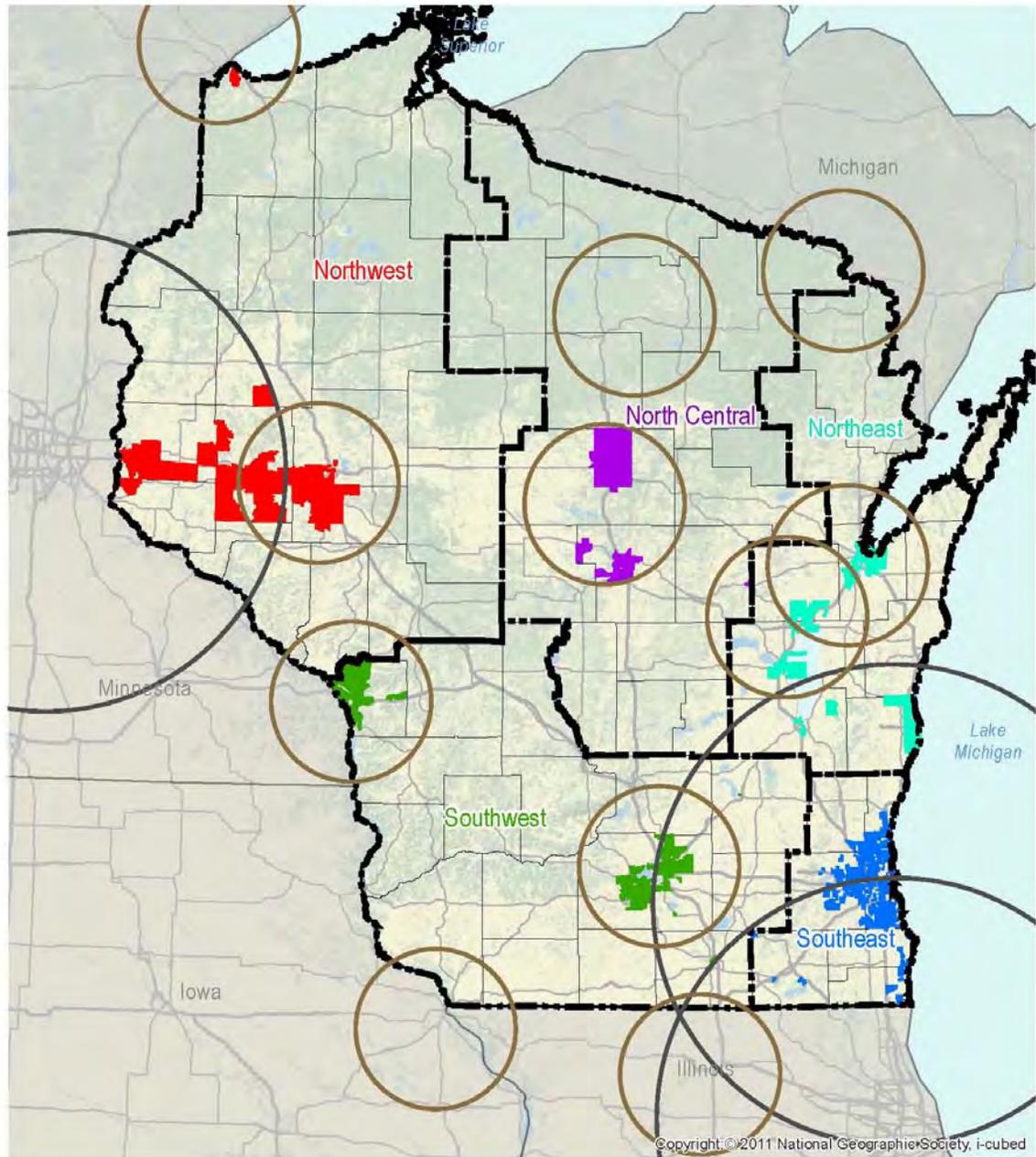
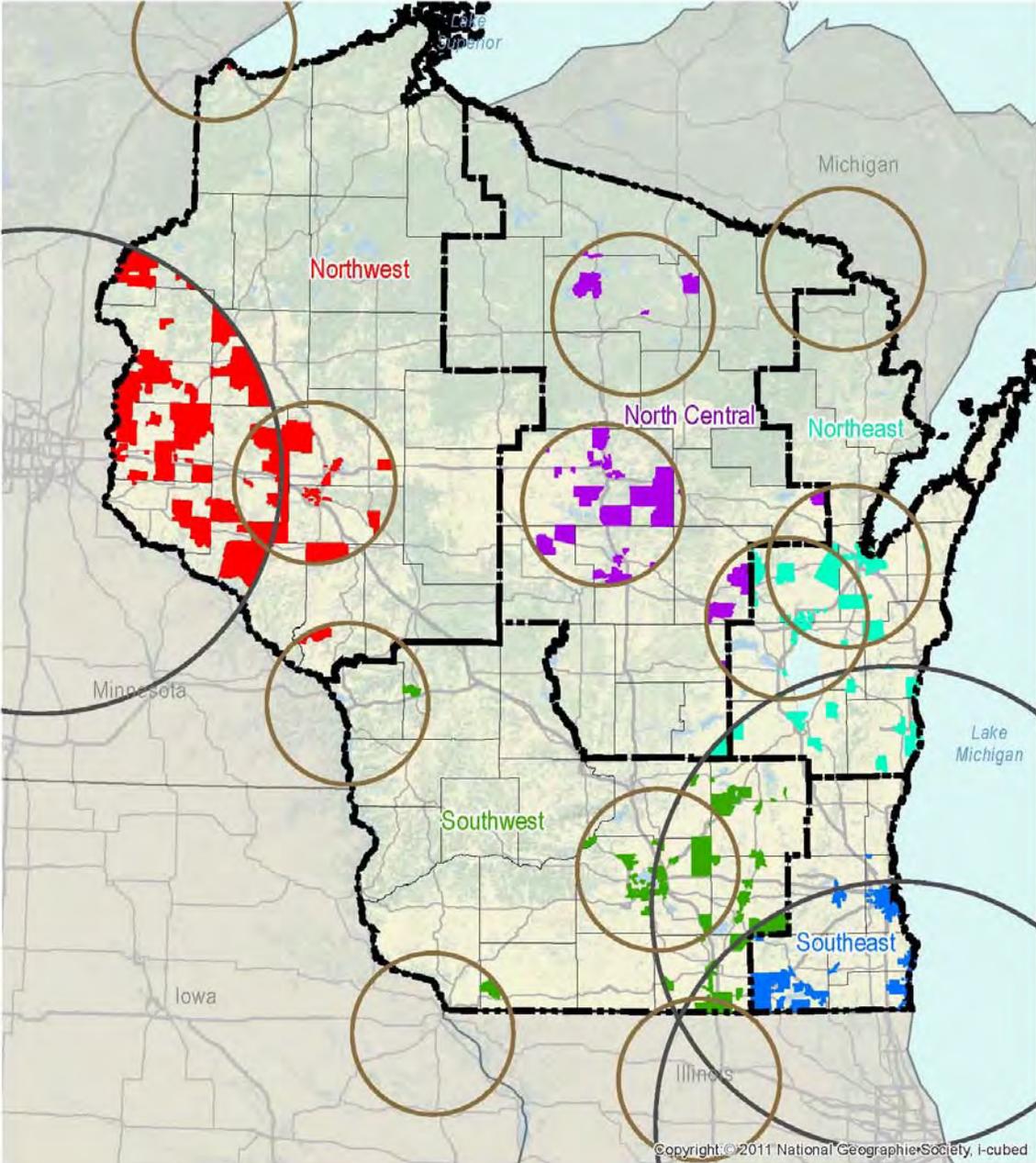


Figure 8-5 – Census Block Groups the Exceed Hispanic Threshold



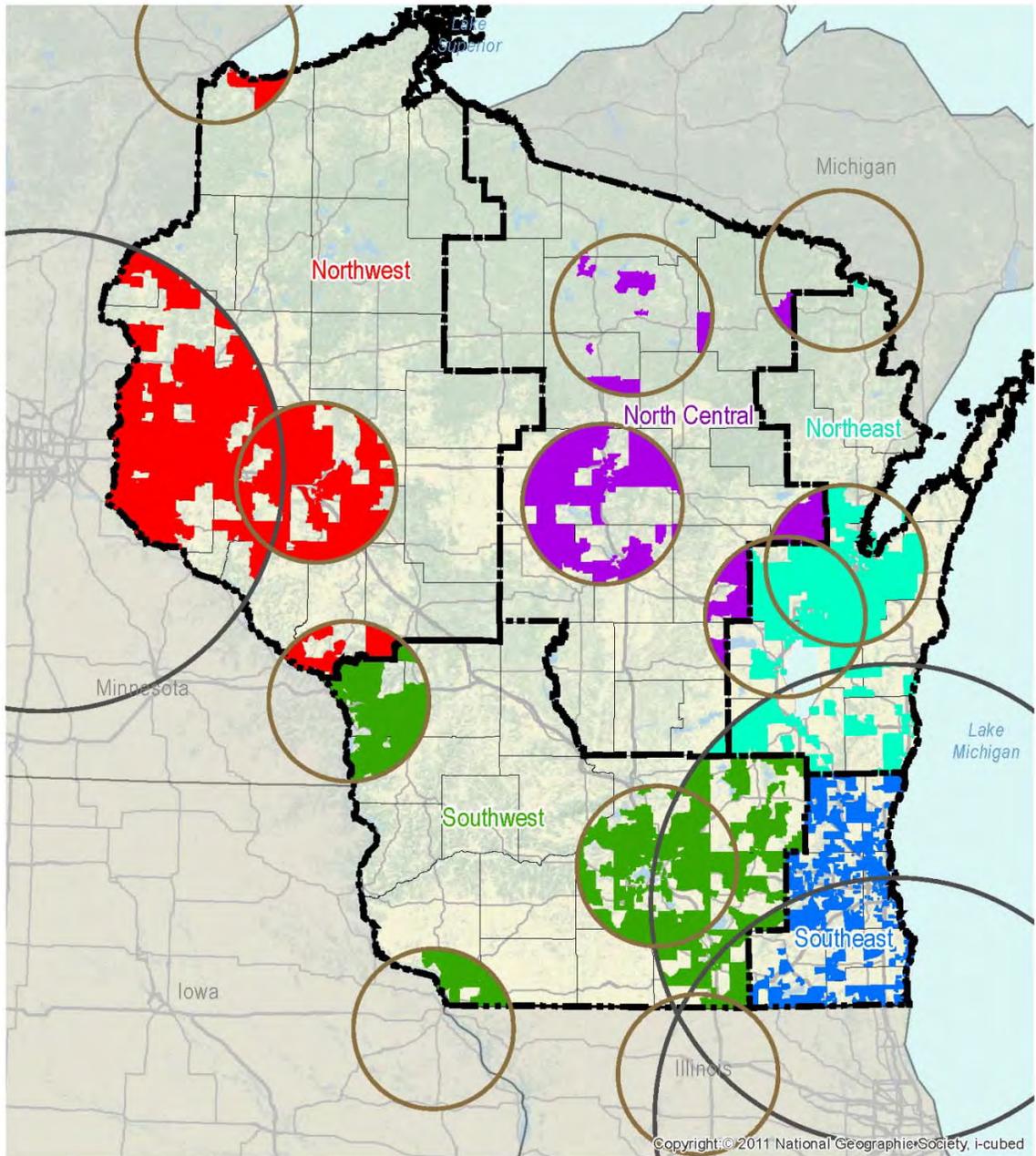
Tracts exceeding Regional Threshold

DOT Region

North Central	(2.11%)
Northeast	(4.09%)
Northwest	(1.71%)
Southeast	(9.21%)
Southwest	(4.34%)



Figure 8-6 – Census Block Groups that Exceed <18 Age Threshold



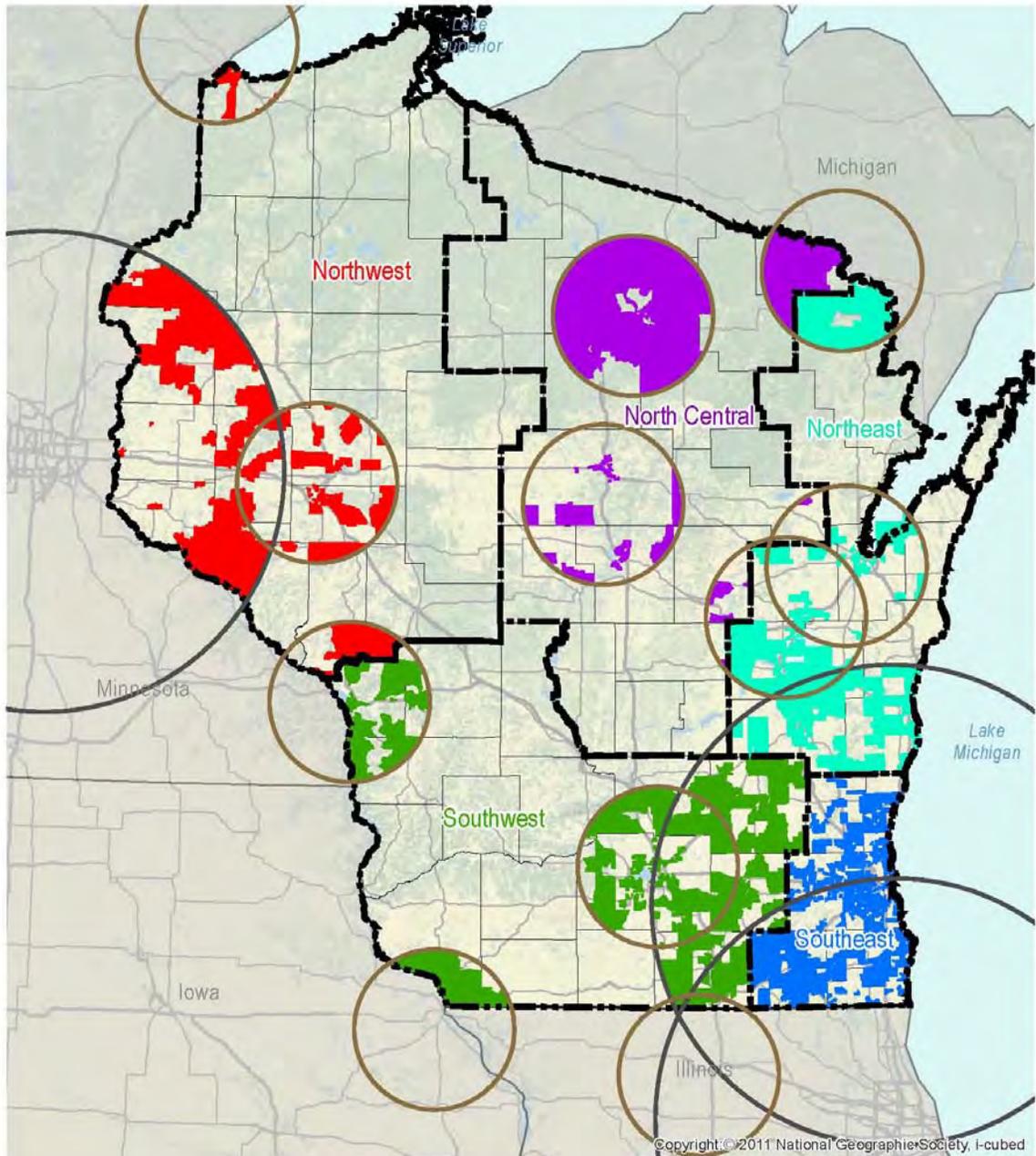
Tracts exceeding Regional Threshold

DOT Region

- North Central (21.84%)
- Northeast (23.56%)
- Northwest (23.09%)
- Southeast (24.67%)
- Southwest (22.86%)



Figure 8-7 – Census Block Groups that Exceed >65 Age Threshold



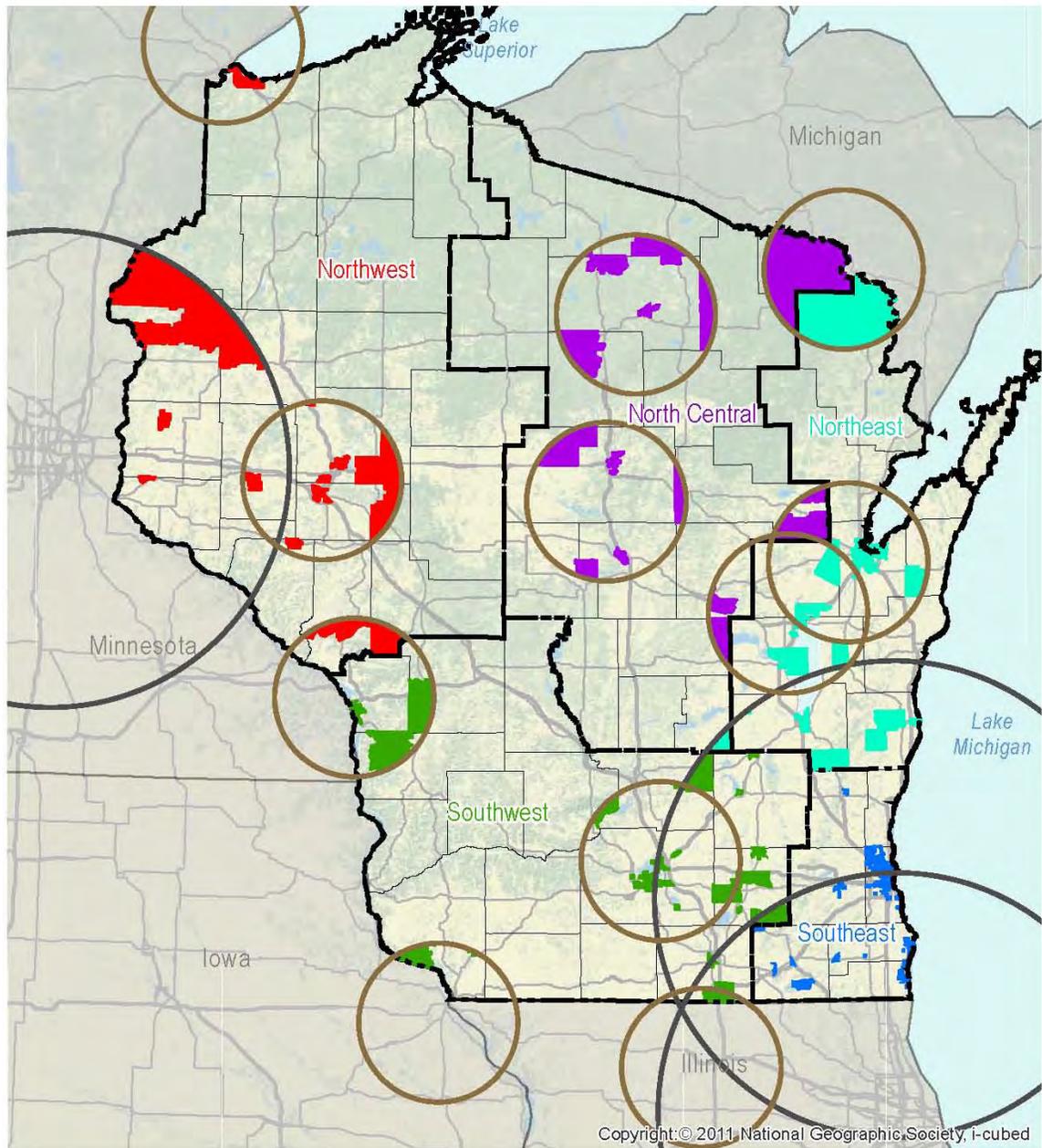
Tracts exceeding Regional Threshold

DOT Region

- North Central (17.57%)
- Northeast (13.80%)
- Northwest (14.71%)
- Southeast (12.57%)
- Southwest (12.93%)



Figure 8-8 – Census Tracts that Exceed the Poverty Threshold



Tracts exceeding Regional Threshold

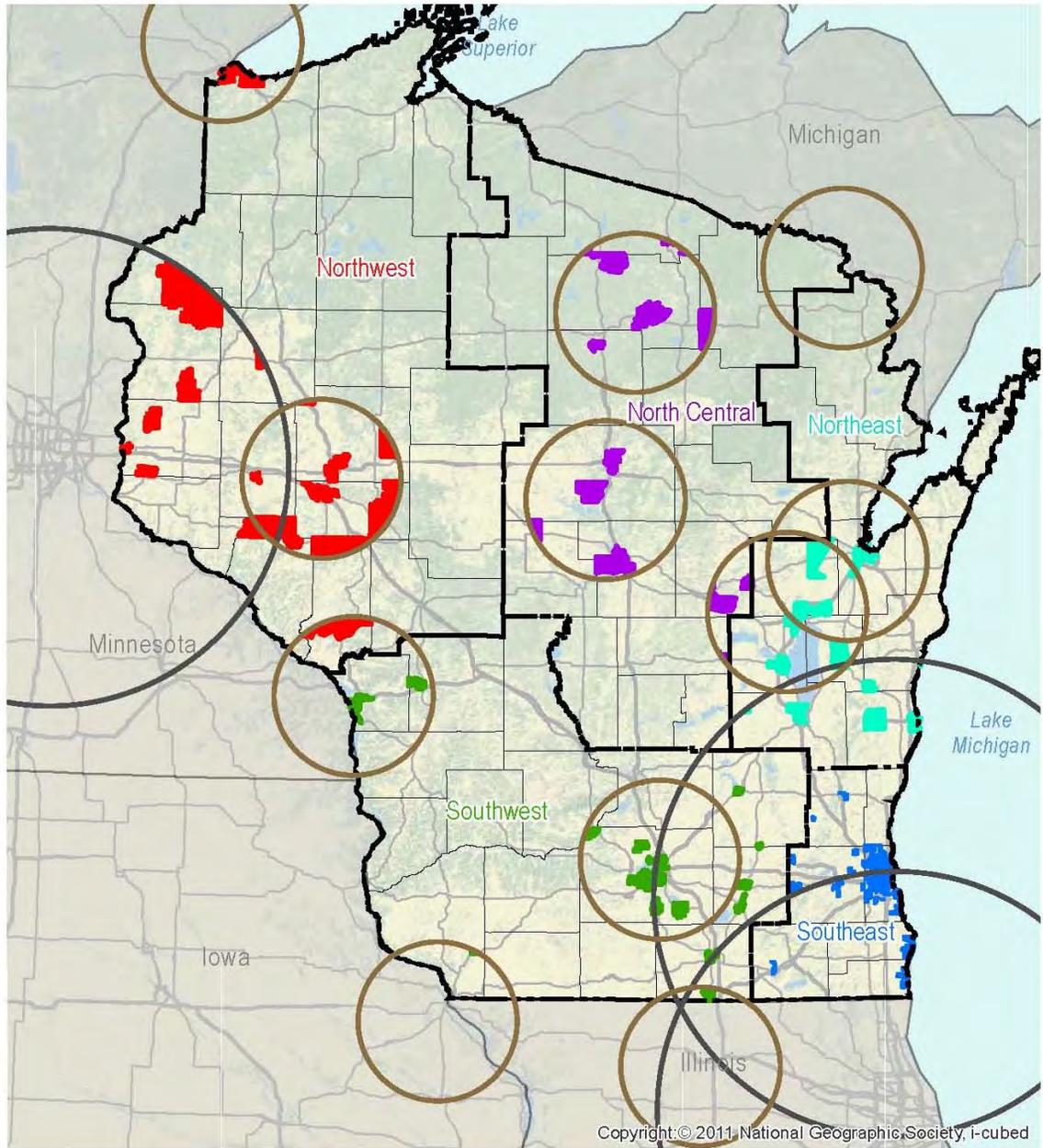
DOT Region

- North Central (11.28%)
- Northeast (9.68%)
- Northwest (12.54%)
- Southeast (13.42%)
- Southwest (11.75%)

0 12.5 25 50 Miles
Source: WISDOT, ESRI, WisDNR, Willbur Smith Associates



Figure 8-9 – Census Tracts that Exceed the 0 Vehicles Threshold



Tracts exceeding Regional Threshold

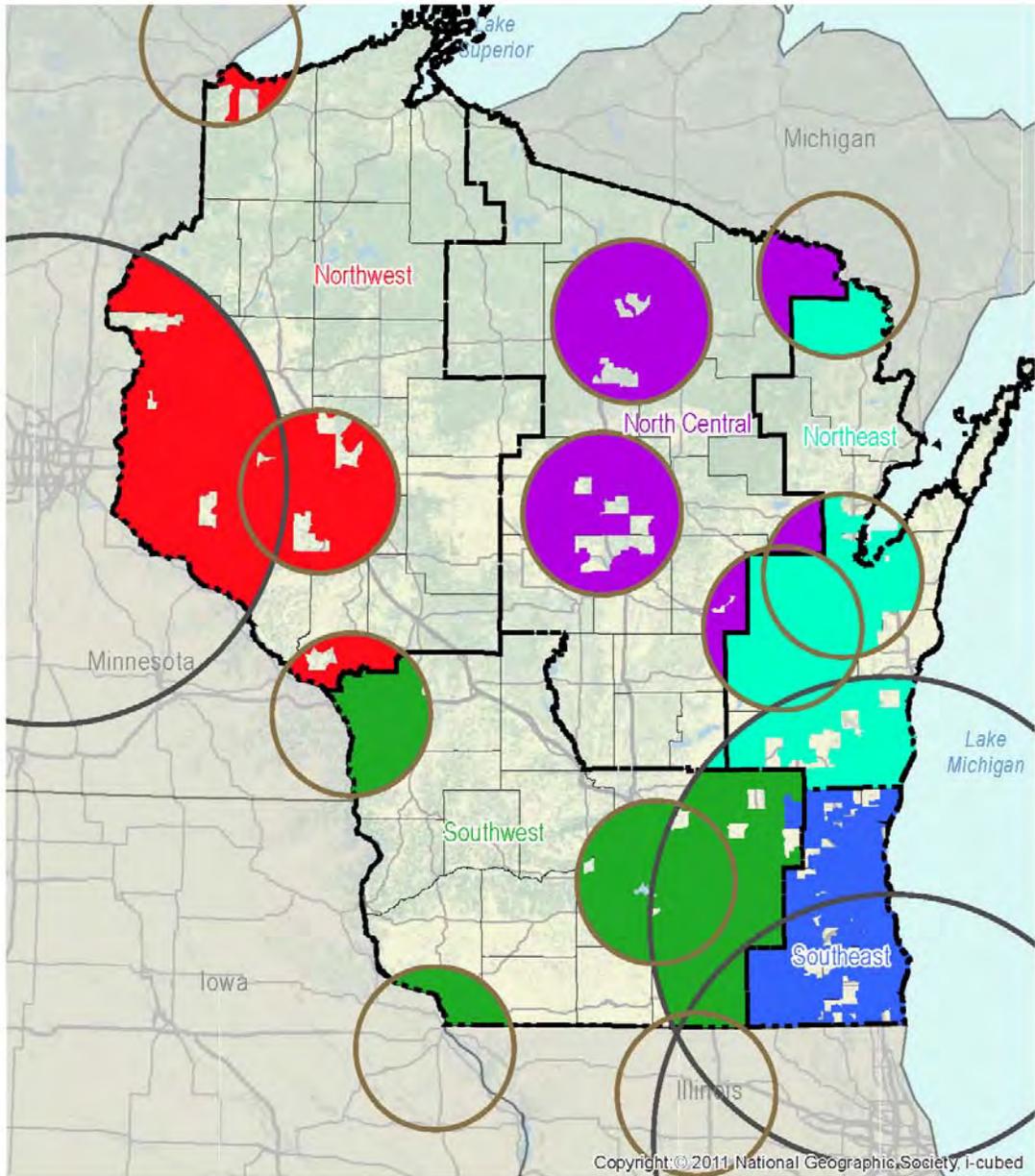
DOT Region

- North Central (5.12%)
- Northeast (5.40%)
- Northwest (5.32%)
- Southeast (9.12%)
- Southwest (6.17%)

0 12.5 25 50 Miles
Source: WISDOT, ESRI, WisDNR, Wilbur Smith Associates



Figure 8-10 – Census Block Groups or Tracts With Any Environmental Justice Population Above the Region Threshold



Tracts exceeding Regional Threshold

DOT Region

- North Central
- Northeast
- Northwest
- Southeast
- Southwest



0 12.5 25 50 Miles

Source: WISDOT, ESRI, WisDNR, Wilbur Smith Associates



Figures 8-2 through **8-5** depict the census block groups that exceed the WisDOT region thresholds for black, American Indian, Asian, and Hispanic populations.

When considering the black population alone (see **Figure 8-2**), Madison has the highest percentage of census block groups exceeding the region threshold with 132 of the 376 (35.1 percent) census block groups above the region average. La Crosse had the lowest percent for a Wisconsin airport with 8.1 percent of the census block groups exceeding the five regional black population thresholds. It should be noted that the Rockford Airport (Illinois) has a higher percentage (86.5 percent) of the census block groups in Wisconsin above the threshold and the Iron Mountain – Kingsford Airport (Michigan) had the lowest, but these airports are located outside the jurisdiction of WisDOT.

The percentage of census block groups with American Indian populations exceeding the region threshold is illustrated in **Figure 8-3**. According to the census data, for airports located within Wisconsin, the General Mitchell International Airport study area has the highest percentage of census block groups exceeding the regional average with 756 of the 2,249 (33.6 percent) block groups above the threshold. The Duluth International Airport (Minnesota) had a higher percentage (61.1 percent), but this airport is located outside of Wisconsin, and only a small area of the airport study area falls within the state. Eau Claire, followed by Mosinee, had the lowest percentages of census block groups exceeding the region threshold with only 1.3 percent and 2.3 percent, respectively.

The census block group data that exceeds thresholds for the Asian population is shown in **Figure 8-4**. The highest percentage of block groups exceeding the region threshold is found in the area surrounding Mosinee where nearly 53 percent of the census block groups in the airport study area have a percent of Asians above the region average. Eau Claire is a close second with 51.6 percent of the block groups above the threshold. On the contrary, the Rhinelander study area had no block groups exceeding the region threshold. The Iron Mountain Kingsford Airport, which is located outside of the state, also had no block groups in Wisconsin exceeding the region threshold.

When considering the census data for Hispanic individuals, the highest percentage of census block groups exceeding the region threshold is found in the Green Bay study area. It should be noted that the Rockford Airport and St. Paul Minneapolis International Airport had a higher percentage (83.8 percent and 40 percent, respectively) but these airports are located outside the jurisdiction of WisDOT. The lowest percentage for an airport located within Wisconsin is found surrounding La Crosse where 4.1 percent of the census block groups in the airport study area exceeded the regional threshold.

For the age group 17 and under (see **Figure 8-6**), the highest percentage of census block groups for a Wisconsin airport study area above the region threshold is found surrounding Green Bay, where 242 of the 397 (64.5 percent) census block groups exceed the region threshold. The lowest percent occurs around Rhinelander with only 17.8 percent of the census block groups above the region threshold. In comparison, the age 65 and older population has the highest percentage of census block groups above the region threshold located near Rhinelander, with 58 of the 73 (79.5 percent) census block groups above the region threshold (see **Figure 8-7**). The lowest percentage of block groups with age 65 and older populations above the region threshold occur at Mosinee with 21.5 percent of the block groups.



According to the census data and as shown in **Figure 8-8**, there are 53 of the 124 (42.7 percent) census block groups in the Green Bay study area above the regional poverty level threshold. Other airports with high percentages of census tracts above the WisDOT region threshold include: La Crosse (16 out of 38 tracts or 42.1 percent) and Rhinelander (13 out of 31 tracts or 41.9 percent). Even though the southeast region has the highest number of individuals living below the poverty level (see **Table 8-4**) and the General Mitchell International Airport study area has the highest number of census tracts above the region threshold (273 tracts), the actual percentage of census tracts (37.8%) above the threshold was slightly lower than several other airports. This is primarily due to the larger study area (723 total census tracts) and the presence of a large suburban area. The Oneida Indian Reservation lies within the study area for Green Bay, and a portion of the tribal land is identified as being above the northeast region threshold.

The greatest percentage of households with zero vehicles is located in the airport study area associated with Eau Claire, where nearly 44 percent (21 of the 48 tracts) were above the region threshold for zero-vehicle households. Milwaukee in the southeast region was also relatively high with 285 of the 723 census tracts (over 39 percent) of reported households were above the no vehicle threshold (see **Figure 8-9**). Rhinelander has the fewest tracts exceeding the region threshold with only eight census tracts (25.8 percent) above the region threshold for zero-vehicle households.

Figure 8-10 illustrates a culmination of all the census block groups and/or census tracts within the airport study areas that have at least one environmental justice population above the region threshold. As shown in **Figures 8-2** through **8-9**, the census tracts and block groups exceeding the thresholds vary in distribution across the state. It should also be mentioned that environmental justice populations exist outside of the airport study areas and could be viewed as not having convenient access to commercial air service. These areas may have other shuttle, air charter or air taxi services at smaller airports across the state that have the potential to provide the missing connections to these areas.

Overall, the data indicates that there are environmental justice populations located within close proximity to all the medium/large hub and small non-hub airports in the state. Furthermore, it should be noted that several airports located outside Wisconsin (e.g. MSP, Duluth, Dubuque, Rockford, O'Hare, and Iron Mountain – Kingsford) have study areas that extend into the state and could potentially impact and serve environmental justice populations residing in Wisconsin.

8.4.2 Census Data Limitations

The analysis described above has notable limitations for determining where specified populations are currently located. These limitations include:

- The 2010 Census Bureau data is the most current statewide information available for the population categories used in this analysis.
- The environmental justice thresholds are based on population averages for each of the WisDOT regions. As a result, there are cases where a census block group found in a rural area exceeds the regional threshold for a particular environmental justice population, even though there are only a small number of persons of that particular environmental justice population living in that area. On the other hand, in highly urbanized areas, like Milwaukee,



Madison, and their surrounding suburban areas, some census block groups may not exceed a threshold even though there are relatively high numbers of persons of environmental justice populations living in these areas as compared to the less populous regions.

- Census tract level data was used instead of census block group data for populations below the poverty level and zero-vehicle households because it was the smallest geographic area in the state for these categories.
- Population projections are not available for race, ethnicity, income or number of household vehicles. For this reason, the analysis does not account for changes in environmental justice populations over the implementation timeframe of the SASP. These future population changes may result in fewer or more census block groups being identified that would exceed an established threshold.

While there are limitations, the analysis provides a basis for evaluating the SASP recommendations and their relationship to environmental justice populations. As a system-level plan, the threshold methodology locates concentrations of the specified group based on population density. This method is appropriate for a state-level plan like the SASP.

8.5 Assessment of Potential Impacts to Environmental Justice Populations Resulting from the SASP

In the context of environmental justice, if an improvement is deemed technically feasible from an engineering standpoint and likely to be economically efficient, another criterion warrants consideration: Will it be environmentally just? This section provides an overview of the potential for the SASP to create a disproportionately high and adverse impact on minority, low-income, children (age 17 and under), seniors (age 65 and older), and zero-vehicle household populations. A disproportionately high and adverse impact, as defined by the executive order, means the totality of individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to:

- Bodily impairment, infirmity, illness or death
- Increased air, noise, or water pollution, or soil contamination
- Destruction or disruption of man-made or natural resources
- Destruction or diminution of aesthetic values
- Destruction or disruption of community cohesion or a community's economic vitality
- Destruction or disruption of the availability of public and private facilities and services
- Increased vibrations
- Adverse employment effects
- Displacement of persons, businesses, farms or non-profit organizations
- Increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community
- Denial of, reduction in, or significant delay in the receipt of benefits of U.S. DOT programs, policies, or activities



It is important to note that the word “environmental” is given an appropriately broad interpretation in the executive order. The term applies to the physical environment (water quality, air quality), the “built environment” (the setting where people live, work and recreate), and human health.

This analysis evaluates the recommended improvements discussed in **Chapter 7** of the SASP to determine whether there is the potential for disproportionately high and adverse effects to environmental justice populations when compared to the entire population in a given airport study area (within 75 miles of medium/large hub airports and 25 miles of small/non-hub airports). For purposes of this analysis, only recommended projects from the SASP that would likely have an off-airport impact were considered. There are several other policy, administrative and on-airport infrastructure improvement recommendations in the SASP, but these improvements are not likely to affect populations outside the airport property. However, as stated previously, the analysis conducted for the SASP is not intended to replace a more detailed individual project analysis.

The recommended system improvements from **Chapter 7** that have the potential to result in off-airport impacts have been grouped into two broad categories to assess potential “direct” or “indirect” impacts on environmental justice populations.

- **Direct Impact Improvements:** Regardless of airport location, size, or type of services provided, this category of improvement has the potential to directly impact all divisions of the population, including minority and low-income residents. The likely need to acquire property (including the potential for total acquisition and relocation of residential or commercial buildings to accommodate these types of improvements) poses the risk of creating disproportionately high or adverse effects on an environmental justice population. According to the 2010 U.S. Census data, and illustrated on **Figures 8-2** through **8-9**, environmental justice populations may exist in close proximity to several of the medium/large hub and small non-hub airports assessed in this study.

Other notable direct effects of these types of airport improvements include, but are not limited to: the potential for increased levels of noise, impacts to natural or man-made resources, increased vibrations, disruption of neighborhood and/or community cohesion, the need to modify the surrounding roadway networks, changes in travel patterns, alterations to the use of historical or cultural properties/traditions and the potential need to relocate existing public or private utilities. This category of recommended improvements includes:

- Runway extensions
- Approach lighting installation
- Approach capability improvement
- Establishment of runway safety areas
- Runway approach surface clearing
- Runway protection zone (RPZ) ownership



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- **Indirect Impact Improvements:** This category of airport improvements has the potential to impact a subsequent action that occurs later in time or farther in the distance. Indirect impacts include changes to the pattern of development (land use), population density or growth rate, long-term economic impacts, and related impacts on air and water and other natural systems, including ecosystems.

The Council on Environmental Quality (CEQ) defines indirect impact into three typical categories:

1. Alternation of the behavior and functioning of the effected environment caused by the physical, chemical and/or biological encroachment on the environment;
2. Project-influenced development effects (i.e. land use patterns); and
3. Effects related to project influenced development effects (i.e. effect of the changes in land use patterns on the human and natural environment).

Determining if a specific segment of the population (e.g. environmental justice populations) would receive more severe indirect impacts, or of a greater magnitude than any other segment of the population can be challenging and may not be supported with quantitative results. Furthermore, one must consider the totality of the impacts when combined with the mitigation commitments and benefits that will be realized by the affected population(s).

Establishing and implementing land use zoning ordinances and height limitation zoning ordinances are commonly created using an overlay zoning district that could impact off-airport properties. The standards and limitations under an overlay zoning district could cause changes to the planned growth to occur in a slightly different configuration than previously anticipated. This could create either beneficial or adverse impacts on surrounding neighborhoods and environmental justice populations. Defining these impacts requires a rational assessment using a variety of qualitative and quantitative techniques. The focus for assessing indirect impact improvements is to examine what is anticipated to occur from the proposed action, based on known information and data, while avoiding speculative conclusions.

8.5.1 Sequencing/Mitigation

WisDOT has an established impact sequencing process or measures to avoid, minimize and mitigate adverse impacts that can occur during the project development process. Avoidance measures include the type, size, location and associated operations of an improvement. During the project scoping phase (early planning and design activities) of a project, a high-level review is conducted to assess the potential for adverse impacts. If it is determined that adverse impacts are unavoidable, the next step in the sequencing process is to consider minimization measures. Examples of minimization measures include, but are not limited to, airport site or feature design modifications (type/size), minor shifts in the location of the proposed airport facility, and the variation in types of technology or construction materials used. Mitigation, the last step in the implementation of sequencing, can come in many forms including operating restrictions, financial compensation and the addition of other project elements to offset adverse impacts.



The sequencing process and mitigation commitments will vary greatly from one project to another. However, WisDOT's process and level of coordination and commitments do not vary based on the populations affected by a particular project. Environmental justice populations are guaranteed equal access to public information concerning human health or environmental effects, and the assortment of offsetting benefits (mitigation opportunities) shall be accessible to all persons regardless of socio-economic status.

8.6 Next Steps

This analysis has provided a high-level review and assessment of potential impacts resulting from SASP recommendations on potential environmental justice populations. The SASP also provides the long-term guiding principles for WisDOT's airport investment objectives and strategies. According to this system-level analysis, the objectives, strategies, and recommendations outlined in the SASP do not appear to result in any inherent disproportionate negative impacts on minority, age 65 and older, age 17 and younger, low-income, or zero-vehicle household populations. **Chapter 7** identifies improvement-specific and programmatic recommendations that will need to be further reviewed and justified at the local level prior to their actual implementation. Additional environmental justice analyses will be conducted at the project level during project environmental review to ensure a specific airport project, policy, or program does not result in disproportionately high and adverse human health or environmental effects. Implementing the individual actions identified in the SASP may impact the environment and communities (see **Chapter 9** for more information) and in some instances these will be determined to be unavoidable impacts. However, in all instances, WisDOT is committed to working through the sequencing process in order to avoid, minimize and mitigate any negative impacts.

The WisDOT Division of Investment Management and Bureau of Aeronautics will continue to strengthen its commitment to developing air travel infrastructure and operations that are readily accessible to all persons and are compatible to the surrounding built and natural environments. In all such endeavors, WisDOT will work closely with the relevant social and economic communities and will seek to ensure that information in the planning, design and construction phases of the project development process are shared with all populations in an open and cooperative manner.

8.6.1 Public Outreach Activities

WisDOT's well-defined outreach activities are intended to allow for input and guidance to the planning process. They are also intended to achieve the public's consent on the SASP purpose and needs highlighted in the plan and to maintain the public's trust in the project development process. A key part of that trust is ensuring that everyone, regardless of income, age, or ability, has the opportunity to be heard throughout all phases of the planning and decision-making process. WisDOT has drafted a guidebook titled "Public Involvement Best Practices" that provides a review of public involvement tools used for transportation projects. The guide includes recommendations on the use of each tool including those that may be most appropriate to reaching environmental justice populations. A copy of the guidebook is available at: <http://roadwaystandards.dot.wi.gov/standards/mega/mg-pub-invol.pdf>.



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