



Environment

CHAPTER 12



Environment

Introduction

This chapter explains how environmental considerations were incorporated into the DMATS 2055 Long Range Transportation Plan (LRTP). While not a project-level environmental document, the LRTP establishes a framework to identify sensitive areas, consider social and natural resource effects, and support informed decision-making as projects advance.

It describes the planning-level approach for addressing environmental review, mitigation, and agency and stakeholder consultation. The chapter also summarizes screening methods to identify potential environmental concerns in fiscally constrained projects. These efforts support a transportation system that meets regional needs while upholding environmental stewardship, community values, and regulatory requirements.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) is the federal environmental review process for transportation projects seeking federal funding, approval, or other involvement. Although the MPO long-range transportation plan is not a

project-level NEPA document, it forms a planning foundation by identifying needs, priorities, and potential environmental considerations early. This supports informed decision-making and improves coordination as projects advance into more detailed review. Figure 12.1 illustrates the NEPA decision process for a project.

NEPA links to MPO planning by addressing environmental, community, and economic issues early in long-range planning and documenting this work to inform future project development. Early coordination, public engagement, analysis, and clear documentation help the MPO lay a stronger foundation for future project-level review, without replacing the separate NEPA process.

Levels of Environmental Analysis

NEPA review generally falls into three levels of analysis depending on the likely significance of a project's environmental effects:

- A Categorical Exclusion (CE) applies to actions that normally do not result in significant impacts.
- An Environmental Assessment (EA) is used when impacts are uncertain or expected to be limited.
- An Environmental Impact Statement (EIS) is required for projects expected to have significant environmental effects.

Together, these levels determine the amount of analysis, documentation, coordination, and public involvement needed as transportation projects move from planning into development. If environmental analysis and interagency review during the EA process finds that a project will have no significant impacts on the quality of the environment, a finding of no significant impact (FONSI) is issued. If significant impacts are found, an EIS is prepared.

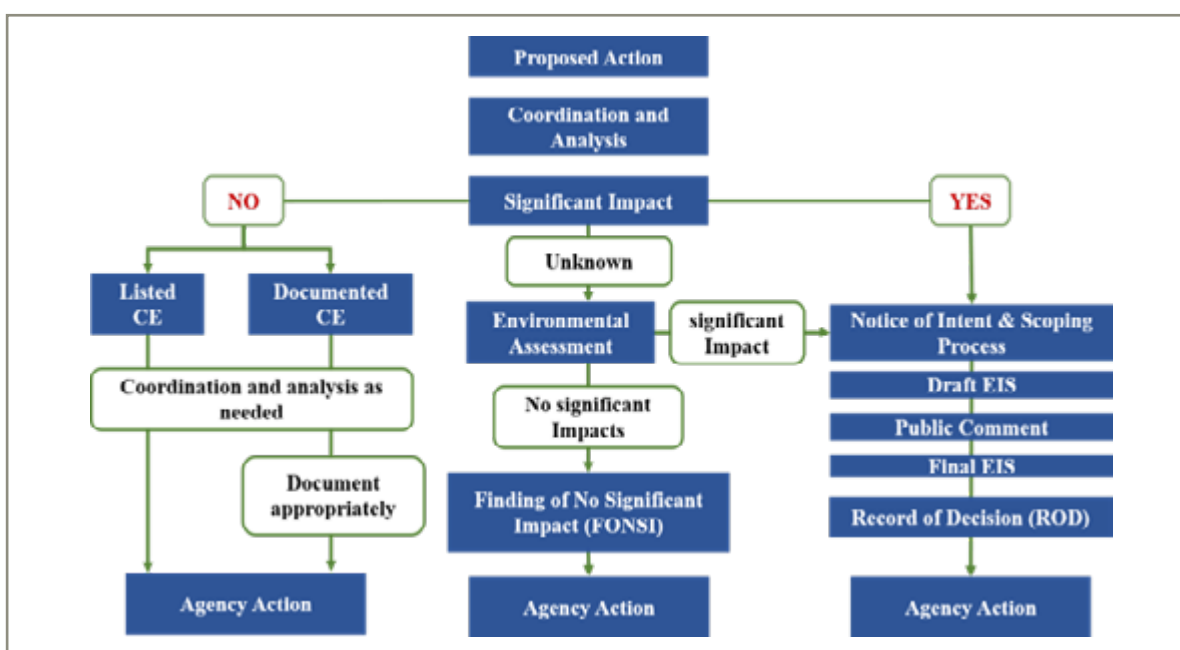


FIGURE 12.1

NEPA Document Decision Process

Source: U.S. Environmental Protection Agency

Environmental Impact Screening

A planning-level environmental screening identifies potential issues early, before a project enters design and NEPA review. Conducted as part of a Long Range Transportation Plan or similar effort, this screening enables local governments and project sponsors to recognize conflicts with sensitive areas, consider if impacts can be avoided or reduced, and make informed project decisions.

Because the LRTP is regional, this screening does not provide detailed project by project analysis. Instead, it highlights areas where future projects may need closer study during NEPA and other review processes. Roadway projects generally have greater potential impacts depending on location and scale, while bicycle, pedestrian, and most transit improvements typically have smaller footprints and fewer environmental effects.

Title VI

The U.S Department of Transportation's (USDOT) Title VI regulations require that all programs which receive funding from the Federal Highway Administration (FHWA) and/or Federal Transit Administration (FTA) must comply with Section 601 of Title VI of the Civil Rights Act of 1964, which states:

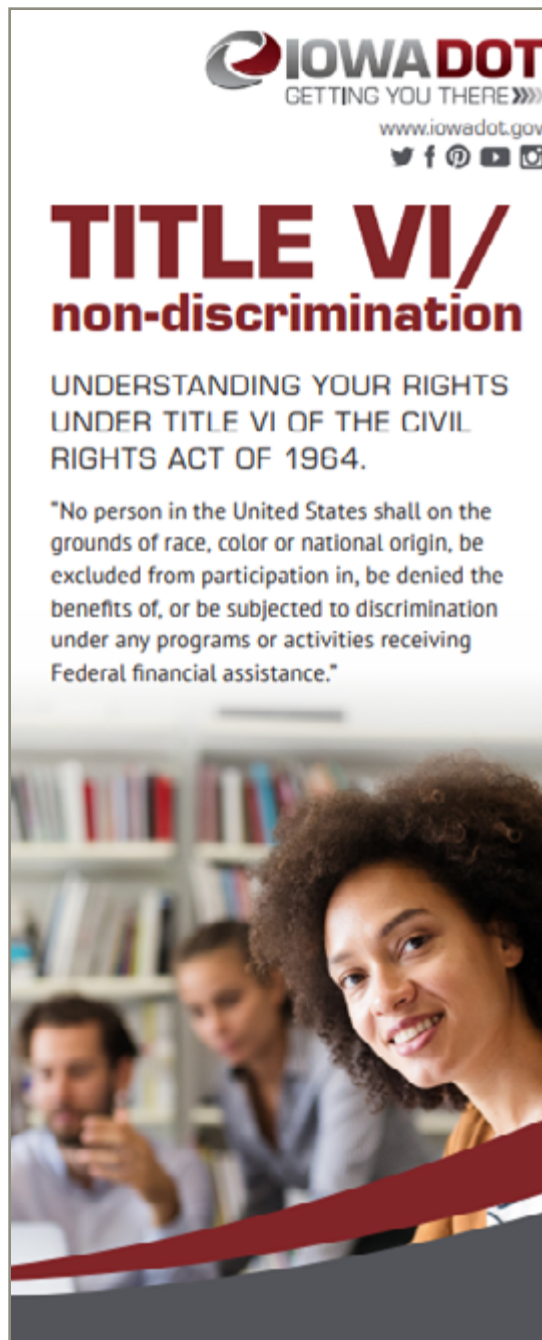
NO PERSON IN THE UNITED STATES SHALL, ON THE GROUNDS OF RACE, COLOR, OR NATIONAL ORIGIN, BE EXCLUDED FROM PARTICIPATION IN, BE DENIED THE BENEFITS OF, OR BE SUBJECTED TO DISCRIMINATION UNDER ANY PROGRAM OR ACTIVITY RECEIVING FEDERAL FINANCIAL ASSISTANCE.

As recipients of federal transportation funds, MPOs must comply with Title VI and related nondiscrimination requirements. In practice, this means long-range transportation planning should emphasize fair access, inclusive public engagement, language accessibility, and careful attention to whether transportation investments distribute benefits and burdens fairly across the region.

The assessment incorporated in this LRTP update is based on three basic principles derived from US DOT guidelines:

- The planning process should minimize, mitigate, or avoid environmental impacts (including economic, social, and human health impacts) that affect minority and low-income populations with disproportionate severity.
- The benefits intended to result from the transportation planning process should not be delayed, reduced, or denied to minority and low-income populations.
- Any community potentially affected by outcomes of the transportation planning process should be provided with the opportunity for complete and equitable participation in decision-making.
- These principles apply to all programs, policies, and activities, including:
 - Transportation planning decisions, including policy decisions and funding decisions.
 - Environmental review associated with project development and the National Environmental Policy Act, or NEPA.
 - Preliminary design and final design engineering of projects.
 - Right-of-way, construction; and Maintenance and operations.

Additional information on this topic can be found in the DMATS Title VI Non-Discrimination Program Plan.



Environmental Mitigation

DMATS seeks to reduce the negative effects of transportation projects on the natural and built environment while preserving quality of life. The level of mitigation needed will vary based on the type of project and the severity of its expected impacts. Projects such as new roadways or roadway widening may require more extensive mitigation, while projects such as resurfacing, lighting, or intersection improvements often involve fewer impacts. To help determine the appropriate response for each project, DMATS uses the following three-step mitigation process:

- Identify and confirm environmentally sensitive areas throughout the project study area.
- Determine how and to what extent transportation projects will affect these environmentally sensitive areas.
- Develop and review appropriate mitigation strategies to lessen the impact of these projects on the environmentally sensitive areas.

To effectively mitigate environmental impacts, it is essential to know how federal regulations define mitigation:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments. (Source: 40 CFR 1508.20)

An ordered approach to mitigation, known as “sequencing,” involves understanding the affected environment and assessing transportation effects throughout project development. Effective mitigation starts at the beginning of the environmental process, not at the end. Mitigation must be included as an integral part of the alternative’s development and analysis process.

Sequencing:

- Avoid
- Minimize
- Repair/Restore
- Reduce Over Time
- Compensate

FHWA's mitigation policy states: "Measures necessary to mitigate adverse impacts will be incorporated into the action and are eligible for Federal funding when the Administration determines that:

- The impacts for which mitigation is proposed actually result from the Administration action; and
- "The proposed mitigation represents a reasonable public expenditure after considering the impacts of the action and the benefits of the proposed mitigation measures. In making this determination, the Administration will consider, among other factors, the extent to which the proposed measures will assist in the compliance with a Federal statute, Executive Order, or Administration regulation or policy." (Source: 23 CFR 771.105(d))

The table 12.1 below details mitigation activities and measures that should be considered when dealing with environmental impacts. Many of the measures are considered by the MPO during the project development phase. Measures considered include construction of sidewalks and bicycle lanes, design modifications to reduce community impacts, and consider noise barriers and landscaping to reduce noise and visual impacts. Figure 12.2 shows US Lock and Dam No. 11 on the Mississippi in the DMATS region, which has major wetlands.

TABLE 12.1 Mitigation Activities and Measures

IMPACTS	MITIGATION MEASURES
Air Quality	• Designate pedestrian/transit-oriented development areas. • Develop project that will reduce delay and over all vehicles hours traveled (VHT) in the metro area
Cultural Resources	• Design modifications to avoid area • Relocation of historical property (Design modification) • Landscaping to reduce visual impacts (Photo documentation) • Historic archival recording to present historic information to the public
Neighborhoods and communities, cultural resources, homes and businesses	• Minimize noise impact with sound barriers • Prevent the spread of hazardous materials with soil testing, well water tests and treatment • Avoid or minimize impact altogether
Communities	• Property owners paid fair market value for property acquired (Residential and commercial relocation)
Farmland	• Protect one to one farmland acre for every acre converted • Agricultural conservation easement on farmland (Compensation)
Wetlands and water resources including streams, lakes and watersheds	• Realign roadway corridors to avoid aquatic resources. Replace or restore wetlands. • Bridge sensitive areas instead of laying pavement directly onto the ground. Improve storm water management for construction and operation of facilities and development associated with projects

IMPACTS	MITIGATION MEASURES
Endangered and Threatened Species	• Time of year restrictions • Construction sequencing • Species research and/or fact sheets • Memorandum of Agreement for species management • Bridge sensitive areas instead of laying pavement directly onto the ground • Design measures to minimize potential fragmenting of animal habitats • Enhancement or restoration of degraded habitat • Creation of new habitat • Establish buffer areas around existing inhabitants • Modifications of land use • Restrictions on land use
Noise	• Depressed roads • Noise barriers • Planting trees
Park Impacts	• Construct bike/pedestrian pathways • Replace impaired functions

**FIGURE 12.2**

US Lock and Dam No. 11

Source: City of Dubuque

Analysis

DMATS staff performed a qualitative environmental screening to assess the potential environmental impacts of the roadway projects recommended for inclusion in the DMATS 2055 LRTP. This analysis consisted of overlaying project locations with mapped sensitive natural and social resource locations.

This screening provides a general understanding of potential environmental impacts during the planning process. As project-specific plans are further developed, more precise environmental assessments will be required. For projects receiving federal funds, the NEPA process must be completed, and other applicable federal and state regulations must be met before any federal funds can be expended for construction. The projects included in the LRTP are at varying stages of development, and for some, additional environmental studies are already underway or have been completed.

The analysis includes two primary objectives:

1. Identify any potential conflicts between the proposed 2055 LRTP projects and key social and environmental resource areas.
2. Assess the nature and degree of the potential conflicts.

Potential Conflicts

The analysis is based on a buffer overlay technique. Staff mapped each project corridor and drew a zone of a specified distance, or buffer, around each one. All project corridors included in the fiscally constrained LRTP are analyzed.

Staff assigned buffer distances based on a corridor's potential impact on the surrounding environment. Corridors with higher speeds and larger traffic volumes are assumed to have a larger impact area and are assigned larger buffer distances. Table 12.2 provides the buffer distances used for the analysis.

TABLE 12.2 Corridor Types and Buffer Distance

CORRIDOR TYPE	BUFFER DISTANCE
Principal Arterials with posted speeds 40 mph or greater	600 ft
Principal Arterials with less than 40 mph	400 ft
All other corridors	200 ft

Corridor buffers were overlaid on mapped indicators of key environmental and social resources. These indicators are summarized in Table 12.3, and Figures 12.3 – 12.14 provide the resulting overlay maps. The screening was performed using those features for which GIS coverage was available and no formal field investigation was conducted as part of this effort.

Potential Impacts

Based on the screening results, each project was assigned a potential impact classification of “Minor,” “Moderate,” or “Major.” These classifications were based on a combination of objective and subjective criteria. These classifications were applied for planning-level screening purposes and do not replace detailed environmental analysis conducted during the NEPA process.

Classifying potential impacts is important because the effects of a project can vary significantly depending on the surrounding land use. For example, roadway widening is typically assumed to be less disruptive to the natural environment than construction on new alignment. However, widening may have greater community impacts depending on right-of-way availability, alignment, adjacent land use, and other factors.

In general, projects involving improvements to existing roadway alignments are expected to have lower impacts than projects on a new or widened alignment. Impacts of projects requiring additional right of way acquisition are anticipated to have greater impacts.

In addition, the following guidelines were used to guide the impact classification process.

Minor Impacts

- Road widening with single small creek crossing
- Road widening near sensitive area

Moderate Impacts

- Road widening with multiple creek crossings
- Road widening through sensitive area
- New alignment with single small creek crossing
- New alignment near sensitive area

Major Impacts

- New alignment along stream
- New alignment with multiple stream crossings
- New alignment through sensitive area
- Road widening or new alignment with numerous impacts

Table 12.4 summarizes the results of the potential impact classification for each project corridor.

Table 12.3

Indicators Used in Screening

FIGURES	ELEMENTS	IMPACT
12.3– 12.4 Floodplain	• 500-year Flood Plain • 100-year Flood Plain • Floodwall Protected	Resurfacing, Restoration, or Rehabilitation projects have a high chance of getting Categorical Exclusion (CE). Capacity Improvements need to go through NEPA process.
12.5-12.6 Environmentally Sensitive Areas	• Conservation Recreation and Public Lands • Underground Storage Tanks • Trails	Resurfacing, Restoration, or Rehabilitation projects have a high chance of getting Categorical Exclusion (CE). Capacity Improvements need to go through NEPA process.
12.7-12.8 Social Facilities	• School • Cemetery • Hospital • Religious Facilities • Cultural Resources	Resurfacing, Restoration, or Rehabilitation projects have a high chance of getting Categorical Exclusion (CE). Capacity Improvements need to go through NEPA process.
12.9-12.10 Poverty	• Household Income by block groups	The average household size in the Dubuque metro area is 2.4 persons per household. The Very Low Income (VLI) for household size of 2.4 people to be eligible for vouchers from the Housing authority is \$42,250. The analysis took into consideration households with income less than \$50,000 as low income and poverty. Most households in poverty are located within downtown Dubuque and John F Kennedy Road. Projects in these areas need to take this into consideration while going through NEPA process.
12.11-12.12 Minority Population	• Percentage of minority population within a block group.	The percentage of minority population is calculated by block group. Projects in areas that have more than 10% minorities need to be given more attention and provide provision for seeking their input Block groups with 10% or more minorities are located within downtown Dubuque, NW Arterial, University Ave and on Pennsylvania Ave. Projects in these areas need to take this into consideration while going through NEPA process.
12.13-12.14 Limited English Proficiency	• Percentage of minority population within a block group	The percentage of Limited English Proficiency (LEP) population is calculated by block group. Projects in areas that have more than 5% LEP population need to do special accommodations for seeking their input. There are no block groups with a concentration of 5% or more LEPs in the metro area. The most predominant LEP areas are located within downtown Dubuque and along NW Arterial.

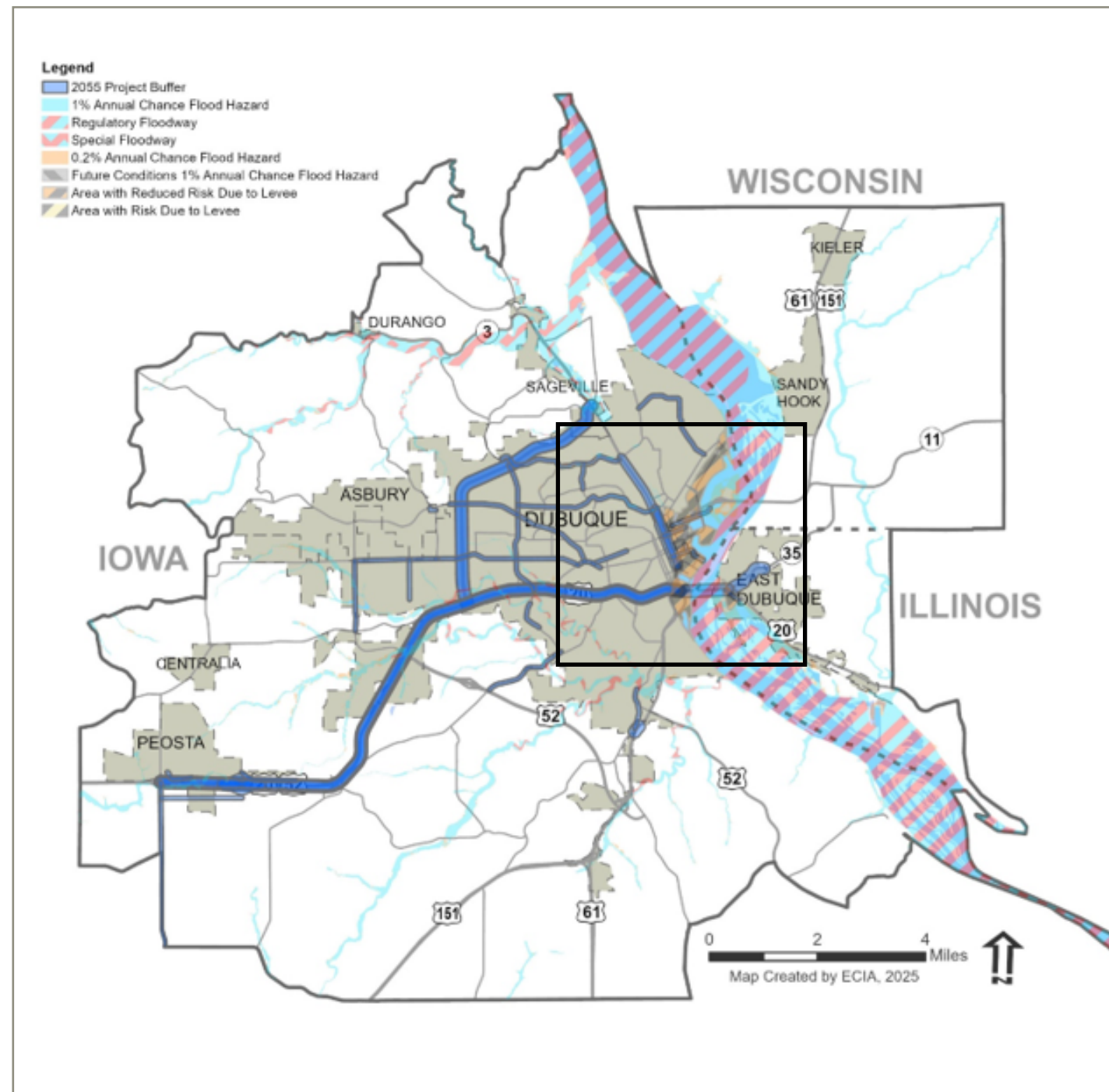


FIGURE 12.3
DMATS Flood Hazard Zones
Source: FEMA National Flood Hazard Layer

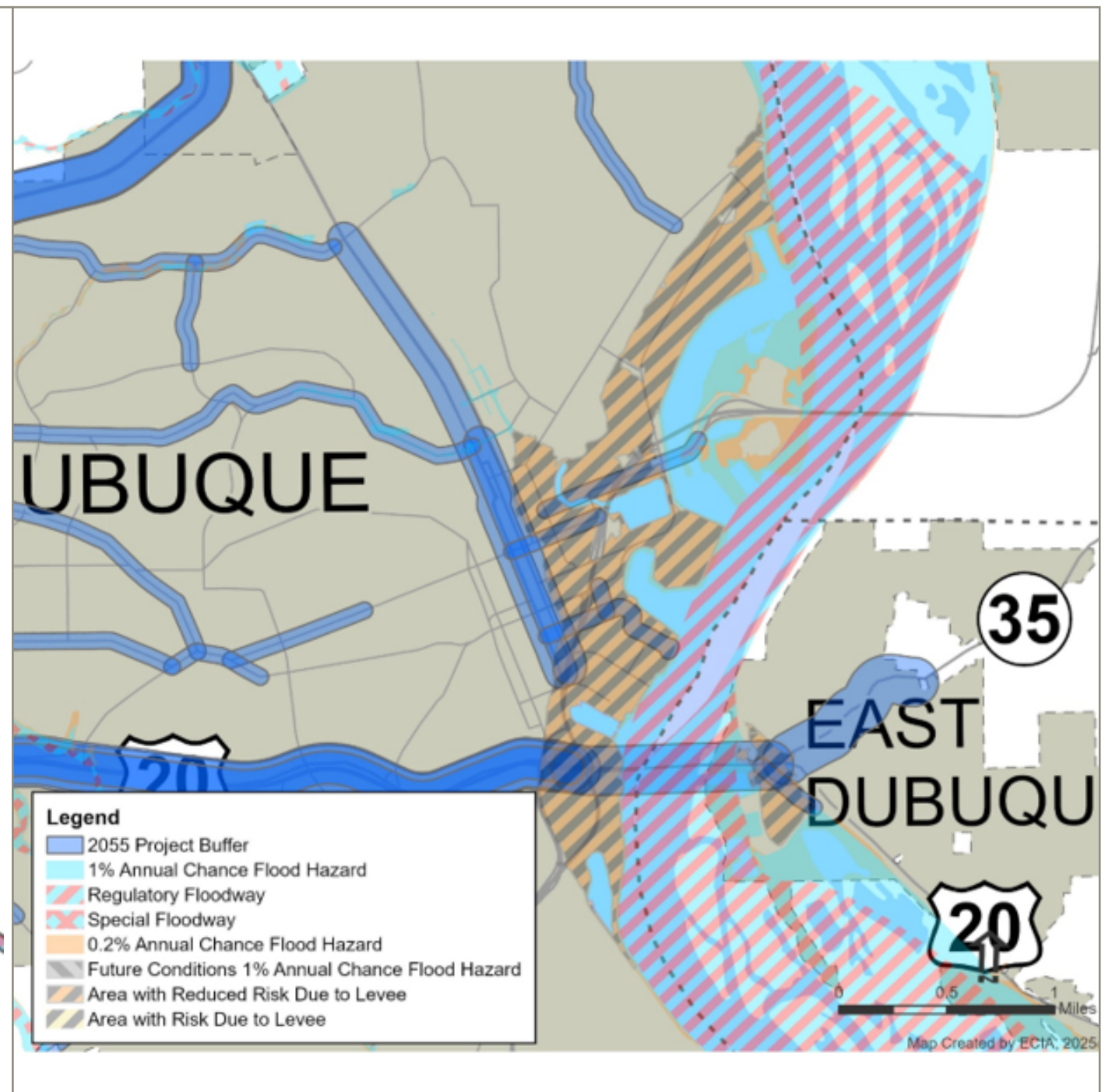


FIGURE 12.4
Downtown Dubuque Flood Hazard Zones
Source: FEMA National Flood Hazard Layer

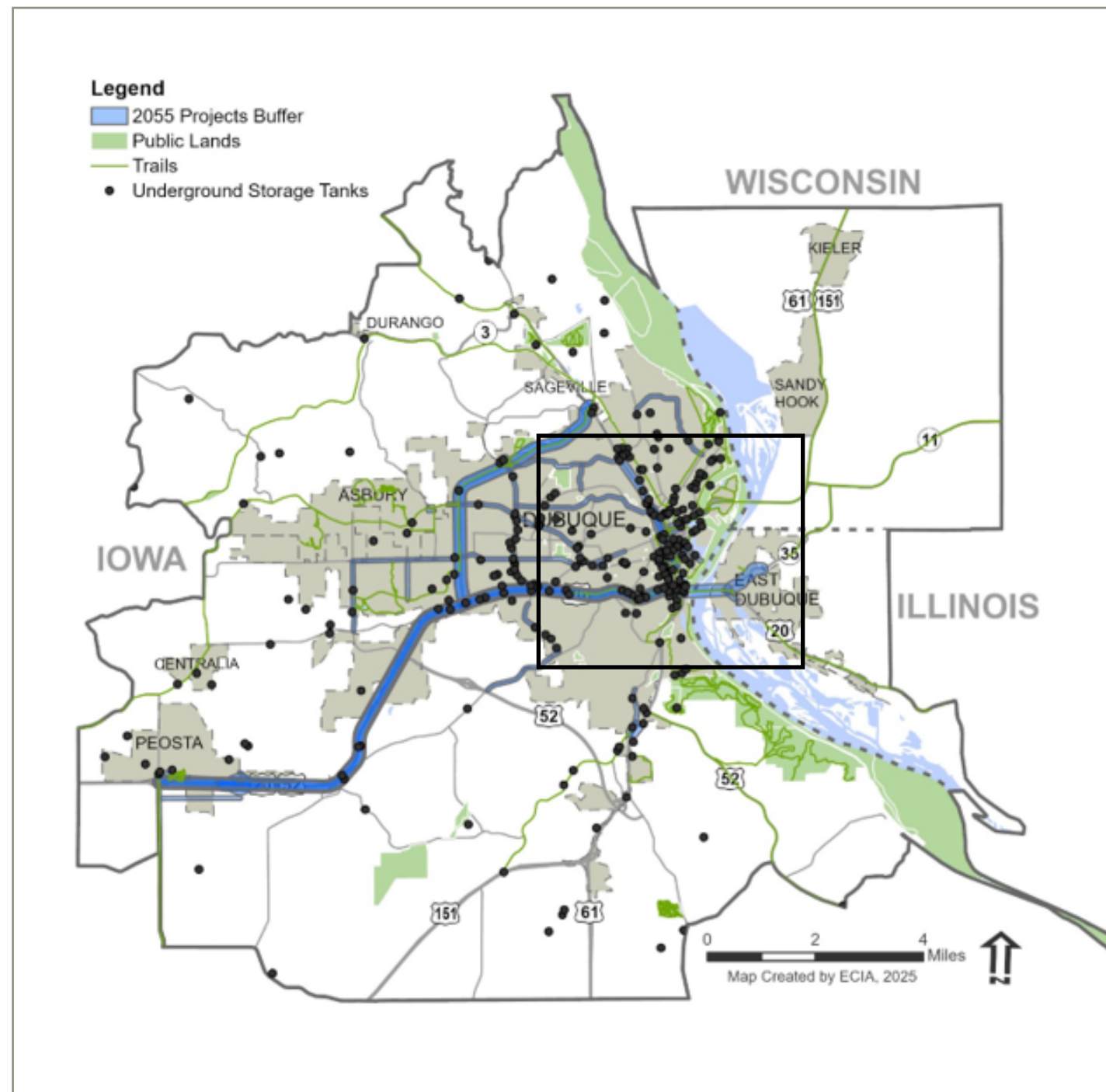


FIGURE 12.5
DMATS Environmentally Sensitive Areas
Source: Iowa DNR, Iowa DOT

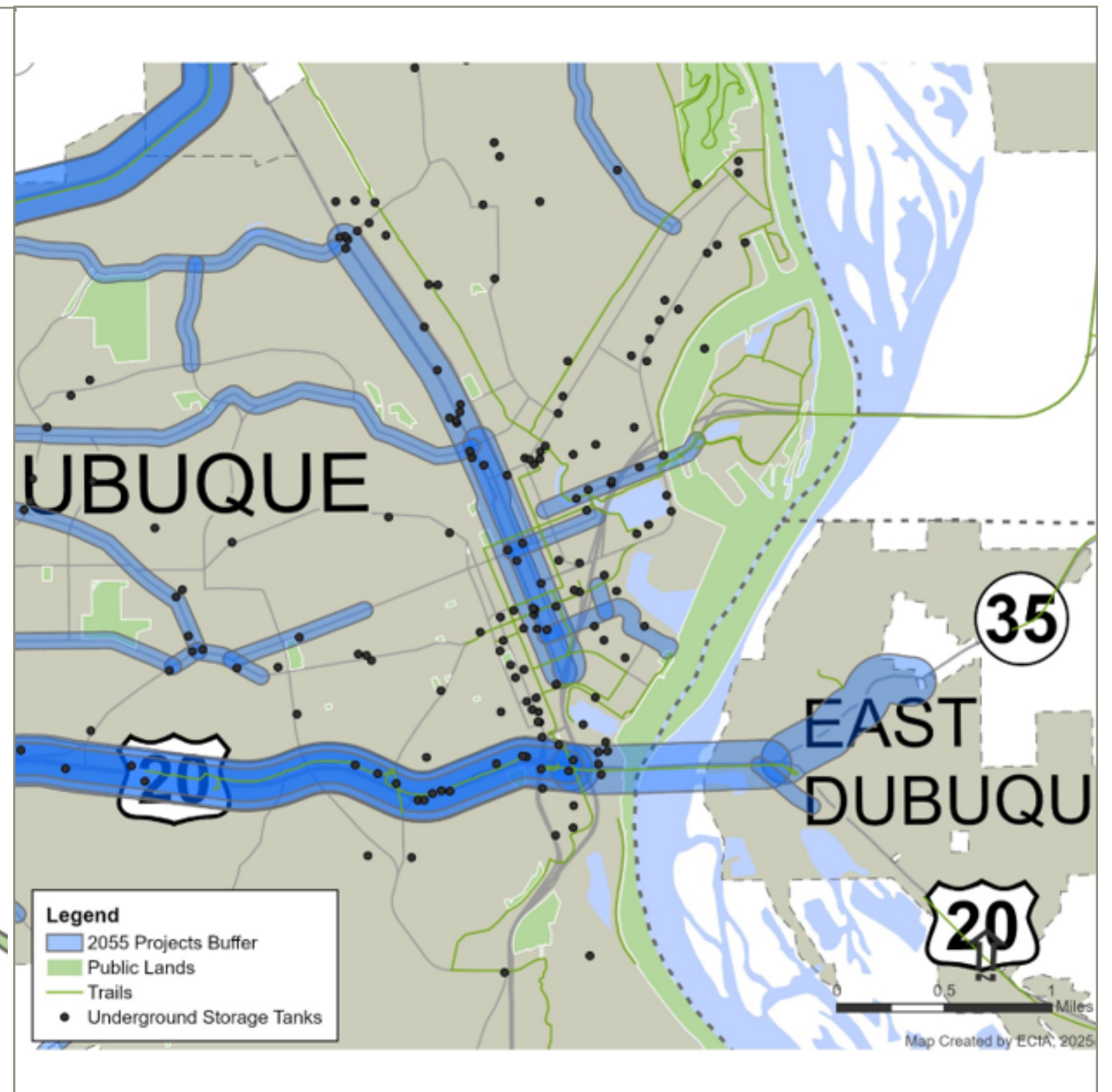


FIGURE 12.6
Downtown Dubuque Environmentally Sensitive Areas
Source: Iowa DNR, Iowa DOT

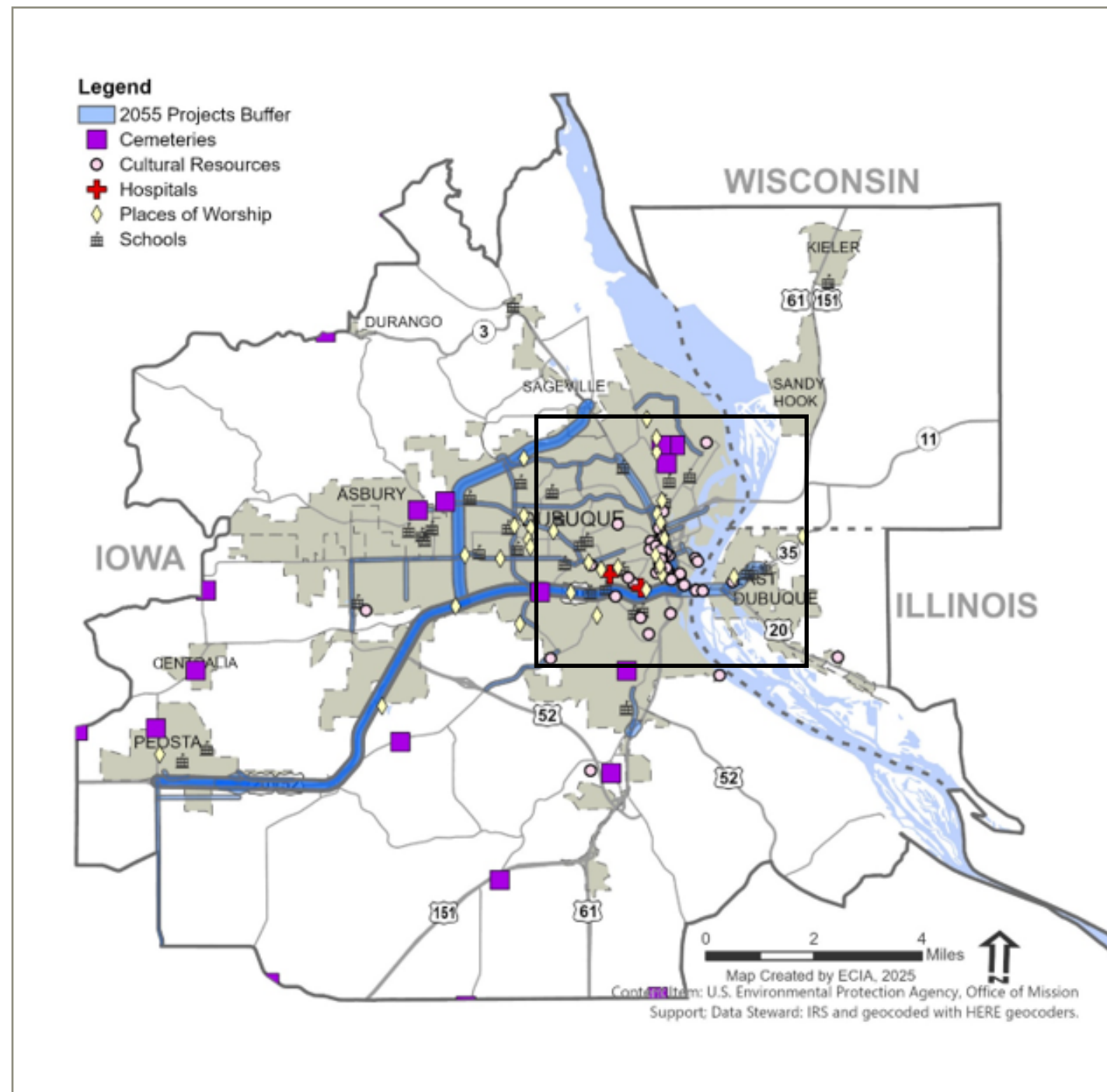


FIGURE 12.7
DMATS Social and Cultural Facilities
Source: ESRI, Iowa Department of Natural Resources, National Register of Historic Places, Iowa Department of Education

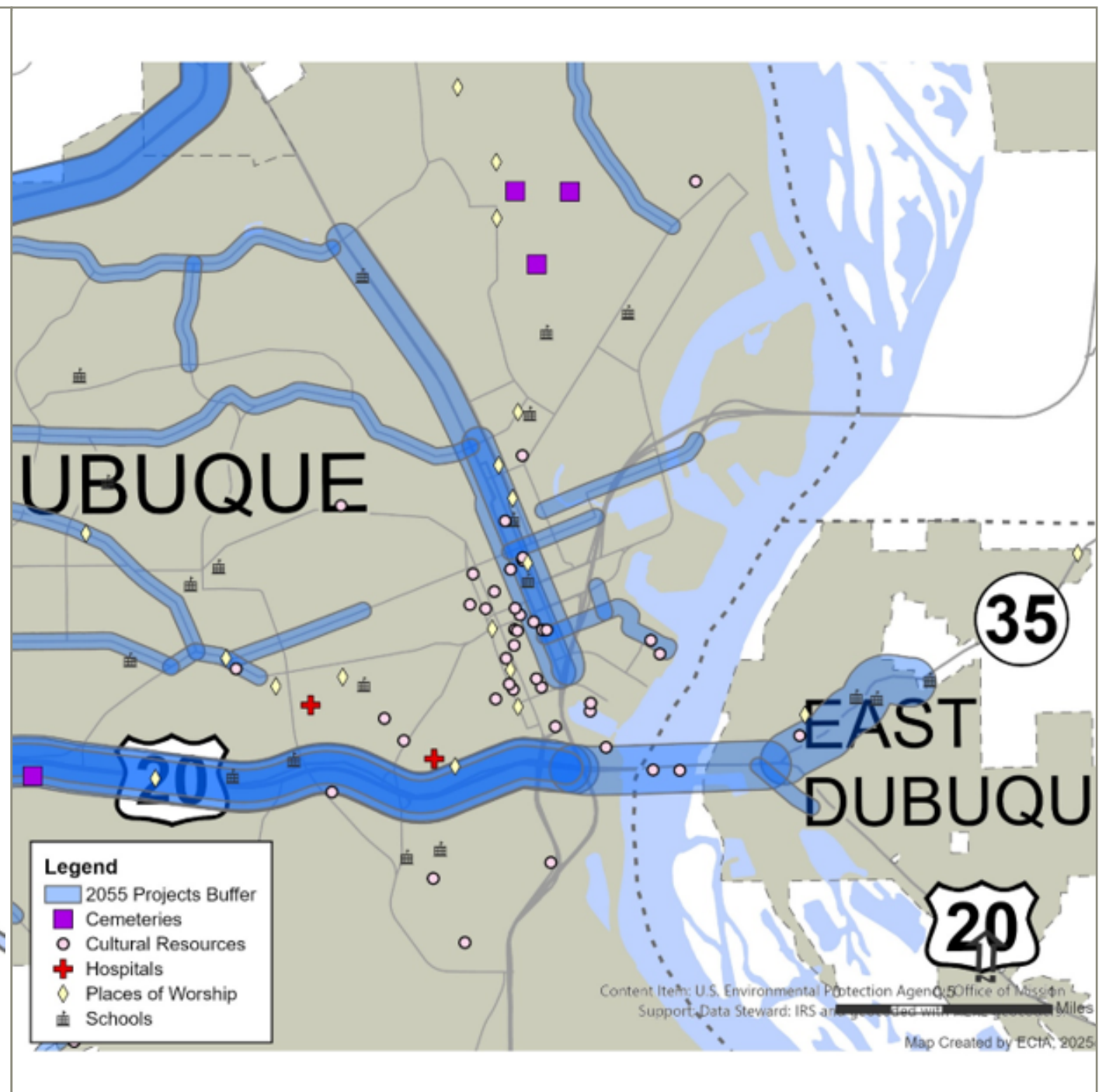


FIGURE 12.8
Downtown Dubuque Social and Cultural Facilities
Source: ESRI, Iowa Department of Natural Resources, National Register of Historic Places, Iowa Department of Education

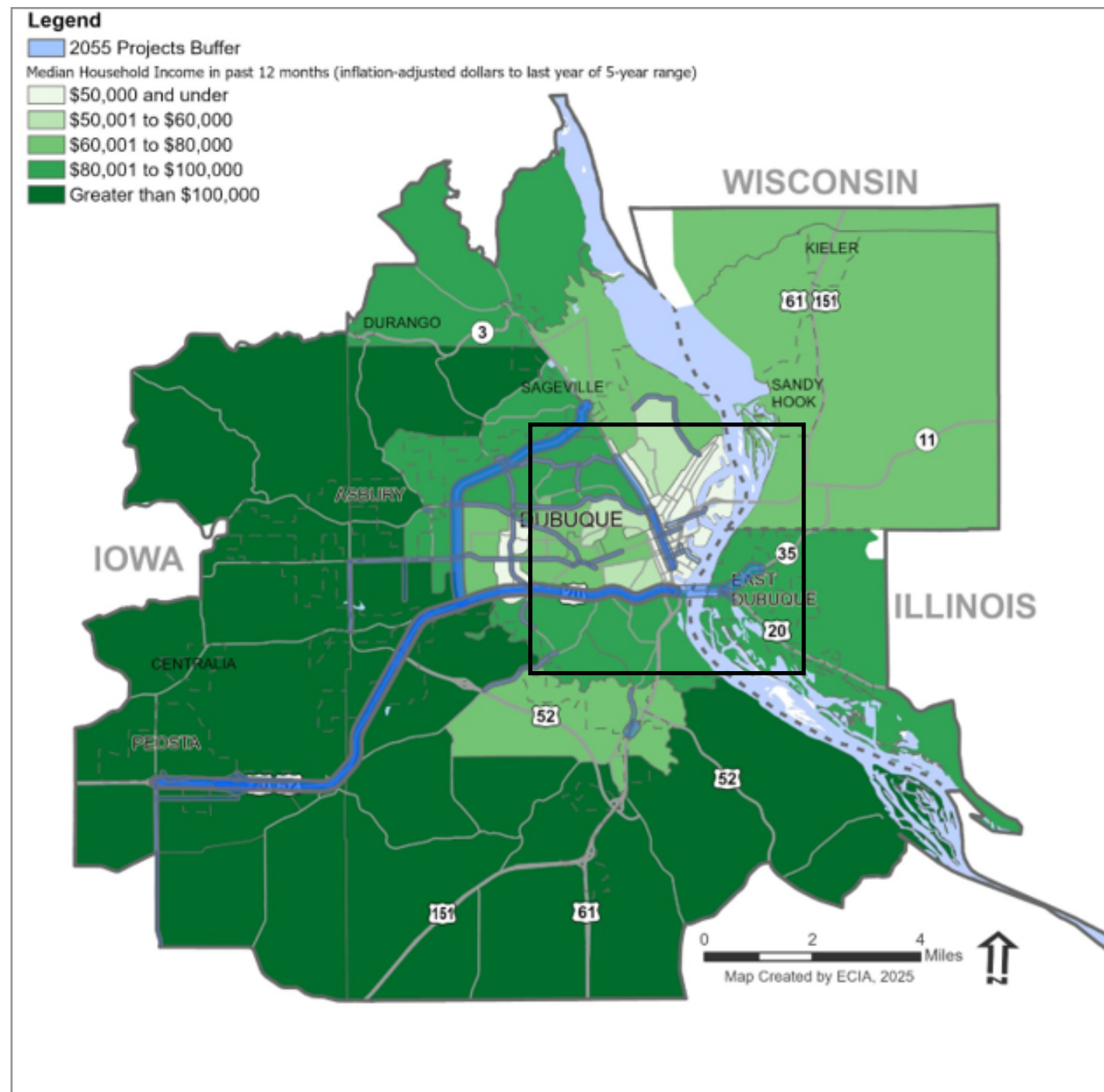


FIGURE 12.9
DMATS Median Household Income
Source: US Census Bureau, 2019-2023 5-Year ACS Estimates, Table B19013

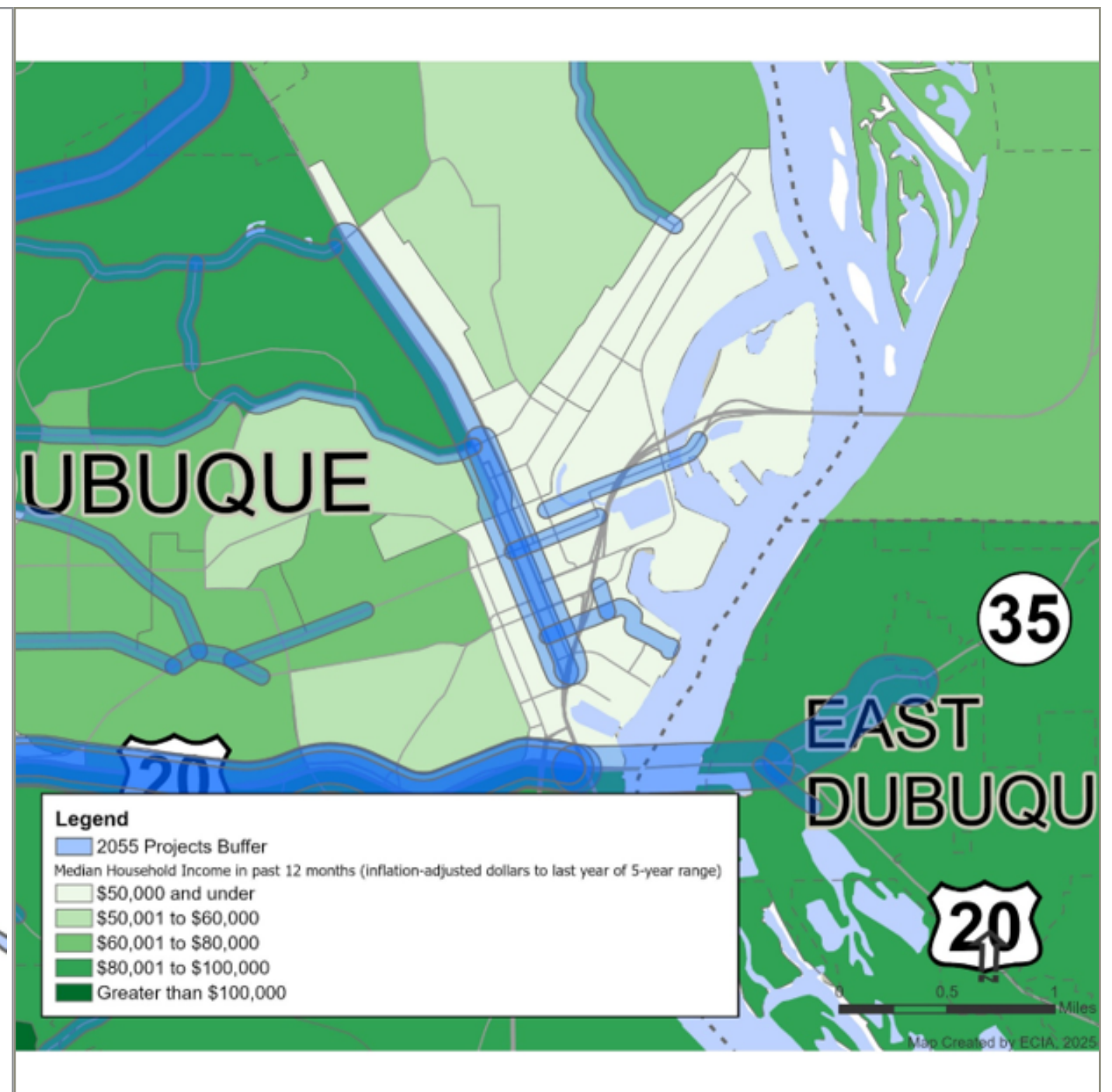


FIGURE 12.10
Downtown Dubuque Median Household Income
Source: US Census Bureau, 2019-2023 5-Year ACS Estimates, Table B19013

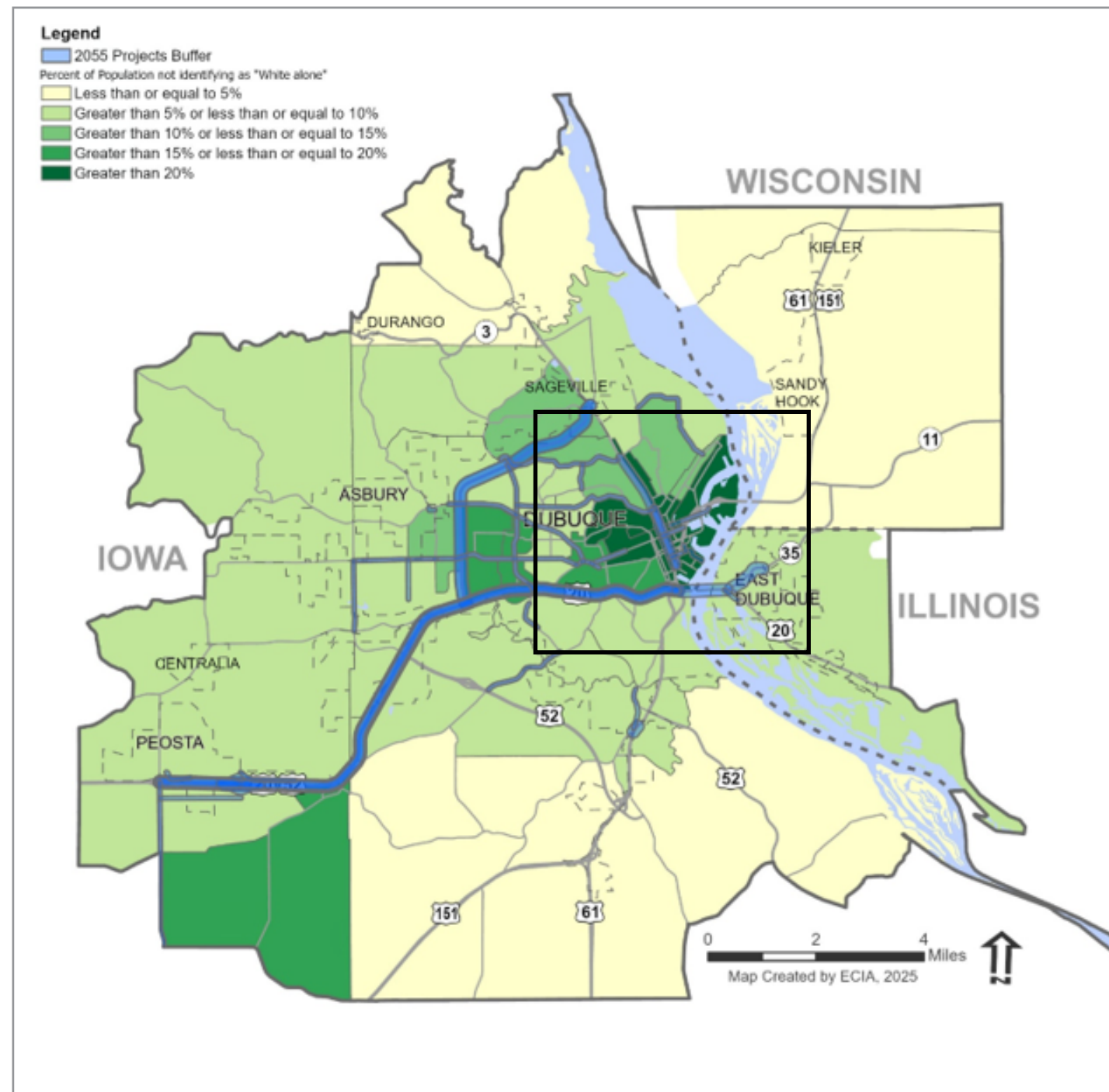


FIGURE 12.11
DMATS Non-White Population
Source: US Census Bureau, 2020 Decennial Census

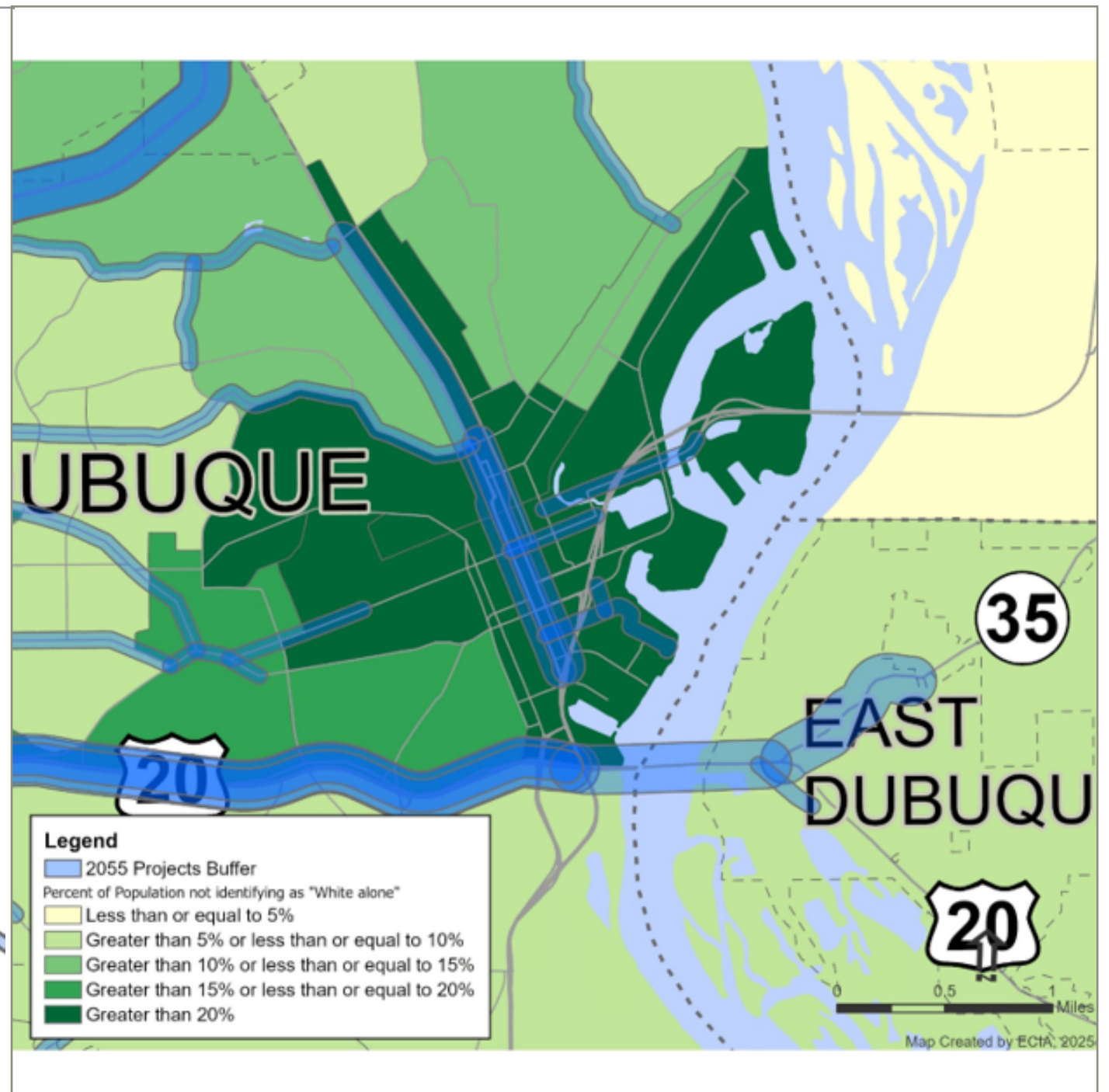


FIGURE 12.12
Downtown Dubuque Non-White Population
Source: US Census Bureau, 2020 Decennial Census

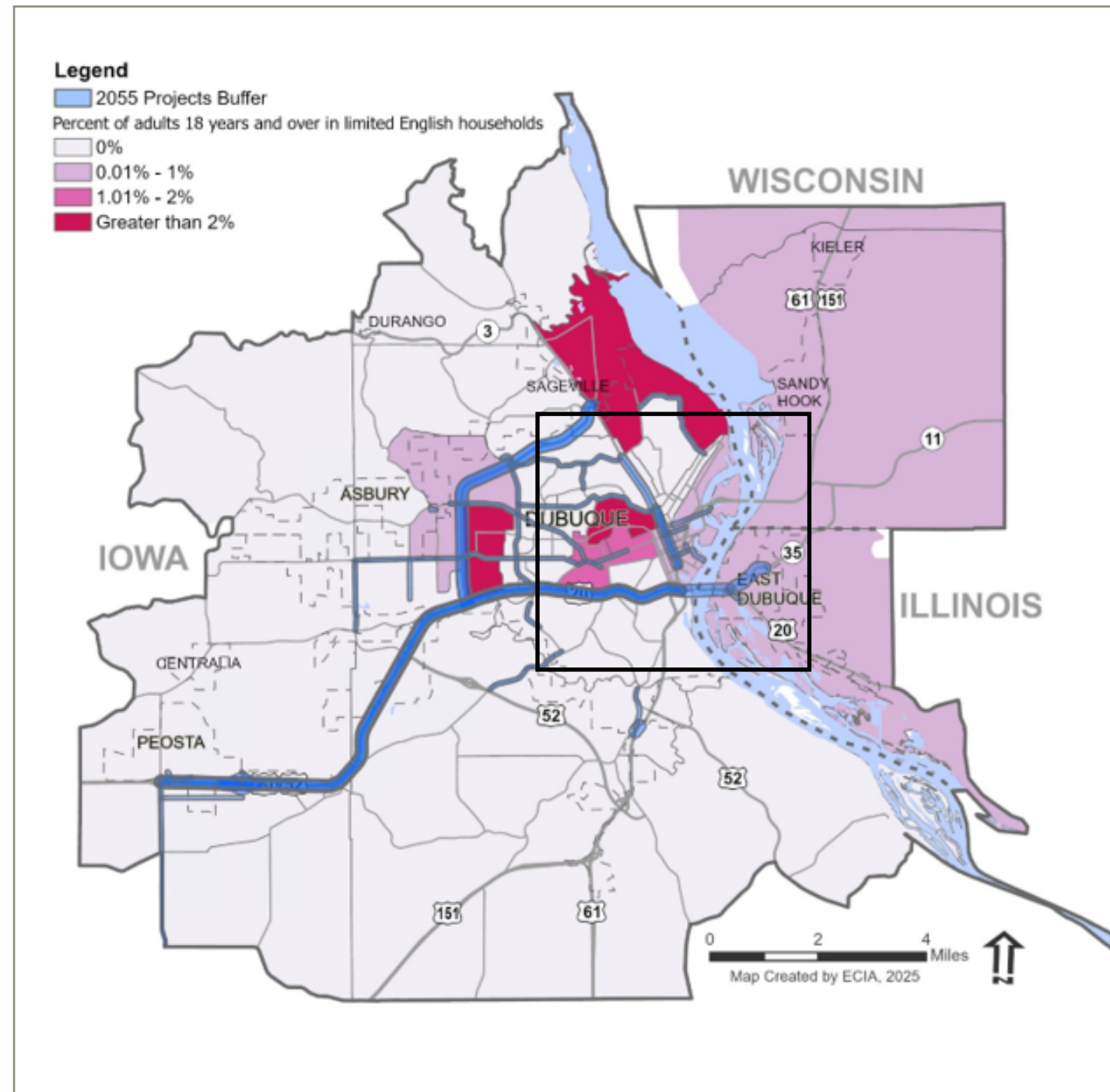


FIGURE 12.13
DMATS Limited English Population
Source: US Census Bureau, 2019-2023 5-Year ACS Estimates, Table S1602

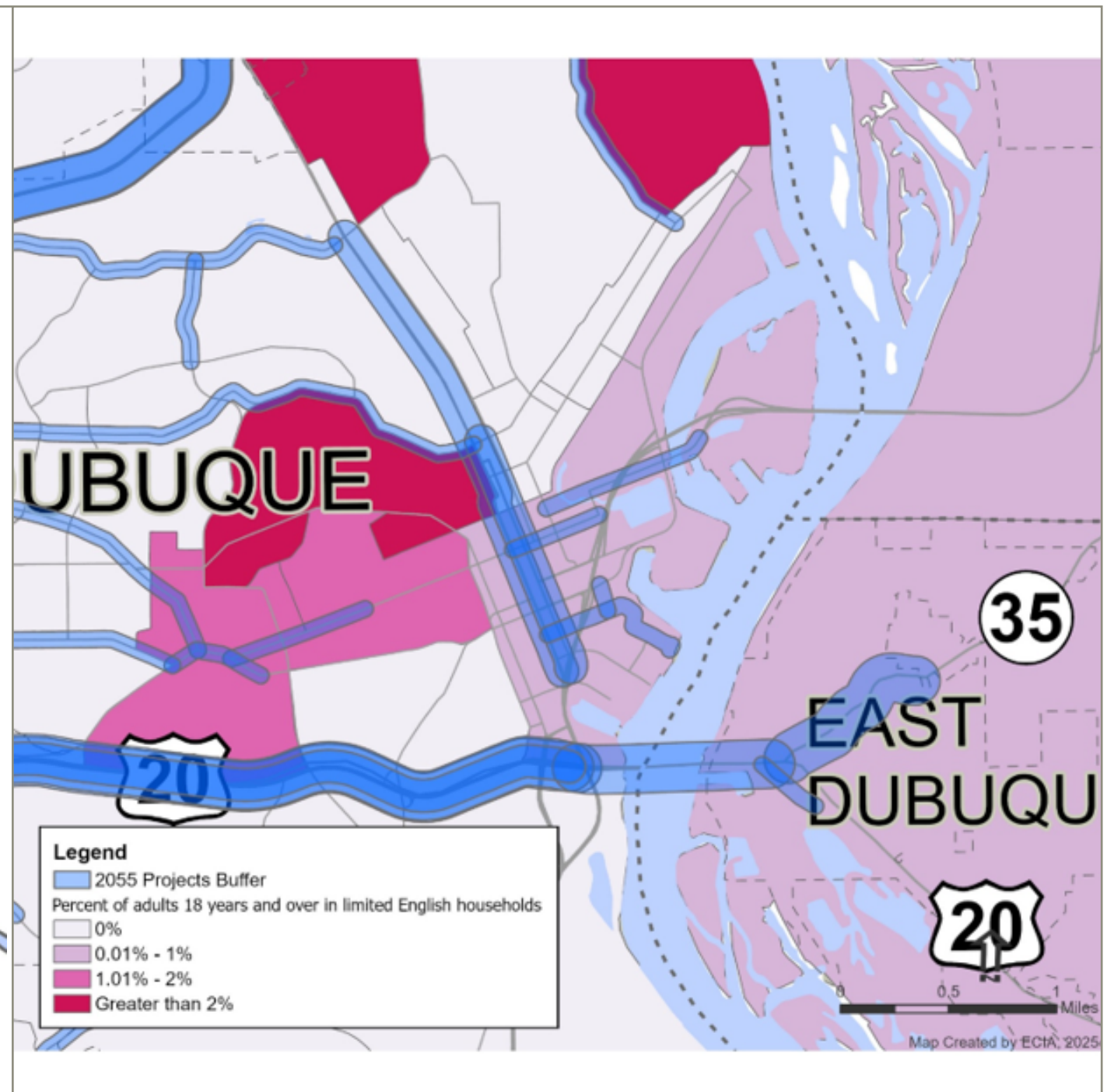


FIGURE 12.14
Downtown Dubuque Limited English Population
Source: US Census Bureau, 2019-2023 5-Year ACS Estimates, Table S1602

TABLE 12.4 DMATS 2055 LRTP Project Descriptions

Project Information											ROW	Natural Environment				Social				Environmental Jus- tice			Overall Impact	
Project Number	Project Name	From	To	Description / Extents							Percentage on Existing Foot print	500-Year-Floodplain	100-Year-Floodplain	Underground Storage Tanks	Conservation Rec Lands / Parks	Cemetery	Hospital	Religious Facilities	Schools	Minority- Population > 20%	Low-Income < \$30,000	Low English Proficiency > 2.5%		
				Resurfacing	Reconstruction	Capacity Improve- ments	Bike & Pedestrian	Safety & Security	ITS improvements	Right of Way														
IOWA PROJECTS																								
1	JFK Rd	US Highway 20	NW Arterial				X	X	X		75% - 100%	Y	N	Y	N	N	N	N	N	N	N	N	Minor	
2	Seippel Rd	Middle Rd	Old Highway Rd.		X						75% - 100%	N	Y	N	N	N	N	N	N	N	N	N	Minor	
3	Cedar Cross Rd	725' E of Starlite Dr	Lake Ridge Dr		X			X	X	X	75% - 100%	N	N	N	N	N	N	N	N	N	N	N	Moderate	
4	NW Arterial	US Highway 20	Iowa Highway 3			X	X		X		75% - 100%	N	N	N	N	N	N	N	N	N	N	N	Minor	
5	Pennsylvania Ave	University Ave	Radford Rd	X	X	X	X	X	X	X	75% - 100%	N	N	Y	N	N	N	N	N	N	N	Y	Major	
6	Central Ave - White St	4th St	22nd St	X			X	X	X		75% - 100%	N	N	Y	N	N	N	Y	Y	Y	Y	Y	Minor	
7	Heacock Rd Extension	Chavenelle Rd	Pennsylvania Ave		X					X	0% - 25%	N	N	N	N	N	N	N	N	N	N	N	Minor	
8	NW Arterial Pedestrian Overpasses	At Pennsylvania Ave and Asbury Rd					X				0% - 25%	N	N	N	N	N	N	N	N	N	N	Y	Minor	
9	Asbury Rd West	City Limits	JFK	X			X			X	75% - 100%	N	N	Y	N	N	N	N	N	N	Y	N	Minor	
10	7th St	Central Ave	Star Brewery Dr		X		X				75% - 100%	Y	N	N	N	N	N	N	N	N	Y	Y	Minor	
11	Rockdale Rd	Key West Dr	Old Mill Rd		X		X			X	75% - 100%	N	N	Y	N	N	N	N	N	N	N	N	Moderate	
12	Pine St	7th St	Kerper Blvd		X		X			X	75% - 100%	Y	N	N	N	N	N	N	N	N	Y	Y	Minor	
13	Asbury Rd East	JFK Rd	University Ave	X	X	X	X	X	X	X	75% - 100%	N	N	Y	N	N	N	Y	N	N	N	Y	Minor	
14	University Ave	Asbury Rd	Delhi St		X	X	X	X	X	X	75% - 100%	N	N	Y	N	N	N	Y	N	N	Y	N	Minor	
15	North Cascade Rd	Cedar Cross Rd / Fremont Ave	SW Arterial		X	X	X			X	75% - 100%	N	Y	N	N	N	N	N	N	N	N	N	Minor	
16	Grandview Av	Kane St	32nd St	X							75% - 100%	N	N	N	N	N	N	N	N	N	N	N	Minor	
17	32nd St	NW Arterial	Lemon St		X		X				75% - 100%	Y	Y	N	N	N	N	N	N	N	N	N	Minor	
18	US Highway 61/151	Maquoketa Dr Intersection			X	X	X	X	X	X	0% - 25%	N	N	Y	N	N	N	N	N	N	N	N	Minor	
19	Kaufmann Ave	JFK Rd	Central Ave				X				0% - 25%	N	N	Y	N	N	N	N	N	N	Y	N	Minor	
20	14th Street	Central Avenue	Sycamore Street		X					X	50% - 75%	N	N	Y	N	N	N	N	N	N	Y	Y	Minor	
21	Loras Blvd	University Ave	Alta Vista St				X				0% - 25%	N	N	N	N	N	N	N	N	N	Y	N	Minor	
22	16th St	Kerper Blvd	Admiral Sheehy Dr				X				0% - 25%	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Minor	
23	Asbury Rd	Hales Mill Rd and Radford Rd Intersection			X						0% - 25%	N	N	N	N	N	N	N	N	N	N	N	Minor	
24	Roosevelt St	Rhomberg Ave	Peru Rd		X		X				75% - 100%	N	N	Y	N	N	N	N	N	N	N	Y	Moderate	
25	Frontage Roads	US Highway 20			X						0% - 25%	N	N	N	N	N	N	N	N	N	N	N	Minor	
26	Sundown Rd	Poesta City Limits	Monastery Rd		X						0% - 25%	N	N	N	N	N	N	N	N	N	N	N	Minor	

TABLE 12.4 DMATS 2055 LRTP Project Descriptions - Continued

Project Information											ROW	Natural Environment				Social				Environmental Justice			Overall Impact
Project Number	Project Name	From	To	Description / Extents							Percentage on Existing Foot print	500-Year-Floodplain	100-Year-Floodplain	Underground Storage Tanks	Conservation Rec Lands / Parks	Cemetery	Hospital	Religious Facilities	Schools	Minority- Population > 20%	Low-Income < \$30,000	Low English Proficiency > 2.5%	
				Resurfacing	Reconstruction	Capacity Improve-ments	Bike & Pedestrian	Safety & Security	ITS improvements	Right of Way													
CITY OF EAST DUBUQUE PROJECTS																							
1	Menominee Ave	2nd St	6th St	X							75% - 100%					N	N	N	N	N	N	N	Minor
IOWA DEPARTMENT OF TRANSPORTATION																							
	SW Arterial Trail & ITS	US Hwy 20/Seippel Rd	US Hwy 61/151 Old Davenport Rd				X		X		0% - 25%	N	Y	N	N	N	N	N	N	N	N	N	Minor
	US Hwy 20 Julien Dubuque Bridge	US 20 Julian Dubuque Bridge Replacement in IL			X						75% - 100%	N	N	N	Y	N	N	N	N	Y	Y	N	Major
	US Hwy 20 Improvements	Peosta Interchange	Julien Dubuque Bridge		X						0% - 25%	Y	Y	Y	N	N	N	N	N	Y	N	Y	Moderate
ILLINOIS DEPARTMENT OF TRANSPORTATION																							
	Passenger Rail in Illinois	Rockford	East Dubuque		X						75% - 100%	N	N	N	N	N	N	N	N	N	N	N	Minor
	US Highway 20	Julien Dubuque Bridge	DMATS Boundary		X						75% - 100%	N	N	N	Y	N	N	N	N	N	N	N	Major
	Wisconsin St/Illinois Hwy 35	Sinsinawa Ave	Cherry Ln		X						75% - 100%					N	N	N	N	N	N	N	Minor