

# Chapter 16

# Economic, Social and Environmental Impacts Assessment

# CHAPTER 16

## ECONOMIC, SOCIAL AND ENVIRONMENTAL IMPACT ASSESSMENT

### INTRODUCTION

Impact assessment is a process to evaluate the effects a transportation project may have on those using the transportation system, as well as the greater community. The assessment process is an integral part of project planning and development that shapes the outcome of a project (U.S. Department of Transportation, FHWA. Community Impact Assessment, September 1996). Impact assessments consist of both a quantitative and qualitative measures. They may be economic, social or environmental impacts, or even all three. Consideration of such impacts is not only required by law, but is simply good planning. This chapter will examine quantitative and qualitative impacts of the plan on the community as a whole and on particular social groups where appropriate.

### ECONOMIC IMPACT

Economic impacts of transportation projects can be measured both for the transportation users through benefit-cost analysis and the greater community through job creation.

### BENEFIT-COST ANALYSIS

Benefit-cost analysis provides a quantitative evaluation of the impact of a transportation project or group of projects on the public and users of the transportation system. The potential benefits to users include reductions in travel time, travel costs and emissions, and an increase in travel safety. The benefits and costs of a base case are compared to those of a proposed alternative.

The largest project in the long range plan is the replacement of the Brent Spence Bridge. Because the bridge's replacement has an impact on the entire OKI region and beyond, its economic impact was evaluated utilizing the Surface Transportation Efficiency Analysis Model (STEAM), a benefit-cost analysis tool developed by the Federal Highway Administration (FHWA). A sophisticated computer program, STEAM utilizes output files from the OKI travel demand model in its calculations to evaluate economic impacts to travelers throughout the entire planning area. STEAM compares the costs and benefits of retaining and maintaining the existing transportation system and committed projects with and without the bridge replacement. Results of the analysis are expressed in a benefit-cost ratio, which is the monetized benefits divided by their costs (Figure 16-1).

**Figure 16-1**  
**STEAM Analysis Summary**

Total monetized benefits for transportation users:	\$116,614,300
Total costs to public agencies:	\$65,904,200
Difference:	\$50,710,100
Benefit/cost ratio:	1.8

SOURCE: OKI.

The benefit-cost ratio of 1.8 means that for every dollar spent on the Brent Spence Bridge project those using the transportation system will reap \$1.80 in travel time and travel cost savings as well as in increased safety and lower emissions. Detailed results of the STEAM analysis can be found in Appendix E.

### **JOB CREATION**

Economic impacts of transportation projects can be measured through job creation. Although data is not available at the local level, measures at the national level show the substantial and growing impact of roadway investment on job creation. The total number of jobs supported by roadway investment including construction-related jobs, jobs in supplier industries, and jobs supported indirectly throughout the economy rose about 12.5 percent, from 1.65 million jobs in 1997 to 1.85 million jobs in 2007 as a result of increased roadway investment from all levels of government. In other words, every \$1 billion of federal roadway investment plus the accompanying state match supports 30,076 jobs (U.S. Department of Transportation).

### **SOCIAL OR ENVIRONMENTAL JUSTICE (EJ) IMPACT**

The concept EJ is rooted in Title VI of the Civil Rights Act of 1964 which prohibits discriminatory practices in programs and activities receiving federal funds. Transportation planning regulations issued in October 1993 require that metropolitan planning processes be consistent with Title VI. In February 1994, President Bill Clinton signed an executive order which amplified the provisions of Title VI by requiring federal agencies 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 and low income populations” (Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations).

In compliance with this directive, OKI incorporated EJ evaluation into its long-range planning process. Specific groups in the OKI region identified for EJ evaluation include the elderly, minority population, people with disabilities, population in poverty, and zero car households (Figure 16-2).

**Figure 16-2  
Definitions of Environmental Justice Population Groups**

Elderly	aged 65 or older
Minority population	persons from every racial category except White Alone plus all Hispanic persons
People with disabilities	non-institutionalized persons aged 16 to 64 years with any disability
Population in poverty	persons below the poverty level
Zero car households	occupied housing units for which there is no car

SOURCE: 2000 U.S. Census.

## ENVIRONMENTAL JUSTICE POPULATION CONCENTRATION IDENTIFICATION

Concentrations of EJ populations within the OKI region were identified by establishing thresholds equal to the regional averages for the various target populations according to 2000 census data (Figure 16-3).

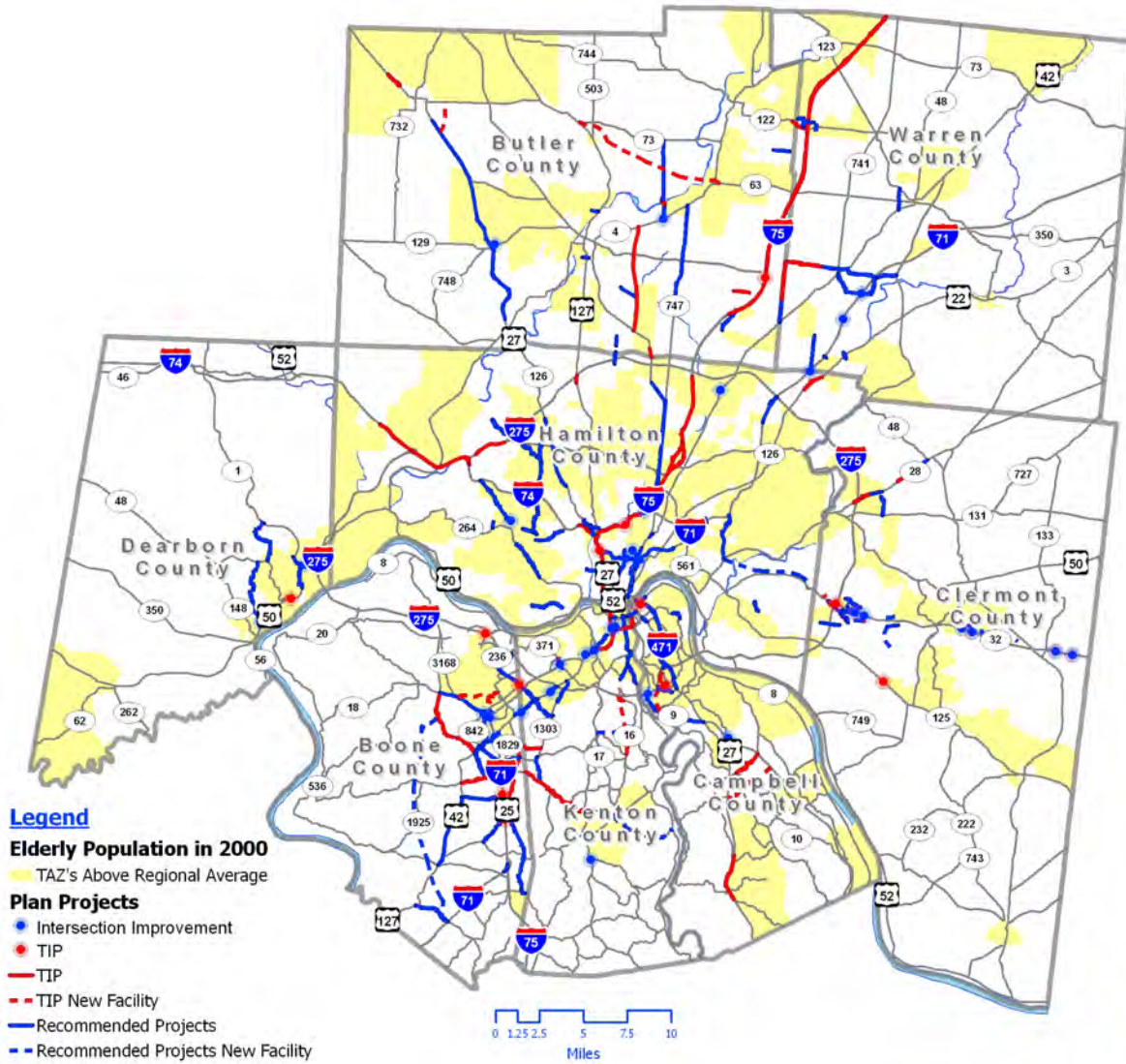
**Figure 16-3**  
**2000 Environmental Justice Population Thresholds**

<b>Environmental Justice Population Group</b>	<b>2000 OKI Region Total Population</b>	<b>Threshold</b>
Elderly (65+ years)	221,093	11.7%
Minority population	300,718	15.9%
People with disabilities (16-64)	196,888	16.3%
Population in poverty	173,901	9.4%
Zero car households	71,694	9.8%

SOURCE: 2000 U.S. Census.

Data for each EJ population were aggregated by Traffic Analysis Zone (TAZ), the geographic unit used in OKI's transportation analysis. Using as a basis a methodology developed by the Ohio Department of Transportation (ODOT) and adding refinements, OKI classified geographic areas both exceeding the threshold values and having a numerical incidence of more than 100 as target zones for impact assessment purposes. Figures 16-4 through 16-8 highlight the concentrations of the target populations by TAZ in the OKI region. The maps are summarized in tabular form to more clearly determine which capacity-adding Transportation Improvement Program (TIP) and recommended fiscally-constrained plan projects fall within a higher EJ concentrated area (Figure 16-9).

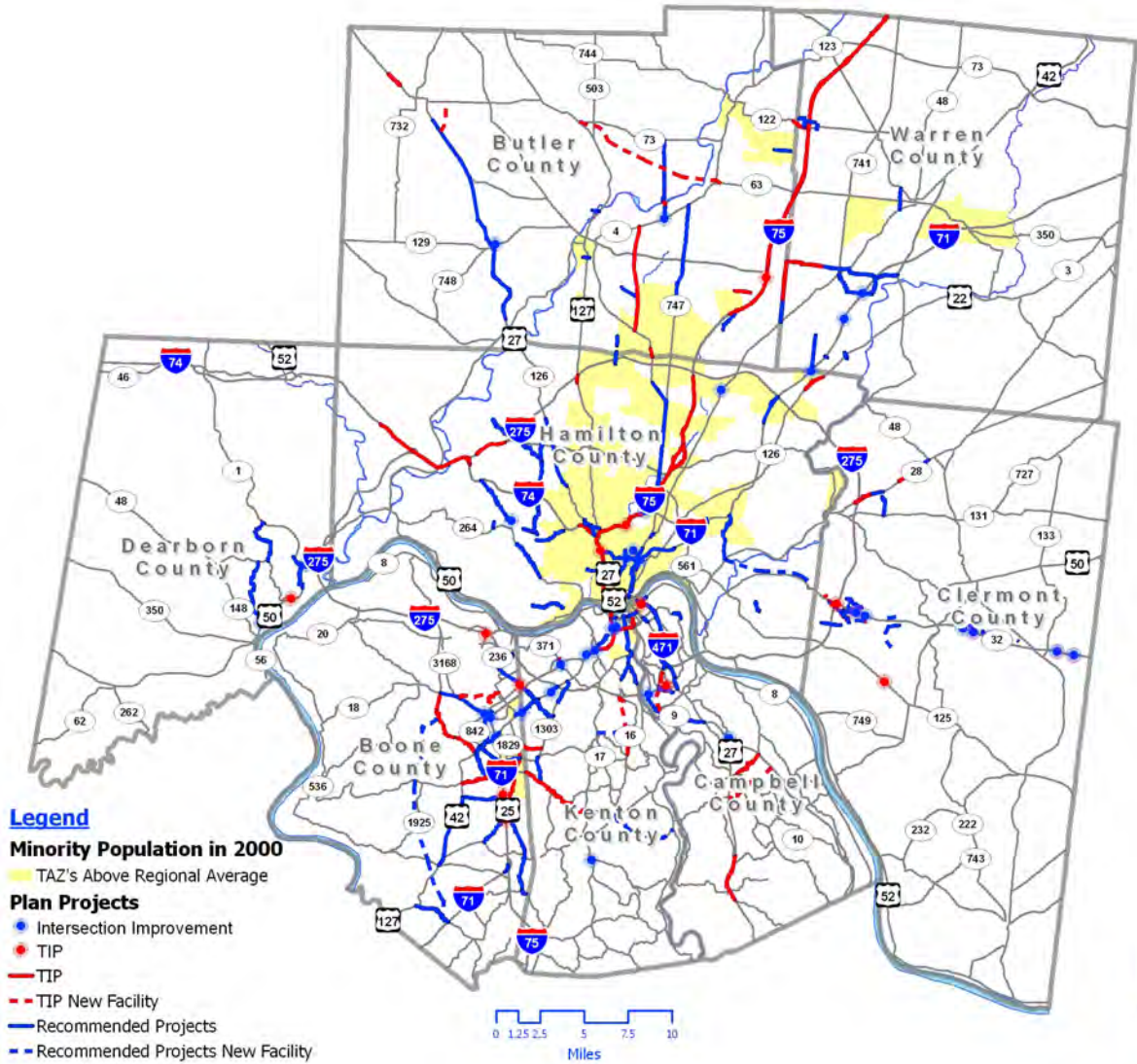
**Figure 16-4  
Elderly Population Concentrations and Plan Projects**



SOURCE: OKI.

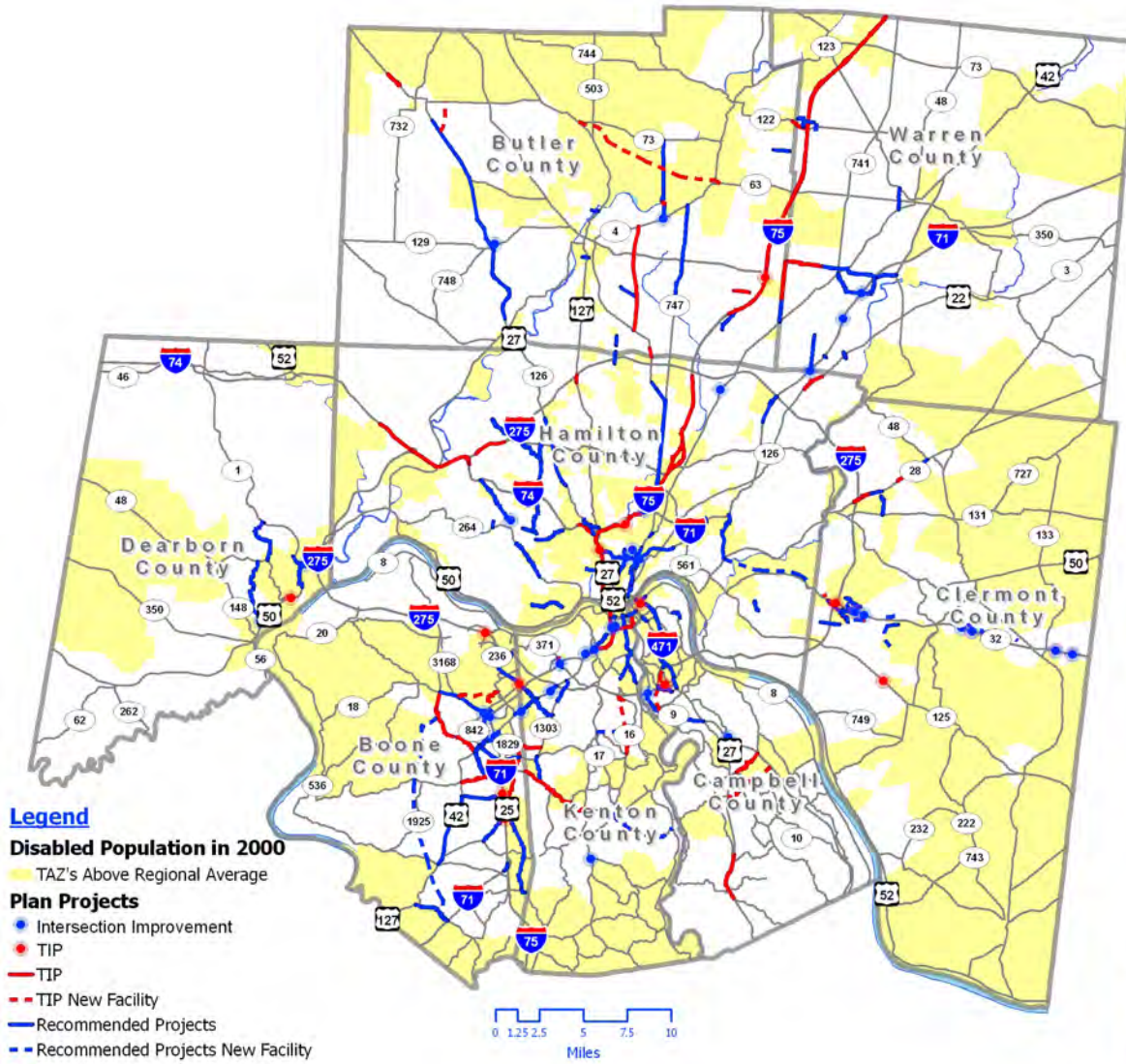


**Figure 16-5  
Minority Population Concentrations and Plan Projects**



SOURCE: OKI.

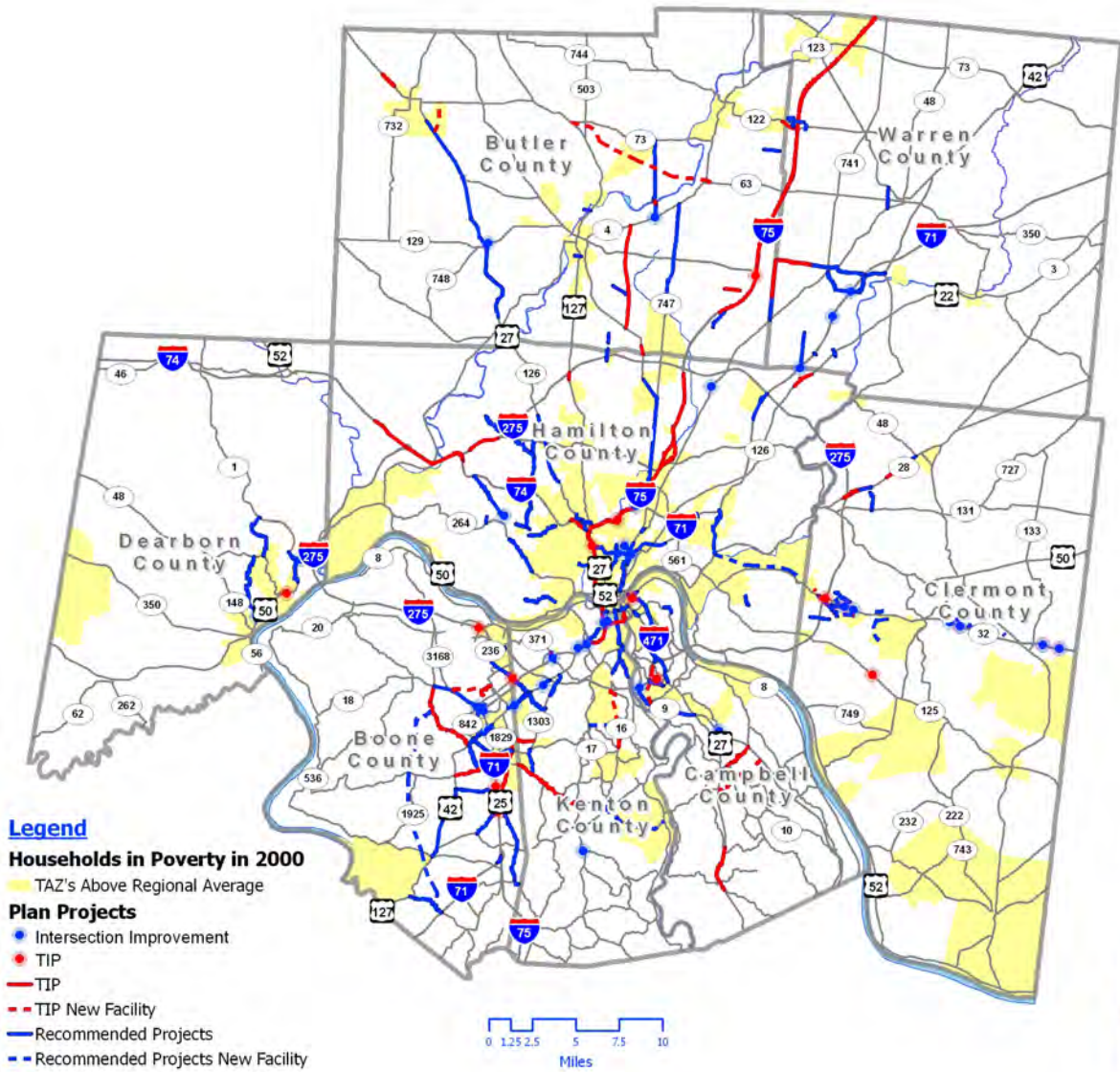
**Figure 16-6  
People With Disabilities Concentrations and Plan Projects**



SOURCE: OKI.



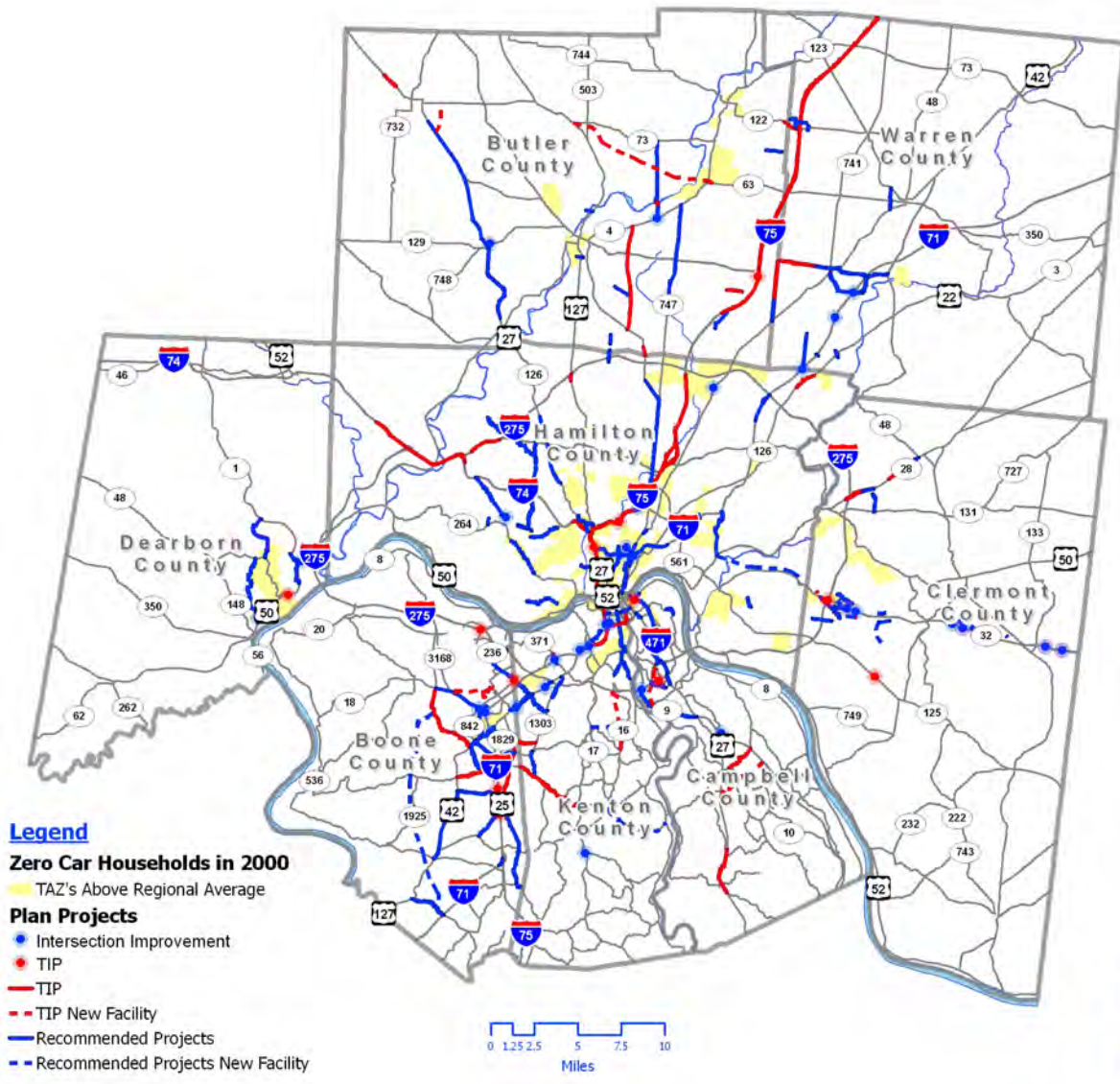
**Figure 16-7**  
**Households in Poverty Concentrations and Plan Projects**



SOURCE: OKI.



**Figure 16-8  
Zero Car Household Concentrations and Plan Projects**



SOURCE: OKI.

**Figure 16-9**  
**Plan Projects and Environmental Justice Populations**  
 (X indicates project is located in or near an EJ group)

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
207		Butler	SR 4					
212		Butler	Bobmeyer Road	X	X			
217		Butler	SR 4 Bypass	X	X			
218		Butler	SR 4 Bypass	X	X			
220		Butler	US 27	X				
222		Butler	Wayne-Madison Road	X		X	X	
230		Butler	Cincinnati-Dayton Road					
233		Butler	SR 4 Bypass					
240		Butler	Oxford State Road		X			
244		Butler	Double Stack Clearance		X			
250		Butler	SR 747	X	X	X		
254		Butler	US 27	X				
255		Butler	US 27	X				
256		Butler	US 27	X		X	X	
258		Butler	Washington Boulevard Extension	X		X	X	
266		Butler	Grand Boulevard	X	X	X	X	X
	14114	Butler	CR 113	X		X		
	20499	Butler	SR 63 Extension	X		X	X	X
	24664	Butler	IR 75			X		
	75971	Butler	IR 75					

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
	76290	Butler	SR 4 Bypass	X	X			
	76380	Butler	SR 4	X	X	X		
	77099	Butler	US 27	X		X	X	
	78073	Butler	CR 20 (Tylersville)		X			
	79686	Butler	SR 122	X		X	X	
	80516	Butler	Oxford Connector				X	
	81988	Butler	Butler-Warren Road			X		
401	82581	Clermont	Amelia-Olive Branch Relocation			X	X	
402	82552	Clermont	Aicholtz Road Extension			X	X	
403	82554	Clermont	Aicholtz Road Widening			X	X	
404	82557	Clermont	Old SR 74 - Phase 1	X		X		X
406		Clermont	SR 28 Improvements			X	X	
408	82590	Clermont	SR 32-Bauer Road	X				
414	82589	Clermont	SR 32-DeLaPalma/McKeever					
417	82588	Clermont	SR 32-Batavia Interchange			X		
433	82553	Clermont	Aicholtz Road Connector	X		X	X	X
436		Clermont	Clough Pike Widening	X		X		
437	82559	Clermont	Eastgate South Drive			X	X	
438	22970-2	Clermont	SR 32/Bach-Buxton Interchange				X	
440	22970-1	Clermont	SR 32/Glen Este-Withamsville Overpass			X		
441	82561	Clermont	Heitman Lane Extension	X				
442	82582	Clermont	Old SR 74			X	X	
445	82587	Clermont	SR 32-Herold Road	X				

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
446	82586	Clermont	SR 32-Frontage Road	X		X		
447		Clermont	Business 28 - Phase 2	X		X		
	75303	Clermont	SR 125					
	76289	Clermont	IR 275			X		
	79111	Clermont	SR 28 Business	X		X		
	82140	Clermont	SR 28	X		X		
	82563	Clermont	SR 28			X	X	
601		Hamilton	Rail Emission Reduction Project	X	X			X
602		Hamilton	Signal System Improvements	X	X	X	X	X
603		Hamilton	Signage		X	X	X	X
604		Hamilton	ML King Drive	X	X	X	X	X
605		Hamilton	SORTA Madisonville Transit Hub	X	X	X	X	X
606		Hamilton	SORTA Avondale Transit Hub	X	X	X	X	X
607		Hamilton	SORTA Bond Hill Transit Hub	X	X			
608		Hamilton	SORTA Lockland Transit Hub		X			
609		Hamilton	SORTA Oakley Transit Hub	X		X		
610		Hamilton	SORTA Springdale/Tri-County Transit Hub	X	X	X	X	X
612		Hamilton	SORTA Evanston/Xavier Transit Hub			X	X	X
614		Hamilton	Reading Road (US 42)	X	X	X	X	X
615		Hamilton	SORTA Lower Price Hill Transit Hub	X			X	
616		Hamilton	SORTA Northside Transit Hub		X	X	X	X
617		Hamilton	SORTA Walnut Hills Transit Hub		X	X	X	X
618		Hamilton	US 27	X	X	X	X	X



Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
619		Hamilton	Vine Street/Jefferson		X	X	X	X
620		Hamilton	Ebenezer Road	X				
621		Hamilton	SORTA West Side/Western Hills Transit Hub	X		X		X
627		Hamilton	SORTA Real-time information system		X			X
630		Hamilton	Ohio River Trail (Lunken Airport to Downtown)		X	X	X	X
631		Hamilton	IR 71		X			
632		Hamilton	Blue Rock Road	X				
633		Hamilton	Ohio River Trail (Lunken Airport to Salem Road)	X		X	X	X
634		Hamilton	Intermodal Barge to Rail Facility		X			
635		Hamilton	IR 75		X	X	X	X
637		Hamilton	I-71	X	X			X
640		Hamilton	SORTA Replacement of Radio Communications		X			X
641		Hamilton	SORTA Uptown Transit Improvements		X	X	X	X
642		Hamilton	Cheviot Road	X				
644		Hamilton	South Gilmore Road		X	X	X	
649		Hamilton	Cincinnati Streetcar Phase II "Uptown Loops"	X	X	X	X	X
650		Hamilton	SR 4	X	X	X	X	X
654		Hamilton	Delhi Road	X	X	X	X	X
655		Hamilton	Red Bank Road	X	X	X	X	X

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
656		Hamilton	SR 264 (Glenway Avenue)	X	X	X	X	X
657		Hamilton	Eastern Corridor Oasis Line	X	X	X	X	X
658		Hamilton	US 27	X	X	X	X	X
659		Hamilton	US 42 (Reading Road)	X	X	X	X	X
661		Hamilton	Blue Rock Road	X	X	X	X	X
663		Hamilton	Reading Road	X	X			X
664		Hamilton	Cheviot Road/North Bend Road	X	X	X	X	
667		Hamilton	North Bend Road	X	X	X	X	
668		Hamilton	Harrison/Race	X				
669		Hamilton	SR 32 relocated	X		X	X	
670		Hamilton	Paddock Road / SR 4	X	X	X	X	X
673		Hamilton	Clough Pike Access Management	X		X	X	
675		Hamilton	SORTA Uptown Transit Hubs (2)		X	X	X	X
678		Hamilton	Harrison Avenue	X			X	X
681		Hamilton	US 27	X	X	X	X	X
682		Hamilton	Ridge Road		X	X	X	X
683		Hamilton	Harrison Avenue	X		X		
691		Hamilton	Montana Avenue	X	X	X	X	X
692		Hamilton	IR 71	X	X		X	X
693		Hamilton	Increase Rail Freight Capacity	X	X	X	X	X
695		Hamilton	North Bend Road	X		X	X	
696		Hamilton	North Bend/Cheviot	X		X	X	

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
697		Hamilton	Ohio Hub Passenger /Midwest Regional Rail's Cincinnati Terminal Facility		X			
698		Hamilton	Western Hills Viaduct		X	X	X	X
699		Hamilton	West McMillan Street Corridor		X		X	X
	8347	Hamilton	US 127		X	X		
	25354	Hamilton	IR 74	X				
	75119	Hamilton	IR 71/IR 75	X	X	X	X	X
	75765	Hamilton	IR 74/IR 275	X				
	75880	Hamilton	US 22	X	X			X
	76256	Hamilton	IR 75	X	X	X	X	X
	76257	Hamilton	IR 75	X	X	X	X	X
	77889	Hamilton	IR 75	X	X	X	X	X
	77944	Hamilton	IR 74	X		X		
	82278	Hamilton	IR 75		X	X	X	
	82282	Hamilton	IR 75		X	X	X	X
	82284	Hamilton	IR 74	X	X	X	X	X
	82286	Hamilton	IR 75	X	X	X	X	X
	82288	Hamilton	IR 75	X	X	X		
801		Warren	Bethany Road					
803		Warren	Core Loop Road northeast	X				
804		Warren	Core Loop Road southeast	X				
805		Warren	Butler-Warren Road	X		X		

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
806		Warren	SORTA Southwest Warren County Transit Hub					
807		Warren	Columbia Road	X				
808		Warren	Towne Boulevard	X				
809		Warren	Towne Boulevard / I-75 Overpass	X				
810		Warren	IR 71	X	X			
812		Warren	New Connector		X			
814		Warren	SR 741					
838		Warren	Mason Montgomery Road	X	X			
846		Warren	Waterstone Connector	X				
847		Warren	Columbia Road					
848		Warren	IR 71					
849		Warren	IR 71					
	10754	Warren	IR 75	X		X	X	
	81986	Warren	Bethany Road					
132		Boone, Campbell, Kenton	TANK Southbank Shuttle Shelter/ Bike/ Aesthetic Improvements				X	
133		Boone, Campbell, Kenton	TANK Real-Time Passenger Information				X	
134		Boone, Campbell, Kenton	TANK New Fare Collection System				X	
102		Boone	US 42	X			X	X



Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
103		Boone	KY 18 (Burlington Pike) striped bike/ped lanes	X	X	X		X
105		Boone	IR 71 SB ramp					
110		Boone	IR 71/75	X				
113		Boone	KY 237 (Gunpowder Road)					
114		Boone	KY 3060 (Frogtown)			X		
115		Boone	IR 71/75	X		X	X	X
116		Boone	KY 3157 (Mall Road)	X		X	X	X
120		Boone	KY 338 (Richwood Road)			X		
122		Boone	KY 3076 (Mineola Pike)	X		X	X	
124		Boone	Frogtown Road Connector Extension-North					
126		Boone	US 25			X		
127		Boone	New Connector			X		
128		Boone	Camp Ernst Road			X	X	
131		Boone	KY 18 (Burlington Pike) access management	X		X	X	X
135		Boone	TANK CVG Airport Transit Hub	X		X		
140		Boone	KY 14			X	X	
141		Boone	KY 18 (Burlington Pike) walkways	X		X		
142		Boone	KY 236 (Donaldson Road)	X		X	X	
143		Boone	KY 237 striped bike/ped lanes	X		X		
144		Boone	KY 842		X		X	
145		Boone	KY 842	X		X	X	X

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
146		Boone	KY 3157	X		X	X	X
147		Boone	US 25	X		X		
148		Boone	US 42	X	X	X	X	X
149		Boone	US 42 walkway	X		X	X	X
150		Boone	US 42			X	X	
151		Boone	US 42					
152		Boone	TANK Florence Transit Hub	X			X	X
	6-106.50	Boone	KY 1829 (Industrial Road)		X	X	X	
	6-14.00	Boone	IR 71/75		X	X	X	
	6-158.00	Boone	KY 536					
	6-18.00	Boone	IR 71/75			X		
	6-193.00	Boone	South Airfield Road (Bypass)	X		X		
	6-8000.20	Boone	IR 275			X	X	
	6-8001.10	Boone	KY 237					
	6-8001.21	Boone	KY 237					
	6-8001.25	Boone	KY 237	X		X		
	6-8200.10	Boone	US 25		X	X	X	
	6-8200.40	Boone	US 25		X	X	X	
	6-8200.70	Boone	US 25		X		X	
302		Campbell	IR 471 SB ramp	X		X		
304		Campbell	KY 9	X			X	
310		Campbell	IR 275					
311		Campbell	IR 471	X		X	X	X

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
317		Campbell	KY 8	X		X	X	
320		Campbell	KY 709	X		X		
324		Campbell	KY 9					
327		Campbell	TANK Long Term: I-471 Transit Way	X		X	X	X
328		Campbell	TANK NKY Transit Hub	X		X		
329		Campbell	TANK Monmouth Street Corridor / Newport Super Stop			X	X	
330		Campbell	KY 8	X	X	X	X	X
331		Campbell	KY 1120	X				
332		Campbell	KY 2345	X		X	X	
333		Campbell	US 27	X		X	X	
334		Campbell	US 27	X		X	X	X
335	6-352.00	Campbell	KY 536			X		
	6-156.00	Campbell	KY 547			X		
	6-46.20	Campbell	US 27	X		X		
	6-8101.01	Campbell	KY 9	X	X	X	X	X
	6-8104.00	Campbell	IR 471					
	6-8105.01	Campbell	AA-I-275 Connector	X		X	X	
	6-8105.03	Campbell	Triangle Access	X		X		
702		Kenton	IR 71/75	X	X	X	X	X
703		Kenton	KY 1501 (Hands Pike)				X	
706		Kenton	KY 1303	X				
707		Kenton	KY 1303			X	X	
711		Kenton	KY 236	X		X	X	X

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
712		Kenton	KY 371	X				
713		Kenton	KY 8	X	X	X	X	X
714		Kenton	KY 8	X		X	X	
715		Kenton	US 25	X		X	X	X
716		Kenton	US 25	X				
717		Kenton	US 25	X	X	X	X	
719		Kenton	KY 536	X		X		
720		Kenton	Dudley Pike	X				
721		Kenton	IR 71/75	X				
722		Kenton	KY 1072	X		X		
723		Kenton	KY 17	X		X		
726		Kenton	Madison/James/Decoursey	X		X	X	X
727		Kenton	Madison/Scott/Greenup	X	X	X	X	X
731		Kenton	KY 8	X		X	X	
732		Kenton	KY 16	X		X	X	
733		Kenton	KY 236	X		X	X	
734		Kenton	KY 536	X			X	
735		Kenton	TANK Long Term: Expansion Buses				X	
736		Kenton	TANK Madison Avenue Corridor	X	X	X	X	X
737		Kenton	TANK Edgewood Park and Ride					
738		Kenton	TANK Short Term: Expansion Buses				X	
739		Kenton	TANK Short Term: I-75/71 Transit Way	X	X	X	X	X
740		Kenton	TANK Turkeyfoot Park and Ride					



Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
741		Kenton	US 25	X		X	X	
742		Kenton	US 25			X	X	
743		Kenton	US 25	X				
744		Kenton	US 25			X	X	
745		Kenton	US 25	X		X	X	
	6-107.00	Kenton	KY 371 (Buttermilk Pike)			X	X	
	6-162.00	Kenton	KY 536	X	X	X	X	
	6-17.03	Kenton	IR 75	X	X	X	X	X
	6-204.00	Kenton	KY 842			X		
	6-273.00	Kenton	KY 1120	X	X	X	X	X
	6-344.11	Kenton	KY 16				X	
	6-344.21	Kenton	KY 16			X	X	
501		Dearborn	Scenic Drive	X		X	X	X
504		Dearborn	US 50 / I-275 / SR 1	X		X		
505		Dearborn	SR 1	X		X	X	
506		Dearborn	US 50	X		X	X	
507		Dearborn	US 50	X		X	X	X
508		Dearborn	Wilson Creek Road	X		X	X	X

Plan ID	TIP ID	County	Facility	Elderly	Minority	People with Disabilities	Population in Poverty	Zero Car Households
509		Dearborn	US 50	X		X	X	X
510		Dearborn	Bicycle and pedestrian projects			X	X	
512		Dearborn	Pribble Road	X		X	X	X
	600726	Dearborn	US 50	X		X	X	X
	800426	Dearborn	IR 275	X		X		

SOURCE: OKI.

## **IMPACT OF PLAN PROJECTS ON EJ COMMUNITIES**

OKI used a variety of quantitative performance measures and qualitative evaluation to assess whether components had any adverse or disproportionate impacts on the target populations as well as to ascertain whether benefits were equitably distributed. The measurement methodology employed by OKI to evaluate the impact of transportation projects on the target populations was developed partly from OKI's travel demand forecasting model process and partly using non-modeling techniques. In certain cases, different techniques are required for evaluation of roadway and transit modes.

For the quantitative measures, three scenarios were prepared: a 2005 base year; 2030 conditions in the absence of a plan with only projects in the current Fiscal Year 2008 to 2011 TIP and current transit service (2030 base); and a 2030 future plan with a fiscally constrained set of programs and projects. Then, several measures compared the relative treatment of the EJ populations and non-EJ populations. Qualitative evaluation was used when quantitative measures were not available or applicable. Figure 16-10 contains the list of quantitative and qualitative performance measures used in the analysis.

**Figure 16-10  
Quantitative and Qualitative Performance Measures Used to Assess Environmental  
Justice Impact**

<b>Mobility</b>	
	Travel time to work
	Percentage of vehicle miles traveled in congestion
<b>Accessibility</b>	
	Population and employment served by transit
	Percentage of population within 40 minutes transit travel time of a college or university
<b>Reliability</b>	
	Congestion management to improve travel times
	Dependable transit service as measured by percent of on-time arrivals
<b>Safety</b>	
	Vehicular travel with reduction in crashes
	Transit travel with reduction in crashes and increased security
<b>Equity</b>	
	Supply of transportation infrastructure and services
	Displacement of residents and business
	Social structure
	Expenditures on roadway projects
	Expenditures on transit projects
<b>Other Regional Performance Measures</b>	
	Environmental impacts
	Fiscal or financial impact
	System performance indicators

SOURCE: OKI.

**Mobility**

Looking ahead to the year 2030, congestion is expected to increase significantly. Mobility for travelers is expected to decline even with significant investments in both new and expanded roadways and improved transit. However, the scenario will be worse if nothing is done. Proposed improvements will lessen the severity of mobility deficiencies. For example, the average travel time to work by car for the general population is expected to increase from about 22 minutes currently to over 27 minutes in 2030 if no improvements are made. This amounts to about a 25 percent increase. Implementation of the plan reduces the time to just under 27 minutes, which is a 23 percent increase (Figure 16-11). Minority target zones will continue to enjoy lower travel times on average compared to all populations.



The average travel time to work by car for minority target zones is expected to increase from about 16 minutes currently to 17 minutes in 2030 if no improvements occur. This amounts to about a six percent increase. On average, implementation of the plan has no significant negative impact on work trips to and from minority target zones.

The average travel time to work by car for low income target zones is expected to increase from about 19 minutes currently to 22 minutes in 2030 if nothing is done. This amounts to about a 17 percent increase. On average, implementation of the plan has no meaningful negative impact on work trips to and from low income target zones.

**Figure 16-11**  
**Comparative Travel Times to Work by Auto**  
**(average travel time in minutes)**

<b>Population Group</b>	<b>2005</b>	<b>2030 Base</b>	<b>2030 Plan</b>
All Populations	22.0	27.3	26.9
Minority Target Zones	16.1	17.2	17.1
Low Income Target Zones	18.6	21.7	21.5

SOURCE: OKI.

Auto travel time for non-work activities, which are assumed to occur primarily in the off peak time period, increases slightly for all populations; however, this increase is insignificant (Figure 16-12).

Auto travel time to hospitals and universities is shorter for the EJ populations than the total population in the region. Travel times to the nearest shopping center are shorter for minority, elderly and zero car household target zones than the population as a whole and almost equal to the total population for low income and disabled target zone populations under the base scenario (Figure 16-12). All EJ groups, except the population with disabilities, have shorter travel times in 2030 under both the base and plan scenarios.

Congestion, as measured by traffic volume to roadway capacity ratios exceeding 0.85, will increase between 2005 and 2030. In 2005, for the total population in the region, 19 percent of vehicle miles traveled (VMT) during peak travel times were under congested conditions. This is expected to increase to 30 percent in 2030 without plan implementation and to 27 percent with plan implementation. For populations residing in minority and low income target zones, the percentages of peak period trips under congestion were higher than the total population in 2005, but these communities will benefit as well from the congestion reducing facets of the plan (Figure 16-13). Under the plan, peak period congestion will increase 43 percent for the region as a whole, 29 percent for trips originating in minority target zones and only one percent for travelers from low income target zones.

A similar situation exists with daily trip congestion, which is a measure of the average percentage of miles traveled in congestion over the course of an entire day. While the percent of VMT under congestion will increase between 2005 and 2030 for all groups, implementation of this plan will likewise temper those increases for all groups.

**Figure 16-12  
Comparative Non-Work Travel Times by Auto  
(off peak period in minutes)**

<b>Hospital</b>			
<b>Population Group</b>	<b>2005</b>	<b>2030 Base</b>	<b>2030 Plan</b>
All Populations	10.6	11.9	11.8
Minority Target Zones	6.6	6.9	6.9
Low Income Target Zones	7.3	7.8	7.7
Elderly Target Zones	8.2	8.9	8.8
Disabled Target Zones	9.7	10.8	10.8
Zero Car Household Zones	5.7	5.8	5.7
<b>University</b>			
<b>Population Group</b>	<b>2005</b>	<b>2030 Base</b>	<b>2030 Plan</b>
All Populations	12.4	13.5	13.5
Minority Target Zones	8.9	9.3	9.2
Low Income Target Zones	8.4	8.9	8.8
Elderly Target Zones	9.9	10.5	10.5
Disabled Target Zones	11.5	12.6	12.5
Zero Car Household Zones	7.0	7.3	7.3
<b>Shopping</b>			
<b>Population Group</b>	<b>2005</b>	<b>2030 Base</b>	<b>2030 Plan</b>
All Populations	14.0	15.1	15.0
Minority Target Zones	9.2	9.5	9.4
Low Income Target Zones	14.1	14.8	14.7
Elderly Target Zones	12.0	12.9	12.9
Disabled Target Zones	14.8	15.8	15.8
Zero Car Household Zones	11.1	11.5	11.4

SOURCE: OKI.

**Figure 16-13  
Percentage of Vehicle Miles Traveled (VMT) Experiencing Congestion**

<b>Peak Period</b>			
<b>Population Group</b>	<b>2005</b>	<b>2030 Base</b>	<b>2030 Plan</b>
All Populations	19.2%	30.3%	27.4%
Minority Target Zones	29.5%	40.4%	38.1%
Low Income Target Zones	22.7%	28.7%	23.0%
<b>Daily</b>			
<b>Population Group</b>	<b>2005</b>	<b>2030 Base</b>	<b>2030 Plan</b>
All Populations	3.2%	6.5%	5.7%
Minority Target Zones	4.1%	8.4%	7.9%
Low Income Target Zones	4.3%	6.3%	4.4%

SOURCE: OKI.

**Accessibility**

Currently, the Southwest Ohio Regional Transit Authority (SORTA) and the Transit Authority of Northern Kentucky (TANK) provide good overall service from their respective service areas to the Cincinnati Central Business District (CBD). Central city neighborhoods, served by many routes and a large number of buses running at relatively short headways, enjoy very good radial access to the CBD. Suburban locations are served primarily by commuter service comprised of more express service but fewer runs.

Figure 16-14 indicates that regional population within a quarter mile of a transit route will drop between 2005 and 2030 if no changes are made but will increase under this plan. More employment will be accessible to transit service in 2030 under both the base and plan scenarios but almost 50,000 more workers will have access under this plan than without it.

**Figure 16-14  
Population and Employment Served by Transit  
(within one-quarter mile of transit route)**

	<b>2005</b>	<b>2030 Base</b>	<b>2030 Plan</b>
Population	696,226	639,617	708,984
Employment	538,731	607,742	656,814

SOURCE: OKI.

The major recommendations in this plan, which include improved service, creation of hubs, and streetcar service, enhance accessibility for both EJ and non-EJ communities to all areas served by existing transit companies. Improved bus service on existing routes and new routes are recommended to improve accessibility to areas not currently served well or at all. The new bus service proposed in Chapter 9 of this plan provides enhanced connectivity. New transit hubs will make transit use more convenient, efficient and safer. These public transportation options will be especially important to the region's increasing elderly population. Due to their wide dispersal throughout the region and

as the elderly transition to a non-driving lifestyle, they will require new transportation options to prevent increased isolation from society.

The concept of aging in place refers to the ability to continue to live in one's home safely, independently, and comfortably, regardless of age, income, or ability level (National Aging in Place Council's Web site, [www.naipc.org](http://www.naipc.org)). The ability to age in place is supported by the public transit recommendations of this plan. Pedestrian recommendations in Chapter 12 are another resource for not only elderly populations as single occupant vehicle (SOV) driving is no longer a viable option for them, but also the disabled and zero car households. Finally, the combination of transportation and land use planning discussed in Chapter 3 is another critical element in serving populations throughout their entire life cycle, through more dense and mixed use development. The ability to walk to retail, medical, social and employment opportunities without the need of any vehicular transportation, supports a vibrant, diverse, and inclusive community.

The combination of the Cincinnati Streetcar and TANK's SouthBank Shuttle improves mobility for members of the EJ communities. The streetcar is envisioned to circulate not only around the CBD but also connect downtown Cincinnati with Uptown. The SouthBank Shuttle is a circulator route that connects the Cincinnati and northern Kentucky riverfront business, restaurant and entertainment areas for visitors and residents alike.

Implementation of this plan will successfully improve accessibility of residents of EJ communities to other parts of the region. Public transit improvements, though modest in terms of percent of new dollars spent, provide significant enhancements to the overall accessibility to jobs, retail shopping, and universities. Included in this plan's recommendations are 17 new transit hubs, four new park and ride facilities and 30 new bus routes including new fixed routes, employment and neighborhood shuttles, and recommendations for rail transit development.

### **Reliability**

Needs identified in the congestion management process led to the recommendation of projects which produce more reliable travel times on roadways and transit for both EJ and non-EJ travelers. In this plan, a multi-faceted approach consisting of access management, operational improvements and capacity expansion projects are directed toward increasing reliability of travel on the region's roadways.

Numerous projects included in this plan are designed to maintain or enhance the reliability of the OKI region's transit systems which currently operate very reliably. (Fiscal year 2007 on-time arrivals for TANK were at 94 percent. A 93 percent on-time arrival rate for fiscal year 2000 was reported by SORTA). Continuation and expansion of the buses on shoulders program, addition of new hubs, park and rides, as well as projects related to capital improvements, operations and maintenance will likely positively impact transit reliability for both EJ and non-EJ travelers.

### **Safety**

Recommended plan projects including additions to ARTIMIS, other intelligent transportation systems, automatic vehicle locators, design upgrades and access management are intended to increase safety for all travelers on the roadways in

the planning area. Cameras, radio communications and off-street hub projects included in this plan are geared towards enhancing the safety and security of the region's transit operations. EJ and non-EJ groups choosing or dependent upon mass transit will benefit from the recommended safety projects as they improve the major providers' current safety records. In fiscal year 2007, TANK reported a crash rate of 4.5 crashes per 100,000 miles for demand responsive service and 6.2 crashes per 100,000 miles for fixed-route service. Crash rates for SORTA were not available.

### **Equity**

Evaluation of the supply of roadway infrastructure is difficult. Urbanized areas of the region have a dense network of streets and roadways, as well as high density development, while some of the outlying areas have roadway systems which are essentially the same as they have been for many years. Transit supply and service clearly favor the urbanized areas where density of employment and population make bus service more efficient. There is no evidence that any one group of citizens is over or under served by the regional transportation system.

Another measure of equity may be the number of families and businesses displaced during the implementation of transportation projects. OKI supports projects that minimize the impacts on all segments of the population and encourages appropriate mitigation measures when such impacts are unavoidable.

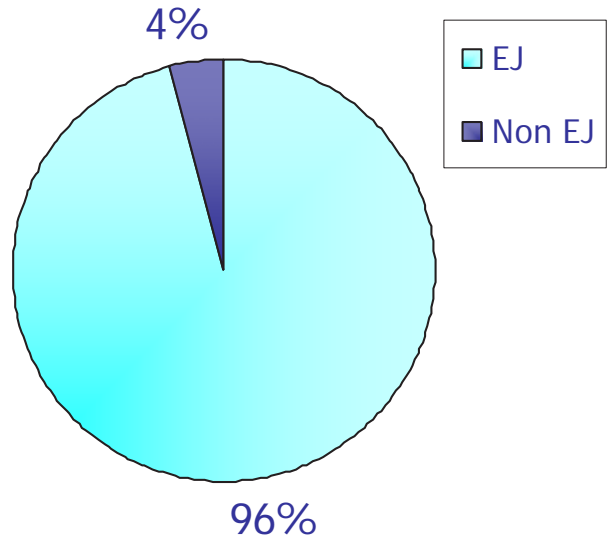
Care must also be taken to avoid not only displacement, but also the damage to neighborhood social fabric which can be caused when implementing transportation projects. Erecting physical and psychological barriers, whether intended or not, can destroy the cohesiveness of communities. OKI supports projects that minimize the impacts on a neighborhood's quality of life. Appropriate mitigation measures should be part of the project when such impacts are unavoidable.

The dollar value of roadway projects by area type is another measure of equality. Analysis of the current TIP reveals that expenditures benefiting EJ target zones for capacity expansion type projects is about \$909 million versus \$39 million for non-EJ target zones (Figure 16-15). Capacity expansion projects in this plan show combined expenditures of \$6.1 billion for projects related to EJ target zones and \$262 million for non-EJ target zones (Figure 16-16). Both the TIP and plan scenarios show a large proportion of the dollars spent where congestion is most severe.

Another measure of equity is the share of expenditures dedicated to transit projects. This plan proposes an increase in the share of dollars spent on transit project in comparison to the 2004 plan update. The proposed bus service increases with new bus routes and better connectivity along with proposed rail service in the Eastern Corridor Oasis and Cincinnati Streetcar provide an equitable solution to improving the mobility.

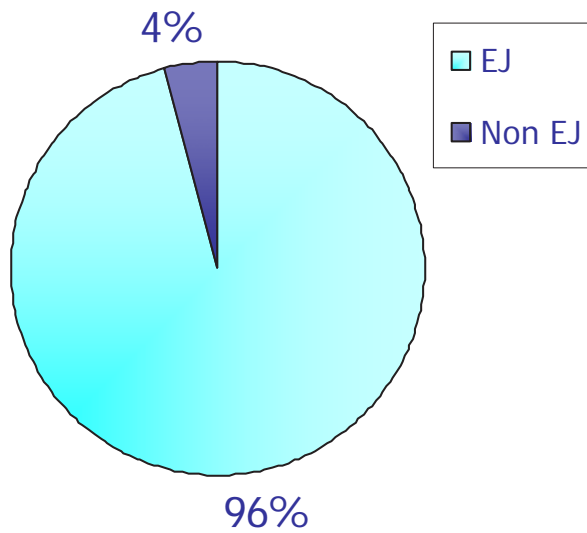


**Figure 16-15  
Transportation Improvement Program (TIP) Capacity Expansion Expenditures**



SOURCE: OKI.

**Figure 16-16  
Plan Capacity Expansion Expenditures**



SOURCE: OKI.

## Other Regional Performance Measures

Figure 16-17 provides a comparison of additional measures for comparing the 2005 scenario, 2030 base and the 2030 plan.

**Figure 16-17  
Environmental, Financial and System Performance Comparisons**

Measure	2005	2030 Base	2030 Plan
<b>Environmental</b>			
VOC emissions (tons per day)	67.34	30.05	31.68
NOx emissions (tons per day)	132.84	29.46	29.06
PM2.5 emissions (tons per day)	2.31	1.00	0.90
Fuel consumption (gal/day)	3,096,116	3,554,036	3,518,358
<b>Financial</b>			
System cost per person per year	179.24	156.91	171.47
<b>System Performance</b>			
Lane Miles	27,236	27,487	27,876
Daily vehicle miles of travel	50,886,608	69,131,544	68,402,880
Daily vehicle hours of travel	1,274,256	2,375,522	2,291,224
Daily transit ridership	86,910	92,158	104,489
Average peak highway speed (mph)	42.59	40.41	41.15

SOURCE: OKI.

## ENVIRONMENTAL IMPACT

National policy to protect the environment was established in 1970 through the National Environmental Policy Act (NEPA). The policy calls for stewardship with each generation as trustee of the environment for succeeding generations and a sustainable environment balanced with other needs of present and future generations. Decisions that involve federal funds are the target of this policy. For decisions on transportation funds, regulations for implementing NEPA call for an environmental review process at the project level. This process is intended to result in "decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment (40 CFR Section 1500.1b)."

Federal decisions for funding transportation improvements are based on metropolitan transportation plans that determine project eligibility for FHWA funding. The 1994 Environmental Policy Statement clarifies that environmental considerations are to be integrated into every phase of transportation decision making and is supported by FHWA. For metropolitan transportation planning, a 1995 FHWA policy memorandum specifies that "Metropolitan Transportation Planning should include consideration of the protection of important natural ecosystems and biological resources..." and provide for "incorporation of ecological considerations early in the transportation system planning and development process."

The need for regional transportation planning to account for the environmental as well as transportation needs is specified in a series of metropolitan planning factors contained in federal guidance. Those planning factors define the scope of metropolitan transportation planning. With each renewal of federal transportation legislation, these factors are revised to reflect changing perceptions of transportation needs and problems. For consideration of the environment, the environmental planning factor has expanded from “account for the overall environmental effects of transportation decisions” to the current, broader mission of “protect and enhance the environment.”

### **NEW ENVIRONMENTAL REGULATIONS**

Some environmental effects of transportation are routinely considered during transportation planning. The effects of construction are considered during project planning, design and engineering as part of a federally required environmental review process. Transportation’s other major environmental effects are related to traffic impacts, such as vehicle emissions, and to the reciprocal impacts of land use change and transportation improvements. The environmental effects that extend beyond the project level are addressed by metropolitan transportation planning to different degrees.

The environment has a new prominence in transportation planning for metropolitan areas like the OKI region. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires a greater consideration of transportation effects on the environment and a more proactive approach to environmental protection than prior federal law. New provisions include requirements for developing metropolitan transportation plans (Section 6001: Environmental Considerations in Planning; regulations at 23 CFR Sec 450.322). One requirement is for the transportation plan to include a discussion of potential mitigation of environmental effects, which involves consulting with federal and state agencies on types of strategies for avoiding, minimizing, or compensating for transportation effects. The other requirement calls for consulting with state and local environment based agencies concerning the plan’s development.

### **Mitigation**

Mitigation is a process for reducing adverse environmental impacts. Mitigation has been applied at the transportation project level for many years but it is a new issue for metropolitan transportation planning. Mitigation is a sequential process in which impacts are to be avoided, minimized if avoidance is not feasible, or offset as a last resort. Mitigation to offset impacts may involve creating, restoring, enhancing or preserving damaged environmental resources or disrupted ecological functions.

For regional level transportation planning, discussions of potential mitigation will be guided by the following definition: “environmental mitigation activities means strategies, policies, programs, actions, and activities that, over time, will serve to avoid, minimize, or compensate for (by replacing or providing substitute resources) the impacts to or disruption of elements of the human and natural environment associated with the implementation of a long-range ... metropolitan transportation plan. The human and natural environment includes, for example, neighborhoods and communities, homes and businesses, cultural resources, parks and recreation areas, wetlands and water sources, forested and other natural areas, agricultural areas, endangered and threatened

species, and the ambient air. The environmental mitigation strategies and activities are intended to be regional in scope, and may not necessarily address potential project-level impacts (23 CFR Sec. 450.104)."

Conceptually, mitigation is the same process at regional and project scales. For project planning and design, mitigation is integral to the development and analysis of alternatives and begins by developing an understanding of the affected environment.

Mitigation activities at a regional level can focus on policy. The type, location and scale of mitigation activities will depend on the type, location and scale of potential transportation impacts on the region. The outcome of agency consultations, availability of funding, value and location of environmental resources, and the timing and location of development are among the considerations that will help determine how, where, and when mitigation occurs.

Mitigation strategies at a project level might involve modifying project design or location, or purchasing property prior to project development. At a regional level, avoidance might involve modifying plan recommendations, for example, to encourage local growth strategies that include efficient development patterns.

At any scale, the avoidance and minimization of environmental effects can be facilitated by advance planning. For this plan, avoidance depends on considering transportation needs along with the potential for transportation induced environmental effects. Strategies that protect the natural environment in advance of transportation improvement projects include the approach recommended in OKI's Strategic Regional Policy Plan (SRPP) for better local comprehensive plans that enable communities to conserve greenspace and protect natural system functions through the development process while simultaneously making efficient use of public tax dollars.

Where environmental effects cannot be avoided or minimized, mitigation to counterbalance impacts is another option. At a regional level, the conventional approach is onsite mitigation, which conserves numerous small sites but does not fully replace the environmental values or functions that were lost. The preference of FHWA is for mitigation banks where environmental resources or functions are created, restored, enhanced or protected to offset damage in other areas. For the OKI region, the approach to mitigation should be based on consideration of the value and vulnerability of this region's environmental resources.

### **New Consultations**

The new federal environmental requirements significantly elevate proactive consultations in developing this plan. They use consultations as a major mechanism for advancing consideration of the environment during the formulation of recommendations to improve transportation. The interagency coordination represented by the consultations is not new. For years, metropolitan transportation planning has been defined as a three "C" process that is a continuing, comprehensive, transportation planning process carried out cooperatively by states and local communities. The new provisions for consultation are tied to provisions for public participation plans and for visualization of transportation strategies. The perspectives of environment based agencies optimize

the potential for recommending transportation improvements that avoid or minimize adverse environmental impacts and for developing high quality and affordable mitigation strategies that account for regional conservation priorities.

The requirement for new regional scale consultations is linked to the efficient and effective expenditure of public funds. The national environmental policy was intended to integrate environmental consideration into decision making from the outset, (NEPA and Transportation: Need and Strategies for Early Involvement, U.S. EPA), but its implementing regulations created an evaluation process that focuses mostly on environmental impacts during project development. It has been observed that the high costs of the Environmental Impact Statement process and its outcomes have created pressure for earlier involvement to integrate environmental considerations into federal funding decisions.

As a metropolitan planning organization, OKI has coordinated and consulted with a number of public, private and non-profit agencies and organizations on regional or sub-regional transportation studies, plans and programs (Figure 16-18). Consultations include agencies that are responsible for land use management, natural resources, environmental protection, conservation and historic preservation. Coordination and consultation occurs as necessary in formal and informal settings, on long and short-term bases, and in individual contacts and group discussions.

**Figure 16-18**  
**Agencies and Organizations Consulted by OKI**

- Federal and state environmental agencies
- Federal and state natural resources agencies
- US Army Corps of Engineers
- National Park Service
- State historic preservation offices
- Local government planning commissions
- Local government environmental services departments
- Regional water and sewer districts or departments
- Soil and water conservation districts
- Resource conservation and development districts
- Flood control districts
- Local park districts and departments
- Local watershed planning groups
- Local colleges and universities

SOURCE: OKI

Consultation with resource agencies in corridor studies has enabled OKI to develop the most appropriate strategies for mitigating environmental impacts. Key environmental resource agency personnel have served on OKI committees. Environmental resource agencies are also invited to review and comment on the plan and other major documents.

The potential for consulting with these same agencies more specifically on this plan is strengthened by their participation in OKI planning efforts. These include planning commissions which are represented on OKI's Board of Directors and standing committees and are involved in implementing the SRPP. Soil and water conservation districts are members of the OKI Regional Conservation Council. Water and wastewater utilities participate on the OKI Groundwater Committee and on site specific projects.

OKI is also expanding coordination with environment based agencies through its Greenspace Program. For example, OKI staff has discussed conservation issues with county park districts and county park and recreation department staff. Relationships with these and other conservation agencies is being expanded as OKI develops environmental information and implements the greenspace provisions of the SRPP. This improved coordination will further the consultations involved in addressing SAFETEA-LU requirements.

### **ASSESSING REGIONAL ENVIRONMENTAL RESOURCES**

Environmental information is needed to address SAFETEA-LU's new requirements for consultation on plan development and discussion of potential mitigation. For discussing mitigation strategies with "the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan" information is needed for identifying and prioritizing the region's most significant environmental resources. Guidance issued by ODOT on July 21, 2006 indicates that metropolitan transportation plans should determine the environmental resources that are worth investments of future mitigation funds.

The guidance also refers to developing information to indicate variations in the value and vulnerability of regional environmental resources. Environmental resources may be considered for their conditions and distribution, variations in watershed conditions, risk of resource degradation, potential development effects on resources and potential to control resource stressors. The environmental information needed for the mitigation discussion overlaps with information needed for consultation on this plan's development.

OKI is working to gain a clear understanding of environmental resources of regional significance prior to discussing a regional approach to mitigation of environmental functions potentially affected by the transportation plan. This understanding will involve consideration of priorities for their conservation, protection and/or mitigation, which in turn will involve analyses of regionally significant environmental resources and consultation with appropriate agencies and organizations.

OKI has Geographic Information Systems (GIS) based maps of many of the region's major natural resources and several types of greenspace conservation areas in different stages of development. OKI is updating or otherwise refining information on the various environmental resources to provide maps and data relevant for regional and local planning and analysis. Once the components of this plan were solidified, OKI overlaid the fiscally constrained plan and capacity adding TIP projects on environmental resources to illustrate their proximity (Figures 16-19 to 16-22). In general, the recommended multimodal list of projects, while dispersed geographically, have higher concentrations



in already urbanized areas. New transit, bicycle and pedestrian facilities will use existing rights of way and will have little or no impact on the natural environment. Most new roadway facilities will also use existing rights of way and will have modest impacts on the natural environment. Some impacts on the environment will occur where roadways are widened within the existing or expanded right of way. No significant impacts are noted at this time on historic sites, endangered species or other noted environmental categories with the exception of the Fourth Street Bridge which will cross the Licking River within an historic district in Covington, Kentucky. The maps are summarized in tabular form to more clearly determine which environmental resources may be impacted by particular plan projects (Figure 16-23).

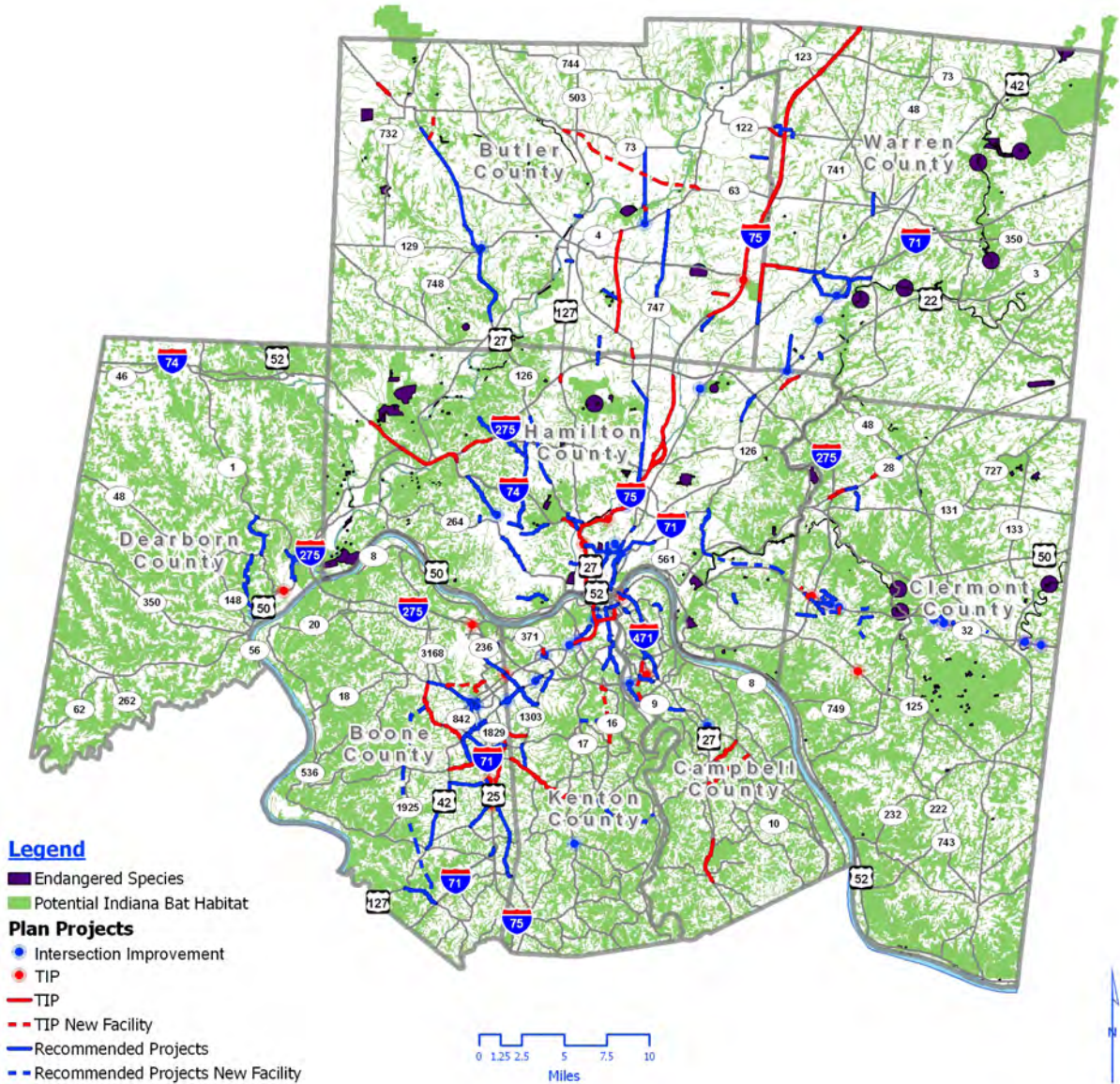
In addition to working to ensure the utility of GIS environmental information for transportation planning, OKI is developing information on the region's listed species of concern, reviewing federal and state priorities for conserving habitat, and investigating mapping for prime agricultural soils. To indicate variations in value and vulnerability of surface water resources, OKI is developing a database of streams and watersheds with information on water quality conditions and watershed and stream protection efforts. To augment maps and databases, the SRPP commits OKI to investigate models for estimating the economic and environmental values of natural systems for use by local governments.

In compliance with SAFETEA-LU regulations, OKI will work in consultation with federal, state and tribal land management, wildlife, and regulatory agencies to discuss potential types of environmental mitigation activities to restore and maintain the environmental functions affected by this plan. The discussion may focus on policies, programs, or strategies at a macro level, rather than at the project level (Federal Register/Vol. 72, No. 30/Wednesday, February 14, 2007/page 7276).



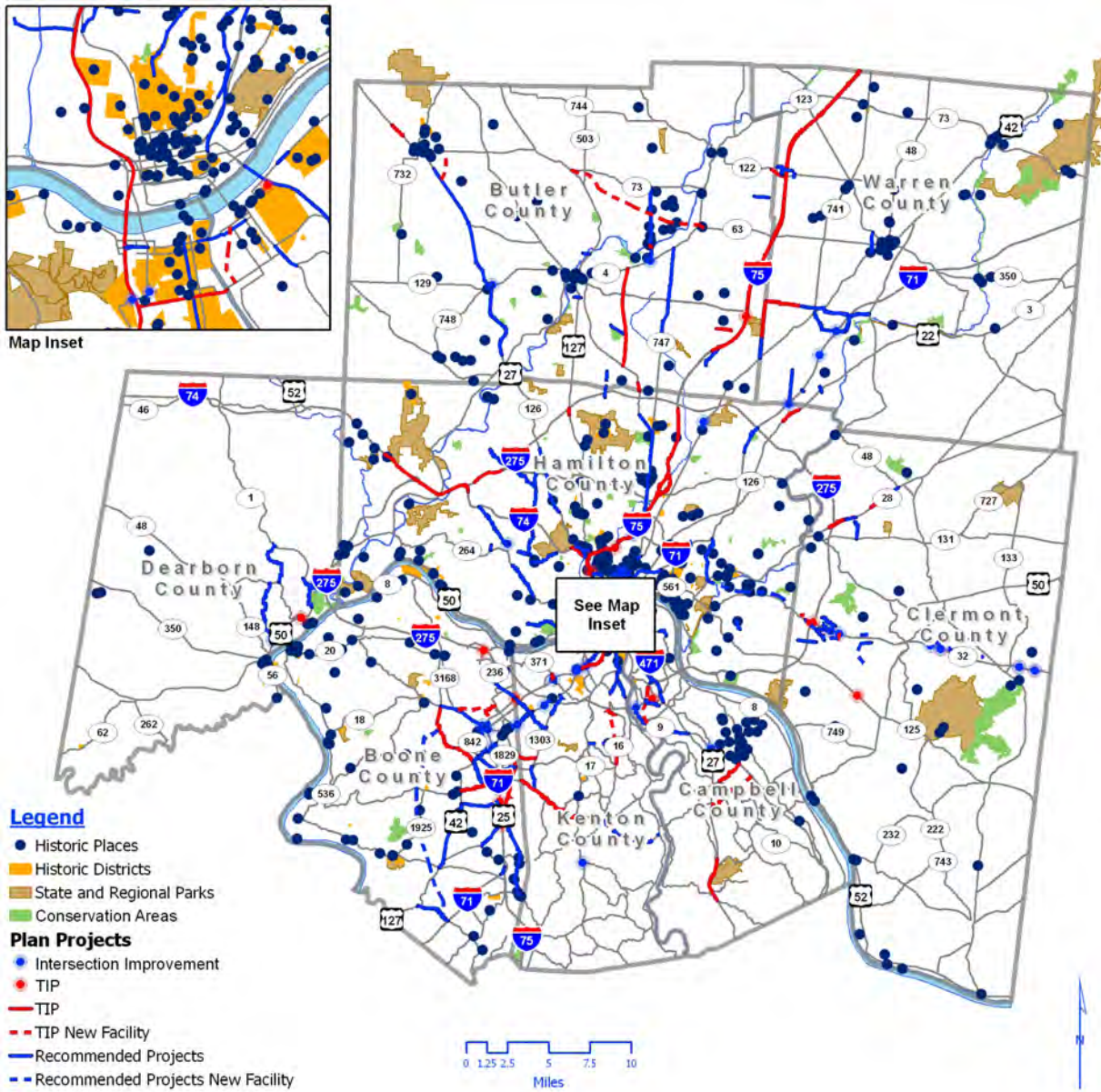


**Figure 16-20  
Threatened and Endangered Species**



SOURCE: OKI.

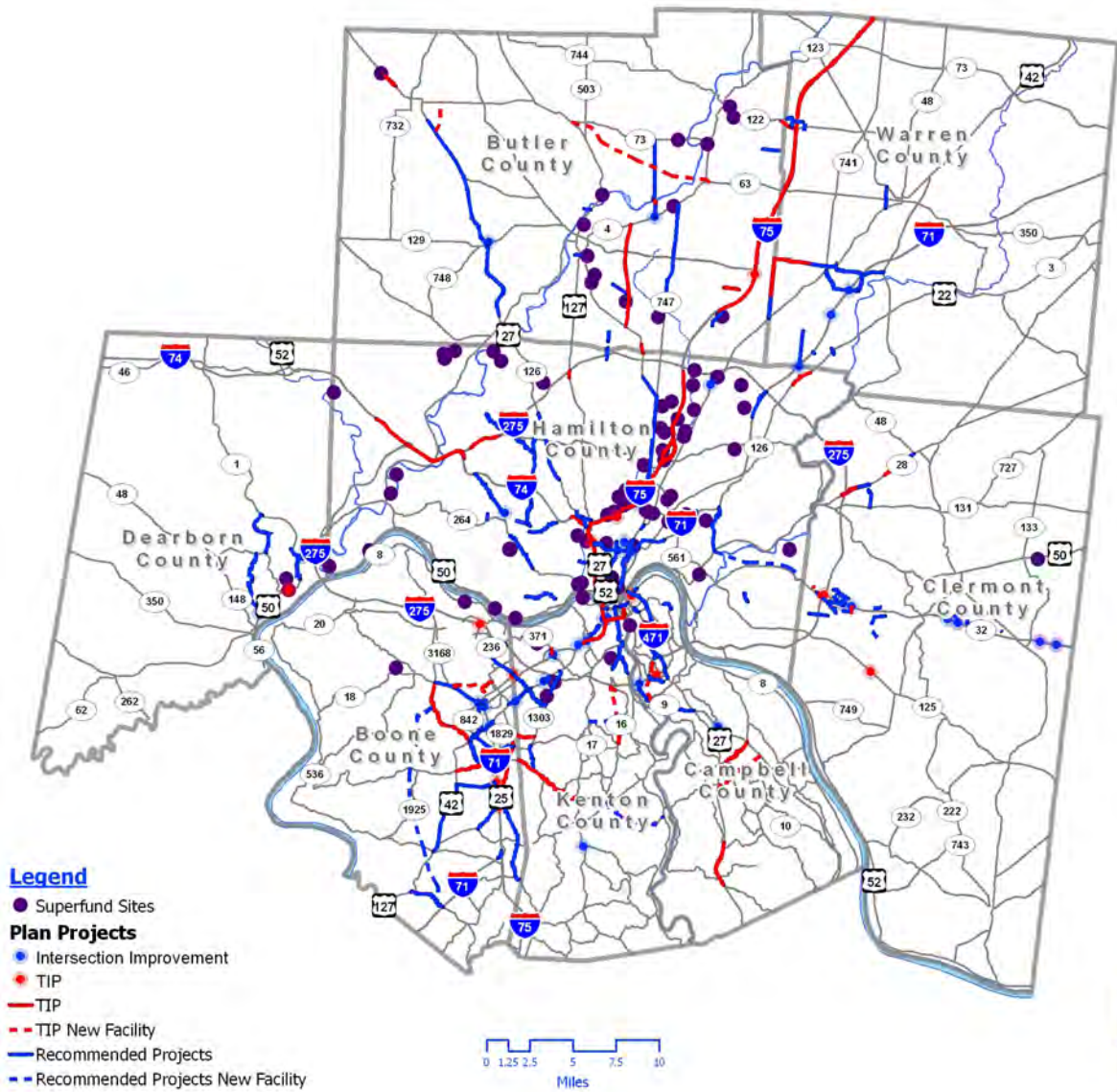
Figure 16-21  
Historic Resources and Parklands



SOURCE: OKI.



Figure 16-22  
EPA Superfund Sites



SOURCE: OKI.

**Figure 16-23**  
**Plan Projects and Environmental Resources**  
 (X indicates project is located in or near an environmental resource)

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Floodplain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
207		Butler	SR 4									
212		Butler	Bobmeyer Road			X	X	X				
217		Butler	SR 4 Bypass				X					
218		Butler	SR 4 Bypass				X					
220		Butler	US 27		X							
222		Butler	Wayne-Madison Road		X	X	X					
230		Butler	Cincinnati-Dayton Road		X		X					
233		Butler	SR 4 Bypass				X					
240		Butler	Oxford State Road				X					
244		Butler	Double Stack Clearance									
250		Butler	SR 747		X		X					
254		Butler	US 27		X		X					
255		Butler	US 27		X		X					
256		Butler	US 27		X		X					

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Floodplain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
258		Butler	Washington Boulevard Extension		X	X	X					
266		Butler	Grand Boulevard									
	14114	Butler	CR 113		X	X	X					
	20499	Butler	SR 63 Extension		X	X	X					
	24664	Butler	IR 75		X		X					
	75971	Butler	IR 75									
	76290	Butler	SR 4 Bypass				X					
	76380	Butler	SR 4				X					
	77099	Butler	US 27				X					
	78073	Butler	CR 20 (Tylersville)				X					
	79686	Butler	SR 122				X					
	80516	Butler	Oxford Connector				X					
	81988	Butler	Butler-Warren Road		X		X					
401	82581	Clermont	Amelia-Olive Branch Relocation				X					



Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
402	82552	Clermont	Aicholtz Road Extension									
403	82554	Clermont	Aicholtz Road Widening									
404	82557	Clermont	Old SR 74 - Phase 1				X					
406		Clermont	SR 28 Improvements				X					
408	82590	Clermont	SR 32-Bauer Road									
414	82589	Clermont	SR 32-DeLaPalma/McKeeper									
417	82588	Clermont	SR 32-Batavia Interchange									
433	82553	Clermont	Aicholtz Road Connector				X					
436		Clermont	Clough Pike Widening				X					
437	82559	Clermont	Eastgate South Drive				X					
438	22970-2	Clermont	SR 32/Bach-Buxton Interchange			X	X					

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
440	22970-1	Clermont	SR 32/ Glen Este- Withamsville Overpass									
441	82561	Clermont	Heitman Lane Extension				X					
442	82582	Clermont	Old SR 74				X					
445	82587	Clermont	SR 32-Herold Road									
446	82586	Clermont	SR 32- Frontage Road				X					
447		Clermont	Business 28 - Phase 2				X					
	75303	Clermont	SR 125									
	76289	Clermont	IR 275									
	79111	Clermont	SR 28 Business									
	82140	Clermont	SR 28									
	82555	Clermont	Eastgate North Frontage Road (Eastgate Drive North)			X	X					
	82558	Clermont	Tina Drive Extension			X						
	82563	Clermont	SR 28				X					

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Floodplain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
601		Hamilton	Rail Emission Reduction Project									
602		Hamilton	Signal System Improvements									
603		Hamilton	Signage									
604		Hamilton	ML King Drive				X					
605		Hamilton	SORTA Madisonville Transit Hub									
606		Hamilton	SORTA Avondale Transit Hub									
607		Hamilton	SORTA Bond Hill Transit Hub									
608		Hamilton	SORTA Lockland Transit Hub									
609		Hamilton	SORTA Oakley Transit Hub									
610		Hamilton	SORTA Springdale/Tri-County Transit Hub									

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
612		Hamilton	SORTA Evanston/Xavier Transit Hub									
614		Hamilton	Reading Road (US 42)									
615		Hamilton	SORTA Lower Price Hill Transit Hub									
616		Hamilton	SORTA Northside Transit Hub									
617		Hamilton	SORTA Walnut Hills Transit Hub									
618		Hamilton	US 27		X		X	X				
619		Hamilton	Vine Street/ Jefferson						X			
620		Hamilton	Ebenezer Road									
621		Hamilton	SORTA West Side/Western Hills Transit Hub									

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
627		Hamilton	SORTA Real-time information system									
630		Hamilton	Ohio River Trail (Lunken Airport to Downtown)		X	X	X	X		X		
631		Hamilton	IR 71					X				
632		Hamilton	Blue Rock Road		X		X					
633		Hamilton	Ohio River Trail (Lunken Airport to Salem Road)	X	X	X	X			X	X	
634		Hamilton	Intermodal Barge to Rail Facility									
635		Hamilton	IR 75									
637		Hamilton	I-71				X					
640		Hamilton	SORTA Replacement of Radio Communications									

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Floodplain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
641		Hamilton	SORTA Uptown Transit Improvements						X			
642		Hamilton	Cheviot Road				X					
644		Hamilton	South Gilmore Road				X					
649		Hamilton	Cincinnati Streetcar Phase II "Uptown Loops"									
650		Hamilton	SR 4									
654		Hamilton	Delhi Road									
655		Hamilton	Red Bank Road		X		X					
656		Hamilton	SR 264 (Glenway Avenue)				X					
657		Hamilton	Eastern Corridor Oasis Line	X	X	X	X	X			X	
658		Hamilton	US 27									
659		Hamilton	US 42 (Reading Road)									

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
661		Hamilton	Blue Rock Road		X				X			
663		Hamilton	Reading Road									
664		Hamilton	Cheviot Road/ North Bend Road				X					
667		Hamilton	North Bend Road									
668		Hamilton	Harrison/Race									
669		Hamilton	SR 32 relocated	X	X	X	X	X				
670		Hamilton	Paddock Road / SR 4		X		X		X			
673		Hamilton	Clough Pike Access Management		X		X					
675		Hamilton	SORTA Uptown Transit Hubs (2)									
678		Hamilton	Harrison Avenue									
681		Hamilton	US 27		X							
682		Hamilton	Ridge Road									
683		Hamilton	Harrison Avenue									



Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
691		Hamilton	Montana Avenue				X		X	X		
692		Hamilton	IR 71									
693		Hamilton	Increase Rail Freight Capacity		X	X	X	X				
695		Hamilton	North Bend Road									
696		Hamilton	North Bend/Cheviot									
697		Hamilton	Ohio Hub Passenger /Midwest Regional Rail's Cincinnati Terminal Facility									
698		Hamilton	Western Hills Viaduct		X	X	X					
699		Hamilton	West McMillan Street Corridor					X				
	8347	Hamilton	US 127									
	25354	Hamilton	IR 74		X	X	X					
	75119	Hamilton	IR 71/IR 75		X	X	X	X	X			
	75765	Hamilton	IR 74/IR 275		X	X	X					

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
	75880	Hamilton	US 22		X		X					
	76256	Hamilton	IR 75		X		X					
	76257	Hamilton	IR 75				X					
	77889	Hamilton	IR 75				X					
	77944	Hamilton	IR 74		X	X	X			X		
	82278	Hamilton	IR 75									
	82282	Hamilton	IR 75									
	82284	Hamilton	IR 74		X		X					
	82286	Hamilton	IR 75				X					
	82288	Hamilton	IR 75				X					
801		Warren	Bethany Road		X		X					
803		Warren	Core Loop Road northeast		X		X					
804		Warren	Core Loop Road southeast									
805		Warren	Butler-Warren Road				X					
806		Warren	SORTA Southwest Warren County Transit Hub									
807		Warren	Columbia Road									

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Floodplain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
808		Warren	Towne Boulevard		X		X					
809		Warren	Towne Boulevard / I-75 Overpass									
810		Warren	IR 71									
812		Warren	New Connector		X		X					
814		Warren	SR 741		X		X					
838		Warren	Mason Montgomery Road				X					
846		Warren	Waterstone Connector									
847		Warren	Columbia Road		X							
848		Warren	IR 71									
849		Warren	IR 71									
	10754	Warren	IR 75		X		X					
	81986	Warren	Bethany Road		X		X					
132		Boone Campbell Kenton	TANK Southbank Shuttle Shelter/ Bike/Aesthetic Improvements		X							

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
133		Boone Campbell Kenton	TANK Real-Time Passenger Information		X							
134		Boone Campbell Kenton	TANK New Fare Collection System		X							
102		Boone	US 42		X							
103		Boone	KY 18 (Burlington Pike) striped bike/ped lanes	X								
105		Boone	IR 71 SB ramp		X		X					
110		Boone	IR 71/75		X							
113		Boone	KY 237 (Gunpowder Road)		X		X					
114		Boone	KY 3060 (Frogtown)		X		X					
115		Boone	IR 71/75		X							
116		Boone	KY 3157 (Mall Road)		X	X	X					
120		Boone	KY 338 (Richwood Road)		X		X					

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
122		Boone	KY 3076 (Mineola Pike)		X							
124		Boone	Frogtown Road Connector Extension-North		X	X	X					
126		Boone	US 25		X							
127		Boone	New Connector		X							
128		Boone	Camp Ernst Road		X	X	X					
131		Boone	KY 18 (Burlington Pike) access management		X		X					
135		Boone	TANK CVG Airport Transit Hub		X							
140		Boone	KY 14		X		X					
141		Boone	KY 18 (Burlington Pike) walkways		X							
142		Boone	KY 236 (Donaldson Road)		X							

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
143		Boone	KY 237 striped bike/ped lanes		X		X					
144		Boone	KY 842		X	X	X					
145		Boone	KY 842		X							
146		Boone	KY 3157		X		X					
147		Boone	US 25		X	X						
148		Boone	US 42		X							
149		Boone	US 42 walkway		X							
150		Boone	US 42		X		X					
151		Boone	US 42		X							
152		Boone	TANK Florence Transit Hub		X							
	6-106.50	Boone	KY 1829 (Industrial Road)		X		X					
	6-14.00	Boone	IR 71/75		X							
	6-158.00	Boone	KY 536		X		X					
	6-18.00	Boone	IR 71/75		X							
	6-193.00	Boone	South Airfield Road (Bypass)		X		X					
	6-8000.20	Boone	IR 275		X							
	6-8001.10	Boone	KY 237		X		X					
	6-8001.21	Boone	KY 237		X		X					

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
	6-8001.25	Boone	KY 237		X							
	6-8200.10	Boone	US 25		X							
	6-8200.40	Boone	US 25		X							
	6-8200.70	Boone	US 25		X							
302		Campbell	IR 471 SB ramp		X		X					
304		Campbell	KY 9		X	X	X					
310		Campbell	IR 275		X							
311		Campbell	IR 471		X	X	X	X				
317		Campbell	KY 8		X							
320		Campbell	KY 709		X							
324		Campbell	KY 9		X							
327		Campbell	TANK Long Term: I-471 Transit Way		X	X	X	X				
328		Campbell	TANK NKY Transit Hub		X							
329		Campbell	TANK Monmouth Street Corridor / Newport Super Stop		X							
330		Campbell	KY 8		X	X			X			
331		Campbell	KY 1120		X		X					



Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
332		Campbell	KY 2345		X							
333		Campbell	US 27		X							
334		Campbell	US 27		X							
	6-156.00	Campbell	KY 547		X		X					
	6-352.00	Campbell	KY 536		X	X	X					
	6-46.20	Campbell	US 27		X		X					
	6-8101.01	Campbell	KY 9		X							
	6-8104.00	Campbell	IR 471		X				X			
	6-8105.01	Campbell	AA-I-275 Connector		X		X					
	6-8105.03	Campbell	Triangle Access		X							
702		Kenton	IR 71/75		X	X	X	X				
703		Kenton	KY 1501 (Hands Pike)		X		X					
706		Kenton	KY 1303		X							X
707		Kenton	KY 1303		X		X					
711		Kenton	KY 236		X		X		X			
712		Kenton	KY 371		X							
713		Kenton	KY 8		X	X	X		X			
714		Kenton	KY 8		X				X			
715		Kenton	US 25		X				X			

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wetlands	Bat	Threatened and Endangered Species	Historic Districts	State and Regional Parks	Conservation Areas	EPA Superfund Sites
716		Kenton	US 25		X		X					
717		Kenton	US 25		X				X			
719		Kenton	KY 536		X		X					
720		Kenton	Dudley Pike		X							
721		Kenton	IR 71/75		X							
722		Kenton	KY 1072		X							
723		Kenton	KY 17		X							
726		Kenton	Madison/James/Decoursey		X	X	X		X			
727		Kenton	Madison/Scott/Greenup		X				X			
731		Kenton	KY 8		X				X			
732		Kenton	KY 16		X	X	X		X			
733		Kenton	KY 236		X		X		X			
734		Kenton	KY 536		X	X						
735		Kenton	TANK Long Term: Expansion Buses		X							
736		Kenton	TANK Madison Avenue Corridor		X				X			

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
737		Kenton	TANK Edgewood Park and Ride		X							
738		Kenton	TANK Short Term: Expansion Buses		X							
739		Kenton	TANK Short Term: I-75/71 Transit Way		X		X		X			
740		Kenton	TANK Turkeyfoot Park and Ride		X							
741		Kenton	US 25		X							
742		Kenton	US 25		X							
743		Kenton	US 25		X							
744		Kenton	US 25		X				X			
745		Kenton	US 25		X							
	6-107.00	Kenton	KY 371 (Buttermilk Pike)		X							
	6-162.00	Kenton	KY 536		X	X	X					
	6-17.03	Kenton	IR 75		X	X	X	X				
	6-204.00	Kenton	KY 842		X							
	6-273.00	Kenton	KY 1120		X	X	X		X			

Plan ID	TIP ID	County	Facility	Designated Wild and Scenic River	100 Year Flood-plain	Wet-lands	Bat	Threat-ened and Endan-gered Species	Historic Districts	State and Regional Parks	Conser-vation Areas	EPA Super-fund Sites
	6-344.11	Kenton	KY 16				X					
	6-344.21	Kenton	KY 16		X							
501		Dearborn	Scenic Drive		X							
504		Dearborn	US 50 / I-275 / SR 1		X							
505		Dearborn	SR 1		X							
506		Dearborn	US 50		X	X						
507		Dearborn	US 50		X							
508		Dearborn	Wilson Creek Road		X		X					
509		Dearborn	US 50		X							
510		Dearborn	Bicycle and pedestrian projects		X	X	X					
512		Dearborn	Pribble Road		X	X	X					
	600726	Dearborn	US 50		X	X						
	800426	Dearborn	IR 275		X							

SOURCE: NOTE HISTORIC PLACES NOT INCLUDED AS COLUMN DUE TO NO PROJECTS BEING LOCATED IN VICINITY OF SUCH RESOURCE.

## **AIR QUALITY IMPACT**

At the metropolitan level, the effect of vehicle emissions on air quality is a major consideration in transportation planning. Individual vehicle trips may seem insignificant, but their cumulative effect is a major determinant of an area's air quality. This plan is required to demonstrate compliance with air quality requirements and include recommendations that contribute to air quality.

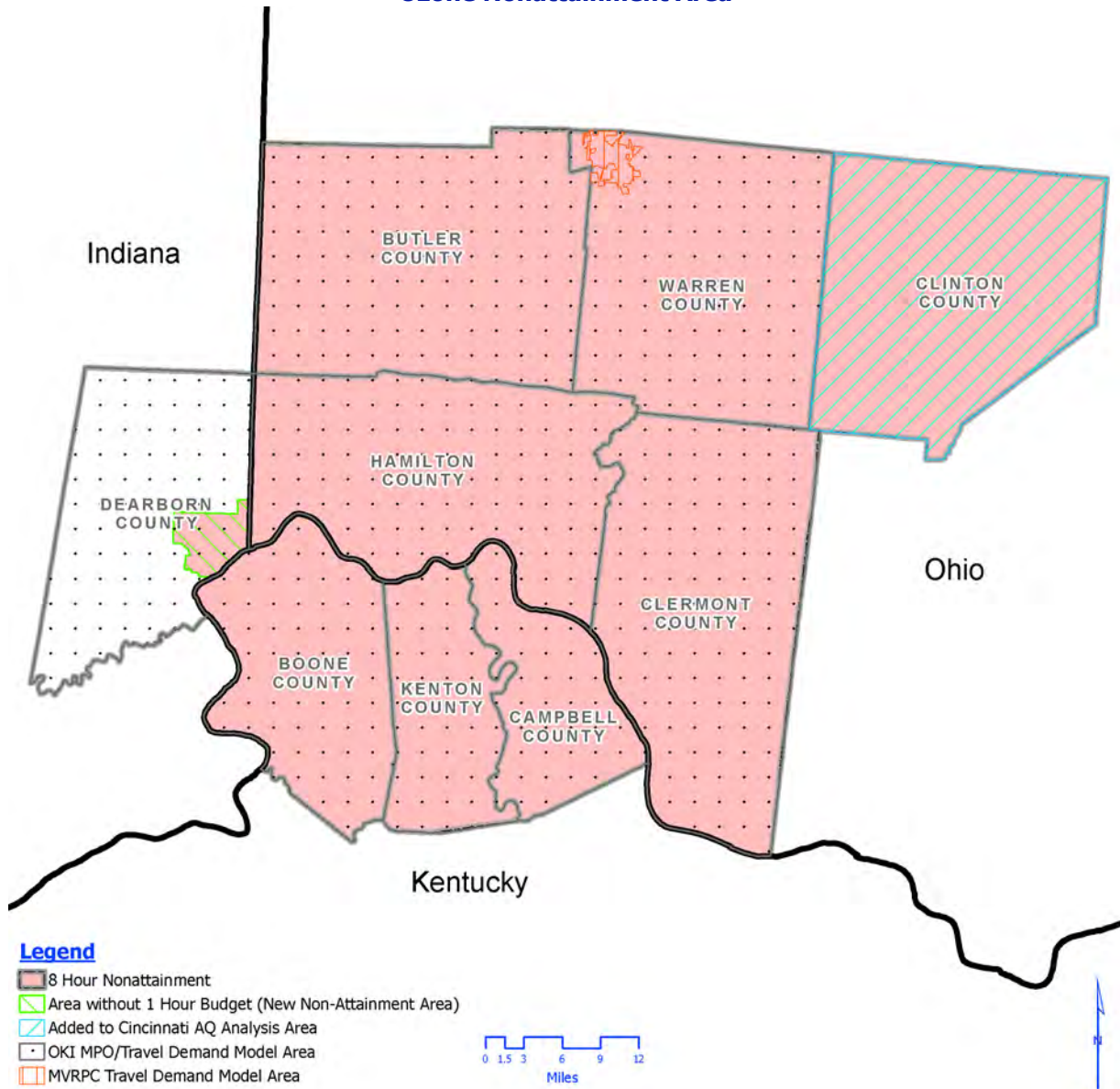
### **Transportation Conformity**

Transportation conformity is a mechanism to ensure that federal funding and approval are given to those transportation activities that are consistent with air quality goals as contained in the State Implementation Plans (SIP). Pursuant to provisions of the Clean Air Act Amendments of 1990, U.S. EPA designated a nine county area in the Cincinnati area as a basic nonattainment area for ozone under the 0.08 ozone standard in April 2004. In December 2004, U.S. EPA designated an eight county Cincinnati area as nonattainment under the annual fine particulate matter (PM2.5) standard. The Cincinnati ozone nonattainment area includes the Ohio counties of Butler, Clermont, Clinton, Hamilton and Warren, the Kentucky counties of Boone, Campbell and Kenton, and Lawrenceburg Township in Dearborn County Indiana (Figure 16-24). The PM2.5 nonattainment area is identical except for the exclusion of Clinton County. The area is on target to meet the SIP attainment goal for ozone in 2009 and PM2.5 in 2010. OKI has determined that the fiscally constrained projects in this plan are consistent with the air quality goals of the ozone and PM2.5 attainment plans Ohio, Kentucky and Indiana. The plan will remain consistent with the maintenance of the ozone and PM2.5 standard through 2030.

Details on OKI's air quality conformity findings and the conformity process can be found in Appendix F. The quantitative findings demonstrate that the region's ozone forming vehicle emissions do not exceed the established motor vehicle emissions budgets for 2008 through 2030. The findings further demonstrate that the region's motor vehicle emissions of fine particulate matter will not cause or exacerbate exceedances of the fine particulate matter standard. OKI qualitatively finds that no goals, directives, recommendations or projects identified in the plan contradict, in a negative manner, any specific requirements or commitments of the applicable SIP.

The daily PM2.5 standard was revised by the U.S. EPA in 2006 to further protect public health. In 2009, U.S. EPA is scheduled to designate those areas not attaining the new PM2.5 daily standard and set an attainment timeframe for meeting the standard. In 2008, U.S. EPA completed its review of the national air quality standard for ozone and replaced the 0.08 parts per million with a new 0.075 parts per million standard. U.S. EPA is scheduled to designate ozone nonattainment areas and set an attainment date for meeting the new ozone standard in 2010.

**Figure 16-24  
Ozone Nonattainment Area**



SOURCE: OKI.

### **Transportation’s Contribution**

Ozone is formed through chemical reactions induced when sunlight reacts with volatile organic compounds (VOCs), principally hydrocarbons, and oxides of nitrogen (NO<sub>x</sub>). Transportation related sources are a major contributor of these pollutants. In the OKI region, transportation sources account for about one half of the total regional emissions of VOCs and about a third of NO<sub>x</sub> emissions. Industry sources, such as power plants, account for one third of all VOC emissions and almost two thirds of NO<sub>x</sub> emissions. The remaining contribution comes from area sources which include individually insignificant sources that when added together, have a significant impact. Area sources include gas powered lawn equipment, oil-based paints, boats and dry cleaners.

The Clean Air Act's ability to meet its objectives and to ensure that improvements in air quality will not be reversed by growth in travel is strengthened by SAFETEA-LU. Many of the programs continued in SAFETEA-LU, which began under its predecessor TEA-21, gives state and local officials tools for adapting the transportation system to meet the Clean Air Act requirements. These tools include increased funding, flexibility to mix project types, such as transit and bicycle, and metropolitan and statewide planning requirements. This plan defines local commitments to promote alternatives to automobile travel and to enhance mobility while minimizing roadway construction. Air quality is a key criterion for OKI in making decisions for transportation plans, programs and projects.

The pollutant impact of transportation sources has been significantly reduced through federal legislation requiring vehicles to meet stricter emissions standards and rules implemented in the OKI region by the state of Ohio and the Commonwealth of Kentucky for cleaner fuels and vapor recovery systems at the fuel pumps. These actions have resulted in lower emission rates per motor vehicle. These technology based air quality benefits will be the primary contributor to lower total emissions from vehicles. From a 2008 base year to 2030, ozone forming emissions from vehicles in the OKI region are forecasted to decrease by over 100 tons per day.

### **Regional Commitment To Clean Air**

Through this plan, OKI has recommended behavior based strategies to reduce vehicle miles traveled. These travel demand management (TDM) strategies encourage using alternatives to SOV travel and shifting trips out of peak travel period, or even eliminating some trips all together. The TDM strategies identified in this plan include increased telecommuting and flexible work schedules through employers, expanded rideshare programs, additional opportunities for safe bicycle and pedestrian travel, parking management and growth management planning as an alternative to roadway expansion.

This plan also identifies improved transit as a critical component in improving air quality. Expanded bus service, development of rail transit and improved access to the transit system through park and ride lots and transit centers, would attract additional transit ridership thereby reducing vehicle miles traveled. The plan also identifies measures aimed at easing congestion through improved traffic flow. These measures, such as access management, traffic signal coordination, and incident management programs, generally have a positive impact on emissions because of a decrease in stop and go travel and reduced delay due to accidents or construction. Roadway improvements that reduce traffic bottlenecks can also have a positive impact on regional air quality. Projects demonstrating measurable reductions in vehicle emissions are eligible for federal funding through the Congestion Mitigation and Air Quality (CMAQ) program. OKI's TIP includes 38 projects utilizing \$46 million in CMAQ.

OKI's Regional Clean Air Program continues to market its successful "do your share for cleaner air" campaign that provides valuable information to the community, businesses and the media on air quality topics. Ozone and particulate matter pollution are critical issues in the tri state region and OKI's commitment to bringing these issues to the forefront is evident through this program. Improved air quality leads to better quality



of life and enhanced economic vitality. In 2007, an aggressive advertising campaign was placed on radio and television as well as in print and on the Internet. Through partnerships with the various radio and television stations, the clean air program was able to secure a significant amount of value added support. This included mentions during traffic and weather reports. In addition, clean air materials were distributed at various events, helping to further spread the word about air quality issues throughout the region.

#### **LAND USE DEVELOPMENT PATTERNS**

Another environmental effect relevant to metropolitan level planning is the transportation and land use connection. This connection is reciprocal in that new development may necessitate transportation improvements for reducing development related congestion or carrying more traffic, or transportation improvements may lead to new development spurred by better access or mobility. In metropolitan areas across the country, the dominant outcome of the transportation and land use connection is an expanding pattern of relatively low density development.

One effect of low density development patterns can be degradation or loss of natural resources, or an impairment of natural system functions. The incremental effects that occur at project level can create local, regional or state level impacts. Where development encroaches on a stream corridor, for example, or where impervious surfaces cover 10 to 25 percent or more of a watershed, the results of impaired stream functions are typically visible as entrenched stream channels, eroded streambanks, polluted or lifeless streams, and frequent overflows and low flows. As a consequence, additional public funds must often be spent to remedy problems by constructing stormwater facilities, repairing flood damage, stabilizing streambanks, and otherwise compensating for malfunctions and damage to natural systems.

It was the growing consequences of ecosystem damage and multiple public outlays that prompted stronger federal legislation to integrate environmental considerations into transportation planning at the metropolitan level. As part of its effort to implement the SRPP, OKI is encouraging the development of complete and up to date local comprehensive plans to strengthen the connection between land use and transportation planning and to help conserve natural resources and ecosystem functions. One of six subject areas in the SRPP is "Natural Systems" in which goals, objectives and policies address protecting natural resources and ecosystem functions.

#### **SUMMARY**

This chapter addresses the transportation needs of the regional population, including target EJ populations. In fact, the improvements recommended directly provide increased transit opportunities to most of the target areas. Projects in OKI's TIP and in this plan provide positive impacts for all segments of the population in terms of travel time savings, emissions reductions, congestion relief and accessibility. Care must continually be taken to minimize the impacts of projects to neighborhoods.

SAFETEA-LU's new environmental requirements enable regional scale transportation planning to provide more meaningful consideration of transportation's environmental effects and advance efforts to protect the environment. OKI will further implement this

plan, the SRPP and SAFETEA-LU by engaging appropriate federal, state, and local environment based agencies in discussions to compare the plan with environmental information and identify potential environmental mitigation that is regional in scope. At the same time, this new process will advance comprehensive planning at regional and local levels to produce better transportation investments and contribute to success in maintaining and restoring environmental resources and functions for future generations.

After examination, OKI has determined that the fiscally constrained projects in this plan are consistent with the air quality goals of the ozone and PM2.5 attainment plans for Ohio, Kentucky and Indiana. This plan will remain consistent with the maintenance of the ozone and PM2.5 standard through 2030.





