

UPPER OHIO NAVIGATION STUDY, PENNSYLVANIA
ENVIRONMENTAL JUSTICE ANALYSIS

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Environmental Justice Background and Principles

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, provides that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The Executive Order (EO) makes clear that its provisions apply fully to programs involving Native Americans.

The Council on Environmental Quality (CEQ) has oversight of the Federal government’s compliance with EO 12898 and the National Environmental Policy Act (NEPA). CEQ, in consultation with the US Environmental Protection Agency (EPA) and other affected agencies, developed NEPA guidance for addressing requirements of the EO.¹ This guidance was developed to further assist Federal agencies with their NEPA procedures so that environmental justice (EJ) concerns are effectively identified and addressed.

The CEQ has also identified six general principles for consideration in identifying and addressing EJ in the NEPA process which include: (1) area composition (demographics); (2) data (concerning cumulative exposure to human health or environmental hazards); (3) interrelated factors (recognize the interrelated cultural, social, occupational, or economic factors); (4) public participation; (5) community representation; and (6) tribal representation.

Key Definitions.

The following definitions are used by the CEQ in guidance on key terms of the EO:

Low-income population: *Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census’ Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.*

Minority: *Individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.*

Minority population: *Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. In identifying minority communities, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals (such as migrant workers or Native American), where either type of group experiences common conditions of environmental exposure or effect. The selection of the appropriate unit of geographic analysis may be a governing body’s jurisdiction, a neighborhood, census tract, or other*

¹ Council on Environmental Quality. 1997. *ENVIRONMENTAL JUSTICE, Guidance Under the National Environmental Policy Act*. Additionally, the EPA has developed a series of environmental justice resources including: *Final Guidance for Consideration of Environmental Justice in Clean Air Act 309 Reviews*, July 1999, and *Policy and Procedures for the Review of Federal Actions Impacting the Environment*.

similar unit that is to be chosen so as to not artificially dilute or inflate the affected minority population. A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds.

Disproportionately high and adverse human health effects: When determining whether human health effects are disproportionately high and adverse, agencies are to consider the following three factors to the extent practicable:

- (a) Whether the health effects, which may be measured in risks and rates, are significant (as employed by NEPA), or above generally accepted norms. Adverse health effects may include bodily impairment, infirmity, illness, or death; and
- (b) Whether the risk or rate of hazard exposure by a minority population, low-income population, or Indian tribe to an environmental hazard is significant (as employed by NEPA) and appreciably exceeds or is likely to appreciably exceed the risk or rate to the general population or other appropriate comparison group; and
- (c) Whether health effects occur in a minority population, low-income population, or Indian tribe affected by cumulative or multiple adverse exposures from environmental hazards.

Disproportionally high and adverse environmental effects: When determining whether environmental effects are disproportionately high and adverse, agencies are to consider the following three factors to the extent practicable:

- (a) Whether there is or will be an impact on the natural or physical environment that significantly (as employed by NEPA) and adversely affects a minority population, low-income population, or Indian tribe. Such effects may include ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Indian tribes when those impacts are interrelated tribes when those impacts are interrelated to impacts on the natural or physical environment; and
- (b) Whether environmental effects are significant (as employed by NEPA) and are or may be having an adverse impact on minority populations, low-income populations, or Indian tribes that appreciably exceeds or is likely to appreciably exceed those on the general population or other appropriate comparison group; and
- (c) Whether the environmental effects occur or would occur in a minority population, low-income population, or Indian tribe affected by cumulative or multiple adverse exposures from environmental hazards.²

Identification and Analysis Specific to the Upper Ohio Navigation Study

An EJ analysis contains three general, but fundamental steps. First, an agency must determine whether EJ populations are present. To do so, an agency must establish project boundaries, obtain residential demographics, and conclude whether EJ populations reside within or adjacent to the project impact area. Next, if an EJ population is present, the potential effects of the project on that population must be identified. Effects on EJ populations must be compared with effects on non-EJ populations within the project area, and analyzed to determine whether those effects are disproportionately high and/or adverse to

² Ibid. Appendix A, pp. 25-27.

the EJ population. Finally, avoidance, minimization, and mitigation (including consideration of project benefits) of any disproportionately high and/or adverse effects should be addressed.

Defining the Geographic Area of Effect

For purposes of EJ analysis, the area of effect is centered on each of the existing navigation facilities where the physical construction activities will occur. The broader Upper Ohio Study Area inclusive of the entire river corridor was initially defined to encompass all potential alternatives for both navigation and ecosystem restoration projects. However, as navigation alternatives involving new locations or pool changes were eliminated early in the study, along with potential ecosystem restoration projects, the area of potential effect for navigation projects evaluated in detail was reduced to the existing facilities and their supporting work areas.

The Upper Ohio River corridor is a close mix of heavy industrial, transportation, and municipal development. Emsworth and Dashields navigation facilities are in the most heavily developed part of the river corridor within 12 miles of Pittsburgh. Further downriver, Montgomery Locks and Dam is situated in a similar, but somewhat less intensively developed area (see **Figures 1-3**).

At all three facilities, a one-mile radius from the center of the navigation facility was considered appropriate to define EJ communities and evaluate potential impact concerns. A one-mile radius from the center of the navigation facility was selected because it encompasses the construction work area alternatives where the project's land-based activities will occur, and also is a reasonable distance for consideration any impacts emanating from the construction areas (e.g. air quality, noise).³

Defining Environmental Justice Populations

The Corps consulted US Census data (www.census.gov) and Southwestern Pennsylvania Commission (SPC) community profile reports (www.spcregion.org) to characterize the communities of the area of effect. The SPC is an organization that supports transportation planning in the 10-county Southwestern Pennsylvania region. This region is inclusive of the Allegheny and Beaver counties, within which the Upper Ohio study area is located, and the counties bordering the Upper Ohio's tributary Allegheny River and Monongahela River Navigation Systems.

Population and income characteristics of the SPC region differ from state averages⁴. The SPC region's percentage of persons living below poverty levels is slightly lower, and minority populations are significantly lower than state averages. For purposes of EJ analysis, the availability of SPC regional statistics provide a more suitable baseline against which to

³ As described elsewhere in the feasibility report, analysis of material disposal alternatives is deferred. We are committed to evaluating specific alternative disposal sites/methods at a future date, which will include performance and completion of all relevant NEPA environmental and socioeconomic analyses, including EJ, in conjunction with specific site selection and transportation routes.

⁴ Southwestern Pennsylvania Commission website (http://www.spcregion.org/reg_all.shtml#muns), by Allegheny County municipal profile, and (http://www.spcregion.org/reg_beav.shtml#muns) by Beaver County municipal profile.

compare local community populations to determine if their minority and low income populations are “meaningfully greater” than the general population.

Study Area Characteristics Based on US Census 2010 Data

Pennsylvania and Regional Characteristics

The 10-county SPC region contains 20 percent of the state’s population. In general, the region’s population is older (both median and over 65) and has a lower median household income compared to the state. The region’s individual and aggregate minority population percentage is significantly lower than the state level, and the percentage of persons below the poverty level is also lower. The SPC regional statistics were used for community comparison and EJ analysis.

Based on a radial distance of one mile from the navigation facility center, all communities or any part falling within that one-mile perimeter were included in the community characterizations. Emsworth Locks and Dams has a total of eight communities, Dashields five, and Montgomery four. Community statistical data relevant to Upper Ohio EJ issues contained in the 2010 US Census and SPC’s municipal profile reports (based on use of 2010 Census Summary File), were reviewed and compiled into **Table 1** for comparison with SPC regional and state-level statistics. Communities qualifying for analysis as EJ communities are highlighted in the table with light-blue shading.

Implementation guidance for the EO states that EJ minority populations exist where either “the minority population of the affected area exceeds 50 percent” or “the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.” The statewide percentage for total minority population is 20.5 percent; the SPC region is 12.4 percent. None of the SPC communities reflect a minority population over 50 percent. What is “meaningfully greater” requires case-specific consideration. The Corps took a conservative approach in considering different values to define “meaningfully greater” and selected a value of 10 percent over the both the SPC minority and low income values to designate an EJ community. Avalon, Neville, Stowe, and Leetsdale all exceed the SPC’s values (plus 10 percent) for minority and/or low income populations. Were any lesser increase above the SPC averages used as the threshold, the data show that there would not be any change in the outcome of EJ community classification, confirming the selected approach.

Table 1. Upper Ohio River Communities Environmental Justice Statistics

AREA	POPULATION		INCOME	
	Total	Minority (%)	Median House-hold income	Persons below poverty (%)
Navigation Project & nearby Municipalities				
Emsworth Locks and Dams				
Avalon	4,705	13.2	\$34,880	17.7
Ben Avon	1,781	7.0	\$84,875	2.7
Ben Avon Heights	371	3.0	\$136,250	1.3
Emsworth	2,449	9.0	\$45,250	6.4
Kennedy	7,672	3.6	\$62,965	7.9
Kilbuck	697	2.7	\$81,071	4.0
Neville	1,084	12.8	\$37,500	18.0
Stowe	6,362	22.7	\$33,579	25.1
Dashiels Locks and Dam				
Crescent	2,640	6.0	\$57,025	7.4
Edgeworth	1,680	4.3	\$142,917	2.7
Leetsdale	1,218	14.9	\$36,726	5.3
Moon	24,185	11.4	\$69,713	8.2
Sewickley	3,827	12.4	\$54,121	6.7
Montgomery Locks and Dam				
Industry	1,835	4.5	\$49,911	8.9
Potter	548	1.6	\$52,292	10.7
Raccoon	3,064	2.5	\$57,094	8.7
Shippingport	214	5.6	\$37,250	4.8
SPC 10-county region	2,574,959	12.4	\$49,562	12.1
SPC region values +10%		13.6		13.3
Pennsylvania	12,702,379	20.5	\$52,267	13.1

XX Values ≥ "SPC value +10%" - designating an EJ community

Emsworth Locks and Dams

Of the eight communities within a one-mile radius of Emsworth Main Channel Dam, three communities (Avalon, Neville, and Stowe) qualify for consideration as EJ communities. Stowe is the only community to qualify under both the minority and low income criteria. Avalon and Neville qualify under the low income criteria.

Dashiels Locks and Dam

Of the five communities within a one-mile radius of Dashiels, only Leetsdale qualifies as an EJ community on the basis of its minority population.

Montgomery Locks and Dam

None of the four communities within a one-mile radius of Montgomery Locks and Dam qualify as EJ communities. Minority and poverty levels are well below the regional and state values.

Upper Ohio EJ Environmental Analysis

Impacts

Now that four EJ communities have been identified within the impact area, the project impacts to these communities may be evaluated. Impacts of the project's navigation alternatives are primarily associated with the temporary construction activities. The navigation project proposes to replace the auxiliary, river chamber with a new larger lock chamber at each facility. As such, the primary construction activities are confined to the river, with the exception of the adjacent land-based support areas (each about six acres) for concrete production and storage. There are no residential areas in the immediate vicinity of the recommended plan's preferred construction support areas. Both Emsworth and Dashields support areas are in an historically and presently industrialized setting. No direct physical impacts to community populations are anticipated in these areas, no cumulative impacts, or any degradation of aesthetics. The primary impact of any significance to the local communities from construction is considered to be temporary increases in ambient noise, which radiates in all directions from the source. In this industrial/transportation corridor, there are high ambient levels of existing noise. There will be no significant air quality issues, as the air quality analysis of the concrete batch plant operations has determined *de minimus* levels.

The intent of an EJ analysis is to determine whether there may be disproportionately high and adverse human health or environmental effects of minority populations, low-income populations, or Indian tribes. CEQ guidance for determining disproportionate effects is cited in the above "definitions." The US Department of Transportation (USDOT) uses a simplified definition for **disproportionately high and adverse effect** on minority and low income populations as "an adverse effect that (1) is predominantly borne by a minority population and/or a low-income population, or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low income population."⁵ This analysis will use the simplified USDOT definition.

As it is population impacts that are of concern, we considered the location and relationship of the residential areas in the EJ communities as shown in the aerial photographs (**Figures 1-3**) to the impact radius. In many cases, as described below, residential areas of the identified EJ communities are situated outside of the impact perimeter. Impacts to industrialized or undeveloped areas of these EJ communities were not considered to be a significant issue requiring analysis.

⁵ U.S. DOT Order 5610.2, *Order to Address Environmental Justice in Minority Populations and Low-Income Populations*, dated April 15, 1997.

Emsworth Locks and Dams

Because the residential areas of Neville and Stowe do not lie within the perimeter radius, and there will be no impact to these EJ communities. A small portion of Avalon is near the outer limit of the radius, while two non-EJ communities, Emsworth and Ben Avon, lie closer to the center of the perimeter than Avalon. All of these communities are situated within a heavily developed industrial and transportation corridor and are acclimated to high ambient noise levels. As a standard mitigating practice for navigation construction projects in populated areas, as with the Emsworth Dams major rehabilitation project conducted between 2009-14, noise-generating activities are limited to daylight hours. Also, the relatively high, steep ridges characterizing much of the Upper Ohio River corridor deflect river-level noise upward mitigating its impact on the majority of residential areas situated beyond the ridge slopes.

Temporary construction noise limited to daylight hours will not be a significant intrusion to the existing condition. In this respect, Avalon may experience some increased noise, but will not bear a disproportionate share of the environmental effect, and no mitigation or further EJ analysis is required.

Dashiels Locks and Dam

The EJ community of Leetsdale lies partially within the Dashiels impact radius. Most of this affected area consists of an industrial park, but also holds a shopping plaza, school, and a small residential area at the perimeter of the radius. The majority of the residential area of Leetsdale, however, lies outside the one-mile perimeter. A heavily used railroad mainline and highway separate the industrial park and river from the other community resources. Adjacent to Leetsdale and closer to the navigation facility lies the residential community of Edgeworth. The undeveloped land riverward of the transportation lines in Edgeworth is the preferred primary construction support area for Dashiels. Both communities are situated within a heavily developed industrial and transportation corridor and are acclimated to high ambient noise levels. The non-EJ community of Edgeworth will bear more of the noise impacts than will Leetsdale, but in both cases, temporary construction noise limited to daylight hours will not be a significant change to the existing condition. Leetsdale will not bear a disproportionate share of the environmental effect, and no mitigation or further analysis is required.

Montgomery Locks and Dam

Because the populations that are the subject of the EO are not present, it is reasonable to conclude that the proposed action will not have a disproportionately high and adverse human health or environmental effect on low-income populations, minority populations, or Indian tribes, and that no further environmental justice review was warranted for this portion of the project.

Public Involvement

Details of overall study coordination are provided in feasibility report **Section 7**. Press releases and legal notices were placed in all of the major newspapers serving the Upper Ohio Valley for the NEPA scoping meetings held in Monaca and Coraopolis in 2006. The draft Feasibility Report was sent to all riverside community public news media, libraries, and elected officials councils, and supervisors in the overall study area.

Conclusions

Community characteristics have been identified and analyzed in conformance with EO 12898 and its relevant federal implementation guidance. This analysis characterized four of the communities within one mile of the navigation facilities as EJ communities under one or both of the EJ criteria (minority, low-income). We determined that project impacts to these EJ community populations would be neither significant, nor disproportionately high and/or adverse on human health or the environment.

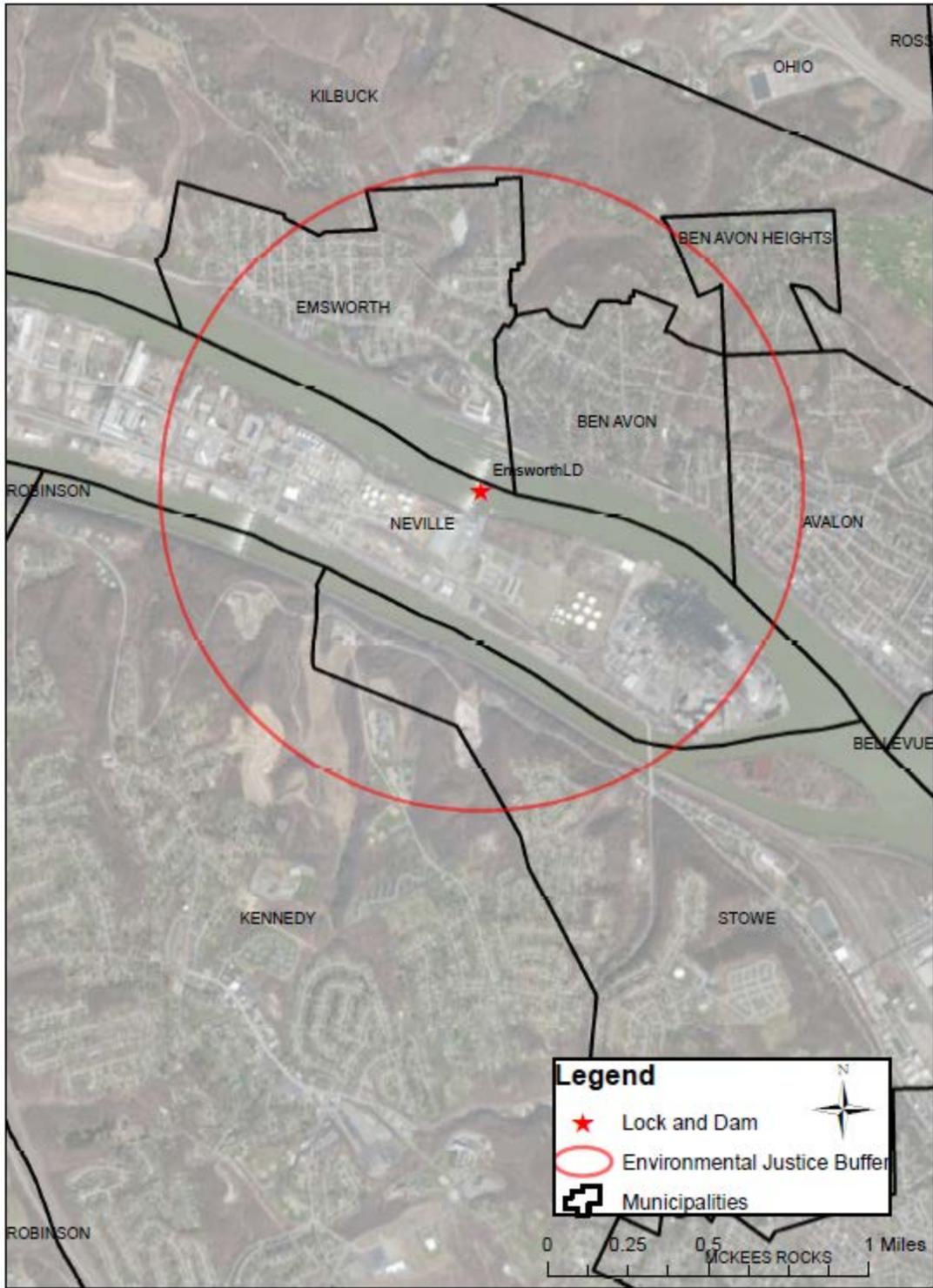


FIGURE 1 Emsworth Locks and Dams Environmental Justice Potential Area of Effect

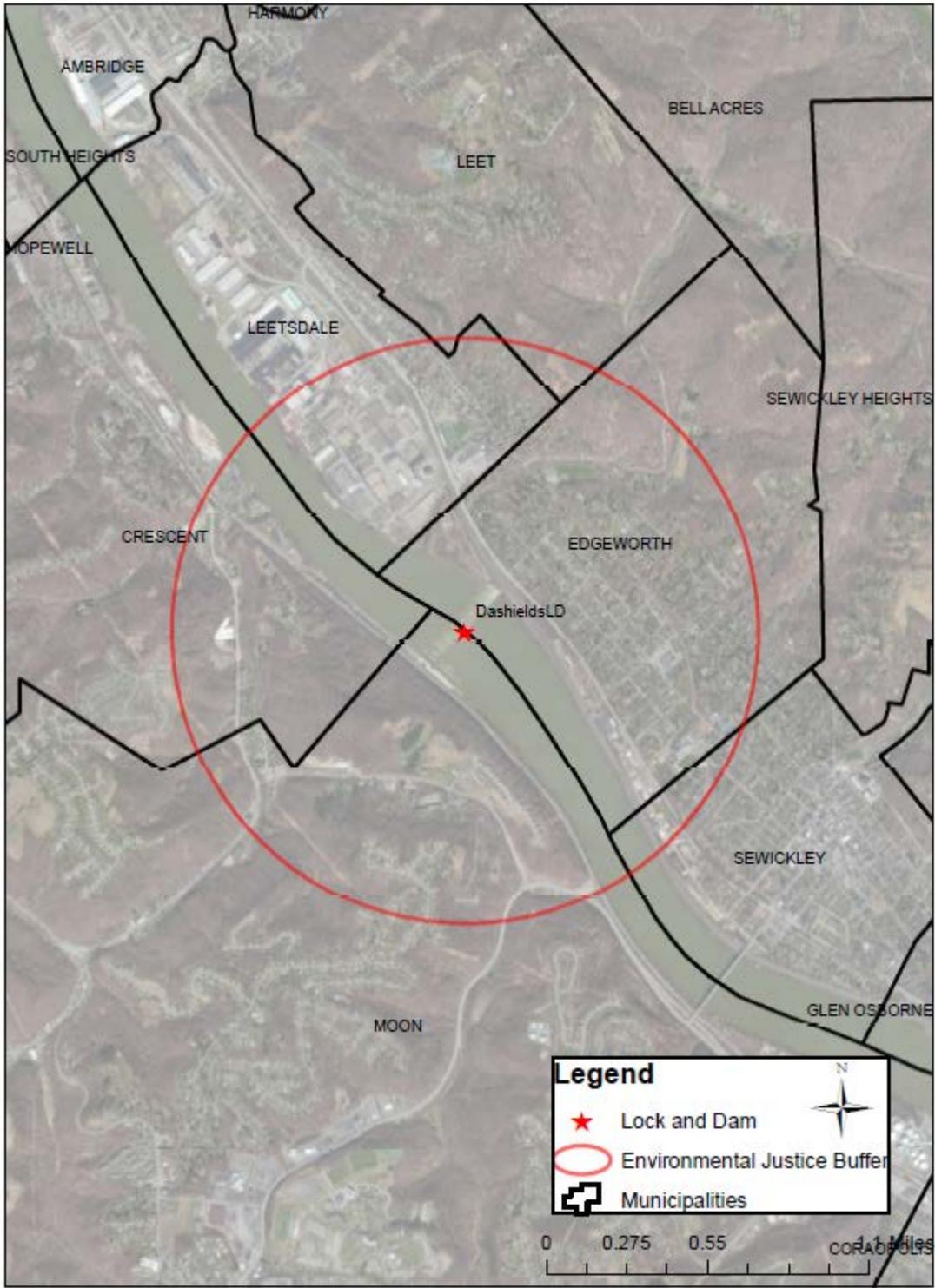


FIGURE 2 Dashields Locks and Dam Environmental Justice Potential Area of Effect

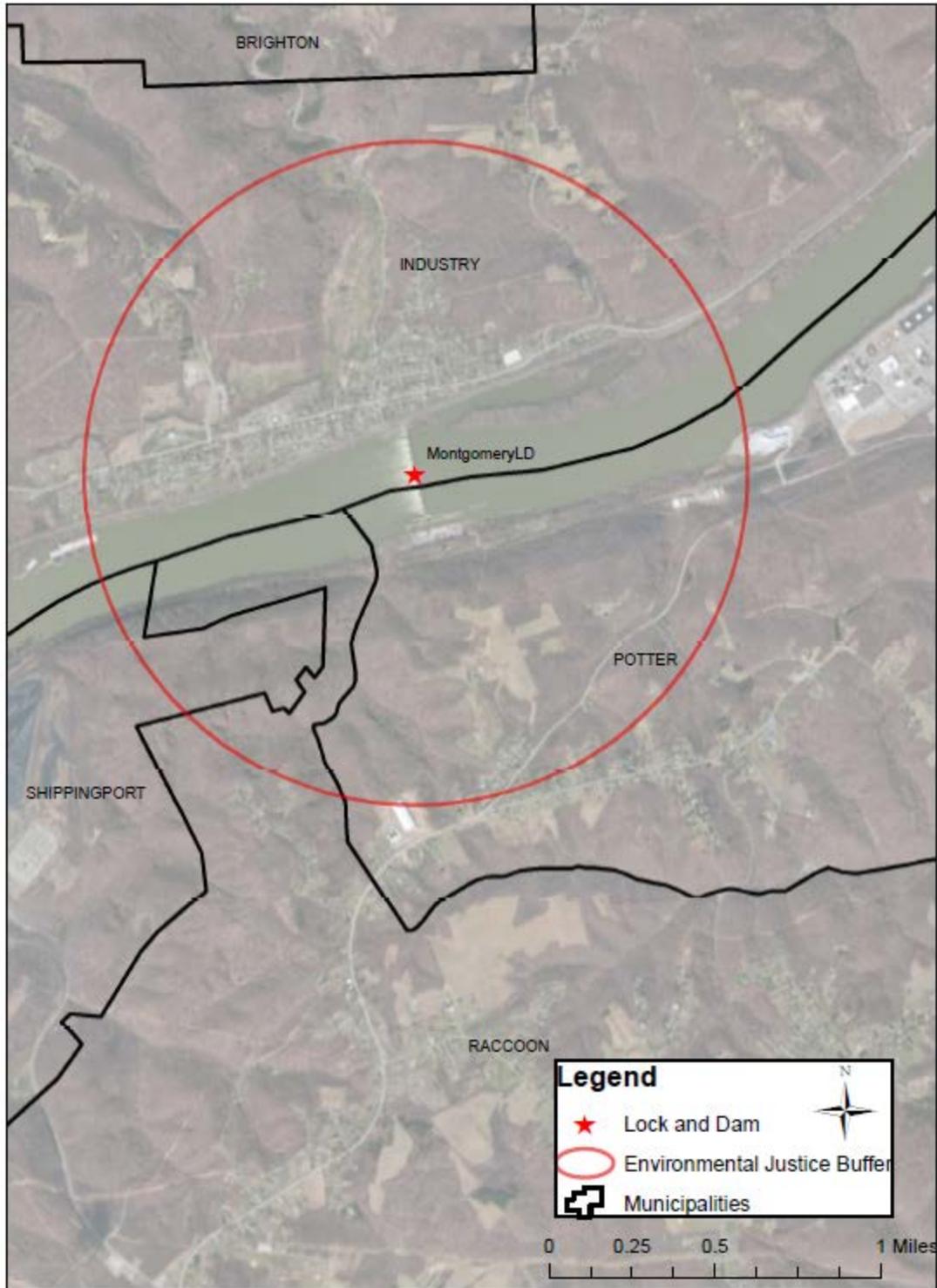


FIGURE 3 Montgomery Locks and Dam Environmental Justice Potential Area of Effect

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