

appendix



Draft Disparate Impact and Disproportionate Burden Policy for the Long-Range Transportation Plan

FEDERAL REQUIREMENT

The Federal Transit Administration's (FTA) Title VI Circular 4702.1B, issued October 2012, under the authority of Title VI of the Civil Rights Act of 1964, directs metropolitan planning organizations (MPOs) to analyze the impacts of the distribution of state and federal funds in the aggregate and to identify any disparate impacts on the basis of race, color, or national origin (for example, impacts to minority populations). FTA's Environmental Justice (EJ) Circular 4703.1, issued August 2015, further directs MPOs to identify and address disproportionately high and adverse effects (referred to as disproportionate burdens) of its activities on minority populations and low-income populations. The Federal Highway Administration's (FHWA) *Environmental Justice Reference Guide*, issued in April 2015, also contains the same requirements for MPOs related to identifying disparate impacts and disproportionate burdens.

PURPOSE OF THE POLICY

As a recipient of federal funding from FTA and FHWA, the Boston Region MPO complies with both agencies' Title VI and EJ requirements. The MPO's Disparate Impact and Disproportionate Burden (DI/DB) Policy allows the MPO to identify potential regionwide future disparate impacts on minority populations and disproportionate burdens on both minority populations and low-income populations in the MPO region (collectively referred to as protected populations) that may result from the set of investment decisions in its Long-Range Transportation Plan (LRTP). DI/DBs are defined by FTA and FHWA as follows.

- **Disparate Impact:** A facially neutral policy or practice that disproportionately affects members of a group identified by race, color, or national origin, where the policy or practice lacks a substantial legitimate justification and where there exists one or more alternative policies or practices that would serve the same legitimate objectives but with less disproportionate effect on the basis of race, color, or national origin.

- **Disproportionate Burden:** A neutral policy or practice that disproportionately affects low-income populations more than non-low-income populations. A finding of a disproportionate burden requires the evaluation of alternatives and mitigation of burdens where practicable. (Note that although EJ guidance covers minority populations as well, disproportionate burdens only address those impacts to low-income populations as minority populations are covered by the more stringent definition of a disparate impact.)

While neither FTA nor FHWA require MPOs to have a DI/DB policy, the policy will allow the MPO to make those determinations in a clear and consistent manner and clearly convey the findings to the public.

This policy is a draft that reflects completion of the first phase of the MPO's development of a DI/DB policy. The MPO will begin phase two in federal fiscal year 2020, which will consist of developing thresholds for metrics that indicate when projected impacts to protected populations are significantly greater than those to non-protected populations. The MPO will incorporate the findings into this policy when that work is complete.

SCOPE

This policy applies to the analysis of the projected impacts of the set of major infrastructure projects that would have funding programmed in the LRTP for construction over the next 20 years—called the LRTP program of projects. These projects are analyzed for impacts as one group; individual projects are not analyzed for disparate impacts or disproportionate burdens under this policy. Major infrastructure projects are considered by the MPO to be those that cost at least \$20 million and/or increase the capacity of the transportation network. The MPO reserves funds for these projects in the LRTP's Major Infrastructure Program and also sets aside funding in several other investment programs as described in the LRTP. The actual projects funded through these other programs in the near-term (the next five years) are defined in the Transportation Improvement Program (TIP). These projects will be included in the equity analysis that is completed for the projects programmed in the TIP.

COMPARISON POPULATIONS

Per FTA and FHWA requirements, the analysis to identify disparate impacts and disproportionate burdens (DI/DB analysis) compares the projected impacts on the entire protected population in the MPO region to the projected impacts on the entire non-protected population in the MPO region. Analyzing and comparing impacts on these populations at the neighborhood and municipal scale is not part of this policy as impacts of the program of projects are only identified at the regional population level. Thus, the projected impacts on the minority population in the MPO region are compared to those on the nonminority population, and the projected impacts on the low-income population in the MPO region

are compared to those on the non-low-income population. According to FTA and FHWA, the definitions of these populations are as follows:

- **Minority:** People who identify as Black or African American, Asian, American Indian or Alaska Native, or Native Hawaiian or other Pacific Islander, and/or Hispanic or Latino/a/x
- **Nonminority:** All other people
- **Low-income:** Households for which the median household income is equal to or less than 60 percent of the region’s median, which is \$45,392
- **Non-low-income:** All other households¹

IDENTIFYING DISPARATE IMPACTS AND DISPROPORTIONATE BURDENS

The MPO staff use a travel demand model to analyze the projected impacts of the LRTP program of projects over the 20-year horizon on the regionwide minority, nonminority, low-income, and non-low-income populations. Two scenarios projecting to the horizon year of the LRTP are analyzed to assess these impacts: the no-build scenario (in which the program of projects is not implemented) and the build scenario (in which the program of projects is implemented). The results are assessed as weighted regionwide averages.

To identify potential future DI/DBs, the MPO staff analyzes several metrics for both scenarios and compares the results. Based on input from the public, the MPO selected metrics related to accessibility, mobility, and the environment. Due to the evolving nature of the analytical process, the specific metrics used to identify DI/DBs may be updated. The MPO staff has identified each metric’s forecasting error—expressed as an absolute value—for minority, low-income, nonminority, and non-low-income populations. The forecasting error accounts for the uncertainty in the travel demand forecasting process and helps to ensure that outcomes are not incorrectly labeled as potential DI/DBs that are likely due to model forecasting error. The forecasting error is distinct for each population because each populations’ size, geographic distribution, and projected travel behavior differs.

For each population and metric, the applicable forecasting errors are compared to the model output to determine whether the impact likely would be caused by the implementation of the LRTP program of projects or forecasting error. According to the MPO’s policy, any impact that is projected to adversely affect the protected population more than the non-protected population, and where the MPO can be confident that this is not due to model uncertainty, would indicate a potential future DI/DB. Adverse impacts can either be the denial of benefits or the imposition of burdens. For some impacts (such as average travel time) an increase from the no-build to build scenarios will indicate a burden and a decrease will indicate a benefit, while for other impacts the reverse will be true (such as access to jobs).

¹ Minority status is derived from the 2010 Decennial Census. Household income is derived from the 2010–14 American Community Survey.

Upon completion of the second phase of developing the DI/DB Policy, additional thresholds will be incorporated into the policy that will allow the MPO to determine when an impact on the protected population is significantly greater than the impact on the non-protected population, per federal guidance.

The following is an example of how the DI/DB analysis is conducted, using hypothetical outputs of average regionwide travel time.

1. The travel demand model reports the projected results for each metric. Table 1 shows results of a hypothetical analysis of travel time, where the third column shows the model outputs and the fourth column shows the projected change between the no-build and build scenarios.

Table C-1
Example of Projected Average Travel Time

Population	Scenario	Average Travel Time (Minutes)	No-build/Build Change (Minutes)
Regionwide minority population	No-build	10.0	
	Build	12.0	+2.0
Regionwide nonminority population	No-build	20.0	
	Build	22.0	+2.0

Source: Boston Region MPO.

2. Next, for each population the no-build scenario output is subtracted from the build scenario output resulting in the projected impact of the LRTP program of projects on each population. The absolute value of the projected impact is compared to the absolute value of the forecasting error for that population. If the absolute value of the projected impact is greater than the absolute value of the forecasting error, there likely would be an impact to that population.

To continue with the travel time example in Table 1, the following calculations would be done for each population:

Minority Population

Where the forecasting error is ± 1 minute:

- *Travel time impact = Build scenario – No-build scenario*
example: $12 \text{ minutes} - 10 \text{ minutes} = +2 \text{ minutes}$
- *Comparison of the absolute value of the travel time impact |2 minutes| to the absolute value of the forecasting error |1 minute|*
 $|2 \text{ minutes}| > |1 \text{ minute}|$
- *Result: Since 2 minutes is greater than 1 minute, there likely would be an impact.*

Nonminority Population

Where the forecasting error is ± 3 minutes:

- *Travel time impact = Build scenario – No-build scenario*
example: $22 \text{ minutes} - 20 \text{ minutes} = +2 \text{ minutes}$
 - *Comparison of the absolute value of the travel time impact |2 minutes| to the absolute value of the forecasting error |3 minutes|*
 $|2 \text{ minutes}| < |3 \text{ minutes}|$
 - *Result: Since 2 minutes is less than 3 minutes, there likely would not be an impact.*
3. Finally, the regionwide projected impacts on the protected population are compared to the regionwide projected impacts on the non-protected population to determine if there would likely be a DI/DB. There would be a DI/DB if
- the MPO region's protected population is projected to receive less of a benefit than the MPO region's non-protected population; or
 - the MPO region's protected population is projected to experience a greater burden than the MPO region's non-protected population.

In the example above, the MPO's regionwide minority population would be likely to experience an increase in travel time (a burden), whereas the MPO's regionwide non-minority population would not. Therefore, the minority population would be projected to experience, on average, a greater burden than the nonminority population. This would indicate a potential future disparate impact.

ADDRESSING DISPARATE IMPACTS AND DISPROPORTIONATE BURDENS

If the DI/DB analysis for a given program of projects results in a finding of a potential future disparate impact for at least one metric, the MPO staff will determine whether there is a substantial, legitimate justification for implementing the program of projects as proposed, as required by federal regulations, and present the conclusion to the MPO board. Staff will also determine whether there are one or more alternatives to the program of projects that meet the same goals of the original projects but that have fewer disparate impacts. If there are, staff will present the alternatives to the MPO board. Any proposed alternative(s) will be subject to the same DI/DB Policy and analysis.

Similarly, if the DI/DB analysis indicates that there is a potential future disproportionate burden for at least one metric, the MPO staff will recommend to the MPO board steps to take to avoid, minimize, or mitigate these impacts, where practicable.

For both potential DI/DBs, alternatives may include a mixture of strategies to mitigate, minimize, or otherwise avoid these impacts. Because the LRTP is a long-term planning document and the projected impacts are likely to occur 20 years into the future, these strategies will likely involve programming future TIP projects in order to mitigate the disparate impact(s) and/or disproportionate burden(s). The MPO board also intends to use this policy during the development of future LRTPs, when conducting scenario planning or making decisions about project programming, to avoid DI/DBs prior to project selection.

PUBLIC PARTICIPATION

Members of the public have had, and will continue to have, opportunities to provide input throughout the revision and implementation of this policy. This current draft DI/DB Policy, as well as the metrics that are analyzed for DI/DBs, reflect public input from outreach conducted in 2018. During the development of future LRTPs, the public will also have the chance to review and comment on the results of the application of the DI/DB Policy to any scenario planning or other project selection process. The MPO board will also provide a meaningful opportunity for public comment on any proposed alternatives recommended by the MPO staff. Finally, MPO staff will conduct further public outreach to support future updates to this policy.