



The Importance of NEPA Review for Infrastructure Projects

A Case Study of the CATS Blue Line Light Rail System

By Kevin DeGood

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In June 2017, President Donald Trump stood before a crowd at the U.S. Department of Transportation (DOT) to discuss the National Environmental Policy Act (NEPA) and declared, “Instead of rebuilding our country, Washington has spent decades building a dense thicket of rules, regulations and red tape.”¹ The president continued, “No longer can we allow these rules and regulations to tie down our economy, chain up our prosperity, and sap our great American spirit.”²

Missing from this threadbare caricature of Washington run amok is any recognition that federal environmental review exists as a response to a past littered with projects that were not studied in advance and thereby caused substantial social, environmental, and even economic harms.³ After all, infrastructure facilities are not an unalloyed good: They bring both benefits and burdens. A highway or rail line that connects people to opportunity may also tear up neighborhoods; degrade wetlands and rivers; destroy wildlife habitat; and generate air pollution, disruptive noise, and damaging vibrations, among other impacts.⁴

This issue brief uses the environmental impact statement (EIS) of the Charlotte Area Transit System (CATS) Blue Line light rail extension to demonstrate how NEPA strengthens infrastructure projects, as well as how federal environmental, civil rights, and historic preservation statutes guide the content of the review. The light rail line in Charlotte, North Carolina, also shows that meaningful enforcement of federal law requires federal agencies to review projects prior to construction given the threat of irreparable harm that major infrastructure facilities pose—harm that could not be sufficiently remedied through post-construction legal action. In addition to exploring the CATS project, the brief discusses the origins of NEPA and outlines the issue of permitting.

Origins of NEPA

In 1969, Congress passed NEPA in response to growing public concern about the social and environmental damage caused by federally funded economic development projects, including infrastructure facilities.⁵ NEPA requires federal agencies—and, where the federal government delegates NEPA responsibilities, state agencies—to study the potential environmental and related social and economic impacts of a proposed infrastructure project, both positive and negative, as well as individual and cumulative. The law also requires these agencies to consider reasonable alternatives to the proposed project before making a decision about whether or how to proceed.⁶

Negative impacts can include anything from habitat loss and water pollution to the destruction of historic buildings and the disproportionate condemnation of homes and businesses in low-income communities or communities of color. Only a small percentage of infrastructure projects—those likely to produce significant impacts—must undergo a full review.⁷ In these cases, the lead federal agency must weigh and balance the benefits and drawbacks based on sound analysis. After public review of and comment on the draft EIS, the agency responsible for deciding on the project publishes a final EIS that responds to the public’s comments.

Importantly, in the absence of environmental review, many negative impacts would become apparent only after the project sponsor completes construction, dramatically increasing the cost of remediation and resulting in certain irreversible harms. Moreover, eliminating review would close a vital pathway through which local residents are able to make their voices heard during the project planning and development process.

By comparison, requiring environmental review prior to construction ensures that government officials and the public know the potential harms associated with a proposed project, allowing for informed decision-making as well as the chance to develop effective design and operational mitigations. In short, NEPA and other protective federal statutes improve governance and make infrastructure projects better.⁸

NEPA as a framework for coordination across federal agencies

The NEPA process requires project sponsors to undertake a detailed study and solicit public input but does not mandate specific outcomes or mitigations. It is triggered when there is a proposal for federal action. Broadly speaking, such federal actions include projects and programs that federal agencies conduct, regulate, approve, or finance in whole or in part, as well as agency rule-making, plans, policies, procedures, and proposed legislation.⁹ Specifically, NEPA applies to “actions where the Administration exercises sufficient control to condition the permit or project approval.”¹⁰

Each federal agency has NEPA procedures consistent with the Council on Environmental Quality's (CEQ) regulations.¹¹ For the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), 23 C.F.R. 771.107(b) defines "action" for NEPA purposes as, among other things, "a highway or transit project proposed for FHWA or FTA funding. It also includes activities such as joint and multiple use permits, changes in access control, etc., which may or may not involve a commitment of Federal funds."¹² For the light rail extension, CATS requested grant funding from the FTA through the New Starts program, triggering a NEPA review.¹³

Equally as important, NEPA serves as a framework that helps federal agencies coordinate review and enforcement of numerous federal environmental, civil rights, and historic preservation statutes. In other words, many federal laws apply to infrastructure projects, and NEPA helps bring order to the review and enforcement process. CEQ regulations require that federal agencies comply with other legal requirements concurrently with the NEPA process and that documentation—such as studies, surveys, and analyses that those other laws require—are integrated into the NEPA process. In fact, a draft EIS must list all federal permits, licenses, and other entitlements that must be obtained to implement the proposal.¹⁴ The value of this coordinating function cannot be overstated.

The environmental review process creates a factual record upon which federal agencies with jurisdiction can determine if a project sponsor is complying with federal law. For instance, Congress passed the Civil Rights Act of 1964 to eliminate intentional discrimination based on race, color, or national origin related to public accommodations, voting, and federal programs, among other purposes.¹⁵ Title VI of the landmark bill states, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."¹⁶ Over the years, the Supreme Court has held that projects and policies that appear neutral on their face may produce unconstitutional discriminatory effects.¹⁷ DOT states in its Title VI circular that "practices that result in discriminatory effects or disparate impacts violate DOT's Title VI regulations."¹⁸

Discriminatory effects can take many different forms. This makes the Title VI mandate crosscutting, as any negative impact has the potential to disproportionately affect a federally protected class of persons. To determine if a proposed infrastructure project would produce disparate impacts, the government sponsor—usually state or local—must compare the location and severity of impacts against demographic and socio-economic data for the project corridor. For example, if a rail line resulted in the condemnation of many homes, businesses, and social or religious institutions of people of color, the project may violate federal civil rights laws.¹⁹

Coordination in the CATS project

The CATS Blue Line light rail extension shows how the concept of prohibiting discrimination in federally funded projects becomes a substantive reality through environmental review. The Blue Line extends 9.4 miles northeast from downtown Charlotte to the University of North Carolina at Charlotte.²⁰ A review of census data by CATS revealed that only two of the 19 neighborhoods along the project corridor had median household incomes above the median for Mecklenburg County at the time of the analysis.²¹ Moreover, the share of residents of color in each neighborhood ranged from 36 percent to 98 percent.²²

After carefully reviewing the preliminary rail design in relation to the communities of concern, CATS found, “Portions of residential properties may be required for partial acquisition and/or easements; however, no residential uses would be displaced as a result of the Preferred Alternative.”²³ In total, construction of the extension required CATS to acquire 90 acres of land, resulting in the displacement of 14 commercial or industrial businesses. A review of these businesses found that none provided “a unique or special service to a community of concern.”²⁴ CATS conducted this same type of analysis for other impacts, including noise, vibration, safety, security, visual, and aesthetics.

Without prior study and review, CATS and the federal government would not have known about the potential for discriminatory effects of the rail extension. Through the environmental review process, CATS created a factual record regarding the demographics and socio-economics of the neighborhoods along the corridor and the resulting impacts from the project. With this information, the FTA was able to determine that the proposed extension complied with Title VI of the Civil Rights Act of 1964.²⁵

The environmental review process plays the same role for other federal laws. For example, in 1973, Congress passed the Endangered Species Act (ESA) to help protect endangered and threatened species and their habitats.²⁶ The act states, “It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purpose of this Act.”²⁷ CATS determined through its study that no mitigations were required for either plant or animal species. Additionally, “A population of Carolina birdsfoot-trefoil would be destroyed by the fill that is proposed within this area of the alignment as part of the Preferred Alternative. Although Carolina birdsfoot-trefoil is a FSC [federal species of concern], it is not rare in the southern Piedmont.”²⁸ As a result of this analysis, the U.S. Fish and Wildlife Service, acting as a resource agency for the FTA, was able to determine that the Blue Line extension complied with the ESA.²⁹

In total, the environmental review process allowed CATS to use its EIS to comply with all 13 applicable laws and executive orders, as well as with the relevant laws and procedures of the state of North Carolina. These laws and executive orders can be found in the sidebar.

Federal laws and executive orders³⁰

- Clean Water Act
- Civil Rights Act of 1964
- National Historic Preservation Act of 1966
- Uniform Relocation Assistance and Real Property Acquisition Act of 1970
- Endangered Species Act of 1973
- National Environmental Policy Act of 1969
- Department of Transportation Act of 1966
- Federal Transit Law
- National Historic Preservation Act of 1966
- Executive order 11988: flood plain management
- Executive order 11990: protection of wetlands
- Executive order 12898: environmental justice

Permitting

Beyond NEPA, project sponsors must also frequently secure federal permits before beginning construction. A federal permit is a written authorization to undertake a specific activity. For example, in addition to complying with NEPA, CATS was required to obtain a Clean Water Act Section 404 permit from the Army Corps of Engineers. The permit authorized CATS to discharge fill materials into U.S. waters.

This raises a basic question: If environmental review is intended to discover project impacts, why must a state or local government sponsor also obtain a separate permit for a certain subset of impacts? Review and permitting are separate for two reasons. First, the environmental review and permitting requirements stem from different federal statutes. NEPA requires environmental review, while the Clean Water Act mandates that project sponsors must secure a permit for activities that affect U.S. waters. Second, and more importantly, permit applications typically require more detailed analysis than would otherwise come from an EIS. In other words, the dual requirement reflects the fact that certain impacts are more complex than others and therefore necessitate additional analysis prior to federal approval. The analyses conducted for the permit application can be folded into an EIS, presented as an appendix to an EIS, or incorporated by reference to avoid duplication.

The 404 permit submitted by CATS determined that the rail corridor would affect 14 jurisdictional streams and nine jurisdictional wetlands, as well as a number of plants and animals subject to various state and federal protections.³¹ Under the Clean Water Act, the Army Corps of Engineers has jurisdiction over waters that are, have been, or may be used in international or interstate commerce, as well as the wetlands and tributaries that feed such waters.³²

Each stream and wetland within the CATS project corridor received an alphabetical label and a detailed description of mitigations and unavoidable impacts. For instance, “Impacts to Perennial RPW [relatively permanent water] Stream F will be avoided through the construction of a 3-span concrete bridge over the stream channel. The piers for the proposed bridge will be placed outside of the top of banks to ensure that

no impacts will occur to this stream.”³³ CATS was not able to avoid all impacts. In order to accommodate the light rail line, CATS had to relocate an existing freight rail spur. This negatively affected 32 feet of Perennial RPW Stream C. The permit notes, “Since the alignment has been placed between the existing townhomes and existing freight railroad tracks, no other feasible alternatives exist to avoid this impact.”³⁴

Additionally, the application details indirect cumulative effects from the proposed rail line. The permit notes that the line would “shape the location and intensity” of growth over the next several decades around proposed station areas. As a result, the light rail line would produce “fewer overall effects on water resources and water quality in the project corridor than the No-Build Alternative.”³⁵

Details of the Charlotte Blue Line EIS

The scope and content of each EIS differs depending on the project in question. The CATS Blue Line EIS contains 22 chapters that respond to 13 federal laws and executive orders.³⁶ Table 1 details each chapter, including the applicable federal laws and executive orders, as well as selected findings. Some federal laws are fully covered by a single chapter. For example, Chapter 8 covers cultural resources, including buildings, structures, sites and objects that are included or eligible for inclusion on the National Register of Historic Places.

Other federal laws, such as the Civil Rights Act of 1964, are crosscutting, as any negative project impact could have discriminatory effects depending on its relation to federally protected classes of persons. The crosscutting laws are not listed for every chapter but are listed instead for the most relevant chapters. The table does not include state laws and regulations.

Each chapter in the CATS EIS is the fulfillment of the public’s collective political will. Over many years, the public has again and again affirmed that federal policies, programs, and spending should not be used to discriminate, degrade the environment, or harm endangered species—to name only a few federal protections. NEPA translates this desire into a concrete process for ensuring that infrastructure facilities adhere to these protections while also generating economic, social, and environmental value. In the end, the Blue Line extension will exist essentially in perpetuity. Taking the time necessary to study its potential impacts was a small price to pay to allow for informed decision-making and fulfill the protections codified within federal law.

TABLE 1

Charlotte environmental impact statement (EIS), federal laws, and selected findings

Blue Line EIS chapters	Applicable federal law, regulations and chapter description	Selected Blue Line EIS findings
Chapter 1: Purpose and need This chapter defines the purpose and need for the proposed action. The statement provides the basis for generating alternatives. The project sponsor evaluates alternatives, in part, based on how well they accomplish the stated purpose and need.	National Environmental Policy Act of 1969 <ul style="list-style-type: none"> For major federal actions, NEPA requires the federal government to review “alternatives to the proposed action.”¹ 40 C.F.R. 1502.13 requires that the statement “shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.”² 	“The purpose of the proposed LYNX BLE [light rail extension] is to ensure future mobility by providing a transportation alternative in a highly congested travel corridor and to support the region’s land use policies and goals for a sustainable growth and development pattern.” ³
Chapter 2: Alternatives considered This chapter describes each of the alternatives the project sponsor considered, including a no-build option.	National Environmental Policy Act of 1969 <ul style="list-style-type: none"> For major federal actions, the federal government must review “alternatives to the proposed action”⁴ 40 C.F.R. 1502.14 requires the project sponsor to “Rigorously explore and objectively evaluate all reasonable alternatives.” This must include “the alternative of no action.”⁵ Clean Water Act <ul style="list-style-type: none"> The Army Corps must evaluate alternatives that are practicable and reasonable. The NEPA alternatives analysis fulfills this requirement. 40 C.F.R. 230.5 requires the Army Corps to “Examine practicable alternatives to the proposed discharge, that is, not discharging into the waters of the U.S. or discharging into an alternative aquatic site with potentially less damaging consequences.”⁶ 	“The No-Build Alternative includes: transit services; highway and transit facilities; and railroad improvements that are planned to exist in 2035. The No-Build Alternative provides the underlying foundation for comparing the travel benefits and environmental impacts of the other alternatives.” “The rail and [bus rapid transit] BRT options selected for each corridor were refined and subjected to additional evaluation. Measures included potential job and household growth for each option, capital cost, capital cost-per-mile, ridership, long-term need for congestion relief and long-term land use opportunities.”[vii]
Chapter 3: Transportation This chapter establishes a transportation activity baseline for both Charlotte overall and the selected corridor. The baseline includes a detailed description of existing transit service. Proposed alternatives are evaluated against the baseline.	National Environmental Policy Act of 1969 <ul style="list-style-type: none"> For major federal actions, NEPA requires the federal government to review “alternatives to the proposed action”⁸ 40 C.F.R. 1502.14 requires the project sponsor to “Rigorously explore and objectively evaluate all reasonable alternatives.” This must include “the alternative of no action.”⁹ 	“Based on regional travel demand forecasts, all purpose travel in the Charlotte region is projected to increase approximately 62 percent for both peak period trips (morning and afternoon rush hours) and total daily trips from 2009 to 2035.” “Similarly, the Northeast Corridor is projected to increase approximately 66 percent for both peak period trips and total daily trips.” “The existing bus routes within the Northeast Corridor currently operate in mixed-traffic on congested roadways ... As a result of operating in mixed traffic on congested roadways, several of the Northeast Corridor routes consistently experience delays above the system-wide average.” ¹⁰
Chapter 4: Land use, public policy, zoning This chapter describes existing and proposed future land uses within the proposed corridor, including the likely effects of those future land uses.	Moving Ahead for Progress in the 21st Century (codified within 49 U.S.C. 5309) <ul style="list-style-type: none"> 49 U.S.C. 5309 requires the secretary of transportation to assess project proposals, in part, by looking for transit supportive land use, including determining that the proposed project is justified based on “policies and land use patterns of the project that support public transportation”¹¹ 	“The Northeast Corridor is classified as a growth corridor and the City and the County have determined that it is an appropriate location for intense development, as identified in the Centers, Corridors and Wedges Growth Framework” “The potential positive impacts include enhanced development, access and the integration of transportation and land use, to create sustainable growth within the region.” ¹²

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Blue Line EIS chapters	Applicable federal law, regulations and chapter description	Selected Blue Line EIS findings
Chapter 5: Socio-economic conditions This chapter establishes a baseline for population, housing, and employment within a half-mile of the proposed light rail stations as well as projected growth by 2035. Additionally, this chapter details regional economic activity and public finances.	<p>Moving Ahead for Progress in the 21st Century (codified within 49 U.S.C. 5309)</p> <ul style="list-style-type: none"> • 49 U.S.C. 5309 requires the secretary of transportation to assess project proposals, in part, by looking at their potential to spur economic development.¹³ • 49 C.F.R. Part 611 requires the secretary of transportation to evaluate applications based on “The extent to which a proposed project is likely to enhance additional, transit-supportive development based on a qualitative assessment of the existing local plans and policies to support economic development proximate to the project”¹⁴ 	<p>“the proposed project would result in an increase in population, housing and employment along the proposed project corridor.”</p> <p>“The resulting effect of construction spending for the Preferred Alternative would be approximately \$848 million in output. It is estimated that direct construction activities of the Preferred Alternative would generate \$253 million in net earnings and payroll expansion and would generate 7,628 jobs in the MSA.”¹⁵</p> <p>The project would increase the population within a half-mile of the station by 298 percent, housing by 330 percent, and jobs by 272 percent.¹⁶</p>
Chapter 6: Neighborhoods, community services, and environmental justice This chapter assesses potential impacts to neighborhoods, community facilities, social services and providers, and special populations located within the proposed project corridor.	<p>Title VI Civil Rights Act of 1964</p> <ul style="list-style-type: none"> • “No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.”¹⁷ <p>Executive Order 12898</p> <ul style="list-style-type: none"> • The order states 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 in the United States”¹⁸ 	<p>“Communities of concern were identified as those Census tracts with either a large concentration of minority residents or median income levels substantially lower than the countywide median income.”</p> <p>“Overall, the Preferred Alternative would improve accessibility for all communities of concern including low-income, minority and transit-dependent populations.”</p> <p>“Overall, impacts resulting from acquisitions and displacements would not be adverse or disproportionate amongst minority and low-income communities under the Preferred Alternative.”</p> <p>“To comply with federal requirements, transit agencies are required to evaluate significant systemwide service and fare changes and proposed improvements ... to determine whether those changes have a discriminatory impact ... No fare or service inequities are expected from the proposed project.”¹⁹</p>
Chapter 7: Visual and aesthetic This chapter details how the proposed light rail line would affect visual character and aesthetics of the commercial and residential areas along the corridor.	<p>National Environmental Policy Act of 1969</p> <ul style="list-style-type: none"> • For major federal actions, NEPA requires the federal government to review “the environmental impact of the proposed action”²⁰ • 40 C.F.R. 1502.16 requires the project sponsor to assess the “Urban quality, historic and cultural resources, and the design of the built environment”²¹ 	<p>“The UDF [urban design framework] recommends specific treatments for trackway, fencing, retaining walls and embankments, bridges, catenary and other system components, as well as landscaping ... In all but two cases, the UDF design treatment tier will sufficiently minimize impacts to visual resources.”²²</p>
Chapter 8: Cultural resources This chapter details the archaeological and historic architectural resources within the proposed corridor.	<p>National Historic Preservation Act of 1966</p> <ul style="list-style-type: none"> • The head of any federal agency shall: “take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.”²³ <p>National Environmental Policy Act of 1969</p> <ul style="list-style-type: none"> • For major federal actions, NEPA requires the federal government to review “the environmental impact of the proposed action”²⁴ • 40 C.F.R. 1502.16 requires the project sponsor to assess the “Urban quality, historic and cultural resources, and the design of the built environment.”²⁵ 	<p>“Potential historic properties identified during the research and fieldwork phase were evaluated against the Section 106 criteria for eligibility for listing in the National Register (36 CFR 60.4.).”</p> <p>“no historic properties would be altered or removed by the proposed project, and the proposed project would not greatly alter the urban, industrial and rail-oriented view sheds of the historic resources.”²⁶</p>

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Blue Line EIS chapters	Applicable federal law, regulations and chapter description	Selected Blue Line EIS findings
Chapter 9: Parklands	Department of Transportation Act of 1966 <ul style="list-style-type: none"> 49 U.S.C. 303 states that the secretary of transportation may only approve the use of parkland if "(1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."²⁷ 	<p>"The Preferred Alternative would result in a potential impact to the Toby Creek Greenway. Potential impacts to this facility and would result from crossing the greenway and visual intrusions. All other park and recreation facilities would not be negatively impacted."</p> <p>"Vegetative screens will be maintained to the extent practicable, and where existing vegetation must be removed, landscaping will be planted where the ROW width would allow."²⁸</p>
Chapter 10: Natural resources	Endangered Species Act of 1973 <ul style="list-style-type: none"> The secretary of the interior must "implement a system to monitor effectively the status of all species with respect to which a finding is made under subparagraph (B)(iii) and shall make prompt use of the authority under paragraph 7 to prevent a significant risk to the well being of any such species."²⁹ 	<p>"No mitigation is required for the plant communities within the study area."</p> <p>"No mitigation is required for wildlife within the project area."</p> <p>"A population of Carolina birdsfoot-trefoil would be destroyed by the fill that is proposed within this area of the alignment as part of the Preferred Alternative. Although Carolina birdsfoot-trefoil is a FSC, it is not rare in the southern Piedmont."³¹</p>
Chapter 11: Water resources	National Environmental Policy Act of 1969 <ul style="list-style-type: none"> For major federal actions, NEPA requires the federal government to review "the environmental impact of the proposed action" as well as "any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented."³⁰ 	<p>"The project will permanently impact approximately 3,312 linear feet of streams and approximately 0.524 acre of wetlands, requiring a Section 404 permit from the U.S. Army Corps of Engineers."³⁶</p>
	Clean Water Act <ul style="list-style-type: none"> "The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Additionally, section 404 of the act states, "The Secretary may issue permits, after notice and opportunity for public hearings for the discharge of dredged or fill material into the navigable waters at specified disposal sites."³² U.S. Department of Transportation Order 5650.2 requires project sponsors "to minimize the adverse impacts on which such actions have on base floodplain ... and to restore and preserve natural and beneficial floodplain values that are adversely affected by such actions."³³ 	
	Executive Order 11990 <ul style="list-style-type: none"> Requires federal departments of agencies to "take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands."³⁴ 	
	Executive Order 11988 <ul style="list-style-type: none"> Requires federal departments of agencies "to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains."³⁵ 	

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Blue Line EIS chapters	Applicable federal law, regulations and chapter description	Selected Blue Line EIS findings
Chapter 12: Air quality	<p>Clean Air Act (42 U.S.C. 701)</p> <ul style="list-style-type: none"> 42 U.S.C. 701 states that the purpose of the Clean Air Act is “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.”³⁷ 40 C.F.R. 93.116 states that highway and transit projects “must not cause or contribute to any new localized CO or Particulate Matter of less than 10 micrometers or less (PM10) violation or increase the frequency or severity of any existing CO or PM10 violation in CO and PM10 nonattainment and maintenance areas. This criterion is satisfied if it is demonstrated that no new local violations will be created and the severity or number of existing violations will not be increased as a result of the project.”³⁸ <p>Moving Ahead for Progress in the 21st Century (codified within 49 U.S.C. 5309)</p> <ul style="list-style-type: none"> 49 U.S.C 5309 requires the secretary of transportation to assess project proposals, in part, by looking at their environmental benefits, including air quality.³⁹ 49 C.F.R. Part 611 requires the secretary of transportation to evaluate applications based on “The monetized value of the anticipated direct and indirect benefits to human health, safety, energy, and the air quality environment that are expected to result from implementation of the proposed project” This includes “Change in air quality criteria pollutants”⁴⁰ 	<p>“The Preferred Alternative would provide a reduction in regional VMT by approximately 75 million miles (Table 12-4). This regional reduction in VMT would subsequently reduce annual CO, NOX and VOC emissions (Table 12-4), which would not be achieved under the No-Build Alternative.”⁴¹</p>
Chapter 13: Noise and vibration	<p>National Environmental Policy Act of 1969</p> <ul style="list-style-type: none"> For major federal actions, NEPA requires the federal government to review “the environmental impact of the proposed action.”⁴² <p>Title VI Civil Rights Act of 1964</p> <ul style="list-style-type: none"> “No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.”⁴³ The Supreme Court has ruled that the government must ensure that “public funds, to which all taxpayers of all races contribute, not be spent in any fashion which encourages, entrenches, subsidizes, or results in racial discrimination.”⁴⁴ 	<p>“Noise impacts at ten residential buildings and one vibration impact at a residence would be considered adverse due to the intensity of the impacts and disproportionate as no residential noise impacts would occur outside of minority and low-income communities of concern.”</p> <p>“Approximately 150 feet of track vibration isolation treatment installed in the LYNX BLE track form would be effective in mitigating potential vibration impact”⁴⁵</p>

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Blue Line EIS chapters	Applicable federal law, regulations and chapter description	Selected Blue Line EIS findings
Chapter 14: Energy use	Moving Ahead for Progress in the 21st Century (codified within 49 U.S.C. 5309)	"Overall, the implementation of the Preferred Alternative would result in an estimated net reduction in regional energy use of 539 million BTUs compared to the No-Build Alternative." ⁴⁸
This chapter details the net energy impact of the proposed facility, including construction, maintenance, and operation as well as avoided vehicle trips and associated energy use.	<ul style="list-style-type: none"> • 49 U.S.C. 5309 requires the secretary of transportation to assess project proposals, in part, by looking at their environmental benefits, including energy use.⁴⁶ • 49 C.F.R. Part 611 requires the Secretary of Transportation to evaluate applications based on "The monetized value of the anticipated direct and indirect benefits to human health, safety, energy, and the air quality environment that are expected to result from implementation of the proposed project." This includes "Change in energy use"⁴⁷ 	
Chapter 15: Hazardous and contaminated materials	National Environmental Policy Act of 1969	"With mitigation, the Preferred Alternative could result in an environmental condition that remediates adverse environmental conditions to levels below state and federal standards." ⁵⁰
This chapter details the potential presence of hazardous and contaminated materials within the corridor. As part of this process, the project sponsor conducted site assessments—including sampling—as well as searches of local, state, and federal databases for known hazardous or contaminated materials sites.	<ul style="list-style-type: none"> • For major federal actions, NEPA requires the federal government to review "environmental impact of the proposed action."⁴⁹ 	
Chapter 16: Safety and security	Moving Ahead for Progress in the 21st Century (codified within 49 U.S.C. 5309)	"The Preferred Alternative has the potential to result in a short-term increase in vehicular conflicts while drivers, bicyclists and pedestrians are getting accustomed to the alteration of North Tryon Street/US-29 and the need to look for both automobiles and light rail vehicles. No long-term negative impact on safety and security would be anticipated." ⁵⁵
This chapter details the steps Charlotte Area Transit System (CATS) will take to ensure that the operations of the light rail facility are both safe and secure.	<ul style="list-style-type: none"> • 49 U.S.C 5309 requires the secretary of transportation to assess applications to determine their environmental benefits, including safety.⁵¹ • 49 C.F.R. Part 611 requires the secretary of transportation to evaluate applications based on "The monetized value of the anticipated direct and indirect benefits to human health, safety, energy, and the air quality environment that are expected to result from implementation of the proposed project." This includes "Change in safety"⁵² 	
	Title VI Civil Rights Act of 1964	<ul style="list-style-type: none"> • "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."⁵³ • The Supreme Court has ruled that the government must ensure that "public funds, to which all taxpayers of all races contribute, not be spent in any fashion which encourages, entrenches, subsidizes, or results in racial discrimination."⁵⁴
Chapter 17: Acquisition and displacements	The Uniform Relocation Assistance and Real Property Acquisition Act of 1970	"Portions of residential properties may be required for partial acquisition and/or easements; however, no residential uses would be displaced as a result of the Preferred Alternative."
This chapter details the potential partial and full acquisition of residential and commercial property along the proposed corridor, including the potential displacement of people or businesses.	<ul style="list-style-type: none"> • The purpose of the act is "To provide for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by Federal and federally assisted programs and to establish uniform and equitable land acquisition policies for Federal and federally assisted programs."⁵⁶ 	"Implementation of the Preferred Alternative would require the full and partial acquisition of parcels along the proposed corridor and would potentially result in the displacement of businesses on parcels with commercial, industrial and office uses." ⁵⁷

continues

Blue Line EIS chapters	Applicable federal law, regulations and chapter description	Selected Blue Line EIS findings
Chapter 18: Construction impacts	<p>National Environmental Policy Act of 1969</p> <ul style="list-style-type: none"> For major federal actions, NEPA requires the federal government to review “the environmental impact of the proposed action.”⁵⁸ 40 C.F.R. Section 1508.8 recognizes that a proposed action may produce direct, indirect, and cumulative impacts or effects. “Effects include: (a) Direct effects, which are caused by the action and occur at the same time and place.”⁵⁹ 	<p>“Construction of the Preferred Alternative would cause temporary impacts to community facilities (i.e. police station, fire station, school) due to access restrictions and temporary blocking of adjoining roadway intersections.”</p> <p>“Potential air quality impacts would be related to increases in fugitive dust, particulates (PM2.5, PM10) and gaseous pollutant emissions (CO, VOCs, and NOx) from mobile and stationary construction related equipment.”</p> <p>“There is the potential for significant construction vibration impact for several structures at 36th Street”</p> <p>“These construction activities could increase sediment levels in stormwater runoff.”⁶⁰</p>
Chapter 19: Secondary and cumulative effects	<p>National Environmental Policy Act of 1969</p> <ul style="list-style-type: none"> For major federal actions, NEPA requires the federal government to review “the environmental impact of the proposed action.”⁶¹ 40 C.F.R. Section 1508.7 defines cumulative impact as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”⁶² 40 C.F.R. Section 1508.8 defines secondary or indirect effects as those caused by the action that “are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”⁶³ 	<p>“it is reasonably foreseeable that the corridor would experience infill development, revitalization, and redevelopment activities as a result of the proposed project.”</p> <p>“Secondary effects to the properties adjacent to stations are reasonably foreseeable and somewhat easier to identify ... including residential and employment growth for the overall corridor and within 1/2-mile radius of each station.”⁶⁴</p>
Chapter 20: Financial analysis	<p>Moving Ahead for Progress in the 21st Century (codified within 49 U.S.C. 5309)</p> <ul style="list-style-type: none"> 49 U.S.C. 5309 The Secretary of Transportation must determine that the project “is supported by an acceptable degree of local financial commitment (including evidence of stable and dependable financing sources), as required under subsection (f).”⁶⁵ 	<p>“CATS’ financial capacity rests on the demonstrated strength of the voter approved ½-percent sales and use tax, the City of Charlotte’s AAA bond rating and CATS’ very strong financial policies which require an annual, year-end \$100 million cash fund balance, a 3.0x gross debt service coverage ratio and a 1.15x net debt service coverage ratio.”⁶⁶</p>
Chapter 21: Evaluation of alternatives	<p>National Environmental Policy Act of 1969</p> <ul style="list-style-type: none"> For major federal actions, NEPA requires the federal government to review: “Alternatives to the proposed action”⁶⁷ 	<p>“The Preferred Alternative would improve mobility in areas with the highest levels of employment in the Charlotte metropolitan area”</p> <p>“The Preferred Alternative would provide a significant travel time savings over the No-Build Alternative.”</p> <p>“The No-Build would result in increased daily VMT (approximately 119,000 more than under the Preferred Alternative), increased auto emissions, and thus could impact regional air quality conformity.”⁶⁸</p>

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Blue Line EIS chapters	Applicable federal law, regulations and chapter description	Selected Blue Line EIS findings
Chapter 22: Public involvement and agency coordination	<p>This chapter details the steps that CATS took to solicit and incorporate public input on the proposed project. Additionally, it details how CATS worked to involve relevant local, state, and federal agencies.</p> <ul style="list-style-type: none"> • NEPA states that “Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved...[the statement] shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of title 5, United States Code”⁶⁹ • 40 C.F.R. 15011 states that “After preparing a draft environmental impact statement and before preparing a final environmental impact statement the agency shall: (1) Obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved or which is authorized to develop and enforce environmental standards. (2) Request the comments of: (i) Appropriate State and local agencies which are authorized to develop and enforce environmental standards; (ii) Indian tribes, when the effects may be on a reservation; and (iii) Any agency which has requested that it receive statements on actions of the kind proposed.”⁷⁰ 	<p>Between July 2000 and April 2011, 42 public workshops were held with a total of approximately 1,567 people in attendance.”</p>

Table 1 endnotes

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Conclusion

The environmental review process improves governance, increases transparency, and makes infrastructure projects better by reducing environmental and community impacts through public participation and mitigations. Moreover, NEPA provides a uniform process by which substantive federal environmental, civil rights, and historic preservation statutes can be enforced effectively. Scaling back or eliminating NEPA would undermine the protections enshrined in federal law as a result of decades of Americans expressing their collective political will.

Kevin DeGood is the director of Infrastructure Policy at the Center for American Progress.

Endnotes

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