

EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers (USACE), New Orleans District (CEMVN) has prepared this environmental impact statement (EIS) to evaluate the potential environmental, cultural, and socioeconomic impacts from construction of the proposed Louisiana Department of Transportation and Development (LADOTD) *Louisiana Highway (LA) 3241* from the LA 40/41 intersection in Bush, Louisiana, to Interstate 12 (I-12) in order to determine whether a Federal permit will be issued. Because the project proposes work in wetlands and structural crossings of various waterways in the project area, a Department of Army (DA) permit pursuant to section 404 of the Clean Water Act (CWA) is required before any construction activities. Because the proposed project requires federal involvement, it is subject to the National Environmental Policy Act (NEPA) of 1969.¹ This EIS has been undertaken in accordance with the NEPA Council on Environmental Quality (CEQ) regulations,² and USACE regulations for implementing NEPA.³ This EIS has been prepared to address NEPA, environmental and cultural resource laws, USACE Regulatory Program Regulations (Title 33 of the *Code of Federal Regulations* [CFR] Parts 320–332), including the USACE NEPA regulations at 33 CFR Part 325, Appendix B, and the requirements of the section 404(b)(1) guidelines (40 CFR Part 230), so that the EIS provides the information needed for the USACE permit decision-making process.

LADOTD proposes to construct a high-speed, four-lane arterial highway from the southern terminus of the current, modern four-lane arterial portion of LA 21 in Bush, Louisiana, to I-12, a distance between 17.4 and 21 miles. The majority of the proposed highway would be designed as a rural arterial road *RA-3* with a design speed of 70 miles per hour, which, according to LADOTD, generally equates to a posted speed limit of 65 miles per hour. The typical cross section would have two 12-foot travel lanes, an 8- to 10-foot outside shoulder, and a 4-foot inside shoulder in each direction. The median width would vary depending on highway design class used ranging between 40 and 60 feet, and a maximum ROW requirement of 250 feet. The exception to that design could be as the proposed project transitions into existing roadways (i.e. intersections), and where alternative alignments follow the existing LA 21.

The proposed I-12 to Bush highway is an effort planned by LADOTD and funded by the Transportation Infrastructure Model for Economic Development (TIMED) program (Louisiana Revised Statute 48:820.2). The stated mission of the TIMED program is to, “foster economic development throughout the state of Louisiana and enhance the quality of life for its residents through an investment in transportation projects.” The TIMED program, approved by the 1989 General Session of the Louisiana State Legislature, identified a 15-year construction program funded by a 4-cent fuel tax, which includes the construction of the proposed *LA 3241* highway between Bush, LA and I-12 in St. Tammany Parish. Revised Statute 47:820.2.B(1)(e) provides for a project from I-12 to Bush to be constructed as a four-lane or more highway. The proposed highway would provide a four-lane highway connection for Washington and northern St. Tammany Parishes to I-12, with the purported goal of providing for regional transportation needs and stimulating undefined economic growth and activity in the region.

LADOTD has stated that the proposed highway is needed as an alternative north-south connection that could reduce congestion and delays for those traveling from northern St. Tammany Parish and Washington Parish to I-12. As stated by LADOTD, the needs of the proposed action are to:

1. Fulfill the legislative mandate, Louisiana Revised Statute 47:820.2B(e)

¹ National Environmental Policy Act of 1969, Pub. L. 91–190, 42 *United States Code* [U.S.C.] 4321–4347, January 1, 1970.

² Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508).

³ *Procedures for Implementing NEPA, 33 CFR Part 230; Processing of Department of the Army Permits*, 33 CFR Part 325.

2. Provide a logical, direct, modern, high-speed, four-lane arterial to I-12 from the southern terminus of the current, modern, four-lane arterial portion of LA 21
3. Divert traffic from Washington and northern St. Tammany Parishes onto a four-lane, modern, high-speed arterial to free capacity for local trips on segments of existing routes in southern suburban areas and reduce congestion during peak and some non-peak periods
4. Support and enhance the existing and developing economic activities in Washington and northern St. Tammany Parishes that rely on the highway network to reach their markets by providing a travel time savings

CEMVN defines the overall project purpose as to construct a four-lane arterial highway from the southern terminus of LA 21 in Bush, Louisiana, to I-12. The need for the project is to meet a legislative mandate in Louisiana Revised Statute 47:820.2B(e), which requires, “[t]he Louisiana Highway 3241 project from Interstate 12 to Bush...shall be constructed as a [four]-lane or more highway.”

Pursuant section 404 of the Clean Water Act of 1972, the USACE, through its New Orleans District Office, issues permits for proposed actions in the project area. This EIS provides the District Engineer, USACE, New Orleans District, with information regarding environmental, cultural, and socioeconomic impacts to consider as part of the public interest review of the permit applications in accordance with USACE regulations. This EIS also provides information to other regulatory and commenting agencies and the general public about the likely environmental consequences of the proposed action and alternatives. This document analyzes both the direct impacts (those caused by the action and occurring at the same time and place) and the indirect impacts (those caused by the action and occurring later in time or farther removed in distance but still reasonably foreseeable) and the impacts from secondary actions (reasonably foreseeable actions taken by others). The potential for cumulative impacts are also addressed, and mitigation measures identified when appropriate.

On November 18, 2008 the USACE published in the Federal Register a Notice of Intent to prepare an EIS to address the potential impacts associated with the proposed action. The USACE conducted a public scoping meeting on January 22, 2009 to solicit input from interested agencies and the public regarding the range of issues and alternatives that should be considered in the EIS. The USACE also solicited comments by e-mail through its Web site at www.i12tobush.com.

SETTING

The project area is entirely within St. Tammany Parish, Louisiana, and roughly bounded by LA 21, U.S. Highway (US) 190, I-12, US 11, and LA 41. It encompasses approximately 245 square miles in area and includes the incorporated areas of Abita Springs, Pearl River, and portions of the cities of Slidell and Covington. Unincorporated areas such as Bush, Hickory, Talisheek, and Waldheim are included in the project area.

LA 21 is a four-lane divided highway between the city of Bogalusa, in Washington Parish, and Bush, in St. Tammany Parish ending at its intersection with LA 41. The proposed I-12 to Bush highway would extend the four-lane section from that point to an existing interchange on I-12 by expanding an existing highway to four lanes or constructing a new alignment with a maximum right-of-way (ROW) width of 250 feet.

ALTERNATIVES

The USACE regulatory permit review process requires a detailed analysis of alternative highway alignments and alternative project site plans to demonstrate the avoidance and minimization of impacts on the aquatic resources to the greatest extent possible. NEPA requires that a No Build Alternative be analyzed to determine the environmental consequences of not undertaking the proposed project, and thereby providing a framework for measuring the benefits and adverse effects of other alternatives.

Pursuant to CWA section 404(b), the USACE defines practicable alternatives as those that are, “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” On the basis of the information, screening analysis, and preliminary evaluation, the following alternatives were selected by the USACE for detailed impacts analysis: No Build, Alternative B/O, Alternative J, Alternative P, and Alternative Q.

No Build Alternative. Under the No Build Alternative, CEMVN would not issue any permits for construction of a new modern, high-speed, four-lane highway between Bush and I-12. As a result, the existing roadway network in the region would remain in its current condition and continue to serve as the transportation network to travel between Bush and I-12. LADOTD could implement future roadway projects in the project area that could improve the transportation network, but those projects might not necessarily fully meet the purpose and need of this project. The No Build Alternative ensures that there would be no direct or indirect impacts to threatened and endangered species, wetlands, environmentally sensitive areas, aquatic resources, or historic sites. Including the CEQ-required No Build Alternative in the EIS serves as a benchmark against which build alternatives can be evaluated. If the proposed highway is not constructed, project-related impacts would be avoided. Other alternatives would have to be developed to provide anticipated project benefits.

Alternative B/O. Alternative B/O would widen LA 21 to a four-lane highway from Bush to just north of Waldheim, then continue as a new four-lane roadway about halfway between Alternatives B and O before capturing Alternative O just north of LA 435, terminating at LA 1088 near I-12. This alternative would use as much of existing highway alignments and non-wetland areas as possible to minimize impacts to the human and natural environment. The alternative would be approximately 19.5 miles long, with 7.0 miles on existing alignment and 12.5 miles on new alignment. The majority of the alignment would consist of an RA-3 typical cross section, which would have a typical ROW width requirement of 250 feet. Control of access could be provided except where the highway follows existing LA 21 and highway crossings at LA 435 and LA 36, and the connection to LA 1088.

Alternative J. Alternative J would be new construction of a four-lane highway following the abandoned railroad corridor from Bush to a point due north of the Slidell Municipal Airport. From that point, the proposed route would connect to Airport Road, which ties into I-12 at an existing interchange (Exit 80). This proposed route would be approximately 21.1 miles long, with 14.2 miles using the abandoned railroad embankment, 5.4 miles on new alignment, and 1.5 miles of existing roadway. The majority of the route (17.5 miles) would consist of an RA-3 typical cross section, which would have a typical ROW width of 250 feet. The northern 0.7 mile of the route would consist of a rural arterial-2 (RA-2) cross section, while the southern 1.9 miles would have suburban arterial SA-1 cross section. Control of access to the route could be provided for the section of highway classified as RA-3 (17.5 miles), except for the segment through Talisheek (2.0 miles) and where the highway crosses LA 435 and LA 36.

Alternative P. LADOTD’s preferred alignment, Alternative P, would begin at the intersection of LA 41 and LA 40 in Bush and proceed southward for approximately 17.4 miles to LA 1088. The majority of the project (15.2 miles) would consist of an RA-3 typical cross section, which has a typical ROW width requirement of 250 feet. The northern 0.7 mile of the project would consist of an RA-2 cross section, which also has a ROW width of 250 feet. The exception to that design would be at the southern end of the project area. The last 1.5 miles would be designed as a suburban arterial -1 typical section, which has a ROW width of approximately 180 feet. The proposed route would use an abandoned railroad corridor from Bush to Talisheek, a distance of approximately 2.5 miles, before turning southwesterly for approximately 13.3 miles on a new alignment to connect with LA 1088 north of I-12. Access for this route would be provided in Bush, at LA 435, at LA 36, and at the intersection with LA 1088. Crossings of existing highways would be at grade.

Alternative Q. Alternative Q would include new construction of a four-lane highway following the abandoned railroad corridor from Bush to a point approximately 1.7 miles north of LA 36. From that point, the proposed route would leave the railroad corridor and connect to LA 434, which ties into I-12 at an existing interchange (Exit 74). This alternative would be approximately 19.8 miles long, with 9.8 miles using the abandoned railroad embankment, 8.7 miles on new alignment, and 1.3 miles on existing roadway. The majority of the alternative (17.2 miles) would consist of an RA-3 typical cross section, which would have a typical ROW width of 250 feet. The northern 0.7 miles of the route would have an RA-2 cross section, with a ROW width of 250 feet. Control of access to the route could be provided for the section of highway classified as RA-3 (17.3 miles), except for the segment through Talisheek (2.0 miles) and where the highway crosses LA 435, LA 36, and connects to LA 434.

SUMMARY OF IMPACTS

Direct, indirect, and cumulative environmental, cultural, and socioeconomic effects that would likely occur upon implementation of the four alternatives, plus the no build alternative, were analyzed. Cumulative effects were analyzed taking into account past, present, and reasonably foreseeable future actions in the project area. A summary of the environmental, cultural, and socioeconomic impacts is presented below and in Table E-1.

No Build Alternative. Under the No Build Alternative, construction of the proposed roadway from I-12 to Bush would not be undertaken. Consequently, there would be no project-related direct or indirect impacts to resource areas within the ROW, or vicinity of, any of the alternative alignment's corridors.

Alternative B/O. Implementation of Alternative B/O would result in short-term and long-term adverse impacts to environmental resources in the project area. Existing land cover would be replaced with impervious road surfaces and a simplified habitat of grasses and herbaceous material in the 250-ft ROW. Approximately 225 acres of pine flatwoods habitat within the ROW would be permanently lost and converted to impervious cover and simplified grassland habitat. Approximately 384 acres of wetlands in the proposed ROW would be permanently lost to construction, clearing, and filling activities. An additional 253 acres of wetlands outside of the ROW could be impacted.

Construction of Alternative B/O would result in fragmentation of existing habitats causing direct and indirect impacts to wildlife. Clearing the ROW would cause localized and temporary dispersal impacts, but wildlife would be expected to return to adjacent areas after construction is complete and the area is revegetated. Aquatic species could be impacted as a result of changes in hydroperiod, an increase in sediment and/or pollutants, and alteration of aquatic habitats. An increase in light and noise as a result of increased traffic could affect migration, breeding, and nesting of wildlife in the vicinity of the roadway. Impacts to threatened or endangered species would not be expected.

Wetland functions and services and the plant and animal communities that inhabit it are largely determined by hydrology. Wetland functions include water storage, transformation of nutrients, growth of living matter, and wildlife habitat. Construction of the roadway could impede channel and overland flow resulting in oversaturated and ponded areas or drought areas in adjacent wetlands. A vegetative shift could be observed with increased duration of ponding or drought conditions. This change in vegetative complex could reduce the amount of wetlands throughout the study area, especially those located in the vicinity of the new roadway. This shift in vegetative complex could directly impact the pine flatwood wetlands throughout the project area. Pine flatwoods in the area could decline in coverage and be replaced with bayhead swamp species.

Removal of surface material and placement of borrow material would directly impact soils in the project area during the construction of the new roadway. The excavation and deposition of fill material would

Table ES-1. Summary of potential physical, natural, and social environmental consequences

Resource Area	No Build Alternative		Alternative B/O		Alternative J		Alternative P		Alternative Q	
	Direct Impacts	Indirect Impacts	Direct Impacts	Indirect Impacts	Direct Impacts	Indirect Impacts	Direct Impacts	Indirect Impacts	Direct Impacts	Indirect Impacts
Land Use	None	None	Long-term major adverse; Short-term minor adverse	Long-term moderate adverse	Long-term major adverse; Short-term minor adverse	Long-term moderate adverse	Long-term major adverse; Short-term minor adverse	Long-term moderate adverse	Long-term major adverse; Short-term minor adverse	Long-term moderate adverse
Water Resources	None	None	Long-term major and moderate adverse	Long-term major and moderate adverse	Long-term major and moderate adverse	Long-term major and moderate adverse	Long-term major and moderate adverse	Long-term major and moderate adverse	Long-term major and moderate adverse	Long-term major and moderate adverse
Ecological Resources										
Land Cover	None	None	Long-term major adverse	Long-term moderate adverse						
Wildlife	None	None	Long-term major adverse	Short-term minor adverse						
Sensitive Habitats	None	None	Long-term major adverse	Short-term minor adverse						
T&E Species	None	None	None	Long-term negligible						
Wetlands	None	None	Long-term major adverse	Long-term moderate adverse						
Geology and Soils	None	None	Long-term major adverse	Short-term and long-term moderate adverse	Long-term major adverse	Short-term and long-term moderate adverse	Long-term major adverse	Short-term and long-term moderate adverse	Long-term major adverse	Short-term and long-term moderate adverse

Table ES-1.
(continued)

Resource Area	No Build Alternative		Alternative B/O		Alternative J		Alternative P		Alternative Q	
	Direct Impacts	Indirect Impacts	Direct Impacts	Indirect Impacts	Direct Impacts	Indirect Impacts	Direct Impacts	Indirect Impacts	Direct Impacts	Indirect Impacts
Air Quality	None	None	Short-term and long-term minor adverse	Short-term and long-term minor adverse	Short-term and long-term minor adverse	Short-term and long-term minor adverse	Short-term and long-term minor adverse	Short-term and long-term minor adverse	Short-term and long-term minor adverse	Short-term and long-term minor adverse
Noise	None	None	Short-term minor adverse	Long-term moderate adverse						
Recreational Resources	None	None	Long-term moderate adverse	Short-term and long-term minor adverse	Long-term moderate adverse	Short-term and long-term minor adverse	Long-term moderate adverse	Short-term and long-term minor adverse	Long-term moderate adverse	Short-term and long-term minor adverse
Traffic and Transportation	None	None	Long-term moderate beneficial	Long-term moderate beneficial						
Utilities	None	None	Short-term negligible	Long-term negligible						
Socioeconomics	None	None	Short-term minor beneficial	Long-term negligible beneficial						
Aesthetic and Visual Resources	None	None	Short-term minor adverse and long-term major adverse	Short-term minor adverse	Short-term minor adverse and long-term major adverse	Short-term minor adverse	Short-term minor adverse and long-term major adverse	Short-term minor adverse	Short-term minor adverse and long-term major adverse	Short-term minor adverse
Cultural Resources	None	None	None	None	None	None	None	None	None	None
Hazardous & Toxic Substances	None	None	Short-term minor adverse	Long-term minor adverse						

1 alter natural contours and elevations, increasing slopes along the entire length of the proposed
2 project. Additionally, native soil profiles would be altered by the redistribution of area soils and
3 the introduction of foreign soils to the area. Compaction of the substrate would occur during the
4 construction phase and continue over time with project use. Soil compaction would decrease
5 surface and substrate porosity forming barriers to surface and subsurface water flow.

6 A noticeable increase in the level of traffic noise (>3 dBA) would be expected for all receptors
7 within approximately one mile of the proposed Control of Access highways proposed under
8 Alternative B/O. Beyond this distance the change in noise would be barely perceptible. There
9 would be an appreciable increase in the level of traffic noise (>10 dBA) for all receptors within
10 approximately ½ mile of the proposed highways proposed under Alternative B/O.

11 The clearing of undeveloped land to construct new sections of the alignment could result in the
12 loss or degradation of fish and wildlife habitat that are used for nature-based recreation. People
13 traveling to the area for bird watching, hunting and fishing, and other nature-based recreational
14 opportunities could see a decrease in the available natural areas that play host to these
15 opportunities.

16 Short-term and long-term beneficial impacts to traffic and transportation would be expected.
17 Alternative B/O is expected to divert traffic mainly from the southwest portion of LA 21 and
18 from LA 59 due to its location within the study area and connection points to the existing street
19 network. The areas where the most traffic relief is expected from Alternative B/O are those with
20 the greatest expected congestion. The travel time savings expected with Alternative B/O
21 improves compared to existing routes involving LA 21 and LA 59. The greatest savings in travel
22 time is expected versus existing routes between Bush and the I-12 at US 190 and I-12 at LA 434
23 interchanges. While Alternative B/O is expected to provide improvements in LOS and/or delay
24 on the congested LA 21 and LA 59 corridors, unacceptable LOS are still expected at many of the
25 intersections in the design year 2035. Capacity analysis for the implementation and design years
26 indicates excess capacity at the intersections in the western portion of the project area. How long
27 beneficial effects at intersections on existing routes depend on whether improvements are
28 provided to existing intersections and when the improvements are implemented.

29 Under Alternative B/O, the economic impact of project-related activities would be expected to be
30 very small. In all years 2010 to 2050 and in the ROI as a whole and in St. Tammany and
31 Washington parishes individually, the project-related impacts, the annual changes over/under the
32 applicable baselines, would be less than 0.14 percent. The economic impact in the ROI of the
33 proposed project to the regional population, employment, GDP, and real personal income is
34 positive, but not statistically significant.

35 Under this alternative, cultural resources would not be directly or indirectly impacted.

36 **Alternative J.** Implementation of Alternative J would result in short-term and long-term adverse
37 impacts to environmental resources in the project area. Existing land cover would be replaced
38 with impervious road surfaces and a simplified habitat of grasses and herbaceous material in the
39 250-ft ROW. Approximately 100 acres of pine flatwoods habitat within the ROW would be
40 permanently lost and converted to impervious cover and simplified grassland habitat.
41 Approximately 373 acres of wetlands in the proposed ROW would be permanently lost to
42 construction, clearing, and filling activities. An additional 292 acres of wetlands outside of the
43 ROW could be impacted.

44 Construction of Alternative J would result in fragmentation of existing habitats causing direct and
45 indirect impacts to wildlife. Clearing the ROW would cause localized and temporary dispersal
46 impacts, but wildlife would be expected to return to adjacent areas after construction is complete

1 and the area is revegetated. Aquatic species could be impacted as a result of changes in
2 hydroperiod, an increase in sediment and/or pollutants, and alteration of aquatic habitats. An
3 increase in light and noise as a result of increased traffic could affect migration, breeding, and
4 nesting of wildlife in the vicinity of the roadway. Impacts to threatened or endangered species
5 would not be expected.

6 Wetland functions and services and the plant and animal communities that inhabit it are largely
7 determined by hydrology. Wetland functions include water storage, transformation of nutrients,
8 growth of living matter, and wildlife habitat. Construction of the roadway could impede channel
9 and overland flow resulting in oversaturated and ponded areas or drought areas in adjacent
10 wetlands. A vegetative shift could be observed with increased duration of ponding or drought
11 conditions. This change in vegetative complex could reduce the amount of wetlands throughout
12 the study area, especially those located in the vicinity of the new roadway. This shift in vegetative
13 complex could directly impact the pine flatwood wetlands throughout the project area. Pine
14 flatwoods in the area could decline in coverage and be replaced with bayhead swamp species.

15 Removal of surface material and placement of borrow material would directly impact soils in the
16 project area during the construction of the new roadway. The excavation and deposition of fill
17 material would alter natural contours and elevations, increasing slopes along the entire length of
18 the proposed project. Additionally, native soil profiles would be altered by the redistribution of
19 area soils and the introduction of foreign soils to the area. Compaction of the substrate would
20 occur during the construction phase and continue over time with project use. Soil compaction
21 would decrease surface and substrate porosity forming barriers to surface and subsurface water
22 flow.

23 A noticeable increase in the level of traffic noise (>3 dBA) would be expected for all receptors
24 within approximately one mile of the proposed Control of Access highways proposed under
25 Alternative J. Beyond this distance the change in noise would be barely perceptible. There would
26 be an appreciable increase in the level of traffic noise (>10 dBA) for all receptors within
27 approximately ½ mile of the proposed highways proposed under Alternative J.

28 The clearing of undeveloped land to construct new sections of the alignment could result in the
29 loss or degradation of fish and wildlife habitat that are used for nature-based recreation. People
30 traveling to the area for bird watching, hunting and fishing, and other nature-based recreational
31 opportunities could see a decrease in the available natural areas that play host to these
32 opportunities.

33 Short-term and long-term beneficial impacts to traffic and transportation would be expected.
34 Alternative J is expected to divert traffic mainly from LA 41 with minor diversion of traffic from
35 LA 21 and LA 59, due to its location within the study area and connection points to the existing
36 street network. The area where the most traffic relief is expected is where excess capacity exists
37 on LA 41. The congestion at Airport Road would be expected to worsen or require additional
38 improvements to accommodate the both the existing needs and significant increase in traffic
39 demand as a result of Alternative J. The travel time savings expected with Alternative J improves
40 compared to existing routes involving LA 41. The greatest savings in travel time is expected
41 versus existing routes between Bush and the I-12 at US 11 and I-12 at LA 434 interchanges.
42 Capacity analysis for the implementation and design years indicates excess capacity at the
43 intersections in the western portion of the project area. How long beneficial effects at
44 intersections on existing routes depend on whether improvements are provided to existing
45 intersections and when the improvements are implemented.

46 Under Alternative J, the economic impact of project-related activities would be expected to be
47 very small. In all years 2010 to 2050 and in the ROI as a whole and in St. Tammany and

1 Washington parishes individually, the project-related impacts, the annual changes over/under the
2 applicable baselines, would be less than 0.14 percent. The economic impact in the ROI of the
3 proposed project to the regional population, employment, GDP, and real personal income is
4 positive, but not statistically significant.

5 Under this alternative, cultural resources would not be directly or indirectly impacted.

6 **Alternative P.** Implementation of Alternative P would result in short-term and long-term adverse
7 impacts to environmental resources in the project area. Existing land cover would be replaced
8 with impervious road surfaces and a simplified habitat of grasses and herbaceous material in the
9 250-ft ROW. Approximately 20 acres of pine flatwoods habitat within the ROW would be
10 permanently lost and converted to impervious cover and simplified grassland habitat.
11 Approximately 358 acres of wetlands in the proposed ROW would be permanently lost to
12 construction, clearing, and filling activities. An additional 208 acres of wetlands outside of the
13 ROW could be impacted.

14 Construction of Alternative P would result in fragmentation of existing habitats causing direct
15 and indirect impacts to wildlife. Clearing the ROW would cause localized and temporary
16 dispersal impacts, but wildlife would be expected to return to adjacent areas after construction is
17 complete and the area is revegetated. Aquatic species could be impacted as a result of changes in
18 hydroperiod, an increase in sediment and/or pollutants, and alteration of aquatic habitats. An
19 increase in light and noise as a result of increased traffic could affect migration, breeding, and
20 nesting of wildlife in the vicinity of the roadway. Impacts to threatened or endangered species
21 would not be expected.

22 Wetland functions and services and the plant and animal communities that inhabit it are largely
23 determined by hydrology. Wetland functions include water storage, transformation of nutrients,
24 growth of living matter, and wildlife habitat. Construction of the roadway could impede channel
25 and overland flow resulting in oversaturated and ponded areas or drought areas in adjacent
26 wetlands. A vegetative shift could be observed with increased duration of ponding or drought
27 conditions. This change in vegetative complex could reduce the amount of wetlands throughout
28 the study area, especially those located in the vicinity of the new roadway. This shift in vegetative
29 complex could directly impact the pine flatwood wetlands throughout the project area. Pine
30 flatwoods in the area could decline in coverage and be replaced with bayhead swamp species.

31 Removal of surface material and placement of borrow material would directly impact soils in the
32 project area during the construction of the new roadway. The excavation and deposition of fill
33 material would alter natural contours and elevations, increasing slopes along the entire length of
34 the proposed project. Additionally, native soil profiles would be altered by the redistribution of
35 area soils and the introduction of foreign soils to the area. Compaction of the substrate would
36 occur during the construction phase and continue over time with project use. Soil compaction
37 would decrease surface and substrate porosity forming barriers to surface and subsurface water
38 flow.

39 A noticeable increase in the level of traffic noise (>3 dBA) would be expected for all receptors
40 within approximately one mile of the proposed Control of Access highways proposed under
41 Alternative P. Beyond this distance the change in noise would be barely perceptible. There would
42 be an appreciable increase in the level of traffic noise (>10 dBA) for all receptors within
43 approximately ½ mile of the proposed highways proposed under Alternative P.

44 The clearing of undeveloped land to construct new sections of the alignment could result in the
45 loss or degradation of fish and wildlife habitat that are used for nature-based recreation. People
46 traveling to the area for bird watching, hunting and fishing, and other nature-based recreational

1 opportunities could see a decrease in the available natural areas that play host to these
2 opportunities.

3 Short-term and long-term beneficial impacts to traffic and transportation would be expected.
4 Alternative P is also expected to divert traffic mainly from LA 21 and from LA 59 due to its
5 location within the study area and connection points to the existing street network. Alternative P
6 is expected to provide the most traffic relief to the routes with the greatest expected congestion
7 except Airport Road, which would not be significantly impacted. The travel time savings
8 expected with Alternative P improves compared to existing routes involving LA 21 and LA 59.
9 The greatest savings in travel time is expected versus existing routes between Bush and the I-12
10 at US 190 and I-12 at LA 434 interchanges. Improvements may be needed on existing
11 intersections not on Alternative P whether or not this alternative is constructed. While Alternative
12 P is expected to provide improvements in LOS and/or delay on the congested LA 21 and LA 59
13 corridors, unacceptable LOS are still expected at many of the intersections in the design year
14 2035. Capacity analysis for the implementation and design years indicates excess capacity at the
15 intersections in the western portion of the project area. How long beneficial effects at
16 intersections on existing routes depend on whether improvements are provided to existing
17 intersections and when the improvements are implemented.

18 Under Alternative P, the economic impact of project-related activities would be expected to be
19 very small. In all years 2010 to 2050 and in the ROI as a whole and in St. Tammany and
20 Washington parishes individually, the project-related impacts, the annual changes over/under the
21 applicable baselines, would be less than 0.14 percent. The economic impact in the ROI of the
22 proposed project to the regional population, employment, GDP, and real personal income is
23 positive, but not statistically significant.

24 Under this alternative, cultural resources would not be directly or indirectly impacted.

25 **Alternative Q.** Implementation of Alternative Q would result in short-term and long-term adverse
26 impacts to environmental resources in the project area. Existing land cover would be replaced
27 with impervious road surfaces and a simplified habitat of grasses and herbaceous material in the
28 250-ft ROW. Approximately 100 acres of pine flatwoods habitat within the ROW would be
29 permanently lost and converted to impervious cover and simplified grassland habitat.
30 Approximately 305 acres of wetlands in the proposed ROW would be permanently lost to
31 construction, clearing, and filling activities. An additional 231 acres of wetlands outside of the
32 ROW could be impacted.

33 Construction of Alternative Q would result in fragmentation of existing habitats causing direct
34 and indirect impacts to wildlife. Clearing the ROW would cause localized and temporary
35 dispersal impacts, but wildlife would be expected to return to adjacent areas after construction is
36 complete and the area is revegetated. Aquatic species could be impacted as a result of changes in
37 hydroperiod, an increase in sediment and/or pollutants, and alteration of aquatic habitats. An
38 increase in light and noise as a result of increased traffic could affect migration, breeding, and
39 nesting of wildlife in the vicinity of the roadway. Impacts to threatened or endangered species
40 would not be expected.

41 Wetland functions and services and the plant and animal communities that inhabit it are largely
42 determined by hydrology. Wetland functions include water storage, transformation of nutrients,
43 growth of living matter, and wildlife habitat. Construction of the roadway could impede channel
44 and overland flow resulting in oversaturated and ponded areas or drought areas in adjacent
45 wetlands. A vegetative shift could be observed with increased duration of ponding or drought
46 conditions. This change in vegetative complex could reduce the amount of wetlands throughout
47 the study area, especially those located in the vicinity of the new roadway. This shift in vegetative

1 complex could directly impact the pine flatwood wetlands throughout the project area. Pine
2 flatwoods in the area could decline in coverage and be replaced with bayhead swamp species.

3 Removal of surface material and placement of borrow material would directly impact soils in the
4 project area during the construction of the new roadway. The excavation and deposition of fill
5 material would alter natural contours and elevations, increasing slopes along the entire length of
6 the proposed project. Additionally, native soil profiles would be altered by the redistribution of
7 area soils and the introduction of foreign soils to the area. Compaction of the substrate would
8 occur during the construction phase and continue over time with project use. Soil compaction
9 would decrease surface and substrate porosity forming barriers to surface and subsurface water
10 flow.

11 A noticeable increase in the level of traffic noise (>3 dBA) would be expected for all receptors
12 within approximately one mile of the proposed Control of Access highways proposed under
13 Alternative P. Beyond this distance the change in noise would be barely perceptible. There would
14 be an appreciable increase in the level of traffic noise (>10 dBA) for all receptors within
15 approximately ½ mile of the proposed highways proposed under Alternative Q.

16 The clearing of undeveloped land to construct new sections of the alignment could result in the
17 loss or degradation of fish and wildlife habitat that are used for nature-based recreation. People
18 traveling to the area for bird watching, hunting and fishing, and other nature-based recreational
19 opportunities could see a decrease in the available natural areas that play host to these
20 opportunities.

21 Short-term and long-term beneficial impacts to traffic and transportation would be expected.
22 Alternative Q is also expected to divert traffic mainly from LA 41 and also from both LA 21 and
23 LA 59 due to its location within the study area and connection points to the existing street
24 network. The travel time savings expected with Alternative Q improves compared to the existing
25 routes involving LA 41, LA 21 and LA 59. Alternative Q is expected to provide improvements in
26 LOS and/or delay on the congested LA 21 and LA 59 corridors; however, the reductions in delay
27 are less than that provided by Alternatives B/O and P. The greatest savings in travel time is
28 expected versus existing routes between Bush and the I-12 at US 190 and I-12 at LA 434
29 interchanges. Capacity analysis for the implementation and design years indicates excess capacity
30 at the intersections in the western portion of the project area. How long beneficial effects at
31 intersections on existing routes depend on whether improvements are provided to existing
32 intersections and when the improvements are implemented.

33 Under Alternative Q, the economic impact of project-related activities would be expected to be
34 very small. In all years 2010 to 2050 and in the ROI as a whole and in St. Tammany and
35 Washington parishes individually, the project-related impacts, the annual changes over/under the
36 applicable baselines, would be less than 0.14 percent. The economic impact in the ROI of the
37 proposed project to the regional population, employment, GDP, and real personal income is
38 positive, but not statistically significant.

39 Under this alternative, cultural resources would not be directly or indirectly impacted.

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