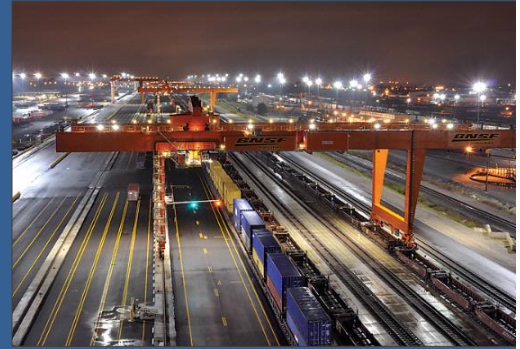




Plan Summary

Alabama Statewide Transportation Plan



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ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN PLAN SUMMARY

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1. OVERVIEW OF THE SWTP AND THE STATEWIDE PLANNING PROCESS

The Alabama 2040 Statewide Transportation Plan (SWTP) Final Report culminates a one-year effort by the Alabama Department of Transportation (ALDOT) Bureau of Transportation Planning and Modal Programs to update the State's long-range transportation plan. The SWTP provides a high-level description of the existing and projected travel and maintenance conditions of Alabama's transportation infrastructure through 2040. It also outlines current and projected funding levels and presents an overall policy guidance for responding to the state's transportation needs. Guided by federal regulations, the SWTP addresses transportation needs for a minimum of 20 years into the future and is typically updated every five years.

As a multimodal plan, the SWTP addresses all modes of travel—roadways and bridges, public transportation and intercity buses, bicycle and pedestrian facilities, rail, aviation and waterways. Freight movement and intermodal facilities are also critical for the transportation system. Significant emphasis is placed on roadways for two primary reasons: roadways are the predominant means of movement for people and freight throughout the state regardless of distances traveled, and roads and bridges are the infrastructure assets under the direct responsibility of ALDOT. With regard to modal facilities and infrastructure outside its direct control, ALDOT's predominant role is coordination and its primary responsibility is to improve intermodal connectivity to the roadway system.

The SWTP is by design a macro-level assessment of the entire transportation system. It considers the extent of transportation infrastructure coverage and connectivity across the entire state and between transportation modes. It is not intended to provide a detailed assessment of transportation conditions within a specific region or mode. In contrast to ALDOT's short-range State Transportation Improvement Program (STIP), the SWTP does not include a detailed, prioritized listing of projects. Instead, it focuses on programs, policies and strategies that will assist in working towards the achievement of longer term goals and objectives. Similarly, short and long-range planning activities related to non-roadway modes (e.g., transit, bicycle, pedestrian, rail, aviation and waterways) are conducted by other ALDOT bureaus, and the findings become inputs into the comprehensive statewide planning process.

The geographic building block leading to the statewide level is the Metropolitan Planning Organization (MPO) structure, which is designated for urban areas with populations of 50,000 or greater. MPOs are federally-mandated to undertake the metropolitan planning process, which mirrors the statewide process. The MPOs prepare short-term project prioritization (Transportation Improvement Program, or TIP) and long-term program assessment (Long Range Transportation Plan, or LRTP) documents for their respective areas. There are currently 14 MPOs in Alabama, including 2 that cross state boundaries. In addition, 12 Rural Planning Organizations (RPOs) support planning activities outside the MPO areas across the state. The state's Regional Commissions serve as the staff of the RPOs.

Coordination and outreach efforts were conducted throughout the SWTP development process to better understand system needs and issues. Engagement primarily consisted of client coordination, stakeholder outreach, and public involvement. A contact list of stakeholders was developed, which included ALDOT Region Engineers, the MPOs and RPOs, FHWA (Federal Highway Administration), representatives of state agencies, the Tribes and Tribal Organizations, and select private sector modal, economic development and advocacy organizations, as well as individuals who expressed interest during the course of the effort. Stakeholders were notified by email of regional meetings and materials provided for review.

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Two rounds of public and stakeholder outreach meetings were held in each of the five ALDOT Regions (Hoover/Birmingham, Huntsville, Mobile, Montgomery and Tuscaloosa) to coincide with key milestones. The first meetings, held in September 2016, corresponded to the identification of existing/future needs, while the second meetings, in April 2017, presented draft plan findings and recommendations. A webpage (<http://www.dot.state.al.us/oeweb/statewideTransportationPlan.html>) and email address (altransplans@dot.state.al.us) were established to efficiently communicate with stakeholders and the general public. Study materials were posted on the webpage, and comments could be submitted to the study team by email. All stakeholders and planning partners were encouraged to distribute SWTP updates through their own websites and/or newsletters and to add a link to the ALDOT SWTP webpage on their own websites. SWTP documentation, available at <http://www.dot.state.al.us/oeweb/statewideTransportationPlan.html>, includes:

- Interim Report #1 – Describes the baseline conditions, travel demand modeling process, and policy direction that guides the overall contents of the SWTP.
- Interim Report #2 – Provides an overview of transportation needs throughout the state and an assessment of the projects currently planned to meet those needs.
- **Final Report – Alabama 2040 Statewide Transportation Plan**
- Supplement #1: Travel Demand Modeling Report – Details the process of developing/refining the statewide travel demand model to derive existing/projected conditions on the roadway network.
- Supplement #2: Summary of Outreach Activities and Input Received – Documents the public involvement activities undertaken throughout the SWTP update process and input that helped in developing plan recommendations.

2. POPULATION, EMPLOYMENT, AND THE ECONOMY

The most well-known, extensive, and reliable source of demographic and economic data at the national and state levels is the US Census Bureau and its ongoing American Community Survey (ACS). In Alabama, the University of Alabama Center for Business and Economic Research (CBER) utilizes data from the US Census and other reliable sources to provide detailed statistics and projections specific to Alabama. The transportation plan development process utilized data from these sources to provide an overview of demographic and growth conditions and trends across the state.^{1,2} In addition, the statewide travel demand model relied on population and employment related data to forecast existing and projected conditions on the roadway network.

The U.S. population in 2016 was estimated at over 323 million, with Alabama ranked 24th at 4,863,300. Projections estimate Alabama's 2040 population at 5,288,583 people (an 8 percent increase), of which 78 percent will reside in metropolitan areas. The Birmingham-Hoover metropolitan area will remain the state's most populous, with over 1.2 million people in 2040. However, the largest percentage increases in population over the next 25 years are expected to occur in the Daphne-Fairhope-Foley, Auburn-Opelika, and Huntsville areas. In contrast, the Anniston-Oxford, Gadsden, Decatur, and Florence-Muscle Shoals areas are expected to decrease in population. It would not be unexpected for the population losses of these metropolitan areas to be a portion of the gains projected in others.

¹ <https://www.census.gov/quickfacts/table/PST045216/01>, accessed 3/21/2017

² <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmm>, accessed 3/21/2017

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Alabama has over 2.2 million workers, or approximately 58 percent of the population. Alabama Department of Labor statistics reported the state's unemployment rate was 6.4 percent in January 2017. The counties with the most jobs were Jefferson, Madison, Mobile, and Montgomery. Not surprisingly, the Birmingham-Hoover area topped the list for metropolitan areas, offering more than half a million jobs. It also had the greatest share of State GDP in 2015, at nearly 32 percent.

Sources of information on economic development and doing business in Alabama include the Alabama Department of Commerce website called "Made in Alabama" (www.madeinalabama.com) and *Business Alabama* magazine's 2017 Economic Development Guide.³ In addition, the Alabama Economic Development Alliance recently updated its Accelerate Alabama 2.0⁴ plan, which provides direction to economic development efforts for the next three to five years. The report highlights Alabama's *intermodal transportation infrastructure* as an asset for multiple business sectors. A strong economy in Alabama is dependent on continued investment in its infrastructure system.

3. THE ROADWAY SYSTEM

The backbone of Alabama's transportation system is the roadway network, providing mobility as well as connectivity between modes. Alabama has over 102,000 miles of roadways, 10 percent (10,900 miles) of which are maintained by the State.⁵ Intended to provide for statewide mobility, the ALDOT-maintained roadways include interstates and designated US and State routes. Roadways intended for localized travel and access are predominantly maintained by local jurisdictions. The SWTP primarily focuses on the portion of the roadway network that is maintained by ALDOT in order to assess characteristics of statewide significance.

Mobility Along the Roadway System

The primary indicators of roadway mobility are traffic volumes and associated levels of congestion. Existing roadway volumes are specified as the Annual Average Daily Traffic (AADT) volumes for 2014. The Alabama statewide travel demand model was utilized to project roadway volumes for future year 2040 conditions, as well as to identify existing (2010) and projected (2040) roadway congestion. Congestion is determined by volume-to-capacity (V/C) ratios, which compare roadway demand (vehicle volumes) against roadway supply (carrying capacity). It is important to note that the statewide travel demand model network is much less dense than the roadway network within a typical MPO model. Therefore, congestion levels derived from this analysis are at a much less detailed level than those at a regional level for MPOs.

In 2014, the heaviest traffic volumes were experienced along the interstate system, particularly within the Birmingham, Montgomery, Mobile, and Huntsville metro areas. Most non-interstate roadways with higher volumes were in urban areas, but some also connect cities, such as US 280 between Columbus and Birmingham, US 231 between Dothan to Montgomery, US 431 from I-20 to Huntsville, and US 72 between Huntsville and Muscle Shoals. The Birmingham area experiences the heaviest volumes of any urban area in the state by a substantial margin. Not surprisingly, most existing congestion is also located within the

³ <http://www.madeinalabama.com/assets/2017/03/2017-Economic-Development-Guide-1.pdf>

⁴ <http://www.madeinalabama.com/assets/2017/01/Accelerate-Alabama-2.0.pdf>

⁵ ALDOT Highway Performance Monitoring System (HPMS)

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urban areas. Major roadways currently experiencing significant congestion include: I-20/59, I-65, I-459, US 78 and US 280 in Birmingham, I-85 in Montgomery, I-10 and US 98 in Mobile, and US 72 in Huntsville.

Alabama's roadways are projected to accommodate significant growth in traffic volumes through 2040. Traffic projections for 2040 were developed for two scenarios. The first, called the No-Build, assumes that growth will occur as forecasted but no capacity projects will be constructed between now and 2040. Although unlikely, it provides a snapshot of anticipated congestion given projected growth. In the second scenario, called the E+C (Existing Plus Committed), the forecasted growth is applied to an expanded roadway network that includes capacity projects within the ALDOT work program for implementation by the year 2040.

As with existing conditions, most roadways with higher projected traffic volumes in the 2040 No-Build scenario are along interstates and in the larger metropolitan areas, particularly Birmingham, Huntsville, Mobile and Montgomery. The interstates with the highest traffic volumes include I-10 in Mobile, I-20/59 and I-65 in Birmingham, and I-565 in Huntsville. Several non-interstate facilities projected to carry significant volumes in 2040 include: US 280 in Birmingham, US 72 in Huntsville, US 90 in Mobile, US 31 in Decatur, and US 280 in Phenix City. As expected, all of the currently congested roadway segments have similar or increased levels of congestion in 2040, with most in the Mobile, Birmingham, Huntsville and, to a lesser degree, Montgomery urban areas. Major roadways expected to experience significant congestion levels in 2040 are: I-10 and US 98 in Mobile; I-22, I-65, I-459 and US 280 in Birmingham; US 90 and US 98 in Baldwin County; and US 231, US 431 and SR 53 in Huntsville.

A number of roadways are projected to experience some congestion under the 2040 E+C scenario, as shown in Figure S-1. Major roadways projected to have lower levels of congestion due to improvements in the current work program include: I-10 in Mobile (portions), I-85 in Montgomery (portions), US 31 in Shelby County and from Montgomery to Prattville, US 72 in Athens, and SR 53 in Huntsville.

Even after the construction of planned improvements in the ALDOT work program, some segments are likely to operate under extremely congested conditions, particularly those that are already congested under current conditions. Segments expected to experience congestion in 2040 include:

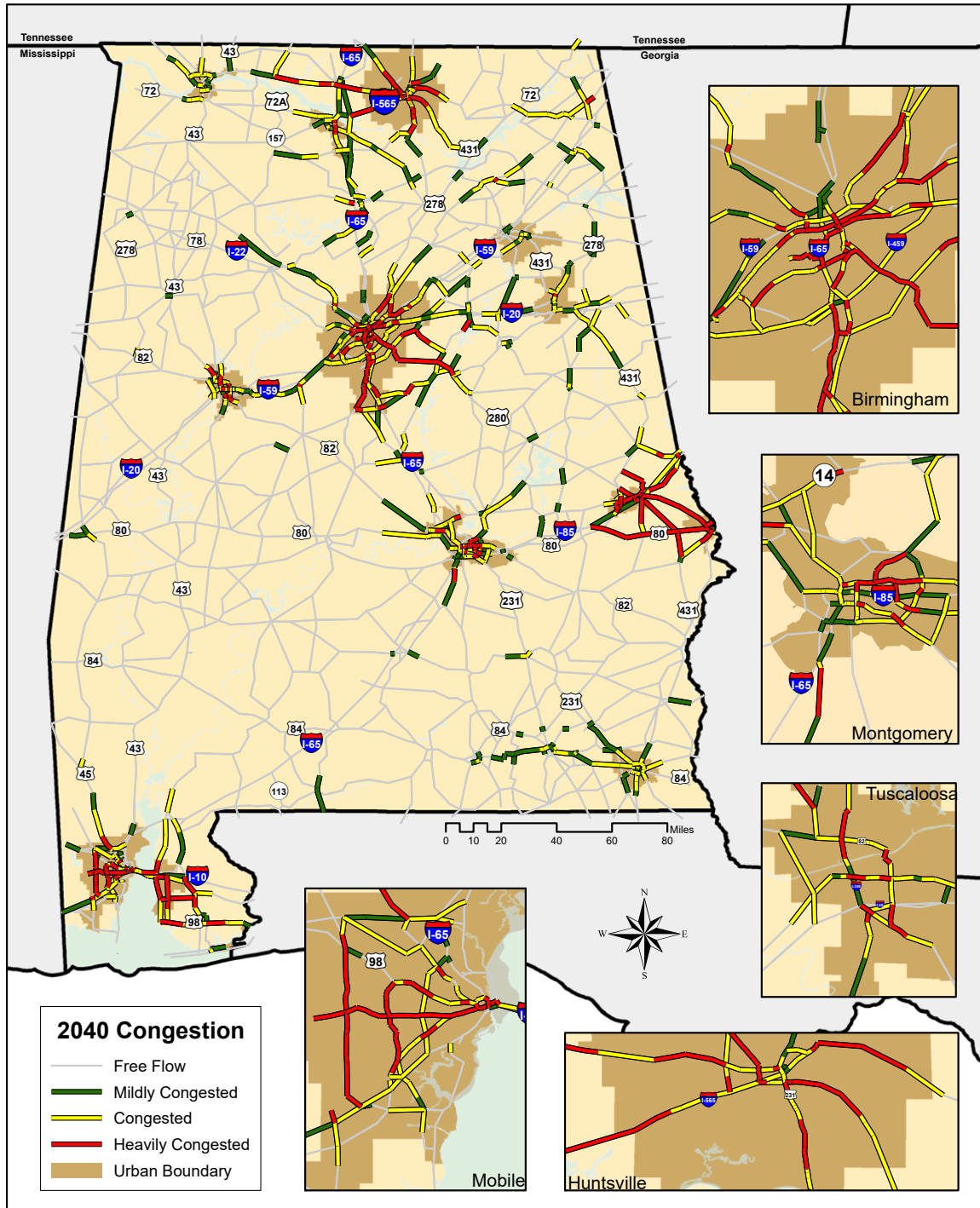
- I-20/59, I-459, I-65, US 280, and US 78 in Birmingham
- I-85 and SR 126 (Chantilly Boulevard) in Montgomery
- I-10, Schillinger Road, University Boulevard, and Airport Boulevard in Mobile
- US 98 and US 90 in Baldwin County
- I-565, US 72, US 231 and US 431 in Huntsville
- US 31 in Shelby County

Non-urban segments projected to be congested after construction of planned improvements include: US 431 between I-20 and Opelika, US 72 in Athens, US 84 near Enterprise, and SR 40 east of Scottsboro.

It is important to note that while some roadways do not experience a noticeable post-improvement reduction in projected congestion, the entire network is responding to an increase in travel demands. In many instances, an increased number of trips are drawn to a facility as a result of additional capacity. In conjunction with the high cost of capacity improvements, the existence of widespread congestion reinforces the need for cost effective solutions to increasing travel flow.

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Figure S-1: Projected Levels of Congestion – 2040 Existing Plus Committed



Source: Statewide Travel Demand Model

For more accurate results in the metropolitan areas, the regional models and/or L RTPs from those respective MPOs should be consulted.

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Maintaining Roadway Infrastructure

Maintaining existing transportation infrastructure is a primary consideration for ALDOT. Two of the most significant maintenance related elements of the transportation system are pavement and bridges.

ALDOT maintains 10,900 miles (29,400 lane-miles) of roadway. A review of data from ALDOT's Bureau of Materials and Tests highlights the following about existing pavement conditions statewide:

- 60 percent of the ALDOT network is rated Good or above, and 77 percent is rated Fair or above.
- 59 percent of the interstate system and 70 percent of the non-interstate NHS (National Highway System) is rated as Good or above.

The ALDOT Maintenance Bureau reports a total of 5,752 ALDOT-maintained bridges, with slightly over half (3,101 bridges, or 54 percent) on the NHS. The condition of non-NHS and NHS bridges is summarized by:

- 98 percent of bridges rate in Good or Fair condition.
- 54 percent of bridges are on the NHS system, but NHS bridges comprise 73 percent of the deck area. Because NHS facilities carry more traffic, they include many four-lane or greater facilities.
- The lower percentage of NHS bridges rated as Good than non-NHS bridges (34 percent vs. 41 percent) may be partially attributed to their greater traffic volumes and associated wear.

Bridge age is also considered by ALDOT when prioritizing bridge improvements. Over 50 percent of the state's non-NHS bridges were built prior to 1970. In contrast, slightly more than half of NHS bridges have been built since 1970. This reflects a historical trend favoring NHS facilities in project prioritization, as well as the fact that many bridges along the NHS were replaced when capacity was added.

The current ALDOT work program includes a number of resurfacing/pavement rehabilitation and bridge projects to maintain the existing infrastructure network. The Transportation Asset Management Plan (TAMP), under development by ALDOT, will guide maintenance improvements and priorities.

Intelligent Transportation Systems (ITS)

The deployment and integration of Intelligent Transportation Systems (ITS) has enhanced the productivity, mobility, safety, efficiency, and security of the state's transportation network. ITS utilizes advanced technological applications to monitor roadway conditions, relay travel information to motorists, collect and archive travel information, and modify traffic signals. These applications are vital to incident/emergency management and improving overall traffic conditions on a regular basis. The core of ALDOT's ITS architecture, Regional Transportation Management Centers (RTMCs) are located in Birmingham, Mobile, Montgomery, Tuscaloosa and, in the future, Huntsville. Each RTMC has local control of that region's field devices and is responsible for daily operations along its freeways and major arterials.

ALDOT's *ITS Strategic Business Plan*, completed in 2015, serves as the five-year plan for necessary actions and priorities to appropriately guide the ITS program. The plan prioritizes deployment strategies for interstate system, urban area, and general/statewide improvements. Most of the ITS priorities are concentrated in the urbanized areas of Birmingham, Montgomery and Mobile, and emphasize interstate ITS applications. Review of the current ALDOT work program identified a total of \$24.5 million in ITS improvements, all to be implemented by 2023. This is not unexpected as ITS projects are typically phased for shorter term implementation. It will be important for ALDOT to continue investing in ITS technologies within urban areas and along interstates given the projected volumes and congestion levels.

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Safety

The *State of Alabama Strategic Highway Safety Plan*⁶ (SHSP) is a collaborative effort by a number of State agencies with the goal of reducing serious accidents, injuries and fatalities on Alabama's roadways. The SHSP contains historical crash data, causes of crashes, and strategies to mitigate crashes. It recommends actions in five main policy areas: driver behavioral crashes, infrastructure measures, legislative initiative, traffic safety information systems, and safety stakeholder community. Historical statewide crash data in the *Alabama Crash Fact Book* indicates that total crashes increased 15 percent from 2011 to 2015. A majority of that increase occurred during a single year, 2014-2015. Several other findings are that:

- There was a slight reduction in the number of fatal crashes, from a high of 899 in 2011 to 849 in 2015, with 2014 having the fewest fatalities of the five-year period at 821.
- Fatality crashes averaged less than one percent of total crashes each year.
- The rate of injury crashes remained consistent at 30 percent for each year of the five-year period.

Hurricane Evacuation Needs

Alabama's primary hurricane evacuation routes are: I-65, US 29, US 43, US 45, US 98, US 231, US 331, and US 431. Of these roadways, I-65 is by far the most critical link due to its direct access from the Mobile area and proximity to the Pensacola, FL area. During a hurricane evacuation sequence, I-65 is anticipated to carry a majority of traffic from the coastal areas. For this reason, ALDOT has a "reverse-laning" plan in place for I-65, which redirects the southbound lanes to accommodate only northbound traffic.

Ensuring that critical roadways are well maintained and support needed mobility and access is important to the evacuation process. Regular congestion levels along these routes and the east-west roadways that connect to them must be considered. Most of the evacuation routes are not currently or projected to be congested, primarily because they traverse mostly rural areas. The majority of evacuation routes with higher levels of existing or projected congestion are within the Mobile and, to a lesser degree, Dothan areas. Improving the performance of hurricane evacuation routes will continue to be a priority for ALDOT.

Historical and Projected Funding

Historical and projected funding are key to ALDOT's future work program. The State contributes a significant amount of revenues to transportation, but most transportation funding comes as federal aid. A breakdown of the State's historical 2011-2015 transportation funding and expenditures was taken from the ALDOT 2015 Annual Report. Key points of note include:

- ALDOT annual revenues for transportation improvements averaged approximately \$1.5 billion.
- Roughly one-third of the revenues for transportation (\$490 million) comes from State sources, with the remaining two-thirds from federal aid, highway bonds, and other sources.
- Gas excise and motor fuel taxes generate 70 percent (\$341 million) of State revenues.
- Construction activities accounted for just under \$1.2 billion per year. (In this breakdown, "construction" includes capacity, bridge repair/replacement, resurfacing, safety, ITS and sidewalk projects, many of which are included under "maintenance" in other areas of the plan.)
- Maintenance spending was the second largest expenditure, averaging \$179.3 million annually.

⁶ https://www.dot.state.al.us/dsweb/divTed/SafetyPlanning/pdf/SHSP_Summary.pdf

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ALDOT has developed anticipated revenues and expenses through the life of the FAST Act (2016-2020) based on anticipated federal funding. Highlights of the anticipated 2017-2020 work program include:

- Federal sources will account for approximately 60 percent of ALDOT's total funding, or \$3.25 billion. This is consistent with the historical federal share.
- The majority of ALDOT revenues (approximately 60 percent) will be allocated to maintenance expenses such as bridge, resurfacing, and safety projects. In contrast, capacity improvements will receive only 7 percent of the revenues, or approximately \$391 million in total.
- Approximately 17 percent of funds will go to local governments for local network improvements.
- Debt service on previous transportation bonds will total \$380 million (7 percent) of spending.

Projecting funding beyond 2020 and the life of the FAST Act is uncertain. It is likely that more emphasis will be placed on maintenance, operations and safety projects. This is logical since the result of capacity projects (widening or new roadway) is additional infrastructure to maintain. The projected investment strategy for resurfacing and bridge projects will be developed in the Transportation Asset Management Plan (TAMP), which will provide a clearer direction for maintenance funding by ALDOT in the near term.

Projections for funding and expenditures through 2040 were developed to be consistent with the FAST Act. As such, a two percent annual inflation rate was applied to the amount of federal funding through 2040; State funding was increased by \$5 million annually through 2040; and the distribution of expenses through 2040 remained constant with short-term projections. Based on this methodology:

- ALDOT is projected to receive annual federal and state funding totaling approximately \$1.9 billion by the year 2040.
- Maintenance expenditures are projected to exceed \$1 billion annually.
- Annual spending on capacity projects is projected to average \$136 million by 2040.
- Roughly \$310 million will be distributed to Alabama's local governments for local projects.

The amount of funding for capacity improvements will be insufficient to meet the demand given the congestion levels projected by 2040.

Capacity Funding Gap Analysis

The congested locations and conditions currently experienced on Alabama's State-maintained roadway network are projected to continue increasing statewide through 2040, even with the construction of planned projects. The funding "gap" between projected revenues and the financial investment needed to provide for relatively uncongested conditions across the entire network (and thus avoid worsening congestion at more locations) was analyzed. The gap analysis considered two primary factors: the number of directional lane-miles of congested facilities and the cost of capacity improvements.

The analysis determined that, even after the construction of planned improvements in ALDOT's work program, approximately 1,400 lane-miles of additional capacity would be required by 2040 to simply maintain current conditions and mitigate worsening congestion. This additional capacity would cost an estimated \$5.2 billion, with nearly half allocated to urban arterial facilities. Funding projections indicate that ALDOT will have an estimated total of \$2.6 billion for capacity improvements through 2040, which is expected to be completely expended on planned projects in the ALDOT work program. Therefore, ALDOT would need to invest nearly \$7.8 billion in additional capacity through 2040 to simply maintain conditions at 2010 levels and mitigate worsening congestion.

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4. FREIGHT MOVEMENT

The 2016 *Alabama Statewide Freight Plan* assessed existing (2012) and projected (2040) commodity flows. Trucks are, and will remain, the most utilized mode for freight movement. Meanwhile, overall increases in rail and truck traffic confirm the need for continued improvements to at-grade rail crossings. Although the share of overall freight shipped by air is relatively small, increases are projected for most major commodities shipped by air, so better roadway connections and access to major airports may be needed in the near future. Not surprisingly, the Port of Mobile's critical role in Alabama's economy directly impacts freight movements. In assessing the primary commodity flow corridors and bottlenecks, it is important to note that much of the commodity flow volume to and from the Port of Mobile occurs by rail.

Commodity flows along major roadways identified areas where future improvements could facilitate freight mobility. The projected commodity flows by truck indicated steady growth throughout the entire interstate network. Interstate segments will carry the most freight, with the greatest freight flows (over 120,000 annual kilotons) along I-20/59 from west of Birmingham to the Mississippi state line, I-65 south of Birmingham through Shelby County, and I-65 south of Montgomery to Greenville.

Notable locations of existing freight bottlenecks include all interstates and many State-maintained roadways (e.g., US 11 and US 280) in the Birmingham area, I-10 and I-65 in Mobile, I-65 and I-85 in Montgomery, I-565 in Huntsville, I-20 near Anniston, and I-59 at I-759 in Gadsden. Future projections indicate that conditions at all existing bottlenecks statewide will worsen. The Birmingham area is projected to continue to have the highest levels of congestion, occurring along its interstates and principal arterials that carry freight traffic. In addition, smaller pockets of bottlenecks combined with greater freight volumes are projected to occur on non-interstate facilities such as US 280, US Alternate 72 and US 231. In many cases, bottlenecks result from general automobile traffic congestion rather than directly from freight traffic. Nevertheless, corridor congestion is a challenge to freight mobility regardless of the cause.

The Freight Plan identified a number of projects in the ALDOT work program that will benefit freight movement. These included capacity, maintenance, operations and safety projects along roadways with significant freight volumes, as well as projects directly addressing freight mobility. Most projected freight bottlenecks will occur even with construction of planned improvements on the primary freight-carrying facilities. This is logical since the main contributor to freight bottlenecks is general traffic congestion.

Alabama has a number of major intermodal facilities, including the Port of Mobile, Huntsville International Intermodal Center, and several facilities around Birmingham critical to Class I railroad operations. The SWTP identified several corridors that provide access to ports and other intermodal freight facilities as congested in 2040, impacting freight mobility. These include:

- I-20/59, I-459, I-65, US 280, and US 78 in Birmingham
- I-85 and SR 126 (Chantilly Boulevard) in Montgomery
- I-10, Schillinger Road, University Boulevard, and Airport Boulevard in Mobile
- US 98 and US 90 in Baldwin County
- I-565, US 72, US 231 and US 431 in Huntsville
- US 31 in Shelby County

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5. MULTIMODAL TRANSPORTATION NEEDS

Alternative modes offer important transportation options within a comprehensive multimodal system. ALDOT does not directly operate any of the state's transit, intercity bus, passenger rail or aviation systems, and has a very limited role in bicycle and pedestrian facilities. However, as a multimodal plan, the SWTP addresses related transportation conditions and needs across the state.

Transit and Intercity Bus

Public transportation services are available to a large portion of the state's residents. Nine urban areas offer fixed route transit services, and demand response service is available in another four. Rural demand response service is provided in 51 counties. Transit systems are also operated by the Poarch Band of Creek Indians (PCI), Auburn University, and the University of Alabama.

The greatest public transportation deficiency within Alabama is the lack of service. Statewide, 13 counties do not have any public transportation services available to residents regardless of age or ability: Bullock, Butler, Chambers, Coffee, Crenshaw, Dale, Elmore, Fayette, Geneva, Henry, Lamar, Limestone, and Randolph. While Mobile, Montgomery and Tuscaloosa counties have urban fixed route service, they do not have rural service. For areas with some degree of urban and/or rural services, common needs include:

- Expanding service and adding routes into unserved areas, both urban and rural
- Extending service operation hours and days, especially evenings and weekends
- Decreasing headways
- Increasing opportunities for regional/intercity connections into adjacent counties

The most significant factor limiting the provision or expansion of transit services is funding availability. Federal transit programs adhere to specific formula allocations in the distribution of transit funds, and ALDOT's current funding structure prohibits it from spending State transportation funds on transit. Therefore, the burden of funding transit falls heavily on local jurisdictions, and the lack of available local funding has a profound impact. The lower population densities and dispersed trip origins/destinations characteristic of many areas in the state result in higher operating costs, further exacerbating the funding difficulties. Nevertheless, ALDOT remains supportive of local jurisdictions funding enhanced public transportation options and continues its coordination activities within the scope of its responsibilities.

Regular (unsubsidized) intercity bus service operated by Greyhound connects 14 larger communities across Alabama to major US cities. Federally subsidized rural intercity bus service also operates in several areas of the state. The 2014 *Intercity Bus Service Study* found the primary gap in service coverage to be in the central and northern portion of western Alabama. Another need for increased intercity bus services exists on a more local scale – between adjacent and nearby counties within a region.

In recent years, the allocation of transit funding throughout Alabama has been relatively consistent across the main federal programs, averaging approximately \$51.7 million per year. By applying a two percent annual inflation factor to the recent average funding totals, the projected federal funding for transit would reach approximately \$83 million by 2040. On average, approximately 35 percent of the funding for transit throughout the state comes from local sources; therefore, the availability of local funds for the required match is an important consideration.

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Passenger Rail

Amtrak provides passenger rail service along one route in Alabama. The *Crescent* route runs one train per day in each direction between New York and New Orleans, stopping in Anniston, Birmingham and Tuscaloosa. According to the National Association of Railroad Passengers, Amtrak in Alabama had a total of 60,167 passengers (arrivals and departures) in 2015, while 1.3 million Alabamians (14 percent) live within 25 miles of an Amtrak station. Re-establishing some form of passenger rail service in two previously used corridors remains a desired outcome of several ongoing efforts. The first is the Gulf Coast corridor, which passes east-west through Mobile between Florida and New Orleans. The second corridor is a north-south connection between Birmingham, Montgomery and Mobile, and ultimately Huntsville.

Bicycle and Pedestrian Mobility

The growing significance placed on bicycle and pedestrian facilities has resulted in increased planning, funding and construction of facilities, particularly at the local and regional level. The greatest potential demand for walking and biking, particularly as a transportation alternative, is found in urban areas, low-income areas, and areas with colleges and universities. At the statewide level, ALDOT is currently updating the *Statewide Bicycle and Pedestrian Plan*. Route access and connectivity, the ability for facilities to serve important transportation needs within communities, providing safe facilities, and economic development will be emphasized. The plan will also recommend a statewide bicycle corridor network crisscrossing the state.—The ALDOT work program specifically calls out \$68.6 million in bicycle and pedestrian improvements, representing approximately five percent of the overall ALDOT work program. The improvements primarily consist of trails and greenways, sidewalks, pedestrian overpasses, and streetscaping and landscaping.

Aviation^{7,8}

Alabama has approximately 235 public and privately owned airports and heliports. Commercial airports exist in Birmingham, Dothan, Huntsville, Mobile, Montgomery and Muscle Shoals, with Birmingham and Huntsville being the state's two international airports. Regularly scheduled commercial passenger flights from Tuscaloosa Regional Airport have been discontinued. Airport planning is typically done by the airports themselves, which are often locally governed by an airport authority. ALDOT's Aeronautics Bureau is tasked with overseeing the state's aviation infrastructure and ensuring Federal Aviation Administration (FAA) and ALDOT safety standards are met. Aging infrastructure and limited State and local resources have made it difficult to keep up with growing aviation needs, most of which center around maintenance and/or expansion.

The FAA provides Airport Improvement Program (AIP) grant funds for airport improvement projects (at 80 or 90 percent of the total project cost, depending on the project), and the Aeronautics Bureau assists with the matching funds. However, State revenues from aviation fuel taxes generate only \$1.5-\$2.0 million per year, severely limiting potential opportunities. Over \$45 million in AIP grants were received from FAA for Alabama airport improvements in 2016. Over 40 percent of FAA AIP funding in Alabama for 2011-2016, totaling over \$26 million per year, went to two airports – Birmingham-Shuttlesworth and Huntsville.

⁷ <http://www.dot.state.al.us/aerweb/aviationFacts.html>, accessed April 25, 2017

⁸ <http://www.dot.state.al.us/aerweb/alabamaStateAirportSystemPlan.html>, accessed April 25, 2017

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6. FUTURE TRENDS AND ISSUES

Supporting Alabama’s Growth – Higher levels of population and employment growth are projected for the suburban areas of Alabama’s major cities, particularly Birmingham, Huntsville, and Auburn-Opelika. Baldwin County is also projected to experience significant growth in population and employment. Statewide, household employment is projected to increase approximately 60 percent by 2040.

Projected Performance of the Current Work Program – Table S-1 shows the comparison of Alabama’s roadway network conditions for the 2010 base year, 2040 No-Build, and 2040 E+C scenarios. As noted previously, the roadway analysis was conducted for the statewide travel demand model network, which consists predominantly of interstates and designated US and State Routes. County and local roads are not included, although some of these roadways may carry significant traffic volumes.

Congestion across the state is projected to increase in 2040 under both scenarios. While approximately 75 percent of the state’s major roadway miles are projected to experience little or no congestion and another five percent only mild congestion, the remaining 20 percent will operate at or over capacity – with 16 percent experiencing heavily congested conditions. Vehicle Miles of Travel (VMT), a measure of network utilization, will increase 16 to 25 percent by 2040. Vehicle Hours of Travel (VHT), an indicator of delay, will also increase. However, capacity improvements through 2040 will result in 21 million fewer hours of congestion than under the No-Build scenario. The increases in truck VMT indicate a more favorable environment for economic development. In summary, the E+C scenario offers a reduction in overall delay compared to the No-Build, even with the projected increases in miles of travel.

Table S-1: Projected Conditions Comparison – 2040 No-Build vs. 2040 E+C

	2010 Base	2040 No-Build	2040 E+C
Households	1,883,791	2,110,572	2,110,572
Population	4,803,667	5,381,960	5,381,960
Employment	1,844,995	3,250,061	3,250,061
Emp/HH Ratio	0.979	1.540	1.540
VMT	450,554,946	523,328,110	560,947,038
VHT	58,816,469	125,770,826	104,653,242
VMT/VHT	7.7	4.2	5.4
Truck VMT	97,382,214	114,057,538	122,470,824

Focus on the State of Good Repair – The focus on maintenance grows as continued expansion of the roadway network increases the need. Over 60 percent of the funding in the 2017 ALDOT work program is dedicated to resurfacing, bridge and safety projects, with only 23 percent for capacity projects. This shift towards maintenance is likely to continue as significant increases in VMT and congestion create additional demands on roadway infrastructure. Also, unlike the one-time, up-front costs of capacity projects, maintenance costs must be paid over and over throughout the facility’s lifespan.

Accommodating Emerging Technology – While technological applications for transportation are endless, two areas of particular relevance to Alabama are advances in ITS and vehicle technological advances. The core of ITS is communication. Coordinated signalization and traffic control within urban areas will continue

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to expand, leading to better operations along the network. Similarly, improved information dissemination to system users through mobile technologies will offer travel time savings, increased safety, and improved efficiency in freight movement.

Understanding Trends in Mode Shift – Travel trends are evolving with shifting needs. Telecommuting continues to experience significant growth nationwide, spurred on by urbanization and congestion. The demand for bicycling and walking facilities is steadily increasing throughout the US, although the use of these modes for transportation is still small compared to vehicle or transit use. The emergence of real-time mobile applications allows greater confidence in transit trips, while increasingly prevalent bike share programs offer “last mile” connectivity for transit riders and a convenient transportation alternative. Ride-hail services (such as Uber and Lyft) have the potential to impact mode choice, particularly for commute trips. As they continue to become more flexible and less expensive, their potential as an alternative to traditional transit trips, “first/last mile” connection, and substitute for private automobiles increases.

Moving Forward – Issues ALDOT will face as it moves forward include:

- Added emphasis on performance-based planning. The latest federal guidance requires ALDOT and the MPOs to establish performance targets, develop monitoring procedures, and report the performance of the statewide transportation network. The future prioritization of improvements in ALDOT’s work program and MPO LRTPs will likely reflect a focus on meeting system targets.
- Proportional increases in maintenance demands resulting from increased travel and congestion. ALDOT’s Transportation Asset Management Plan (TAMP) will set performance targets for maintenance and identify funding sources for the improvements needed to meet those targets.
- An increase in the severity of congestion if additional revenue sources for capacity improvements cannot be identified.
- Mitigating some of the impacts of congestion, particularly in higher density urban areas, by promoting transit, cycling, and walking for tripmaking.
- Planning for and growing its transportation network to accommodate emerging technological advances in transportation systems, communications and mobile applications.
- Ensuring freight mobility is sufficient to maintain Alabama’s economic competitiveness.
- Continued investment in maintaining and enhancing Alabama’s intermodal transportation infrastructure to ensure its ability to support a strong economy and provide efficient mobility for the state’s residents, businesses and visitors.