USE OF
ADVANCE CONSTRUCTION
IN FINANCING TRANSPORTATION PROJECTS

transportation finance briefing papers

providing up-to-date research results for state departments of transportation

American Association of State Highway and Transportation Officials
AASHTO
The Voice of Transportation

prepared for
American Association of State Highway and Transportation Officials
Center for Excellence in Project Finance

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Study Purpose

Through this briefing paper, *Use of Advance Construction in Financing Transportation Projects*, the AASHTO Center for Excellence in Project Finance (CEPF) seeks to provide transportation industry professionals with a synthesis of practices across the country relating to the use of the Advance Construction (AC) technique. The use of AC across states varies widely—from consistent and aggressive use that is an integral part of a state's financial management to more selective or sporadic use. This briefing paper presents historical trends in AC usage, identifies current practices, benefits, and challenges, and provides observations regarding future use and administration of the AC technique.

Benefits of Advance Construction

Advance Construction is one of several Federal-aid fund management tools designed to provide states with greater flexibility in managing Federal-aid highway funds. The primary benefit of AC is that it allows states to accelerate transportation projects using non-Federal funds while maintaining eligibility to be reimbursed with Federal-aid funds at a later date. Prior to the 1990's, AC was used solely as a means to transition between Federal fiscal years. Beginning with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and, in particular, the innovative finance research initiative under FHWA's test and evaluation program, known as TE-045, in 1994, the AC tool was adjusted to further facilitate advanced project delivery.

Considerations and Risks

The AC technique serves one or more of the following functions:

- Cash management
- Acceleration of state projects

- Acceleration of local projects
- Facilitation of GARVEE debt issuance

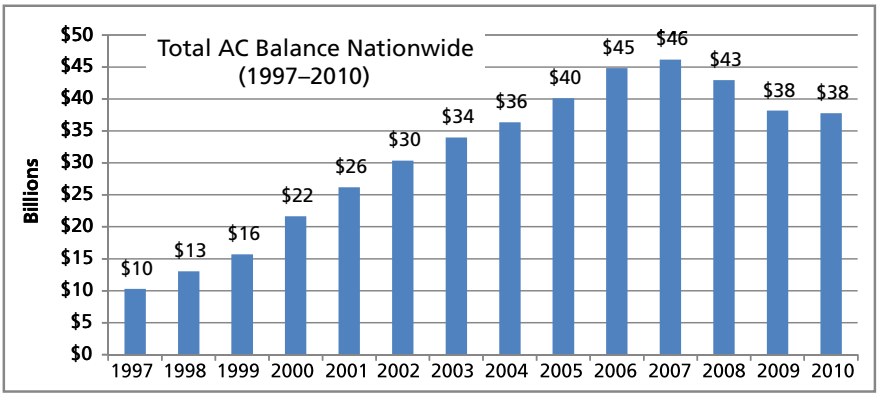
The functions that AC serves in a particular state differ based on the relative levels of state and Federal funding as well as each state's overall approach to funding and financing transportation projects.

Since there is no commitment by FHWA to fund the project, states must carefully consider their strategy for utilizing the AC technique and converting projects. If Federal funds are not available at the time conversion is planned, the state will have to continue the project with non-Federal funds or suspend any work on the project. On the other hand, the state is not required to convert the project and may choose to complete the project without ever requesting Federal funds—a practice that is commonly applied by many state DOTs.

Historical and Current Use

Nationally, the use of Advance Construction has grown significantly since the late 1990s (see Chart ES-1). Much of this growth is attributable to the easing of restrictions on the use of AC resulting from TE-045 and the NHS Act. In recent years—2008 and 2009—AC balances declined. In 2010, balances remained consistent with 2009. According to interviews for this study, the decline in recent years is at least in part attributable to the September 30, 2009 expiration of SAFETEA-LU and related reauthorization uncertainty in combination with the coinciding national economic downturn that is restricting transportation funding in many states. In at least some states, this has resulted in greater and more frequent AC conversions and more conservative practice regarding the level of AC balances carried.

Chart ES-1. Total AC Balance Nationwide (1997–2010), Dollars in Billions



Key Findings

Overall, interviewed states noted few complications with administering the Advance Construction technique. Based on interviews with 12 states, the following provides a summary of areas that may merit further review with regard to the administration of the AC program.

- **Uncertainty and timing of Federal funding.** General uncertainty regarding the availability of future Federal funding has a significant limiting effect on the use of the AC technique. Further, end of fiscal year notification regarding the provision of obligation authority does not enable states to effectively plan, including as it relates to the management of AC.
- **Integration with planning processes.** In some states, the manner in which the coordination between the use of AC and State Transportation Improvement Program (STIP) oversight is implemented creates administrative burdens and potential delays of STIP approval. While the majority of states interviewed described smooth processes, there is an apparent inconsistency across the country as it relates to the determination of what level of detail regarding AC projects is required to be reflected in the STIP, and associated amendment and timing requirements. This has caused issues in a few states and could benefit from further clarification of requirements.

- **Quality of communication between the state department of transportation and the FHWA Division office.** The communication between state DOTs and their respective Division offices regarding AC administration was described as quite strong generally. Instances of poor communication, however, can create unnecessary effort or complication for both the state and FHWA. In no instance did a state point to poor communication as something that adversely altered their use of the AC technique.
- **Dated financial systems.** A few states expressed that both the state's financial system and FHWA's Fiscal Management Information System (FMIS) could benefit from upgrades that could improve administrative processes in general, not just for the AC program.
- **Interest in technical assistance and information sharing.** Interviewed states expressed interest in utilizing AC more fully through technical assistance and information sharing of best practices. Several noted that they anticipate the results of this research effort to be a good first step along those lines.

In sum, the AC technique is evidenced to be effectively used by states throughout the country as both a cash management and project acceleration tool. Based on the results of this research effort, there are minimal barriers to its use but some opportunities for administrative refinement.

1.0 INTRODUCTION

Purpose of the Briefing Paper

Through this briefing paper, *Use of Advance Construction in Financing Transportation Projects*, the AASHTO Center for Excellence in Project Finance (CEPF) seeks to provide transportation industry professionals with a synthesis of practices across the country relating to the use of the Advance Construction (AC) technique. The use of AC across states varies widely—from consistent and aggressive use that is an integral part of a state's financial management to more selective or sporadic use. This briefing paper presents historical trends in AC usage, identifies current practices, benefits, and challenges, and provides observations regarding future use and administration of the AC technique.

In sum, this briefing paper serves three primary purposes:

1. Provides documentation of how broadly and in what ways AC is being used by state departments of transportation;
2. Informs the policy debate about future directions for the AC technique by evaluating what is working well and where actual or potential limitations exist regarding the effectiveness of current rules and policies; and
3. Documents specific successful practices that other states may be able to apply to improve and expand their use of the AC technique.

Research Oversight Panel

Following are members of the panel that oversaw development of this briefing paper:

Scott Bennett, Assistant Chief Engineer for Planning, Arkansas State Highway and Transportation Department

Michael Bridges, Undersecretary, Office of Management and Finance, Louisiana Department of Transportation and Development

Joe Erskine, Deputy Secretary for Finance and Administration, Kansas Department of Transportation

Leon E. Hank, Chief Administrative Officer, Michigan Department of Transportation

Report Organization

This Briefing Paper on the Use of Advance Construction in Financing Transportation Projects is divided into six major sections and an appendix. The contents of each section and the appendices are described below:

- **Section 1. Introduction.** Presents the purpose of the study and the members of the panel that oversaw development of this briefing paper. Also, introduces the contents of each section of the briefing paper.
- **Section 2. Background.** Describes the technique of Advance Construction, including benefits and uses as well as a history of how use of the tool has evolved over time. This section also lists resources available for additional information on AC.
- **Section 3. Study Methodology.** Summarizes the steps undertaken in conducting the study, including a description of how interview candidates were selected and the development of the interview guide. A list of state personnel interviewed is provided.
- **Section 4. Historic Trends and Factors Affecting Advance Construction Use.** Offers national historic trends in Advance Construction use from 1997 through 2010. This section also looks at individual states' use of Advance Construction, providing average AC use by state since 1997 as well as the top and bottom users of AC in recent years. This section then evaluates a variety of factors that affect AC in certain states.
- **Section 5. Program Administration.** Reviews interviewees' input on the administration of the AC program.
- **Section 6. Conclusion.** Summarizes the results of the study and, specifically, the input provided by the states as users of the AC technique. This section includes a summary of areas of the AC program that may merit additional review.
- **Appendices.** Four appendices provide a case study of each of the 12 interviewed states, the interview guide used in discussing AC use with each of the interviewed states, data on Advance Construction balances from 1997 through 2010 for the states and territories, and sample state DOT policies on Advance Construction provided by a few of the interviewed states.

2.0 BACKGROUND

What is Advance Construction?

Advance Construction (AC) is a project authorization technique that allows the Federal Highway Administration (FHWA) to authorize a project without obligating Federal funds. Federal appropriations law requires a Federal agency to obligate the total amount of funds needed to satisfy any commitment made by the agency at the time the commitment is made. In compliance with this requirement, FHWA is required to fully obligate the Federal share of a Federal-aid project at the time it executes a project agreement. Under an AC authorization, FHWA approves a project as being eligible for Federal funding but does not commit to funding the project. As such, the project must meet all Federal requirements except for the requirement to obligate funds. AC is not a funding category and does not provide additional Federal funding.

The primary benefit of AC is that it allows states to accelerate transportation projects using non-Federal funds while maintaining eligibility to be reimbursed with Federal-aid funds at a later date. Prior to the 1990's, AC was used solely as a means to transition between Federal fiscal years. If a state had used all of its funds in a particular program or all of its obligation limitation it could use AC to advance projects until additional funds were authorized in the new fiscal year. States were required to convert all AC projects to fully funded status at the beginning of the Federal fiscal year. As discussed more fully below, beginning with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and, in particular, the innovative finance research initiative under FHWA's test and evaluation program, known as TE-045, in 1994, the AC tool was adjusted to further facilitate advanced project delivery.

Advance Construction is one of several Federal-aid fund management tools designed to provide states with greater flexibility in managing Federal-aid highway funds. Typically, state and local governments must provide 5 to 20 percent of the

funding for projects benefiting from Federal aid. An objective of the management tools is to ease restrictions on the timing of obligations and reimbursements and create a broader range of options for meeting matching requirements. While finding money to fund projects is always a challenge, states and other project sponsors also have to align the flow of projects with the availability of funding. These tools are intended to help non-Federal project sponsors leverage Federal funding and expedite project implementation.

By eliminating the need to set aside full obligational authority before starting projects, the AC technique enables a state to undertake a greater number of concurrent projects than would otherwise be possible. Since there is no commitment by FHWA to fund the project, states must carefully consider their strategy for utilizing the AC technique and converting projects. For example, a recent audit of a state DOT found that the Federal share of AC projects was improperly recorded as accounts receivable, requiring the DOT to immediately convert projects and obligate a significant amount of Federal funds to avoid an end-of-year deficit in state accounts. If Federal funds are not available at the time conversion is planned, the state will have to continue the project with non-Federal funds or suspend any work on the project. The state is not required to convert the project and may complete the project without ever requesting Federal funds—a practice that is commonly applied by many state DOTs.

Partial Conversion of Advance Construction (PCAC) was formally authorized in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) but was in practice before the legislative change. PCAC enables a state to convert an AC project to a Federal-aid project in stages, based on cash flow requirements and availability of obligation authority, rather than all at once. Under PCAC, the state converts, obligates, and receives reimbursement for only a portion of the Federal share of project costs. This removes any requirement to wait until the full amount of obligation authority is available, enabling states to begin some projects earlier and more effectively manage cash flow. PCAC also is an important technique when used in conjunction with Grant Anticipation Revenue Vehicles (GARVEE bonds) where Federal funds are obligated for debt service payments over a period of time beyond the completion of construction.

History of Advance Construction Technique

Advance Construction has been part of the Federal-aid highway program since 1956, but beginning with the Intermodal Surface Transportation Efficiency Act of 1991 and, in particular, the innovative finance research initiative under FHWA's test and evaluation program, known as TE-045 in 1994, the tool was adjusted to further facilitate project delivery. In particular, Section 308 of the National Highway

System Designation Act of 1995 (NHS Act) eliminated the requirement that future year authorizations be in effect one year beyond the fiscal year for which the AC application was sought. With this change, FHWA can approve an AC project at any time, provided the project is on the State Transportation Improvement Program (STIP). This provides states with greater flexibility to use AC based on anticipated apportionments beyond the final year of a Federal transportation funding authorization act. This flexibility also was important in making GARVEE bonds feasible. The approval process for an AC or PCAC project in a state's STIP includes the following steps[1]:

1. State identifies project(s) and requests AC designation;
2. FHWA Division office ensures project meets Federal-aid requirements;
3. FHWA reviews and approves AC designation for project. Project agreement executed;
4. State constructs project following Federal-aid requirements;
5. State requests conversion to Federal-aid project with a full or partial obligation and project agreement is modified;
6. FHWA obligates Federal-aid funds per modified project agreement;
7. State requests reimbursement for costs incurred up to the amount obligated; and
8. FHWA makes payment to the state.

Advance Construction Legislation

Title 23–Chapter 1
§115. Advance Construction

a. In General.—The Secretary may authorize a state to proceed with a project authorized under this title—
   1. without the use of Federal funds; and
   2. in accordance with all procedures and requirements applicable to the project other than those procedures and requirements that limit the state to implementation of a project—
      A. with the aid of Federal funds previously apportioned or allocated to the state; or
      B. with obligation authority previously allocated to the state.

b. Obligation of Federal Share.—The Secretary, on the request of a state and execution of a project agreement, may obligate all or a portion of the Federal share of a project authorized to proceed under this section from any category of funds for which the project is eligible.

c. [c. Redesignated d.]

d. Inclusion in Transportation Improvement Program.—The Secretary may approve an application for a project under this section only if the project is included in the transportation improvement program of the state developed under section 135 (f).

More recently, in 2005, SAFETEA-LU enabled all categories of Federal-aid highway funds to be eligible for AC. Additionally, a clarification was announced in

[1] Federal Highway Administration, Office of Innovative Program Delivery: Innovative Finance. Tools and Programs: Federal Aid Fund Management Tools.

Advance Construction Resources

- Statutory Reference: 23 USC §115
- Code of Federal Regulations Reference: 23 CFR 630G
- Federal Highway Administration, Office of Innovative Program Delivery: Innovative Finance. *Tools and Programs: Federal Aid Fund Management Tools.* http://www.fhwa.dot.gov/ipd/index.htm
- Federal Highway Administration, Office of Program Administration. *A Guide to Federal-Aid Programs and Projects.* Updated March 11, 2009. http://www.fhwa.dot.gov/federalaid/guide/guide_inactive.cfm.
- Federal Highway Administration, Office of Planning, Environmental, and Realty. *Guidance on Financial Planning and Fiscal Constraint for Transportation Plans and Programs.* April 17, 2009. http://www.fhwa.dot.gov/planning/guidfinconstr.htm

the Federal Register on August 26, 2008 (Docket No. FHWA-2007-0020) that eliminated the restriction that a state must obligate all of its allocated or apportioned funds, or demonstrate that it will use all obligation authority allocated to it for Federal-aid highways and highway safety construction, prior to the approval of AC projects. The regulation contains no AC limitation beyond the statutory requirement that all projects must be on the STIP. This change in regulations was consistent with the revisions in SAFETEA-LU. The existing Advance Construction related legislation (Title 23 USC §115) is provided in the text box above. Below are a number of resource documents related to the application of the AC technique.

As the AC mechanism has evolved over the years so has the use of AC by the states. As is noted throughout this briefing paper, the AC technique has grown from a moderately used cash management tool by many states to a more active mechanism that plays a significant role in accelerating projects. While there is still room for improvement as outlined in Section 5 of this briefing paper, almost every state regularly uses the AC technique to some degree to the benefit of its overall transportation program.

3.0 STUDY METHODOLOGY

Methodology Overview

To meet the objectives of this research study, a select group of states was interviewed regarding their use of the Advance Construction technique. To determine an appropriate sampling of states with a mix of experiences with the AC technique for these interviews, the research team analyzed FHWA data on AC balances. The methodology for the study can be summarized into the following steps.

1. The research team worked with FHWA to query FHWA's financial data system for historical AC balance information by state and program category.
2. The research team consulted with the oversight panel to select state interview candidates based on an analysis of historical AC usage levels and industry knowledge of states' AC management practices.
3. The research team developed an interview guide covering a range of topics, including use trends and influences, program and project affects on AC use, AC use in conjunction with debt, program administration, and institutional factors.
4. The research team conducted interviews with 12 state transportation agencies, including personnel from various departments that together have responsibilities for managing the AC technique.
5. The research team consulted with FHWA regarding some study findings to clarify findings and to help identify areas for potential improvement in management and use of the AC technique.

Additional detail on the methodology undertaken in conducting this research is provided below.

Analysis of Historical Use Data and Selection of Interview Candidates

In consultation with the oversight panel, the research team selected interview candidates based on each state's level of AC use, seeking a mix of light, moderate, and heavy AC users as well as other factors such as the use of debt in conjunction with AC and other innovations. Given the impact that the size of a state's transportation funding program has on its aggregate volume of AC, the research team analyzed the use of AC relative to each state's formula obligation limit, based on 2009 data, to scale results to individual state size.

The level of a state's use of AC was based on data obtained from FHWA's Office of the Chief Financial Officer via queries of the Fiscal Management Information System (FMIS). The data provided each state's AC balances by program category as of September 30 for 2008, 2009, and 2010. In addition, FHWA provided AC balances by state (but not broken down by program category) as of September 30 for 1997 through 2007.

Interviewed States

Based on the research team's analysis of the state by state AC balance data obtained from FHWA's Office of the Chief Financial Officer and additional industry knowledge of particular state innovations with regard to AC, the research team proposed interview candidates for review by the project panel. Table 3.1 provides a list of the states selected for interviews and the staff who participated in the interview. The research team is grateful for the participation and responsiveness of these individuals.

Development of Interview Guide and Interviews

To provide a framework for the interviews, the research team developed an Interview Guide. The Interview Guide includes a range of questions organized into categories regarding AC use and trends, program and project basis for AC use, AC use and debt, and program administration and institutional factors that affect AC use. Please see Appendix A.2 for the complete Interview Guide.

Table 3.1 Interviewed States

State	Contact
California	Stephen Keck, Chief, Division of Budgets and Fardad Falakfarsa, Chief, Office of Federal Resources
Colorado	Darrell Johnson, Construction Budget & Project Funding—Manager, Office of Financial Management and Budget
Florida	Marsha Johnson, Director, Office of Financial Development; Mina Ehsani, Supervisor—Resource Allocation
Idaho	Dave Tolman, Administrator, Division of Administration
Kansas	Joe Erskine, Deputy Secretary for Finance and Administration; Marcia Ferrill, Director of Financial Services; Bruce Burditt, Division of Financial Services, Office of Financial and Investment Management; Alicia Johnson, Financial and Legislative Policy Analyst; and Reed Davis, Manager of Economic Analysis
Louisiana	Michael Bridges, Undersecretary, Office of Management and Finance
Maryland	David Fleming, Chief Financial Officer Maryland DOT; Betty Connors, Director of Finance, State Highway Administration; Connie Kennedy, State Highway Administration; June Hornet, Maryland DOT
Michigan	Leon E. Hank, Chief Administrative Officer; Myron Frierson, Director, Bureau of Finance and Administration; Ed Timpf, Administrator, Financial Operations Division, Bureau of Finance and Administration
New Jersey	David Kuhn, Executive Director, Capital Investment Strategies
New Mexico	Max Valerio, Deputy Secretary for Programs and Infrastructure
South Dakota	Leah DeMers; Jerry Ortbahn, Office of Planning and Program
Tennessee	Chris Christensen, Transportation Administrator, Engineering Bureau; Ronnie Porter, Project Programming

The Interview Guide was provided to the interviewees in advance to ensure appropriate personnel participated in the interview and also to give the state time to obtain responses to more detailed questions. To avoid any undue burden on the states, written responses were not requested, but some interview contacts elected to provide written responses to complement the phone discussions.

Sections 4, 5, and 6 of this briefing paper provide a synthesis across all interviewed states with some state-specific examples. Appendix A.1 provides a brief case study of each interviewed state with a summary of the state's level of use of AC as well as the general approach to AC use that the state follows.

FHWA Consultations

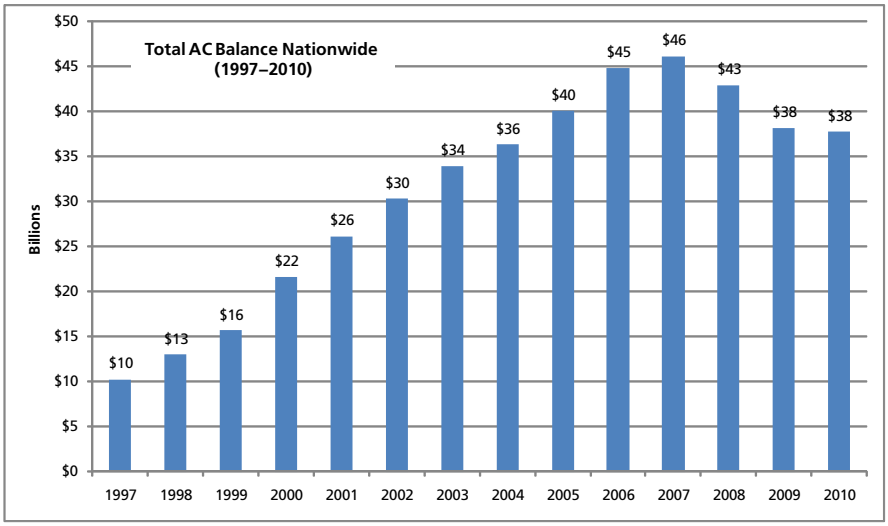
In addition to interviewing select states, the research team contacted FHWA personnel for their perspective on how use and administration of the AC technique has evolved over the years. As discussed above, FHWA's Office of the Chief Financial Officer was instrumental in providing the historical data on state AC use. Additionally, current and prior FHWA headquarters and division personnel were consulted for general background and regarding specific issues raised in the course of the study. These included representatives from the Office of the Chief Financial Officer, the Office of Innovative Program Delivery, and the Office of Planning, Environment, and Realty.

4.0 HISTORIC TRENDS AND FACTORS AFFECTING ADVANCE CONSTRUCTION USE

Historic Trends in Advance Construction

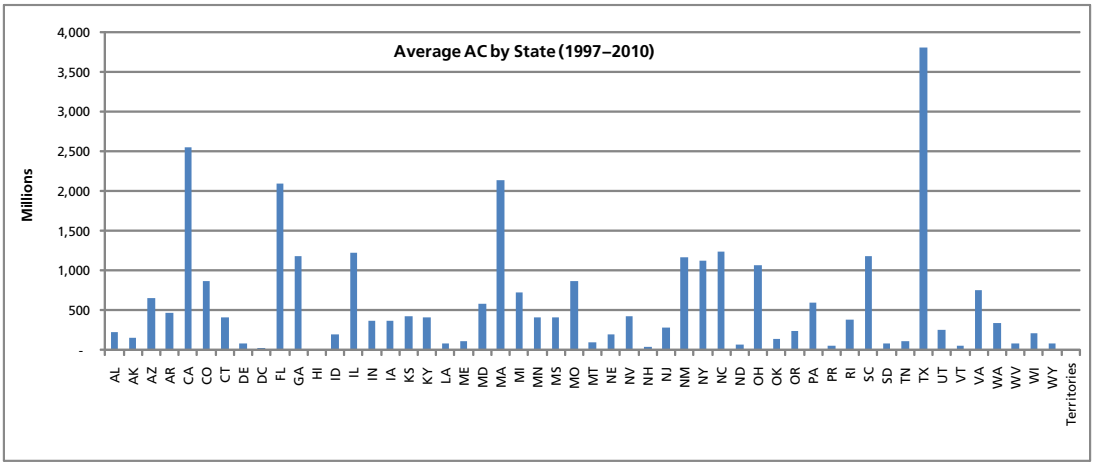
As shown in Chart 4.1 nationally, the use of Advance Construction has grown significantly since the late 1990s. Much of this growth is attributable to the easing of restrictions on the AC technique resulting from TE-045 and the NHS Act, as discussed more fully in Section 2 of this paper. In recent years—2008, 2009, and 2010—AC balances declined. The decline may be attributable to the September 30, 2009 expiration of SAFETEA-LU and related reauthorization uncertainty as well as the coinciding national economic downturn that is restricting transportation funding in many states.

Chart 4.1 Total AC Balance Nationwide (1997–2010), Dollars in Billions



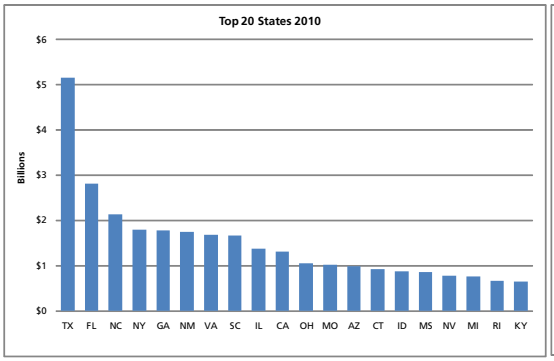
These national figures, however, may over-simplify the factors that can affect a particular state's use of AC. Chart 4.2 provides the average AC balances at year end by state for 1997–2010. As shown, the largest users based on aggregate dollars are Texas, California, Massachusetts, and Florida. Other states are either moderate or light users based on aggregate balances.

Chart 4.2 Average AC Balances by State (1997–2010), Dollars in Millions



Charts 4.3 and 4.4 focus on more recent data—2009 and 2010—and provide AC balances for the top 20 and bottom 20 states. As shown, the top spot is maintained by Texas in both 2009 and 2010 with other high users including Florida, New York, North Carolina, and Georgia. At the low end of the AC use spectrum, and without controlling for overall program size are Hawaii and South Dakota, as shown in Chart 4.4.

Chart 4.3 Top 20 States—AC Balances (2009 and 2010), Dollars in Millions



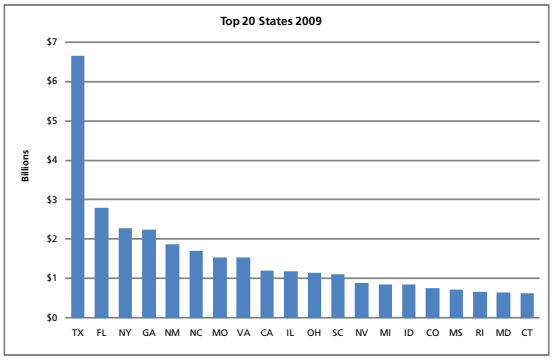
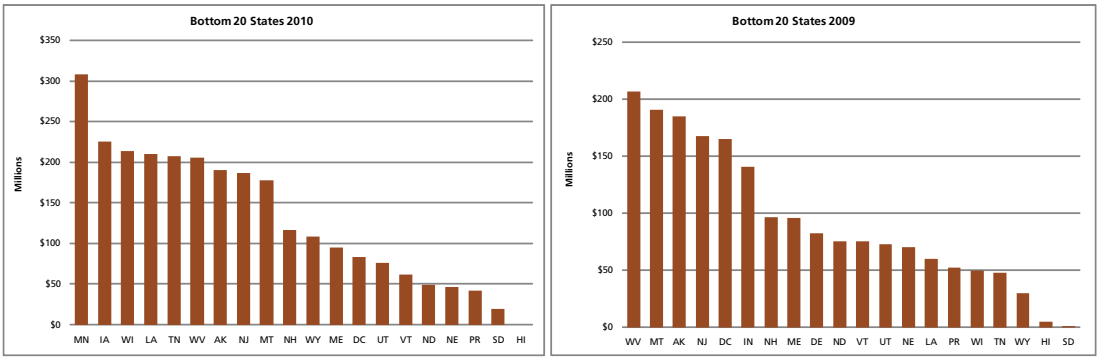


Chart 4.4 Bottom 20 States—AC Balances (2009 and 2010), Dollars in Millions



Given the effect that the size of a state's transportation funding program has on its use of AC, for 2010 the use of AC was analyzed relative to each state's overall formula obligation limit. Chart 4.5, below, provides the top 20 and bottom 20 states' AC balances when viewed as a percentage of each state's formula obligation limit. As shown, while Texas has the largest AC balances on an aggregate dollar basis (see Chart 4.3), several states including New Mexico, Rhode Island, Idaho, South Carolina, and Nevada all use AC as a larger percent of their overall funding program than Texas, at least as viewed as a snapshot balance in time. Also, while California's AC balances are in the top 20 on an absolute basis, when compared to the state's formula obligation limit, California's AC balance is low on a proportionate basis. Due to the practice in some states of using AC for projects that span multiple years and for debt service payments on projects funded with debt, such as GARVEE bonds, these percentages often exceed 100 percent for a given year.

Chart 4.5 Top 20 and Bottom 20 States—AC Balances as a Percentage of Formula Obligation Limit (2010)

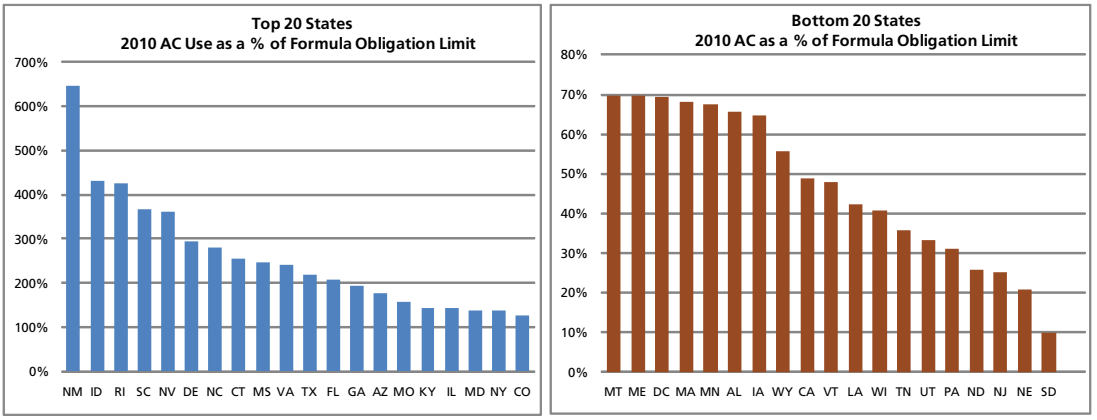
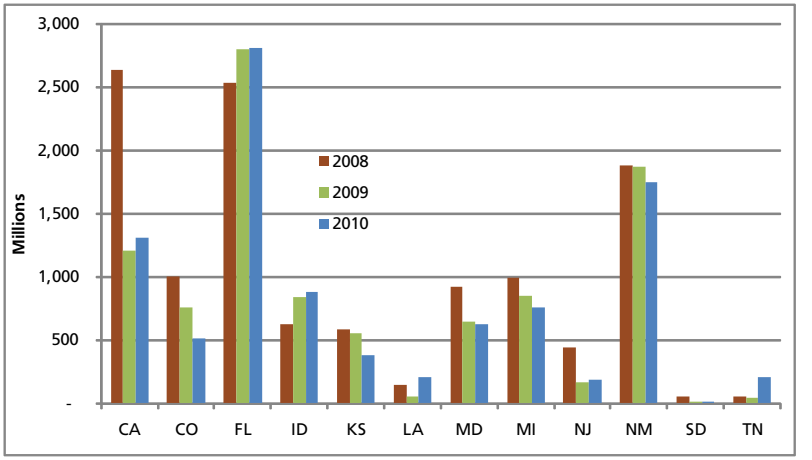


Chart 4.6 provides the usage data for the past three fiscal years of the interviewed states. As shown, some states' AC use—California and Colorado, for instance—have declined significantly. Other states, such as Idaho have increased their balances over the same time period while other states have maintained relatively consistent balances. Complete detail on AC balances for all states from 1997 to 2010 can be found in Appendix A.3.

Chart 4.6 AC Balances of Interviewed States (2008–2010), Dollars in Millions



Factors Affecting Advance Construction Use

A variety of factors can influence a particular state's use of AC and, as a result, both the extent of use and related management practices vary significantly across states. This variance is demonstrated by the historical data charts provided above, Appendix A.1's case studies of the interviewed states, and Appendix A.3's detailed charts of the AC balances of all states for 1997 through 2010. Discussed below are those factors that were noted by interviewees as having an effect on their use of the AC technique.

Federal Funding Timing and Certainty

The timing and certainty of Federal funding can affect a state's use of the AC technique. If the amount or timing of Federal funds is uncertain, such as just prior to the expiration of Federal transportation funding legislation, a state may need to fund project costs entirely with state funds either for a longer period of time than anticipated or perhaps permanently. Federal FY 2009 and FY 2010, for example, were disruptive for states' AC use due to factors surrounding Federal funding such as the delays in the enactment of a new Federal transportation funding act, the use of continuing resolutions, the decision by Congress to implement a rescission of Federal funds, and the threat of Highway Trust Fund insolvency. In addition

to these factors specific to Federal transportation funding, the nation also was experiencing a severe economic downturn. The manner in which a particular state manages these uncertainties and declining economic conditions is specific to that state's resources and funding and financing practices, but across the states interviewed these were given as explanations for reductions in AC use.

If Federal surface transportation program reauthorization is not timely, the use of AC by a state depends to some extent on the state's access to alternative resources to fund its transportation program. In cases where 100 percent of the state's transportation projects are at least in part funded with Federal monies, these states may convert AC balances more frequently and/or reduce expenditures and thereby reduce their need to use AC. Tennessee, for example, normally converts AC balances quickly and as the end of a funding authorization term gets closer, is more cautious, ensuring that the state has resources to cover 100 percent of its cash flow needs until AC conversions are completed. On the other hand, states with more significant state transportation program resources may increase their AC balances during periods of uncertainty in Federal funding. In Michigan, for example, the state will continue to let projects for the first six months of the year—construction season—largely regardless of the status of reauthorization. For the state to continue to let these projects, however, AC is utilized which increases Michigan's outstanding AC balances.

In addition to delays in reauthorization, at the end of Federal FY 2009, Congress enacted a rescission that reduced total FY 2009 contract authority apportioned to states via formula by $8.7 billion. To retain contract authority in certain programs, some states converted AC balances beyond original plans.

State Funding Availability and AC Practices

One of the largest determinants of the extent to which a state uses AC is whether the state views AC predominately as a short-term cash management tool or if the state also uses the AC technique to accelerate projects. Using AC to accelerate projects can enable a state to deliver projects sooner but also can present risks to the state.

Prior to SAFETEA-LU, Michigan used AC solely as a cash management tool. Under SAFETEA-LU, however, Federal funding to Michigan was provided more slowly than under prior legislation. To manage the new pace of funding receipt, Michigan chose to increase its use of the AC technique to advance projects. Florida also increased its AC use to accelerate projects. In Florida, state funding was growing and able to support the state's construction program prior to Federal funding receipt. In more recent years, Florida's use of AC has declined, however, reflecting the reduced availability of state funding as a result of the economic downturn.

Some states also use AC to advance local projects as well as state projects. For example, Michigan has advanced funds for local projects in advance of the avail-

ability of Federal funds. Once the Federal funding becomes available, the projects are converted. The State of Maryland also has lent money to localities to advance the Federal share of locally-funded projects.

The economic downturn affected every state's resources. To address declining state transportation revenues and budget crises, many states scaled back their construction programs due to the lack of state matching funds and as a result their use of AC declined. Alternatively, other states managed the economic downturn by increasing the frequency of their conversion practices, utilizing Partial Conversion of Advance Construction (PCAC) by converting projects with lower expenditure amounts than typical to assist in meeting state cash flow requirements. If a state has a practice of a relatively low dollar threshold for converting accrued balances, that state's AC balances will be low, reflecting the regular conversion of funds from AC to obligation. In South Dakota, for example, AC balances have declined in recent years, reflecting a lowering of the conversion threshold from $50,000 to $10,000. Other states, such as Tennessee, use PCAC to convert most AC balances annually, based on expenditures.

Institutional Foundation and Federal Oversight

The interviewed states did not note any significant institutional constraints to the use of AC either at the state level or at the Federal level. Most states have a relatively long history of utilizing the AC technique. Additionally, none of the states interviewed noted any state level statutory or regulatory hurdles in utilizing the AC technique. A few states have developed policies or guidelines to assist staff in administering the AC program (please see Appendix A.4 for sample policies for AC use provided by interviewed states).

Several interviewees did comment that legacy financial systems have resulted in some challenges when administering AC programs. These states, however, are looking towards the implementation of new systems that along with improvements in other areas will resolve these issues.

Another concern that surfaced from the interviews relates to Federal requirements to coordinate AC use with the state's approved Statewide Transportation Improvement Program (STIP). This issue is discussed fully in Section 5 of this briefing paper.

A potential issue was flagged by one interviewee as it relates to the tracking of inactive projects, projects with no billing activity for over a year. It was reported that FHWA requires the state to maintain less than 4 percent of its appropriations as inactive projects and that when AC is used the clock starts for measuring inactivity on the day the project is put in AC, as opposed to at the point of obligation. It was noted that this was particularly problematic when AC was used for debt service payments. There appears to be some discrepancy regarding this issue that may warrant further exploration.

Table 4.1 Summary of GARVEE Bond Issuance (through 2009)

State	No. of Issues	Total Issuance (millions)	Projects Financed
Alabama	1	$200.0	County bridge program
Alaska	1	$102.8	Eight road and bridge projects
Arizona	6	$528.4	Maricopa freeway projects
Arkansas	3	$575.0	Interstate highways
California	2	$712.5	Eight road projects
Colorado	5	$1,665.6	Any project financed wholly or in part by Federal funds
Georgia	2	$840.0	Various transportation projects
Idaho	3	$847.3	Various expansion projects
Kentucky	2	$417.5	Three Interstate widening and rehabilitation projects
Maine	2	$98.4	Replacement of the Waldo-Hancock Bridge
Maryland	2	$750.0	InterCounty Connector
Montana	2	$167.5	44 miles of US 93 improvements
New Jersey	1	$131.6	Route 52 Causeway Replacement Project
New Mexico	2	$118.7	New Mexico SR 44, US 70 Corridor Reconstruction
North Carolina	2	$530.6	38 projects around the state
North Dakota	1	$51.4	Highway and bridge projects
Ohio	9	$1,303.1	Various including Spring-Sandusky and Maumee River improvements
Oklahoma	4	$290.4	Projects in 12 corridors
Puerto Rico	1	$139.8	Various transportation projects
Rhode Island	3	$570.4	Highway, bridge, and freight rail improvement projects
Virgin Islands	1	$20.8	Enighed Pond Port Project and Red Hook Passenger Terminal Building
West Virginia	3	$186.2	Route 35 enhancements
Total	**58**	**$10,248.0**	

Sources: AASHTO Center for Excellence in Project Finance and FHWA's Office of Innovative Program Delivery.

Debt Issuance

As noted previously in this briefing paper, GARVEE bonds became more feasible when FHWA began to allow Partial Conversions of Advance Construction. Without PCAC, states would have been required to obligate the full amount of the project cost, including bond interest, at the time of conversion. As a result of PCAC, states that issue GARVEE bonds are able to utilize the AC mechansim

and convert only the amount needed to make debt service payments each year. Additionally, some states, such as Florida, have utilized AC in conjunction with other types of debt, including the state's State Infrastructure Bank (SIB) and Local Government Reimbursement Programs.

Disruptions and volatility in the municipal bond market can affect the ability of states to issue GARVEE bonds and other types of municipal debt and thereby will affect their use of AC and AC balances. The most significant example of market volaility is the financial crisis which began in earnest in 2008 with events such as the Lehman bankruptcy filing on September 15, 2008 and resulted in lasting changes to the credit markets which have affected issuers' ability to access the municipal market. As shown in the table below, based on available data through 2009, 20 states plus Puerto Rico and the Virgin Islands have issued GARVEE bonds, totaling approximately $10.2 billion. A total of approximatley 60 individual transactions has taken place.

Funding Program and Project Type

States that utilize Advance Construction tend to use it for practically the full range of Federal funding programs and all types of projects with a few exceptions as noted below:

- **Large Unobligated Balances.** In some states, if a particular project type or funding category has a large unobligated balance, the AC technique is not advantageous.
- **Congressionally Designated Projects (commonly referred to as Earmarks or Demonstration Projects).** Due to the project specific nature and unique obligation authority that comes with this project funding, in some states AC is not considered to be a viable funding approach for these projects. Other states, however, noted that given the timing of funding availability over multiple years, sometimes for relatively small dollar amounts, that these projects are strong candidates for AC.
- **Locally Funded Projects.** Given the need for and unpredictability of the local match, some states choose not to use the AC technique for these projects. In other instances, however, states aggressively help advance local projects through the use of AC.

5.0 PROGRAM ADMINISTRATION

Overview

Interviewees commented on a range of specific administration-related factors at both the state and Federal level but generally feedback indicated that the administration of the AC program is functioning well. Desired improvements, if any, can be characterized as relatively minor refinements.

Organization and Communication

Within states, the roles and responsibilities for effectuating the use of AC are spread throughout several departments within the transportation agencies and typically involve a disperse group of officials and staff. This does not appear to handicap the use of AC; in fact, drawing on the various departments enables involvement of those responsible for managing the full cycle of funding and constructing projects. It does, however, point to the issue of institutional capacity and training to ensure effective program management and communication.

The communication and relationship between state departments of transportation and their respective FHWA Division offices regarding the use of AC varies considerably among the interviewed states. The inconsistencies here may lead to additional efforts by both the state and FHWA when the AC program is utilized, but it does not appear that of the interviewed states any use of AC is inhibited by the quality of the interactions between the state and respective FHWA Division office.

Some interviewees suggested that additional training and/or sharing of best practices regarding AC use among states could be quite beneficial. These interviewees expressed a desire to improve their implementation of AC and to learn what other states were doing in order to further benefit their own state.

Information Technology/Accounting Systems

In general, the interviewees did not have any concerns regarding the mechanics of implementing AC and expressed few, if any, issues with executing AC-related financial transactions and recordings. A few states did express that both their state's financial system and FHWA's Fiscal Management Information System (FMIS) could benefit from upgrades. As an example, one state was interested in adding a capability to FMIS to enable FHWA approval of AC conversions in batches, not individually.

Practices/Policies and Legislative/Regulatory Framework

Interviewees did not express any overarching concerns or issues with the current statutes or regulations governing use of AC. The interviewed states all viewed the flexibility enabled by the AC tool as beneficial to their programs. A few states have developed internal guidelines or policies to assist staff in administering the AC program and deciding when to use AC but generally staff use discretion in making these decisions based on factors such as the availability of funds, time of year, and projected funding needs (please see Appendix A.4 for sample policies for AC use provided by interviewed states).

The interviewed states did express that the end of fiscal year timing of notification regarding the provision of obligation authority did not enable states to plan for these amounts. States also noted that the use of AC is disrupted by funding rescissions. Some states, for instance, acted to convert AC balances in advance of their plans to protect certain funds from rescission.

Relationship with Planning Requirements

As discussed previously in this briefing paper, in 1995, the NHS Act established a requirement that AC projects be on the approved Statewide Transportation Improvement Program (STIP). On April 17, 2009, FHWA issued Guidance on

Financial Planning and Fiscal Constraint for Transportation Plans and Programs that provides information on the extent and manner by which AC must be shown in the STIP. The two key actions governing AC projects and the STIP are summarized in the text box to the right. The guidance clarifies that AC projects can be accounted for in the STIP as a "project grouping." The guidance, however, does leave some ambiguity relating to the need for and required frequency of amendments to the STIP.

"Guidance on Financial Planning and Fiscal Constraint for Transportation Plans and Programs"
(excerpts) FHWA, April 17, 2009

Two key actions governing AC projects:

1. Prior to Federal authorization of a project as AC, the project must be included in the Federally-approved STIP. The project will be demonstrated as supporting the fiscally constrained element of the STIP using all or some combination of state, local, and private funds. The financial limit on the amount of AC is set by the state's or MPO's ability to demonstrate fiscal constraint of the STIP or TIP respectively.

2. Generally, when an AC project is converted to a Federally funded project, the STIP will document the full or partial conversion of the project as an individual project or as part of a project grouping. This project or group of projects needs to meet all STIP/TIP requirements, including the indication of the Federal funding category(ies) that are intended to be used for the conversion. Fiscal constraint must be demonstrated for the individual categories of Federal-aid funds. The amount of conversion is limited by the amount of apportioned Federal-aid funds available in the category to be converted and the amount of obligation authority available at the time of the conversion. As with any project, it should be noted that the state is not locked into the category of funds identified in the approved STIP/TIP. However, should the approved AC "conversion" substantially change the current STIP/TIP's fiscal constraint determination, the STIP/TIP may need to be amended. The fiscal constraint determination should be supported by showing the individual project or group of project conversions in the STIP/TIP or by showing the total amount and source(s) of Federal funds to be converted at part of the financial plan for the STIP/TIP.

While the majority of the states interviewed for this study did not express concerns about the STIP coordination process, in some states the manner in which the coordination between the AC program and the STIP approval is implemented is considered to create administrative burdens and potential delays of STIP approval. Generally, the determination of what level of detail regarding AC projects is reflected in the STIP (and associated timing) is at the core of the issue. As reported by several interviewed states, the required level of detail in some instances is at a project by project level as opposed to a project grouping or program funding category, as provided for in FHWA guidance. Additionally, in some states, more frequent updates or amendments to the STIP driven strictly by the occurrence of AC conversions are being required by FHWA. Both of these issues create some degree of administrative burden that could potentially be lessened. This issue area may benefit from further exploration.

6.0 CONCLUSION

Overall, the interviewed states noted few complications with administering the Advance Construction technique. All of the interviewed states make use of the AC technique to varying degrees and all anticipate that use will continue in their state. In each state interviewed, the AC technique serves one or more of the following functions:

- Cash management
- Acceleration of state projects
- Acceleration of local projects
- Facilitation of GARVEE debt issuance

The functions that AC serves in a particular state differ based on the relative levels of state and Federal funding as well as each state's overall approach to funding and financing transportation projects.

Based on the interviews with 12 states, the following provides a summary of areas that may merit further review with regard to the administration of the AC program.

- **Uncertainty and timing of Federal funding.** General uncertainty regarding the availability of future Federal funding has a significant limiting effect on the use of the AC technique. Further, end of fiscal year notification regarding the provision of obligation authority does not enable states to effectively plan, including as it relates to the management of AC.
- **Integration with planning processes.** In some states, the manner in which the coordination between the use of AC and State Transportation Improvement Program (STIP) oversight is implemented creates administrative burdens and potential delays of STIP approval. While the majority of states interviewed described smooth processes in this regard, there is an apparent inconsistency across the country as it relates to the determination of what level of detail regarding AC projects is required to be reflected in the STIP, and associated

timing requirements. This has caused issues in a few states and could benefit from further clarification of requirements.

- **Quality of communication between the state department of transportation and the FHWA Division office.** The communication between state DOTs and their respective Division offices regarding AC administration was described as quite strong generally. Instances of poor communication, however, can create unnecessary effort or complication for both the state and FHWA. In no instance did a state point to poor communication as something that adversely altered their use of the AC technique.
- **Dated financial systems.** A few states expressed that both the state's financial system and FHWA's Fiscal Management Information System (FMIS) could benefit from upgrades that could improve administrative processes in general, not just for the AC program.
- **Interest in technical assistance and information sharing.** Interviewed states expressed interest in utilizing AC more fully through technical assistance and information sharing of best practices for integrating AC into a funding and financing program more effectively. Several noted that they anticipate the results of this research effort to be a good first step along those lines.

In sum, the AC technique is evidenced to be effectively used by states throughout the country as a cash management and project acceleration tool. Based on the results of this research effort, there are minimal barriers to its use but some opportunities for administrative refinement.

A. APPENDICES

A.1 Case Studies of Interviewed States

This appendix provides a brief case study of each of the interviewed states that highlights the AC trends in each state and reviews each state's AC management practices.

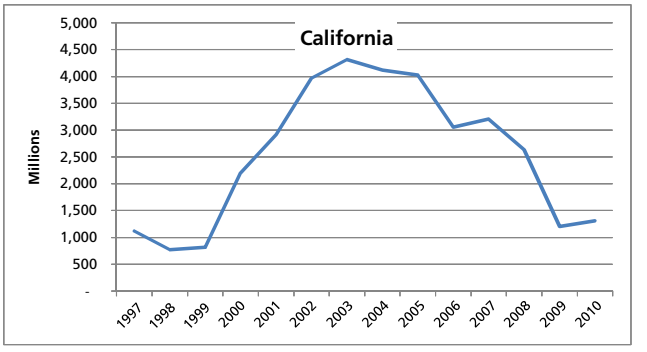
- California
- Colorado
- Florida
- Idaho
- Kansas
- Louisiana
- Maryland
- Michigan
- New Jersey
- New Mexico
- South Dakota
- Tennessee

CALIFORNIA

In recent years, California's AC balances have declined from their highs in fiscal years 2002–2005. A reduction in California's AC balances occurred primarily in response to declining state gas tax revenues that created a need to convert AC balances for cash.

The state generally uses AC for formula funded projects but not for Congressionally-designated project funding. According to those interviewed, designated projects are required to show full funding availability and thus the AC technique is not applicable. California also has used the AC mechanism in conjunction with GARVEE debt. The state finances multiple projects with a single GARVEE issuance and then performs a single (not multiple for each project funded with the GARVEE) AC conversion per debt service payment.

California AC Balances (1997–2010)

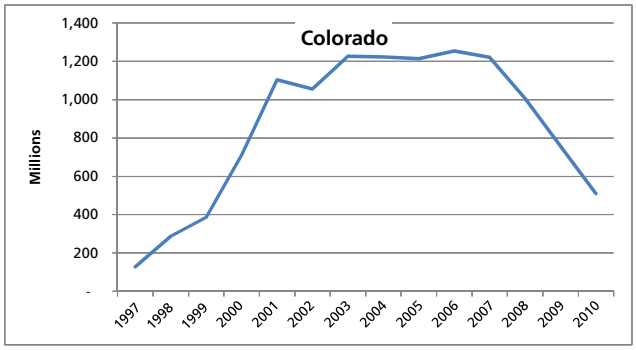


COLORADO

Colorado's use of AC has grown since the 1990s, with significant increases attributable to the issuance of GARVEE bonds. Recent declines in AC balances reflect conversions for debt service on GARVEE bonds and reductions in Federal apportionments due to Federal rescissions. Additionally, the inability to use AC for ARRA funded projects helped cause the state's overall use of AC to decline. In 2006, when Colorado DOT shifted to a new accounting system, 100 percent of Federal-aid highway projects utilized Advance Construction. Colorado DOT has shifted from large conversions that were based on obligation limitations and apportionment processing at the project level to daily, smaller partial conversions based on expenditure reimbursements processed through CDOT's daily billing approach.

Colorado's routine operating approach is for all Federal-aid projects to be advance constructed. The state's multi-year long range planning and continuous appropriation of state highway tax revenues result in systematic overall budget procedures that enable full utilization of AC.

Colorado AC Balances (1997–2010)

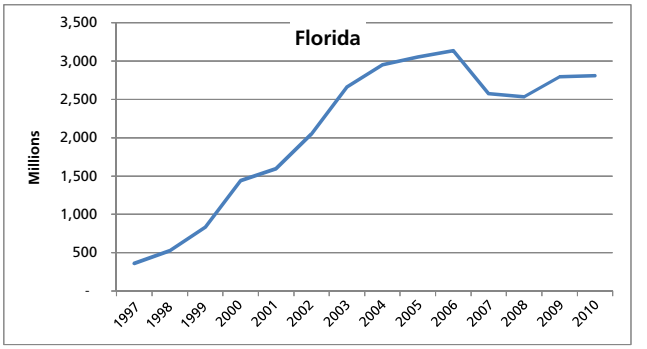


FLORIDA

As Florida experienced a period of economic growth and state transportation funding resources grew, the state changed its methodology for AC use to be based on project expenditures. The state's approach to AC is a mix of conducting AC conversions based on the cash needs of the DOT's financial plan as well as on the need to use obligation authority. With the economic downturn and decline in state transportation funding, the use of AC is decreasing. Florida also has scaled back its AC program due to the lack of new Federal transportation funding authorization, the rescission of Federal funding at the end of Federal FY 2009, and the threat of Highway Trust Fund insolvency.

Florida utilizes the AC technique for funding programs such as the National Highway System (NHS) and Surface Transportation Program (STP) but does not use AC for smaller programs or programs that are subject to local control. Additionally, Florida does not choose to utilize AC based on specific project types but rather uses AC for broad funding categories. For example, the state uses the AC mechanism for a large public-private partnership program, in conjunction with its State Infrastructure Bank (SIB), and for a Local Government Reimbursement Program.

Florida AC Balances (1997–2010)

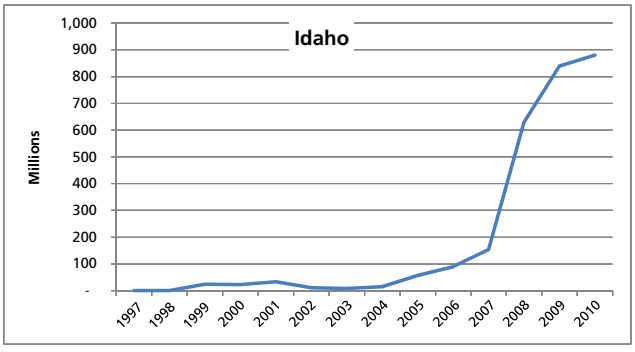


IDAHO

To fund large construction projects that the state faced in the mid-2000s, the state implemented a GARVEE bonding program in combination with AC. These funding tools were vital to Idaho's ability to construct these projects as the state is unable to issue state revenue-backed debt. Following the completion of these large projects, new AC will drop off as the state's program focuses on system preservation.

To date, the state has issued approximately $600 million in GARVEEs. The full amount of each project is authorized through the AC program and a conversion is completed every six months for each debt service payment. The GARVEEs are secured by pledging Federal funds for the project and all other Federal receipts of the state as a back-up pledge. No state funds are pledged to the bonds as state law does not allow issuance of debt. The state, however, has annually appropriated its portion of the debt service payments.

Idaho AC Balances (1997–2010)

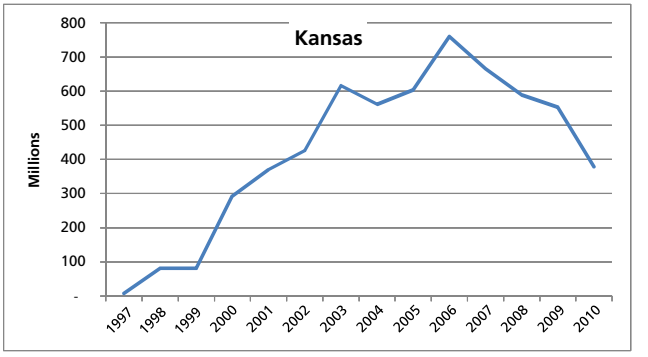


KANSAS

In Kansas, AC balances generally climbed from 1997 to 2006 with a decline beginning in 2007. The increase in use reflects the practice in Kansas of using AC on projects that were previously state funded. While these projects did not require Federal reimbursement to be funded, the practice was intended to build a pool of projects that could be converted if the state needed cash or if there is a need to utilize remaining obligation authority after the term of the state's multi-year highway program.

Kansas utilizes the AC program for a range of projects within the state's core highway construction program and all Federal funding program categories. Kansas also extends the use of the AC to local governments. This flexibility has been appealing to localities and a portion of the AC use is attributable to this practice.

Kansas AC Balances (1997–2010)

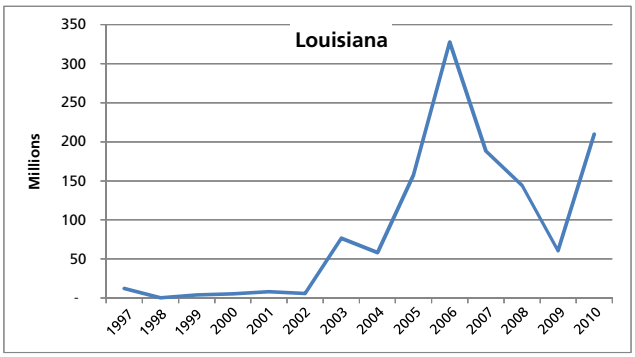


LOUISIANA

Louisiana's use of AC over the years has varied based on cycles in project needs and availability of state funding. Generally, the state converts AC balances as Federal funding becomes available and based on project expenditures.

Louisiana has a policy of keeping its AC balance at around $100 million; however, in 2008, due to the uncertainty of Federal transportation funding reauthorization, the state set a goal to reduce its AC balance to $50 million. In early 2010, the Louisiana Department of Transportation and Development then modified this policy to accelerate the letting of projects through the use of state funds that were set aside for matching Federal funds in the FY 2011 and FY 2012 programs. This change in policy enabled an infusion of construction projects and spend down of an accumulated balance of state transportation funds. Due to this policy modification, the AC balance increased to over $200 million by September 30, 2010. When Federal funds become available in FY 2011 and FY 2012, AC conversions will free state funds for matching requirements. The flexibility of the AC mechanism assists Louisiana in meeting project requirements in a range of financial and economic environments.

Louisiana AC Balances (1997–2010)

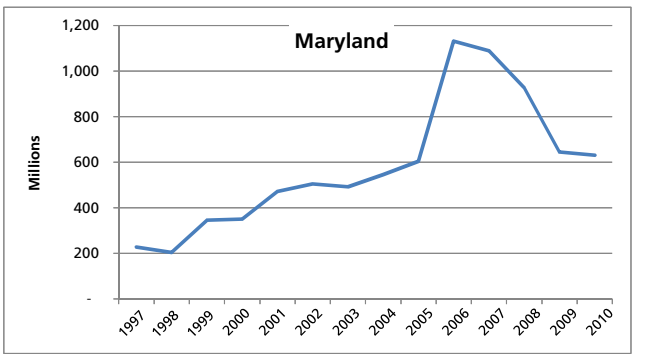


MARYLAND

Maryland steadily increased its use of AC from the late 1990s, with larger increases occurring in the mid-2000s (2006, 2007, and 2008). More recently, the AC balances have declined to pre-2006 levels. Maryland uses AC for approximately 98 percent of the state's Federally funded capital program. The level of use generally aligns with variations in the size of the state's capital program, with recent declines reflective of state and Federal funding restrictions associated with the economic downturn, concerns surrounding the solvency of the Federal highway trust fund, and uncertainty related to expiration of SAFETEA-LU and reauthorization of the Federal surface transportation program.

Maryland conducts quarterly (and more frequent, as needed) updates of cash flow and capital program projections that enable program managers to efficiently align the delivery of the state's capital program. The extensive use of AC furthers the ability to maximize the use of available funding. Maryland also extends the use of AC to local projects to enable localities to benefit from the efficiencies associated with the AC program. Maryland has issued GARVEEs and utilizes AC in combination with the debt service payments.

Maryland AC Balances (1997–2010)

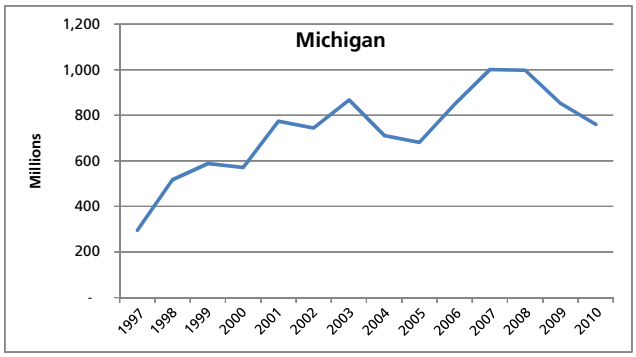


MICHIGAN

Prior to SAFETEA-LU, Michigan used AC solely as a cash management tool. Due to the measured provision of funding over the term of SAFETEA-LU, however, the state began to more actively utilize AC to accelerate projects. For example, if in a given year full obligation authority is not available for a project, the state will use AC to advance the project. The Federal funding program influences the extent to which the state utilizes AC both in the structure of the provision of funding within an authorization cycle as well as in the uncertainties surrounding reauthorization. If a reauthorization is not timely, the state continues to let projects, but increases its use of AC to make this possible.

According to Michigan's internal guidelines for using AC, Michigan will generally use AC on construction phase projects under Interstate Maintenance (IM), Bridge, and National Highway System (NHS) categories requiring more than $3 million in Federal aid as well as on large multi-year projects whether in preliminary engineering, right-of-way, or construction phase and design/build/finance projects regardless of the Federal funding sources. Additionally, Michigan uses PCAC in conjunction with GARVEE bonds. Currently, over 65 percent of Michigan's AC balance is related to indirect GARVEE bonds. PCAC is conducted to make debt service payments. Multiple bond issues pledge all future Federal aid for debt service payments. Michigan also uses PCAC for loans to localities, at the request of the local agency, that are converted annually as Federal funds become available.

Michigan AC Balances (1997–2010)

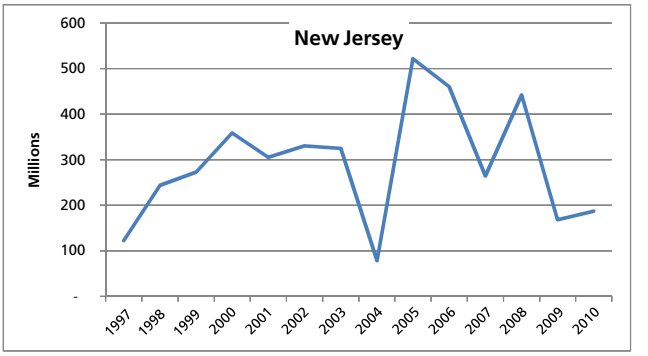


NEW JERSEY

New Jersey has used AC on various occasions, including in conjunction with a GARVEE issuance, but generally does not utilize AC regularly. The state's GARVEE issuance was for approximately $130 million and funded the first contract of the Route 52 Causeway replacement project.

Instead of utilizing the AC technique, the state has developed an alternative approach that enables multi-year funding of projects, including those reliant on Federal funding. To do this, the state establishes contracts that provide for the funding available in the first year of the contract and for following years notes the estimated funding amounts but specifies that those amounts are subject to annual appropriation. The state also has converted projects that were not originally programmed for Federal funding to Federally funded projects through an amendment to the STIP but without use of the AC technique. New Jersey program managers expressed interest in how other states use the AC mechanism and sees potential opportunities for utilizing the mechanism in some instances in conjunction with state programs.

New Jersey AC Balances (1997–2010)

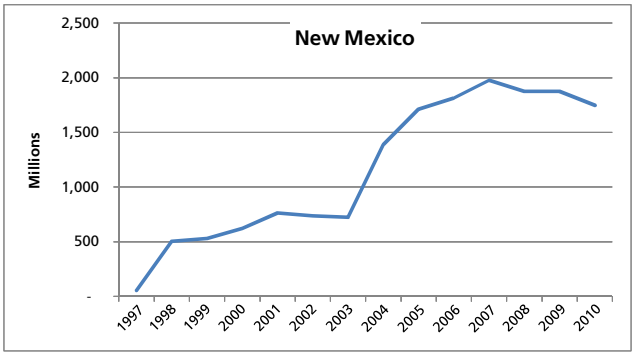


NEW MEXICO

New Mexico's construction program is predominately funded with Federal-aid highway funds. A substantial portion of New Mexico's future Federal-aid highway program is committed to GARVEE bond debt service. New Mexico has issued three GARVEE bond issuances to fund 120 projects. In recent history, NMDOT has only utilized AC for debt service on the GARVEE bonds. New Mexico, however, also has historically used AC to fund projects that span multiple construction seasons.

NMDOT has historically applied AC to the predominant sources of Federal funding, such as IM, NHS, and STP categories, but their use of AC is not limited to these funding categories. NMDOT also noted that they use AC for program categories with lower obligation authority if insufficient obligation authority is available for a project.

New Mexico AC Balances (1997–2010)

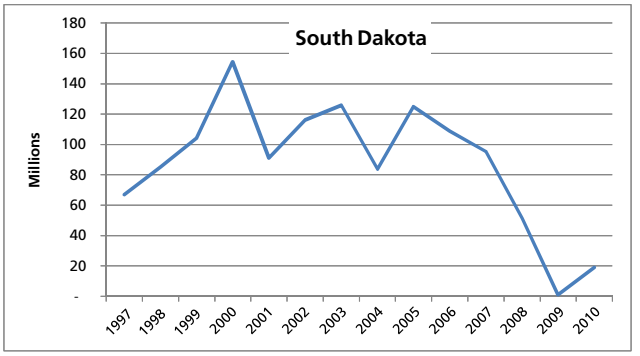


SOUTH DAKOTA

While South Dakota's end of year AC balance may fluctuate annually, as shown in the chart below, the state's approach to use of AC has been consistent. Most projects in South Dakota utilize AC unless the funding is a lump sum earmark or other project-specific dedicated funding source. The use of AC increased in the 1990s as the Federal-aid highway program grew. In FY 2009, the end of year AC balance declined to $1.4 million due to the provision of an additional $15 million in Federal funds to South Dakota at year end. AC balances in the state fluctuate with formula obligation limitation levels and in 2010 use of AC rebounded.

The use of AC throughout the year in South Dakota ties closely with the state's construction season, focus on cash flow, and the traditional availability of obligation authority later in the year. In the late Fall through Winter, the state advances projects with AC, reflecting the slower construction season and the typical lack of full Federal funding in the beginning of the Federal fiscal year. In the Spring, when the state typically has full apportionment and full formula obligation authority for the year, projects are fully or partially converted to ensure obligation authority applied to the projects translates to actual construction costs for the season. The state also pays close attention to project completion dates—if project completion is scheduled within a year or two, generally the project costs will be partially converted. Any project with participating accrued but unbilled costs over $10,000 is converted with PCAC to improve cash flow. This practice has been revised from a $50,000 threshold which resulted in a higher accrued but unbilled balance historically.

South Dakota AC Balances (1997–2010)

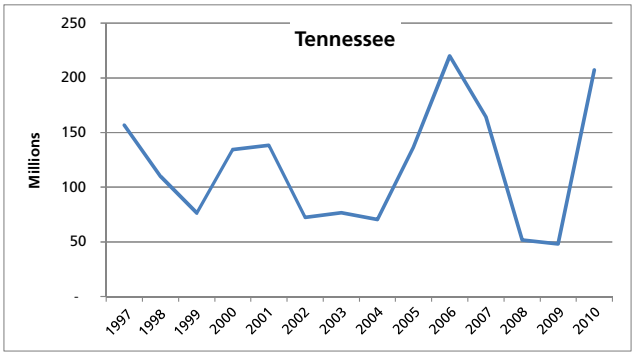


TENNESSEE

Since 1997, Tennessee's AC balances have ranged from a high of approximately $225 million in 2006 to a low of $50 million in 2008 and 2009. Tennessee uses AC for a variety of funding programs and projects. The state has utilized AC for a $200 million project known as Smart Fix in Knoxville and is currently utilizing AC for an aggressive bridge replacement program. Due to this bridge replacement program the state's AC use has increased in the past three years, with $72 million currently for the bridge program. The state, however, annually converts AC balances based on expenditures using PCAC, resulting in relatively low end of year AC balances in 2008 and 2009.

In general, the state does not use AC in a manner where the state will not be able to convert balances within a short timeframe, usually two to three years, and as the end of a Federal funding authorization cycle approaches the state is increasingly cautious, ensuring the state has adequate resources to fund ongoing projects until a conversion can be completed. As the state embarks on the aggressive bridge replacement program, the timeframe for conversion may become extended but this will be determined, in part, by the details of the new Federal funding authorization once finalized.

Tennessee AC Balances (1997–2010)



A.2 Interview Guide

AASHTO Use of Advance Construction in Financing Transportation Projects Interview Guide

Use Trends

1. How has your state's use of AC changed over time? Has use grown or diminished over time (last 5 years? Last 10 years?)? Why?
2. Does your state use partial conversion of AC? Has your state's use of partial conversion changed over time? Has use grown or diminished over time (last 5 years? Last 10 years?)? Why?
3. How have your state's AC conversion practices changed over the years?
4. How do you expect your state's use of AC to change going forward?
5. What triggers affect the level of use of AC in your state? What factors influence how your state chooses to seek AC conversion?
    a. Have recent state and Federal budget events (e.g., Highway Trust Fund insolvency, reduced state resources, and reauthorization delays) affected use of AC? How?
    b. Are there institutional factors specific to your state that influence your state's use of AC? Do any of the following factors make use of AC more difficult or accessible in your state?
        i. State statutory requirements
        ii. Budgeting and funding allocation procedures
        iii. Organization culture
        iv. Historical precedent
        v. Other?
6. Does your state have a policy or program regarding use of AC? Can we have a copy? When was it established?

Program and Project Basis

7. Does your state tend to use AC for certain Federal program categories and not others?
    a. Which program categories make sense for AC? Why?
    b. Which program categories do not make sense for AC? Why not?
    c. What could change about the AC program that would make it more useful for all programs?
8. Does your state tend to use AC for specific types of projects?
    a. Which types of projects make sense for AC? Why?
    b. What project types and specific projects has your state used AC for?
    c. Which project types do not make sense for AC? Why not?
    d. Have you actively decided against using AC for a specific project or type of project?
    e. What could change about the AC program that would make it more useful for all types of projects?

AC and Debt

9. Has your state used AC in conjunction with debt programs (e.g., GANs, GARVEE bonds, or other state or local debt issuance)?
    a. What was the project?
    b. How was the combination of AC and debt of benefit to the financial plan?
10. What is the relationship between current AC balances and what your state really intends to convert? How is this influenced by use of AC with debt issuance programs?

Program Administration

11. How do you feel the AC mechanism, as currently administered by FHWA, is working?
12. How do FHWA factors influence your state's use of AC? For example, do any of the following positively or negatively influence your state's use of AC?
    a. Knowledge of resource center, regional office, HQ, other staff?
    b. Costs?
    c. Division office practices? Such as?
    d. FHWA organizational factors? Such as?
    e. Other administrative burdens? Such as?
13. Does the NHS Act requirement that AC projects be on the fiscally constrained STIP present any issues or complications for your state's use of AC or STIP development? What about with respect to partial conversion of AC?
14. What specific concerns do you have with FHWA's current administration of AC, if any?
    a. Are these concerns related to HQ, Division, or regional FHWA office administration practices?
    b. How would you resolve/improve these issues with the administration of AC?
15. Has your state not made use of AC due to administrative issues?
16. Is FHWA providing sufficient information, training, and technical assistance to ensure states maintain adequate knowledge and familiarity with AC rules?
17. How could the FHWA's administration of AC be improved? What AC policy changes could potentially make the mechanism more useful and effective?

A.3 State by State Advance Construction Balances (1997–2010)

State	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
AL	7,394	24,870	79,971	99,196	87,929	189,792	229,572	266,799	310,469	413,755	378,908	340,862	458,351	313,151
AK	39,100	39,100	39,100	39,100	39,100	146,122	138,542	214,514	222,111	353,934	321,931	228,974	185,035	190,337
AZ	135,335	396,473	496,705	370,772	605,940	707,840	812,850	858,966	953,244	995,451	751,848	741,819	425,829	985,013
AR	58,462	–	3,577	185,484	595,695	779,320	736,937	773,324	766,706	657,840	582,552	538,918	430,685	374,691
CA	1,117,021	770,450	817,204	2,199,530	2,916,781	3,970,572	4,319,104	4,116,205	4,026,789	3,056,270	3,203,472	2,634,264	1,205,763	1,311,137
CO	127,765	286,723	386,078	709,555	1,103,607	1,055,917	1,227,543	1,222,555	1,213,266	1,255,081	1,220,580	1,005,405	756,939	510,402
CT	93,383	227,534	155,147	304,104	355,974	343,862	312,399	264,593	145,854	761,444	850,801	417,536	615,271	927,689
DE	73,857	49,523	74,936	76,836	41,831	26,455	18,653	17,624	83,415	149,470	127,812	120,711	82,565	343,376
DC	–	–	–	–	–	684	1,613	11,360	77,841	45,173	26,413	52,131	165,470	83,333
FL	360,093	527,495	832,947	1,440,400	1,596,552	2,046,048	2,662,041	2,953,689	3,052,798	3,134,324	2,574,089	2,535,311	2,795,101	2,810,887
GA	26,250	34,793	32,872	92,654	292,867	332,945	462,674	603,661	1,379,958	2,775,334	3,864,026	2,621,027	2,237,425	1,788,812
HI	–	–	–	–	–	13,638	–	–	–	–	8,666	4,453	5,220	0
ID	–	–	23,559	23,176	33,681	10,548	8,390	15,393	56,782	90,291	152,809	628,832	839,283	880,468
IL	263,572	296,852	508,673	720,168	1,093,612	1,594,161	1,612,736	1,764,049	1,826,633	1,886,403	1,657,666	1,434,395	1,180,370	1,374,342
IN	185,271	221,756	363,715	447,734	390,192	317,320	524,127	572,582	268,597	496,585	396,096	391,542	141,094	501,277
IA	169,954	178,097	223,665	332,240	455,300	563,352	468,803	447,033	498,458	502,467	435,529	359,278	344,653	225,551
KS	7,734	81,702	81,717	292,378	370,434	425,596	615,910	561,617	603,396	759,363	665,827	588,606	552,661	378,906
KY	87,906	134,085	290,759	329,247	416,500	405,103	284,453	250,390	293,731	420,207	900,381	755,342	467,079	654,822
LA	12,326	–	3,996	5,037	7,998	5,663	76,264	58,163	157,509	327,641	188,175	143,938	60,201	209,954
ME	29,083	27,453	30,607	59,699	68,912	73,590	78,646	134,811	253,792	221,412	161,736	187,329	95,861	94,642
MD	227,373	203,857	346,112	350,824	472,221	504,996	493,023	546,076	604,317	1,131,823	1,089,415	926,385	644,930	631,337
MA	2,277,331	2,946,656	2,976,942	3,176,101	3,402,870	2,852,085	2,594,120	2,380,391	2,360,489	2,162,094	1,454,683	467,604	546,073	338,448
MI	295,220	517,116	588,533	570,555	773,678	744,560	867,806	711,020	681,787	848,170	1,001,276	998,627	853,086	760,849
MN	58,403	110,644	90,351	153,282	207,547	410,510	573,770	723,542	699,538	796,539	903,036	449,649	243,185	308,564
MS	23,479	22,000	86,075	106,239	296,788	249,927	316,726	328,680	437,765	587,812	848,735	821,120	723,717	853,134
MO	142,711	227,547	464,918	530,385	858,163	888,945	993,614	803,736	958,659	1,294,180	1,205,338	1,311,499	1,538,881	1,026,812
MT	–	–	–	–	15,269	30,396	1,838	155,765	223,748	201,665	155,084	210,512	190,702	177,838
NE	135,520	193,639	190,197	200,533	210,317	205,618	274,949	273,047	278,027	249,919	270,059	146,742	70,600	46,506
NV	19,362	20,390	7,291	11,660	14,146	43,856	253,940	476,957	632,064	819,919	1,025,208	964,041	887,804	787,311
NH	12,136	27,650	29,736	45,466	31,028	32,264	18,452	19,526	28,216	30,727	38,308	66,684	96,838	116,316
NJ	122,742	244,050	272,520	358,456	305,218	330,062	325,080	78,409	522,083	460,039	264,581	442,633	167,837	186,777
NM	53,209	503,315	529,725	623,330	762,215	735,788	724,776	1,386,291	1,710,137	1,813,195	1,977,884	1,875,936	1,875,328	1,746,679

State	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NY	585,307	643,395	870,684	976,356	926,962	845,247	799,553	978,969	984,951	1,037,741	1,141,264	1,972,652	2,275,693	1,802,076
NC	449,688	483,745	817,521	819,832	924,022	1,157,257	1,486,940	1,407,150	1,429,187	1,288,593	1,446,306	1,799,761	1,691,559	2,136,251
ND	19,175	22,577	27,433	44,240	27,368	47,917	45,215	38,983	137,463	138,385	116,973	100,903	75,783	49,041
OH	667,878	565,069	436,415	671,519	1,034,110	1,080,591	930,554	1,025,435	1,195,772	1,629,791	1,759,350	1,844,093	1,146,168	1,052,039
OK	56,188	55,437	10,232	12,244	55,594	8,479	3,153	62,550	122,492	271,809	278,727	374,257	343,250	325,606
OR	51,889	49,889	106,578	63,857	67,325	61,242	56,467	65,883	262,899	597,413	572,014	544,487	506,402	387,566
PA	578,218	496,861	441,963	983,432	683,077	621,535	695,468	658,932	552,229	584,471	716,598	586,546	468,466	370,037
PR	19,240	35,425	22,695	13,829	13,829	35,521	35,983	132,380	124,419	112,385	102,849	64,603	52,474	41,536
RI	46,524	117,698	130,355	141,548	150,119	136,099	335,448	444,902	653,524	580,334	580,919	704,319	662,458	670,984
SC	116,778	441,309	742,579	1,306,750	1,491,716	1,754,599	1,907,806	2,196,759	1,034,381	741,309	856,874	1,301,879	1,103,087	1,669,034
SD	66,976	85,143	104,385	154,376	91,017	116,204	125,917	83,654	124,874	108,876	95,325	51,370	1,072	19,099
TN	156,715	109,632	76,193	134,270	138,441	72,208	76,464	70,269	136,512	220,098	164,366	51,530	47,983	207,428
TX	383,530	369,494	772,319	982,964	1,125,162	2,703,548	3,800,359	4,644,141	6,296,372	6,644,795	7,372,091	6,382,204	6,657,445	5,157,403
UT	424,011	417,979	319,366	392,860	298,059	273,041	235,909	202,955	221,597	288,514	200,163	143,317	72,995	75,645
VT	2,206	3,027	8,657	28,911	69,862	45,405	73,709	107,272	107,062	91,342	73,894	62,138	75,389	61,647
VA	285,231	423,841	330,417	340,705	619,570	773,008	537,617	495,623	492,656	666,182	973,178	1,389,402	1,535,009	1,690,297
WA	88,467	153,806	174,876	357,523	304,076	191,379	509,138	415,712	338,104	608,806	428,870	453,417	263,722	574,970
WV	8,720	16,936	34,757	56,865	25,899	51,330	–	4,445	3,307	126,328	198,568	283,864	206,751	205,162
WI	91,249	163,520	186,911	237,361	230,766	218,031	159,392	180,273	450,651	257,975	296,187	270,862	50,183	213,862
WY	21,032	43,186	49,255	60,529	78,516	100,011	102,106	108,827	93,021	123,801	72,187	115,592	29,784	108,183
Territ.	5,721	33	5,151	3,007	–	25,182	22,261	21,837	21,837	21,837	21,837	21,837	21,837	21,271
Total	**10,286,735**	**13,011,772**	**15,696,370**	**21,637,119**	**26,177,855**	**30,355,369**	**33,968,810**	**36,337,719**	**40,111,489**	**44,839,312**	**46,171,464**	**42,931,138**	**38,171,347**	**37,778,521**

A.4 Sample State DOT Policies on Advance Construction

This appendix provides policies for AC management practices that were provided by three of the interviewed states—Florida, Michigan, and New Mexico.

FLORIDA AC PROCEDURES

(excerpt from: Work Program Instructions, Tentative Work Program—FY 10/11–14/15, September 25, 2009)

Chapter 2: Advanced Construction

1. Overview

Advanced construction (AC) is used to program project phases that will eventually be reimbursed with Federal funds. These are state funds used to finance projects in anticipation of future Federal funds. AC funds are authorized with Federal Highway Administration (FHWA) in the same manner as regular Federal funds. This will allow the Department to convert the state funds to Federal funds and then bill FHWA for accumulated costs.

Projects funded as AC will be converted as needed to facilitate the use of obligating authority and the cash management process. The AC capacity will be restored as conversions occur.

District ACSA

The established levels for District ACSA are as follows:

District	Amount
1	51,439,000
2	53,102,000
3	56,363,000
4	69,849,000
5	79,240,000
6	54,679,000
7	64,477,000
Total	**429,149,000**

The amount of District AC as noted above has been added to each District's PAR and is part of the ME.fund roll up. Beginning in FY 2009, all SA funds are to be programmed as ACSA. No conversion phase will need to be programmed.

Temporary AC

Temporary AC includes any Federal fund which is authorized as AC, with the exception of SA, NHAC, BRAC, ACEN, IMAC and ACEP. For temporary AC, the following rules apply:

A. No increase in temporary AC is allowed in any year.

B. Any increase in temporary AC in any year, must be approved in writing by the Work Program Development and Operations Office and the Financial Development Office.

C. Other than ACSA, all funds previously programmed as AC that have not yet been converted must have a conversion phase programmed no later than the current fiscal year with the same funds as were authorized as AC, unless a written exception was previously provided. Any exception to this requirement must be approved in writing by the Work Program Development & Operations Office and the Office of Financial Development.

2. Programming Guidelines

A. Advanced Construction for District Programs
ACSA funds are allocated to the Districts, and their use is tracked on the ME. Production Accomplishment Report (PAR). ACSA funds may be programmed when project phases are initially added to the program. Conversion phases are not required for ACSA. Districts may not program ACSA funds on projects in excess of the ME. PAR without the approval of the Work Program Development and Operations Office and the Financial Development Office.

B. Advanced Construction for District Programs—Temporary AC
When apportionment and obligating authority in the state is consumed, the Federal Aid Management Office may request additional AC funds be programmed in excess of the ACSA amount. Such requests will be made through the Work Program Development and Operations Office in coordination with the Financial Development Office. When ACXX funds are programmed due to lack of obligating authority, regular Federal funds must be programmed in the same fiscal year as a conversion phase. The total amount of regular Federal funds programmed for conversion of AC must equal the total amount of temporary AC programmed.

C. Conversion phases are programmed as phase A8, program number 52, allocation type 1.

D. Advanced Construction for District Programs—Payback for Local Advanced Funds (LFR/LFRF/LRSC) and State Infrastructure Bank Funds (SIB)
If Federal funds are programmed in a future year as the payback of local funds (LFR, LFRF or LRSC), then the project must be authorized and approved through the Federal Aid Management Office and FHWA as an Advanced Construction (AC) project. This must be done prior to work being started on the project. AC funds must be programmed in the year of the planned payback as phase A8, program number 39 for LFR/LFRF/LRSC or program number 61 for SIB, and allocation type 1. The Federal funds to be used for the future conversion must be programmed in the same fiscal year as the payback for temporary AC. A conversion phase should not be programmed when ACSA, ACEP, ACEN, BRAC, IMAC, or NHAC is programmed for the payback. A Federal-aid number will be assigned authorizing the project as AC. See the Chapter on Local Funds in these Instructions for further information.

E. Advanced Construction for Statewide Programs
The statewide fund codes for AC and regular Federal funds are ACEP, ACEN, BRAC, IMAC, and NHAC. AC will not be authorized for: BRTZ, HP, HR, and PL. Exceptions will be reviewed on a case by case basis with the Office of Work Program.

Mobility 2000 projects are programmed with NHAC or IMAC with an "ACI" distribution area. Do not add any ACI distribution area designations beyond those already programmed. (For further instruction on Advance Construction, see Part IV, Federal Overview, Chapter 7 of these Instructions).

3. Balancing Guidelines

A. All ACXX, with the exception of ACSA, ACEP and ACEN must have a conversion phase programmed with the same Federal funds that were programmed as AC. All conversion phases for all fund types are to be programmed in the current fiscal year, unless an exception was previously granted in writing for the conversion phase to be programmed in a later year (for example, some exceptions were provided for advance acquisition of right of way).

B. Temporary AC may include funds programmed in prior fiscal years which have not yet been converted. The full amount of the conversion must be programmed in the current fiscal year unless an exception was otherwise

approved in writing by the Office of Work Program and the Office of Financial Development.

C. FM Report 6.21, AC (Advanced Construction) Reports will provide project level detail for all projects programmed with AC and will provide the amount of conversion programmed on the project. The report should be run starting in the earliest year that non-revolving AC is still programmed (not yet converted). Every project must be balanced.

MICHIGAN AC GUIDELINES

Michigan Department of Transportation
Financial Operations Division–Project Accounting Unit Guidelines for Current Practices in Funding Federal-Aid-Eligible Projects Using Advanced Construction
Updated on: 5/28/2010

These guidelines are used by Project Accounting Staff to determine when to use advanced construction (AC) for projects submitted to Finance for funding. The guidelines have been mutually agreed upon between Planning and Finance. They are reviewed periodically to reflect current funding strategies. Within these guidelines, Project Accounting Staff will use their discretion depending on factors such as the availability of funds, time of year and Michigan Department of Transportation's (MDOT) projected program needs. Project Accounting Staff routinely analyzes individual project activity on AC funded projects.

Advance Constructing MDOT (Trunkline) Projects:

- Construction phase projects under Interstate Maintenance (IM), Bridge, and National Highway (NH) requiring more than $3 million in Federal aid are initially funded as AC. These projects are converted from AC to regular Federal funds (subject to availability) when significant costs start to accrue.
- Large, multi-year projects, whether preliminary engineering, right-of-way or construction phase, and Design/Build Finance projects may be AC'd regardless of Federal funding source. The phased conversion of these projects to regular Federal funding begins when significant costs start to accrue and the funds are available. Some project's phased conversion amounts are stipulated

at the time the project is AC'd to reflect MDOT's program template. Other projects are converted periodically as work progresses and funds are available.

- Projects are AC'd that may be eligible for special funding, e.g., High Priority Projects (HPP), Discretionary, or Border Crossing, but for which approval or allocation of these special funds has not occurred at the time the project is advanced. These projects are converted as approval is received and the funding becomes available.
- All projects are AC'd that are submitted to Finance for funding after the obligational authority and/or apportionment is exhausted for the fiscal year. These projects are converted in the new fiscal year when funds become available, subject to the guidelines stated above.
- In the event additional obligational authority and apportionment are available at year-end, projects may be converted regardless of costs incurred in order not to lapse funds or obligational authority.
- Some projects are AC'd when bonds have been sold to construct them. These are considered Indirect GARVEE projects and are converted as debt service payments are due.

Advance Constructing Local Agency projects:

- Projects may be AC'd at the request of the local agency. These projects are converted at the written request of the local agency once funds become available. HPP projects are an exception to the requirement for the written request. Project Accounting Staff will convert a percent of each project to HPP funds at the beginning of each fiscal year according to TEA-21.

NEW MEXICO AC PROCEDURES

Procedure:	Advanced Construction (AC) Project Authorizations
Purpose:	To authorize a project for letting with the intent to obligate future Federal obligation authority when Federal obligation authority is not currently available
Supporting Partners:	P.S. & E. Section, PDE's, Construction Bureau, Planning Division, and FHWA
Information Users:	P.S. & E., Planning Division, and FHWA

Advance Construction is the FHWA process which allows the states to use other non-Federal sources of funds on a Federally approved project while preserving the eligibility of future Federal obligation and reimbursement. An AC project must meet the requirements of Title 23 U.S.C. and follows the same process used when authorizing Federal funds.

The Department requests AC authorization when it intends to use FHWA funds but there is not sufficient current obligation authority to authorize the project. Projects are typically authorized as AC near the end of the Federal fiscal year when all obligation authority may have already been obligated, but it is in the best interests of the Department to go forward with letting. Projects may also be authorized as AC early in the Federal fiscal year when the Department is operating under limited obligation authority provided by Congress through continuing resolutions. Another example of an AC project is when the funding is programmed for more than one fiscal year; funding for future years must be authorized as AC.

The expenditures of an AC project are not eligible for reimbursement from FHWA until the project is converted (obligated) to Federal funds. When obligation authority becomes available, Funding Control will process a modification to the project agreement, which "swaps" the AC authorization for Federal obligation authority.

- Based on the remaining obligation authority and the letting schedule, projects are identified as potential AC candidates by Funding Control/Program Management

- The potential AC projects are brought to management's attention and they-determine whether to authorize as AC or delay the letting of the project
- The project is authorized as AC using the same process described under Authorization of Federal Funds (see Authorization of Federal funds, Page 16)
- Once the project is authorized by FHWA, the project is established in NMDOT's SHARE as a non-participating (ineligible for Federal reimbursement)
- When obligation authority becomes available, Funding Control submits a Fed form to modify the project agreement and convert the funding from AC to Federal funds
- The project Budgets in SHARE are then modified to reflect the authorization of Federal funds (to participating)
- If the project has been let, awarded and encumbered, Funding Control will convert the encumbrance to reflect the authorization of Federal funds and notify the District
- If expenditures have occurred, Funding Control will Journal Entry (JE) the non-participating expenditures to Federal participating in order to make them eligible for reimbursement