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# Local Government Funding and Financing of Roads: Virginia Case Studies and Examples From Other States

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Final Report VCTIR 15-R2

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<p>16. Abstract:</p> <p>Several Virginia localities have used local funding and financing sources to build new roads or complete major street improvement projects when state and/or federal funding was not available. Many others have combined local funding sources with state and/or federal funds to accelerate a project of importance to the locality. The purpose of this study was twofold: (1) to determine the extent to which local governments have completed road projects under Virginia statutes that enable various types of funding and financing tools and to document lessons some localities learned in the process; and (2) to identify examples of locally generated funding sources from other states not currently used in Virginia that could be promising for road projects. To achieve the first purpose, case studies and a survey were used to gather the necessary information. To achieve the second purpose, a literature review was conducted.</p> <p>Different localities had different enabling factors that led to their decisions to apply local funds to road projects. Enabling factors that were evident from the case studies included the following:</p> <ul style="list-style-type: none"> <li>• high growth rates and the resultant increases in tax receipts</li> <li>• regional medical centers associated with substantial ancillary land development</li> <li>• local government staff with experience managing road construction projects</li> <li>• a combination of future-focused transportation plans and negotiation during the land development process</li> <li>• a record of success with similar projects</li> <li>• collaboration with universities and other local governments</li> <li>• careful budgeting and saving.</li> </ul> <p>Examples of locally generated funding sources from other states that are not widely used in Virginia include transportation utility fees, local motor fuel taxes, mileage-based user fees, special property taxes on non-residential parking spaces, a tax per employee, concurrency, availability payment public-private partnerships, and various types of special districts.</p> <p>In addition to identifying the enabling factors listed, the study concludes that Virginia's local governments have become major funding sources for road improvements of local importance. This role intensified as state funding levels decreased before Virginia's 2013 transportation funding revisions, but some localities said that they could not sustain this trend over the long term. Even so, localities have an interest in using local dollars to advance local priority projects.</p> <p>The study recommends that the Virginia Center for Transportation Innovation and Research and the Virginia Department of Transportation's Local Assistance Division (1) develop a "road show" summarizing the findings from the case studies conducted in this study, with a focus on options for local funding that other localities might find useful; and (2) enhance an existing annual workshop that focuses on local project administration to add consideration of innovative local funding tools currently in use by jurisdictions outside Virginia.</p>			
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**FINAL REPORT**

**LOCAL GOVERNMENT FUNDING AND FINANCING OF ROADS:  
VIRGINIA CASE STUDIES AND EXAMPLES FROM OTHER STATES**

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In Cooperation with the U.S. Department of Transportation  
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Virginia Center for Transportation Innovation and Research  
(A partnership of the Virginia Department of Transportation  
and the University of Virginia since 1948)

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## ABSTRACT

Several Virginia localities have used local funding and financing sources to build new roads or complete major street improvement projects when state and/or federal funding was not available. Many others have combined local funding sources with state and/or federal funds to accelerate a project of importance to the locality. The purpose of this study was twofold: (1) to determine the extent to which local governments have completed road projects under Virginia statutes that enable various types of funding and financing tools and to document lessons some localities learned in the process; and (2) to identify examples of locally generated funding sources from other states not currently used in Virginia that could be promising for road projects. To achieve the first purpose, case studies and a survey were used to gather the necessary information. To achieve the second purpose, a literature review was conducted.

Different localities had different enabling factors that led to their decisions to apply local funds to road projects. Enabling factors that were evident from the case studies included the following:

- high growth rates and the resultant increases in tax receipts
- regional medical centers associated with substantial ancillary land development
- local government staff with experience managing road construction projects
- a combination of future-focused transportation plans and negotiation during the land development process
- a record of success with similar projects
- collaboration with universities and other local governments
- careful budgeting and saving.

Examples of locally generated funding sources from other states that are not widely used in Virginia include transportation utility fees, local motor fuel taxes, mileage-based user fees, special property taxes on non-residential parking spaces, a tax per employee, concurrency, availability payment public-private partnerships, and various types of special districts.

In addition to identifying the enabling factors listed, the study concludes that Virginia's local governments have become major funding sources for road improvements of local importance. This role intensified as state funding levels decreased before Virginia's 2013 transportation funding revisions, but some localities said that they could not sustain this trend over the long term. Even so, localities have an interest in using local dollars to advance local priority projects.

The study recommends that the Virginia Center for Transportation Innovation and Research and the Virginia Department of Transportation's Local Assistance Division (1) develop a "road show" summarizing the findings from the case studies conducted in this study, with a focus on options for local funding that other localities might find useful; and (2) enhance an existing annual workshop that focuses on local project administration to add consideration of innovative local funding tools currently in use by jurisdictions outside Virginia.

## **FINAL REPORT**

### **LOCAL GOVERNMENT FUNDING AND FINANCING OF ROADS: VIRGINIA CASE STUDIES AND EXAMPLES FROM OTHER STATES**

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#### **INTRODUCTION**

In Virginia, other than in independent cities; towns with populations over 3,500; and 2 of its 95 counties, the Virginia Department of Transportation (VDOT) has historically funded, constructed, and maintained all public roads. With the exceptions of Alaska, Delaware, North Carolina, and West Virginia, this is in contrast to other states, which have state oversight of primary roads but local control of and funding responsibility for secondary (or county) roads (O’Leary, 1998). Because state funding historically pushed projects along, local government funding was typically limited to small local match amounts and therefore was not critical. The downside of this arrangement is that when state funding sources dwindle, projects can stall. This has spurred some localities to seek ways to obtain local funding to continue their priority projects.

Virginia’s funding for secondary road construction declined by 65% from FY07 through FY11 (Gifford, 2011) for various factors including debt service and Virginia’s general downward revenue trend. According to the *Code of Virginia* (§ 33.1-23.1), funding for necessary maintenance is to take priority over funding for construction; Figure 1 illustrates the resulting recent trend in Virginia’s formula for allocating dollars for construction of new roads. Maintenance funding also declined substantially during the same years, and there was an increased need for local governments to step in if they desired new roadway projects, especially those of local or regional importance. Data gathering for this study was completed before Virginia’s 2013 transportation funding reforms, which substantially changed the funding structure, were enacted. It remains to be seen whether and how these changes will affect funding trends over the long term.

#### **Problem Statement**

VDOT recognizes the continuing challenge of providing funding for road projects through traditional means. Locally developed and funded projects often provide benefits to VDOT and Virginia as well as to the sponsoring localities. Several localities in Virginia have funded and financed road improvements using local bond issues, development proffers, and other strategies. However, no summary exists of their efforts, and there is a shortage of readily available information or case studies for Virginia localities that may want to know what locally generated funding options are available. As a result, VDOT is interested in promoting information exchange to facilitate project development using alternative funding sources where there is local support. This topic was a high priority of the Transportation Planning Research Advisory Committee, which provides input to the Virginia Center for Transportation Innovation

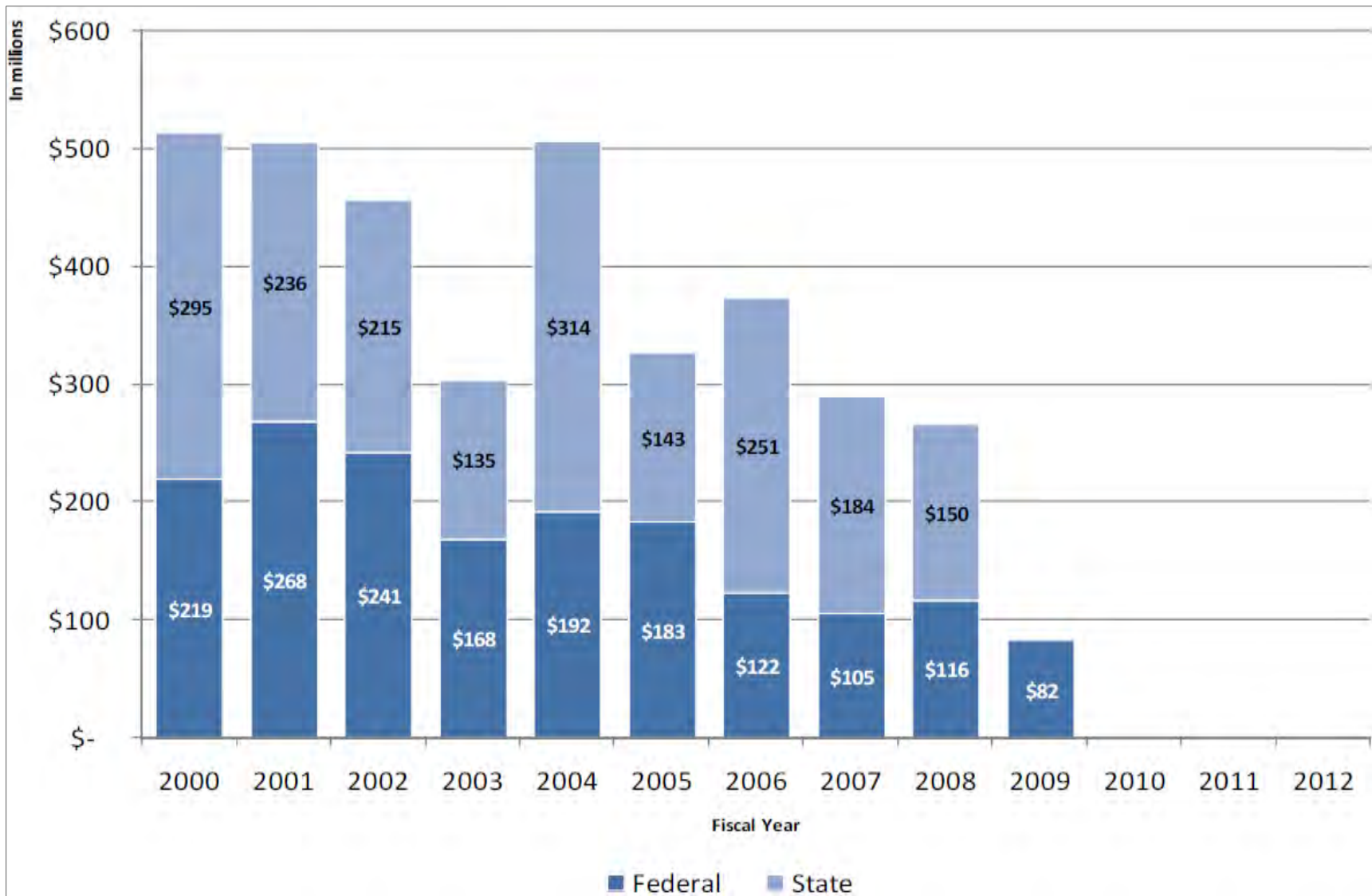


Figure 1. Federal and State Dollars Available for Distribution Via Virginia's Road Formula Funding, 2000-2012. After other items were funded according to the priority specified in state law, no formula funds were available for construction in recent years (chart by Lawson, 2011).

and Research (VCTIR), and was recommended by a member of the committee who is on the staff at the Richmond Area Metropolitan Planning Organization. This recommendation was the impetus for this study.

### **Background and Definitions of Local Funding Sources**

The following definitions may be useful in understanding the terms used in this report. The first list contains techniques that Virginia localities have used to fund and finance highway projects. Some of these are authorized for use by a small number of localities or may not be currently authorized in the same way as when they were used. The second list contains other funding and financing tools that are discussed in this report.

#### **Local Funding and Financing Tools Used by Localities in Virginia**

- *Bonds* were fairly common local financing mechanisms for transportation projects before 2008. General obligation bonds are typically repaid from the locality's general fund, and revenue bonds are repaid from a project-related source, such as tolls. Before the recession, a study evaluated how VDOT could financially encourage projects that were funded primarily by local bonds and found that VDOT could not afford to contribute to these costs without cutting funds elsewhere (VDOT, 2006).
- *Business, professional, occupational, and licenses (BPOL) taxes* are based on gross annual receipts by businesses, professions, trades, and occupations. Some localities' category of "general fund" may include receipts from the BPOL tax.
- *Community development authorities (CDAs)* provide an administrative body with funding authority for a local transportation district.
- *General funds* are supported mainly by property taxes in most localities and are the default local funding source for transportation projects if no other arrangement is made. However, they are also the default funding source for many other competing needs such as schools, fire stations, and the police.
- *Impact fees* are designed to recover the costs associated with new growth, such as expansion of existing roads or the construction of new roads.
- *Local transportation districts* vary in form, but the common theme is to collect additional taxes from a specific geographic area in order to finance transportation improvements that benefit the area. This could include service districts and/or tax districts formed with special legislative approval such as the Route 28 tax district in Fairfax and Loudoun counties.
- *Personal property taxes on vehicles* are typically charged annually. Virginia localities are authorized to place a tax on the value of motor vehicles, but only a small



percentage of the tax remains truly a locally derived funding source; much of it is a transfer from the state to the local government (*Code of Virginia* § 58.1-3524).

- *Proffers* are conditions imposed voluntarily on new developments by the applicant as a way of mitigating negative impacts. As part of the conditional zoning process, accepted proffers become part of the zoning for the affected property. Road-related proffers could include dedication of right of way and construction of roads. Certain localities may accept cash contributions for specific road projects. The Commission on Local Government publishes an annual report with details; for FY12, it indicated that the largest share of proffered funds was spent on roads and other transportation improvements (31.3%) (Commission on Local Government, 2013).
- *Pro-rata reimbursement provisions in the subdivision ordinance* provide for payments or reimbursements from one developer to another when land is subdivided. The payment is based on the subdivision's share of off-site road improvements that another developer paid for or constructed.
- *Public-private partnerships (P3s)* are enabled under Virginia's Public-Private Transportation Act of 1995 (PPTA) and can lead to the use of local funds in lieu of federal funds. *Comprehensive development agreements* are a type of P3 in which a private company designs, builds, finances, operates, and maintains a facility for a period of time.
- *Severance taxes or fees* are payments from companies extracting natural resources such as coal.
- *Tax increment financing (TIF)* captures future revenue growth related to land development. TIF for a road project is typically used with bonds by establishing a baseline amount of tax income from a designated area and allocating any growth in revenues—the increment—to bond repayment.
- *Virginia Resources Authority (VRA)* provides financing for infrastructure, including roads, to Virginia localities at below-market interest rates.
- *VDOT's Revenue Sharing Program* (hereinafter VDOT revenue sharing) uses state funds, with a limit of \$10 million per locality per year, to match an equal amount of local funds (VDOT, 2012). Some localities use cash proffers to leverage revenue sharing funds, which can cause road projects to stall when development rates fall.

### **Other Funding and Financing Tools**

- *Air rights* are the development rights above a transportation facility, which a transportation agency could sell to offset the cost of the facility.

- *Availability payment public-private partnerships* are a form of P3 in which the governing body makes regular (typically annual) payments to a private company in exchange for that the company making a road available for public use.
- *Concurrency* is a growth management policy with the goal of providing facilities such as roads at the same time as new development (rather than years later in response to congestion). If, for example, a new road is needed before a new development occurs in a locality that has concurrency provisions in order to avoid violating service standards, the developer must either build/fund the road or delay the development until it is built.
- *Fair share mitigation* is a general term for the authority to require a developer to mitigate the transportation impacts of the development.
- *Joint development* involves the creation of a transportation facility along with physically adjacent private land development, with the private developer often assisting with the costs or directly constructing the transportation facility.
- *Land value taxes* or *land taxes* are essentially property taxes that tax only the value of land rather than the land plus its improvements (buildings).
- *Negotiated exactions* may be the result of fair share mitigation, with the developer agreeing to pay cash or construct an improvement in exchange for approval of the development.
- *Shadow tolling* is an approach related to availability payment public-private partnerships wherein the public agency's payment varies with the amount of traffic on the road.
- *Special purpose property levies* can be set up with assessments based on the amount of street frontage properties have, the number of beds in hotels, the amount of land dedicated to parking, or other factors.
- *Transportation benefit/improvement districts* function the same way as special purpose property levies.
- *Transportation utility fees (TUFs)* are based on treating the road as a public utility. They charge all development based on estimated numbers of trips or miles traveled. They are typically charged monthly, as with other utilities.
- *Mileage-based user fees (MBUF)*, also known as vehicle miles traveled fees, charge each vehicle owner a fee based on how many miles the vehicle is operated, often with adjustment factors based on vehicle size and weight.

## **VDOT's Local Assistance Division**

VDOT's Local Assistance Division (LAD) serves as a liaison between VDOT and local governments and provides guidance to localities about transportation funding programs. Its communications could include anything from updates on the state budget to engineering details for the end of a guardrail. The LAD holds an annual local programs workshop that enables around 400 attendees to learn about topics such as funding sources, projects other localities have done, and local project administration and to network with staff from other localities and from VDOT. The LAD also manages several VDOT funding programs, including revenue sharing.

### **PURPOSE AND SCOPE**

The purpose of this study was twofold: (1) to determine the extent to which local governments have been able to complete road projects under Virginia statutes that enable various types of funding and financing tools and to document lessons some localities learned in the process; and (2) to identify examples of locally generated funding sources from other states not currently used in Virginia that could be promising for road projects.

The study had two objectives:

1. Collect information on individual highway construction projects in Virginia where local governments have taken primary funding responsibility, including case studies for a small number of projects.
2. Identify funding sources that are promising for road projects based on experiences in other states but that may require additional legislative authority, training, or technical assistance for use by Virginia localities.

The scope of the study was limited to road projects in Virginia, either new construction or major reconstruction. New funding sources made available for two regions in Virginia's 2013 transportation funding legislation (Virginia Acts of Assembly, 2013) were not addressed. A full exposition of funding sources and financing tools available to localities in Virginia was beyond the scope of this study but is the subject of a VCTIR study in progress.

### **METHODS**

To accomplish the study objectives, three tasks were performed:

1. A literature review was conducted to identify research on local funding sources that have been used in Virginia and ways localities in other states have raised funds for road projects.

2. A survey of local governments in Virginia was conducted to identify potential candidates for case studies to illustrate the funding tools available to Virginia local governments.
3. Localities were selected for the Virginia case studies, and the case studies were conducted.

### **Task 1. Literature Review**

A review of the literature was conducted to identify publications on alternative funding sources used in Virginia. A search of the Transport Research International Documentation (TRID) database identified literature published within the past 10 years using the keywords *local highway finance* and *Virginia*.

To examine ways other localities in other states raise funds for road projects and to obtain further information on the Virginia context, the VDOT Research Library conducted a search of transportation research databases and general databases (including TRID, OCLC WorldCat, the NTIS Technical Reports Library, the ASCE Library, Ei Compendex, OCLC PapersFirst, OCLC Dissertations, and Mechanical and Transportation Engineering Abstracts). The search first used the key terms *innovative financing*, *innovative funding*, *Virginia*, *VDOT*, and *construction* and was then refined to identify more thorough results in these key areas through the use of several supplementary search terms.

### **Task 2. Development and Administration of Survey of Virginia Localities**

A survey of local governments in Virginia was conducted to collect information about road projects that were largely locally funded from 1997 through 2012 and to identify potential candidates for case studies to illustrate the funding tools available to Virginia local governments.

#### **Development of Survey**

Informational interviews were conducted with several individuals recommended by the project's advisory panel that had expertise in local government administration and local transportation programs, including representatives of three Virginia municipal organizations and staff from two counties with a history of locally funded road projects.

Specifically, meetings were held with representatives of the Virginia Association of Counties (in person), the Virginia Municipal League (by telephone), and the Virginia Chapter of the American Planning Association (in person). Informational interviews were also held with staff of Chesterfield and Loudoun counties. In contrast to the interviews conducted for the case studies, discussed later, these interviews were broader in focus and were conducted to gather information and obtain insights regarding several aspects of local road funding that were relevant to the development of the survey rather than to focus on specific projects.

After the survey instrument was developed, the content was reviewed by VCTIR staff with survey expertise. Appendix A provides the final survey instrument.

## **Administration of Survey**

In fall 2012, invitations to take the survey were sent by e-mail to the chief administrative officers of 235 Virginia localities. The distribution list was provided by VDOT's LAD and included all of Virginia's 95 counties, 38 of Virginia's 39 cities, and 102 of Virginia's 190 towns. The Mail Merge feature of Microsoft Word was used to personalize the first line of each e-mail. Appendix A provides the survey invitation e-mail and the survey distribution list.

The survey was administered using Obsurvey, an online survey administration tool. A few localities requested that the survey be sent to them by e-mail in accordance with the option offered in the survey invitation e-mail.

Reminder notifications were placed in the newsletters of the Virginia Association of Counties and the Virginia Municipal League. In addition, a reminder e-mail was sent 1 week before the announced closing date of the survey. After that date, an additional e-mail allowing additional time to respond was sent only to those localities that had not responded.

After this extended deadline, a final e-mail was sent to the 116 non-respondents requesting that they reply citing one of three reasons they did not complete the survey. The reasons were as follows: (1) researching information for the survey would have required staff time that was not available; (2) topic was not relevant to the locality; and (3) no benefit to responding; providing a response might not be in the locality's best interest. The message invited them to add other reasons as well. Of the 33 responses to this e-mail, 13 cited staff time, 12 cited it was not relevant to their locality, 1 cited no benefit to responding, 5 cited other issues, and 5 returned a completed survey (some non-respondents cited more than one reason).

As an informal validation of the survey responses, VDOT district planners were consulted to identify notable projects and localities within their district, particularly for localities that had not responded to the survey. Consultations occurred by telephone, e-mail, or in person based on convenience. Because of the importance of institutional memory for this step, some planners consulted with other senior district staff in order to provide responses.

As survey responses were obtained, data were documented and reviewed for completeness. Obsurvey provided results in a spreadsheet format, and the spreadsheet was augmented as needed based on telephone conversations and in-person interview responses to survey questions. The results were reviewed to identify issues such as seemingly incomplete responses (i.e., the respondent began the survey but may have stopped without completing it, and Obsurvey saved initial responses).

For localities that had not completed the survey but that district planners had identified as having notable projects, the researcher contacted the localities again by telephone to seek completion of the survey. In some cases, an in-person interview addressed both the survey questions and additional questions related to developing a case study.

### **Task 3. Selection and Performance of Case Studies of Virginia Localities**

#### **Selection of Case Studies**

Projects reported by survey respondents were compared with projects in VDOT's Six-Year Improvement Program records to validate funding amounts and funding sources reported by survey respondents, where possible, for review by the study's advisory panel. (These records did not typically include details of local funding sources.) Projects reported by survey respondents were also sorted by the percentage of the project cost supported by local funds in order to identify localities that had contributed more than the minimum required local match. To provide additional suggestions for case study candidates—and conversely to identify localities that should not be used for case studies—the director of VDOT's LAD, a member of the study's advisory panel, reviewed this information. The City of Virginia Beach was an example of a locality that should not be used for a case study because its program was so large that the lessons learned might not be applicable to any other Virginia locality. Other attributes of the information included each locality's metropolitan planning organization (MPO) if applicable, VDOT district, and 2011 population estimate from the U.S. Census (Weldon Cooper Center for Public Service, 2014).

The study's advisory panel determined that case studies should include different contexts in terms of size (e.g., larger counties, medium-sized cities, smaller towns); urbanization (MPO and non-MPO); project type (100% locally funded, VDOT revenue sharing with local funds above the required match, or P3s); and geographic location to illustrate what jurisdictions large and small had done. There was also an interest in including projects with local funding amounts beyond the required minimum local match amounts, whether for VDOT revenue sharing or federal grants, and a desire to focus on projects completed or underway since 2009 (representing relatively recent projects, which might be more relevant than older ones for reasons such as changing economic conditions and federal and state transportation funding conditions). To narrow the field further, the researcher focused on projects receiving at least 50% local funding and costing \$1 million or more.

Consultations with VDOT district planners resulted in a list of eight additional localities that were known to have had recent locally funded projects but had not returned complete surveys: the cities of Portsmouth, Chesapeake, Harrisonburg, Fredericksburg, and Williamsburg and the counties of Rockingham, Frederick, and Prince William. Based on information provided by VDOT district staff, the City of Chesapeake, the City of Harrisonburg, and Prince William County were given consideration as candidates for case studies along with localities that had responded to the survey. Staff contacts at Fredericksburg and Williamsburg were willing to meet in person to complete the survey, and at the meeting, the researcher also asked additional questions allowing for the development of case studies for those two cities.

Based on the previously discussed criteria and the discussions with VDOT district planners, a list of 20 candidate case study localities was compiled and each advisory panel member was asked to recommend 5 of them for case studies. Table 1 categorizes the 20 candidate localities by population size, funding sources used, MPO membership, and VDOT district (a rough proxy for geographic location).

**Table 1. Candidate Localities for Virginia Case Studies**

Locality	Population Tier <sup>a</sup>			Project Type <sup>b</sup>					In MPO?		VDOT District
	A	B	C	RS	Bonds	100% Locally	Private/P3	Other <sup>c</sup>	Y	N	
Chesterfield County			X	X	X	X		Proffers, district, CDA	X		Richmond
Hanover County			X			X		Proffers	X		Richmond
Henrico County			X		X			Proffers	X		Richmond
Prince William County			X		X	L			X		NOVA
Stafford County			X	X	X	X		Impact fees	X		Fredericksburg
Spotsylvania County			X		X	X		Proffers, district, decal fees	X		Fredericksburg
Loudoun County			X	X	X	L		Proffers, gas tax, district	X		NOVA
City of Harrisonburg	X			L	X				X		Staunton
City of Lynchburg		X			X	X			X		Lynchburg
City of Suffolk		X		X	X			Proffers, IDA	X		Hampton Roads
Albemarle County			X	X				Proffers	X		Culpeper
Augusta County		X		X			X			X	Staunton
City of Chesapeake			X				X		X		Hampton Roads
Town of Haymarket	X							Meals tax	X		NOVA
City of Salem	X					>5 yr ago			X		Salem
City of Waynesboro	X				X	X		VRA bonds		X	Staunton
Town of Orange	X					X				X	Culpeper
Town of Wytheville	X									X	Bristol
Russell County	X			L						X	Bristol
Fauquier County		X		X				Proffers, EDA		X	Culpeper

MPO = metropolitan planning organization; Y = yes; N = no; VDOT = Virginia Department of Transportation; NOVA = Northern Virginia District; VRA = Virginia Resources Authority.

<sup>a</sup> Population tiers were based on July 2011 Census population estimates (Weldon Cooper Center for Public Service, 2014) and were A (under 50,000); B (50,000 to 100,000); and C (over 100,000).

<sup>b</sup> Project types were based on projects reported in the survey or by VDOT district staff and focused on RS (VDOT revenue sharing), bond-funded, 100% locally funded, and private / public-private partnership (P3) projects. An “L” indicates that the locality was likely to have a given project type (based on observations by the study’s advisory panel) but either had not completed the survey or had not reported it in the survey.

<sup>c</sup> The “Other” category contains items reported in the survey, including a community development authority (CDA), an industrial development authority (IDA), and an economic development authority (EDA).

Based on the panel’s recommendations and the input provided by district planners, the researcher selected seven localities to serve as case studies: Augusta County, the City of Chesapeake, the City of Harrisonburg, the City of Lynchburg, Prince William County, Stafford County, and the City of Suffolk. After an initial meeting, the City of Suffolk was unable to participate. The cities of Fredericksburg and Williamsburg were added as additional case studies after meetings with staff at each city to obtain answers to the survey questions. Thus, a total of eight case studies were chosen and included projects that were fully funded with locally generated dollars and projects funded with state and/or federal funds where additional local funding accelerated the project.

Although the selection methods did not explicitly exclude towns from consideration for a case study—indeed, several towns reported experience with locally funded road projects in the survey—no towns were selected as case studies because many but not all Virginia towns are relatively small and may have limited capacity to fund and/or administer projects. Even so, the five cities and three counties that were selected for case studies provide examples of locally funded projects in various contexts as desired by the advisory panel.

### **Performance of Case Studies**

In-person interviews with local staff were conducted for each case study to gather the following information: the funding and financing sources the locality used, the projects it completed, how the projects were done, and the lessons learned in the process.

## **RESULTS AND DISCUSSION**

### **Literature Review**

The many challenges regarding the current paradigm of highway funding are described in numerous publications (e.g., Forkenbrock, 2006; Strathman and Simmons, 2010; Yusuf et al., 2011) and are not detailed here.

### **Literature on Local Funding in Virginia**

Literature on local funding in Virginia is summarized here in two categories: literature from Virginia and broader literature with mention of Virginia.

#### *Literature From Virginia*

In a 2012 presentation, Powell (2014) provided an overview of funding mechanisms used by Virginia localities including the regional motor fuel tax, local option income tax (which was authorized in 1989 for certain localities but repealed in 2013) (*Code of Virginia* §§ 58.1-540 through 58.1-549 [2009]), developer proffers, debt, impact fees, and tax districts.



The Virginia Chapter of the American Planning Association (2012) summarized funding tools available to Virginia localities. It noted that although impact fees for roads were authorized for several localities, the process was cumbersome and data intensive. It further speculated that this process was the reason localities had not widely adopted impact fees, an exception being Stafford County, which began charging road impact fees to developers in 2003 and had collected \$3.4 million through September 2011.

Grimes et al. (2006) identified funding sources available to localities in Virginia including programs administered by federal, state, and local agencies. They highlighted six available funding and financing mechanisms: local transportation districts, pro-rata reimbursement provisions in the subdivision ordinance, community development authorities, impact fees, proffers, and local bonding authority. The study was being updated as of September 2014.

O'Leary (1998) looked at VDOT's relationships with Virginia's fastest-growing counties and conducted interviews with staff from localities and VDOT. "According to the VDOT respondents, counties are quite selective in which road projects they elect to help finance. Respondents said that participation has occurred usually on projects in which the county has a significant financial stake (because of potential development) and/or on major projects that the county wants to expedite."

P3s, although not the focus of the present study, can serve to provide the local share of funding for a road project or can fully fund a project without requiring state or federal funds. One type of P3 involves the use of an industrial development authority or not-for-profit corporation created pursuant to Internal Revenue Service Ruling 63-20, which allowed tax-free status for bonds and led to the term "63-20 corporation." These corporations have been created in Virginia to achieve the lowest cost of capital and to manage tolling (Atwell, 1998). The history of the Route 895 Pocahontas Parkway, Virginia's first P3 completed under the PPTA, was described by Kerley et al. (2007). A more recent overview of P3 "lessons learned" noted that for projects with a high risk of the actual use falling short of projections, such as the Pocahontas Parkway, availability payments (wherein a concessionaire is responsible for all aspects of a road while the public agency makes annual payments in exchange for the road being available for public use) may be more appropriate financing tools than 63-20 corporations (Wheeler, 2013). Wheeler stated that 63-20 corporations were used because neither the public sector nor private investors were willing to take on the risks of these projects underperforming in terms of revenue.

Through operation of a revolving fund, a state infrastructure bank (SIB) can reduce the cost of projects by providing better rates and repayment terms than would be available elsewhere; can support projects independent of federal and external influences; and can accelerate project delivery. SIBs are especially suited for revenue-producing projects or those that raise general government revenue through a tax increment, and local governments could take advantage of a SIB by structuring repayment to flow from property tax revenues or increments, tolls, fees, or special district taxes. In 1997, Virginia established a SIB with a relatively limited scope and relatively limited resources (Gifford, 2010). In 2011, Virginia created the Virginia Transportation Infrastructure Bank, which has supported additional projects including those

proposed by local governments (VDOT, 2013). A SIB such as the Virginia Transportation Infrastructure Bank that is capitalized solely with state funds can accelerate project delivery by allowing projects to avoid some federal regulations.

The *Code of Virginia* (§ 15.2-2403.1) allows an urban county to take over maintenance of some roads in an “urban transportation service district,” but this authority had not been implemented as of April 2014 (DeBruhl, 2014). More general service districts enable localities to provide a higher level of local government services such as water, sewer, trash pickup, roads, transit, streetlights, etc., in a targeted geographic area than may be available in the locality as a whole. Some localities have used such “generic” service districts for road financing.

A study exploring options for secondary road construction and management in Virginia noted that even as early as 1990, Fairfax County was spending over \$50 million per year on its road program. This was deemed to be because the county wanted to complete road improvements on a faster schedule than VDOT could accomplish and to complete more of them than VDOT had planned (Gifford, 2011).

The Virginia Auditor of Public Accounts (2012) prepares an annual report with data by locality on capital improvement costs by subject area and funding source. The report includes a capital expense category of “Streets, Roads and Bridges” along with a similar category in the areas of maintenance, debt service, and outstanding debt. This information could facilitate a more detailed analysis of expenditures.

The Richmond Metropolitan Authority’s web site provided information on the bonds and tolls for its toll roads (Richmond Metropolitan Authority, n.d.).

#### *Broader Literature With Mention of Virginia*

In a summary of local option transportation taxes (LOTTs) by state, Goldman and Wachs (2003) noted that two regional transportation districts in Virginia, representing 27% of Virginia’s population, had a local option gasoline tax in place that raised \$12 per capita annually, on average. Although not named in the report, the two districts were the Northern Virginia Transportation District—comprising the counties of Arlington, Fairfax, and Loudoun and the cities of Alexandria, Fairfax, and Falls Church—and the Potomac and Rappahannock Transportation District (PRTC)—comprising the counties of Prince William, Spotsylvania, and Stafford and the cities of Fredericksburg, Manassas, and Manassas Park. Nearly every county and city in Virginia imposed vehicle license and registration taxes, raising \$16.20 per capita, although legislation passed around the time of the report had reduced the taxes. The authors also noted that Virginia was among four states with statutory language connecting income taxes and transportation-related expenditures and was one of five states with local severance taxes for extraction of natural resources (in Virginia’s case, limited to a small number of southwestern jurisdictions).

In 1987, a tax district was formed along Route 28 in Loudoun and Fairfax counties (Strathman and Simmons, 2010; Williams, 2006). A partnership between the localities and the Commonwealth, the additional commercial and industrial property tax on the corridor helped finance improvements to the road and provide better access to Dulles International Airport.

Bochner et al. (2007) cited the Route 28 case as a local funding partnership and cited two Virginia examples of private funding partnerships for roads: the Pocahontas Parkway and the Dulles Greenway.

In their study focused on funding sources distributed by states, Rall et al. (2011) noted that fees generated by red-light cameras are a funding source used only at the local level but that fee revenues are not typically dedicated to roads or transportation.

### **Literature Regarding Practices of Other States**

In the 1980s, the 50-mile E-470 loop highway outside Denver was constructed with no federal funds under a local authority funding structure supported by impact fees for highway users, buildings, land-based uses, and the general metropolitan area (“Non-Traditional Funding,” 1986). Some 30 years ago, 19 of California’s largest counties began imposing voter-approved sales taxes for transportation projects (Antonucci, 2013; Crabbe et al., 2002). Around the same time, Indiana localities had a local option highway user tax, which was actually a two-part tax consisting of a surcharge on the vehicle excise tax and a wheel tax for heavy vehicles and trailers (Fricker, 1984).

Although these historical facts provide some context, as discussed previously, the literature review of funding practices in other states focused mostly on literature less than 10 years old. These are summarized here in the following categories: general overviews of local funding mechanisms, funding and financing options for rural areas, state-specific studies, studies of individual funding options, economic analyses of funding options, and recent legislation.

#### *General Overviews of Local Funding Mechanisms*

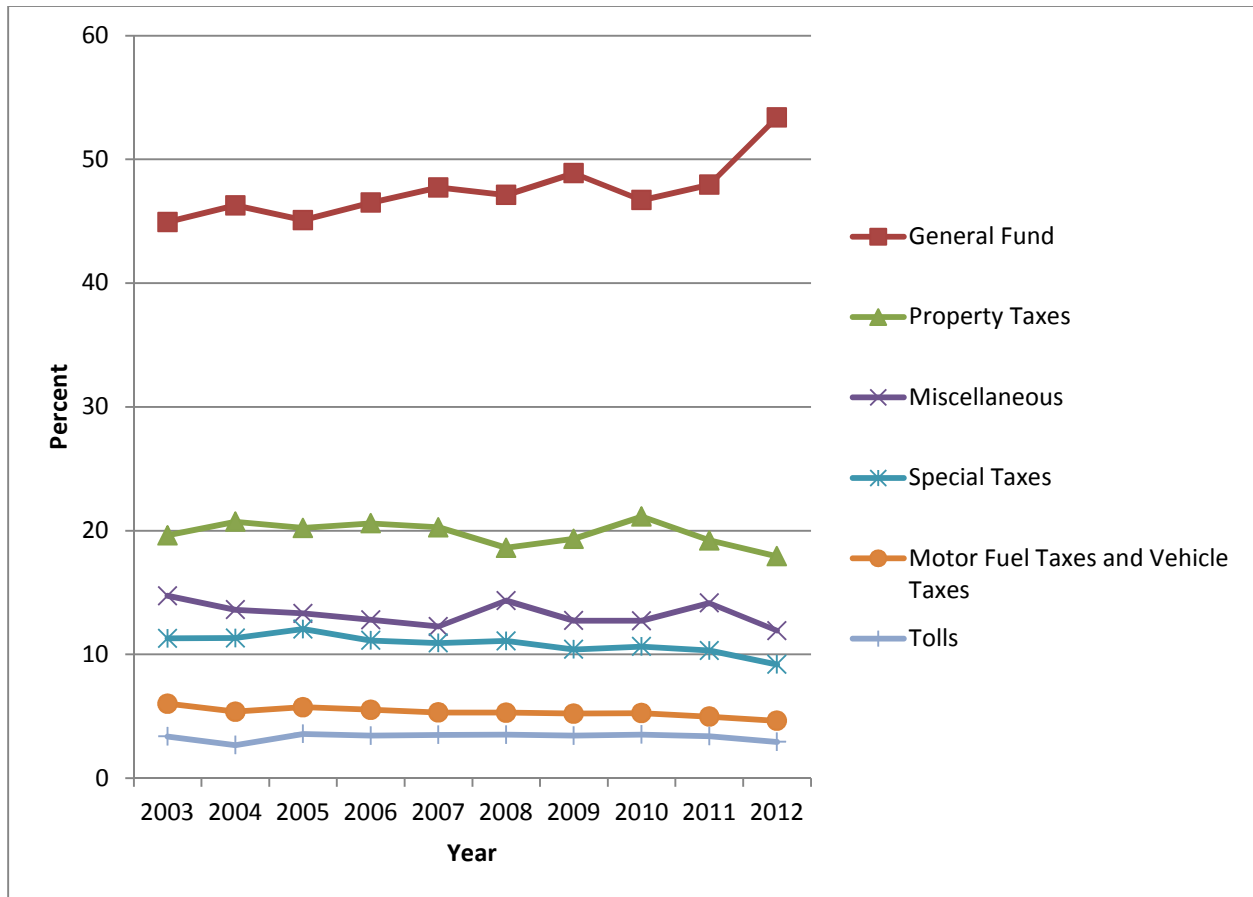
For each state, Goldman and Wachs (2003) summarized the LOTTs that were authorized and adopted, how much revenue the LOTTs generated, how the revenue was used, and what policy issues were apparent. Categories included fuel taxes; vehicle taxes; sales taxes; income, payroll, and employer taxes; severance taxes; impact fees; taxes on property sales; and hotel taxes. One finding was that there was often a lack of consideration for MPOs in the implementation of LOTTs, which led to fragmenting of the responsibility for transportation between MPOs and localities, both of which have planning and financing roles. Only two states—California and Nevada—had given MPOs a direct role in overseeing LOTTs, with two more—Arizona and Washington—giving MPOs limited influence over how the funds were allocated. Crabbe et al. (2002) focused on the California context and also found that local control over revenues could fragment transportation decision-making and decrease regional transportation coordination.

The Intergovernmental Forum on Transportation Finance (2008) convened by the National Academy of Public Administration provided an overview of pre-recession transportation finance with regard to local governments. As discussed in this overview, when localities perceived a transportation need that could not be funded by state and federal sources, they used local property and sales taxes as the most frequently used sources. These revenue sources were often not as close an approximation of a user fee as the state or federal sources they

replaced, however. For example, general funds, or bonds repaid by general funds, for road projects would not be as user-based as a motor fuel tax. State-level limitations on the purposes for which sales tax revenues may be used, along with requirements to coordinate with an overlying state sales tax, can affect the usefulness of that funding source. The overview noted that state laws and constitutions can limit local government funding sources and intergovernmental cooperation is typically necessary if a locality desires to raise additional revenues.

In *Future Financing Options to Meet Highway and Transit Needs*, Cambridge Systematics et al. (2006) included numerous tables and figures providing data such as revenue tools, their potential yield, and the states that have used them. Figure 2 is modeled after a chart in that report that showed the sources of local highway funding in the United States from 1978 through 2003. During that period, general funds and property taxes were the top two sources of local highway funds. Before 2003, the use of these sources appeared to be declining in proportion to others, but Figure 2 shows that this decline had leveled off in the years since 2003; moreover, the use of the general fund appeared to jump in 2012.

Yusuf et al. (2011) identified financing mechanisms used in various parts of the United States including impact fees, LOTTs, TUFs, and low-cost financing from SIBs.



**Figure 2. Local Funding Sources for Highway Projects Nationally, 2003-2012.** The data used for this figure were compiled from the data in Table LGF-1 in the 2003-2012 editions of Highway Statistics (Federal Highway Administration, n.d.).

Krohe (2012) provided a concise overview of several transportation revenue sources, not necessarily limited to road funding, and the cities that had used them. These included using parking pricing, congestion pricing, red-light cameras, other traffic fines, and special purpose property levies or benefit districts; outsourcing parking management; and selling advertisement space, public property, and air rights.

The AASHTO Center for Excellence in Project Finance (2014) provided definitions of eight categories of local funding options. It directed readers to resources with examples of other states' practices, such as a chart with notes about local option motor fuels taxes (American Petroleum Institute, 2014) and a summary of transit payroll taxes in Oregon (Oregon Department of Revenue, 2014).

In a report prepared for AASHTO, the Institute of Transportation Studies and ICF Consulting (2005) focused on funding available to MPOs. Case studies from Las Vegas, San Francisco, and regional mobility authorities in Texas highlighted various features of each regional funding structure. Regional funding sources from these case studies included aviation fuel taxes, property taxes, and sales taxes (Las Vegas); bridge tolls (San Francisco); and revenue bonds, comprehensive development agreements, and others (regional mobility authorities in Texas). Several others were included in an analysis, including MBUFs, a funding source the authors reported to be politically and practically difficult for small MPOs to implement. "On the other hand, if the region enjoys substantial political cohesion, the MPO may be better able to pursue such fees, particularly if locals see a direct benefit." The authors provided several tables evaluating revenue mechanisms based on characteristics such as MPO size, existing problems such as congestion and air quality, and population growth rates. They also noted that regional mobility authorities such as those created in Texas could pose challenges for MPOs and impede regional governance if not created with appropriate safeguards.

In a report focused on funding public transportation, not roads, Litman (2014) evaluated 18 tools, most of which could be used for local road projects. Three transit funding options Litman outlined might warrant particular consideration for funding local roads: (1) parking levies, which are special property taxes on non-residential parking spaces; (2) vehicle levies, essentially additional vehicle registration taxes; and (3) employee levies, a tax per employee, often collected only from larger employers. The revenue generation potential of these sources is substantial, and costs are broadly distributed. The first two have a clear connection to the use of roads, and a tax on employees has a fairly clear connection if the assumption is accepted that high-quality roads benefit businesses and their employees. It should be noted that parking levies are different from commercial parking taxes, which are taxes on parking transactions that localities have used for decades (Johnson and Hoel, 1985). The full argument for market-rate parking pricing was covered by Shoup (2005) in *The High Cost of Free Parking*.

Smart Growth America and the State Smart Transportation Initiative (2014) looked at three pilot MBUF programs. One was managed by a regional agency, the Puget Sound Regional Council, and charged drivers based on time traveled, distance traveled, and roads used. The authors reported that the technology used in this pilot program minimized administrative and infrastructure costs.

## *Funding and Financing Options for Rural Areas*

Chicoine and Walzer (1986) summarized transportation funding options that were available for non-metropolitan areas in the 1980s. At the time, 19 states allowed localities to place a tax on the value of motor vehicles, 16 authorized local taxation of household personal property, and 12 authorized local motor fuel taxes as an add-on to the state tax. Virginia's local personal property tax includes motor vehicles, trailers, motor homes, and business personal property and is largely a transfer from state to local government. It is not dedicated to transportation funding. Other than legislatively designated regional motor fuel taxes, Virginia localities do not collect purely local motor fuel taxes.

In a survey of county road officials in seven states (Iowa, Minnesota, Montana, North Dakota, South Dakota, Utah, and Wyoming), Hough et al. (1997) found regular use of four traditional revenue sources for roads in rural areas: property taxes, fuel taxes, vehicle registration fees, and a mill levy (which the authors defined as "essentially an additional property tax"). The authors deemed four other financing methods to be both innovative and significant, which was defined as accounting for more than 5% of a county's budget: sales taxes, special ownership taxes (the only example given was a South Dakota tax on mobile home registrations), wheel taxes, and rural improvement districts, with the authors recommending wider use of the latter two.

In a 2009 report on rural financing options, Kenyan et al. stated that the regional government in Portland, Oregon, which was responsible for transportation, was receiving revenues from a regional payroll tax of about 0.06%.

### *State-Specific Studies*

According to Antonucci (2013), over 70% of transportation project funding in southern California comes from local sources. According to Irani et al. (1991), in the late 1980s Orange County set up a phasing plan for a fast-growing area of the county that ensured that arterial roads (40 intersections and 133 lane-miles) were built or improved before development occurred. Financing was accomplished through community facilities district bonds secured by private landholdings and repaid by a special tax on land within the district; such bonds were made possible by California's Mello-Roos Community Facilities Act of 1982. Developers without land in the bonding program paid fees on building permits instead to fund major thoroughfares and bridges.

The final report of the Local and Regional Transportation Funding Task Force (2013) convened in Maryland under a legislative mandate included suggestions from localities for additional funding options not currently available to them; highlighted key issues to be addressed in creating regional transportation financing entities; and recommended further consideration of four local-option revenue sources: a vehicle registration fee, expansion of the local income tax, expansion of real estate transfer tax authority, and value capture techniques. It considered but did not recommend local option sales and gas taxes, noting that they may be more appropriate when regional financing entities are in place. The report stated that Maryland's strong centralized multimodal transportation investment structure is a strength relative to peer states.

In a report prepared for the North Carolina Department of Transportation, Williams (2006) summarized six funding strategies: transportation corporations, transportation improvement districts, TIF, fair share mitigation, impact fees, and concurrency. For each strategy, the report provided case studies of local initiatives in other states.

Strathman and Simmons (2010) examined the use of alternative local financing mechanisms in the specific context of interchanges in Oregon. Mechanisms considered included transportation impact fees, TIF, value capture financing, local improvement districts, transportation corporations, SIBs, LOTTs, fair share mitigation, and transportation concurrency. Each option was assessed in terms of revenue yield and stability, efficiency and equity, cost and ease of administration, transparency, and political and legal feasibility. The authors' findings included the following:

- Transportation utility/maintenance fees in Oregon localities offset maintenance costs, but they could cover capital improvements or repayments instead. The authors noted that the fees were not as equitable as some other options because a carless household would pay the same as an equivalent household with several cars.
- What the authors described as fair share mitigation in Oregon is a broader term that would include the Virginia practice of accepting proffers. Some Oregon localities included “zone of benefit recovery charges” to spread the costs of roads attributable to growth: under this scenario, if Developer A builds a road that opens up Property B to development and Developer B then develops Property B within 15 years, Developer B must pay a recovery charge to Developer A.
- The authors reported that a quotation from a study by Persad et al. (2008) was relevant for the Oregon study: “There is no pattern or consistency for selection of financing tools. It appears that in each case, whatever method of financing was available or could be gathered was used. . . . No planning tools were used in targeting the most financially suitable repayment mechanism.”
- The authors concluded that no local funding mechanism was a panacea, even within the specific context of interchange areas in Oregon. Context-specific conditions varied enough to influence which financing mechanisms were available and appropriate for each site or project, but no one tool was deemed generally better than the others.

Bochner et al. (2007) provided several examples of locally funded road projects in Texas, including toll roads, developer-built improvements, partnerships with transit authorities to add high-occupancy-vehicle (HOV) lanes or reinforce pavement at bus stops, and municipal funding and financing. A list of local funding options in Texas was included, and federal legislation encouraging state-local partnerships and P3s was summarized.

Bochner et al. (2007) further reported that recent Texas legislation allowed for the Texas Transportation Commission (similar to Virginia's Commonwealth Transportation Board) to authorize regional mobility authorities, which have several funding powers and can enter into

agreements with other entities. Texas already had several other types of local authorities. State law also expressly authorized local governments to partner with other local governments on road projects. The authors noted advantages and disadvantages of several local funding and financing options and suggested five additional methods that were considered innovative: selling assets to a private company that could use the tax advantages of depreciation; leasing right of way for facilities such as cell towers; charging for paid parking on the right of way; charging an impact fee for transportation facility usage; and selling/leasing air/water/mineral rights. The authors included 24 projects from other states in their study.

Boske et al. (2013) looked at road financing options for Texas. Energy sector infrastructure financing would require an energy company to improve insufficient local roads before hydraulic fracturing drilling activity begins and to maintain and repair roads while drilling continues. According to the authors, this was proven effective in Ohio and West Virginia. Another option these authors noted was availability payment public-private partnerships, used in California, Florida, Indiana, and Ohio. Sometimes used in place of tolls, in this arrangement the concessionaire is responsible for all aspects of a road and the state or local department of transportation makes annual payments in exchange for the road being available for public use.

#### *Studies of Individual Funding Options*

Sorensen et al. (2012) suggested that locally administered MBUFs could be plausible. “Many have assumed that mileage fees will ultimately be collected by states or at the federal level to replace existing fuel taxes. With its DriveSmart initiative, however, New York City recently developed a conceptual approach under which mileage fees might be collected by local jurisdictions.” Although such a “conceptual approach” is not a proof of concept, the authors suggested that the perception that MBUFs must be managed at a higher level of government may not be universally correct.

Chapman et al. (2009) stated that a land tax, which does not tax improvements to the land, is administratively feasible and has been applied in Allegheny County, Pennsylvania. The authors noted that such a tax—or a split-rate tax where the tax on land is higher than the tax on improvements—could generate substantial revenue and lead to efficient land use without being as regressive as other options and that the major challenge was gaining political traction. Junge and Levinson (2012) noted that 15 cities in Pennsylvania had split-rate taxes as of 2008 and found—through simulations rather than actual implementation—that such taxes in three Minnesota cities would lead to higher densities. The authors stated that this was due to the structure of the tax: with building value taxed at a lower rate than land value, there is an incentive to put more (or taller) buildings on land that has a higher value.

In an overview of TUFs, Ewing (1993) stated: “a TUF appears more politically feasible at this point than the theoretically elegant road pricing schemes advocated by economists.” As of 1992, 10 U.S. cities had used TUFs with varying degrees of success and charged \$0.75 to \$3.00 per month per single-family unit (most of these cities also included nonresidential categories). Although most of these cities used the revenue for road maintenance and operation, La Grande, Oregon, and Soap Lake, Washington, directed funds to reconstruction and widening. Springer



and Ghilarducci (2004) suggested that by funding maintenance costs with TUFs, a portion of existing funds (i.e., fuel tax revenues) could be transferred to capital projects.

More recently, Junge and Levinson (2010) found that 19 cities in Oregon and 1 city each in Colorado and Texas had active TUF programs. The authors noted that the fees were often motivated by a maintenance backlog, a purpose validated by the courts: “Fee ordinances that have been upheld have limited the proceeds to transportation purposes only, and have tended to favor maintenance applications over new construction, meaning funding from other sources would still be necessary for capital projects.” Ewing (1993) noted that although a TUF may not survive legal challenges if used for roads that were needed because of growth, a TUF could provide for new construction that was necessary to eliminate existing deficiencies. A TUF is ongoing (collecting revenue from existing residents and businesses). Ewing suggested that costs incurred to accommodate new trips because of anticipated development can be funded with impact fees, since they are one-time collections from developers that get passed on to new residents and businesses.

Yusuf et al. (2011) found that TUFs were one option for local governments in need of road funding. The authors stated that the advantages of TUFs included equity and economic efficiency in addition to being a new revenue source. They also stated that by its nature as a fee rather than a tax, a TUF would not require state enabling legislation; the present study has not tested that claim in the context of Virginia. Springer and Ghilarducci (2004) provided a case study of the development of a TUF in an Oregon county and found that there was a need for better interagency land use data organization in order to collect the fees.

### *Economic Analyses of Funding Options*

In a theoretical analysis of local transportation funding options for the Washington, D.C., metropolitan area, Parry (2002) found that congestion taxes, property taxes, and gasoline taxes would have fairly low economic efficiency costs, defined as “the economic cost over and above the transfer of dollars from the private sector to the government.” According to Parry, this would make them preferable to increased transit fares and labor taxes, which would have higher efficiency costs; that is, they would lead to higher externalities associated with driving and “distortions created by the tax system.” The analysis included external damages from pollution and congestion that resulted from these funding options.

Forkenbrock (2006) concluded that “an ideal local road finance approach would charge each traveler an amount equal to the full cost the trip imposes on society.” He found that MBUFs showed the most potential in terms of charging road users efficiently and supporting public policy goals but that such a mechanism would be difficult for localities to implement, both technically and politically, without support at the state and/or federal level.

Iacono et al. (2009) examined value capture approaches, which are intended to generate revenue by recovering a portion of the incremental gain in land value resulting from a transportation improvement. The authors evaluated land value taxes, TIF, special assessments, TUFs, impact fees, negotiated exactions, joint development, and air rights, all of which are available at the local government level, in terms of efficiency, equity, sustainability, and

feasibility. Based on these metrics, they found that a tax on land was preferable to a tax on buildings although it was slightly regressive and politically challenging; special assessments did well in terms of efficiency and equity but had problems with regard to political feasibility; TUFs could improve efficiency and possibly equity while offering relatively stable revenue in a politically feasible manner although enforcement could be a challenge; impact fees had mixed results with regard to equity but were politically and administratively feasible; and negotiated exactions, joint development, and air rights promoted efficiency and equity and were politically feasible but were not a large-scale replacement for other revenue sources. The authors found limited evidence to evaluate the efficiency of TIF.

### *Recent Legislation*

A search of the National Conference of State Legislatures Transportation Funding and Finance Legislation Database (2013) and its archived database for 2007 to 2012 identified several state laws regarding local option taxes. Two from nearby states may be of interest:

1. West Virginia's S.B. 352, enacted in 2010, allows county governments to issue general obligation bonds; impose, administer, collect, and enforce payment of voter-approved user fees; issue special revenue bonds including refunding bonds; and take other actions to finance and complete transportation projects. The bill also provides for recovery of the cost of highway improvements from commercial and residential developments.
2. Maryland's H. 1515, Transportation Infrastructure Investment Act, was enacted in May 2013. It established a local and regional transportation funding task force, the mission of which includes the study of possibilities for local option transportation revenues.

## **Informational Interviews for Survey Development and Survey Results**

### **Informational Interviews for Survey Development**

#### *Virginia Chapter of the American Planning Association*

George M. Homewood, president of the Virginia Chapter of the American Planning Association and assistant planning director for the City of Norfolk, was interviewed. Homewood offered the following observations about mechanisms for Virginia localities' funding of road improvement projects:

- Proffer dollars are sometimes coupled with VDOT revenue sharing funds to double the value of the proffers. With recent increases to statutory limits on the amount of VDOT revenue sharing funding available per project, this practice may grow.

- By state law, a certain percentage of room and meals tax revenues must go back to tourism-related expenditures. Some of those expenditures could be for transportation infrastructure, especially sidewalks and trails.
- Because it relies on new development, tax increment financing is less likely when development activity is muted for economic reasons.
- Industrial development authorities are authorized in all localities and exist in most but are more of a financing tool than a funding source. That is, they have borrowing authority that does not count against the debt limits of local governments.
- CDAs operate in cooperation with localities but are not part of the local government. A CDA's financing mechanism is akin to advancing the value of future proffers: CDA bonds are repaid by property assessments or a tax increment over up to 20 years. Based on the expectation of development (and thus proffers), the CDA makes the improvements initially and gets paid when the development and its proffers occur. Some localities have found that CDAs are not advisable for residential development because if future homeowners covered by a CDA balk at paying more taxes than their neighbors outside the district, the city/county could end up responsible for the difference. State Route 106 in New Kent County is an example of a CDA project.

#### *Virginia Municipal League*

Joseph R. Lerch, director of environmental policy, was interviewed by telephone. Lerch confirmed several of Homewood's general observations and noted that the City of Chesapeake has a P3 for a bridge project that took advantage of the SIB.

#### *Virginia Association of Counties*

George Edward (Ted) McCormack, Jr., director of governmental affairs, was interviewed. McCormack offered the following observations about mechanisms for Virginia counties' funding of road improvement projects.

- Before development rates slowed because of the 2008 recession, there were two main ways counties funded roads: cash proffers from developers and bonds, the latter being used especially in Northern Virginia. Bonds are typically repaid with general funds.
- Local governments might want to see the state return a portion of the state income tax revenues to localities or to be authorized to have an add-on income tax (authorized for certain localities but as yet unused).
- The state constitution requires that general obligation bonds be approved by referendum in counties but not in cities and towns. However, in counties, there is no limit to the amount of general obligation bonds that can be issued (if approved). Towns and cities are limited to issuing no more than 10% of the jurisdiction's real property value.

- Counties can borrow from the VRA’s bond pool, which avoids the need for multiple bond issues from smaller counties and the need for bond referenda.
- Legally, counties typically cannot designate where future revenues will go, such as by pledging to put a percentage of future collections in a “lockbox” for a specific project. Future decision-making bodies cannot be bound by earlier ones unless specifically authorized by state law.
- Counties with experience with local funding for roads include Prince William, Fairfax, Spotsylvania, and Stafford.

*Chesterfield County Department of Transportation*

R. John McCracken, director of transportation, and Barbara K. Smith, principal transportation engineer, were interviewed.

- Chesterfield County has taken a major role in local road projects since the mid-1980s. Funding and financing tools used have included the following:
  - general fund
  - revenue bonds from the state
  - loans from the county to the state
  - local bonds (repaid with the general fund), the most recent being in 2004 for \$40 million
  - developer proffers (cash and construction of improvements)
  - transportation service district
  - CDA with a tax district
  - advance dedication of right of way
  - business, professional, occupational, and licenses tax revenues.
- Chesterfield County would be glad to receive funding to administer road projects on its own, which it thinks could allow it to avoid some of the bureaucracy faced by state project management. (In the 2014 Regular Session of the Virginia General Assembly, Senate Bill No. 606 was introduced but was not acted on during the session. The bill would have allowed Chesterfield County to withdraw entirely from Virginia’s secondary road system and receive the same per-lane-mile reimbursement rate for maintenance as Henrico County.)

*Loudoun County Department of Transportation*

Rick Conner, interim transportation director; Terrie L. Laycock, special projects manager; and John J. Sandy, assistant county administrator, were interviewed.

- In recent years, Loudoun County has experienced rapid growth as part of the Washington, D.C., metropolitan area. It has pursued several road projects using its own funds. From the county’s perspective, this has occurred mainly because the state

has not met the expectations of county residents. According to the interviewees, although many local governments have been forced to invest in transportation, even what they have done still may not measure up to citizen expectations.

- One problem resulting from the county’s investment in transportation is that the county is reaching its debt limit because of funding transportation along with statutory local obligations such as schools and fire departments. (Although there is no statutory limit on debt for Virginia counties, the need to preserve high credit ratings typically informs the amount of debt they can carry.)
- A challenge has been that even when Loudoun County has assembled funding to administer its own projects, there seems to be excessive VDOT oversight. The county would prefer to see VDOT implement a process to certify local governments as competent to manage their own projects with less direct oversight. There is a perception that VDOT uses “safety” as a catch-all to require unnecessary and costly changes.
- Funding and financing tools Loudoun County has used include the following:
  - Bonds. One local bond issue was used in 2006.
  - General funds. General funds have been used.
  - Local increment on the gas tax. At the time of the interview, Loudoun County did not contribute funds to the Washington Metropolitan Area Transit Authority, so its 2-cent local gas tax was often used as a local match for VDOT revenue sharing projects.
  - Tax district on Route 28 (jointly with Fairfax County). Road improvements there are 75% funded by owners of commercial and industrial properties along the corridor.
  - Developer proffers (cash and construction of improvements). Probably more than 75% of new streets in Loudoun County are developer funded. The adopted county transportation plan is used to analyze development impact statements and to request fair share contributions, which often include road improvements. Cash proffers are sometimes used as a local match for VDOT revenue sharing funds.
- Potential additional future funding sources are uncertain. There is neither local nor state political support for a local sales tax. A countywide meals tax would require either a unanimous vote by the board of supervisors (unlikely) or a referendum, which has failed three times. At the time, Loudoun County had opted not to implement a countywide commercial and industrial properties tax so as to avoid placing another tax on the businesses in the Route 28 tax district.

## Survey Results

Of the 235 Virginia localities surveyed, 133 responded, a 56.5% response rate. Of the 133 responding localities, 62 (46.6%) provided data about locally funded road projects from

2008 through 2012 (Question 7; see Appendix A). In total, these localities reported spending over \$500 million on road projects during these 5 years (Question 6).

For funding and financing mechanisms that were used by 3 or more of the 133 responding localities, Table 2 lists the jurisdictions that applied each mechanism. (The criterion “used by 3 or more” was selected to identify a list of about 10 of the most common approaches; the full list of responses is available from the author upon request.) Table 3 summarizes the likely future funding sources for 2013 through 2017 reported by all 133 responding localities, including those that had not recently applied local funds to roads (Question 8).

No attempts were made to verify localities’ use of reported funding sources or to verify that the relevant legislative authority was available to each locality. Appendix B contains data from survey responses including specific project information and comments as reported by respondents. Table B1, Appendix B, contains project data and local expenditures reported by survey respondents.

Also included in Appendix B are the responses to Question 9 of the survey, which asked respondents for comments.

### **Case Studies of Virginia Localities**

As discussed previously, each of the eight case studies of Virginia localities begins with a description of the locality, continues with a narrative summarizing its projects and funding, and ends with the lessons learned by the locality with regard to local funding. All population figures are 2012 estimates (Weldon Cooper Center for Public Service, 2014).

#### **Augusta County**

Located in the Shenandoah Valley at the intersection of I-64 and I-81, Augusta County is a mostly rural county with 73,815 residents. This excludes the populations of two independent cities that grew large enough to form the Staunton-Augusta-Waynesboro MPO based on the 2010 Census. Augusta County is the only case study locality that was not in an MPO when its projects were planned. Timothy K. Fitzgerald, director of community development, was interviewed for this case study.

#### *Projects and Funding*

Augusta County’s biggest locally funded road project was ongoing as of summer 2013. The Augusta Medical Center has its main entrance on Goose Creek Road, which had been improved in the direction of an interstate interchange to the south but remained narrow and unpaved to the north. A project to improve access to the medical center by reconstructing the road on a new alignment had been advancing slowly through VDOT’s planning and design process as funding was available. Prior to 2009, the county had allocated approximately \$300,000 in local funding to the project from an account within its general fund.

**Table 2. Funding Mechanisms That 3 or More of 133 Responding Virginia Localities Reported Using From 2008 Through 2012**

Locality	GOB	RB	Prof	Gen	Gas	CDA	IDA	TSD	BPOL
Albemarle County			X	X					
Arlington County				X					
Botetourt County				X					
Campbell County				X					
Chesterfield County			X					X	X
City of Alexandria	X		X	X					
City of Charlottesville			X	X					
City of Colonial Heights				X					
City of Danville	X			X					
City of Hampton	X			X		X			
City of Lynchburg	X		X	X			X		
City of Manassas	X		X	X	X				
City of Newport News	X			X					
City of Norfolk	X			X	X				
City of Richmond	X								
City of Roanoke	X			X					
City of Suffolk	X		X	X			X		
City of Virginia Beach	X			X					
City of Waynesboro	X			X					
Fairfax County	X		X						
Fauquier County			X	X					
Hanover County			X	X					
Henrico County	X		X	X					
Isle of Wight County	X			X					
Loudoun County	X		X	X	X			X	
Louisa County			X	X					
Montgomery County				X			X		
Prince George County	X	X		X					
Rockingham County			X	X					
Shenandoah County							X		
Spotsylvania County	X		X	X				X	
Stafford County			X	X	X				
Town of Blacksburg	X		X	X		X			
Town of Chincoteague				X					
Town of Christiansburg				X					
Town of Culpeper	X			X					
Town of Gordonsville				X					
Town of Halifax				X	X				X
Town of Haymarket				X					
Town of Herndon	X		X	X					
Town of Kilmarnock	X			X					
Town of Lovettsville	X		X	X	X				
Town of New Market		X		X					
Town of Rocky Mount				X		X			
Town of South Hill				X					
Town of Strasburg			X	X					
Town of Stuart				X					X
Town of Tangier				X					
Town of Tazewell		X							
Town of Vienna	X								
Town of Wytheville				X					
Wythe County				X				X	
Total reported uses	24	3	20	46	6	3	4	4	3

GOB = general obligation or 9(b) bonds; RB = revenue or 9(c) bonds; Prof = developer proffers; Gen = General fund (typically includes real property tax); Gas = local or regional gas tax; Inc = local income tax; CDA = community development authority; IDA = industrial development authority; TSD = transportation service district; BPOL = business, professional, occupational, and licenses tax.

In 2012, Mary Baldwin College announced plans to build a health sciences campus adjacent to the medical center, which was the impetus for the county to advance the road project. To accelerate construction to coincide with the college's plans, the county decided to administer the project locally using state and local funds. Because the college's proposed timeframes would have been difficult to meet under federal requirements, the county worked with VDOT to reallocate federal funds that had been allocated for the Goose Creek Road project to other projects in the area. A contractor working with the college submitted an unsolicited PPTA proposal for the road improvements, which the county accepted.

The \$13.645 million project became fully funded with the addition of \$5 million in local funds matched by \$5 million in VDOT revenue sharing funds. Not counted in the total project cost was about \$2 million worth of fill material contributed by the contractor from the college site and elsewhere. The county financed its \$5 million using a 15-year loan with a 2.5% interest rate from the VRA. The loan is to be repaid with a version of TIF based on expected new development spurred by the road project. All property tax receipts from new businesses on the corridor will be earmarked for loan repayment; typically in Augusta County, 50% of property tax revenues goes to schools.

VRA bonds were chosen for this project because of their low interest rate and ease of approval. Given competing road needs, it was less complicated to borrow for this single large project than to seek multiple bonds for several smaller projects. To issue general obligation bonds, Virginia counties must conduct a voter referendum, which would not have been possible within the project's timeframe.

Two other adjacent projects were of note in Augusta County. The county planned in advance for a widening project on Tinkling Spring Road (a primary state highway, Route 285) at I-64 and reduced the cost by obtaining a majority of the necessary right of way through the rezoning process as sites were developed over 10 years. At the time of the interview, the county also expected widening of an adjacent segment of the same road (although designated as a secondary road for this segment) to be completed by a developer who would then be repaid under a TIF agreement using no state or federal funds.

Membership in an MPO does not affect a locality's eligibility for receiving VDOT revenue sharing funds or its ability to plan, fund, and administer road projects using local funding sources. The interviewee had 15 years of experience at VDOT prior to joining the county staff.

### *Lessons Learned*

- *Having local public agency staff members with project management experience who are familiar with VDOT and its processes is valuable.* For the Goose Creek Road project, the ability to work with VDOT's programming staff at the district level to identify the different types of funding sources and their varying degrees of flexibility was important in order to move money around.



**Table 3. Likely Future Funding and Financing Sources for 2013 Through 2017 Reported by All 133 Responding Virginia Localities**

Locality	GOB	RB	VRA	Prof	IF	Gen	Gas	Inc	CDA	IDA	TSD	MT	BPOL	Other
Accomack County			N	N										
Albemarle County				C		C								
Arlington County						C								
Botetourt County				N		C								
Carroll County										N				
Chesterfield County				C		N			N		C			
City of Alexandria	C			C										
City of Bristol	N							N						
City of Buena Vista				N	N	N								
City of Charlottesville				C		C	N				N			
City of Colonial Heights						C								
City of Danville	C					C								
City of Falls Church	N					N					N			
City of Galax						N				N			N	
City of Hampton	C					C			C					
City of Lynchburg	C					C				C				
City of Manassas	C			C		C	C							
City of Newport News	C					C								
City of Norfolk	C					C	C		N					
City of Petersburg							N							
City of Richmond	C		N	N						N				
City of Roanoke	C					C								
City of Suffolk	C			C	N	C				C				N
City of Virginia Beach	C					C								
City of Waynesboro	C		C	N		C								
Craig County						N								
Fairfax County	C			C							N			C
Fauquier County				C										C
Frederick County				N		N			N	N				
Gloucester County				N						N				
Hanover County					N	C			N	N				
Henrico County	C			C		C								
Isle of Wight County	C	N		N		C				N				
Loudoun County	C			C		C	C				C			
Louisa County				C		C								
Montgomery County						C				C				
Powhatan County				N										
Pulaski County				N		N	N	N		N				
Rockingham County				C		C								
Russell County														C
Shenandoah County										C				

Locality	GOB	RB	VRA	Prof	IF	Gen	Gas	Inc	CDA	IDA	TSD	MT	BPOL	Other
Spotsylvania County	C			C		C					C			
Stafford County	N		N	C	C	C	C		N		N			
Town of Ashland				N										
Town of Blacksburg	C			C					C				N	
Town of Chatham							N							
Town of Chincoteague						C								
Town of Christiansburg						C								
Town of Culpeper	C			N	N	C								
Town of Exmore						N								
Town of Front Royal						N								
Town of Halifax			N			C				N				
Town of Haymarket						C						C		
Town of Herndon	C			C		C								
Town of Lovettsville	C		C	C		C						N		N
Town of Luray				N	N									
Town of New Market	N				N	C								
Town of Pulaski	N													
Town of Rocky Mount		N				C			C					
Town of South Hill	N	N				C								
Town of Strasburg				C	C	C				N				
Town of Tangier						C								
Town of Tazewell		C												
Town of Vienna	C													
Town of Wytheville						C				N				
Wythe County						C					C			
Total reported likely uses <sup>a</sup>	28	4	6	31	8	47	8	2	8	15	8	2	2	5

C = continuing use (i.e., a source the locality has used recently and is likely to consider using in the next 5 years [see Table 2]); N = new use (i.e., a source the locality has not used since 2008 but is likely to consider using in the next 5 years); GOB = general obligation or 9(b) bonds; RB = revenue or 9(c) bonds; VRA = Virginia Resources Authority bonds; Prof = developer proffers; IF = impact fees; Gen = general fund (typically includes real property tax); Gas = local or regional gas tax; Inc = local income tax; CDA = community development authority; IDA = industrial development authority; TSD = transportation service district; MT = meals tax; BPOL = business, professional, occupational, and licenses tax.

<sup>a</sup> Five sources in the “Other” category had one likely user each: coal & gas road improvement tax (Russell County); stormwater utility fee (City of Suffolk); commercial and industrial property tax for transportation (Fairfax County); economic development authority (Fauquier County); cigarette tax (Town of Lovettsville).

- *Local project administration is preferable when there is a quick deadline that VDOT's typical process might not meet.* In order to streamline project delivery and focus limited VDOT oversight resources on projects with greater risk, VDOT has different processes for locally administered projects without federal funds, which are lower risk. A side effect of these processes is that they can allow locally administered projects to move faster than a typical federally funded project. In addition, the locality has some control over the timeline. Details of the risk-based oversight method are available in Appendix 9-C of VDOT's *Locally Administered Projects Manual* (VDOT, 2014).
- *The PPTA process provides maximum flexibility by allowing concurrent phases of work.* The county's ability to respond to the unsolicited PPTA proposal allowed the Goose Creek Road project to proceed quickly using a contractor who could take advantage of efficiencies from involvement with the nearby site development project for the college.
- *The VRA can finance major local capital improvements at a competitive borrowing rate.* For counties, VRA bonds have the time-saving advantage of not requiring a voter referendum.
- *Coordination with local land-use planners can lead to cost savings for road projects.* Obtaining right of way, whether through purchase or negotiation, for a widening project as property develops decreases the cost and complexity of the road project.

## **City of Chesapeake**

This city in the Hampton Roads region is Virginia's third largest by population (228,210). Because of its relatively large land area when compared with most Virginia cities (it was formed by the combination of the former City of South Norfolk and the former Norfolk County), its context is somewhat similar to that of an urbanized county. Kevin M. Lundgren, a project manager with the city, was interviewed for this case study.

### *Projects and Funding*

Chesapeake, like the greater Hampton Roads region, has a history of using toll revenue to finance transportation facilities. The 16-mile tolled Chesapeake Expressway was built in 2001 and serves vacationers and other travelers headed to and from North Carolina along with some local residents, bypassing a parallel two-lane road that has lower speed limits, several traffic signals, and commercial development. According to Lundgren, tolls in the region are often eliminated after the initial debt is paid off rather than being used to amass funds for maintenance and eventual reconstruction, and it can be difficult to reinstate a toll. Toll projects may also face heightened legal scrutiny as evidenced by the attention given to tolls in 2013 by the Virginia Supreme Court (*Elizabeth River Crossings v. Meeks* and *VDOT v. Meeks*).

Chesapeake's next toll facility, the \$345 million Dominion Boulevard Improvement Project, is under construction and required state enabling legislation for its tolling plan (Virginia

Acts of Assembly, 2007). The project includes several interchanges and major bridges, and funding was assembled from various federal and non-federal sources. Tolls will repay a \$151.9 million loan from the Virginia Transportation Infrastructure Bank and \$150.7 million in revenue bonds. Although its financing structure is similar to that used for the Chesapeake Expressway, Dominion Boulevard serves mostly local commuters, who are likely to be more sensitive to toll prices than vacation travelers. A study resulted in an adopted toll rate that is comparable to the Chesapeake Expressway's toll for members of its discount program but far lower than the expressway's adopted peak toll (City of Chesapeake, 2012).

A companion project fully funded by the city to be finished at the same time as the improvement project will widen an adjacent 2-mile section of Dominion Boulevard. Two intersections, one in each of the two projects, were previously widened as development proffers, so although lanes may need to be reconfigured, the right of way exists (Figure 3). As part of the city's comprehensive plan, the master transportation plan shows developers what will be required in terms of right-of-way dedication (City of Chesapeake, 2005). Sometimes, right of way is reserved during the development process, meaning that the city will eventually pay for it and that the developer cannot construct buildings in the designated area.



**Figure 3. Intersection on Dominion Boulevard in Chesapeake. This intersection was widened through development proffers to match roughly the planned configuration of a larger scale widening project.**

### *Lessons Learned*

- *Having the capacity to administer projects locally is valuable, and certain funding packages can accelerate projects.* For example, a project using only local funds and VDOT revenue sharing funds must comply with only local and VDOT guidelines, rather than federal rules and contracting requirements that can add to a project's cost and lengthen its schedule.
- *Localities should carefully consider whether to eliminate tolls after a project's initial costs have been recouped.* Because it is harder to reinstate a toll than to continue charging one, localities could simply lower toll rates to cover ongoing maintenance costs while building up a fund for eventual reconstruction costs. Tolling is unpopular

but is likely to be a local revenue source in the future, especially for major projects in the absence of other options.

## **City of Fredericksburg**

Located on I-95 approximately 50 miles south of Washington, D.C., Fredericksburg is a city of 26,024 within a growing region approaching a population of 350,000 that is adjacent to the much larger Washington, D.C., metropolitan area. D. Mark Whitley, assistant city manager, was interviewed for this case study.

### *Projects and Funding*

Recent local funding sources for road projects have included property taxes; business, professional, and occupational license taxes; proffers; local motor fuel taxes; a CDA; and a service district.

Fredericksburg typically uses its surplus motor fuel tax revenue for multimodal projects. Its membership in the PRTC allows the PRTC to collect a 2.1% motor fuel tax on behalf of the city, and the city tells the PRTC how to spend the surplus revenue remaining after local subsidy obligations for the Virginia Railway Express commuter rail system have been fulfilled (PRTC, 2013). Recently, about \$1.5 million yearly has remained, some of which has been used to match VDOT revenue sharing dollars. As a percentage of fuel sales rather than a cents-per-gallon gas tax, this funding source has been somewhat unstable but has the benefit of rising with inflation.

VDOT managed the construction of Cowan Boulevard, completed in 2006 (Figure 4). The project extended an existing road over an interstate, connecting a regional shopping center with a medical center and neighborhoods. Fredericksburg provided financing to accelerate the project, using its bonding authority to loan funds to the Commonwealth to accelerate project construction. To repay the bonds, Fredericksburg relied on VDOT's repayments in the form of state urban construction allocations (state funds allocated by formula from VDOT to the city), and the city created a service district to recover its local share. The service district approach was chosen because the shopping center was a major beneficiary of the project and because the service district did not add to the residential property tax burden, which would have been politically problematic. During the ensuing economic downturn, VDOT's urban construction allocation funds dwindled, causing the repayments to dwindle as well. The situation was eventually resolved when VDOT paid Fredericksburg a lump sum to retire the debt, but the city is not likely to pursue this arrangement again unless state law adds stronger repayment requirements to protect localities. The *Code of Virginia*, which limited the reimbursement to one-third of the city's urban construction allocation, has since been changed to allow for two-thirds of the annual allocation to be used for such a purpose. However, there has been little or no funding flowing through the urban construction formula in recent years (DeBruhl, 2014).

### *Lessons Learned*

- *A local tax based on fuel sales is feasible.* This tax is currently collected based on membership in a regional commission rather than as a purely local initiative.

- *Strategically placed service districts can recoup roadway project costs without political backlash.* The city's service district for Cowan Boulevard was placed on a major shopping center that benefited from the road's construction. Residential property owners were not taxed.
- *Ensure that localities are protected when lending funds.* By providing the state share of the Cowan Boulevard project, Fredericksburg was able to accelerate its construction, but when VDOT funding later decreased, the city's repayment schedule was interrupted.



**Figure 4. Cowan Boulevard in Fredericksburg**

## **City of Harrisonburg**

Harrisonburg, a city of 50,862, is home to James Madison University (JMU). For its population size, the city has a fairly large road construction program. Andrew D. Williams, assistant public works director, and Thomas A. Hartman, public works engineer, were interviewed for this case study.

### *Projects and Funding*

The city's primary road financing mechanism has been the use of general obligation bonds that are repaid from the general fund. This has been the case because the city has always had a very good debt capacity and other options are not politically popular. General fund revenue sources have been able to handle bond repayment attributable in large part to meals and lodging taxes spurred by JMU-related activities. Developer proffers have provided some smaller elements such as dedication of right of way. JMU also reimburses the city for the cost of safety-related construction projects adjacent to the campus.

The biggest ongoing project is Stone Spring Road / Erickson Avenue (Figure 5), with an estimated total cost of \$62 million. The road has been planned for decades to improve east-west access, including to a regional hospital. With three of the four phases complete, approximately \$50 million had been spent. Total engineering costs, all local funds, were approximately \$6 million. The local, state, and federal funding proportions varied with each phase. For Phase 2, the state designed and paid for a bridge over I-81 using right of way purchased by the city. When funding became available in the state's bridge replacement program to replace the previous bridge, which was functionally obsolete, the city committed funding for the remainder of the phase. The city constructed the bridge over the interstate for VDOT, a notable achievement because of the project's complexity, which involved closures of the interstate and full federal oversight.

A similar multi-phase effort was the widening of Port Republic Road (Figure 6), which provides a connection across I-81 near JMU. A 2002 widening project by the city with a federal grant improved the first segment, and the next segment was 100% locally funded. Subsequent phases have improved the road beyond the regional hospital and the city limits, and Rockingham County has plans to continue the improvements to the boundary of the urbanized area.

The city had a \$14 million project to widen a 1-mile stretch of Reservoir Street through a commercial area. Local bond funds were to finance one-half of the cost, with VDOT revenue sharing funds contributing the other half. A companion project to continue the widening outside the city limits represented an unusual approach to locally administered projects that was expected to result in cost savings: the city was purchasing right of way and handling the design on behalf of Rockingham County, with plans for the county to submit it for VDOT revenue sharing funding.

Although Harrisonburg's roadway improvement program has continued apace through the economic downturn, likely attributable to the stabilizing effect of the presence of JMU, the city may not be able to continue borrowing as heavily as in the past. After ongoing major projects are completed, remaining efforts are expected to have smaller funding impacts.



**Figure 5. Stone Spring Road in Harrisonburg**



**Figure 6. Port Republic Road in Harrisonburg**

### *Lessons Learned*

- *Local administration of projects can be quicker than VDOT administration, and federal projects always take longer than non-federal projects because of the need for increased coordination among the city, the Federal Highway Administration (FHWA), and VDOT.* One case when local administration speeds up the process is when a local contractor is used. Decisions can be made quickly because there is no need to wait for someone from VDOT to be able to come from the nearest district office. Instead, local staff can make a decision, and VDOT typically approves it quickly if necessary.
- *Strategic use of local funds can speed up projects.* For example, using local funds in the right-of-way phase allows the city to purchase a property and demolish structures at the same time; under typical VDOT project management, these would be separate, consecutive phases.
- *Before Virginia's 2013 transportation funding changes, VDOT revenue sharing funds appeared to be the new de facto funding program for construction of roads in Virginia localities.* Anticipating the need for the city to continue contributing at least one-half the cost of projects, it is likely that bonds repaid with general fund dollars will continue to be the main financing tool for local road projects. Virginia's 2013 transportation funding reform (Virginia Acts of Assembly, 2013) may shift the focus back away from VDOT's revenue sharing program if it causes funds to resume flowing through statutory construction formulas, although this did not occur in the first update of the state's transportation funding program after the law was enacted (Rollison, 2014).



## City of Lynchburg

Lynchburg is a city of 77,203 and is home to Liberty University (LU) and Lynchburg College, among other universities and colleges. Several staff members from its public works and financial services departments were interviewed for this case study.

### *Projects and Funding*

Lynchburg primarily uses general obligation bonds to finance new streets and major reconstructions from its capital improvement program. Within its general fund are two funds typically used for street improvements: an annual bridge maintenance fund for projects under \$300,000 and a pay-as-you-go fund made up of cash or investments on hand from previous surpluses. At the end of each fiscal year, 10% of any remaining balance in the general fund is put into a contingency account and the rest is available for pay-as-you-go capital improvements (i.e., financed without long-term debt) including but not necessarily limited to roads. To manage cash flow, the city uses a \$10 million line of credit.

A recently completed project was the \$3.6 million D Street Bridge replacement (Figure 7). A routine inspection found safety concerns that required closure of the bridge, one of only two entrances to a city neighborhood. The city manager decided to replace the bridge quickly, which ruled out applying for VDOT revenue sharing funds, and used pay-as-you-go funds and an additional \$800,000 from interest earned on unexpended state-allocated road funds. The city designed the replacement bridge, and construction took place over the following 2 years.

As a 100% locally funded project, city staff judged the D Street Bridge project to be easier, faster, and more cost-effective than the adjacent Rivermont Bridge, a \$3.2 million project with federal and state funding designed in 2008 and not yet fully closed out as of April 2013. The city funded the design, and construction was funded with 80% federal and 20% state funds. The Rivermont Bridge is longer and wider and carries more traffic than the D Street Bridge, so work on the Rivermont Bridge is clearly more complex because of elements such as maintenance of traffic. However, the Rivermont Bridge project comprised a deck replacement, whereas the D Street Bridge project was a full bridge replacement project—yet their costs were similar, and the former project took twice as long. City staff found the federal process to be slower because of a number of factors: sequential rather than concurrent phases, various required studies, environmental reviews and process requirements, approvals for change orders, and other regulations.



**Figure 7. D Street Bridge in Lynchburg**

The state-funded Kemper Street Bridge replacement used a locally funded design and was 1.5 years behind schedule as of April 2013. Major issues with this project arose after its design, which had been developed using city standards, was sent to VDOT for a courtesy review because of the use of VDOT revenue sharing funds. This led to a long process of redesigns and exceptions because of differences between city and VDOT standards. The bridge crosses a National Highway System route at an interchange, so the project required coordination with both VDOT and FHWA. Neither the city nor the VDOT district office noted this when the project was scoped (DeBruhl, 2014).

Lynchburg has been able to leverage funding from its university partners, collaborating via a bi-monthly meeting of local elected officials and university representatives. One example of this collaboration is a pedestrian bridge over Wards Road near LU (Figure 8). The need was identified after observations that many LU students were crossing the four-lane arterial to access major retail stores. LU was expanding by around 1,000 students per year, and a February 2011 pedestrian count showed 40 crossings in 1 hour. The project's funding came from a partnership with LU in which the city contributed \$1.35 million, the estimated cost of a previously planned at-grade crossing, and LU paid the rest of the \$1.65 million total project cost. To accelerate the project, LU agreed to construct it to city standards. After construction was completed in October 2011, LU turned the pedestrian bridge over to the city for maintenance.

Other LU-related projects are planned, and another project is planned across town at the entrance to Lynchburg College with funding from the college providing the local share.



**Figure 8. Pedestrian Bridge Over Wards Road in Lynchburg**

In the short term, the city does not expect to return to the volume of road construction that occurred before the recession. Lynchburg faces major short-term capital improvement projects such as school replacements that will affect the city's borrowing capacity. In addition, staffing levels have been reduced whereas funds have still been transferred to the pay-as-you-go account annually. The likely result is that desired future transportation improvements requiring local funding—needs are \$15 million to \$20 million per year—will be deferred.

### *Lessons Learned*

- *For projects that are likely to involve VDOT, it is best to meet early on to discuss plans and get feedback.* Consulting both the VDOT district office and the VDOT central office is advisable to ensure that any differences of opinion between the two can be resolved promptly.
- *If state and federal grants are not available to fund road needs fully, the use of VDOT revenue sharing funds is a second choice because of the need to match funds with local dollars.* Although it stretches dollars as far as it can, in order to meet citizen expectations, the city annually spends \$2 million to \$5 million more on street maintenance than it receives for that purpose from VDOT. This limits the amount of funds available for new construction.
- *Careful budgeting and saving can allow unanticipated needs to be addressed quickly.* The D Street Bridge replacement relied on Lynchburg's history of saving funds for pay-as-you-go capital improvements.
- *Partnerships can accelerate projects and potentially lower costs.* The city's experience working with universities has led to cost sharing for multiple projects and a short construction timeline for the pedestrian bridge.

### **Prince William County**

Prince William County is a suburb of Washington, D.C. With 421,164 residents, it is Virginia's second-largest county. For 50 years, every decennial census has reported growth of more than 30% from the previous census for the county. From 2000 to 2010, the county added more than 121,000 residents (Prince William County Government, 2013). Ricardo A. Canizales, transportation planning division chief, and Khattab O. Shammout, capital projects division chief, were interviewed for this case study.

### *Projects and Funding*

Prince William County has been a Virginia leader in using local funds for roadways, but it still seeks to use other funding sources to minimize reliance on local dollars whenever possible. The recession made it less common for county road projects to be 100% locally funded. Instead, the county has been able to leverage federal funds while administering projects locally.

The county has been successful in delivering promised projects from local bond referenda, often without having to exhaust all the approved bond funds. For example, the county expects to complete the projects promised in a \$300 million road bond from 2006 using only \$170 million in bond funds. The county had planned to continue putting road bonds on the ballot every 4 years, but the 2006 bond was the most recent because of the economic downturn. In the next 5 years, the county does not anticipate another bond issue; its elected officials want to avoid additional bonds until the economy recovers because of a tight budget and a high and growing debt service.

Bonds did allow the county to complete more than 200 lane-miles of new construction and widening projects since 1988. Bond debt is repaid from the general fund, which has been able to keep up with the approximately \$24 million annual debt service because of the pace of new development in the county. Over the past 15 years, there were three bond issues, covering 104 lane-miles and representing over \$309 million in spending.

On projects that have local funding, the county often follows the model of using local dollars for design and right-of-way acquisition and state and federal dollars for construction. This approach saves time and money by allowing concurrency between project phases while producing projects that can move quickly if non-local funding becomes available.

The county has two service districts that were established to pay for initial road improvements as authorized by state law (*Code of Virginia* § 15.2-2403); this general type of service district should not be confused with the urban transportation service district, which applies to road maintenance, also authorized by state law (*Code of Virginia* § 15.2-2403.1). A small district in a developing corporate research park near the interchange of Route 28 and the Prince William Parkway / 234 Bypass charges property owners \$0.02 per \$100 valuation to support road improvements. A larger district along a heavily developed (mostly with retail) stretch of the parkway from I-95 to Minnieville Road charges \$0.20 per \$100 valuation.

The county's proffer guidelines for conditional zoning explain that developers of new residential units are expected to make monetary contributions to mitigate demands on various services based on level-of-service criteria in the county's adopted comprehensive plan. Developers can receive credit for off-site road improvements or improvements "beyond what is required to mitigate the transportation impact of the proposed development and satisfy VDOT safety requirements" (Prince William County Office of Planning, 2006). Cash proffers are placed in an interest-bearing account. Each fiscal year, the county reviews projects to determine how to allocate funds from this account, typically \$1.5 to \$2 million annually. The interest from cash proffers is also available to be allocated to projects countywide. Proffers that would normally provide a development-driven improvement in a location where the county has a larger planned road improvement are typically negotiated into a cash contribution for the larger project. Some developers have chosen to publicize their contributions to road improvements (Figure 9).

Widening of a 1.4-mile segment of the Prince William County Parkway was included in the 2006 bond referendum. Local funds were used for design and right of way (\$3.8 million) but federal funds were obtained for construction (\$9.1 million). Also included in the bond was a \$15

million widening of a 1.8-mile segment, which is under development and is expected to use bonds and VDOT revenue sharing funds.

A 1-mile widening project on U.S. Route 1 north of Joplin Road opened to traffic in 2012 (Figure 10) and used the most local funds of any project since 2008. Although construction was fully funded with federal dollars, construction costs comprised just \$10 million of the \$68 million total cost, most of which was for right of way because of the need for several total acquisitions of commercial properties. Approximately 2% of the project cost was paid from developer contributions, but the remainder, more than \$50 million, was paid from local bond financing.



**Figure 9. Sign Along U.S. 15 in Prince William County Notes Homebuilder's Participation in Road Widening Costs**



**Figure 10. U.S. Route 1 in Prince William County**

Other major projects underway at the time of the interview included the \$31 million University Boulevard extension, a 100% locally funded PPTA design-build project. Another PPTA project will widen a segment of Route 1 for approximately \$50 million, including \$40 million in bonds and \$10 million in VDOT revenue sharing funds. VDOT revenue sharing funds will also support the \$20 million widening of a segment of Minnieville Road, with \$1.5 million in local funds spent for design and right of way. An upcoming \$56 million widening of Route 28 is locally administered and uses mainly federal and state funds but has some local funds and cash proffers.

### *Lessons Learned*

- *Federal funds should be used strategically, such as for construction phases of standard projects and not for a PPTA project.* Virginia's PPTA allows for concurrent phases, but the federal process for P3s does not. The interviewees noted one downside of PPTA proposals: they were typically unsolicited, making it hard to plan for them in advance.
- *To speed up projects, it is often best to put local dollars into preliminary engineering and right-of-way phases and then seek federal funding and follow federal processes for construction.* The federal process requires approval of certain elements before work can begin on others, whereas on projects with no federal funding, concurrent phases can save time and money.
- *It is important to deliver on promises.* The county's 2006 road bond passed with more than 80% approval, attributed to the county's track record of successfully delivering projects from earlier bonds in a timely fashion; a 2006 regional bond issue for VDOT projects did not pass.
- *Projects should be developed in multiple categories so that funding may be sought from multiple sources.* In this way, the county has been very successful at receiving grant funding to stretch local dollars.

### **Stafford County**

Stafford County, with a population of 132,719 and a 2010 Census population 39.5% higher than 10 years earlier, straddles the boundary between the large Northern Virginia region and the smaller Fredericksburg area. A group of planning and engineering staff was interviewed for this case study.

### *Projects and Funding*

In 2008, the county received voter approval for road bonds that were to be repaid by impact fees and surplus revenues from the regional motor fuel tax rather than from the general fund; the bonds had not yet been offered for sale as of the interview. The county has experience with road projects using bonds and proffers, but its ongoing use of impact fees to fund road

projects is unique in Virginia, although the practice is enabled for several localities (*Code of Virginia* § 15.2-2317-2327).

Initially, the Stafford County *Comprehensive Plan 2010-2030* (Stafford County Planning Commission, 2010) and an accompanying ordinance defined the areas where transportation impact fees were collected with new development and identified specific projects to be funded using the revenue. The first project to use the impact fee revenues made safety and capacity improvements to a segment of Poplar Road. Construction of the \$2.5 million project was to use 100% local funds.

In September 2012, the county repealed one of its two impact fee areas, and in May 2013, elected officials approved a countywide transportation impact fee (Thisdell, 2013). The county expects to use impact fee revenues as a local match for VDOT revenue sharing dollars for road projects necessitated by continued growth.

An unanticipated use of local funding occurred for a project to improve Poplar Road and Mountain View Road. The county had to provide \$150,000 of local funding to replace federal money. The county was under the impression that the project would not use any federal funds and retained a consultant from an on-call list that had not been developed under federal guidelines. VDOT later provided documents to the county indicating that federal funds were used on the project, and the county followed federal guidelines from that point forward. VDOT was unable to reimburse the county for the consultant, however, because the hiring process had not followed federal guidelines.

### *Lessons Learned*

- *Impact fees can help high-growth localities fund roads related to new development.* It is too soon to comment on the countywide impact fee, but the funds collected under the previous iteration of the program have begun to be applied.
- *It is important to track the source of project funds to determine whether more time-intensive federal processes must be followed.* The unanticipated use of local funds on the Poplar Road and Mountain View Road project suggests that it is prudent for localities and VDOT to track funding sources carefully.

### **City of Williamsburg**

Williamsburg has a population of 14,503 and is contiguous with two counties that each have a population over 65,000 (James City County and York County). The region has major tourist attractions including amusement parks and Colonial Williamsburg. Daniel G. Clayton III, director of public works and utilities, was interviewed for this case study.

### *Projects and Funding*

In Williamsburg, all local revenues from the retail sales and use tax go into the Capital Improvement Program (CIP). At the time of the interview, the sales tax was the typical 1% local

tax that Virginia localities levied in addition to the 4.3% state tax (Virginia Department of Taxation, 2013). Williamsburg had the second highest 2012 taxable sales amount (behind the larger City of Colonial Heights) of the 16 Virginia cities with 2012 population estimates below 20,000 (Weldon Cooper Center for Public Service, 2013). This is likely due to its status as a major tourist destination. Since the interview, the state tax has increased to 5%, with the local tax remaining at 1% (Virginia Department of Taxation, 2014).

The city partially funded several projects from sales tax revenues via the CIP, including the following:

- Treyburn Drive was constructed as a PPTA project in 2006 (Figure 11). After a major proposed development made the news, a local contractor brought an unsolicited proposal to the city, which paid for it using a combination of state formula allocations, VDOT revenue sharing, and local funds.
- Quarterpath Road was improved in 2008 as another P3, adding curb, gutter, and sidewalks to complement a new residential development (Figure 11). The project was funded primarily with developer money and some city funds.

In the near future, Williamsburg plans to follow the model of using CIP dollars supported by the sales tax to match VDOT revenue sharing funds, although the city looks forward to more state funding for local road projects.



**Figure 11. Treyburn Drive (left) and Quarterpath Road (right) in Williamsburg**

### *Lessons Learned*

- *Successful local administration of road projects is possible, even with a small staff. It can allow projects to get done faster, especially when only state and local funds are used, as was the case with both P3 efforts.*



- *VDOT's Revenue Sharing Program is a key funding source.* In recent years, as revenue sharing became the de facto funding program because of reduced state formula allocations to cities, Williamsburg began planning to use local funds in order to receive state funds for road projects.
- *Saving sales tax revenues for capital improvements can be a good strategy.* This approach especially makes sense for a city with relatively high taxable sales compared to population. It allows the city to fund projects without incurring debt and can also give it the flexibility to act quickly on unsolicited proposals.

## CONCLUSIONS

- *The Virginia case studies suggest that different localities had different enabling factors that led to their decisions to apply local funds to road projects.* Some enabling factors supported by the case studies are described here and are listed in Table 4.
  - *High growth rates* allowed some localities to obtain funding for road improvements related to growth. Prince William County's rapid population growth and the resulting increased tax revenues enabled its heavy use of bond financing. Its strategic application of service districts enabled value capture without reliance on the general fund, and its proffer guidelines helped ensure that new growth mitigates its impacts. Stafford County's use of impact fees demonstrated a different approach to capturing value from rapid growth. Harrisonburg had growth in university-related revenues (student apartments and businesses serving additional students) that allowed it to maintain a bond-financed road construction program.
  - *Regional medical centers* were associated with major ancillary land development and represented both a challenge and an opportunity to complete necessary road improvements. As a largely rural county, Augusta County leveraged both current development and anticipated future growth surrounding its medical center. Fredericksburg and Harrisonburg also had recent road projects connecting to medical centers, although funded in different ways.
  - *Local government staff with experience managing road construction projects in Virginia* facilitated entry into the processes of administering a project locally and/or providing local funds. This was most evident in Augusta County, where the director of community development had experience with VDOT processes and was able to work closely with VDOT to manage funding allocations.
  - *A combination of future-focused transportation plans and negotiation during the land development process* reduced roadway project costs. Augusta County and Chesapeake took advantage of new development through dedication or reservation of right of way for future local road projects.

**Table 4. Summary of Enabling Factors and Funding and Financing Tools Used by Localities in the Case Studies**

	Augusta County	City of Chesapeake	City of Fredericksburg	City of Harrisonburg	City of Lynchburg	Prince William County	Stafford County	City of Williamsburg
<b>Enabling Factor</b>								
High growth rates	—	—	X	X	—	X	X	—
Regional medical centers	X	—	X	X	—	—	—	—
Staff experienced with road construction projects	X	—	—	—	—	X	—	—
Future-focused plans and negotiation during land development	X	X	—	—	—	X	X	—
Record of success with similar projects	—	X	—	—	—	X	—	—
Collaboration with universities and other local governments	X	—	—	X	X	—	—	—
History of careful budgeting	—	—	—	—	X	—	—	X
<b>Funding and Financing Tool Used in Case Studies</b>								
Developer proffers or advance acquisition/reservation of right of way	X	X	X	X	—	X	X	X
General fund or property taxes	X	—	X	X	X	X	—	—
General obligation bonds	—	—	—	X	X	X	X	—
Service districts or tax increment financing districts	X	—	X	—	—	X	—	—
Public-private partnerships	X	—	—	—	—	X	—	X
College and university funds	—	—	—	X	X	—	—	—
Local motor fuel tax	—	—	X	—	—	—	X	—
Accumulated cash / pay-as-you-go	—	—	—	—	X	—	—	X
Virginia Resources Authority loan	X	—	—	—	—	—	—	—
Virginia Transportation Infrastructure Bank loan	—	X	—	—	—	—	—	—
Toll revenue	—	X	—	—	—	—	—	—
Impact fees	—	—	—	—	—	—	X	—

An X indicates that the enabling factor was evident in the locality's case study; a dash indicates that it was not evident (i.e., whether it existed or not, it was not a clear element in the case study).

- *A record of success with similar projects* enabled jurisdictions to build on that record. Chesapeake built on its history of managing a successful toll road to secure financing for a particularly expensive project that would also have tolls. Prince William County received voter approval for road bonds following successful implementation of other bond-funded road projects.
  - *Collaboration with universities and other local governments* led to funding partnerships and accelerated project delivery. Harrisonburg collaborated with state and local partners to administer mutually beneficial projects. Lynchburg’s partnership with LU enabled a short timeline for construction of a pedestrian bridge.
  - *A practice of careful budgeting and saving* provided substantial funds for road projects. Lynchburg funded an acutely needed neighborhood bridge project using cash on hand in the absence of other funding options. Although small in population, Williamsburg took advantage of its tourism-based economy to amass local funds for capital improvements from sales tax revenues.
- *Despite Virginia’s history of having a road network that is primarily state-funded, local governments have become major funding sources for road improvements of local importance.* This role has intensified as state funding levels have decreased, but many localities have begun to reach financial or political borrowing limits. It is likely that localities interested in committing local funds to road projects would be able to benefit from hearing the experiences of other localities, especially those with similar characteristics. Some localities may need assistance in selecting financially suitable funding sources and financing options.
  - *Despite approaching borrowing limits, localities still have an interest in using local dollars to advance local priority projects.* Localities typically raise revenues to supplement, not supplant, state and federal funds, which retain a key role. Major projects with no state and federal funds remain the exception rather than the rule, and when they have occurred, they were typically made possible because the local government received state and federal funds for other road projects.
  - *Each case study locality chose its funding sources based on what options were feasible for its context, sometimes blending several funding and financing mechanisms.* The availability of a broad menu of tools allowed for this flexibility.

## RECOMMENDATIONS

1. *VCTIR should work with VDOT’s Local Assistance Division and appropriate staff at the district level (such as the planning and investment manager or his or her designee) to develop a “road show” summarizing funding options and case studies.* A traveling 1-day training program would allow VDOT to deliver this information to localities in an interactive manner. VDOT’s Staunton District could serve as the pilot for this program, as offered by a Staunton district planner who was a member of the project review panel.

2. *VDOT's Local Assistance Division should continue efforts aimed at helping local government staff network.* The division's local programs workshop could be expanded with perspectives from localities outside Virginia that have experience using innovative local funding tools (including tools that are currently enabled for use by Virginia localities and, potentially, tools that would require additional enabling legislation). VCTIR could consider providing implementation funding to help support this enhancement. This recommendation could be implemented at the 2015 workshop. Interest in specific topics could be measured using a question on a follow-up survey sent to workshop attendees after the 2014 workshop.

## **BENEFITS AND IMPLEMENTATION PROSPECTS**

### **Benefits**

For jurisdictions interested in having additional mechanisms for raising funds, this report provides information for their elected representatives to consider should they decide to pursue additional statutory authority. If local governments are able to complete transportation projects that meet local and/or regional needs using alternative funding sources, the resulting benefit to VDOT would be less pressure on its limited funds. Benefits to localities could include quicker implementation of priority projects with fewer potential problems along the way.

### **Implementation Prospects**

Some implementation actions have already been taken. Presentations about the case studies were made to the following statewide audiences:

- Virginia Association of Metropolitan Planning Organizations (June 2013)
- Virginia Chapter of the American Planning Association (July 2013)
- VDOT Local Assistance Division's Local Programs Workshop (September 2013).

A presentation regarding this study was made to an international audience at the annual meeting of the Transportation Research Board in January 2014 (Ohlms, 2014). Other potential audiences could include the Virginia Association of Counties, the Virginia Municipal League, and the Virginia Association of Planning District Commissions.

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**APPENDIX A**

**SURVEY DISTRIBUTION LIST, SURVEY INVITATION E-MAIL, AND SURVEY  
INSTRUMENT**



## Survey Distribution List

This survey was sent by e-mail to a distribution list provided by VDOT's Local Assistance Division. The list included contacts for Virginia's 95 counties, 38 of 39 cities, and 102 of 190 towns. The City of Manassas Park and the following towns were not on the list (or, as noted, were on the list but lacked e-mail addresses): Accomac, Alberta, Appomattox, Belle Haven, Bloxom, Boones Mill (no e-mail), Boyce, Boydton, Boykins, Branchville, Brookneal, Buchanan, Burkeville, Capron, Charlotte Court House, Cheriton, Claremont, Cleveland, Clifton, Clinchco, Clinchport, Clintwood, Columbia, Courtland, Craigsville, Dendron, Dillwyn, Drakes Branch, Duffield, Dungannon, Eastville, Fincastle, Glen Lyn, Goshen, Hallwood, Hamilton, Haysi, Hillsboro, Honaker, Hurt, Iron Gate, Ivor, Jarratt, Jonesville, Keller, Keysville, La Crosse (no e-mail), Madison, McKenney, Melfa, Middleburg, Middletown, Monterey, Mount Crawford, Nassawadox, New Castle, Newsoms, Nickelsville, Onancock, Onley, Pamplin City, Parksley, Pembroke, Phenix, Pocahontas, Port Royal, Pound, Quantico, Ridgeway, Round Hill, Saltville, Saxis, Scottsburg, St. Charles, St. Paul, Stanardsville, Stony Creek, Surry, The Plains, Toms Brook, Troutdale, Troutville, Virgilina, Wachapreague, Wakefield, Washington, Waverly, and Weber City.

## Survey Invitation E-mail

To: [Mr./Ms.] [First Last], [Position], [Locality]

*This message is being sent to chief administrative officers of each county, town, and independent city in Virginia.*

Greetings,

**Please forward this message to the staff person most knowledgeable about roadway project funding in your locality (if it is not you).**

The Virginia Center for Transportation Innovation and Research (VDOT's research division) has initiated a study on locally funded roadway projects. This research project was suggested by a staff person at a Virginia Metropolitan Planning Organization (MPO), who noted that some local governments have used local dollars to construct projects because the state or federal funds were insufficient. The research project's advisory panel includes representation from the MPO, the Virginia Department of Transportation, and the Federal Highway Administration. The main objective of the study is to provide factual information about roadway projects that have benefited from non-state, non-federal dollars contributed by Virginia's local governments in the past 15 years (that is, since 1997 or so).

Your completion of this brief, multiple-choice survey will contribute greatly to our effort to describe such contributions by Virginia localities to date. The survey has been kept short. We will contact localities that report having funded roadway projects for follow-up conversations about lessons learned. The survey is online and can be accessed using the password **local** at either of the following links through Friday, October 26:

<http://obsurvey.com/S2.aspx?id=27797d4e-0775-4630-9f25-6e223577d336> or  
<http://tinyurl.com/8cdfnty>.

*If you are not the proper contact for your locality regarding the funding of roadway projects over the past 15 years, we would very much appreciate it if you would forward this link to the appropriate person. Only one survey should be completed for your locality.*

More details on this research project are available from the following website:  
<http://vtrc.virginia.gov/ProjDetails.aspx?ID=510>. If you have any questions regarding the survey or the study in general, or if you would prefer to complete the survey on paper or over the phone, please contact me.

Sincerely,

**Peter Ohlms**

**Research Scientist**

**O** 434.293.1991 **F** 434.293.1990 **E** [peter.ohlms@vdot.virginia.gov](mailto:peter.ohlms@vdot.virginia.gov)  
Virginia Center for Transportation Innovation and Research  
530 Edgemont Road  
Charlottesville, VA 22903

### Survey Instrument

1. Name of local government: \_\_\_\_\_
2. Your Name: \_\_\_\_\_ Position: \_\_\_\_\_ Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_
3. For additional information, whom should we contact?  
 You  
 Someone else (provide name and phone or e-mail): \_\_\_\_\_
4. Consider any new or reconstructed roadway projects (excluding routine maintenance) that were completed in your locality within the last 15 years (that is, since 1997 or so). How many of these projects were funded all or in part with local funds? *Although some local governments administer roadway projects using earned state and federal transportation dollars, this study is specifically interested in non-state, non-federal funding.*  
 More than two: *Please complete Questions 5 through 7.*  
 One or two: *Please complete Questions 5 through 7.*  
 None: *Please skip to Question 8.*  
 No roadway projects have been completed since 1997: *Please skip to Question 8.*
5. Please provide the following information for the most recent project using local funds and then for the project using the most local funds. (There is no need to inflate dollar amounts to 2012 dollars.)

Most recent project using local funds:

- Project name: \_\_\_\_\_
- Project website if available: \_\_\_\_\_
- Approximate total project cost: \$\_\_\_\_\_
- Estimated local funding contribution: \$\_\_\_\_\_

Project using the most local funds:

- Project name: \_\_\_\_\_
- Project website if available: \_\_\_\_\_
- Approximate total project cost: \$\_\_\_\_\_
- Estimated local funding contribution: \$\_\_\_\_\_

6. What is the total amount of local funds your locality has spent over the past five years on new or reconstructed roadway projects? \$\_\_\_\_\_
7. Which local funding and financing sources were used for roadway projects in the last five years?*(Check all that apply; if borrowing [i.e., the use of bonds] was a means of financing, also check any revenue sources that were used to repay debt on the bonds.)*
- General obligation or 9(b) bonds
  - Revenue or 9(c) bonds
  - Virginia Resources Authority bonds
  - Developer proffers
  - Impact fees
  - General fund (typically includes real property tax)
  - Local or regional gas tax
  - Local income tax
  - Community Development Authority
  - Industrial Development Authority
  - Transportation Service District
  - Business, Professional, Occupational and Licenses Tax
  - Coal and Gas Road Improvement Tax
  - Other: \_\_\_\_\_
8. Which local funding and financing sources is your locality likely to consider using for roadway projects in the **next** five years? *(Check all that apply; if borrowing [i.e., the use of bonds] is an expected means of financing, also check any revenue sources that would likely be used to repay debt on the bonds.)*
- None
  - General obligation or 9(b) bonds
  - Revenue or 9(c) bonds
  - Virginia Resources Authority bonds
  - Developer proffers
  - Impact fees
  - General fund (includes real property tax)
  - Local or regional gas tax
  - Local income tax
  - Community Development Authority



- Industrial Development Authority
- Transportation Service District
- Business, Professional, Occupational and Licenses Tax
- Coal and Gas Road Improvement Tax
- Other: \_\_\_\_\_

9. Please provide any additional comments, questions, or insights regarding this survey or topic. \_\_\_\_\_

**APPENDIX B**  
**DATA FROM SURVEY RESPONSES**



**Table B1. Project Data and Local Expenditures Reported by 133 Localities**

Locality	Locally Funded Projects Since 1997	Most Recent Project Using Local Funds			Project Using Most Local Funds Since 1997			Total Local Funds Spent Since 2008 on Roadway Projects (\$)
		Project Name	Approx. Total Project Cost (\$)	Est. Local Funding Contribution (\$)	Project Name	Approx. Total Project Cost (\$)	Est. Local Funding Contribution (\$)	
Albemarle County	>2	Jarmans Rap Road, Crozet	13,160,000	1,500,000	Meadow Creek Parkway (John Warner Parkway)	11,800,000	7,000,000	5,000,000
Arlington County	>2	North Nottingham Street	551,596	551,596	N. Quinn Street	392,320	392,320	40,000,000
Augusta County	>2	Whetstone Ridge road	250,000	125,000	Goose Creek Road	13,645,000	-	-
Botetourt County	>2	Arch Mill Improvements	40,000	20,000	Valley Road Improvements	95,000	47,500	60,000
Campbell County	>2	Carden Lane	700,000	400,000	Carden Lane	700,000	400,000	400,000
Chesterfield County	>2	Chalkley Rd (Deep Forest Rd. to Ecoff Ave) Curve Improvement	1,553,000	1,553,000	Woolridge Rd (over the reservoir) widening	9,600,000	9,600,000	40,000,000
City of Alexandria	>2	King St Rehab	2,000,000	1,000,000	Washington St	1,900,000	1,000,000	5,000,000
City of Charlottesville	1-2	Rte 250 Bypass Interchange at McIntire Road	33,553,000	1,500,000	Hillsdale Drive Extension	15,850,756	2,500,000	3,534,050
City of Colonial Heights	1-2	Bruce Avenue Phase I	750,000	750,000	Bruce Avenue Phase II	1,100,000	1,100,000	3,000,000
City of Danville	>2	Airport Drive curb and gutter	455,000	268,000	Collins Drive Bridge	1,300,000	900,000	2,467,000
City of Hampton	>2	Kecoughtan Rd./LaSalle Ave. Roadway Improvements	300,000	300,000	Pembroke Ave. Roadway Project	800,000	800,000	5,000,000
City of Lynchburg	>2	Florida Ave. Bridge	656,677	656,677	D Street Bridge	3,645,451	3,645,451	16,746,000
City of Manassas	>2	Maple Street	450,000	294,000	Wellington Road	9,375,000	1,117,000	6,938,000
City of Newport News	>2	Harpersville Rd Improvement at J. Clyde Morris Blvd.	65,000	65,000	Lucas Creek Road Bridge Replacement	1,800,000	1,800,000	100,000
City of Norfolk	>2	Va. Beach Blvd. - Jett to Briar Hill	18,000,000	451,000	Military Highway - I264 to Lowery	68,000,000	10,000,000	550,000
City of Poquoson	1-2	City Hall Avenue	4	4	-	-	-	-
City of Richmond	>2	Cannon Creek Trail Phase 1	825,000	705,000	Street Resurfacing & Rehabilitation	6,083,000	6,083,000	24,600,000
City of Roanoke	>2	Old Mountain Road Bridge Replacement	3,000,000	1,500,000	Old Mountain Road Bridge Replacement	3,000,000	1,500,000	7,000,000
City of Salem	>2	Lynchburg Turnpike Bridge	600,000	600,000	Lynchburg Tpk Bridge	600,000	600,000	-
City of Suffolk	>2	Prentis Street	3,000,000	2,000,000	Burbage Drive Ext.	2,800,000	2,800,000	5,000,000

Locality	Locally Funded Projects Since 1997	Most Recent Project Using Local Funds			Project Using Most Local Funds Since 1997			Total Local Funds Spent Since 2008 on Roadway Projects (\$)
		Project Name	Approx. Total Project Cost (\$)	Est. Local Funding Contribution (\$)	Project Name	Approx. Total Project Cost (\$)	Est. Local Funding Contribution (\$)	
City of Suffolk	>2	Nansemond Parkway/ Shoulders Hill Road Intersection Improvements	18,000,000	8,000,000	Holland Road/Rt. 58 Corridor Improvements	73,000,000	11,000,000	-
City of Virginia Beach	>2	Baker Road Extended	3,200,000	3,200,000	Princess Anne Rd/ Kempsville Rd Intersection	90,000,000	45,000,000	175,000,000
City of Waynesboro	>2	4th Street Bridge	400,000	400,000	4th Street Bridge	400,000	400,000	864,000
Culpeper County	>2	McDevitt Drive	-	-	Ira Hoffman Lane	-	-	-
Dickenson County	>2	-	-	-	-	-	-	-
Fairfax County	>2	Zion Drive	1,700,000	1,700,000	Unknown which project had the most local funds			Over 100,000,000
Fauquier County	>2	Brookside/Vint Hill Parkway	2,616,000	1,308,000	Vint Hill Public Street Network	9,000,000	4,500,000	2,720,462
Hanover County	>2	Rt. 301/New Ashcake Rd	742,330	742,330	Verdi Lane	97,560	97,560	3,435,000
Henrico County	>2	North Gayton Rd Extension	48,380,900	32,000,000	Same	-	-	39,040,993
Isle of Wight County	1-2	Muddy Cross Paving	354,630	150,000	-	-	-	255,000
Louisa County	>2	Ferncliff Business Park	778,000	150,000	Moss Nuckols Elementary School	590,918	315,809	711,338
Montgomery County	>2	Craig Creek Road	469,193	235,101	Yellow Sulphur Road	552,000	277,005	1,918,530
Prince George County	1-2	Crosspointe Centre	22,000,000	3,000,000	Crosspointe Centre	22,000,000	3,000,000	3,000,000
Rockingham County	>2	-	-	-	-	-	-	-
Russell County	>2	Century Farm Road	999,922	499,961	-	-	-	3,554,000
Scott County	1-2	-	-	-	-	-	-	-
Shenandoah County	>2	Borden Mowery Industrial Access Road	-	-	Borden Mowery Industrial Access Road	-	-	-
Spotsylvania County	>2	Smith Station / Piedmont Intersection	2,600,000	2,600,000	Massaponax Church Road Improved 2-lane and curve straightening	8,900,000	8,900,000	15,000,000
Stafford County	>2	Centreport Parkway (completed 2006)	8,000,000	8,000,000	Garrisonville Road Widening (SR - 630)	11,900,000	6,900,000	2,080,000
Town of Ashland	1-2	Woodside Lane	350,000	350,000	Same	-	-	-

Locality	Locally Funded Projects Since 1997	Most Recent Project Using Local Funds			Project Using Most Local Funds Since 1997			Total Local Funds Spent Since 2008 on Roadway Projects (\$)
		Project Name	Approx. Total Project Cost (\$)	Est. Local Funding Contribution (\$)	Project Name	Approx. Total Project Cost (\$)	Est. Local Funding Contribution (\$)	
Town of Blacksburg	1-2	Revenue Sharing Streetscapes, Sidewalks, etc.	5,000,000	2,500,000	-	-	-	3,500,000
Town of Bluefield	>2	Hockman Pike	5,000,000	1,500,000	Mountain Lane	500,000	-	1,500,000
Town of Chincoteague	1-2	Chicken City	1,500,000	14,000	Deep Hole Rd	7,000,000	68,000	14,000
Town of Christiansburg	>2	Christman Mill Rd	-	-	Christman Mill Rd	-	-	-
Town of Coeburn	>2	-	-	-	-	-	-	-
Town of Culpeper	>2	James Madison Highway Resurfacing	550,000	30,000	Western Inner Loop	10,100,000	5,000,000	1,000,000
Town of Dumfries	>2	Tripoli Heights drainage improvements	700,000	700,000	Rose Hill Drainage Improvements	650,000	650,000	-
Town of Gordonsville	1-2	-	-	-	Railroad grade crossing paving	6,000	6,000	6,000
Town of Halifax	>2	Banister Bridge Replacement Project (UPC#18878)	7,613,000	28,565	Downtown Revitalization Project (UPC 63573)	1,043,750	208,750	237,315
Town of Haymarket	1-2	Washington Street Enhancement Project Phase 1A	2,566,160	846,979	Washington Street Enhancement Project Phase 1A	2,566,160	846,979	82,983
Town of Herndon	>2	Dranesville Rd	900,000	450,000	Alabama Dr	2,500,000	2,500,000	635,000
Town of Kilmarnock	1-2	Main Street revitalization	5,000,000	1,800,000	-	-	-	1,800,000
Town of Lovettsville	1-2	Germanna Drive	110,000	110,000	-	-	-	360,000
Town of New Market	1-2	Shady Lane Drainage Improvement Project	375,000	200,000	-	-	-	300,000
Town of Orange	1-2	Daily Dr	1,100,000	1,100,000	-	-	-	1,100,000
Town of Pulaski	1-2	Duncan Ave. bridge deck	750,000	15,000	-	-	-	-
Town of Rocky Mount	>2	Uptown Revitalization Project	1,500,000	400,000	Downtown Revitalization Project	1,000,000	250,000	550,000
Town of South Boston	>2	-	-	-	-	-	-	-
Town of South Hill	1-2	Raleigh Avenue, 2 phases	Uncertain <2 million total	Uncertain <15% of total expenditures	-	-	-	Uncertain approx 150,000

Locality	Locally Funded Projects Since 1997	Most Recent Project Using Local Funds			Project Using Most Local Funds Since 1997			Total Local Funds Spent Since 2008 on Roadway Projects (\$)
		Project Name	Approx. Total Project Cost (\$)	Est. Local Funding Contribution (\$)	Project Name	Approx. Total Project Cost (\$)	Est. Local Funding Contribution (\$)	
Town of Strasburg	>2	Queen Street	208,000	20,800	Ebley Street	105,000	15,500	100,000
Town of Stuart	>2	Uptown Revitalization Project	1,500,000	700,000	-	-	-	100,000
Town of Tangier	1-2	Airport/ Road Rehabilitation/ Resurfacing	2,000,000	40,000	-	-	-	40,000
Town of Tazewell	1-2	Route 61	3,400,000	900,000	-	-	-	900,000
Town of Vienna	1-2	Park Street NE	100,000	100,000	-	-	-	1,000,000
Town of Vinton	1-2	-	-	-	-	-	-	-
Town of Warrenton	>2	Intersection Improvements Winchester & Broadview Ave	650,000	13,000	Shirley Avenue Widening	8,000,000	150,000	1,822,855
Town of Wytheville	>2	Combined: Phases I & II Nye Connector (Bob Spring Rd), Madison St Ext (west of S. 6th St - end of Cul-de-sac); Community Blvd Construction from Peppers Ferry Rd to Community Center (2002-04)	539,721	500,000	-	-	-	500,000
Warren County	>2	-	-	-	-	-	-	-
Westmoreland County	>2	-	-	-	-	-	-	-
Wythe County	>2	New Road for Industrial Access (Economic access funds)	1,400,000	500,000	Same	-	-	850,000

The survey was distributed to a total of 235 localities. Responses in surveys that were apparently incomplete are included.

## Responses to Question 9 of the Survey: Request for Comments

The following comments were submitted by localities in response to the final survey question:

9. Please provide any additional comments, questions, or insights regarding this survey or topic. \_\_\_\_\_

The names of individuals were removed, and the comments were categorized by whether or not the locality reported having completed any locally funded road project since 1997.

### Comments from Localities Reporting a Locally Funded Project(s)

- Campbell County: No road projects identified to receive local funds.
- City of Charlottesville: The City of Charlottesville feels strongly that state and federal funding is necessary to ensure proper investment in the state/nation's transportation infrastructure.
- City of Lynchburg: We have been fortunate enough to have other means to assist us with transportation funding, but the slow-down in the economy is quickly diminishing our resources and capacity to fund projects on the local level.
- City of Manassas: \$5.0 million dollars was also spent during this time frame toward an Old Town Parking Deck.
- City of Norfolk: Various transportation issues facing our region include congestion, maintaining mobility and growth in the region, balancing the need for travel with the quality of life in communities, providing accessible travel options, and improving safety within our roadways. The need for sustainable funding to maintain and expand our transportation system is critical.
- City of Poquoson: We have recently obtained funds through the Hampton Roads Transportation Planning Organization process of allocating state and federal funding. Funding will be used to widen a road within the City from two to four lanes, using RSTP funding. The only other "road" projects have been City-owned drives to City Hall (labeled City Hall Avenue, but not part of the City's right-of-way system) and a school board drive for bus traffic at Poquoson's new elementary school. Both of these roads were built as part of larger projects focused on constructing new City buildings. Poquoson's roads are essentially completed, with perhaps the potential for 1-2 more through undeveloped areas. We hope to continue to rely on RSTP or CMAQ funding for upgrades or for these new funds. The recent trend toward larger, multi-jurisdictional projects being prioritized over individual City projects could have the unintended consequence of penalizing citizens in small cities and towns because of their size and location.
- City of Suffolk: Estimates are very rough and based on road projects "completed." Increased local funding has been identified and appropriated in the last two to three years on road projects that are still in design or are mid construction, but not completed.
- City of Waynesboro: 5-Year Expenditures include local match on a VDOT 6-year project (Approximately \$300,000).
- Fairfax County: The County has completed hundreds of roadway, transit, sidewalk, trail, bicycle and bus stop projects funded fully or partially with local funds. When all types of



capital and operating projects for all modes are included, Fairfax County spends about \$280 million annually from local sources on transportation.

- Henrico County: County uses Revenue Sharing, CMAQ, RSTP and other various grants as they become available.
- Louisa County: I am not certain exactly what funds our road expenditures have come from, but the General Fund and the Capital Improvement Fund are likely candidates. I am also not positive we have used proffers for this purpose, but we did use proffers for the Moss Nuckols School, which included the road project.
- Montgomery County: All of the listed projects were completed using VDOT revenue sharing funds (50% local, 50% state) with the exception of \$800,000 spent on Industrial Access Projects.
- Rockingham County: The only projects Rockingham County has done were revenue sharing. If the survey includes revenue sharing projects, seems like that info is better provided directly by VDOT. That's where I'm going to have to go to get the information.
- Scott County: We have only worked on one road project which was completed approximately 5 years ago through the Economic Development Authority.
- Stafford County: [Name] is meant to be listed as a back-up contact if I cannot be reached. Stafford County Board of Supervisors passed a 2008 Bond Referendum with authorization to borrow 70 million for transportation improvements which the residents of Stafford County approved. Stafford County has and will be applying for the maximum amount of revenue sharing (\$10 million) allowed by VDOT for road improvements. Stafford County currently collects impact fees in select areas (now one select area) and is pursuing a countywide impact fee.
- Town of South Hill: Two phases of Raleigh Avenue project completed. Would like to work with VDOT to complete Phase 3 connecting Hwy 47 to Parker Park area within next 5 years to improve safety and traffic flow. Other projects uncertain at this time.
- Town of Strasburg: Additional funding and how you are able to use the funding for roadway projects would be beneficial. The price for material has fluctuated in the upward direction over the past 5 years and the General Fund has not been able to keep up.
- Town of Tangier: We would like to see our roads/lanes that aren't state maintained to become state maintained roads/lanes.
- Town of Vienna: I assume you want us to include sidewalk construction as a roadway project.

### **Comments From Localities Reporting No Locally Funded Project(s)**

- City of Buena Vista: No locally funded projects have been undertaken since 2009. Prior to that time there may have been projects but I have no records that substantiate them.
- Essex County: Essex County has no locally funded roads—as we do not have enough funding to be able to accomplish these very needed projects.
- Frederick County: Of these sources General funds least likely to be used and more often only as matching for other sources.
- Gloucester County: Gloucester does not have the staff or resources to locally administer projects; however, we have had developers proffer off-site improvements to get some mutually beneficial projects completed (extended turn lanes at Crewe Road and other

intersections) and our EDA used funding for a turn signal at the Business Park (not sure how much of their funding was used to have this completed).

- Northampton County: Our community has relied upon the distribution of transportation dollars generated through the gas tax to oversee our local road system.
- Town of Damascus: The Town of Damascus has only paved existing streets in the last 15 years.
- Town of Dublin: The Town of Dublin does not own its roadways and does not qualify for any VDOT funding or management of its roadways. Our population level of 2625 does not provide any funding available for anything other than maintenance assistance to VDOT.
- Town of Irvington: VDOT handles all streets.
- Town of Lawrenceville: VDOT maintains all roadways within the corporate limits due to population size.
- Town of Louisa: We are small and only use TEA 21 funds for road projects.
- Town of Rich Creek: All streets in Rich Creek belong to VDOT; therefore the town had no projects. We did however have a TEA-21 project for sidewalk replacement. I did not think that applied but will be glad to supply any information you need on that project.