REPORT OF THE
CENTER FOR INNOVATIVE TECHNOLOGY

Dig Once Feasibility Study (HJR 77, 2018)

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

HOUSE DOCUMENT NO. 3

COMMONWEALTH OF VIRGINIA
RICHMOND
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Dig Once Feasibility Study

Presented to the Governor and the General Assembly

January 9, 2019

Table of Contents

Executive Summary

In 2018, the Virginia General Assembly requested, through HJ77, that the Center for Innovative Technology (CIT) study the feasibility of a statewide, blanket dig once policy, including installation of conduits with bridge and tunnel construction projects, for all Virginia Department of Transportation (VDOT) districts. Based on HJ77 criteria, to guide the study, a dig once policy is defined as, *"A policy requiring VDOT to install and maintain conduit in all VDOT-maintained Rights of Way (ROW), including bridges and tunnels, when construction is being performed in that ROW."*

According to stakeholders, three primary challenges to accessing VDOT ROW to install broadband infrastructure exist:

- accessing complex intersections, bridges, and tunnels
- perceived policy fragmentation across VDOT's nine districts
- costs associated with ROW access

Based on the criteria established in HJ77, findings from the Dig Once Feasibility Study include:

- A blanket dig once policy, including the installation of conduits with bridge and tunnel construction projects, for all VDOT districts - as defined above - does **not** appear to be feasible.
- While a dig once policy, as defined above, may not be feasible, thematic issues did emerge that should be given more attention:
    - access to bridges and tunnels
    - perceived policy fragmentation across all VDOT districts

CIT recommends that further analysis, coordination, and planning focus on *streamlining the permitting process and associated costs.* This will help make installing and enhancing broadband infrastructure cheaper, easier, and faster throughout the Commonwealth.

Introduction

Broadband has evolved into a virtual necessity for daily life. Broadband access influences the economic prospects, social connectivity, and educational opportunities available to everyone. In recognition of the vital role broadband plays in society, Governor Northam announced his vision that the Commonwealth should achieve functionally universal broadband coverage within 10 years.

Unfortunately, broadband access is dispersed unevenly, resulting in a digital divide. To bridge that divide, infrastructure must expand to reach those that need access. One way to accomplish this is to minimize the number of times the ground is disturbed to install broadband infrastructure - to "dig once".

Benefits

A dig once policy can have many benefits. For instance, it can *potentially lower the cost of broadband deployment* by coordinating with internet service providers (ISP), *facilitating access to public rights of way (ROW)* and *minimizing the number of excavations* required to install telecommunications infrastructure. This can prevent unnecessary digging within a ROW after construction is complete.

Allowing ISPs access to an open trench can *promote coordination amongst multiple providers* related to broadband infrastructure placement, as opposed to locating in multiple trenches. A dig once policy can *provide consistent guidelines* under which conduit would be installed and utilized.

As conduit is added under a dig once policy, it *could be mapped* for better understanding of broadband infrastructure placement, which would facilitate more effective broadband planning to better reach unserved areas of the Commonwealth.

By reducing the number of excavations, a dig once policy can *reduce environmental impacts* such as soil disruption, diminished water quality resulting from sediment, and potential habitat disruption.

From an administrative standpoint, a dig once policy could prove beneficial by *potentially reducing the number of broadband infrastructure permits needed*, if multiple entities take advantage of an open trench.

All of these aforementioned dig once policy benefits can save time and money.

Dig Once Feasibility Study Origin

Elected officials throughout the Commonwealth are striving to bridge the digital divide to provide broadband access – and the opportunities that come with it – to all Virginians. In 2018, the Virginia General Assembly directed the Secretary of Commerce and Trade in HJ77[1] to request that the Center for Innovative Technology (CIT) study the feasibility of a statewide, blanket dig once policy, including the installation of conduits with bridge and tunnel construction projects, for all VDOT districts. The General Assembly sought to determine if a blanket, statewide "dig one policy" was an effective way to help advance broadband infrastructure in Virginia.

Methodology

HJ77 establishes the following criteria for examining dig once policy feasibility:

[1] See Appendix A - HJ77 Bill Text as Passed House and Senate for HJ77 in its entirety.

- the policy should be statewide, applying to all VDOT districts, and
- involve conduit installation for bridge and tunnel construction projects.

There are many variations of dig once policies[2], however, CIT chose the following definition in order to meet the criteria listed above when guiding this feasibility study: *"A policy requiring VDOT to install and maintain conduit in all VDOT-maintained ROW, including bridges and tunnels, when construction is being performed in that ROW."*

In providing further guidance, HJ77 establishes that CIT consult with the Virginia Broadband Advisory Council (BAC), the Virginia Department of Transportation (VDOT), telecommunication and cable providers, and utility providers.

The BAC received updates at its meetings and some members of the BAC were directly involved in the process. For instance, Del. Boysko introduced HJ77 and was updated on study progress periodically, while Ray LaMura is President of the Virginia Cable Telecommunications Association (VCTA), which was a large contributor to the feasibility study process. Other large contributors include VDOT and the Virginia, Maryland, & Delaware Association of Electric Cooperatives (VMDAEC). Additional stakeholders CIT consulted with for feedback and insight during the feasibility study process include the Virginia Association of Counties (VACo), Virginia Association of Planning District Commissions (VAPDC), Virginia Department of Environmental Quality (DEQ), and Dominion Energy Virginia (DEV).

Many stakeholders from a variety of backgrounds were involved in making this Dig Once Feasibility Study possible. CIT is grateful for their thoughtful insight and eagerness to contribute to this study.

Current Challenges to Accessing VDOT Rights of Way

According to stakeholders, there are currently three primary challenges to accessing VDOT ROW to install broadband infrastructure, which are:

- accessing complex intersections, bridges, and tunnels
- perceived policy fragmentation across VDOT's nine districts
- costs associated with ROW access

Challenges Associated to Accessing Complex Intersections, Bridges and Tunnels

Challenges associated with accessing complex intersections, bridges, and tunnels have been a focal barrier to broadband deployment for years and remains such for members of VCTA and VMDAEC. In fact, this was identified as one of the top barriers for VCTA and VMDAEC members in regards to dig once related challenges.

Presently, design and construction of bridges, tunnels, and complex intersections do not include conduit for broadband infrastructure, and obtaining permission to attach to existing bridge structure can be difficult for providers. Section 7.6 of VDOT's *Utility Manual of Instruction* (Virginia Department of Transportation, 2011) lays out the high standards for utility bridge attachments.

> Due to current bridge design standards involving full and semi-integral bridge abutments any and all utility bridge attachments are highly discouraged. Utilities may be attached to bridge structures

[2] For examples of other dig once policies, please see the section entitled Dig Once Policies Outside of Virginia.

only when it is not feasible or economically reasonable to locate them elsewhere. All alternate locations for the installation of utilities shall be considered by the utility owner prior to submitting a request to attach to a bridge structure. The design for bridge attachments must be in accordance with the VDOT Bridge Attachment Standards. Utilities shall not be placed on the exterior of bridge structures except when there is no other alternative and then only with the approval of the State Structure and Bridge Engineer.

VDOT's existing bridge attachment policy can often result in significant cost and delays for internet service providers. Additionally, the permitting process for broadband infrastructure installation on bridges and tunnels often takes more time than land use permits due, in part, to performing a necessary in-depth structural review. Furthermore, most tunnels involve limited access ROW, requiring that negotiations related to resource sharing or ROW fees be concluded prior to granting permits.

VCTA states that its

member companies have identified several broadband deployment projects which require access to or through a tunnel, bridge, or complex intersection. Currently, this infrastructure is not designed or built with conduit to ease the deployment of telecommunications infrastructure, or consideration that conduit could be added in the future. At times, our members have been asked to hire dive teams and deploy infrastructure underwater, which adds extreme costs to a project – sometimes nullifying its feasibility.

In reference to tunnels, VDOT notes that conduit, cables, and pipes can often be accommodated through utility chambers.

Fragmented Policies Across VDOT's Nine Districts

Perceived policy fragmentation and inconsistent permit response times amongst VDOT's nine districts can potentially delay broadband deployment and may lead to inefficient use of provider resources.

VCTA asserts that its member companies experience a wide range of permitting response times based on regions. These response times can directly affect deployment and customer wait times for service. Examples of differing permitting timeframes include:

1. Harrisonburg permit approval is approximately 3 weeks
2. Richmond permit approval is approximately 30 days.
3. NOVA permit approval can take anywhere from 60-90 days.

A compounding factor is that internet service providers, which includes electric cooperatives, often operate within multiple VDOT districts where perceived policy fragmentation and permit response times may vary for projects. Variable policies and procedures can make it difficult to provide uniform service levels. VMDAEC provided some examples for permitting and bonding requirements for this study.

For instance, in one district, a standard overhead line crossing a roadway may be covered under a blanket permit that allows for construction without prior VDOT approval, yet in another district the same project might require prior approval, extensive engineering review, and permit application fees.

> In one particularly egregious example, two districts varied by a factor of 10x on their bonding requirements [for similarly situated projects].

Such variability in terms of policies and permitting times/expenses can significantly slow broadband deployments.

Preexisting policy fragmentation can be explained, in part, due to numerous state and federal statutes[3] that address access fees, processing timeframes, and access - or means of access - to interstate ROW.

Policy and timeframe differentiation is noted by VDOT. Below is an explanation as to why some of the variation exists and what VDOT is doing to address the issue.

> It is noted that the Commonwealth Transportation Board (CTB) Land Use Permit Regulations set forth rules relating to permits and fees for use of the right of way permit issuance (Virginia's Legislative Information System, 2019a). The regulations should be consistently administered across the state and to the extent that the regulations are not being administered consistently, VDOT stands ready to address such inconsistency. While there could be circumstances that could delay permit issuance, VDOT attempts to work with providers to resolve those issues on a case-by-case basis. Finally, the time that it takes to issue a permit can differ simply because different land use offices have different workloads and must deal with differing local issues or requirements. These can significantly impact the time it takes to process a permit request.
>
> VDOT would also note that, pursuant to Chapter 505 of the 2018 Session of the General Assembly, VDOT has developed and submitted to FHWA for approval, an expedited land use permit process by which public or private utility companies that offer high-speed Internet services may apply to use right-of-way maintained by the Department. It is noted, however, that such process shall be designed to apply only when the proposed use of the right-of-way does not make substantial changes to such right-of-way and does not interfere with the safety or ongoing maintenance of the right-of-way for transportation purposes.

Costs Associated to ROW Access

Stakeholders identified what are perceived as excessive and varying costs to access VDOT-maintained ROW as a significant challenge to broadband deployment. According to VCTA, its members' subscribers (i.e. the consumers) pay more than $14.7 million per year in VDOT ROW fees.

VDOT's permitting fees vary depending on a number of factors including:

- the work being requested,
- the provider, for example, some companies are certificated providers of telecommunication services, which, by law, are exempt from permit fees,
- if the projects includes small cell wireless facilities,
- if the project involves longitudinal installations along limited access highways – this would require resource sharing negotiations which take significant time and costs/fees vary based upon the value of the right of way, and

[3] See Appendix D -State and federal statutes regulating access to ROW, Bridges, and Tunnels

- if the request for work is complicated or out of the ordinary – for instance, long runs of 2+ miles that cross bridges. In cases like these, the local VDOT permit office can require the permittee to pay the actual cost of VDOT review and inspection, which can be significantly more than the standard permit fees.

In addition to the permitting fees, there are fees for accessing VDOT-maintained ROW that are set out in the Land Use Regulations (Virginia's Legislative Information System, 2019b). Providers seeking to utilize VDOT conduit with excess capacity can enter into a Resource Sharing Agreement with VDOT. This fee varies based on the location and length of conduit the provider plans to use and can be paid through goods, services, monetary value, or a combination thereof.

Other Challenges

While the challenges noted above are the primary difficulties identified by stakeholders, they also provide the following as additional challenges, however.

- challenges associated to sharing ROW with other occupants
    - ensuring there is enough room for multiple utilities and the effects of multiple utilities digging near one another
- overall lack of coordination involved in these processes

Challenges of a Dig Once Policy

As mentioned earlier in this report, for the purposes of this study, CIT chose to define a dig once policy as a policy requiring VDOT to install and maintain conduit in all VDOT-maintained ROW, including bridges and tunnels, when construction is being performed in that ROW. VDOT, VMDAEC and VCTA all identified challenges with this policy.

VDOT-Identified Challenges

Inefficient Use of Taxpayer Dollars

According to VDOT, the primary risk of a dig once policy that requires the installation of conduit on all bridges and tunnels is the potentially inefficient use of taxpayer dollars. Over half (52% of 13,175 total) of VDOT-maintained bridges are less than 75 feet long. It is estimated that the cost of installing conduit on new bridges is approximately $240 per foot[4] compared to the cost of burying broadband infrastructure through directional boring, which VDOT estimates to be $15 - $30 per foot. Additionally, installing conduit on bridges and tunnels is another component that requires inspection. Installing conduit increases the time and cost of inspections. It is important to note, however, that there may be additional factors to consider - including environmental concerns - that could influence the decision of whether to attach to a bridge or bury infrastructure.

In addition to potentially inefficient use of taxpayer dollars, VDOT noted that a dig once policy based on highway projects would not be an efficient means of expanding broadband. Many roadways, bridges, and tunnels may not undergo improvements for some time; this is especially so for more rural areas (that have less traffic congestion), which happen to be in greater need of broadband. Therefore, the impact of a dig once policy of this kind would be slow to implement and may benefit more

[4] There are many factors to consider in regards to cost of installing conduit on existing structures, but it is assumed to be greater than $240 per foot.

population dense areas that already have broadband, as opposed to more unserved areas of the Commonwealth.

Cost

Below is a conduit installation cost estimate provided by VDOT[5].

- Cost per mile to install conduit in ROW (2 at 2" & 1 at 3") is $125k - $175k.
- Cost of installing hardware needed to support conduit on a new structure (new construction) is an estimated $240 per foot.
- Minimum estimated cost to install conduit on the entire bridge inventory[6] (2.23 million feet) is $533M.
- Minimum estimated cost to install conduit on the entire tunnel inventory[7] (44,000 feet) is $11M.
- Additional annual bridge inspection cost is estimated to be $750K.

In regards to a potential fee structure for accessing conduit deployed under a dig once policy, VDOT suggests that at a minimum the fee structure should allow for recoupment of installation and maintenance of the VDOT conduit systems.

Provider-Identified Risks

The following is a list of potential risks and concerns regarding a dig once policy that were identified by VMDAEC's members.

- If a dig once policy is only applied to VDOT-maintained ROW and not ROW maintained by other entities, the conduit may not be utilized in some areas due to a scattered/fragmented conduit system.
- VDOT fees for the use of a conduit system in their ROW could be expensive and/or recurring.
- If this becomes the only way to utilize VDOT ROW, the cost or availability of the conduits may lead providers to get their own easements outside of the ROW (if possible).
- May likely add to future expenses when splicing is required to accommodate new connections.
- Could cause unintended consequences and create questions. For instance, who would monitor the conduit if an unauthorized company pulls their cable through? Who has oversight of the conduit if it is damaged - and who is responsible for fixing it? How many companies can use the same conduit and how secure would that be?
- If only one company is authorized to use the conduit space, it would cause delays for other companies who want access to the conduit.
- Could hinder competitive service providers.

Additionally, VCTA avows, "even where VDOT installs facilities, *no provider should be obligated to use those facilities.*[8] Providers may have engineering, technical, or other resource concerns that make use of state conduit or facilities undesirable."

[5] This information is based on 2017 calculations and is subject to change.
[6] VDOT does not have a database that currently identifies bridges with conduit.
[7] VDOT does not have a database that currently identifies tunnels with conduit.
[8] Emphasis added.

Stakeholder Recommendations

VDOT recommendations

VDOT would offer that a dig once policy should incorporate the following, or similar, criteria:

- Consideration should be given to applying policy to construction projects which are requested as part of a locality's project application (in Smart Scale and Revenue Sharing processes),
- Policy should only be applied to construction projects that are longer than 1 mile in length or that are in a portion of highway having no open conduit that is immediately adjacent to a portion of highway that has existing open conduit,
- For projects involving bridge and tunnels, any such policy should allow for VDOT discretion in determining the most cost effective and most appropriate manner and means by which conduits should be installed,
- Policy should not be applied to maintenance projects

VCTA Recommendations

VCTA members recommend:

- Should VDOT install conduit, they build duct banks of at least four to sixteen, 4" conduits into any construction/design plans for bridges and tunnels.
- Amend VDOT regulations to exempt broadband who pay VDOT ROW fees from additional charges in the form of shared resource agreements or similar fees for bridges, tunnels, or other limited access areas.
- VDOT not charge any additional fees for access to VDOT-owned (on bridges or tunnels, or elsewhere) since subscribers already pay a monthly ROW fee to VDOT. Currently, the 2018 ROW fee is $1.09 per subscriber, per month.

VMDAEC Recommendations

VMDAEC and its members recommend:

- Apply laws, policies, and procedures consistently across the entire state except where there is reasonable justification for a difference, such as highly congested area vs. rural areas. Personal district or residency preferences should never be the cause of variations.
- The cost of conduit space would have to be less than other installation options (direct bury, overhead, etc.) if it were to successfully encourage further deployment of fiber and broadband.
- Apply a dig once policy uniformly to all bridges and tunnels.
- The priority of a dig once policy should be on bridges and tunnels and not on roadways.
- A dig once policy should include conduits underneath roadways as well to allow transitioning areas to serve from one side of the road to another versus parallel runs along the highways.

Additional Stakeholders

In order to understand how a dig once policy would fully affect the Commonwealth, CIT reached out to various entities that could potentially be affected by such a policy. These entities include: Virginia Association of Counties (VACo), Virginia Association of Planning District Commissions (VAPDC), Virginia Municipal League (VML), Virginia Department of Environmental Quality (DEQ), Dominion Energy Virginia (DEV), and American Electric Power (AEP).

CIT received responses from VACO, VAPDC, DEQ, and DEV. Below is input they provided for inclusion in this report.

VACo

- VACo's recently adopted legislative program includes the following priority position: *VACo urges the Commonwealth and the Federal Government to assist communities in their efforts to deploy universal affordable access to the internet for all areas, particularly in underserved and rural areas.*
- Given such, VACo is supportive of a cost saving VDOT policy to install and maintain conduit when construction is being performed, as this would prevent unnecessary digging of a ROW a second time after construction is complete.
- VACo encourages any policy to include all degrees of construction, *where economically feasible and structurally sound.*[9]
- While VACO's priority is to underserved and rural areas, such a policy can also benefit urban areas where costs to repair and maintain ROW needs to recognize the sound fiscal policy of a dig once approach.
- Responsibility for the maintenance of conduit may depend on a case-by-case basis. For example, many localities with existing broadband authorities already have an informal policy of asking for broadband conduit easements at the same time they are seeking water and sewer easements.

VAPDC

- This study and review of "dig once" policy issues is a great start. The "wins" of a dig once policy in the Commonwealth would be lower costs of infrastructure deployment when completed in conjunction with other infrastructure improvements and promoting and facilitating integration of broadband infrastructure.
- While a dig once policy could be most utilized in more densely populated areas, there should be consistent criteria/guidelines under which conduit would be installed (for which open trenches, over what distance, etc.).
- The industry should be afforded a simple application process for use of such conduit, but to include their demonstration as to how they would serve unserved customers (think about if they are running fiber for one large customer, how would tap-ins along the way be provided). It also would be helpful to have a mapping of conduit that is available and that which would be installed.

DEQ

- DEQ supports the reduction in the number of land-disturbing activities (and associated stream/wetland impacts) which is contemplated with a Dig Once policy.
- From DEQ's perspective, a Dig Once policy has the potential to reduce the overall number of environmental impacts, including impacts to water quality resulting from repeated excavations in rights-of-ways.
- A Dig Once policy would reduce the potential number of projects reviews, permits, and compliance inspections to be performed by DEQ staff. DEQ believes that such a policy may provide greater environmental protections, while actually lessening the use of resources.

[9] Emphasis added.

DEV

- This could possibly reduce the number of dig-ins DEV experiences during a broadband deployment.
- It may unnecessarily tie up ROW that could be used for other installations like streetlight poles. Typically, DEV prefers to be on private property.
- DEV's greatest expense is often the road crossings. The first consideration could possibly be to install conduits at intersections.
- Since this is intended for unserved areas, DEQ would not expect the ROW in those areas to be congested. It may be more cost effective for the broadband company to just direct bury vs. paying VDOT's annual rent. The rent should incite the use of the VDOT provided conduit compared to adding a new trench line.
- VDOT charges to add a bridge attachment can be expensive and difficult to obtain.
- Currently our customers own and maintain conduit installed for future DEV use until DEV installs the cable. It then becomes owned and maintained by DEV.
- Road crossings are costly and can have permitting delays with VDOT and limitations attached (working hours, open cut moratoriums, extra depth, etc.). This impacts the speed with which DEV can provide service.
- It is difficult for us to apply a blanket policy on conduit count requirements for road crossing as the needs vary across our service territory. Currently as part of the design process for VDOT road projects, DEV provides input on the number of conduit crossings required.
- Conduit/duct bank systems for future use by DEV would need to be separate from any other utility and maintain required separation.
- Currently DEV has no shared conduit for broadband attachments.
- This process would require a coordinated effort by utilities if utilized on a VDOT project.

Dig Once Policies Outside of Virginia

Below is a sample of Dig Once policies in other states around the country.

- Arizona – Arizona's Senate Bill 1402 requires the Department of Transportation to coordinate the installation of multi-user conduit in state highway ROW. This bill targets rural highways specifically (Arizona Legislature, 2012).
- California – California legislation (AB 1549) requires the Department of Transportation to notify companies working on broadband deployment of Department-led highway construction projects and authorizes those companies to coordinate with the Department on conduit installation (Hughes).
- Minnesota – Minnesota's Office of Broadband Development, in collaboration with the Department of Transportation and private entities, encourage and coordinate "dig once" efforts for the planning, relocation, installation, or improvement of broadband conduit within the right-of-way in conjunction with any current or planned construction (Office of the Revisor of Statutes, 2018).
- Nevada - Senate Bill No. 53 creates the Telecommunications Advisory Council within the Department of Transportation and establishes its duty, which is, among other things, to provide information, advice, strategic plans, priorities and recommendations to assist the Department in administering access to rights-of-way to telecommunications providers for statewide telecommunications purposes. This bill also requires the Director to coordinate with

telecommunications providers for the reasonable, efficient, and cost effective installation, maintenance, operation, relocation and upgrade of telecommunications facilities within rights-of-way for state highways (Nevada Legislature, 2017).

- Utah – UDOT has a policy and practice to install oversize conduit during road construction, facilitating later broadband expansion. UDOT owns the conduit and leases to ISPs (Council of State Governments, 2017).
- West Virginia - West Virginia has a Dig Once policy that encourages telecommunications carriers to coordinate the installation of broadband conduits to minimize costs for carriers and to minimize disruption and inconvenience to the traveling public (West Virginia Division of Highways, 2018).

Municipalities

- Boston - Boston has a "joint build" policy that requires all telecoms to install their cable in shared underground conduits on a shared-cost basis. This policy also designates a "lead company" that is tasked with coordinating efforts between all telecoms involved in the installation process, planning, and implementing the installation (CTC Technology & Energy, 2017).
- San Francisco - San Francisco allows for a roadside trench to be left open after construction ends. This trench is later used to bury conduit and is shared among broadband providers, if possible, to avoid the costs associated with additional excavation in areas where the entire right of way is paved (Vora, 2018).

Federal

- H.R.1625 - The Consolidated Appropriations Act, 2018 (Congress.gov, 2018) was signed by the President to become Public Law No: 115-141 on March 23, 2018. This public law "directs States to lay the groundwork for potential Dig Once policies" (Brodkin, 2018). More specifically the law directs the U.S. Secretary of Transportation to enact regulations to ensure that States:

    1. identify broadband utility coordinators who are responsible for facilitating broadband infrastructure right of way efforts within the state,
    2. establish processes for communicating with and notifying broadband providers regarding efforts to facilitate broadband infrastructure installation in rights of way, and
    3. coordinate efforts between transportation planning and broadband infrastructure planning, including strategies to minimize repeated excavations involving installation of broadband in rights of way.

  Thus far, the U.S. Secretary of Transportation has not proposed regulations in response to this legislation. This law is not a mandate that States install, or allow the installation of, broadband infrastructure in a highway right-of-way.

Findings

A dig once policy that requires VDOT to install and maintain conduit in all VDOT-maintained ROW, including bridges and tunnels, appears to be a **cost prohibitive use of taxpayer dollars**. **Conduit installation would likely be slow** – potentially even slower for areas that are in significant need of

broadband. Furthermore, there is a possibility that **conduit installed in VDOT ROW may not be utilized by providers** due to technical concerns, space availability, and access costs.

Through its discussions with stakeholders during this Dig Once Feasibility Study, CIT has found that the following thematic issues emerge:

- access to bridges and tunnels,
- perceived policy fragmentation across VDOT's nine districts.

In conclusion, any dig once policy should focus primarily on bridges and tunnels throughout the Commonwealth and creating more uniformity amongst all VDOT districts. Based on the research and input that emerged during this study, **CIT recommends that further analysis, coordination, and planning focus on streamlining the permitting process and associated costs.** This will help make installing and enhancing broadband infrastructure cheaper, easier, and faster throughout the Commonwealth.

Works Cited

Arizona Legislature. (2012). *Senate Bill 1402.* Retrieved from https://www.azleg.gov/legtext/50leg/2r/bills/sb1402s.htm

Brodkin, J. (2018, March 7). *"Dig Once" rule requiring fiber deployment is finally set to become US law*. Retrieved from ARS Technica: https://arstechnica.com/tech-policy/2018/03/dig-once-rule-requiring-fiber-deployment-is-finally-set-to-become-us-law/

Congress.gov. (2018, March 23). *H.R.1625 - Consolidated Appropriations Act, 2018*. Retrieved from Legislation, 115th Congress: https://www.congress.gov/bill/115th-congress/house-bill/1625/text#toc-HFDDD6E27DBB144C4A4B0FDB7962684E2

Council of State Governments. (2017). *Dig Once: Using Public Rights-of-Way to Bridge the Digital Divide.* Retrieved from The Current State: https://www.csg.org/pubs/capitolideas/enews/cs41_1.aspx

CTC Technology & Energy. (2017). *Techical Guide to Dig Once Policies.* Kensington, MD: Columbia Telecommunications Corporation.

Hughes, K. (n.d.). *Dig Once Policies and Best Practices.* Retrieved from www.dot.ca.gov/hq/tpp/offices/omsp/system_planning/.../DigOnceWhitePaper.docx

Nevada Legislature. (2017). *Senate Bill 53.* Retrieved from https://www.leg.state.nv.us/Session/79th2017/Bills/SB/SB53_EN.pdf

Office of the Revisor of Statutes. (2018). *116j.391 Coordination of Broadband Infrastructure Development.* Retrieved from Minnesota Statutes: https://www.revisor.mn.gov/statutes/cite/116J.391

Virginia Department of Transportation. (2011). *Utility Manual of Instructions.* Retrieved from Utility Relocation Policies and Procedures: http://www.virginiadot.org/business/resources/Right_of_way/Utility_Manual02132012_TechRev.pdf

Virginia's Legislative Information System. (2019a). *Land Use Permit Regulations*. Retrieved from Administrative Code: https://law.lis.virginia.gov/admincode/title24/agency30/chapter151/

Virginia's Legislative Information System. (2019b). *Permits and Agreements*. Retrieved from https://law.lis.virginia.gov/admincode/title24/agency30/chapter151/section30/

Vora, R. (2018, July 10). *The Power of "Dig Once"*. Retrieved from Nexus Connectivity: https://www.nexusconnectivity.com/fiberopticblog/digonce

West Virginia Division of Highways. (2018). *Guidance on Implementing the Dig Once Policy.* Retrieved from https://broadband.wv.gov/assets/files/pdfs/news/Dig-Once-Policy-Guide-October-2018.pdf

Appendix A - HJ77 Bill Text as Passed House and Senate

2018 SESSION

ENROLLED

ENROLLED

HOUSE JOINT RESOLUTION NO. 77

Directing the Secretary of Commerce and Trade to request the Center for Innovative Technology to study the feasibility of a statewide dig once policy, including the installation of conduits with bridge and tunnel construction projects. Report.

Agreed to by the House of Delegates, February 9, 2018
Agreed to by the Senate, March 5, 2018

WHEREAS, dig once policies seek to minimize the amount of excavation required to install infrastructure and facilitate access to rights-of-way for the purpose of expanding affordable access to broadband, especially in unserved or underserved areas of the Commonwealth; and

WHEREAS, such policies may include provisions that require road construction projects to include the installation of oversized or open-access conduits to accommodate improved broadband installation; now, therefore, be it

HJ77ER

RESOLVED by the House of Delegates, the Senate concurring, That the Secretary of Commerce and Trade be directed to request the Center for Innovative Technology to study the feasibility of a statewide dig once policy, including the installation of conduits with bridge and tunnel construction projects.

In conducting its study, the Center for Innovative Technology (CIT) shall consult various stakeholders, such as the Virginia Broadband Advisory Council, the Virginia Department of Transportation (VDOT), telecommunication and cable providers, and utility providers. The CIT shall also examine the feasibility of a blanket policy for all nine VDOT districts.

All agencies of the Commonwealth shall provide assistance to the CIT for this study, upon request. The CIT shall complete its meetings by November 30, 2018, and shall submit to the Governor and the General Assembly an executive summary and a report of its findings and recommendations for publication as a House or Senate document. The executive summary and report shall be submitted as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents and reports no later than the first day of the 2019 Regular Session of the General Assembly and shall be posted on the General Assembly's website.

Appendix B - VDOT's Response to CIT's Dig Once Feasibility Study Questions

HJR 77: VDOT Responses to CIT Questions/Outline

Re: HJR 77 Study Relating to Feasibility of a State-Wide Dig Once Policy

1. **Current policies, programs and fees in regards to granting access to VDOT-maintained ROWs.**
    a. **Current ROW access process**
        i. **Providers report fragmented policies, fees and processing timeframes across all VDOT districts. Why do policies and timeframes vary across the districts?**

Without additional detail, it is difficult to address this comment/question. It is noted that there are various statutes that govern the fees for access to VDOT maintained ROWs, which differ depending on the type of provider seeking access. There are also state statutes that address, for certain types of providers, the processing time-frames and other requirements that apply to permits issued to said providers. Finally, there can also be federal requirements that impact the access or means of access that can be granted to a Provider in the ROW, particularly Interstate ROW.

It is noted that the CTB's Land Use Permit Regulations set forth rules relating to permits and fees for use of the right of way permit issuance (*see* 24VAC30-151[10]). The regulations should be consistently administered across the state and to the extent that the regulations are not being administered consistently, VDOT stands ready to address such inconsistency. While there could be circumstances that could delay permit issuance, VDOT attempts to work with providers to resolve those issues on a case by case basis. Finally, the time that it takes to issue a permit can differ simply because different land use offices have different workloads and must deal with differing local issues or requirements. These can significantly impact the time it takes to process a permit request.

VDOT would also note that, pursuant to Chapter 505 of the 2018 Session of the General Assembly, VDOT has developed and submitted to FHWA for approval, an expedited land use permit process by which public or private utility companies that offer high-speed Internet services may apply to use right-of-way maintained by the Department. It is noted however that such process shall be designed to apply only when the proposed use of the right-of-way does not make substantial changes to such right-of-way and does not interfere with the safety or ongoing maintenance of the right-of-way for transportation purposes.

With regard to fees, the fee structure for permits can be somewhat complicated, depending upon what work is being requested. In addition, the law also provides for differing fees. For instance, some companies are certificated providers of telecommunication services, which, by law, are exempt from permit fees. In the case of small cell wireless facilities, the law establishes the permit fees that may be charged to providers seeking to co-locate small cell wireless equipment in the Right of Way on existing structures. Further, projects that involve longitudinal installations along limited access highways require the negotiation of resource sharing, either through the provision of annual payments or by the provision of services such as dark fiber. These negotiations can take significant amounts of time and costs/fees vary based upon the value of the right of way. Finally, if the request is for work that is complicated or out of the ordinary, the local VDOT permit office can require the permittee to pay the actual cost of VDOT review and inspection, which can be significantly more than the standard permit fees.

[10] https://law.lis.virginia.gov/admincode/title24/agency30/chapter151/

b. Current process, timeline, stakeholders in regards to bridges and tunnels

In addition to the various factors impacting the process and timelines associated with land use permit issuance, a permit request that involves work or installations on bridges and tunnels can take significantly more time, as in- depth structural review is generally required. Furthermore, since most tunnels also involve limited access right of way, discussions and negotiations relating to resource sharing or the right of way use fees need to be concluded prior to permit issuance.

It is noted that current policy or practice relating to bridge attachments is set out in VDOT's Utility Manual of Instructions, in section 7.6, below:

> 7.6 Bridge Attachments Due to current bridge design standards involving full and semi-integral bridge abutments any and all utility bridge attachments are highly discouraged. Utilities may be attached to bridge structures only when it is not feasible or economically reasonable to locate them elsewhere. All alternate locations for the installation of utilities shall be considered by the utility owner prior to submitting a request to attach to a bridge structure. The design for bridge attachments must be in accordance with the VDOT Bridge Attachment Standards.
>
> Utilities shall not be placed on the exterior of bridge structures except when there is no other alternative and then only with the approval of the State Structure and Bridge Engineer.

In general, tunnels can accommodate cables and pipes through the utility chamber.

c. Fees

i. Do the fees vary based on district? If so, why?

See above discussion on fees.

ii. What are the current fees to access ROWs/conduit?

In addition to permit fees, which are fees that must be paid to obtain a permit for work to be done in the ROW, fees for access or use of the ROW are set out in the Land Use Regulations (24 VAC 30, Chapter 151) (accommodation fees) and are also set out in the Code of Virginia based on the type of provider or service (*see,* for instance, § 56-484.32. *Wireless support structure public rights-of-way use fee*; § 56-484.29: *Access to locality rights-of-way for installation and maintenance of small cell facilities on existing structures;* 56-468.1. *Public Rights-of-Way Use Fee* relating to telephone and telegraph companies)

On non-limited-access ROW, any VDOT-owned conduit typically supports local traffic signal operations and does not continue along the route for any significant length. Additionally, conduits supporting local signal operations are often congested and any spare conduit capacity needs to be reserved for future DOT operations and cut over operations when aging/failed cables need to be replaced.

Conduit installed on limited-access ROW generally supports VDOT's freeway operations and there may be excess capacity available along certain segments. In these cases, VDOT and that provider enter into a Resource Sharing Agreement. The fee for their use of the conduit depends on the location of the conduit and the length of conduit the provider plans to use. Through Resource Sharing, VDOT can request goods, services, monetary value or a combination of the three.

iii. How/why are fees charged? (I.E. are these fees designed to generate profit, or cover expenses?)

Land use permit fees are charged to partially defray the costs of VDOT processing, review, and inspection of the requested work. Right of way use fees are charged to recoup right of way value, in accordance with federal requirements, 23 CFR Part 645 and 23 CFR Part 710.

VDOT evaluates the Limited Access route a provider is looking to build by pulling the land value of recently sold parcels adjacent to the route of interest. Once that information is gathered, VDOT averages out the price per square foot by county and use a Fair Market Value methodology from the American Public Works Association (APWA) to determine a per-mile fee for the access. The final value is based on the standard initial 25 year term of our agreements and includes an administrative fee for the benefits that providers realize by dealing with a single entity and process rather than multiple land owners. The cost of any goods (fiber) received from the provider is deducted from the calculated fee.

2. **Potential benefits AND risks of a statewide, blanket dig once policy that would require VDOT to install conduit in all VDOT-maintained ROWs, bridges, and tunnels.**
    a. **Should the dig once policy only be applied when a certain degree of construction is being performed in the ROW, bridge, and/or tunnel?**
        i. **If so, what degree of construction would be appropriate?**

VDOT would offer that a dig once policy should incorporate the following or similar criteria:

- Policy should only be applied to construction projects which are requested as part of a locality's project application (in Smart Scale and Revenue Sharing processes),
- Policy should only be applied to construction projects that are longer than 1 mile in length or that are in a portion of highway having no open conduit that is immediately adjacent to a portion of highway that has existing open conduit
- For projects involving bridge and tunnels, any such policy should allow for VDOT discretion in determining the most cost effective and most appropriate manner and means by which conduits should be installed,
- Policy should not be applied to maintenance projects

The main risk associated with a policy that dictates the requirement to install conduits on every bridge and tunnel is the inefficient use of taxpayer dollars, the avoidance of which presumably would be an objective of any such policy. The VDOT bridge inventory totals 13,175. Of that number, 52% of the VDOT bridge inventory has spans less than 75 feet in length. It is anticipated that conduit being installed before and after a bridge of this length would not be redirected onto the bridge but would be continued to be buried, through directional boring, adjacent to the bridge, thus avoiding the costly bridge conduit infrastructure. The estimated cost of installing conduit on a new structure is approximately $240 per foot when compared to $15 to $30 per foot for directional drilling. It is noted that new construction (total bridge replacement/superstructure replacement) projects are the easiest to accommodate utility attachments.

For existing bridges, there are many factors that could increase the cost of implementation and thus, need to be taken into account before installing conduits on the bridge. Such factors include but are not limited to:

1. Length of the structure

2. Current structure condition
3. Load carrying capacity (Posted)
4. Low clearance (Traffic underneath or High water elevation)
5. Type of structure (Truss, complex structures with straddle bents)
6. Geometry of the structure
7. Terrain
8. Location of existing utilities on the bridge
9. Mobilization and maintenance of traffic (MOT) (under and on the structure)
10. Developing plans to identify location and methods to install cables
11. Future maintenance costs of the occupied and unoccupied conduits

Conduits on bridges and in tunnels interfere with safety inspections. Such interference increases the time necessary to conduct thorough and necessary inspections. In addition, current bridge design philosophy of jointless bridges complicates the details needed for conduit systems.

It is also noted that a dig once policy probably should not serve as the sole or primary means of facilitating conduit installation/implementation. Many roadways, bridges and tunnels may not be improved for some time and therefore a dig once or installation policy tied to highway projects would not necessarily be an effective means of accomplishing expansion of affordable access to broadband in the Commonwealth. Unless broadband deployment/conduit installation becomes a program of its own, any programs or policies that render broadband deployment or installation an ancillary element of road projects will result in segmented deployment and perhaps in areas with less significant needs than others.

b. Should a dig once policy be applied based on broadband need?

That would seem to be a more effective/more efficient approach to deployment. Roadway projects that may be proposed in the more significantly underserved broadband areas may be few.

i. If so, how should that need be determined?

In locations where "No" broadband or other similar technology exist.

It is assumed that the primary purpose of a dig once policy would be to expand broadband to unserved or underserved rural areas. Perhaps an approach similar to the scoring or ranking prioritization process required by section 33.2-214.1 is an approach that could be used to facilitate and prioritize broadband deployment.

c. What would be an appropriate fee/fee structure for accessing VDOT conduit?

ROW—VDOT would offer that at a minimum, any fee structure should be sufficient for recoupment of any VDOT cost of installing and maintaining the conduit systems on the right of way.

d. Should the dig once policy only be applied to bridges and tunnels of a certain size?

General consensus is that the response to this question should be no.

As noted above, current VDOT policy is to avoid placement of utilities (including conduit for broadband) on the structures (See response to 1b). The best policy implementation would be to require VDOT to

incorporate conduit in all projects and for VDOT to determine the most appropriate and cost effective solution for each project. Factors stated above should be taken into account when determining the feasibility of utilities on a structure.

i. **If so, what size?** N/A

e. Do you have a concept of what the cost would be to install conduit in all VDOT-maintained ROWs, bridges, and tunnels that do not currently have conduit?

The following estimated cost to install conduit in the right of way is based on cost information from VDOT's Location and Design and Operations Divisions. Based on documentation developed by those divisions (LD-IIM-230.2) the cost per mile to install conduit (2@2" & 1@3") is $125K to $175K. This information is based on 2017 calculations and is subject to change.

The estimated cost of installing hardware needed to support conduits on a new structure (new construction) is an estimated $240 per foot. The estimate for installation on existing bridges is influenced by the factors listed in the response to question 2a. It is considered to be higher than new construction but there are too many variables to accurately identify an average cost per foot. Therefore, $240 per foot is provided herein as the estimated cost for installation on existing VDOT bridges.

VDOT does not have a database that identifies the bridges that currently have conduit. Therefore, simply using the total length (2.23 million feet) of the entire bridge inventory, the minimum estimated cost to install conduit on the entire bridge inventory is $533M.

VDOT does not have a database that identifies the tunnels that currently have conduit. Therefore, using the total length (44,000 feet) of the tunnel inventory, the minimum estimated cost to install conduit on the entire tunnel inventory is $11M.

The existence of conduit on a bridge will directly influence the time it takes to inspect the bridge and develop the inspection report. The additional amount of time needed is 1.5 hours per bridge on average. VDOT inspects a little more than half of the bridge inventory annually. Therefore, the additional annual inspection cost is estimated to be $750K.

f. Who should be responsible for maintaining the conduit?

Generally, VDOT would propose that the owner of conduits should bear responsibility for maintaining conduit in some form or fashion. However, to the extent empty conduit is installed, it might be most prudent for VDOT to maintain the conduit until the conduit is occupied by a Utility or Provider. Once the conduit is occupied by a Utility or Provider, maintenance responsibility could/should transfer to the Utility or Provider.

3. Potential benefits AND risks of uniformity in regards to policies and fees across all VDOT districts.

a. What are the challenges in regards to creating uniformity amongst all VDOT districts in regards to policies, fees, and timeframes?

b. Can there be an expedited/streamlined permitting process for ROW access?

i. If so, what would it take to do this?

This is outside the scope of the General Assembly's request, but is covered under Chapter 505 of the 2018 Acts of Assembly. VDOT has already prepared a draft in response to that Chapter, and is piloting that approach with several electric coops that are installing fiber along existing overhead electric lines.

c. What would be an appropriate fee/fee structure to access the conduit?

For Existing Structures (bridges): All incurred costs. For New Structures: Standard Fee ($240 per foot or a fair recovery cost would be explored)

4. Any other additional thoughts or concerns.

- How can VDOT monitor for trespass of empty conduits and if/when it occurs what would be actions taken? This happens today and is usually discovered when a project occurs and found during utility designation/relocation process.
- Communication/fiber lines are also attached to existing aerial pole lines…would this still require installing conduits if there are single or multiple providers already installed in an area?
- Issue relating to competition…. If other telecommunication companies already have conduits/fiber installed in area, would installing VDOT conduits for use by other interfere with competitiveness from a business standpoint? Is that fair?
- Conduits on bridges and in tunnels interfere with safety inspections.
- Current bridge design philosophy of jointless bridges complicates the details needed for conduit systems.
- There is a concern that the constant improvement in technology may no longer require the need for conduit installation. The industry should be periodically monitored and adjustments to this policy made as the demand for fiber deployments increases or decreases.
- Many miles of VDOT-controlled secondary highways are on prescriptive easement. If VDOT were required to install conduit along all roadways, even if no highway improvement project is scheduled, there could be significant ROW costs even if no additional width is required, as the provision of broadband service on prescriptive easements may be considered an expansion of the property right associated with the use of such easements. Generally, under a prescriptive easement situation, the right of use is restricted to the original use under which the easement was acquired, which in the case of VDOT right of way, was as a road. Additional rights of use may need to be acquired from the owner of the underlying fee interest and the question would be who would be required to incur the associated costs.

HJ77 – Dig Once Study

The following are comments from VCTA in response to CIT's directive to conduct a dig once study based on 2018 legislation, HJ77, aiming to identify challenges and opportunities to ease the deployment of broadband infrastructure in regards to ROWs.

Current challenges to accessing VDOT Right of Way ("ROW") to install broadband infrastructure include:

i) associated excavation and accessibility costs
ii) fragmented policies spanning across nine VDOT districts
iii) challenges sharing ROWs with other ROW occupants
iv) challenges accessing complex intersections, bridges and tunnels, and
v) overall lack of coordination with excessive compartmentalization involved in these processes.

VDOT is divided into nine regions across the Commonwealth. This regional fragmentation creates policy inconsistencies, including permit response times that make it difficult for private providers to conduct business successfully. Adopting and implementing a unified, statewide broadband deployment policy which reduces cost and gives priority to broadband deployment would ease in the facilitation of broadband infrastructure developments at the local level more effectively and efficiently.

The complications surrounding complex intersections, bridge and tunnel crossings have remained constant barriers to broadband deployment for years. Most all VCTA members as well as other industry related companies and stakeholders have consistently complained of huge costs, extra requirements, and significant time delays to deployment. The current regulations, 24VAC30-151-30G, allow an arbitrary charge by VDOT for a "shared resource agreement" for these key limited access right-of-way points. This uncertainty and potential cost prevents broadband deployment. A reasonable solution, to ease and speed broadband infrastructure deployment, is critical to the future of the Commonwealth.

Specific examples include:

ROW Permitting Timeframes:
VCTA member companies experience a wide range of permitting response time based on regions. These response times directly impact deployment and customer wait times for service.

1. Harrisonburg permit approval is approximately 3 weeks.
2. RICHMOND permit approval is approximately 30 days.
3. NOVA permit approval can take anywhere from 60-90 days.

Cost Barriers to Complex Intersections/Bridges/Tunnels:

VCTA member companies have identified several broadband deployment projects which require access to or through a tunnel, bridge or complex intersection. Currently, this infrastructure is not designed or built with conduit to ease the deployment of telecommunications infrastructure, or even consideration that conduit could be added in the future. At times our members have been asked to hire dive teams and deploy infrastructure under water; which adds extreme costs to a project – sometimes nullifying its feasibility. Other times our members have been asked to give infrastructure to VDOT in unrelated areas as the price for access.

Moving forward our members recommend VDOT build duct banks of at least four to sixteen, 4" conduits into any construction/design plans for bridges and tunnels. VDOT regulations be amended to exempt broadband who pay VDOT ROW fees from additional charges in the form of shared resource agreements or similar fees for bridges, tunnels or other limited access areas. VCTA recommends that VDOT not charge any additional fees for access to VDOT-owned (on bridges or tunnels, or elsewhere) since subscribers already pay a monthly ROW fee to VDOT. Currently, the 2018 ROW fee is $1.09 per subscriber, per month. Additionally, even where VDOT installs facilities, no provider should be obligated to use those facilities. Providers may have engineering, technical, or other resource concerns that make use of state conduit or facilities undesirable.

Member subscribers (consumers) pay more than $14.7 million per year in VDOT ROW fees.

Additional charges from VDOT would prevent new broadband deployment or prevent upgrades of existing broadband facilities.

Questions to address:

- **Does VDOT have nine different "Dig Once" policies?**
    - **What are they?**
        - **Bridges**
        - **Tunnels**
        - **ROWs**
        - **Other**
- **Does VDOT assess fees to Broadband Providers?**
    - **Are they administrative?**
        - **If so, what %**
        - **Actual costs**
    - **Are the fees uniform across the nine districts?**
- **Does VDOT charge ROW fees?** YES
    - **What are they?** 2018 ROW fee was $1.09 per subscriber, per month
    - **Are these uniform across the nine districts?**
- **Has VDOT recently reviewed their Dig Once Policy?**
- **Has VDOT applied the _____**

- **Has VDOT apprised the Governor's Chief Broadband Advisor?**
- **Has VDOT developed a blanket policy for Dig Once Smart Cities?**
- **What other state agencies have undergrounding/Dig Once Standards**
    - **Do they charge fees?**
    - **Do they have policies?**
    - **Do they ____?**
    - **Is this policy submitted to the chief broadband advisor?**

Appendix D - State and federal statutes regulating access to ROW, Bridges, and Tunnels

Examples of state statutes governing fees for access to VDOT ROW:

Section 56-468.1 related to Telegraph and Telephone companies/certificated providers--Right of Way fee
https://law.lis.virginia.gov/vacode/title56/chapter15/section56-468.1/

Section 56-484.28 relating to the permit fees that the Department may charge to small cell providers for co-locations on existing structures in the Rights of Way.
https://law.lis.virginia.gov/vacode/title56/chapter15.1/section56-484.28/

Section 56-484.32 relating to the annual right of way access fee that may be charged by the Department for installation of wireless support structures in the public rights of way under the jurisdiction of the Department.
https://law.lis.virginia.gov/vacode/title56/chapter15.1/section56-484.32/

Section 56-484.31--"Fees or charges" that can be charged for attachment of small cell equipment infrastructure on government owned property (some of which could be located in public rights of way).
https://law.lis.virginia.gov/vacode/title56/chapter15.1/section56-484.31/

Examples of state statutes governing requirements relating to structures on VDOT ROW:

Section 56-484.30 which provides requirements relating to agreements governing placement/relocation of wireless support structures in VDOT or locality rights of way.
https://law.lis.virginia.gov/vacode/title56/chapter15.1/section56-484.30/

Section 56-484.28 relating to the turnaround times for permits issued by the Department relating to small cell co-locations on existing structures in the Rights of Way.
https://law.lis.virginia.gov/vacode/title56/chapter15.1/section56-484.28/

Section 56-458: Rights/requirements relating to installation of Telegraph/Telephone lines in/on, among other things, public rights of way/streets.
https://law.lis.virginia.gov/vacode/title56/chapter15/section56-458/

Examples of Federal Law/Regulations Relating to Right of Way Use:

23 CFR Part 645 subpart B:Requirements (including approvals by FHWA) relating to accommodation of utilities in federal aid rights of way
https://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title23/23cfr645_main_02.tpl

23 CFR § 710.403 which sets forth requirements for charging fair market value for disposal and use of ROW acquired using federal funds (along with possible exceptions)
https://www.ecfr.gov/cgi-bin/text-idx?SID=c783d8c1de53911ac437f3e50ff3ef46&mc=true&node=se23.1.710_1403&rgn=div8

Recent rule issued by the FCC (effective Date January 14, 2019) relating to acceleration of wireless and wireline broadband deployment by removal of barriers to infrastructure investment <https://www.federalregister.gov/documents/2018/10/15/2018-22234/accelerating-wireless-and-wireline-broadband-deployment-by-removing-barriers-to-infrastructure>