

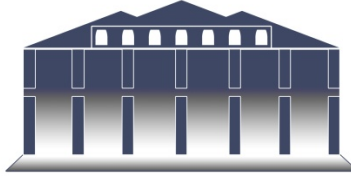
**Improved Management of Mobile Devices and
Services Could Save the State At Least \$1–2 Million
Annually**



**Final Report to the Joint Legislative
Program Evaluation Oversight Committee**

Report Number 2021-01

February 8, 2021



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February 8, 2021

Senator Brent Jackson, Co-Chair, Joint Legislative Program Evaluation Oversight Committee

North Carolina General Assembly
Legislative Building
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Raleigh, NC 27601

Honorable Chair:

The Joint Legislative Program Evaluation Oversight Committee's 2019–20 Work Plan directed the Program Evaluation Division (PED) to examine the cost of mobile devices and related services throughout state government and determine whether the State could save money by improving procurement processes. In addition, the directive asked PED to identify potential cost savings to the State through termination of devices with no or little usage, improved policies at state agencies, and improved oversight of spending.

I am pleased to report that the Department of Information Technology and the Office of State Budget and Management cooperated with us fully and were at all times courteous to our evaluators during the evaluation.

Sincerely,

A handwritten signature in blue ink that reads "Kiernan McGorty".

Kiernan McGorty
Acting Director

Mandatory Evaluation Components

Report No. 2021-01, Improved Management of Mobile Devices and Services Could Save the State At Least \$1–2 Million Annually

N.C. Gen. § 120-36.14 requires the Program Evaluation Division to include certain components in each of its evaluation reports, unless exempted by the Joint Legislative Program Evaluation Oversight Committee. The table below fulfills this requirement and, when applicable, provides a reference to the page number(s) where the component is discussed in the report.

| N.C. Gen. § 120-36.14 Specific Provision | Component | Program Evaluation Division Determination | Report Page |
|--|--|---|-------------|
| (b)(1) | Findings concerning the merits of the program or activity based on whether the program or activity | | |
| (b)(1)(a) | Is efficient | <p>PED determined agencies and universities are not efficiently managing mobile device costs. PED identified the following examples of inefficiencies and waste during Fiscal Year 2019–20:</p> <ul style="list-style-type: none"> • 2,098 devices had no usage for 12 months or more, costing \$920,000 per year; 56% of these devices had not been used in at least two years. • Approximately 17 million voice minutes within pooled plans went unused, at an estimated cost of up to \$740,000. | 7–9 |
| (b)(1)(b) | Is effective | <p>PED determined that oversight of mobile device usage is ineffective. Although the North Carolina Department of Information Technology (DIT) has broad authority to manage wireless devices and services, its failure to exercise this authority results in limited oversight of mobile device usage. DIT has continued to renew and extend cellular service contracts but has not established performance measures for these contracts and has not evaluated the effectiveness of the contracts or other options.</p> | 17–20 |
| (b)(1)(c) | Aligns with entity mission | <p>State agencies and universities use a variety of mobile devices in furtherance of their missions.</p> | 3 |
| (b)(1)(d) | Operates in accordance with law | <p>Most executive agencies are not fully compliant with applicable statutory mobile device requirements, including directives to conduct annual reviews of device justifications, audits, and annual reporting.</p> | 15–16 |
| (b)(1)(e) | Does not duplicate another program or activity | <p>PED did not find duplication in management or oversight of mobile device usage.</p> | N/A |
| (b)(1a) | Quantitative indicators used to determine whether the program or activity | | |
| (b)(1a)(a) | Is efficient | <p>Executive branch agencies are required to report annually on their total number of devices issued and total cost of devices issued; at present, few agencies appear to be complying with this requirement. PED recommends the State begin tracking unused and little-used devices to provide information on how efficiently agencies are using devices.</p> | 15 |

| | | | |
|------------|--|---|-------|
| (b)(1a)(b) | Is effective | The State does not have quantitative indicators to determine if mobile devices are being used effectively. | N/A |
| (b)(1b) | Cost of the program or activity broken out by activities performed | North Carolina spent an estimated \$20.3 million on mobile devices and services in Fiscal Year 2019–20. DIT charges a 2% fee on mobile device equipment and service purchases to cover billing and procurement expenses. This fee generated \$523,876 of revenue to DIT in Fiscal Year 2019–20. DIT reported spending \$121,500 of this amount on staff salaries and indicated that the rest of this revenue goes to the DIT internal service fund; the agency did not clarify how this money is being used. | 20 |
| (b)(2) | Recommendations for making the program or activity more efficient or effective | <p>To improve the efficiency and effectiveness of the State’s use of mobile devices and services, The General Assembly should direct DIT to:</p> <ul style="list-style-type: none"> • conduct a review of existing wireless device and services contracts using a consultant specializing in mobility management; • develop a business case for improved management and optimization of the State’s mobile services and report to the General Assembly on potential costs and savings; • create a standardized “bring your own device” policy across state entities; and • submit an annual consolidated report on mobile device usage, thereby providing information in a more systematic and holistic manner and eliminating the need for agency-specific reports, which generally are not being submitted. <p>In addition, the General Assembly should modify state law to:</p> <ul style="list-style-type: none"> • require all state agencies to have processes to ensure devices assigned to employees are deactivated at separation; • require all state agencies to designate an individual responsible for each active mobile device; and • expand the applicability of these requirements to all state agencies subject to the State Budget Act. | 23–26 |
| (b)(2a) | Recommendations for eliminating any duplication | PED did not identify any duplicative programs or activities. | N/A |
| (b)(4) | Estimated costs or savings from implementing recommendations | Rectifying certain categories of inefficiency and waste identified in this report could result in savings of \$1–2 million per year, depending upon the extent of implementation and optimization costs. To further estimate potential savings, DIT should develop a business case for optimization by examining potential savings and costs of having a third-party vendor provide optimization or having DIT provide these services internally. | 11 |



PROGRAM EVALUATION DIVISION

NORTH CAROLINA GENERAL ASSEMBLY

February 2021

Report No. 2021-01

Improved Management of Mobile Devices and Services Could Save the State At Least \$1–2 Million Annually

Highlights

In FY 2019–20, North Carolina spent an estimated \$20.3 million on mobile devices and services. This evaluation documents shortcomings related to procurement and management of mobile devices and services including more than 3,000 devices with zero or little usage that incur monthly service charges. Rectifying waste identified by the Program Evaluation Division could result in savings ranging from \$1–2 million per year. Engaging a mobility management company to assist North Carolina's Department of Information Technology could help the State realize these savings, as well as potential additional savings achieved through procurement, dynamic device and plan management, more efficient pooling of shared minutes, and bill review and auditing.

Background: The North Carolina Department of Information Technology (DIT) manages statewide contracts for mobile devices and services. Individual state entities select the vendor, equipment, and service plans, and manage their devices and their usage. North Carolina's spending on mobile devices continues to steadily grow, increasing by more than 80% in the last decade. For this reason, procurement and optimization of mobile devices and services are important issues for the State to monitor and proactively manage.

Agencies and universities are not efficiently managing mobile device costs. The Program Evaluation Division (PED) identified the following examples of inefficiencies and waste during Fiscal Year 2019–20:

- 2,098 devices had no usage for 12 months or more, costing \$920,000 per year; 56% of these devices had not been used in at least two years. Additionally, 1,347 little-used devices cost the State \$427,000.
- Approximately 17 million voice minutes within pooled plans went unused, at an estimated cost of up to \$740,000.

Taking action on the items identified in this report could save an estimated \$1–2 million annually, depending on how aggressively the State acts.

Agencies and universities have failed to comply with mobile device laws and policies, contributing to waste and inefficiencies. State law and the State Budget Manual include provisions to encourage the efficient use of mobile devices and minimize waste. PED found:

- agency and university mobile device policies generally failed to meet State Budget Manual requirements,
- no agency or university satisfied all requirements for keeping a mobile device inventory as outlined in the State Budget Manual, and

- 32% of executive branch agencies reported not maintaining written justifications for each mobile device as required by state law.

Although DIT has broad authority to manage mobile devices and services, it has not exercised this authority, resulting in limited oversight of mobile device usage and unrealized cost savings.

Although DIT manages statewide procurement through the statewide cellular services and equipment contract, almost all mobile device management decisions are left to agencies. PED found DIT failed to comply with state law requiring the agency to develop a detailed plan for the standardization and operation of state communications networks and services. In addition, the absence of statewide policies for using personal devices to conduct official state business has resulted in varying levels of adoption, policies, and employee allowance amounts. DIT could improve efficiency by taking a more active role in managing and overseeing the use of mobile devices and services. Several private companies with expertise in achieving cost savings could assist DIT.

Limitations in DIT's management of cellular services and equipment contracts have hindered evaluation of performance and assurance that the contracts are maximizing value and minimizing costs to the State.

DIT does not have performance measures in place for its mobile contracts and could not provide any evidence of evaluation of vendor performance. PED determined that North Carolina is not maximizing value through existing contracts in the purchasing of device accessories such as cases and screen protectors. Further, DIT could benefit from the assistance of a mobility management firm capable of analyzing the structure of North Carolina's contracts and plans to ensure they are maximizing value.

Recommendations. The General Assembly should direct DIT to:

- conduct an evaluation of existing wireless device and services contracts that would involve retaining a consultant specializing in mobility management;
- develop a business case for improved management and optimization of the State's mobile services, potentially with assistance from a mobility management company, and report to the General Assembly on potential costs and savings;
- create a statewide "bring your own device" policy; and
- submit an annual consolidated report on mobile device usage, thereby providing information in a more systematic and holistic manner and eliminating the need for agency-specific reports.

In addition, the General Assembly should modify state law to:

- require all state agencies to have processes to ensure devices assigned to employees are deactivated at separation;
- require all state agencies to designate an individual responsible for each active mobile device; and
- expand the applicability of these requirements to all state agencies subject to the State Budget Act.

Purpose and Scope

The Joint Legislative Program Evaluation Oversight Committee's 2019–20 Work Plan directed the Program Evaluation Division (PED) to examine the cost of mobile devices and related services throughout state government and determine whether the State could save money by improving procurement processes. In addition, the directive asked PED to identify potential cost savings to the State through termination of devices with no or little usage, improved policies at state agencies, and improved oversight of spending.

Three research questions guided this evaluation:

1. Are state agencies complying with applicable mobile device laws and policies?
2. Are state agencies efficiently using mobile devices and services?
3. Is the Department of Information Technology effectively and efficiently procuring and managing mobile devices and services for the State?

PED collected and analyzed data from several sources, including

- mobile service provider billing and utilization data;
- North Carolina State Accounting System financial data;
- queries of all state agencies and universities regarding policies, procedures, inventories, and other data related to mobile device usage;
- interviews with subject matter experts;
- interviews with officials from other states; and
- a review of North Carolina's contracts and other states' cooperative contracts for mobile devices and services.

Background

State agencies and universities use a variety of mobile devices to carry out state business. Employees engaged in fieldwork, such as law enforcement and transportation workers, use devices to perform essential job functions. Mobile devices allow employees to work when away from their desks or outside of regular business hours and also allow workers who travel frequently to be accessible and continue working while traveling. In addition, many agencies maintain mobile devices that are primarily used for emergency situations, either to contact emergency services in the event of an incident or to respond to emergencies, including disasters.¹

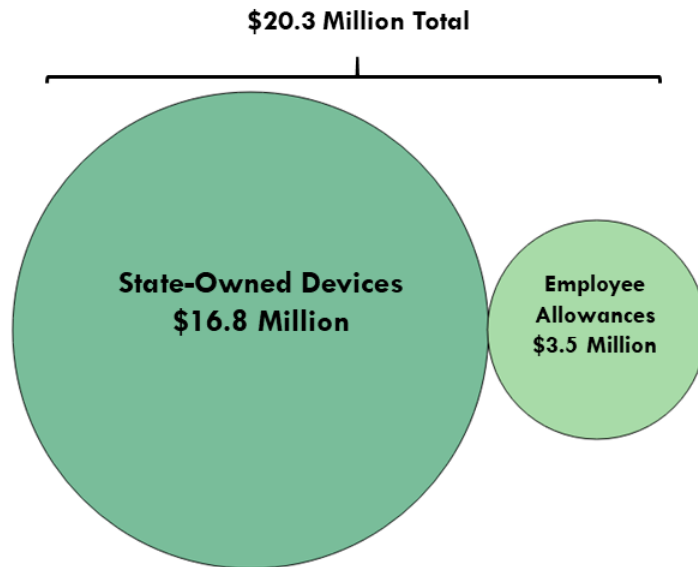
For this evaluation, the term “mobile device” refers to devices connected to a cellular network and purchased through the North Carolina Department of Information Technology (DIT) contract 915A, Cellular Telephone Service & Equipment. Examples of common mobile devices discussed in this report include basic mobile phones, smartphones, tablets, and mobile broadband modems. Beyond those common devices, some state agencies utilize additional types of devices connected to cellular networks such as those used for the Division of Motor Fleet Management's vehicle fleet telematics system or certain Department of Transportation equipment such as changeable message signs.

¹ This list of uses of mobile devices by state employees is not exhaustive, and each state agency determines types of usage.

North Carolina spent an estimated \$20.3 million on mobile devices and services in Fiscal Year 2019–20.² This total includes purchases of equipment and accessories, monthly service costs, and allowances paid to employees using their personal devices to conduct state business. Such allowances for use of personal devices accounted for 17% (\$3.5 million) of total spending.³ Meanwhile, the vast majority of total state spending, \$16.8 million (83%), is attributable to the use of more than 37,000 state-owned active mobile devices as of June 2020.

Exhibit 1

State Spending on Employer-Provided Devices and Services Eclipses Spending on Employee Allowances



Source: Program Evaluation Division based on Fiscal Year 2019–20 data from wireless carriers and allowance payment data provided by state agencies and universities.

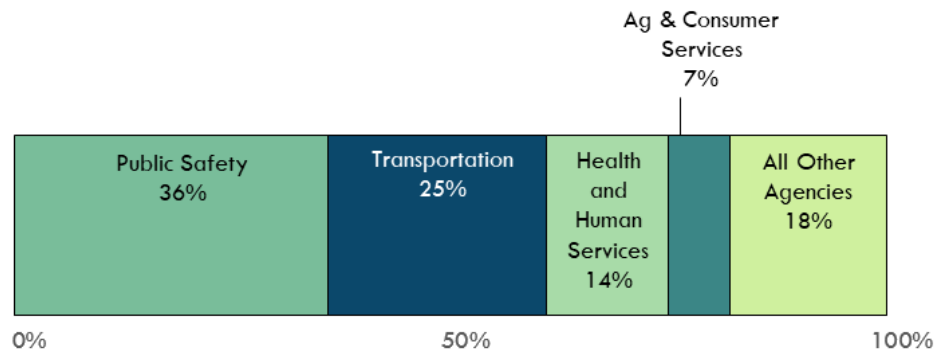
The use of mobile devices is not equal across state agencies. As is common in other states, certain agencies account for a large portion of the State’s mobile device usage. As shown in Exhibit 1, four agencies account for more than 80% of total state agency spending.

² The \$20.3 million figure is based on mobile service vendor data and agency-reported allowance data; due to inconsistencies and variations in how vendors and agencies account for spending on mobile devices, this figure is an estimate. The Program Evaluation Division (PED) was unable to validate reported amounts using North Carolina Accounting System data as a result of certain challenges. For one, there is an expenditure account for “cellular phone services,” but it is unclear how agencies are accounting for expenditures on other types of mobile devices such as mobile broadband modems or tablets connected to cellular networks. Another challenge is that the North Carolina Accounting System has an expenditure account for non-taxable mobile device allowances but does not have one for taxable mobile device allowances; several agencies pay taxable rather than non-taxable allowances.

³ Some agencies do not permit allowances for use of personal devices for a variety of reasons, including concerns that personal devices are less secure. In other instances, devices are shared among several users, making a state-owned device a more efficient solution. Some employees may also prefer to not use personal devices for state business due to the potential applicability of the N.C. Public Records Act to those devices.

Exhibit 2

More than 80% of Spending on Mobile Devices and Services Occurs at Four Agencies



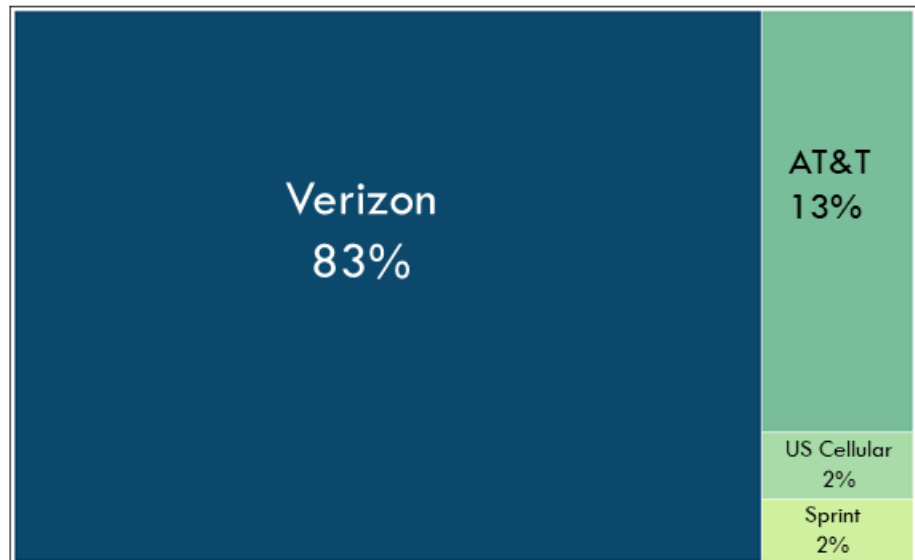
Note: This chart does not include spending on mobile allowances and does not include the General Assembly or constituent institutions of the University of North Carolina System.

Source: Program Evaluation Division based on Fiscal Year 2019–20 expenditure data from the North Carolina Accounting System.

DIT has contracted with five carriers—Verizon, AT&T, T-Mobile, Sprint, and U.S. Cellular—to sell mobile devices and services to state agencies.⁴ Universities, community colleges, and local governments, unlike state agencies, are not required to utilize the state contracts but instead have the option of using the state contract or another method of procurement.⁵ As Exhibit 3 shows, Verizon receives the most state business of the five vendors, accounting for more than 80% of total spending in Fiscal Year 2019–20 under these contracts.

Exhibit 3

Verizon is North Carolina’s Primary Wireless Services Vendor with 83% of Total State Spending



Source: Program Evaluation Division based on carrier data for Fiscal Year 2019–20.

DIT manages statewide cellular contracts, but individual state entities themselves determine which vendor to select, what equipment to purchase, and which service plans to use. DIT argues that by having contracts with multiple carriers providing discounts, these carriers must still compete for

⁴ As of April 1, 2020, Sprint and T-Mobile merged, though DIT still maintained separate contracts as of the writing of this report.

⁵ Although state universities are not required to use the statewide contracts for mobile devices and services, all but one UNC institution reported using these contracts. The UNC School of the Arts purchases mobile devices and services through a General Services Administration contract.

the business of state agencies or universities at the time of purchase, keeping market prices fair. DIT believes that this scenario is preferable to trying to leverage greater discounts from a smaller number of vendors.

Monitoring spending on procurement of mobile devices and services is an area where the State can potentially achieve significant efficiencies especially as mobile device and service usage is expected to continue to grow. Modern work is increasingly mobile, and the State's use of mobile devices extends beyond mobile phones to include tablets, mobile broadband modems, and wearable technology. This growth in usage is especially pertinent at present, as employees have increasingly relied on mobile devices in adapting to new ways of working amidst the COVID-19 pandemic. Even prior to the pandemic, North Carolina's mobile device and allowance spending had steadily grown, increasing by more than 80% in the last decade. According to DIT officials, the way that the State carries out business post-pandemic is likely to be different, along with the way mobile devices are used by many state agencies. As a result, attention to how these devices are used and managed will be even more important going forward.

Findings

Finding 1. North Carolina can reduce waste and achieve savings on mobile device expenses.

To summarize the finding below, North Carolina could save millions of dollars through improved optimization and management of mobile services. The Program Evaluation Division (PED) identified waste resulting from agencies maintaining 2,098 devices with no usage for a year and 1,347 little-used devices, as well as almost 17 million unused pooled minutes. Additional waste includes agencies incurring unnecessary overage charges and purchasing unnecessarily costly devices. The process for realizing some savings is straightforward, but if the State wishes to fully capitalize on potential efficiencies, it will need to pursue more complex optimization strategies that are beyond the capacity of individual agencies.

Optimization of mobile services requires making adjustments to plans in real time based on actual usage, ensuring the State is not paying for voice minutes or data that it does not use while at the same time minimizing or eliminating costly overage charges. Optimization is an ongoing need because usage is dynamic. Factors that can affect how much a mobile device is used include vacation or holiday periods, emergencies or natural disasters, and how much work is being done remotely compared with in-office.

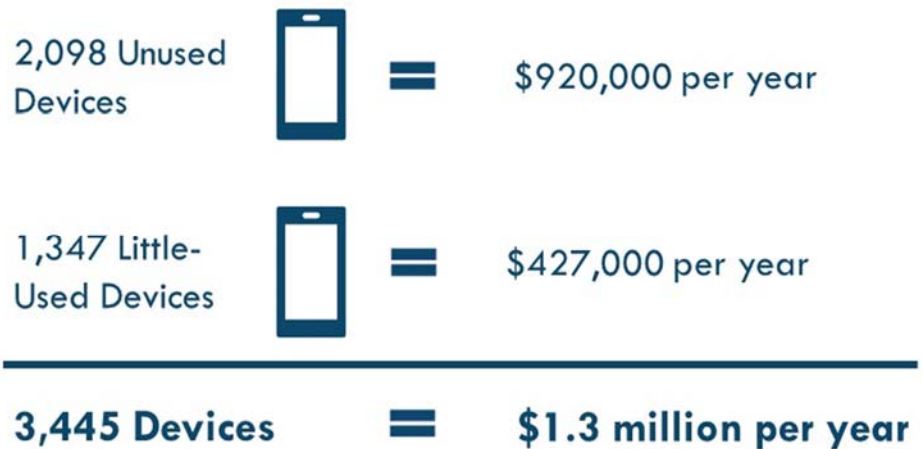
Pooled plans, in which voice minutes or data are shared among multiple devices, are a common way organizations save on the cost of mobile services. Pooled plans work by allowing minutes to be shared among the devices that are part of the pool, thereby eliminating individual overages as long as the total number of minutes allocated to the pool is not exceeded. However, pooled plans require active management for their benefits to be fully realized because, just as it is costly to exceed the number of pooled minutes, it can also be costly to pay for large amounts of pooled minutes that go unused.

Optimization is continually aligning mobile device usage with the most appropriate voice and data plans and features.

In Fiscal Year 2019–20, 9% of the State's devices with active service were unused or little-used, resulting in \$1.3 million in unnecessary spending. Exhibit 4 provides a breakdown of the number and cost of these devices.

Exhibit 4:

No-Use and Little-Used Devices Cost the State More Than \$1.3 Million in Fiscal Year 2019–20



Note: Unused devices are defined as those with no usage for 12 consecutive months. Little-used devices averaged less than 30 minutes of voice use, one megabyte of data usage, and 50 texts per month during a 12-month period. PED was unable to identify an industry standard definition for unused and little-used devices. Absent such a standard, PED chose to apply criteria developed by the Washington State Auditor. Its standard for little-used devices was among the more lenient that PED reviewed, meaning it identified fewer devices as little-used than many other standards.

Source: Program Evaluation Division based on Fiscal Year 2019–20 mobile provider data.

Unused devices included basic phones, smartphones, and internet-connected devices such as tablets and mobile broadband modems. Internet-connected devices were the most frequently unused devices. Of the 2,098 unused devices, 1,166 (56%) were not used during the prior year as well, meaning these devices had at least two years of no use.

Individual state agencies are responsible for managing their mobile device usage and making changes to their service plans. Agency failure to deactivate devices upon employee separation is one cause of devices having no usage.

PED observed devices with no usage that were assigned to employees who had left state government, some of whom had departed as long ago as 2013. Another issue appears to be that some devices are not directly assigned to an individual and thus are more difficult to track over a period of time as staff changes.

PED asked the five agencies with the most unused devices to conduct a review of the devices identified by PED and determine which devices could be deactivated. The Department of Public Safety indicated challenges with deactivation because a special form must be submitted by the employee's division due to "potential safety concerns for the employee in question." In other words, even when department staff managing mobile devices identify unused lines, it is required that someone submit a special request for the device to be deactivated. In response to the PED inquiry

- The Department of Transportation responded that 3 of the devices identified by PED had already been deactivated and 11 of the

devices identified by PED could be deactivated, for a total of 2% of the 564 unused devices identified.⁶ The department did not make a determination on the majority of the devices PED identified.

- The Department of Public Safety responded that it needed more time to review the 426 unused devices identified.
- The Department of Health and Human Services responded that 56 of the devices identified by PED had already been deactivated and 378, or 69% of the 551 unused devices PED identified, could be deactivated.
- The Department of Environmental Quality responded that 61 devices, or 54% of the 114 unused devices identified by PED, could be deactivated and that it will keep the remaining unused devices active for staff in the field for emergency purposes using low-cost plans.
- The Department of Revenue responded that 40 devices, or 58% of the 69 devices identified by PED, had already been deactivated and that the department is reviewing the need for 26 other devices.

Improved management of pooled plans represents another significant source of potential cost savings. Typically, the pooled plans that North Carolina state agencies and universities use pool voice minutes together. With a pooled plan, users can exceed their allotted usage minutes without penalty as long as the usage of all users in the pool does not exceed the total minutes reserved for the pool. Pooled plans can be cost-effective, but administrators must monitor and manage the pool to ensure the pooled minutes purchased approximate monthly usage.

PED estimates that state agencies and universities unnecessarily paid up to \$740,000 for nearly 17 million pooled minutes that went unused in Fiscal Year 2019–20.⁷ Because pooled minute plan costs are based on the number of minutes available to the pool, unused pool minutes have a direct cost to the State. In Fiscal Year 2019–20, the State used roughly 42% of available pool minutes; one optimization expert noted that a more appropriate range would be 85% to 90% of pooled minutes.

To quantify the cost of excess pooled minutes, PED compared actual purchased minutes to a scenario in which the State purchased less-costly plans with fewer pooled minutes. PED estimates that optimizing pooled minute usage so that 85% to 90% of total minutes were used could have produced potential cost savings of \$700,000 to \$740,000 in Fiscal Year 2019–20 alone.

One barrier to improved management of pooled minutes occurs because minutes are not all pooled together across agencies and universities; instead, there can be many separate pools with the same carrier. Agencies can set up their own separate pools of minutes. Each one of these separate pools must be managed closely. This arrangement is administratively

Despite having nearly 17 million unused voice minutes, the State incurred \$39,000 in voice minute overage charges in Fiscal Year 2019–20.

⁶ PED analyzed data for State Fiscal Year 2020 (July 1, 2019 through June 30, 2020). When agencies reviewed the list of inactive devices in December 2020, some of the devices that had been unused had already been deactivated.

⁷ This calculation takes into account pooled minutes used with the State's two dominant carriers, Verizon and AT&T. Used pool minutes are not equivalent to the total number of minutes used by individuals. Off-peak minutes typically do not count against the pool of minutes because the majority of plans include free nights and weekends and domestic mobile-to-mobile minutes.

inefficient compared to having one large pool. The other inefficiency of having separate pools is that one agency's pool can exceed its total allocated number of minutes in a month, resulting in overage charges, while another agency retains large numbers of unused minutes. Because these agencies are maintaining separate pools, those unused minutes in one pool cannot benefit the other pool that exceeded its number of minutes and incurred overages. The presence of separate pools likely contributed to the State incurring \$39,000 in voice overage charges in Fiscal Year 2019–20 despite having millions of unused pooled voice minutes during the same time period.

Other forms of optimization can save the State additional funds but are not currently in place. For example, a number of state-owned devices that are presently on “unlimited everything” plans (unlimited minutes, messaging, and data) do not have the level of usage to justify the cost of such plans. In many instances, including these low-use devices in a pooled plan would save money. There also are devices that incur feature charges every month. Examples of features that can be added to a plan include the ability to use a smartphone as a hotspot or to have an additional 2 GB of data per month. Some of these feature charges are unnecessary or wasteful because they may go unused or they may be redundant with features already included in a plan. Because of data limitations and the complexity of wireless carrier billing, PED was not able to estimate savings from optimization of feature charges or other types of optimization; as a result, the potential savings PED identified may underestimate total savings.

PED observed several additional issues that demonstrate a need for improved management of the State's purchasing of mobile services. Many of these issues are relatively minor, such as state employee use of directory assistance (411), which amounted to roughly \$750 in the last fiscal year. Another example is that the State incurred \$570 in charges to insure seven mobile devices in cases where the user opted for this coverage. This cost is unnecessary, particularly because many lines are eligible for device upgrades at little to no cost and one of the conditions of the state contracts is that all carriers provide a one-year parts and labor warranty.

Other questionable costs involve purchases of expensive devices and accessories that are potentially unnecessary.⁸ Wireless carriers generally offer free or low-cost devices through state contracts with qualifying plans. Typically, to take advantage of these discounts the line must be new or eligible for an upgrade. As shown in Exhibit 5, these low-cost devices frequently include popular manufacturers, though the devices offered are not the latest generation and offerings change regularly.

⁸ Accessories include items such as charging cables, phone cases, screen protectors, and Bluetooth headsets.

Exhibit 5:**Examples of Subsidized Apple Devices Offered by Carriers as of November 2020**

| Carrier | Model | Subsidized Cost |
|-------------|-------------------------------------|-----------------|
| AT&T | iPhone 7 32 GB | \$0.99 |
| Sprint | iPhone SE 128 GB | \$0.00 |
| US Cellular | iPhone SE 2 nd Gen 64 GB | \$0.01 |
| Verizon | iPhone SE 64 GB | \$0.00 |

Source: Program Evaluation Division based on carrier website offerings as of November 2020.

In most instances, agencies and universities appear to be purchasing or obtaining low-cost or free phone offerings from carriers. In fact, several agencies reported to PED that they require their employees to take advantage of free or discounted devices. In some cases, agencies allow employees to purchase more expensive devices but require a special approval process. For example, the Department of Public Safety requires special approval by the budget office for any devices costing more than \$100. These policies are consistent with state law, which requires that “the device issued and the plan selected shall be the minimum required to support the employee’s work requirements.”⁹

Despite agencies generally exercising economy in the selection of devices, PED identified instances of costly device purchases. In Fiscal Year 2019–20, PED pinpointed \$117,000 in spending on devices that cost in excess of \$500 apiece wherein the purchasing agency paid full retail price with no discount. These purchases raise questions regarding whether agencies exceeded the state requirement to purchase the minimum device necessary to support employee work requirements. Many of these purchases involved obtaining premium, latest-generation devices despite less expensive, earlier-generation devices being available through a state contract discount.

Of this \$117,000 spent on costly, non-discounted device purchases, the State Bureau of Investigation (SBI) accounted for 74% of the spending. For example, in Fiscal Year 2019–20, SBI purchased

- 70 non-discounted Apple iPad Pro devices at an average cost of \$1,002,
- 17 non-discounted Apple iPhone devices at an average cost of \$906,
- 4 non-discounted Apple watches at an average cost of \$517, and
- 88 non-discounted Apple AirPods or AirPods Pro in-ear headphones at an average cost of \$204 per pair.

SBI contends these device purchases were necessary to meet varied needs. However, it is unclear how several of these purchases specifically satisfy the standard that they be the minimum devices required to support employee work.

⁹ N.C. Sess. Law 2015-286, Section 3.1

Rectifying certain categories of inefficiency and waste identified in this report could result in savings of \$1–2 million per year. As shown in Exhibit 6, if the State improved management and optimization of mobile device usage by addressing the issues identified by PED, it could realize annual savings of approximately \$1 million to \$2 million.

Exhibit 6

Correcting Identified Deficiencies Could Save \$1-2 Million Per Year

| Action | Low Estimate | High Estimate |
|---|--------------------|--------------------|
| Deactivation of devices with no use for one year | \$459,842 | \$919,685 |
| Deactivation or reduction of plan costs for little-used devices | \$213,277 | \$426,553 |
| Optimization of pooled minutes | \$370,000 | \$740,000 |
| Elimination or reduction of other waste | \$45,660 | \$91,320 |
| Total | \$1,088,779 | \$2,177,558 |

Notes: This savings estimate does not presume any savings from reducing or eliminating purchases of expensive devices. In addition, it does not include potential savings available in other areas of optimization beyond pooled minute plans such as optimization of feature charges or unlimited plans. Further, it does not include potential savings resulting from identification of erroneous charges or billing errors; PED was unable to estimate the prevalence of these issues and their attendant potential range of savings due to data limitations and the complexity of wireless carrier billing.

Source: Program Evaluation Division based on assumption that the State could realize anywhere from 50% of potential savings (low estimate) to 100% of potential savings (high estimate).

Effective management and optimization of mobile devices and services requires specialized knowledge and detailed data analysis to ensure devices and plans are matched with actual use. Although many agencies reported to PED that they review monthly bills and run reports to identify unused devices, the number of unused devices identified by PED suggests that these efforts have been only marginally effective at best. There are several potential reasons why agencies may not be realizing savings on mobile device expenditures.

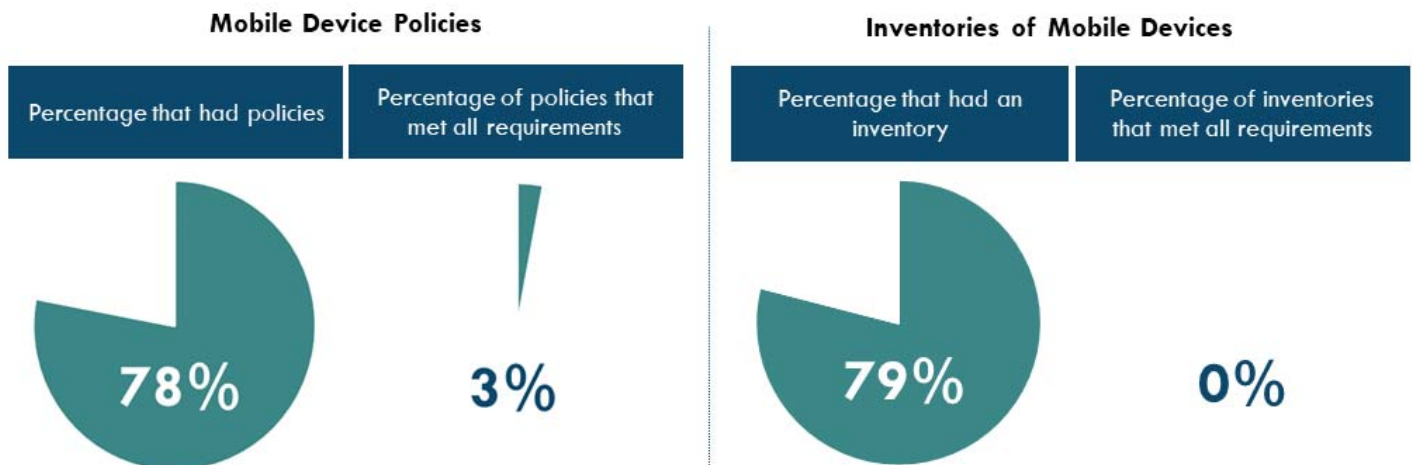
- Even within agencies, management can be decentralized to divisions or sections within the agency. For this reason, there may not be one individual accountable for managing all services and optimizing usage, nor may there be accountability mechanisms in place when divisions or sections waste these resources.
- Usage optimization also requires knowledge of the intricacies of various rate plans, access to and ability to analyze data, and dedicated time to conduct this work.
- Another possibility for the absence of optimization is that these efforts are not a priority for agencies. Cost savings from improved management may seem minimal on an individual device level or even agency level, yet savings to the State in aggregate are potentially substantial.

As Finding 2 will further discuss, the State’s current approach of relying on state agencies to manage mobile devices and services efficiently is failing.

Finding 2. Agencies and universities have failed to fully comply with mobile device laws and policies, which contributes to waste and inefficient use of mobile devices.

To summarize the finding below, the State Budget Manual and state law specify minimum requirements for the management and use of mobile devices. Most agencies and universities have policies in place, yet as Exhibit 7 illustrates, these policies generally fall short of State Budget Manual standards; the same is true for required inventories. Similarly, executive agencies largely failed to meet requirements specified in state law designed to ensure the efficient use of mobile devices and minimize waste. This overall lack of compliance limits assurance that individual agencies are effectively and efficiently managing mobile devices and services, which contributes to some of the waste identified in Finding 1.

Exhibit 7: Agencies and Universities Are Not Compliant with State Budget Manual Requirements Regarding Policies for Mobile Devices and Inventories



Source: Program Evaluation Division based on a survey of North Carolina agencies and universities.

The State Budget Manual and state law both have established requirements related to the use of mobile devices and services. The State Budget Manual requires that each agency and university establish appropriate use policies for mobile devices. At a minimum, these policies must include:

1. business criteria justifying the issuance of devices to employees;
2. business criteria justifying mobile device reimbursement or allowances for state employees using personal phones for business purposes;
3. internal business control policies to ensure monthly bills are reviewed before payment to eliminate errors, waste, or fraud;
4. internal business control policies to ensure underutilized or high-cost mobile devices are replaced with more cost-effective alternatives; and

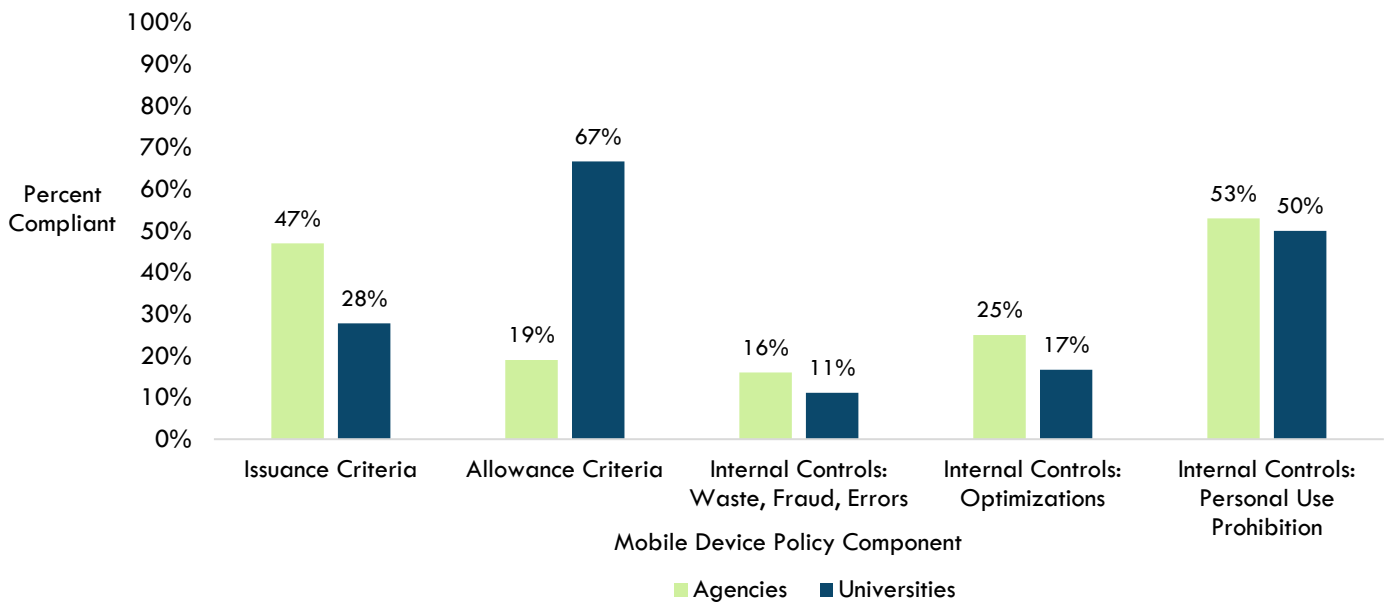
5. internal business control policies to ensure personal material and non de minimis personal use of state-funded mobile devices is prohibited.¹⁰

The State Budget Manual also requires that agencies and universities maintain an inventory of devices that must be reviewed and approved annually by each entity’s chief financial officer (CFO) or equivalent executive manager.

Most entities had a mobile device use policy, but these policies generally fail to meet State Budget Manual criteria. PED collected policies from state agencies and universities to analyze the extent to which they met the five criteria. In total, 32 agencies and 18 university system entities responded, with nearly 80% having a policy. However, because maintaining such a policy is required, compliance should have been 100%.

Further, as Exhibit 8 shows, most policies did not contain the five required components. In particular, most respondents provided policies that lacked internal business controls to 1) ensure monthly bills are reviewed before payment as a means of eliminating errors, waste, or fraud and 2) ensure underutilized or high-cost devices are replaced with more cost-effective alternatives.

Exhibit 8: Majority of Mobile Device Policies Failed to Meet State Budget Manual Requirements



Notes: Percentages represent portion of respondents that provided policies containing the identified component.

Source: Program Evaluation Division based on a survey of North Carolina agencies and universities.

No agencies or universities met all State Budget Manual device inventory requirements. Inventories must contain the following seven components for every employee-issued device:

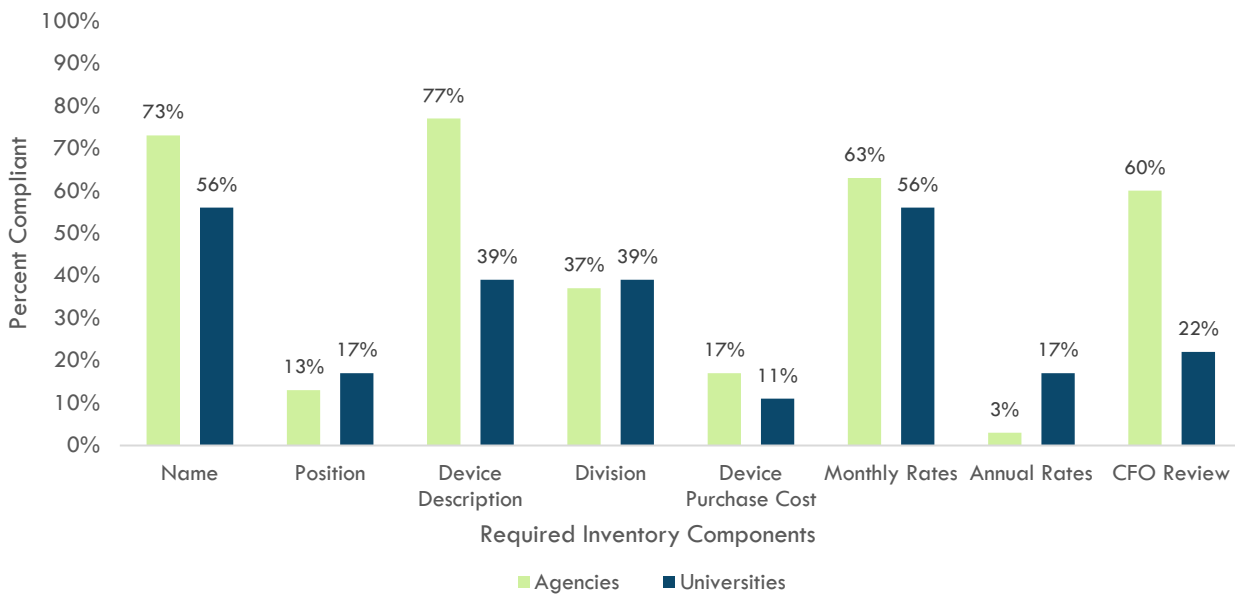
1. employee name;
2. employee position;
3. employee division or office;

¹⁰ A non de minimis amount is not defined in the State Budget Manual, but is generally considered to be something so minor as to merit disregard.

4. device summary description;
5. initial device purchase cost;
6. monthly vendor billing rates; and
7. annual vendor billing rates.

PED obtained copies of recent device inventories from state agencies and universities to analyze whether inventories met these criteria. The most common examples of non-compliance included respondents neglecting to list employee title, initial cost of device, and annual vendor costs. In addition, each agency/university’s CFO or equivalent executive manager must annually review and approve the inventory. Fewer than half (46%) of all agencies and universities reported having a CFO or equivalent manager conduct and approve an annual review.

Exhibit 9: Mobile Device Inventories Failed to Meet All State Budget Manual Requirements



Notes: Percentages represent portion of respondents that provided inventories containing the identified component.

Source: Program Evaluation Division based on a survey of North Carolina agencies and universities.

Many inventories provided to PED consisted solely of data derived from carriers, which negates much of the utility of having an inventory in the first place.

Some inventories consisted entirely of data from wireless carriers, meaning the agency or university was not independently tracking this data. Some entities provided relatively thorough inventories and reported that their inventories were updated regularly by staff. However, others submitted inventories that appeared to simply be data downloaded from mobile service providers. Although PED counted these submissions as inventories in its analysis, the utility of these inventories is questionable. First, part of the benefit of keeping an independent inventory is that this information can be compared with mobile service provider data to ensure billing charges are accurate. Second, using mobile service provider data as an inventory fails to account for mobile devices that are not active.

State law imposes several additional requirements on executive branch agencies related to the efficient use of mobile devices.¹¹

These requirements include the following:

1. Agencies shall develop a policy to limit the use of mobile devices to the minimum required to carry out the agency's mission.
2. State-issued devices shall only be used for state business.
3. Agencies shall limit the issuance of devices to employees for whom a mobile device is a critical requirement for job performance, and the device issued and plan selected shall be the minimum required to support the employee's work.
4. The requirement for each device issued shall be documented in a written justification that shall be maintained by the agency and reviewed annually.
5. Agencies shall conduct periodic audits of usage to ensure that state employees and contractors are complying with agency policies and state requirements for their use.
6. Each agency shall report annually to the General Assembly, the Fiscal Research Division, and the Office of State Budget and Management on the following:
 - a. any changes to agency policy on the use of mobile communication devices;
 - b. the number and types of new devices issued since the last report;
 - c. the total number of devices issued by the agency;
 - d. the total cost of devices issued by the agency; and
 - e. the total number of each type of device issued, with the total cost for each type.

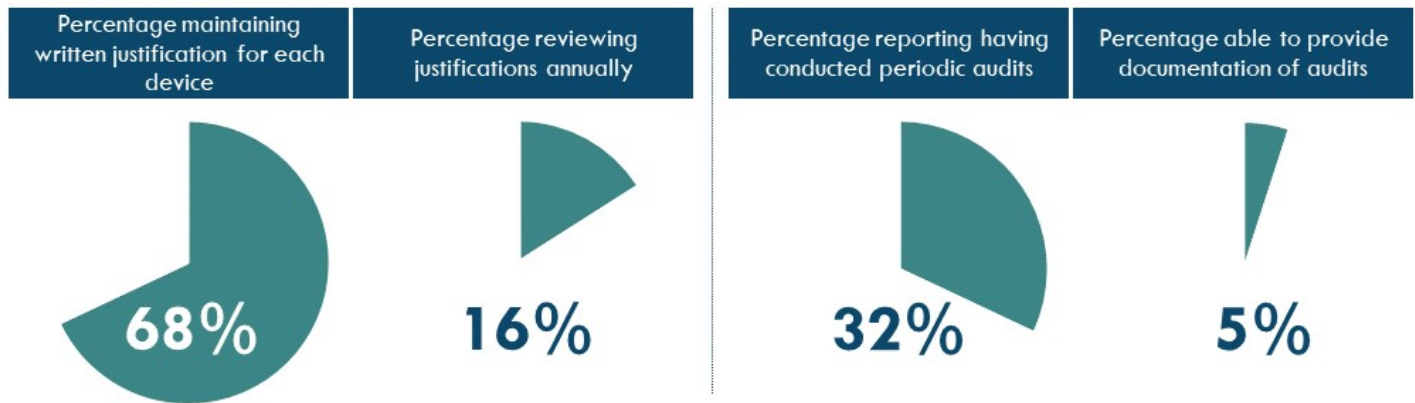
Most executive agencies are not fully compliant with applicable statutory device requirements, including directives to conduct annual reviews of device justifications, audits, and annual reporting. As shown in Exhibit 10, 68% of agencies indicated compliance with the requirement that agencies document a need for all state-issued devices in a written justification, but only 16% indicated that these justifications undergo the required annual review.¹² Furthermore, fewer than a third of agencies reported conducting periodic audits of usage as mandated, and only one agency provided documentation showing results of an audit.

¹¹ N.C. Gen. Stat. § 143-162.5 does not define executive branch agencies. For this report, the Program Evaluation Division interpreted executive branch agencies to include the principal departments named in N.C. Gen. Stat. §143A-11 and §143B-6 (the Executive Organization Acts of 1971 and 1973). The agencies evaluated for compliance were the Departments of Administration, Agriculture and Consumer Services, Commerce, Community Colleges System Office, Environmental Quality, Health and Human Services, Information Technology, Insurance, Justice, Labor, Military and Veterans Affairs, Natural and Cultural Resources, Public Instruction, Public Safety, Revenue, Secretary of State, State Auditor, State Treasurer, and Transportation.

¹² Several agencies reported that they reviewed justifications but did not do so annually. These agencies typically reported reviewing justifications prior to purchase or when employees request upgrades. These instances are appropriate times to review justifications, yet they would not detect situations wherein an employee's need for a device has changed after initial approval or when an employee separates from the agency.

Exhibit 10: Executive Branch Agencies Need to Improve Compliance with State Law Regarding Efficient Mobile Device Usage

Executive Branch State Agencies



Source: Program Evaluation Division based on a survey data from North Carolina executive branch agencies.

Agency compliance with reporting provisions also appears to be low.

The Fiscal Research Division is among the entities to whom agencies should be reporting annually. However, the Fiscal Research Division reported that it has not received mobile device-related reports from any agency since Fiscal Year 2016–17. PED was able to identify two agencies that have completed these reports more recently but apparently had not submitted them to the Fiscal Research Division. Overall, compliance appears to be low.

One factor that may contribute to low compliance with state law regarding agency usage of mobile devices is the complicated recent history of state law on this topic. The current law, N.C. Gen. Stat. § 143-162.5, was not codified until the latter part of 2020. Previously, Session Law 2011-145, as modified by Session Law 2015-286, applied but was not codified in statute. A previous reporting requirement, N.C. Gen. Stat. §120-236, had been codified in law, but the General Assembly repealed that law in 2014. Given this complicated history, it is possible that some agencies may not have been aware of the existing reporting requirements.

Lack of compliance with mobile device-related laws and policies contributes to waste. Lack of policies at state agencies sufficiently implementing requirements of state law and the State Budget Manual result in a lack of assurance that agencies are efficiently using mobile devices. The importance of these policies is not theoretical; Finding 1 discussed observed waste resulting from unused mobile devices and a failure to optimize device usage. The State Budget Manual requires agencies to have controls in place to ensure that underutilized devices or high-cost devices are terminated or replaced with more cost-effective alternatives. Agencies need to improve compliance, yet there is also a role that the Department of Information Technology (DIT) could play as the statewide enterprise organization for IT governance.

Finding 3. Although the North Carolina Department of Information Technology has broad authority to manage wireless devices and services, its failure to exercise this authority results in limited oversight of mobile device usage and missed opportunities to save money.

To summarize the finding below, the Program Evaluation Division (PED) found that the North Carolina Department of Information Technology (DIT) has broad authority to make policies and to oversee the use of mobile devices. Despite this authority, DIT delegates almost all decisions regarding the management of mobile devices to individual agencies, resulting in lost opportunities to better optimize devices and plans at the state level, a lack of oversight regarding how agencies are using mobile devices, and wide variation in allowances for state employees who are approved to receive payment for personal devices used for state work. To rectify these issues, DIT would need to increase management and oversight of mobile devices and services. The agency could fund these additional management costs with revenue provided by the fees DIT already charges to agencies for their use of the State's mobile device and services contracts.

In 2015, the North Carolina General Assembly created DIT as a cabinet-level agency to consolidate information technology functions, powers, duties, obligations, and services. State law details DIT's specific powers and duties, including to

- operate as a state enterprise organization for information technology governance;
- prescribe the manner in which information technology assets, systems, and personnel shall be provided and distributed among agencies, to include changing the distribution when the state Chief Information Officer (CIO) determines that is necessary;
- identify and develop projects to facilitate the consolidation of information technology equipment, support, and projects;
- require reports by state agencies, departments, and institutions about information technology assets, systems, personnel, and projects and prescribe the form of such reports; and
- proportionally charge each state agency for maintaining and operating shared centers and services, subject to approval by the Office of State Budget and Management.¹³

Despite its directive to consolidate information technology functions and services, DIT has done little to oversee mobile device usage at state agencies. State agencies are required to use DIT contracts to purchase mobile devices and services, and DIT charges an administrative fee to manage these contracts. Although DIT is available to assist with consultation related to the selection of mobile devices and plans, state agencies interact directly with the selected mobile service providers for ordering, billing, disconnections, warranty/repair issues, and ongoing support. The mobile service vendors provide procurement portals on their websites for state customers. DIT does not monitor how agencies are managing their mobile devices and does not require agencies to report on mobile device purchasing, use, or expenses. Further, DIT has not created any policies or

The rationale behind the creation of the Department of Information Technology was to establish clear accountability and authority over IT resources.

¹³ N.C. Gen. Stat. § 143B, Article 15.

guidance to proscribe how agencies should manage mobile devices, keep device and service records, ensure proper use, or prevent waste.

DIT also has failed to meet broader internal management and operations directives from the General Assembly to exercise authority over telecommunications.¹⁴ As part of its legislative mandate, DIT is statutorily charged with 14 enumerated responsibilities related to communications services.¹⁵ Two of these responsibilities are to

- develop a detailed plan for the standardization and operation of state communications networks and services and
- provide a periodic inventory of telecommunications costs, facilities, systems, and personnel within state agencies.

DIT has not developed a detailed plan for the standardization and operation of state communications networks and services, which would include mobile device networks and services. DIT also does not provide an inventory of costs for mobile devices and services within state agencies or related personnel within state agencies.

Efficiency could be improved and waste reduced if DIT took a more active role in managing and overseeing state agency usage of mobile devices and services. As discussed in Finding 1, effective management and optimization of mobile devices and services is specialized work. Even where staff at agencies may have time to devote to these efforts, this work would be most efficiently performed at the state level. Analysis of pooled voice minute usage is an example of a task best accomplished in this centralized manner as opposed to being conducted at each agency. Likewise, rather than having each agency separately analyze which of its devices are unused or little-used, DIT could conduct this analysis and alert agencies to take action.

One challenge to assigning DIT this role is that, despite its authority, the department presently does little to manage mobile device usage in the State beyond procurement and billing. Because it does not presently possess the necessary technical expertise, DIT could contract some of this work to a private vendor, as Ohio has done, or seek to develop this capacity internally.

Several private companies specialize in mobility management and optimization and utilize specialized software programs to analyze usage and determine the most cost-effective mix of plans. These companies offer services to help private sector and government clients optimize their spending on mobile services. These services are frequently paid as a negotiated fee or on a contingency basis and include

- wireless carrier contract review and contract negotiation;
- order processing and inventory management;
- optimization of rate plans and features;
- management of pooled minutes or data;
- identification of unused devices; and

¹⁴ Telecommunications systems include broadband, telephone systems (including commercial mobile radio systems), two-way radios, satellite services, closed-circuit TV systems, microwave systems, and related systems based on telecommunications technologies.

¹⁵ N.C. Gen. Stat. § 143B-1370.

- bill review and auditing, including disputing erroneous charges with wireless carriers.

One company interviewed by PED noted that savings are driven by centralization and the resulting ability to bring disparate datasets into one platform to track and validate expenses, make optimization decisions, and manage the life cycle of devices. This company stated that its work in another state has led to a 16% reduction in monthly mobile device and services spending and helped make program management more efficient and consistent across state agencies. A similar rate of savings, if achieved in North Carolina, would equate to roughly \$2.7 million annually.

Another policy area DIT has not directly addressed is “bring your own device.” “Bring your own device” generally refers to employees using their own mobile devices for work purposes. In 2013, the General Assembly directed the State CIO to develop a policy for implementing a “bring your own device” plan for state employees. Such policies allow state employees to use personally owned devices to conduct state business; in certain instances, employees may receive reimbursement for the use of these devices. Although the CIO presented a policy development update to the Joint Legislative Oversight Committee on Information Technology in 2014, no policy was ever finalized or implemented. Absent a statewide policy, there are no standards or guidelines for conducting state business with personal devices. Concerns over cybersecurity related to personal devices are another reason to have a formal policy. Several agencies do not permit allowance payments to their employees for the use of personal devices and do not have policies. Other agencies allow “bring your own device,” but their policies lack content standardization.

A 2018 survey of companies by Oxford Economics found the average monthly stipend to employees who brought their own device to work was \$36

Agencies have adopted differing levels of allowances for employees required to use personal devices, and some of the allowances appear to be set at unreasonable levels. Without oversight or guidance regarding implementation of “bring your own device” protocols, state entities have developed their own policies, which include determining the allowance amounts they pay. As Exhibit 11 shows, the amounts state employees are reimbursed for using their personal device for state work depends on the agency where the employee works; PED found allowance amounts range from \$5 per month to up to \$80 per month depending on the agency. According to one national survey, the average monthly stipend in 2018 for employees who brought their own device to work was \$36. Several state entities such as the Housing Finance Agency and the Administrative Office of the Courts offer allowances that are more than twice this national average. Some agency mobile device allowances are even greater than the cost of certain smartphone plans offered by vendors through state contracts. For example, a Verizon plan with unlimited voice, data, and messaging with hotspot is \$53.04 per month. Similarly, U.S. Cellular offers an unlimited voice, data, and messaging monthly plan with hotspot for \$43.05. Meanwhile, some state entities are paying as much as \$70 or \$80 per month in allowances.

Exhibit 11: Allowances for Personal Device Usage Range Widely by Agency



Notes: Ranges for a particular agency represent the lowest and highest amounts offered. Generally, the low amount represents minimal personal use or payment for voice-only usage, whereas the top end of a range generally represents an allowance for personal use of a device that entails voice, messaging, and data. The Department of Transportation pays allowance amounts of up to \$35 per month but did not have a minimum amount. The Commissioner of Banks pays a flat amount of \$25 per month. This exhibit does not include every agency that provides allowances but is an illustrative sample.

Source: Program Evaluation Division based on a survey of North Carolina agencies and universities.

Although there is a cost to managing and optimizing the use of mobile services, DIT already receives fee revenue from state agencies that far exceeds the costs presently incurred by DIT for mobile device management. As part of its mandatory procurement contracts for mobile devices and services, DIT charges state agencies and universities a 2% fee on all purchases. Other entities such as local governments, school boards, and community colleges pay a 1% fee to use a state contract. These fees provided DIT with \$523,876 in Fiscal Year 2019–20. DIT reported spending \$121,500 of this amount on staff salaries and indicated that the rest of this revenue contributes to “equity within the internal service fund.” DIT’s position on the use of these funds appears to be inconsistent with North Carolina statute governing the DIT internal service fund, which states, “Receipts shall be used solely for the purpose for which they were collected.”¹⁶ Regardless, this excess fee revenue could be used to improve the management of mobile devices and services.

¹⁶ N.C. Gen. Stat. § 143B-1333(c).

Finding 4. Limitations in DIT's management of cellular services contracts have hindered performance evaluation and assurance that contracts are maximizing value.

To summarize the finding below, DIT manages statewide contracts for mobile devices, services, and accessories, but DIT could not demonstrate that it has evaluated the performance of these contracts, which DIT has renewed or extended several times. In addition, PED determined that the State presently is paying more than necessary for mobile device accessories through state contracts. Regarding the procurement of actual mobile devices and services, PED could not determine whether the structure and pricing of state contracts are optimal due to the complexity of plan designs and pricing structures. There are mobility management services firms capable of analyzing the State's mobile device usage and needs to determine whether North Carolina's statewide cellular service contracts are optimally structured and provide the maximum possible discounts.

As discussed in the Background, DIT currently manages mobile device and service procurement through separate contracts with five national carriers. Prior to the creation of DIT, the Office of Information Technology (OIT) issued a request for proposals (RFP) in 2010 to procure cellular telephone services and equipment. OIT awarded contracts to Verizon, AT&T, Sprint, and U.S. Cellular in 2011 and OIT later awarded a contract to T-Mobile during an open enrollment period in 2013.¹⁷ Since these initial awards, DIT has renewed or extended each contract at least three times to run through May 2022. According to the terms of these contracts, the State receives varying discounts on eligible equipment, monthly service, and accessories. Service discounts range from 16% to 25%, depending on the carrier.

PED's review of DIT's management of cellular service contracts revealed two deviations from best practices.

- *Lacks award justification.* It is imperative that the evaluation of proposals is well documented to ensure the award process is fair and conforms to the solicitation and to law. DIT did not provide evidence of evaluation of vendor proposals, which would typically include an evaluation process as well as scores and justifications for the decisions to award contracts.
- *Lacks performance measures and evaluation of vendors.* Evaluating vendors against documented performance measures is critical to ensuring goods and services conform to contract specifications, vendors comply with contract terms, and any issues or disputes are identified and resolved. Contract renewal or extension should be tied to vendor performance, and DIT did not provide evidence to demonstrate that it has completed any performance evaluations of vendors. DIT did note that it looks at performance of these contracts based upon technical sufficiency of the products and agency complaints, but DIT did not have any established performance measures for either of these areas.

¹⁷ Open enrollment allows DIT to add vendors to the state contract after the initial contract is established if a potential vendor meets certain criteria. This feature allows new vendors to join the contract mid-cycle instead of having to wait for the contract to expire and a new procurement solicitation.

DIT's current contracting and procurement processes for mobile device accessories fail to maximize savings to the State. DIT's cellular service and equipment contract includes accessories for devices. Each contract specifies a percentage discount on accessories, which typically includes items such as cases, screen protectors, and chargers. North Carolina's contract with Verizon provides for a 25% discount off the retail price of "qualifying accessories." In practice, many of the accessories purchased through Verizon did not qualify for this discount, which is particularly problematic considering Verizon accounts for over 80% of the State's spending on mobile devices and services, including accessories.

PED found the State could save money on mobile device accessories by more fully participating in an existing cooperative purchasing contract.

Cooperative purchasing occurs when two or more governmental entities pool their commodity and/or service requirements to purchase aggregated quantities, thus achieving economies of scale. Cooperative purchasing agreements are a common method that states use across sectors to purchase goods and pool contract administration resources. The process usually involves a single combined bid or RFP in which all of the participating entities are named or in which their participation is implied.

The National Association of State Procurement Officials (NASPO) operates a cooperative purchasing program called ValuePoint that manages cooperative purchasing agreements for a variety of products and services. ValuePoint manages a mobile device, services, and accessories portfolio that includes cooperative purchasing agreements with Verizon, AT&T, T-Mobile, and Sprint, but not U.S. Cellular. North Carolina currently participates in several ValuePoint cooperative purchasing agreements. For example, DIT participates in a ValuePoint agreement to procure equipment from Apple.

In addition to contracting with wireless carriers, NASPO ValuePoint has a contract with a company exclusively focused on selling discounted mobile device accessories. North Carolina does not have a similar contract, and state agencies and universities instead purchase accessories directly from wireless carriers. In Fiscal Year 2019–20, the State spent \$312,154 on mobile device accessories from Verizon alone.

The ValuePoint contract for accessories appears to provide lower net accessory costs and could save North Carolina between \$7,000 and \$51,000 annually depending on how frequently the contract would be used by agencies.¹⁸ North Carolina could join the NASPO ValuePoint contract with DiscountCell to take advantage of these potential cost savings on accessories while continuing to use the current statewide contracts for mobile devices and services.

¹⁸ PED sampled the State's 10 most-purchased Verizon accessories in Fiscal Year 2019–20, which accounted for 55% of the total number of accessories ordered from Verizon, to compare the cost of those accessories with the cost of similar accessories sold by DiscountCell, the current NASPO ValuePoint vendor for accessories. Based on this sample, the State would have saved approximately \$24,700 if these accessories had been purchased using the ValuePoint contract rather than directly from Verizon. PED then applied this 17.3% savings rate from the sample to all Verizon purchases, in order to estimate a range of savings based on how frequently the vendor carries the same or equivalent products and an estimated range of how frequently agencies would use the vendor when a lower-cost item is available rather than ordering through a wireless carrier.

Unlike purchasing accessories, PED could not compare the value of NASPO contracts for mobile devices and services to current statewide contracts because of major differences in how plans are structured.

Though both North Carolina statewide cellular service contracts and NASPO ValuePoint cellular contracts provide discounted mobile equipment and services, specific service plan offerings differ greatly. For example, the State's pooling plans are generally oriented around pooled voice minutes with unlimited data, whereas the pooling plans ValuePoint has procured are oriented around pooled data with unlimited voice minutes. Determining which of the two plan structures is more favorable depends on sophisticated analysis of usage patterns paired with industry data on different plan structures. In addition, contract terms, such as those regarding late fees, administrative fees, changing plans, and the ability to make purchases in retail stores, also differ between contracts. Given these variations and limitations, PED could not compare the North Carolina and ValuePoint contracts to identify potential cost savings in the State's procurement of mobile devices and services.

There are mobility management services firms capable of analyzing the State's mobile device usage and needs and determining whether North Carolina's statewide contracts are structured to realize maximum savings.

Mobility management companies can perform comprehensive analysis of North Carolina's statewide contracts and mobile device usage in order to determine optimal contract and procurement strategies. Such an analysis has the potential to yield opportunities for cost savings in procurement for the State and is likely even more important because mobility trends and service offerings consistently evolve. DIT did not provide evidence of having performed any analysis of this type during the past decade that spans the existing contracts. Thus, it is important that DIT reevaluates its statewide contracts and procurement strategy to see if greater savings are possible.

Recommendations

Recommendation 1. The General Assembly should direct the Department of Information Technology to evaluate its procurement of cellular telephone service and equipment.

As Finding 3 discusses, the State could save money by improving how it procures mobile device accessories. In addition, rather than continuing to extend the State's cellular equipment and services contracts, DIT should review the existing contracts to determine whether they are structured to maximize value. DIT has already extended its 2011 contracts with wireless carriers through the end of May 2022.

The General Assembly should require DIT to

- have a third party with expertise in mobility management review current contract and usage information by November 2021 to inform a future procurement strategy. This review should include analysis of the structure of existing pricing plans and determine whether they are optimally structured for the State's usage or if there is a more cost-effective procurement strategy the State should pursue before its current contracts expire. For example, such a review should consider revising the sharing of minutes in pooled plans versus instituting pooled plans that are primarily structured to share data.
- establish a contract for device accessories that ensures the State leverages its buying power to consistently receive discounts on mobile device accessories. The State has not been receiving a discount on many common accessory purchases through Verizon. The National Association of State Procurement Officials' ValuePoint is a cooperative group purchasing program that has established a standalone contract for device accessories, and DIT could choose to participate in this contract or pursue its own procurement process.

DIT should submit a report to the Joint Legislative Oversight Committee on Information Technology by February 1, 2022. This report should include a brief summary of findings of the third-party review and a description of how DIT intends to proceed when existing contracts expire.

Recommendation 2. The General Assembly should direct DIT to consider a business case for centralized management and optimization of the State's mobile services.

As Finding 1 discusses, the State could be saving millions of dollars each year through improved optimization and management of mobile services. The Program Evaluation Division (PED) identified waste resulting from agencies maintaining 2,098 devices with no usage for a year and 1,347 little-used devices, as well as almost 17 million unused pooled minutes. Achieving these savings will require more active management and optimization, which could be done by a mobility management company or internally by DIT.

The General Assembly should require DIT to develop a process to solicit and receive detailed proposals from multiple parties providing mobility management services, including plan optimization, pool optimization, and bill review/audit, by November 1, 2021. As part of this process, DIT should

be required to share utilization information and contract pricing information with potential mobility management providers so that they can estimate cost savings to the State. DIT should be directed to simultaneously consider the feasibility and estimated cost and savings of developing these mobility management services internally.

DIT should be required to submit a progress report on optimizing the State's use of mobile services to the Joint Legislative Oversight Committee on Information Technology by February 1, 2022. This report should include

- an update on progress,
- a projection of potential savings and costs resulting from having a managed mobility services company provide optimization services,
- a projection of potential savings and costs resulting from DIT providing these services internally,
- a recommendation on how to proceed, and
- copies of any proposals received from mobility management providers.

The required actions and corresponding progress report resulting from this recommendation will provide the General Assembly with information to consider in determining how it wishes to proceed. Should the General Assembly wish to proceed, it should explicitly direct DIT to centrally manage wireless service plan selection and pooling to best match usage with services. Agencies could still retain the autonomy to order devices and determine the types of plans they need, but DIT would have the ability to modify plan selection to optimize the State's spending on mobile services.

Recommendation 3. The General Assembly should direct DIT to establish a “bring your own device” policy.

As Finding 3 discusses, the General Assembly directed the State Chief Information Officer (CIO) to develop a policy for implementing a “bring your own device” policy for the State in 2013, but the State CIO never adopted a policy. The General Assembly should require DIT to develop a policy and provide a copy to all principal state departments and to the Joint Legislative Oversight Committee on Information Technology by February 1, 2022.

Recommendation 4. The General Assembly should modify current law to direct DIT to collect additional information and to report annually on mobile device usage, thereby eliminating agency-by-agency reports.

As Finding 2 discusses, each executive branch agency is currently required to report annually on new mobile devices purchased, total number of mobile devices, number of each type of device, and costs. The utility of current reporting requirements are limited by low rates of reporting and a lack of data on utilization. A more efficient approach would be to have DIT compile information across state agencies to facilitate comparisons and the identification of additional areas of savings.

The General Assembly should modify current reporting requirements in state law and require DIT to prepare a consolidated report annually of

information statewide for each agency using mobile device data available through carriers. The report should include

- total amounts spent by each state agency on mobile devices and services and the amounts and percentage change from the previous year;
- number of devices issued by each agency as of the end of the fiscal year and the number and percentage change from the previous year;
- number of unused and little-used devices by agency and the cost of such devices (in doing so, DIT should establish definitions for unused and little-used devices);
- general trends in device usage by state agencies; and
- any additional information DIT deems necessary to increase the efficiency of mobile device usage.

The report should be submitted to the Chairs of the House of Representatives Committee on Appropriations, the Chairs of the Senate Committee on Appropriations, the Joint Legislative Oversight Committee on Information Technology, the Fiscal Research Division, and the Office of State Budget and Management beginning September 1, 2022 and annually thereafter.

Recommendation 5. The General Assembly should modify existing requirements for state agencies to efficiently use mobile devices.

The requirements found in N.C. Gen. Stat. § 143-162.5 should be modified to include the following:

- a requirement that all state agencies have processes to ensure that devices assigned to employees are deactivated at separation;
- a requirement that all state agencies ensure that all active devices have an assigned individual who is responsible for that device (in the case of shared devices, a primary user, supervisor, or IT staff person could be assigned primary responsibility); and
- expanded applicability of these requirements to all state agencies subject to the State Budget Act.

Recommendation 6. The General Assembly should direct the Office of State Budget and Management (OSBM) to establish maximum allowance amounts for agencies/institutions that permit or require employees to use their personal mobile devices for state business.

As discussed in Finding 4, some entities are setting mobile device allowance amounts at rates that exceed what it would cost to provide a state-owned mobile device to the employee. To ensure efficiency in state expenditures on mobile device allowances, OSBM should establish maximum amounts in the State Budget Manual and update these amounts as necessary. OSBM should include separate amounts for basic phone use (voice only); smartphone use (voice, data, and text); or data-only devices. In setting the amounts, OSBM should ensure that allowance amounts are not greater than the cost of purchasing these services through state contracts. OSBM should

begin including these amounts in the State Budget Manual by January 31, 2022.

Recommendation 7. The General Assembly should direct the Office of the State Controller to work with DIT to revise expenditure accounts within the Chart of Accounts to capture spending more precisely on mobile devices and services.

As discussed in the Background, current expenditure data in the State's financial management system do not adequately capture spending on mobile devices and services for management purposes. There is an expenditure account for nontaxable employee cell phone reimbursement, but many agencies are paying taxable reimbursements. In addition, there is an account for cellular phone services, but it is unclear what account should be used for cellular devices that are not phones (e.g., tablets, broadband modems, fleet telematics devices). Having more explicitly defined expenditure accounts related to mobile devices and services will help the State better track these expenditures. The Office of State Controller should work with the Department of Information Technology to better define and track these expenditures within the Chart of Accounts by February 1, 2022.

Agency Response

A draft of this report was submitted to the Department of Information Technology and the Office of State Budget and Management for review and response.

Program Evaluation Division Contact and Acknowledgments

For more information on this report, please contact the lead evaluator, Jeff Grimes, at jeff.grimes@ncleg.gov.

Staff members who made key contributions to this report include Cody Davis, Natalie Garrett, and Sara Nienow. Kiernan McGorty is Acting Director of the Program Evaluation Division.

January 6, 2021

Kiernan McGorty
Acting Director
Program Evaluation Division
N.C. General Assembly
300 N. Salisbury Street, Suite 100
Raleigh, NC 27603-5925

Acting Director McGorty:

The N.C. Department of Information Technology team and I appreciate the opportunity to review the December 17, 2020, Program Evaluation Division draft report No. 2021-01, “Improved Management of Mobile Devices and Services Could Save the State at Least \$1-2 Million Annually.”

The Department generally agrees with the Division’s finding that the State can gain efficiencies on agency use of mobile devices. In the wake of the COVID-19 pandemic, however, the way NCDIT serves the state is changing rapidly and perhaps permanently. State agencies have maintained operations and productivity despite a widescale shift to remote work, and this steady performance will yield greater opportunities to save taxpayer resources down the road. The questions of where and how we work will be central to resource management moving forward, and potential savings certainly will follow more technology and remote capability investment, not less.

At the same time, heavier reliance on technology across state government coincides with continually growing cyber threats focused in part on user devices. This makes personal mobile device use by state employees riskier and the potential costs of malicious activity higher. Accessing secure cloud-based work resources through an employee’s personal device requires additional security licenses and operation and maintenance costs, as well as staff hours. On top of security concerns, personal device use creates record retention concerns for the agency as does the potential increase of personnel issues.

NCDIT agrees with finding three regarding the Department’s broad authority to manage wireless devices and services. The Department’s current posture is a reflection of a business decision to delegate authority to agency leaders who know their mission need and can assess agency

requirements. Given the trend toward the consolidation of IT functions across state government, NCDIT certainly could take a stronger oversight role, but this approach would require additional resources. NCDIT currently maintains a statewide cellular contract that includes all cellular providers in the state – this is crucial for competition and to meet mission and service needs across the state where some providers have a limited signal. This contract includes mobile device accessories, and contract participants have performance and customer support requirements to provide for the state.

NCDIT does not object to any of the Division’s specific recommendations. NCDIT recommends, however, that the Department evaluate its procurement of cellular telephone service and equipment and consider a business case for third-party management and optimization of the State’s mobile services without enacting further legislation at this time. Additional resources may be necessary to complete these analyses. NCDIT recommends completing these reviews prior to enacting further legislation. NCDIT will continue to evaluate its existing contract as well as the state’s ability to use existing cooperative purchasing agreements such as NASPO’s ValuePoint.

NCDIT is committed to delivering the best possible value in technology needs to state agencies and the people of North Carolina. We will explore all available options to gain efficiencies and save taxpayer resources while supporting the state’s remote work posture, meeting critical agency mission needs, and maintaining the state’s cybersecurity.

Sincerely,

A handwritten signature in black ink, appearing to read "T. Parrish #". The signature is stylized and includes a small hash symbol at the end.

Thomas Parrish
Acting Secretary and State CIO



STATE OF NORTH CAROLINA
OFFICE OF STATE BUDGET AND MANAGEMENT
Employment First State for Individuals with Disabilities

ROY COOPER
GOVERNOR

CHARLES PERUSSE
STATE BUDGET DIRECTOR

January 7, 2021

Mr. Jeff Grimes
Principal Program Evaluator
Program Evaluation Division
NC General Assembly
100-M Legislative Office Building
Raleigh, NC 27603-5925

Dear Mr. Grimes,

Thank you for the opportunity to comment on the Program Evaluation Division's confidential preliminary draft of Report No. 2021-01 "Improved Management of Mobile Devices and Services Could Save the State At Least \$1–2 Million Annually." The Office of State Budget and Management (OSBM) agrees with the Performance Evaluation Division's (PED) assessment that Statewide procurement and use of mobile devices and services will continue to trend upward, especially in a post-pandemic environment, and that this presents a potential area to achieve efficiencies.

OSBM prides itself in pioneering good-government initiatives and evidence-based decision making and, thus, we will seriously consider this report's recommendations and stand ready to partner with the Department of Information Technology (DIT), the General Assembly, or any other stakeholder to ensure all identified issues are properly addressed in a timely and comprehensive manner.

Based on the evidence provided in this report, OSBM concurs with Recommendation 1 and 2. We propose waiting to act until the evaluations described in Recommendations 1 and 2 are complete before pursuing any recommendations that follow.

Sincerely,

A handwritten signature in black ink that reads "Charles Perusse".

Charles Perusse