2024 - 2026 IT Strategic Plan

Agency:	199 Department of Conservation and Recreation
Date:	12/19/2023

Current IT State

In this section, describe the high-level strategy the agency will use to manage existing operational IT investments over the next year to 5 years. This section should align with identified Business Requirements for Existing Technology (BReTs). At minimum, please address the following questions in your description of your agencys strategy for managing existing operational IT investments:

Are there existing IT investments that will require additional funding over the next year to 5 years, such as license renewals, re-competition of current IT contracts, or system enhancements required by the Agency Strategic Plan?

If there are systems that will no longer support the agencys business needs, either through poor performance or excessive cost, how does IT leadership in the agency plan to address the issues?

If the agency does not have the staff or funding to meet increasing demand for IT services, how will IT leadership fulfill the requests?

DCR utilizes Information Technology (IT) in a number of diverse and complex ways.

In the area of Soil and Water Conservation, DCR employs IT for modeling related to land use practices that is used to determine whether Virginia is meeting its commitments to the clean-up of the Chesapeake Bay; agricultural planning and support to Virginia's 47 Soil and Water Conservation Districts in areas such as best management practices (BMPs), conservation planning (CPs), resource management plans (RMPs), and nutrient management plans (NMPs); and general support within the agency and to external stakeholders.

In the area of Dam Safety, IT resources are utilized to track all identified dams in Virginia, supporting spatial data such as watersheds and inundation zones, descriptive data and compliance documentation to support public safety and emergency response.

In the area of Natural Heritage, a spatial database management system called Biotics is supported for essential business processes that utilize ArcGIS, Oracle, Crystal Reports, Microsoft Access, and SQL Developer. This Biotics system is used by natural heritage programs throughout the U.S., Canada, and Central/South America to maintain and propagate data on rare species and natural communities. Biotics enables DCR and other state agencies to collaborate on projects and proposed actions in Virginia and to ensure that Natural Heritage resources are minimally impacted by their work. ArcGIS and R (for statistical computing) software are integral for modeling, assembling, and maintaining ConserveVirginia, the Commonwealth's land conservation strategy that guides state investments in land conservation to ensure the highest conservation outcomes, and ConservationVision, the Commonwealth's land conservation atlas containing nine models that guide land protection for a variety of values. DCR is mandated by law (§ 10.1-104.6:1) to update, maintain, and host ConserveVirginia and it is the lead agency for ConservationVision. Additional laws (§ 29.1-578 and § 29.1-579) established a collaborative leadership team comprised of the Virginia Department of Wildlife Resources, the Virginia Department of Transportation, the Virginia Department of Conservation and Recreation, and the Virginia Department of Forestry to create the Wildlife Corridor Action Plan for the Commonwealth. DCR conducted the modeling to develop the Wildlife Biodiversity Resilience Corridors and analyses to develop spatial summaries for the plan. Pursuant to § 29.1-579, the plan must be updated every four years.

In the State Parks and Planning and Recreation Resources divisions, GIS data is used for planning improvements to State Parks and Natural Areas that include road access. The electronic reservation system employed by DCR's State Parks reservation center is a utilization of IT to provide a seamless avenue for the public to access State

Parks services throughout the Commonwealth and provides a cost-effective way for DCR to ensure recreational facilities access to Virginia citizens in a user-friendly, up-to-date manner that enhances visitorship to the State Parks and Natural Area system.

DCR also relies heavily on IT for central operations that serve all divisions and consequently, affects services being provided efficiently and effectively to citizens and stakeholders.

Several of the above IT functions are provided and supported by third parties, however, DCR maintains IT systems that: identify the hazard status of dams, support GIS, automate the reservation systems, track payments to Virginia's 47 Soil and Water Conservation Districts for cost-share, support reporting to the Chesapeake Bay Program; support development of Nutrient Management Plans and provide operational support needs to districts and farmers to control and reduce nonpoint source pollution.

Central office operations include, but are not limited to, financial reporting and data management; IDS is DCR's internal accounting system that interfaces with the statewide accounting (Cardinal) and procurement (eVA) systems. This system was developed to replace the older IDSS Oracle based system. Human Resource data management and reporting; Enterprise Resource Planning (ERP) application; telecommunications; and applications development.

The Divisions of Dam Safety and Soil and Water Conservation share common IT staff and server platform to support their applications. For application maintenance and enhancements, a development contractor is used to address all application maintenance and enhancements that DCR data management staff cannot complete on their own.

Internal Process Automation is an operational necessity for the agency. DCR has designed and built several applications to address specific business needs where enterprise applications either do not exist, or to interface with an existing enterprise application, with enhancements made to existing applications and more applications being developed.

The Office of Resilience Planning utilizes IT resources to track resilience projects, initiatives, and funding opportunities, supporting spatial data such as present and future flood hazard extent and depths to analyze infrastructure and community impacts to support informed planning and decision making.

Factors Impacting the Current IT

In this section, the agency will describe the changes in their business environment that will require or mandate changes to the agencys current IT investments. These are requirements and mandates from external sources, such as other agencies or business partners, the agencys customer base, product and service providers, or new federal or state legislation or regulations. The agency must identify the business value of the change, any important deadlines that must be met, and the consequences if the deadlines are not met. In your discussion, be sure to note whether the proposed enhancements are funded or not. If the agencys existing current IT investments will not need enhancement due to requirements or mandates from external sources in the foreseeable future, the agency should enter the following text rather than leave the Factors Impacting the Current IT section blank

For each mandated change, summarize your agencys response from your Agency Strategic Plan, and is it the opinion of agency IT leadership that the IT portion of the response is adequately funded?

Do the mandated changes effect IT in other Commonwealth agencies, or in other states? If so, how?

GIS Demands: DCR conducts a large amount of geospatial analysis using GIS and statistical software. DCR utilizes web-based geospatial map services to support interstate and regional projects as well as supplementing DCR programs. While there is a growing demand for GIS services internal and external to DCR and a high public receptivity to GIS products, these services have been reduced due to the higher hardware costs. DCR continually examines ways to coordinate and influence the GIS efforts of VITA/Virginia Geographic Information Network. GIS web access: There is a strong demand for improved access for geospatial natural heritage and conservation data using new GIS and web technologies, and it is difficult to keep up with the demand and the technological advances to support it. Changes are occurring rapidly in geospatial software, storage, serving, and data format standards. These rapid changes require increased levels of security caused by access to multiple operating systems and more open applications. Geographic Information Systems data has long been the industry standard in outdoor recreation and conservation efforts. Continued investment in the tools needed to remain relevant and current in the rapidly

changing environment are essential to leverage relationships and avoiding the chance of missed opportunity. In addition to rapid changes and increased cost, GIS related staffing continues to hamper our ability to build out full datasets that support operational and growth needs of the division and agency.

Proposed IT Solutions

In this section, describe the high-level strategy the agency will use to initiate new IT investments over the next year to 5 years in support of the agency strategic objectives documented in your Agency Strategic Plan. The agency does not need to consider specific technologies at this time, however, the strategy should identify how the IT implementation will provide business value to the organization. This section should align with identified Business Requirements for New Technology (BRnTs). At minimum, please address the following questions in your description of your agencys strategy for initiating new IT investments:

What are the most important solutions, based on the priority assigned to the requirements by the business sponsors in your agency, and what is the approach to achieving these priority solutions?

If any new IT initiatives will be started in the upcoming budget biennium, is it the opinion of agency IT leadership that it is adequately funded?

Does the agencys current IT staff have the appropriate skill set needed to support future agency technologies? If not, what skill sets need to be acquired?

If the agency will be engaged in multiple new IT initiatives, how will agency IT staff and agency subject matter experts be used across the initiatives?

Over the next biennium DCR must continue to leverage technology to meet the Agency's goals and objectives and customer needs. The below items have been specifically identified as IT needs: continue to meet public demand for online services, including mobile services and social media services used to promote recreational opportunities; ensure that all database information used for DCR decision-making is tied together so that information can continue to be shared with decision makers and constituents in an effective and efficient manner.

During the next biennium DCR's Division of Soil and Water Conservation (DSWC) and Division of Dam Safety have several proposed projects to enhance system functionality and to meet the Agency's goals, objectives, and customer needs. These projects include: The Conservation Application Suite (CAS) which is the application that contains modules for best management practices, conservation plans, resource management plans, and nutrient management plans contains sections that are working off of technology that is over a decade old. It is becoming increasing difficult to find application developers who are proficient in this older technology, and there's also concern that some of the technology may reach a point where it is not supported by modern web browsers. This application has also grown tremendously over the years and was never anticipated to cover its current scope. With this in mind, DCR has received funding to develop the next version of this application which will be designed using more recent technology and will also be designed to more efficiently handle the wide scope of functionality that is now part of CAS. New functionality will also be added to the best management practice module of the application to allow for more accurate tracking of financial data with the goal of making this module the official system of record that tracks all sources of revenues and expenses related to agricultural programs in the DSWC. In addition, the mapping capabilities in the next version of the application will be greatly enhanced to allow for more efficient editing and processing of geospatial data along with enhanced capabilities for creating maps.

Conservation Application Suite (CAS) Enhancements: As part of DCR staff's management of applications, a list of requested enhancements is maintained for future development. A third party vendor is employed through CAI's staff augmentation contract to perform these enhancements and is also available to cover any bugs that may identified in CAS.

The Division of State Parks has a need for a GIS enabled asset and facilities management solution to track acreages of land, infrastructure, natural and cultural resource management equipment, and other assets. A business need for Virginia State Parks is increased integration of IT solutions outputs. Many IT solutions utilized are siloed which does not promote efficiency in workflows.

Internal Process Automation: The DCR will continue to refine, improve and expand the use of IT Automation to

improve the efficiency of Internal Processes. Additional projects are expected during the upcoming biennium. We are looking into an assessment of our accounting systems to determine if there are other potential products we can utilize to meet our financial reporting needs.

Virginia State Parks Communications Connectivity: During the next biennium DCR will continue to push for increases in communications capability. Many solutions are unavailable due to the high cost of trenching and burying communications wiring along public roads and utility easements. The continuing strategy is to continue to seek affordable improvements to communications connectivity.

The Office of Resilience Planning plans to migrate external databases and web applications to DCR and continue to build these systems to support Code required planning efforts.

IT Strategic Plan Budget Tables

Agency:	199 Department of Conservation and Recreation
Date:	12/19/2023

Current IT Services

	Costs Year 1		Costs Year 2	
Category	**GF**	**NGF**	**GF**	**NGF**
Projected Service Fees	$2,300,733.00	$573,928.70	$2,300,733.00	$591,146.56
VITA Infrastructure Changes				
Estimated VITA Infrastructure	$2,300,733.00	$573,928.70	$2,300,733.00	$591,146.56
Specialized Infrastructure				
Agency IT Staff	$1,040,596.00		$1,092,626.00	
Non-agency IT Staff	$393,244.00		$412,906.00	
Cloud Computing Service	$17,810.00		$17,810.00	
Other Application Costs				
Total:	$3,752,383.00	$573,928.70	$3,824,075.00	$591,146.56

Proposed IT Investments

	Costs Year 1		Costs Year 2	
Category	**GF**	**NGF**	**GF**	**NGF**
Major IT Projects:		$1,000,000.00		$500,000.00
Non-Major IT Projects:				
Agency-Level IT Projects:				

Major Stand Alone IT Procurements:				
Non-Major Stand Alone IT Procurements:				
Agency-Level Stand Alone IT Procurements:	$241,282.00		$241,282.00	
Procurement Adjustment for Staffing:				
Total:	$241,282.00	$1,000,000.00	$241,282.00	$500,000.00

Projected Total IT Budget				
	Costs Year 1		**Costs Year 2**	
Category	**GF**	**NGF**	**GF**	**NGF**
Current IT Services	$3,752,383.00	$573,928.70	$3,824,075.00	$591,146.56
Proposed IT Investments	$241,282.00	$1,000,000.00	$241,282.00	$500,000.00
Total	$3,993,665.00	$1,573,928.70	$4,065,357.00	$1,091,146.56

Business Requirements For Technology

Agency:	199 Department of Conservation and Recreation
Date:	12/19/2023
BReT - DCR State Parks Reservation System	
BRT Type:	Business Requirement for Existing Technology
Requested Start:	9/11/2023
Mandate:	
Mission Critical:	
Description:	
Recreation Dynamics reservation system from US eDirect.	
BReT Conservation Applic Suite (CAS) Enhancement	
BRT Type:	Business Requirement for Existing Technology
Requested Start:	9/11/2023
Mandate:	
Mission Critical:	
Description:	
CAS is an aging system. DCR is looking into the development of the next version of CAS designed with recent technology to allow for more efficiency and support. New functionality will also be added to CAS for best management practice module of the application to allow for more accurate tracking of financial data with the goal of making this module the official system of record that tracks all sources of revenues and expenses related to agricultural programs in the DSWC.	
BReT DCR Staff Augmentation	
BRT Type:	Business Requirement for Existing Technology
Requested Start:	7/1/2022
Mandate:	
Mission Critical:	
Description:	
IT contractor staff for ongoing support and maintenance of existing and new DCR IT systems and solutions.	

BReT DCR Website Improvements	
BRT Type:	Business Requirement for Existing Technology
Requested Start:	
Mandate:	
Mission Critical:	
Description:	
DCR is in need of website improvements that include an improved interface and navigational structure, especially for mobile devices. With more than 55% of all visits coming from mobile devices, the new websites must be designed for this format. In addition, an amplified use of imagery and video that complements data and information delivery so important to VADCR must be integrated into any new design.	
BRnT - Ag NMP Module Development	
BRT Type:	Business Requirement for New Technology
Requested Start:	
Mandate:	
Mission Critical:	
Description:	
DCR works to manage agricultural nutrients found in fertilizers, manure, bio-solids and other sources so that they retain their efficient use yet don't impair the quality of Virginia's ground and surface waters. DCR uses various strategies to encourage proper land application of fertilizer, manure and sewage sludge for agricultural and urban purposes. Nutrient management specialists in DCR's regional offices provide direct technical assistance to farmers. They develop site-specific nutrient management plans to help farmers with manure testing for nutrient levels, calibrate nutrient application equipment, and coordinate soil nitrate testing in agricultural crop fields. A business requirement exists to integrate a Nutrient Management Planning Module into DCR's existing AgBMP Tracking/Conservation Planning/Resource Management planning system. In addition to internal users at DCR this need also exists for the approximately 60 private sector nutrient management planners.	
BRnT - Cardinal	
BRT Type:	Business Requirement for New Technology
Requested Start:	
Mandate:	
Mission Critical:	
Description:	

Cardinal will replace CARS as the Commonwealth's accounting system by Febraury, 2016. DCR's financial systems will need to be modified to interface with Cardinal.

BRnT - Computer Aided Dispatch Upgrade	
BRT Type:	Business Requirement for New Technology
Requested Start:	
Mandate:	
Mission Critical:	Yes
Description:	
Upgrade the computer aided dispatch system for agency law enforcement. This system will be implemented and operated in cooperation with VA Department of Game and Inland Fisheries.	

BRnT - Dam Safety Module	
BRT Type:	Business Requirement for New Technology
Requested Start:	
Mandate:	Yes
Mission Critical:	Yes
Description:	
The dam safety module allows dam safety staff to track all information relevant to the regulation, maintenance, and emergency response efforts of all dams in Virginia through efficient data entry, storage and retrieval. Dam Safety staff and participants (owners and engineers) will be able to enter and edit dam safety data via general internet access with a user name and password. The centralized server and web based design will allow all DCR dam safety staff to coordinate and share data with other dam safety staff and participants. The modern data management approach taken in this project will allow for quick and efficient data retrieval (spatial and non-spatial data), querying, reporting, analysis, and sharing as well as provide an interface for users to quickly assess the status of a dam. A new mapping application within the module will allow dam safety to track essential spatial data that will allow dam safety and emergency responders to quickly identify areas at risk of dam related flooding or failures.	

BRnT - DSWC Financial Systems Module	
BRT Type:	Business Requirement for New Technology
Requested Start:	
Mandate:	
Mission Critical:	Yes

Description:
The purpose of this project is to develop a software and database solution for the integration of a complete Financial Management solution into DCR's existing AgBMP Tracking/Conservation Planning/Resource Management Planning system. The solution will be focused on five main areas: 1. Full tracking of all financial support provided to DCR, and to the SWCDs from DCR, for water quality program delivery and implementation, including the ability to input fiscal year budgets by subprogram, funding source, cost code and project codes, and to track project expenditures by fiscal year. This includes tracking initial fiscal year of allocation, even when funds are subsequently transferred and/or expended in other program years. 2. The ability to calculate allocations to SWCDs for Administration and Operations and for Cost-Share and Technical Assistance and the ability to generate contracts for each SWCD. 3. Integration between the AgBMP Tracking Module and other DCR financial data management systems. 4. Automation of financial data management transactions. 5. Clear and concise reporting of all financial data by both DCR and SWCDs including the ability for SWCDs to perform all of their required financial reporting, as well as generating information for annual audits. While these areas of focus have been identified by DCR DSWC it is expected the scope of this project will reasonably include other potential items identified during the initial phases of determining the full business needs portion of the project.

BRnT - Improving Virginia State Parks Communicatio	
BRT Type:	Business Requirement for New Technology
Requested Start:	
Mandate:	
Mission Critical:	
Description:	
Virginia State Parks Communications Connectivity: During the next biennium DCR will continue to push for increases in Communications Capability. Many solutions are unavailable due to the high cost of trenching and burying communications wiring along public roads and utility easements. The continuing strategy is to continue to seek affordable improvements to Communications Connectivity.	

BRnT-GIS Enabled Asset & Facilities Mgmt Solution	
BRT Type:	Business Requirement for New Technology
Requested Start:	10/2/2023
Mandate:	
Mission Critical:	
Description:	

Enterprise Asset Management (EAM) software has been identified as a need for Virginia State Parks across all levels of leadership. This includes a GIS functionality to track assets spatially, track asset condition, create preventive maintenance schedules for assets, create/assign work orders to particular assets, and utilize a scenario builder for capital planning against assets. Implementation of an EAM software improves the ability to manage assets through multiple lenses in a single place. This replaces the use of multiple complex spreadsheets that become easily outdated and only provide a singular glimpse at an asset.

DCR Network Upgrade BReT	
BRT Type:	Business Requirement for Existing Technology
Requested Start:	
Mandate:	
Mission Critical:	

Description:

Network

DCR SD-WAN Upgrade	
BRT Type:	Business Requirement for Existing Technology
Requested Start:	3/1/2023
Mandate:	Yes
Mission Critical:	Yes

Description:

Configure existing routers to support SD-WAN capability across all agency locations. This approach prepares agency location(s) with the ability to add additional network capabilities (multiprotocol label switching (MPLS), broadband, wireless (i.e., Cradlepoint)) to take advantage of application -aware routing over private and public networks.

Three step process:

Remote internetwork operating system (IOS) software upgrade on the router.

Remote SD-WAN deployment

Circuit deployment as needed

DCR Website Modernization	
BRT Type:	Business Requirement for New Technology

Requested Start:	6/18/2023
Mandate:	
Mission Critical:	Yes
Description:	
The primary objective of the COV Website Modernization and the CMS Virginia.gov projects are to ensure all state sites are on a single common platform and are following required VITA, COV and 508 standards	

Commonwealth Projects >= $250,000.00

There are no projects for this agency.

Commonwealth Procurements >= $250,000.00

There are no stand alone procurements for this agency.