



**COLORADO**

**Governor's Office of  
Information Technology**

Serving people serving Colorado

# Annual Legislative Report for FY 2021-22

Submitted Nov. 1, 2022



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Honorable Members of the Colorado General Assembly,

I am pleased to present the Governor's Office of Information Technology (OIT) FY 2021-22 Annual Report. This consolidated report contains all reporting requirements required by Title 24 Article 37.5, and specifically our work in the following areas:

- Agency and Enterprise Technology Dashboards
- Asset Inventory and Refresh Cycle
- Government Data Advisory Board
- IT Delegation of Authority
- Broadband Deployment Board
- Public Safety Communications Network / Digital Trunked Radio System Accountability

Even as the COVID-19 pandemic continued into FY22, OIT did not slow down. We continued on our IT Transformation journey, pursuing programmatic change in how we work together and serve our customers. The projects and work evolved as we implemented the statutory changes from HB21-1236, creating collaborative inter-agency governance boards led by OIT and modifying business models. We are excited about the work we've done and will keep doing to fundamentally improve IT for the agencies we serve and the Coloradans who consume state government services.

We look forward to the work ahead of us as we continue "Serving people serving Colorado."

A handwritten signature in blue ink that reads "Anthony Neal-Graves".

Anthony Neal-Graves  
Chief Information Officer & Executive Director

# Table of Contents

<b>Agency and Enterprise Technology Dashboards</b>	<b>3</b>
Introduction	3
<b>Asset Inventory and Refresh Cycle Report</b>	<b>4</b>
Introduction	4
Link to Report	4
<b>Government Data Advisory Board Report</b>	<b>5</b>
Introduction	5
Accomplishments	5
Recommendations for Future Work	7
Highlights	8
<b>IT Delegation of Authority Report</b>	<b>13</b>
Introduction	13
Delegation of Authority Agreements	13
<b>Broadband Deployment Board Report</b>	<b>15</b>
Introduction	15
Use of Monies	15
FY 2021-22 High Cost Support Mechanism Grant Awards	18
FY 2021-22 State and Local Fiscal Recovery Fund (SLFRF) Funding Awards	20
<b>Public Safety Communications Network</b>	
<b>Digital Trunked Radio System Accountability Report</b>	<b>21</b>
Introduction	21
Section I: Use of Monies for 2.5 and 2.7 in FY 2021-22	21
Section II: Use of Monies for 2.5 and 2.7 in FY 2021-22	23
Section III: Anticipated Future Use of the Monies	25

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# *Agency and Enterprise Technology Dashboards*

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## **Introduction**

The Governor's Office of Information Technology (OIT) partners with customers to support agency-led decision-making for future technology investments and is uniquely positioned to identify common technology needs that— when coordinated together— benefit Coloradans with a more cost-effective, connected, user-centric digital experience. In accordance with C.R.S. 24-37.5-105, OIT is responsible for providing governance to all state agency information technology projects.

In previous years OIT worked with agencies to prepare information technology plans known as IT Roadmaps, which included information about their critical and essential applications, major IT projects, and common policy services consumption. This year we are providing more in-depth information about the health of agency applications (Technology Health Score), providing a view into all major IT capital projects across all agencies, and sharing monthly common policy consumption in a dynamic dashboard.

- **Technology Health Score.** In this view, detailed data is gathered from OIT systems, customer surveys, employee feedback, and other inputs and processed to generate a letter grade for each IT application. This grading scale provides a non-technical, at-a-glance view of applications that have accumulated the most technical debt leaving them most in need of funding and/or resources for upgrade or replacement.
- **Major IT Capital Projects.** This view provides an overview of all major IT capital projects statewide. Readers can dynamically sort by agency and view the status of major IT projects including overall, scope, schedule, stakeholder, and resources.
- **Financial Summary.** Total IT expenditures on vendor provided IT goods and services across executive branch agencies. Amounts include hardware, software (including lease costs, purchases, maintenance, support and licensing) and IT professional contractor services.

We believe these dashboards are a meaningful and essential step in our journey to provide a more comprehensive and timely view of project metrics and analytics for our customers. You can [review the dashboards here](#).

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# *Asset Inventory and Refresh Cycle Report*

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## **Introduction**

C.R.S. 24-37.5-801 requires the Governor's Office of Information Technology (OIT) to submit a report to members of the Joint Budget Committee and the Joint Technology Committee regarding the Office's information technology asset inventory and refresh cycle schedule.

We are pleased to submit this report, which includes asset inventory refresh cycle and cost projections for:

1. Personal computers, including operating systems and productivity software,
2. Network infrastructure,
3. Servers, and
4. Non-productivity software.

## **Link to Report**

Due to the length of the report, it is being submitted as an attachment. You can [review the report here](#).

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# *Government Data Advisory Board (GDAB) Report*

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## **Introduction**

Historically, state government has been data-rich but insight poor. Established via HB09-1285, the Government Data Advisory Board (GDAB) was created to improve data sharing while enhancing data privacy and security. As a result of HB21-1236 (State Information Technology), OIT's leadership and oversight role was further strengthened with a new operating model centered around three subcommittees—data inventory, data sharing, and data governance—that establish standards, definitions, business rules and policies for state agencies. For more information about how the GDAB and its subcommittees are structured, visit the GDAB [webpage](#). By providing guidance and recommendations on how to govern and manage data, we've improved policymaking, the efficiency and effectiveness of state government, and service delivery for Coloradans. Additionally, the work already begun by the GDAB, will support the implementation of the recently released Digital Government Strategic Plan.

In accordance with C.R.S. 24-37.5-702(4) we are pleased to submit a yearly report detailing the:

- Accomplishments,
- Recommendations for future work of the Government Data Advisory Board, and
- Highlights of data sharing between agencies and with other entities.

## **Accomplishments**

### **Culture**

Capitalizing on both leadership changes and legislatively mandated activities, the Board has been galvanized into action, and one of the primary achievements of FY22 was a cultural shift and “reset.” GDAB has long been a source of cross-agency discussion and the sharing of ideas and aspirational goals, but in the past year, leveraging the productivity of the subcommittee membership, they have approved templates, policies and procedures and completed an initial state-wide data inventory. There is a consensus that one of the next key steps will be using, adopting and adapting these tools within agencies.

### **Communication**

In an effort to better publicize the activities of GDAB, we enhanced our webpage by providing an overview of what GDAB is and what our main focus has been. As the subcommittees were

created, an internal site was created to assist in scheduling meetings, document management and resource repository for subcommittee members. We expect the public website to be a key communication vehicle for our completed work and thus meriting a further investment of time and energy to ensure it is a quality resource for agencies and the public.

### Collaboration

One of the key FY22 accomplishments was the establishment of three subcommittees - Data Governance, Data Sharing and Data Inventory - in March, 2022. The agency-led and populated subcommittees provided the bulk of the work for the deliverables, which were then submitted to the GDAB for additional review, commentary and final approval. In addition to their productivity, these subcommittees created an opportunity for greater interagency collaboration and for more staff to be involved, providing a wider lens into the work. All members of the subcommittees and GDAB recognize the value of this model so we plan to continue with this configuration, anticipating that individual committees will be repurposed, created and sunset as needed.

Subcommittee and Assigned Deliverables: Links to be found at <a href="#">GDAB Website</a>	
Data Governance	<ul style="list-style-type: none"> <li>• List of National Best Practices on Data Management*</li> <li>• Definition of Data Life cycle and accompanying policy and procedure</li> <li>• Data Retention Policy for state and accompanying agency Data retention policy</li> <li>• PII Protocol</li> <li>• Data reconciliation process</li> </ul>
Data Sharing	<ul style="list-style-type: none"> <li>• Data Sharing Standards &amp; Terms Document</li> <li>• Data Sharing Policy and Procedure</li> <li>• Standard Inter-Government Data Sharing and Data Agreement</li> <li>• Policy and Procedures on sharing data outside the state agencies</li> <li>• List of data sharing risks and mediations</li> </ul>
Data Inventory	<ul style="list-style-type: none"> <li>• Data Inventory Scope &amp; Requirements</li> <li>• Agency Data Inventory</li> </ul>

\*NB This deliverable is slated for development in FY 2022-23

- *Data Governance Subcommittee.* Through this multi-agency initiative, the data governance subcommittee completed a personal identifying information (PII) protocol that specifies standards minimizing the collection of and securing PII. As part of this process, and in response to [HB21-1111 \(Consent Collection Personal Information\)](#), the subcommittee completed and the GDAB approved a definition of PII for use throughout the state. Additionally, the Data Governance subcommittee defined the data life cycle and created an accompanying policy and procedure, including a data retention policy for state and agencies, and data reconciliation processes guide. As an outcome of much of this work, the subcommittee created a Data Life Cycle roles and responsibility

chart as well as other templates for state agencies to use as part of a toolkit.

- *Data Sharing Subcommittee.* To complete the assigned work, the Data Sharing subcommittee divided itself into three working groups aligned to the major deliverables. The subcommittee combined the Risks and Barriers to data sharing into a single deliverable, noting mitigation factors where appropriate. The subcommittee developed general policy and procedures that should be applied to both inter-agency data sharing and sharing with outside entities. To meet the standard data sharing agreement needs, the subcommittee developed a template for inter-agency use. This template had substantial input from legal experts and the GDAB. While it provides the basic structure for an agreement, agencies are still able to adapt it to their specific needs. The standardization of this template has the potential to streamline the data sharing process, which has historically been prolonged. As this work has been underway, all three working groups have contributed to a lexicon of terms and definitions that will serve to create a shared understanding, increasing both collaboration and efficiency.
- *Data Inventory Subcommittee.* The data inventory template created by this subcommittee was approved by GDAB on July 19, 2022. The subcommittee also created a user guide providing definitions for each data point. With those in place, many agencies partnered with OIT to kick off the data inventory project and hold data steward meetings. All agencies have completed their initial Data Inventories defining data stewards, locations and self identified data classifications. This is the first time all agencies have simultaneously been involved in this work. The comprehensive effort has identified nearly 500 data stewards across the agencies. Already engaging in continuous improvement, the agency has suggestions for improving the inventory. In the future, there will be a review cycle for the inventory itself, and an expectation that agencies will maintain the inventory. To manage this effectively, additional technology will be required.

## **Recommendations for Future Work**

### **Communication**

To further bolster our deployment efforts and as a matter of best practice, we want to improve our communications with state agencies and to the public at large. This sharing and promotion of a common lexicon and best practices will increase the efficiency and efficacy both within agencies and during inter-agency projects. We will enhance the content and utility of our GDAB webpage. We will leverage existing OIT communication channels and actively seek new avenues to keep agencies informed of the GDAB's work.

### **Education**

With the completion of projects like the Data Inventory and Interoperability Framework, the next task must be supporting agencies as they deploy the work of the subcommittees throughout their respective organizations. One key component of this will be developing



educational resources that agencies adapt to use internally. GDAB can help to create a shared understanding of what it means to be a “data-driven organization” and the necessary steps to become one. To do this effectively, GDAB may require additional resources to leverage technology or enlist the expertise of consultants, and a Data Literacy Subcommittee will be proposed for the upcoming year.

### **Clarification of Data Roles**

As the Data Governance subcommittee developed documentation around the data life cycle, it became clear that there was a need for further discussion around corresponding roles. Greater guidance and alignment between agencies in terms of job titles and job functions will be critical in creating sustainable and effective processes. Moreover, determining where these roles and corresponding responsibilities should be housed (e.g., OIT or agencies) will provide a clarity that will increase efficiency. As roles are further defined it is likely that both agencies and OIT will identify increased FTE needs to support best practices and align with the Colorado Digital Government Strategic Plan.

### **Technology**

GDAB will need to explore and determine the best technical solutions and complements to the work that has begun. Without question, this will require additional funding. The initial data inventory was a great success in terms of the united cooperation of agencies and efforts to document data. However, this process was entirely manual, subject to human error/omissions, and will be resource-intensive to maintain. Data governance best practices will also be best supported with technology to allow for more cooperation across state agencies, including creating and deploying cohesive standards and technology to support interoperability. Agencies will also be able to combine the data they have to create better insights and help support more data-driven policy so that the state can more effectively serve residents.

### **Continuous Improvement**

As the subcommittees completed the majority of their deliverables, the need to iterate on current policies, procedures and tools is apparent. It is expected that as agencies begin to implement some of the tools, enhancements will be necessary based on lessons learned. For example, the Data Governance subcommittee would like to continue work on a list of national data governance best practices for managing data. GDAB also plans to expand and update its charter, codifying subcommittees, membership and voting. The approved Data Sharing Template plans to expand to include agreements with key partnerships outside of state agencies.

## **Highlights**

### **Office of eHealth Innovation (OeHI)**

The Office of eHealth Innovation (OeHI) continues to advance information and data sharing initiatives as part of Colorado’s Health IT Roadmap efforts to accelerate the Polis-Primavera administration’s bold health priorities. Roadmap Goal 1 explicitly emphasizes the importance

of data sharing, with the vision that “Coloradans, providers, payers, community partners, state, local, and Tribal agencies share data and have equitable access to needed health and social information.” OeHI, in partnership with state agencies and community partners, has made progress toward this goal through developing a vision and user stories for a Consent Management system, building a vision and processes for onboarding additional state modules to the Identity Cross-Resolution solution, and developing requirements for a Social Health Information Exchange (where an individual’s physical, behavioral and social health data will be available in one ecosystem to facilitate whole person care).

#### **Colorado Department of Early Childhood (CDEC)**

The Colorado Department of Early Childhood, a new state agency, is working to bring formal data governance to the forefront of our GDAB work. The agency has developed an organizational structure that provides centralized support for data sharing and data governance, which promotes a clear, shared understanding of data sharing processes and guidelines among CDEC staff. The CDEC has also established an internal Data Community of Practice where several data-related roles from across the department gather every three weeks to discuss the current state of data governance and align on data governance and sharing strategies until their formal data sharing processes are built out. Through these efforts, GDAB has already observed an increase in director-level conversations about their data sharing and data governance needs and have collectively identified gaps in data governance and data sharing through open and honest communication across roles and teams.

#### **Colorado Department of Higher Education (CDHE) and Colorado Department of Education (CDE)**

In alignment with a data sharing agreement between CDHE and CDE and in accordance with C.R.S. 23-1-113, CDHE prepares an [annual report on the postsecondary progress and success of recent Colorado high school graduates](#). The report provides various measures related to postsecondary success including postsecondary matriculation, credit hour accumulation and credential completion. These data can be filtered by high school graduating class, K-12 district or high school, gender, race/ethnicity, and free or reduced lunch status. The report provides important information and insights to improve connections between K-12 and higher education and highlight student success.

#### **Colorado Department of Higher Education (CDHE) and Colorado Department of Labor and Employment (CDLE)**

In alignment with a data sharing agreement between CDHE and CDLE and in accordance with C.R.S. 23-1-135, CDHE prepares an [annual report on the Return on Investment \(ROI\) of postsecondary education](#). The report covers various aspects of ROI, specifically the [median 1-, 5- and 10-year earnings outcomes](#) of individuals who complete a postsecondary credential. These data can be filtered by institutions of higher education, type of credential and program. This report provides individuals and policymakers with important information on workforce outcomes for higher education.

## **Colorado Data Trust**

The Colorado Data Trust is a multi-agency, multi-partner agreement with three main goals:

1. Reduce barriers to ethical and responsible data sharing,
2. Encourage collaboration and data usage to better serve education and workforce pathways of Colorado residents, and
3. Move towards more external data and resource sharing with both technical and nontechnical stakeholders.

It is composed of a governance board, which is a decision-making body to ensure that trust agreements are being followed, and at least one representative from each Data Trust member. The Colorado Department of Labor and Employment and the Colorado Workforce Development Council (CWDC) act as the council and trustee, taking the role of convening and facilitating conversations. There are defined processes to join the Data Trust and use the data. Current projects include My Colorado Journey (MCJ), the CWDC Empowerment Score, Data for Opportunity in Occupation Reskilling Solutions (DOORS), Research Data Lake (RDL), and the Outcomes for Opportunity Workforce Dashboard.

## **Department of Natural Resources (DNR)**

The Department of Natural Resources is working on a variety of successful data sharing initiatives including the following examples. Colorado Parks & Wildlife (CPW) and the Colorado Department of Human Services (CDHS) share data on outstanding child support charges. If there are outstanding charges reported by CDHS, CPW stops the process of that individual obtaining a license for hunting or fishing or any other CPW services. CPW also shares data with Colorado State University (CSU) in aquatic, avian and mammal research. CPW also shares water quality data from its Riverwatch program (a statewide community science) with CSU and the Colorado Department of Health and Environment (CDPHE). Through the Regional WID Data Sharing System, CWP shares Invasive Species data with 14 other states to help protect regional bodies of water. Landowner data is shared via Colorado Trail Explorer (COTREX) - Colorado's official trails app, and is a source where multiple land and trail management entities can enter their data into a common application for public consumption. GIS data is one of the most common data sets DNR shares with state agencies and organizations outside of the state. Data from a core CPW application to administer fishing licenses enables Coloradans to create a digital version of their fishing license within myColorado™, the State of Colorado's official mobile app™. DNR continues to look for data sharing initiatives and ways to improve data sharing practices and governance.

## **Department of Transportation (CDOT)**

CDOT is continuing the efforts to utilize centralized data architecture to provide transparency and accessibility to agency data, including building out agency-level data governance skills. To that end, roles within the Office of Data Management have been formalized to be in alignment with the organizational structure required for developing and implementing the strategies that support CDOT data management goals. The goals are to:

- Establish our information as a managed asset with a focus on improving quality, usefulness and accessibility.

- Enable transparency and accuracy of CDOT data so it is findable, accessible, interoperable and reusable.
- Build and support an informed CDOT culture that values information quality.
- Provide effective and appropriate information security.
- Engage all areas of the agency in data governance efforts.
- Maintain the usefulness of the data through accountability.

CDOT has continued to build out the data architecture components needed to ingest and manage real time data feeds through the OpenTMS system. Today, real time data about traffic conditions (i.e., ongoing constructions, traffic incidents, road conditions) is provided to the public through the COTrip application. Improving driver awareness increases their safety as well as CDOT's maintenance activities and crews on the roadways. Other examples of how CDOT is using their digital cloud infrastructure:

- Work Zone Data Exchange. Communicating real time information of the work zones including the dynamic start and end points, worker presence and conditions of the work zone that change through the day.
- Traffic Operations Dashboard. Traffic operators use various tools to better understand road conditions and make decisions. By pulling real time data they now have an integrated view of the alerts, weather, incidents, speed, cameras and signs information.
- Variable Speed Limit Algorithm. Understanding the correlatory relationship of speed and propensity and severity of crashes, CDOT has leveraged Variable Speed Limits to improve safety during dangerous roadway conditions. CDOT leverages variable speed limits throughout the state to improve safety by adjusting the speed as traffic and environmental conditions require.

### **Colorado Department of Corrections (CDOC)**

The department's mission is to protect the citizens of Colorado by holding offenders accountable and engaging them in opportunities to make positive behavioral changes and become law abiding, productive citizens. The DOC has over the last several years, implemented a new offender management system (eOMIS) that will provide the agency with a single management system going forward. Within the department, the Business Innovations Group (BIG) is working on a multi-year data ecosystem transformation initiative that will develop a data driven solutions environment that will propel the DOC forward, while improving Offender outcomes. BIG's vision is to maximize program and data management using analytics to move the department into an enterprise level data-centric culture. DOC's desired goal, to fully capitalize and share information generated throughout the various areas of the DOC, Law Agencies, and Partnering Affiliates and to improve state inoperability.

Goal: Internally focused, BIG will capitalize on the newly developed data ecosystem through the use of a series of data marts and business intelligence tools to enable DOC Executives, Facility Officials, and Divisional Leaders to make timely decisions through the use of real-time data analytics using desktop, and mobile applications that provide information visualization dashboards.

Strategy: Seven key areas.

- Creating data strategy
- Sourcing and collecting data
- Turning data into department value
- Capitalize on existing technology and data/information infrastructure
- Build data competencies into DOC everyday life
- Data Governance
- Executing, revisiting data strategy year over year using an Agile environment

Data Sharing Agreements/Memorandum of Understanding: Critical to the successful care and release of offender data, the DOC has entered into agreements with other departments within the state and with outside contractors. We strongly believe in the security and privacy of PII and PHI of our entrusted population, that we maintain the highest standards of confidentiality through the use of information sharing agreements.

The DOC, understanding the significance to the safety and care of their incarcerated population and to the general public, have several data sharing agreements that allow them to share and collaborate across agencies. Examples of Colorado agency partnerships are; CDHS, CJI/CJD, CDLE, CDOS, and HCPF. The DOC also collaborates with outside agencies and organizations by using very stringent and strict Data Sharing Agreements. Partnering examples are with; Protocol (CWISE), Public Welfare Foundation, Recidiviz and Contexture (COHIRO HIE).

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# *IT Delegation of Authority Report*

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## **Introduction**

In 2021, [HB21-1236 \(State Information Technology\)](#) was passed and signed into law with certain provisions codified in C.R.S. 24-37.5 *et seq.* Among the provisions is the authority of the state Chief Information Officer (CIO) to delegate an IT function to a state agency and specify procedures and requirements that OIT and the state agency must follow when such delegation occurs. OIT created policies and procedures to ensure a consistent process; however, it is important to note that the judgment to delegate an information technology function from OIT to another state agency lies solely with the CIO.

The Governor's Office of Information Technology (OIT) is responsible for "any delegation of authority" to the state agency pursuant to C.R.S. 24-37.5-105.4(3). The following is provided in accordance with C.R.S. 2-3-1704(6)(b) and details delegation of authority agreements with state agencies.

## **Delegation of Authority Agreements**

OIT has implemented policies and procedures that facilitate the statutory requirements and intent for delegation of authority of information technology functions. Currently OIT has two Delegation of Authority Agreements in place.

Pursuant to C.R.S. 2-3-1704(6)(b), the interagency delegation agreements include the following information:

- A precise definition of each function to be delegated.
- A clear description of the standards to be met in performing each delegated function.
- Designation of the state agency responsible for ensuring operational security and validating compliance to security policies and standards.
- A provision for periodic administrative audits by the OIT.
- A date on which the agreement shall terminate.
- Designation of the appointed authority responsible for the delegated services to support the function in the state agency and rates to be charged for the staff, if any.

## **Colorado Department of Transportation (CDOT)**

OIT and CDOT have an executed delegation agreement for the CDOT [Intelligent Transportation Systems \(ITS\) & Network Services](#), a program within the Division of Maintenance and Operations.

**Colorado Department Health Care Policy and Financing (HCPF)**

OIT and HCPF have an executed delegation agreement for the HCPF [Medicaid Management Information System \(MMIS\)](#), a system within the Health First Colorado (Colorado's Medicaid program) for which HCPF is statutorily responsible.

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# *Broadband Deployment Board Report*

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## **Introduction**

The Broadband Deployment Board, established through [HB14-1328](#), was created to implement and administer the deployment of broadband service in unserved areas of the state by awarding grants through the [Broadband Fund](#) to eligible applicants. In 2021, legislation was passed moving the Broadband Deployment Board (Board) from the Department of Regulatory Agencies to OIT. This change is codified in C.R.S. 24-37.5-119(5)(a). The Board continuously seeks to meet the needs of Colorado residents by funding projects designed to have the highest impact.

This report is submitted in accordance with C.R.S. 24-37.5.119(12)(a), which requires the Board to report annually on the projects supported by the Broadband Fund including the number of projects; the location of each project; the amount of funding received for each project; and a description of each project.

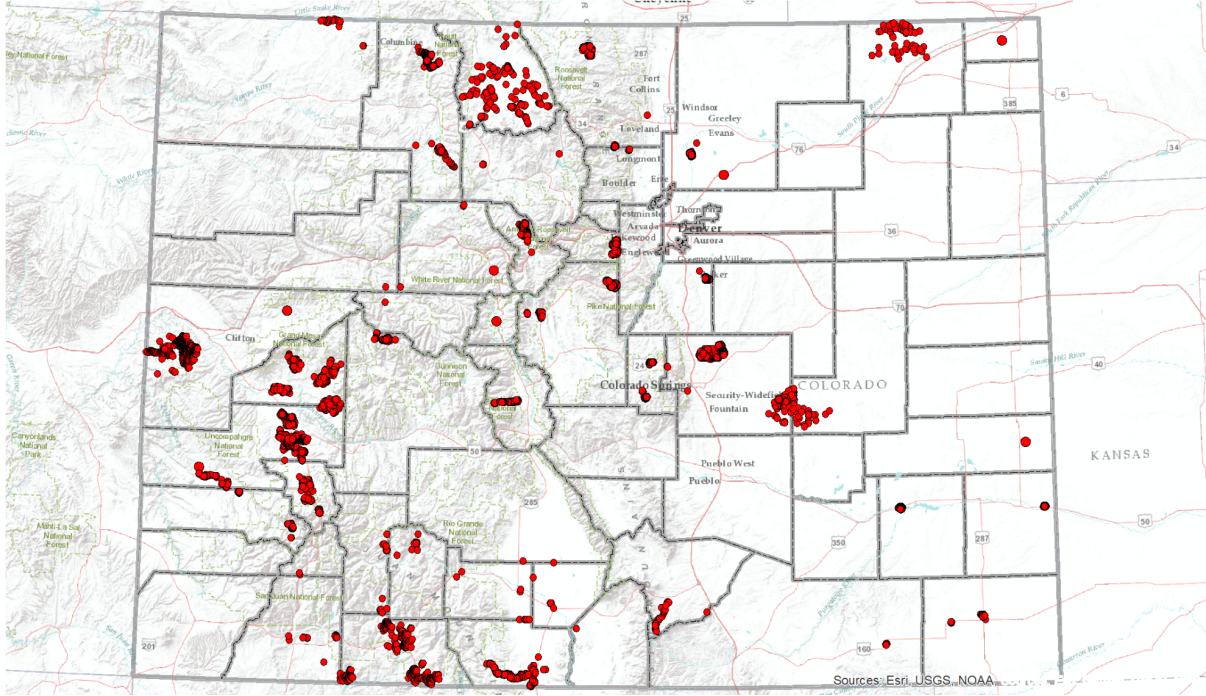
## **Use of Monies**

The Broadband Deployment Board, established by the Colorado General Assembly in 2014, has since awarded just over \$51 million in grants from the Broadband Fund to 63 rural broadband infrastructure deployment projects. These projects combined will provide broadband access to over 29,000 households across Colorado. The funding comes from both the High-Cost Support Mechanism stream and the State and Local Fiscal Recovery Fund (SLFRF). HB21-1289 provided the Board the opportunity to award \$35 million in SLFRF to projects that met the requirements according to the Treasury Regulations, finalized on April 1, 2022. In FY 2021-22, the Board awarded \$11,690,820 from the HCSM and \$13,716,536 from the SLFRF for a total of \$25,407,356.

Due to a number of factors, including the implementation of HB22-1306 and Board member availability, the Board approved the cancellation of the Summer 2022 Grant Cycle. The Board will revisit Board policies and procedures and gather feedback from stakeholders and the public on the application and review process.



# Locations of Broadband Fund Grant Awards

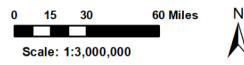


## Legend

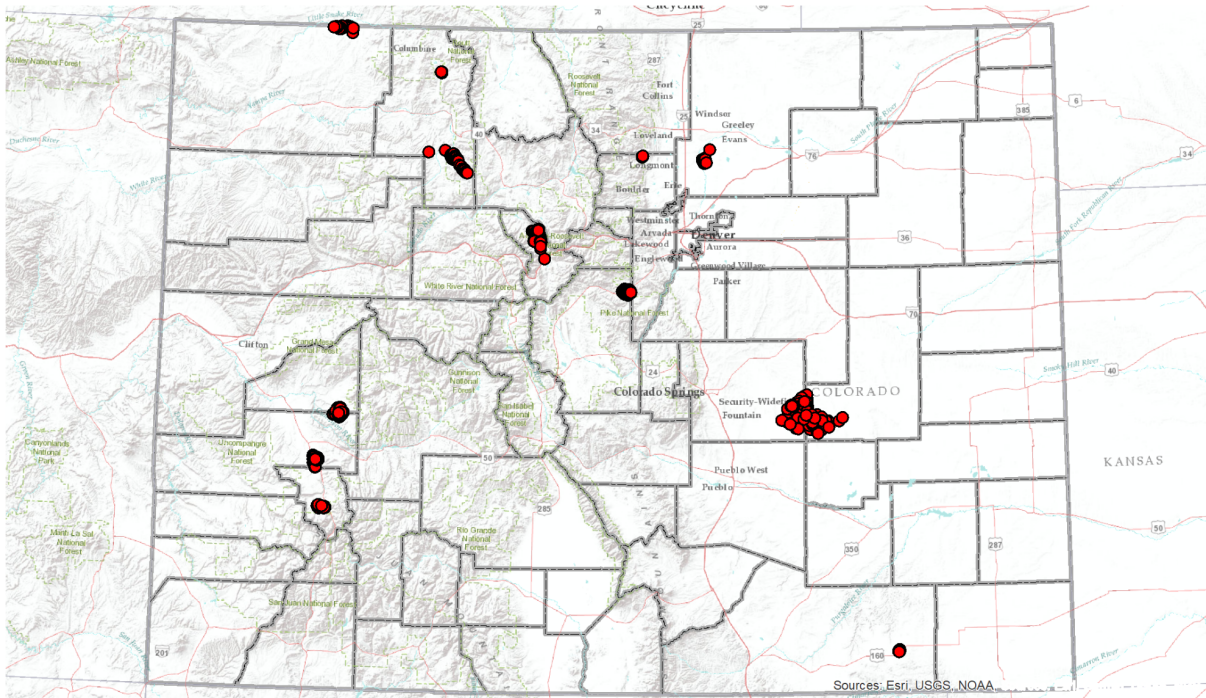
- Grant Addresses, 2016-2021

This map represents Broadband Fund Grant Awards between 2016 and 2021. Note: 2016 awards are represented as single points rather than individual addresses.

Data: Colorado Broadband Office  
 Created by Colorado Broadband Office  
 oit\_broadbanddata@state.co.us  
 Thursday, October 6, 2022



## Location of Broadband Fund Grant Awards in FY 2021-22

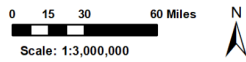


**Legend**

● Broadband Fund Grant Awards

This map displays the locations of Broadband Fund Grant Awards in Fiscal Year 2021-2022.

Data: Colorado Broadband Office  
 Created by Colorado Broadband Office  
 oit\_broadbanddata@state.co.us  
 Monday, October 17, 2022



\*The map includes awards from the Winter 2021 Grant Cycle which were finalized in FY 2021-2022

**FY 2021-22 High Cost Support Mechanism Grant Awards**

Grant #	Name/Project	Amount Awarded	Total Project Cost	Project Summary	Project Status
W-2021-12	Xbar7 Communications - Longmont Dam Rd.	\$71,283	\$95,044	This project aims to build an underground distribution GPON in unincorporated Boulder County along lower Longmont Dam Rd. to 25 households and 28 addresses.	Active
W-2021-07	South Park Telephone - Burland Subdivision Complete	\$2,659,072	\$4,748,343	This project aims to deploy a FTTP network to provide up to 1Gbps broadband access to the Burland subdivision in Park County to a total of 1374 addresses (1280 residential, commercial and CAI).	Active
W-2021-14	Hilltop Broadband - Platteville FTTP Project	\$1,171,201	\$1,561,600	This project aims to build fiber to the home and business system capable of delivering speeds in excess of 10Gbps. The project will cover the entire area of land that is inside the Town of Platteville's boundaries. Hilltop Broadband will provide internet and voice services for 948 households and 67 businesses.	Active
W-2021-15	Yampa Valley Electric Association - South Stagecoach and Lynx Pass	\$1,147,481	\$1,912,468	This project aims to build Gigabit Broadband Service within Routt County to 108 households.	Active
S-2021-01	Range - Little Snake River Fiber	\$686,000	\$1,051,000	This project aims to build fiber to the premises and connect nineteen (19) households, three (3) government locations and one (1) business along the Little Snake River near the Colorado/Wyoming border.	Active
RoFR-1 (Summer 2021 Grant Cycle)	Rye Telephone Company - Kim, Colorado	\$244,833	\$326,444	RTC will utilize a buried application to replace an existing copper network with a FTTP network and associated hardware to provide up to 1G broadband service to 72 addresses (locations) within the Town of Kim and Las Animas County.	Active

S-2021-06	Delta-Montrose Electric Association - Uncompahgre	\$852,729	\$1,421,215	This project aims to build Gigabit Fiber, offering 1,000/1,000 Mbps to 315 premises located outside of the City of Montrose in Montrose County.	Active
S-2021-08	Yampa Valley Electric Association - Willow Creek Pass	\$126,225	\$168,300	This project aims to build a symmetrical Gigabit broadband network to 7 households, 2 commercial and 0 anchors to South Willow Creek Pass in Routt County.	Active
S-2021-14	Clearnetworx - Elk Meadows	\$1,107,700	\$1,476,934	This project aims to build a Fiber to the Premise (FTTP) that would extend fiber internet service into a community of 111 households south west of Ridgway in Ouray County.	Active
S-2021-15	Viaero Wireless - Truckton/Rush Project	\$2,451,165	\$3,268,221	This project aims to build out a 1 Gigabit fiber-to-the-home (FTTH) to 144 addresses, (135 households, 6 businesses and 3 anchor institutions) in an area serving unincorporated Truckton, Yoder and Rush, Colorado located in El Paso and Lincoln Counties.	Active
S-2021-17	Delta-Montrose Electric Association - Black Canyon	\$1,008,586	\$1,551,672	This project aims to bring Gigabit Broadband fiber to the premise service to 140 addresses (130 residents, 6 commercial and 2 CAI) to Black Canyon located outside the Town of Crawford in Delta county.	Active
S-2021-38	Arbor Mesh - Lower Blue Valley Deployment	\$164,545	\$219,394	The project aims to deploy high-speed wireless internet to 173 households and 22 businesses to North Silverthorne in Summit County.	Active

\*The chart includes awards from the Winter 2021 Grant Cycle which were finalized in FY 2021-2022

**FY 2021-22 State and Local Fiscal Recovery Fund (SLFRF) Funding Awards**

Grant #	Name and Project	Amount Awarded	Total Project Cost	Project Summary	Project Status
S-2021-09	Vero Broadband - Wadley Farms II	\$346,141	\$346,141	This project aims to build FTTH service to 105 households in the Wadley Farms III located in Adams County and offer speeds of 100 and 1000 Mbps.	Active
S-2021-12	Ute Mountain Ute Tribe and UMCE - UMCE Towaoc	\$3,451,170	\$4,601,561	This project aims to build a FTTP network for the tribal reservation of Towaoc, located in Montezuma County. 424 street addresses (391 residential, 4 commercial and 29 anchor institutions) will be provided with Gigabit, Fiber to the Premise services, offering 1,000/1,000 Mbps.	Final Grant Agreement Pending
S-2021-18	Delta-Montrose Electric Association - Greater Gunnison Gorge	\$5,686,314	\$8,748,175	This project aims to build Gigabit, Fiber to the Premise services, to 1,384 addresses (1,227 residential, 92 businesses, 31 "other" and 34 anchor institutions), offering 1,000/1,000 Mbps in Montrose County and a small portion of Delta County.	Active
S-2021-19	South Park Telephone - Staunton State Park Visitor Center	\$2,404,496	\$3,644,847	This project aims to deploy a FTTP network to provide up to 1Gbps broadband access to the Staunton State Park area in Jefferson County. The project area includes a total of 796 addresses encompassing 703 household addresses (88% capacity) of which 184 household addresses (26%) are identified as priority addresses, 9 businesses and 2 anchor institutions.	Active
S-2021-34	Vero Broadband - Victor & Goldfield	\$688,344	\$917,792	This project aims to bring FTTP service to 459 (437 residential, 26 commercial, 1 CAI), or around 459 residents in Teller County.	Active
S-2021-23 (Re-Review)	MVEA - Simla Substation	\$523,983	\$1,047,967	This project aims to build FTTH to 228 households and 48 businesses to Simla Substation in El Paso County.	Final Grant Agreement Pending
S-2021-32 (Re-Review)	Force Broadband - Majestic	\$616,088	\$1,026,813	This project aims to build FTTH gigabit internet access to 269 households and 12 businesses in rural El Paso County. 269 are priority addresses with less than 10/1Mbps speeds.	Final Grant Agreement Pending

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# *Public Safety Communications Network / Digital Trunked Radio System Accountability Report*

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## **Introduction**

Each year the general assembly appropriates money to the Public Safety Communications Trust Fund. Following statutory directive, the Governor's Office of Information Technology (OIT) is required to use the appropriated monies for the replacement of legacy radio equipment and hardware at radio tower sites, for software upgrades and to add additional radio tower sites in areas of the state that are experiencing critical coverage gaps for public safety radio communications.

Pursuant to C.R.S. 24-37.5-506(2.5)(b), OIT submits this report detailing the use of the money appropriated in fiscal year (FY) 2021-22.

This report encompasses the following:

- Use of Monies for 2.5 and 2.7 in FY 2021-22
- Use of Monies for 2.5 and 2.8 in FY 2022-23
- Anticipated Future Use of the Monies

As a result of [HB22-1353 \(Public Safety Communications Transfer\)](#), on July 1, 2023, the powers, duties, and functions related to public safety telecommunications coordination within state government are transferred from the Chief Information Officer in OIT to the Department of Public Safety (CDPS) in the Division of Homeland Security and Emergency Management (DHSEM). Specifically, the act relocates authority and responsibility of the Public Safety Communications Network / Digital Trunked Radio System (PSCN/DTRS) from OIT to CDPS. In future years this report will be submitted by CDPS.

## **Section I: Use of Monies for 2.5 and 2.7 in FY 2021-22**

Pursuant to C.R.S. 24-37.5-506 (2.5)(a)(I) and C.R.S. 24-37.5-506 (2.5)(a)(II), the Public Safety Communications Network / Digital Trunked Radio System (PSCN/DTRS) submits the following information regarding HB14-1203 funding appropriations, which were utilized for transmitter site supporting software, hardware and infrastructure, in support of 64 counties across the state of Colorado.

During FY 2021-22 the PSCN/DTRS team continued to face multiple challenges directly related to the pandemic. These challenges were outside our control and forced our teams to exercise

great patience and flexibility in schedules and timelines. The recovery and effects of the pandemic continue today and cause frustrating delays in our ability to advance and complete our projects at our standard aggressive pace. The most prominent delays are directly related to disruption in supply chains, material shortages, and challenges with contractor workforce availability. Despite these uncontrollable circumstances, our teams did push through a number of major projects, keeping project delays completely transparent to our public safety first responders across the state. Considering the challenges we face, our planned and scheduled projects are in various stages of completion. As these dependencies begin to slowly self-correct, our projects are moving ahead.

As historically documented, legislative appropriations continue to be fully and directly applied toward supporting transmitter site and network infrastructure upgrades, expansions, system and user radio health monitoring in response to increased state and local government reliance and use.

The DTRS completed the statewide and system-wide software and hardware upgrade to Motorola System Release 2021.1. This system-wide upgrade provides operational and security compliant software upgrades and hardware replacements for all state-owned DTRS infrastructure. The software upgrade is delivered to thousands of DTRS network infrastructure components across the state, including all master sites, servers, state and local government 911 public safety dispatch radio consoles and every transmitter at every DTRS site. Maintaining the DTRS at the most currently available hardware and software platforms ensures all components of this mission critical system are performing at the highest possible levels for the greatest protection of our public safety first responders and the public for which they serve. It is crucial that the PSCN continue to receive funding appropriated for these critical refreshes of the DTRS in support of public safety first responders.

Four new transmitters were added at two DTRS sites to improve site capacity for our local, state, tribal and federal public safety first responders. The addition of these transmitters provides greater assurance that in the event of an emergency, DTRS transmitter resources are available for first responders managing the incident.

<b>FY 2021-22 HB14-1203</b>		
<b>Transmitter expansions to add capacity at DTRS tower sites</b>		
<b>Site Name</b>	<b>Location</b>	<b>Installed</b>
Dakota Mtn +2	Gilpin County	8/29/22
DRDC +2	Denver County	8/31/22

Pursuant to C.R.S. 24-37.5-506 (2.7) and as defined in HB18-1325 (also known as the DTRS Coverage Gap Bill), PSCN/DTRS submits the following information regarding the purposes for which the funding allocated through HB18-1325 were directed and utilized. HB18-1325 was a two-year pilot program to provide funding to assist the PSCN/DTRS with adding DTRS sites in known areas lacking DTRS coverage. The Bill required the PSCN/DTRS work in collaboration with local governments at sites where a suitable tower was already in place.

In FY 2021-22, HB18-1325 remaining funds were directed to the addition and completion of the following DTRS sites.

<b>HB18-1325 DTRS Site Additions</b>			
<b>DTRS Site Name</b>	<b>County Location</b>	<b>Description</b>	<b>Completed</b>
Young's Peak	Delta	New 6-channel site	On air March 8, 2022
Little Blue Creek	Gunnison	New 6-channel site	On air July 25, 2022
Leadville	Lake	New 6-channel site	Site is under Lake County construction. Estimated completion CY2022.

## **Section II: Use of Monies for 2.5 and 2.7 in FY 2022-23**

The DTRS/PSCN submits the following information regarding the purposes for which FY 2022-23 funding allocated through HB14-1203 is being directed and utilized for site supporting infrastructure and DTRS supporting software and hardware, replacement of DTRS legacy radio equipment and hardware at radio tower sites and for software upgrades. HB14-1203 funding to date is currently being directed and applied toward continued compliance of the DTRS radios, site and network infrastructure upgrades, and overall system and radio health monitoring. DTRS monitoring, hardening and redundancy remain top priorities and are continually being addressed utilizing these funding sources.

Two major technology upgrades are currently in progress across the DTRS network. Evolving technology requires a complete migration from legacy Time Division Multiplex (TDM) telecommunications technology utilized across the DTRS for network connectivity to be replaced with Multiprotocol Label Switching (MPLS) networking technology. Our engineering and technical staff are working closely with our primary DTRS and public safety microwave vendors to effect this technological migration. The project is currently estimated to be 30% complete, with full completion estimated by the end of CY-22. Additionally, we are currently engaged in the replacement of all legacy site routers with revolutionary public safety grade routers, and installing a secondary router at each site to improve reliability and redundancy at every site. This project is 93.8% complete, with estimated completion by the end of FY23.



Maintenance at state DTRS sites is continually in progress. Several of the DTRS sites require replacement of tower top amplifiers, as those currently in use have reached or exceeded their life expectancy and have become unreliable. The replacement tower top amplifiers are in-house and being installed as time and conditions permit. This installation project is currently estimated to be 75% complete. Projected to be 100% complete by the close of FY23.

Our crews are currently involved in tower replacement projects and two new communications site development projects. Our Buffalo Pass tower in Routt County was in desperate need of replacement. This tower was donated to us years ago and has long exceeded its life expectancy and antenna load capacity. This project required our crews to set up a temporary tower loaned to us by Douglas County in order to move all of our antennas while the old tower was decommissioned and the new tower constructed. The tower project is within days of completion at the writing of this report in early October.



Photos on the left show construction of the new tower at Buffalo Pass nearing completion. Antennas have been moved from the temporary tower to the new tower and the temporary tower has been removed from the site and returned to Douglas County.

We are in the initial stages of construction of a new communications site in Custer County on U.S. Forest Service lands. At the time of this report in early September 2022, the foundation has been poured for the tower. Construction of the tower and delivery of the equipment shelter and backup power generator are expected to take place in October. Installation of the DTRS radio and microwave equipment are expected to be completed and the new DTRS site on the air during the month of October.

The PSCN submits the following information regarding the purposes for which funding allocated through HB18-1325, also known as the DTRS Coverage Gap Bill, were directed and utilized. HB18-1325 was a two-year pilot program to provide funding to assist the DTRS/PSCN with adding DTRS sites in known areas lacking DTRS coverage. The Bill required the DTRS/PSCN to partner with local governments at sites where a suitable tower was already in place. With the completion of the last HB18-1325 funded site in Leadville, funds from this funding stream will be fully spent.

The last of the HB18-1325 funding is encumbered to provide equipment at the new DTRS site in Leadville, in Lake County. The Leadville site will provide needed coverage within the town of Leadville, as well as along the highway corridor running through Lake County. Site

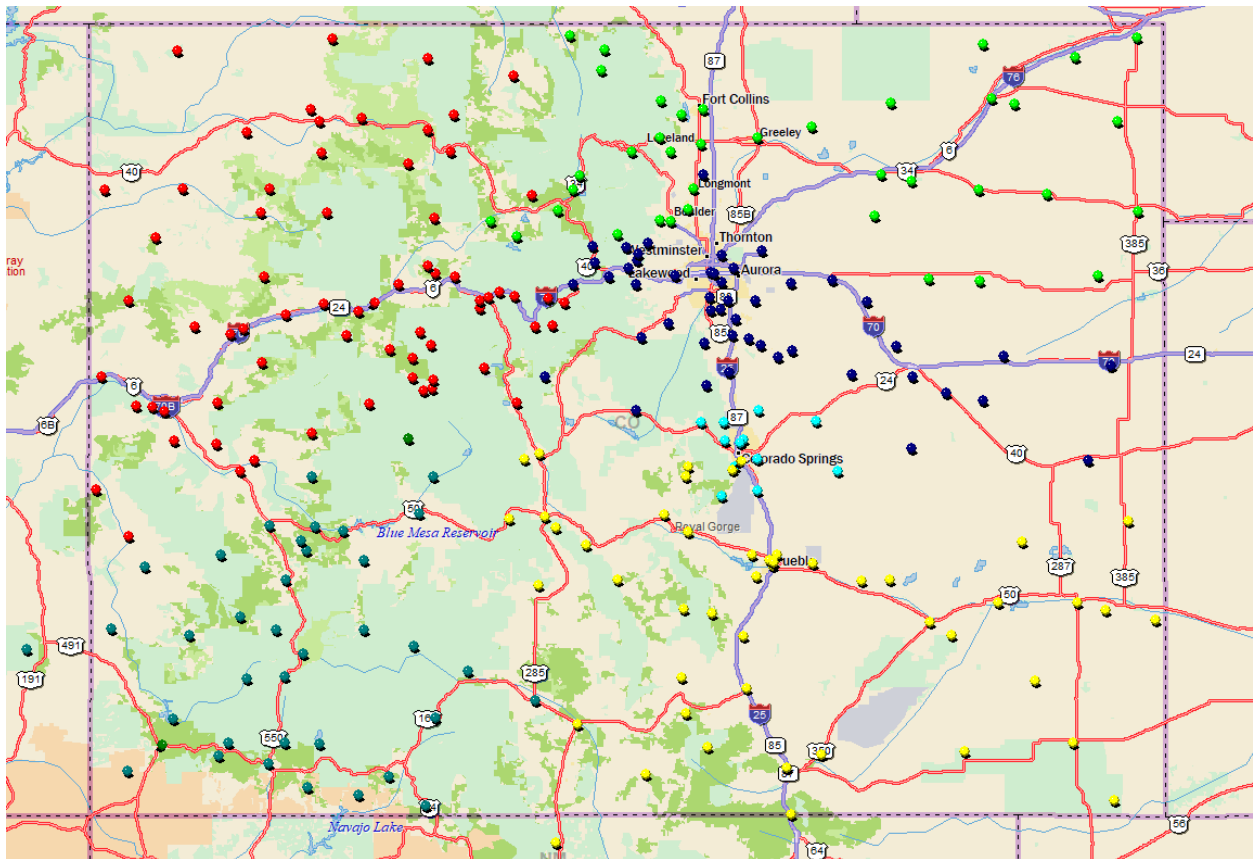
construction is in progress although there has been a number of lengthy delays due to COVID-19, supply chain interruption, material shortages, contractor staffing shortages and various other factors. There is a very tight construction window in Leadville due to weather conditions. The project is projected to be completed by the end of 2022.

It is important to note that the limited amount of funding from HB18-1325 was instrumental in the addition of nine DTRS sites at a fraction of the cost required for the PSCN to secure land and develop a DTRS public safety communication site. These nine new sites are in use around the clock providing mission critical operational and interoperability communications needs for all first responders and state agencies in areas where coverage was lacking or completely non-existent. The PSCN partnering with the local governments in this effort to add DTRS sites was extremely successful. Local government partners have inquired whether there is a possibility of extending HB18-1325 or if a similar bill might be considered in the future to continue this extremely valuable and successful program.

### **Section III: Anticipated Future Use of the Monies**

Anticipated use of HB14-1203 funding will continue to be aggressively invested in DTRS site-supporting infrastructure and supporting software and hardware, replacement of DTRS legacy radio equipment and hardware at radio tower sites and for software upgrades. The PSCN consistently researches and pursues cost-effective means of adding DTRS sites to improve public safety radio coverage in underserved areas. As the state population grows and the number of radio calls on the DTRS continues to grow, it is imperative that the DTRS continues to keep pace with the growth. As of September 1, 2022 the DTRS network has grown to 256 tower sites serving over 1,000 public safety and governmental entities with over 125,000 mobile and portable radios in use, and 85 public safety dispatch centers being served. The DTRS averages over 8 million radio voice calls on the network monthly.

## DTRS Tower Map



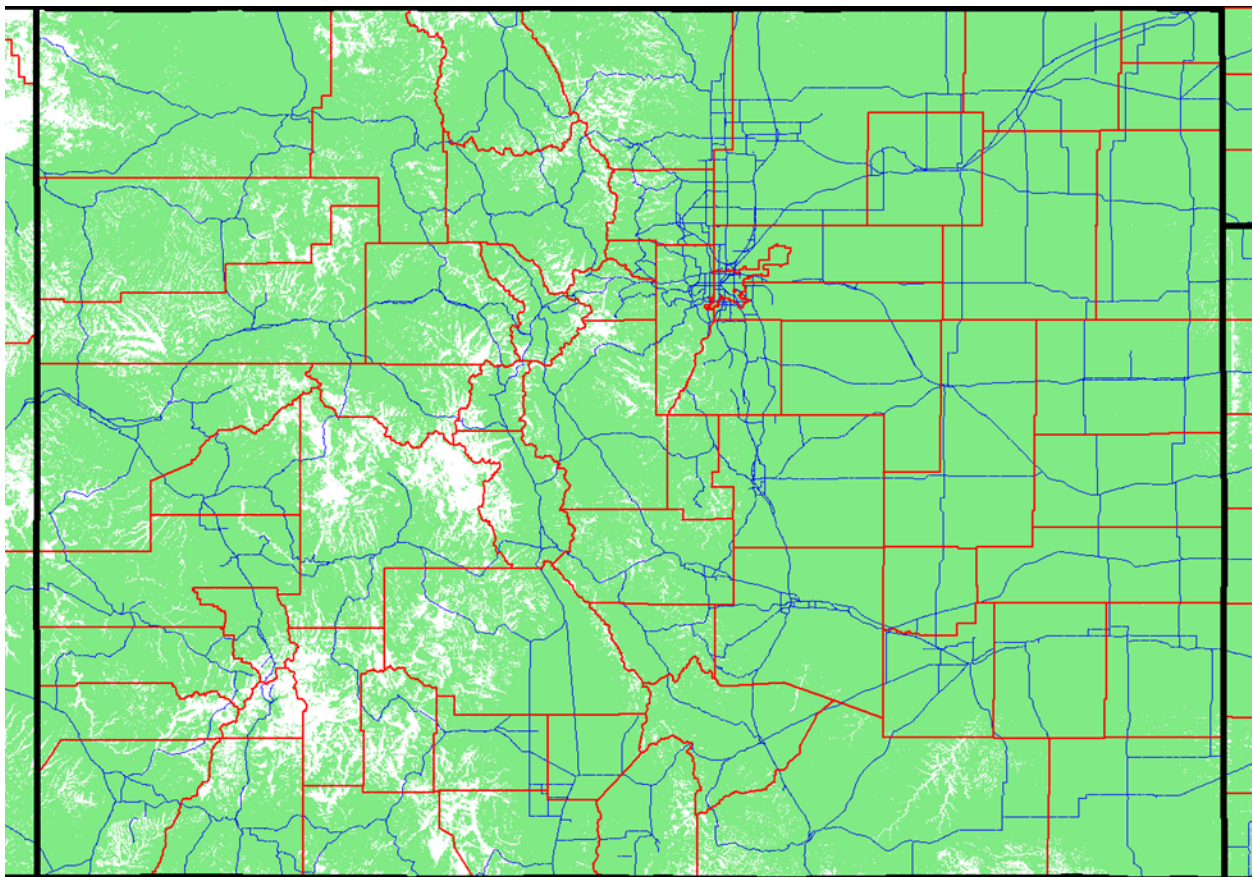
\*Each point on the map indicates a DTRS tower site. Colored pins indicate the Zone Controller managing the site.

The DTRS is on track to take the next Motorola contracted statewide and system-wide software upgrade in 3Q 2023. This system-wide upgrade provides software upgrades, and in some cases hardware replacements for all state-owned DTRS infrastructure. The software upgrade is delivered to all DTRS network infrastructure components across the state, including all master sites and servers. It also includes software upgrades to all public safety dispatch radio consoles and every transmitter at every DTRS site. Maintaining the DTRS at the most currently available hardware and software platforms ensures all components of this mission critical system are performing at the highest possible levels for the greatest protection of our public safety first responders and the public for which they serve. It is crucial that the PSCN continue to receive funding appropriated for these critical refreshes of the DTRS in support of public safety first responders.

Future funding will be directed to the addition of a number of DTRS sites to improve coverage for our state agencies and first responders. We are working through final plans to add a critically needed site at Lake Hill, in Summit County. This site is in an extremely busy section of the I-70 corridor. The site we are currently operating our DTRS equipment from at Lake Hill is in a complete state of disrepair and is not favorable for improvement. We have approached the U.S. Forest Service and gained preliminary approval to construct a new DTRS tower site that will provide more reliable first responder coverage across this busy area. We are also

exploring adding a new DTRS site near the summit of Vail Pass. First responders along the I-70 corridor on the west side of Vail Pass do not have good DTRS coverage near a narrow area of the canyon. We are installing a temporary test transmitter on CDOT property to assess the effectiveness of adding this site. A third site is being considered at Staunton State Park in Park and Jefferson Counties, six miles west of Conifer. There is currently no DTRS coverage in this area. Colorado State Parks and Wildlife have requested a site survey to determine if the addition of a DTRS site for this area is possible. Staunton State Park attracts a large number of recreational visitors. Emergencies do occur at the park and the addition of a DTRS site is badly needed for public safety first responders to coordinate evacuation and care of the sick and injured.

### DTRS Coverage Map



\*This map indicates current mobile radio coverage for the DTRS. Areas in white indicate areas lacking coverage or where coverage is marginal.

As noted in previous annual reports, of primary consideration is the need for redundant Zone Master Sites, which are considered the “brains” of the network. The state currently owns and is responsible for four of the six Zone Master Sites on the DTRS. These Zone Master Sites currently do not have built-in redundancy. When one of the Zone Master Sites unexpectedly fails, it creates a dangerous situation for DTRS first responders until the failure is corrected. The PSCN has requested a quote from our vendor for Dynamic System Resilience (DSR) to

provide this urgently needed redundancy and resiliency across the DTRS. In the event of a system failure, DSR seamlessly switches to the redundant Zone Master Site, preventing interruption in DTRS service to our public safety first responders. The TDM to MPLS conversion project must be completed prior to the procurement and deployment of DSR.

The PSCN is exploring a DTRS software feature to enable Over-the-Air-Programming (OTAP), to provide a greater level of system security. Additionally, OTAP will permit PSCN staff to remotely provide mobile and portable radio programming to thousands of radios, without having to physically touch every radio, saving hundreds of staff hours currently dedicated to radio programming. The TDM to MPLS project must be completed prior to implementation of OTAP.