

# **Dudley-Charlton Regional School District**



## **Technology Plan 2022-2027**

## Table of Contents

Table of Contents.....	2
District Overview .....	3
Schools .....	3
Technology Plan Summary .....	4
Introduction .....	4
Technology Goals.....	4
Infrastructure .....	5
Network Infrastructure .....	5
Wireless Connectivity.....	5
Internet Connectivity .....	5
Cybersecurity.....	6
Firewalls and Content Filtering .....	6
AntiVirus Protection.....	6
Hardware .....	6
Staff Devices.....	6
Student Devices .....	7
Device Replacement .....	7
Device Disposal.....	8
Printing .....	8
Software.....	8
Productivity and Administrative Software .....	8
Web Presence .....	9
Email and Collaboration.....	9
Educational Software.....	9
Technical Support.....	10
Help Desk .....	10
Technology Staff .....	10
Finance .....	11
E-Rate .....	11
Budget.....	11
Appendix .....	12

## District Overview

The Dudley-Charlton Regional School District (DCRSD) is a K-12 regional school district comprised of mostly students who live in the towns of Dudley and Charlton as well as school choice students. The District is responsible for the education of approximately 3,400 students. The District is comprised of the following seven schools.

### Schools

Town of Dudley	Town of Charlton
Mason Road School 20 Mason Road Dudley, MA 01571 Phone: 508-943-4312 Grades: PK-1	Charlton Elementary School 9 Burlingame Road Charlton, MA 01507 Phone: 508-248-7774 Grades: PK-1
Dudley Elementary School 16 School Street Dudley, MA 01571 Phone: 508-943-3351 Grades: 2-4	Heritage School 34 Oxford Road Charlton, MA 01507 Phone: 508-248-4884 Grades: 2-4
Dudley Middle School 70 Dudley-Oxford Road Dudley, MA 01571 Phone: 508- 943-2224 Grades: 5-8	Charlton Middle School 2 Oxford Road Charlton, MA 01507 Phone: 508-248-1423 Grades: 5-8
Shepherd Hill Regional High School 68 Dudley Oxford Road Dudley, MA 01571 Phone: 508-943-6700 Grades: 9-12	

District Web Site: [www.dcrsd.org](http://www.dcrsd.org)

## Technology Plan Summary

Areas of focus have been identified within both District and individual school improvement plans and the technology personnel and plan must support these efforts. District initiatives identified within this plan focus on networking, infrastructure, end-user devices and online resources.

The following plan builds upon the existing technological infrastructure, enhances the ability for teachers and students to access appropriate hardware, software and services, increases ongoing support for all members of the District and further supports students in reaching a higher level of achievement. This technology plan will enable the Dudley-Charlton Regional School District to seek federal and local government funding to help support our growing technological needs.

The plan will be reviewed within the district on an annual basis and will incorporate emerging technologies as they evolve. This will allow the District to not only meet today's demands but to meet the demands of the future in a timely and responsible manner.

## Introduction

While the Dudley-Charlton Regional School District continues to operate within a per pupil expenditure that is far below the state average, the District is committed to providing the best available technology to both staff and students in order to support student achievement. To this end, the District IT Department's plan and budget are reviewed annually with input from district administrators and staff. Utilizing the state DESE curriculum standards, research of current technological trends and evaluation of existing innovations, a proposed operating budget is presented to District administrators. Every effort is made to design a budget request that is based on internally identified areas of need, industry best practices and the reality of the District's financial constraints.

The District administration recognizes the importance of technology at all levels of the organization and is concerned about keeping our infrastructure up to date. This plan is one means of keeping the District technology infrastructure current in a planned and orderly fashion while maintaining sufficient flexibility to respond to new and evolving technologies.

The distribution of technology throughout the District is based on not only need but also standardization. Standardizing hardware and software purchases throughout the District minimizes re-training in the use of software and hardware and allocates more time to actual learning as well as allowing efficient management and maintenance by the IT Department. These standards are re-assessed on an annual basis and held up to private sector standards, standards at equivalent school districts and emerging technologies so that they stay current and usable.

## Technology Goals

The DCRSD IT Department is committed to:

- Developing a realistic, fundable technology plan.
- Facilitating appropriate information exchange between the District's professionals, parents and students.
- Creating a sustainable, long-term budget for technology to support a District-wide technology replacement schedule.
- Increasing the number of qualified technical support personnel District-wide.
- Standardizing technology purchases/replacements in order to reduce inventory and support requirements.

## Infrastructure

### Network Infrastructure

The District currently has a 1Gbps fiber optic WAN (Wide Area Network) connecting all seven District schools. The wide area network is comprised of fiber optic cable installed in August of 2006 and maintained by Spectrum Business.

Each individual school has a LAN (Local Area Network) comprised of 1Gbps switches connecting all classrooms with category 6e cabling. All wiring closets in each building are connected by 10Gbps fiber optic cabling. All ethernet and fiber cables were installed in 2018/2019. All classrooms have at least 4 working network jacks while all administrative areas have at least two.

The District maintains a single Microsoft Active Directory domain with domain controllers located in four of the seven schools. This allows users to access their data from any building and easily share information with anyone in the district.

### Planned Enhancements

- **1 to 2 Years** - The District plans to replace all aging network switches in FY24 using E-rate funds to cover a portion of the cost.
- **3 to 5 Years** - The District will continue to monitor, maintain and evaluate its core network infrastructure.

### Wireless Connectivity

The District currently has 246 Extreme Networks wireless access points deployed throughout all schools. These are managed access points allowing staff to connect District wireless devices to the network. Each school also has a password protected “guest” network available for students, staff and presenters to connect non-District devices to the internet.

### Planned Enhancements

- **1 to 2 Years** - The District plans to replace all access points throughout the four elementary schools in FY23 using E-rate funds to cover a portion of the cost.
- **3 to 5 Years** - The District plans to replace all access points throughout the two middle schools and Shepherd Hill in FY25 using E-rate funds to cover a portion of the cost.

### Internet Connectivity

The District has two 5Gbps/5Gbps fiber internet circuits shared by all seven schools, one at Charlton Middle and the other at Shepherd Hill.

### Planned Enhancements

- **1 to 2 Years** - None planned.
- **3 to 5 Years** - The District will continue to monitor its bandwidth and upgrade the fiber connection as needed as it plans for increased need.

## Cybersecurity

### Firewalls and Content Filtering

The District currently has two Sophos XG750 advanced threat protection firewalls, one at Charlton Middle and the other at Shepherd Hill. These firewalls protect the two fiber internet circuits used by all seven schools. The Sophos devices allow us to easily block or allow websites as needed. All internet traffic is filtered, both incoming and outgoing, as required by law.

#### Planned Enhancements

- **1 to 2 Years** - None planned.
- **3 to 5 Years** - The District will replace its current firewall/content filter as required by demand and equipment failure.

### AntiVirus Protection

The District currently uses “AVG Antivirus” to protect our Windows computers and servers. AVG allows us to centrally monitor all computers on our network, monitor status with regard to viruses and protection level, and run detailed reports. However, it does not provide some of the automated response features that Next-Generation solutions provide and that most insurance companies want organizations to have.

#### Planned Enhancements

- **1 to 2 Years** - The District plans to replace our current Antivirus solution with Sophos Intercept X Advanced with XDR and deploy it to all 1,200 computers and servers in FY23.
- **3 to 5 Years** - The District will continually monitor and evaluate the overall effectiveness of its anti-virus software, installing updates and replacing it as needed.

## Hardware

### Staff Devices

All staff have access to a computer or Chromebook for use while in the schools. All office staff, counselors, nurses and teachers have a desktop computer or laptop running Windows 10 specifically assigned to them. Many staff have document cameras and/or interactive whiteboards in their classrooms.

#### Planned Enhancements

- **1 to 2 Years** - Upgrade old mechanical hard drives to solid state drives on all staff desktop computers and laptops.
- **3 to 5 Years** - The District may look into the possibility of replacing staff desktop computers with laptops if the District office determines this is required and funding permits.

## Student Devices

Students have access to a number of different general access devices. There are 16 student computer labs located throughout the District. These labs contain a total of 420 desktop computers running Windows 10. There are also 60 Chromebook carts containing a total of 1800 Chromebooks and 4 iPad carts containing a total of 120 iPads. There are also hundreds of other devices used by students throughout the District that are not housed in labs or mobile carts. There are over 2,200 student devices that are suitable to be used for state computer-based testing.

### Planned Enhancements

- **1 to 2 Years** - None planned.
- **3 to 5 Years** - The District may look into the possibility of adding additional Chromebooks and iPads either in the form of additional 30 seat carts or 12-16 seat cabinets permanently installed in classrooms if the District office determines this is required and funding permits. However, maintaining the current student/staff devices should always be the first priority.

## Device Replacement

The District will continue to replace aging devices as funding permits. Our goal is to keep all devices under warranty which we are currently not close to meeting. If the District can't keep all devices under warranty, it at the very least must replace devices when they are no longer supported by the hardware/software manufacturers. The District has a large number of Windows computers that are over five years old. Approximately 500 computers will not run Windows 11 or above and will not be supported after 10/14/25. Any of these computers that are not replaced before 10/14/25 will be removed from the District network and disposed of. All 1,800 Chromebooks on the mobile carts will reach "end of life" in 2027. Any Chromebook not replaced by then, will be removed from the District network and Google management console and disposed of. All servers will be reviewed each year for potential upgrades due to changes in technology and to maintain network stability. A report to the Superintendent will take place during the budget planning process.

### Planned Enhancements

- **1 to 2 Years** - The District must increase the number of Windows computers that are replaced each year. In two years, a total of 500 computers must be replaced or they will be removed from the District network. The District needs to come up with a reasonable replacement plan for approximately 2,000 Chromebooks that will no longer be supported by Google in 2027. These devices cannot be replaced all at once.
- **3 to 5 Years** - The District needs to start replacing 2,000 Chromebooks that will no longer be supported by Google in 2027 on a staggered schedule.

## Device Disposal

The District disposes of all old technology items that have reached the end of their useful life. All devices that reach their “end of life” and are no longer supported by the hardware/software manufacturer are removed from the network. After the School Committee approves disposal, the IT Department schedules a recycle company to remove the items at no charge to the District.

### Planned Enhancements

- **1 to 2 Years** - None planned.
- **3 to 5 Years** - None planned.

## Printing

The District has approximately 97 network laser printers, 20 local printers and 20 network copy machines. Networked color laser printers are available to all computers in the labs, libraries and main offices. Monochrome laser printers are located throughout the schools in common areas/print centers. There are also a significant number of smaller personal laser printers in locations where confidential printing was required. The District uses an outside vendor for printer maintenance and toner replacement.

### Planned Enhancements

- **1 to 2 Years** - The District wants to minimize the number of local (personal) laser printers. The IT Department will evaluate and if necessary, begin upgrading print centers throughout the District.
- **3 to 5 Years** - The District wants to minimize the number of local (personal) laser printers throughout the District forcing most people to print to dedicated print centers. The IT Department will begin removing some of the “local” printers.

## Software

### Productivity and Administrative Software

Microsoft Windows 10 is the standard operating system on all District computers. As Windows 10 quickly approaches its “end of life” the District will begin to migrate all District computers that support it to Windows 11. Microsoft Office 2019 or 2021 has become the district’s standard productivity suite. As computers are upgraded to Windows 11, they will also be upgraded to Office 2021.

Staff and administrators have 24x7 access to web-based applications like District’s Student Information Systems (SchoolBrains and eSped), as well as access to a number of other student/staff management systems like Mosaic, TeachPoint and SchoolSpring. The District is also moving to a new web-based finance application.

### Planned Enhancements

- **1 to 2 Years** - The District is planning to begin installing Windows 11 and Office Professional 2021 on all computers.
- **3 to 5 Years** - The District will evaluate its administrative software and upgrade as necessary.



## Web Presence

The District's website ([www.dcrsd.org](http://www.dcrsd.org)) is managed by the District Webmaster as well as by District and school office staff. The District uses a content management system provided by FinalSite which allows each school to maintain their own webpage on the District's website.

### Planned Enhancements

- **1 to 2 Years** - The District office plans to have the content management vendor (FinalSite) refresh the District website template, providing a more modern look.
- **3 to 5 Years** - The District will expand the use of its website to include additional resources as appropriate.

## Email and Collaboration

The District uses the Google Workspace for Education suite of web-based email and collaboration tools including Gmail, Google Drive and Google Classroom. The District pays for the Google Workspace for Education Plus subscription. Each student has 20GB of online storage while each staff member has 100GB.

### Planned Enhancements

- **1 to 2 Years** - None planned.
- **3 to 5 Years** - The District will continue to monitor, maintain and evaluate its email and collaboration suite.

## Educational Software

The District has purchased subscriptions for a number of web-based programs for instruction and assessment. Whenever possible, the District chooses to use web-based application services over locally installed applications since students can use them in school and at home. The schools maintain a list and the licenses for all educational software used at their buildings. The software approval procedure for staff to request additional software can be found in Appendix A of this document.

### Planned Enhancements

- **1 to 2 Years** - The District office and school administrators will continue to monitor, maintain and evaluate student educational software.
- **3 to 5 Years** - The District office and school administrators will continue to monitor, maintain and evaluate student educational software.

## Technical Support

### Help Desk

Technical support is coordinated by the IT Department through a web-based Help Desk application. The Help Desk application is available through a link on the District's home page as well as from a number of other locations. Users log in with an account associated with their school, create a ticket, and explain the problem. A member of the IT Department responds within a short period of time based on priority and workload. The IT Department's staff of three employees close an average of approximately 2,200 support requests per year. This does not include any projects, emergency network issues or other problems that have been addressed while in the buildings completing work on other Help Desk tickets.

### Planned Enhancements

- **1 to 2 Years** - None planned.
- **3 to 5 Years** - The IT Department will continually monitor and evaluate the overall effectiveness of its Help Desk software, updating it as needed.

### Technology Staff

As of July 2022, the IT Department which is responsible for seven schools across two towns consists of:

- One full-time Technology Director
- One full-time Senior Network Computer Technician
- One full-time Network Computer Technician

The IT Department is currently responsible for maintaining approximately 1,200 computers, 2,000 Chromebooks, 500 iPads and almost 1,000 additional user devices including, network printers, tablets, projectors, interactive whiteboards and document cameras used by approximately 580 staff members and over 3,400 students. The IT Department is responsible for maintaining the entire network infrastructure including all network switches, routers, firewalls and servers. The IT Department is also responsible for creating and maintaining all domain, email, student information system, absence management system, IT Help Desk and DESE Security Portal accounts, as well as maintaining all aspects of those systems. The IT Department is also responsible for a number of other non-technical duties at this time.

The number of computers and peripherals continues to grow and incidents of use by staff members and students continue to increase. At the same time, the IT Department has not increased in size in over fifteen years. In 2007 the department was increased to three employees. At that time, there were approximately 1,000 computers and 14 networked printers. None of the other devices existed. There were no wireless networks or student assigned devices (Chromebooks, iPads, etc.). There was a single 10Mbps broadband internet connection shared by all seven schools that was occasionally used to check email and research information on the internet. There was no web-based curriculum and no computer-based testing (MCAS, Access for ELL, PLTW, AP, etc.)

### Planned Enhancements

- **1 to 2 Years** - The District needs to add an additional computer repair and support technician.
- **3 to 5 Years** - The District should look into adding a network/server level support technician.

## Finance

### E-Rate

Each year the Dudley-Charlton Regional School District seeks Category one E-Rate funding from the federal government to help defray the cost of internet service, firewalls and content filtering. The District also seeks Category two E-Rate funding to cover some of the cost of replacing network equipment like network switches, wireless access points, and network cables.

Each year the District will apply for E-Rate funding for the following year. However, the local budget for each fiscal year will be developed to include adequate funding for both the reimbursed and non-reimbursed portions. E-Rate funding is used to offset the overall technology budget request.

### Budget

The District must prepare an annual budget that will support the technology plan. The budget requests include hardware replacement, additional hardware, software upgrades, and maintenance fees for continuing day-to-day operations. Network maintenance and various projects must be in alignment with the direction laid out in this document. To create a sustainable, long-term budget for technology devices and software is a challenge.

In order to provide students of the Dudley-Charlton Regional School District with an education which is appropriate for 21st century learners, we must attain budgetary support for the following:

- Additional hardware for staff and students (software and licensing must be included with hardware)
- A realistic replacement policy which will allow us to keep all District devices current
- Updated software for staff and students
- Network infrastructure improvements
- Additional web-based software and services
- School based Instructional Technology Specialists responsible for training staff on the use of technology in the classroom
- Additional Technology Support Technicians

## Appendix

### Appendix A - Software Approval Procedure

When requesting access to new software, including Windows applications, web services, iPad apps and Google Chrome extensions/add-ons, staff should have a conversation with their principal or manager (for District office staff) to see if the requested software is something the principal/manager approves of and to determine next steps.

If the principal/manager approves the use of the software.

- If the software has already been approved by the District (possibly discussed in ad-council).
  - If there is no additional cost the staff member can request the installation through the IT Help Desk.
  - If there is an additional cost, the principal must request the purchase and installation through the IT Help Desk and provide an account to charge.
- If the software has **not** already been approved by the District, the principal may need to discuss with ad-council before approving the request. Once approved, the principal/manager needs to notify the IT Department that it's been approved.
  - If there is no additional cost the staff member can request the installation through the IT Help Desk.
  - If there is an additional cost, the principal must request the purchase and installation through the IT Help Desk and provide an account to charge.