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Ms. Lucy Feria, Interim Superintendent

Dr. Josue Falaise, Interim Chief Academic Officer

Jayne S. Howard, Business Administrator/Board Secretary

Business Office

Wilfredo Ortiz, Interim Assistant Superintendent

Office of School Support

Elizabeth DeJesus, Assistant Superintendent

Office of Special Services

Lissa Johnson, Assistant Superintendent

Office Talent Acquisition and Development

Perry L. Lattiboudere, Esq.

General Counsel

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**Stakeholders: 2016 – 2019 District Technology Committee Members**

Lucy Feria, Superintendent

Dr. Josue Falaise, Chief Academic Officer

Alfonso Llano, Principal

Dennis Morgan, Technology Coordinator

Michael Tofte, Supervisor of STEM

Sandra Iturbides, Supervisor of ESL/Bilingual

Kathryn Graf, Professional Development Specialist and Teacher

Nicholas Barbato, Instructional Technology Teacher

John Dunston, STEM Leader

Garrett Palowitch, District Technician

**TABLE OF CONTENTS**

Advisory Board Members.....Page 2

Superintendent’s Leadership Team .....Page 2

Stockholders.....Page 3

  

II. Executive Summary .....Pages 5

III. Technology Overview .....Page 6-11

IV. Technology Needed to Improve Student Achievement .....Page 12-14

V. Cyber Safety .....Page 15

VI. Three-Year Goals and Objectives.....Page 15-16

VII. Goals .....Page 17

VIII. Action Plan .....Page 17-18

IX. Evaluation.....Page 19

## **II. EXECUTIVE SUMMARY**

### **Introduction**

Technology has become an important part of the curriculum for all schools throughout the state and nation. Technology directly affects the way in which teachers teach and students learn; administrative and support staff also benefit from the information and communication systems designed to improve their performance and productivity. The purpose of this plan is to review previous goals, conduct a needs assessment, establish new goals, and establish a plan for the future.

Trenton Public Schools plans to purchase new devices, including Assistive Technologies, as part of preparing students to function as part of a digital learning community. In order to Switches and other networking hardware will be increased to manage the demands for the administration, faculty and student use throughout the day. Light speed web content filtering currently protects the entire Trenton Public Schools community. Our District is continuing to evaluate our filtering method to monitor safe online learning resources. Software and hardware initiatives will be targeted to maximize the impact for every student. Educational offerings provided by various vendors will be piloted and evaluated for in class use. Our goal will be to move to a Cloud solution for students to extend the learning day past school hours to improve student performance and access to online learning. The importance of technology in today's society and the focus to ensure that no student is left behind, bridging deficiencies with technology is a viable tool to support student success. Developing digital learning communities will encourage and aid online assessments, which will provide every teacher with immediate assessment results and enhance the process for differentiated instruction. Finally, there is a quintessential need for district wide training to assist our students and staff to even the technology playing field in the upcoming years. All these recommendations are subject to education need, Board approval, and budgetary allocations.

### ***Mission Statement***

**All Students will graduate with a vision for their future, motivated to learn continually and prepared to succeed in their choice of college or career.**

### **Stakeholder Involvement**

#### **2016 – 2019 Building Technology Integration**

Each school in the district has KACE enterprise management. All new and existing equipment is inventoried and monitored with the use of the KACE tool. Meetings are held with school principals, department heads, and the technicians monitoring the equipment to determine what equipment is in need of updating.

### III. TECHNOLOGY OVERVIEW

<b>Trenton Central High School Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	10
Routers	1
Wireless Access Points	114
Phone Systems	1
Telephones	18
Workstations	228
Laptops	270
Chromebooks	0
iPads	0

<b>Dunn Middle School Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	16
Routers	1
Wireless Access Points	100
Phone Systems	1
Telephones	28
Workstations	232
Laptops	629
Chromebooks	0
iPads	91

<b>Rivera Middle School Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	8
Routers	1
Wireless Access Points	80
Phone Systems	1
Telephones	22
Workstations	54
Laptops	104
Chromebooks	0
iPads	120

**Hedgepeth-Williams Middle School Network Inventory**

<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	7
Routers	1
Wireless Access Points	70
Phone Systems	1
Telephones	23
Workstations	158
Laptops	173
Chromebooks	0
iPads	90

**Kilmer Middle School Network Inventory**

<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	11
Routers	1
Wireless Access Points	86
Phone Systems	1
Telephones	18
Workstations	140
Laptops	424
Chromebooks	0
iPads	90

**Columbus Elementary Network Inventory**

<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	6
Routers	1
Wireless Access Points	57
Phone Systems	1
Telephones	8
Workstations	140
Laptops	117
Chromebooks	0
iPads	90

<b>Franklin Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	5
Routers	1
Wireless Access Points	42
Phone Systems	1
Telephones	6
Workstations	126
Laptops	85
Chromebooks	0
iPads	120

<b>Grant Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	8
Routers	1
Wireless Access Points	57
Phone Systems	1
Telephones	24
Workstations	120
Laptops	110
Chromebooks	200
iPads	60

<b>Gregory Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	7
Routers	1
Wireless Access Points	60
Phone Systems	1
Telephones	18
Workstations	142
Laptop	166
Chromebooks	0
iPads	90



<b>Jefferson Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	6
Routers	1
Wireless Access Points	57
Phone Systems	1
Telephones	14
Workstations	9
Laptops	162
Chromebooks	0
iPads	90

<b>MLK Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	14
Routers	1
Wireless Access Points	88
Phone Systems	1
Telephones	13
Workstations	225
Laptops	109
Chromebooks	0
iPads	120

<b>Mott Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	9
Routers	1
Wireless Access Points	65
Phone Systems	1
Telephones	16
Workstations	158
Laptops	109
Chromebooks	0
iPads	120

<b>Parker Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	8
Routers	1
Wireless Access Points	62
Phone Systems	1
Telephones	22
Workstations	89
Laptops	140
Chromebooks	0
iPads	120

<b>PJ Hill Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	14
Routers	1
Wireless Access Points	76
Phone Systems	1
Telephones	16
Workstations	218
Laptops	66
Chromebooks	0
iPads	90

<b>Robbins Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	7
Routers	1
Wireless Access Points	57
Phone Systems	1
Telephones	9
Workstations	110
Laptops	90
Chromebooks	0
iPads	30

<b>Robeson Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	6
Routers	1
Wireless Access Points	34
Phone Systems	1
Telephones	18
Workstations	163
Laptops	102
Chromebooks	0
iPads	60

<b>Washington Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	9
Routers	1
Wireless Access Points	33
Phone Systems	1
Telephones	16
Workstations	102
Laptops	32
Chromebooks	0
iPads	90

<b>Wilson Elementary Network Inventory</b>	
<b>Equipment</b>	<b>Quantity</b>
Servers	1
Switches	8
Routers	1
Wireless Access Points	52
Phone Systems	1
Telephones	12
Workstations	119
Laptops	180
Chromebooks	0
iPads	60

#### IV. Technology Needed to Improve Student Academic Achievement Through 2019

Technology Plan Checklist for NJ School Districts/Charter Schools  
(2016 - 2019)

**Three-Year Technology Plan Inventory Table**

<b>Area of Need</b>	<b>Describe for</b>	<b>Describe for</b>	<b>Describe for</b>
Technology Equipment	Build each school with the capacity for a one to one computer experience for the students.	Continue capacity for a one to one computer experience for students.	Evaluate Wide Area Network, and Internet connectivity to validate it's meeting the needs
Network Capacity	Each school has a 1 gig WAN link, and has access to a 10 Gig Internet Pipe	Each school has a 1 gig WAN link, and has access to a 10 Gig Internet Pipe	Each school has a 1 gig WAN link, and has access to a 10 Gig Internet Pipe
Filtering Software	Fortigate	Fortigate	Fortigate
Maintenance Policy and Plans	<ul style="list-style-type: none"> <li>● UPS Maintenance</li> <li>● Microsoft Suite</li> </ul>	<ul style="list-style-type: none"> <li>● UPS Maintenance</li> <li>● Microsoft Suite</li> </ul>	<ul style="list-style-type: none"> <li>● UPS Maintenance</li> <li>● Microsoft Suite</li> </ul>
Tele-communication s Services	<ul style="list-style-type: none"> <li>● Basic phone service</li> <li>● Internet access</li> <li>● Direct Internet Connection</li> <li>● Cell Phones</li> <li>● Website ASP</li> </ul>	<ul style="list-style-type: none"> <li>● Basic phone service</li> <li>● Internet access</li> <li>● Direct Internet Connection</li> <li>● Cell Phones</li> <li>● Website ASP</li> </ul>	<ul style="list-style-type: none"> <li>● Basic phone service</li> <li>● Internet access</li> <li>● Direct Internet Connection</li> <li>● Cell Phones</li> <li>● Website ASP</li> </ul>

Technical Support	<ul style="list-style-type: none"> <li>● Virus protection</li> <li>● Backup system</li> <li>● Software updates</li> <li>● Library subscriptions</li> <li>● Student Information System</li> <li>● Network Monitoring Software</li> <li>● Server Maintenance</li> <li>● Meraki Wireless</li> </ul>	<ul style="list-style-type: none"> <li>● Virus protection</li> <li>● Backup system</li> <li>● Software updates</li> <li>● Library subscriptions</li> <li>● Student Information System</li> <li>● Network Monitoring Software</li> <li>● Meraki Wireless</li> </ul>	<ul style="list-style-type: none"> <li>● Virus protection</li> <li>● Backup system</li> <li>● Software updates</li> <li>● Library subscriptions</li> <li>● Student Information System</li> <li>● Network Monitoring Software</li> <li>● Meraki Wireless</li> </ul>
Facilities – Infrastructure including central telephone & security systems	<ul style="list-style-type: none"> <li>● Maintenance of radio, security, phone services and replace phone system</li> <li>● Add or replace UPS in all IDFs and MDFs</li> </ul>	Maintenance of radio, security and phone services	Maintenance of radio, security and phone services
Other	<ul style="list-style-type: none"> <li>● Evaluation of emergent technologies</li> </ul>	<ul style="list-style-type: none"> <li>● Evaluation of emergent technologies</li> </ul>	<ul style="list-style-type: none"> <li>● Evaluation of emergent technologies</li> </ul>

### **Integration of Assistive Technology**

The integration of assistive technology is coordinated with the child study team and is based upon the individual student's instructional plan.

The School District's website is accessible to all stakeholders. Our website currently utilizes a text based content management system that allows all links and content to be translated into a screen reader with ease. Website graphics and animations that may be included on the site are for decoration only and are not used for navigation or information.

The logical and consistent method of creating, organizing and displaying information provide the optimal situation for stakeholders who need an alternate way to review the school website.

Electronic forms created using the tools included with our software generate text-based forms that can be easily navigated and completed using accessibility tools. Image maps are generally not utilized within the site due to the navigation problems they can cause with regard to accessibility.

### **Computer/Technology Replacement Plan**

Replacement of obsolete equipment has become a significant problem in all school districts. The Technology Committee made a commitment in previous technology plans to investigate the use of various computing technologies. As of now, the district is in the process of utilizing our desktop and laptops until they can no longer support the instructional initiatives of the district. When we purchase replacement equipment, we are moving to laptop carts to take advantage of our wireless network.

### **Plan for Obsolescence**

When looking at a planned obsolescence program for our educational technology, our district will look to answer the following questions before making a decision to replace outdated equipment:

- How might we delay obsolescence and extend the life of our technology resources?
- What will be the process for properly destroying secure data and memory from outdated computers?
- Should old computers be sold, donated, or recycled?

## **V. Cyber Safety**

### **Filtering Methods**

Methods used to insure Children's Internet Protection Act (CIPA) Compliance

Office365 brings together the best of both worlds, providing the blocking capabilities of a traditional e-mail system and the ease of an on-line service. Office365 can be accessed on any computer with a web browser and an Internet connection. Students access Office365 for education with an encrypted password, and read, organize, and delete their mail with a simple web interface.

### **Fortigate**

Fortigate is built into a rack-mountable network appliance you install between your Internet connection and your internal network. Besides filtering your Internet connection, the software services that run on this appliance include:

- A simple web-based interface to configure the web filtering options
- An intelligent web caching service to speed up redundant web requests
- Complete web usage logging that keeps track of every Internet request
- Traffic monitoring and network management tools that graph your network traffic for analysis
- A VPN solution for Administrative Access
- A Firewall to allow or deny access ports on the network

## **VI. THREE –YEAR GOALS AND OBJECTIVES**

### **A.) History (2013 – 2016)**

Trenton Public Schools entered into a technological expansion period during the 2013-2016 years. The district was able to increase our student learning, staff's knowledge, skills and instructional abilities. Trenton Schools were able to accomplish this by providing numerous Professional Development sessions for our instructional staff. The PD was across the core content areas and further assimilated by turn-key training in the home school environment. Students were presented with additional electronic devices, improved infrastructure for research, benchmark assessments, class learning centers and independent skill development.

The district created an "E.P.I.C." (edConnect, PARRC, Instruction and Curriculum) Team in each school to support all of the new initiatives and provide daily support to the administration, staff and students. The EPIC Team members had regular meetings with the district Instructional Technology and Professional Development Intervention Teachers to obtain their knowledge and prepare to turn-key for the instructional staff at their schools. Parent Liaisons communicated the new programs and goals to the parents via regular meetings, flyers, email, district website and daily contact at the school. Together all stakeholders worked to insure that the students were continually adding to their life-long learning and skills for college and career.

### **B.) Goals and Objectives for 2013 - 2016**

Goal 1: Use technology to improve instruction and provide opportunities to acquire technological skills.



Evaluation:

Trenton Schools worked toward a "greener" environment over the 2013-2016 school years by reducing the amount of printed materials. The district utilized the Microsoft Office 365 and One Drive platform to create: shared folders, staff and student e-portfolio locations, new student log-in structure and enhanced student engagement with technology advancements in the learning arena.

I-tech Tuesday workshop dates allowed teachers to continue developing their technological skills. District Administrative staff was also provided with additional PD dates to hone their digital abilities. Teachers collaborated on lessons and other instructional material via the One Drive sharing feature, thus constructing stronger classroom content for the students

Finally, Trenton School District moved to the majority of student assessments being given through digital portals. District benchmark testing, PARRC and other content area summative and formative assessment data came back to the district administrators, supervisors, school administrators and teachers at a much quicker rate than in previous years. Consequently, we were able to modify the student-learning environment to meet their specific needs at a much more rapid pace. Thereby keeping them in stride with their individualized learning plan.

Goal 2: Implement consistent, ongoing professional development and support in order to further develop instructional staff's expertise in utilizing technology within the disciplines as a tool for improved teaching and learning.

## **B.) Goals and Objectives for 2013 – 2016 (cont.)**

Evaluation:

The Trenton Public Schools worked hard over the 2013-2016 school years to provide a multitude of Professional Development opportunities for its administrators, instructional staff and in school support staff members. The District's Cyberspace Training Center, Media Centers, Computer Labs, Cafeterias, Gyms and Auditoriums held many Professional Development workshops. These workshops were placed on a district calendar and promoted via the district webpage, emails to prospective attendees and listed in the My Learning Plan Catalog.

Turn-key trainers and E.P.I.C. Team members supported many of these sessions at the school level. These school based associates reinforced PD content on an individual, as well as group basis, in their home schools. Our summers over those three years also provided Professional Development opportunities for up to 400 staff members.

Technology was the major emphasis in these summer workshops. Furthermore, sessions were offered at various knowledge levels. Thereby addressing the skill level of the attendees.

Finally, when we contracted a vendor, we required Professional Development workshops for the staff that would use the material.

**VII. GOALS 2016 – 2019**

**GOAL I: TO SUPPORT EDUCATORS IN THEIR QUEST TO ENRICH STUDENT LEARNING EXPERIENCES THROUGH EMERGING TECHNOLOGIES.**

**VIII. ACTION PLAN**

<b>OBJECTIVE 1.1</b>			
<b>Integrate content with interactive and online technology resources across the curriculum.</b>			
<b>ACTIVITY</b>	<b>TIMELINE</b>	<b>PERSON RESPONSIBLE</b>	<b>DOCUMENTATION</b>
New Jersey Center for Teaching and Learning (NJCTL) online math and science online content, assessments and methodology which leveraging SMART Notebook presentation technology and student response systems used in ongoing formative assessments.	September through June 2016, 2017, 2018	Teachers, math & science teachers  STEM Supervisor  Building administrators	Common science assessments  Lesson plans, walkthroughs  Classroom observations
Read180 for special education and resource students needing standards-based remediation in English Language Arts.	October through June, 2018, 2019 & 2020	Special education reading teachers	SAM Pre-test vs. Post-tests Interim assessments

<b>OBJECTIVE 1.2</b>			
<b>Continue to align software, curriculum needs and appropriate technology-based tools.</b>			
<b>ACTIVITY</b>	<b>TIMELINE</b>	<b>PERSON RESPONSIBLE</b>	<b>DOCUMENTATION</b>
edConnect single platform for standards-based assessments, curriculum and instruction, as well as lesson planning and training - for math, science, Language Arts, Social Studies and other subjects	October - June 2016, 2017, 2018	Supervisor of Instructional Technology, building administrators, teachers	Real-time, online reporting through assessment system.

<b>OBJECTIVE 1.3</b>			
Expand the district's staff development plan to include varied levels and modes of integrated			
<b>ACTIVITY</b>	<b>TIMELINE</b>	<b>PERSON RESPONSIBLE</b>	<b>DOCUMENTATION</b>
Online training in selected software programs, such as edConnect and New Jersey Center for Teaching and Learning (NJCTL) Progressive Science/Math Initiative (PSI/PMI)	September – June 2016, 2017, 2018	Supervisor of Instructional Technology, STEM Supervisor Building technology leads	Sign in sheets, mylearningplan.com

**GOAL II: DEVELOP EFFICIENT AND EFFECTIVE SYSTEMS OF TECHNOLOGICAL SUPPORT FOR STAFF MEMBERS AND STUDENTS.**

<b>OBJECTIVE 1.1</b>			
Implement effective systems of communication within the district.			
<b>ACTIVITY</b>	<b>TIMELINE</b>	<b>PERSON RESPONSIBLE</b>	<b>DOCUMENTATION</b>
Use of One Drive to supplement sharing and collaborative development of files	September - June, 2016, 2017, 2018	Supervisor of instructional technology, building admins, teachers	One Drive collaborative works, including student portfolios.

## **IX. EVALUATION**

1. Teacher participation in professional development opportunities that focus on technology integration will be monitored. Exit surveys were carried out at the end of the 2015-2016 workshops.

2. Performance on state mandated assessments such as the PARCC would be analyzed. Content Area Supervisors will also monitor their departments' embedded technology progress via OnCourse reporting systems, classroom observations and lesson plan review. Finally, state and local graduation requirements will be review.