Fiscal Year 2023
Higher Education Department
IT Strategic Plan

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B. Malecki
Chief Information Officer

Stephanie Rodriguez
Cabinet Secretary

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EXECUTIVE SUMMARY

The New Mexico Higher Education Department (HED) seeks to promote accessibility to education for all New Mexicans and Information technology is a key element of this effort. Some of the areas in which IT is utilized are managing loan applications for Financial Aid, providing collaborative tools for teleworking, serving archived school transcripts for students, and delivering data for policy makers.

The Information Technology Services Division (ITS) helps facilitate the workflow of other HED divisions and enhance the overall efficiency of the agency.   ITS's work and goals are in alignment with the Higher Education Department's and the State's IT strategic goals. Specifically:

ITS is working to improve security and functionality by activating firewalls on user systems and upgrading MS Office 2019 to MS Office 365. Additionally, we continue to add features and improve performance of the Financial Aid Division's Health Professional Loan Repayment Program application (HPLRP), the NM Children, Youth & Families Worker Loan Repayment Program application (CYFD) as well as Planning & Research Division's Electronic Data Editing and Reporting system (eDEAR).   Finally, ITS successfully developed and deployed the Academic Policy application for the Academic Affairs and Policy Division, allowing Higher Education Institutions to more easily and securely submit CIP Code, General Education or New Education Program requests.

Regarding inter-agency activity, ITS continues to work with the CIOs of all the New Mexico Higher Education Institutions (HEIs) on cybersecurity, especially on ransomware prevention and mitigation. Additionally, we are a key stakeholder on the New Mexico Longitudinal Data System project (NMLDS), which is a collaboration between DWS, ECECD, PED, and HED through participation on the Project Team, securing state and federal funding, and evaluating vendor solutions. This certified project is transitioning to the Planning Phase this autumn and will be in the Implementation Phase in in early FY23. As such, much of ITS resources will be devoted to it in FY23.

Agency leadership continues to make it a priority to (a) better engage and support the State's higher education institutions, students and teachers and (b) more widely share the extensive information HED has collected and which ITS manages. To that end, FY23 will see (a) the delayed off-site Business Continuity and Disaster Recovery solution (BC/DR) finally placed into service and (b) the remaining on-premises services, Active Directory and shared files, migrated to a cloud-hosted platform.

I.   AGENCY OVERVIEW

A. AGENCY MISSION

The New Mexico Higher Education Department provides financial, academic, and policy oversight to the NM public higher education institutions for the purpose of promoting efficiency, accountability and student success.

B. AGENCY GOALS

HED fosters and guides a system of higher education that best meets the needs of the citizens of the state by providing financing to and oversight of all of the state's public universities and colleges. The agency also has regulatory authority over private for-profit institutions operating within the state.

C. AGENCY DESCRIPTION AND ORGANIZATION STRUCTURE

HED has a staff size of 42 and all of its offices in Santa Fe. The agency is comprised of seven main divisions that sponsor various education-related programs. These are as follows:

1. The Adult Education Division serves adults to become literate and obtain the knowledge and skills necessary for employment and self-sufficiency.
2. The Financial Aid Division is dedicated to helping students in pursuing their educational goals by educating students, parents and the community about state aid opportunities.
3. GEAR UP's mission is to increase the number of underrepresented students who are prepared to enter and succeed in Postsecondary education.
4. The Institutional Finance Division is responsible for the fiscal oversight of 32 colleges, universities and special schools.
5. The Academic Affairs and Policy Division is involved with a number of activities, including monitoring the transfer and articulation operation and the associated General Education Core Course listings.
6. The Private Postsecondary Schools Division (PPSD) issues licenses or letters of exemptions to private postsecondary Institutions allowing these institutions to legally operate in the state.
7. The Research and Planning Division provides quality assurance, reporting and planning support to the higher education community through collaborative data collection, analysis and reporting.

For the organization chart and division-level staffing information, go to Appendix C.

II. HED IT DIVISION

A. VISION AND PRIORITIES

To facilitate and transform the business processes of the agency and provide the highest possible value to all internal and external stakeholders.

Priorities are as follows:

- Increasing information and data redundancy and security
- Increasing information and data availability
- Streamlining service delivery
- Improving responsiveness and customer service
- Becoming more transparent to stakeholders
- Consolidating services and reducing costs via virtualization and hosting

B. IT ENVIRONMENT

1. Major Applications

Our primary applications deal with supporting NM higher education institutions directly and indirectly by (a) providing financial aid to students, teachers and graduates, (b) funding projects, (c) overseeing projects and finances, (d) managing course and program changes and standards, (e) collecting enrollment and graduation information, and (f) providing transcripts. All of these work with sensitive information. Therefore, security is the highest priority. Second highest priorities are intuitive, easy-to-use interfaces and strong customer support.

For a list of and details about HED applications, go to Appendix A.

2. Infrastructure

All HED network and server systems are located at the 2044 Galisteo Street HED Office complex and are comprised of HP x64 servers, an HP SAS storage system, Juniper network switches, a Palo Alto firewall, and Ubiquiti wireless access points.   We also have a growing cloud-based infrastructure that includes application containers and SQL Server database servers.

Here is a summary of our on-premises systems:

Systems	Operations	Servers and/or Services
HPE server systems and HPE SAS storage	VMware vSphere running 8 virtual server instances	• Active Directory servers • Windows Server 2012R2 File Share servers
Back-up systems	Disk- and tape-based back-ups	Disk- and tape-based back-ups
Juniper switches, Palo Alto firewalls and Ubiquiti WPAs	Network communications and security	• VPN • DMZ • Zero-trust subnets • External IP traffic • Wireless access

TABLE II.2: HED IT Infrastructure

For more information about our physical IT infrastructure, go to Appendix B.

3. Security

Security is currently our highest priority and takes approximately 40% of our time. It is the first consideration when any change, purchase or request is made, and it is and has been a key driver of our move to cloud-based services. This includes redundant back-ups on and off-site, our current and planned efforts to standardize on using encrypted email and requiring multi-factor authentication on all applications and services.

Other aspects of our security include zero-trust networks, tiered Active Directory permissions, robust VPN service, and multi-level end-user protection, including local anti-malware and firewall services.

4. IT Projects

HED has one certified IT Project, the NM Longitudinal Data System (NMLDS) and one project exempted from certification by DoIT, the Shared Services Enterprise Resource Planning (ERP). Here are the details:

NM Longitudinal Data System (NMLDS)	
Project Description	In partnership with DWS, ECECD and PED, implement a central data and reporting system containing all student and workforce information to track students' progress accurately through the education and workforce systems.
Estimated Project Cost	$9.3M (FY21 – FY24)
Current Funding	$1.2M (FY21 – FY22)
Certified Project Phase	Initiation
Estimated Completion	September, 2023
Strategic Priority	To identify what programs, services, interventions, education practices, and other factors have an impact on student success and thereby help improve New Mexico's high school graduation rate, college enrollment and completion rates, workforce preparedness and retention, employment rate, career longevity, and ultimately broader social indicators such as poverty and health outcomes.
Shared Services Enterprise Resource Planning (ERP)	
Project Description	To allow participating NM colleges to remain independent, while providing students access to curriculums previously unavailable in their geographic area.
Estimated Project Cost	$33.9M (FY22 – FY24)
Current Funding	$4.4M
Project Phase	Initiation
Estimated Completion	June, 2024
Strategic Priority	To promote accessibility to education for all New Mexicans (agency goal) and to standardize higher education's ERP and data management and sharing processes (IT goal).

TABLE II.3: Certified and DoIT-exempted IT projects

5. *Challenges*

ITS has two major challenges: Migrating remaining data to hosted system and providing a BC/DR solution. Both should be fully mitigated in FY23. Specifically:

Challenge	Details	Mitigation
BC/DR system	We don't have an off-site Business Continuity and Disaster Recovery system. Our Server Room is neither	• Migrate remaining file share and application data to a cloud-hosted environment

	secure nor power-redundant and, meanwhile, agency staff use and save ever more information, so implementing a BC/DR system is a priority.	• Implement existing, cost-effective, robust and secure cloud-based BC/DR solutions.
Data access & security	Lack of redundancy across Active Directory server systems; the demand for increased data access; and the need for increased security.	• Migrate remaining file share and application data to a cloud-hosted environment. • Implement a hybrid Active Directory system (cloud-based and on-premises). • Implement a cloud-based firewall.

III. FY21 KEY ACCOMPLISHMENTS

FY22 was a challenging but productive year for ITS. We deployed more applications, provided more collaboration tools, migrate all databases to a more secure location, enabled additional network and data security measures, and collaborated with State and higher education partners more often and more closely than ever before.

A. KEY FY21 STRATEGIC IT ACCOMPLISHMENT

IT Strategic Goal:	Deliver capabilities to foster more collaboration and easier and more secure knowledge sharing and management
FY21 Strategy:	Deploy proven web-based and cloud-based services, including MS 365 and AWS while applying industry-recommend security measures and processes, e.g., MFA
Metrics:	• 100% increase in number of inter-agency and inter-institution IT activities and/or initiatives • 2-4 New and/or improved secure, easy-to-use web services
Accomplishments:	• 150% increase in IT collaboration and/or initiatives with DoIT, PED, ECECD, and DWS • 100% increase in IT collaboration and/or initiatives with NM Higher Education Institutions • Upgraded 3 web applications to improve user experience (UX)

TABLE III.1: Key FY21 strategic IT accomplishment

B. OTHER KEY FY21 IT ACCOMPLISHMENTS

CATEGORY	ACCOMPLISHMENT	VALUE or IMPACT
APPLICATIONS	Deployed the Academic Affairs web application	Increased efficiency and security and improved User Experience
DATA	Complete move of all databases to AWS cloud-hosted platform	More redundant and secure data
INFRASTRUCTURE	Enabled snapshots and versioning; deployed laptops to all staff	Staff now have access to historical versions of shared drive files; all staff can now access all HED resources remotely
SECURITY	Upgraded and expanded firewall & VPN systems; added local firewalls to user computers; introduced zero trust architecture; enabled cloud-based database back-ups; and tiered AD configuration	Access to services, agency files and data is now transparent and more secure, both in the office and remotely
WORKFORCE	All staff was migrated to and trained on MS 365 services	All staff now have the complete suite of robust and secure collaboration, communication and information management tools

TABLE III.2: Other FY21 IT accomplishments

IV. FY23 IT STRATEGIC GOALS & STRATEGIES

Primary IT Strategic Goal:	Increase transparency, ease of use and security for all services, file access and data management for staff and all authorized partners
Agency Strategic Goal:	Better leverage and share institutional and student information
FY23 Strategy:	More fully engage DWS, ECECD, PED, DoIT, and other institutions to share and better utilize key constituent data
Metrics:	• 1-2 new inter-agency and inter-institution projects • 2-4 new and/or upgraded web applications and/or services • 15+% increase in data sharing with other agencies • 40+% increase of web-based custom and ad hoc reports
FY23 Strategy:	Make agency services and data sharing standard and transparent by way of secure, on-demand access technology
Metrics:	• Complete migrating Active Directory to the cloud • Complete file shares migration to the cloud
FY23 Strategy:	Make more information more readily available to the higher education institutions (HEIs) and the public
Metrics:	• 1-2 new wizard-driven, web-based reporting services • 10+% increase of web-based custom and ad hoc reports • 25+% increase in data sharing with other agencies

TABLE IV.1: FY23 IT strategic goals and strategies

V. IT FISCAL AND BUDGET MANAGEMENT

A. IT OPERATING BUDGET (C1)

Information Technology Base Operating Budget Informational Purposes Only					
Agency Name:	NM Higher Education Department			**Agency Code:**	950
Appropriation Funding Type:	Base Request Operational Support of IT. Check one of the options below: Flat Budget ☐ or Expansion from previous year ☒				
Revenue IT Base Budget (dollars in thousands)					
	FY20 Actual	**FY21 Actual**	**FY22 OpBud**	**FY23 Request**	**FY24 Estimate**
General Fund	632	1,410	1,771	2,314	2,400
Other State Funds	36	25	20	42	60
ISF/IAT	0	0	0	0	0
Federal Funds	20	20	40	150	200
Total	688	1,455	1,831	2,506	2,660
Expenditure Categories (dollars in thousands)					
Category or Account Description	**FY20 Actual**	**FY21 Actual**	**FY22 OpBud**	**FY23 Request**	**FY24 Estimate**
Personal Services & Employee Benefits	620	675	689	1,195	1,215
Contractual & Professional Services	29	72	125	110	135
IT Other Services	15	29	77	75	83
Other Financing Uses	0	0	0	0	0
Total	664	776	891	1,380	1,436
	Agency Cabinet Secretary/ Director (mandatory)	**CIO or IT Lead (mandatory)**		**Chief Financial Officer (mandatory)**	
Name	Stephanie Rodriguez	Bogi Malecki		Mario Suazo	
Signature					
Phone	505-476-8400	505-476-8432		505-476-8400	
Email address	stephanie.m.rodriguez@ state.nm.us	Bogi.Malecki@state.nm.us		mario.suazo@state.nm.us	

TABLE V.1: NM Higher Education Department C1

B. CAPITAL IMPROVEMENT, SPECIAL AND SUPPLEMENTAL FUNDING (C2)

1) NM LONGITUDINAL DATA SYSTEM (NMLDS)

C2: Information Technology
Data Processing - Computer Systems Enhancement Fund (CSEF)

Agency Name	Agency Code	Project Name	Priority (one is highest)	Projected Start Date	Projected End Date
Higher Education Department (HED)	95010	NM Longitudinal Data System (NMLDS)	1	8/31/2020	6/30/2024

Multi-Agency Project	Participating Agencies		Project Type Please select one of the options below:		
☒ Yes ☐ No	DoIT, DWS, ECECD, HED, PED		☐ New ☐ Replacement ☒ Existing		

Revenue Project Cost *(dollars in thousands, amounts calculate upon exit, click outside the cell after your last entry)*

Category or Account Description	FY21 & Prev Actual	FY22 Budget	FY23 Request	FY24 Estimate	Total
General Fund (CSEF)	303.0	466.0	6500.0	0.0	7269.0
Other State Funds *(*specify funds below)*	0.0	0.0	0.0	0.0	0.0
Federal Funds	0.0	500.0	1000.0	2500.0	4000.0
Internal Svc Funds/Interagency Transfer	6.0	0.0	0.0	0.0	6.0
Total	309.0	966.0	7500.0	2500.0	11275.0
*If Other State Funds, Specify Funding Source/Fund Name					

Expenditure Categories *(dollars in thousands, amounts calculate upon exit, click outside the cell after your last entry)*

	FY21 & Prev Actual	FY22 Budget	FY23 Request	FY24 Estimate	Total
Personal Services & Employee Benefits	0.0	0.0	410.0	410.0	820.0
Professional Services	172.0	1654.0	3532.0	996.0	6354.0
Travel/Lodging	0.0	0.0	0.0	0.0	0.0
IT Hardware	0.0	0.0	0.0	0.0	0.0
IT Software	4.0	527.0	243.0	696.0	1470.0
Other	0.0	16.0	0.0	0.0	16.0
Total	176.0	2197.0	4185.0	2102.0	8660.0

2) *SHARED SERVICES ENTERPRISE RESOURCE PLANNING (ERP)*

C2: Information Technology
Data Processing - Computer Systems Enhancement Fund (CSEF)

Agency Name	Agency Code	Project Name	Priority *(one is highest)*	Projected Start Date	Projected End Date
Higher Education Department (HED)	95010	Shared Services Enterprise Resource Planning (ERP)	2	9/1/21	6/30/21

Multi-Agency Project	Participating Agencies		Project Type *Please select one of the options below:*		
☒ Yes ☐ No	HED, CCC, CNM, LCC, MLCC, NNMC, SJC, SFCC		☐ New	☐ Replacement	☒ Existing

Revenue Project Cost *(dollars in thousands, amounts calculate upon exit, click outside the cell after your last entry)*

Category or Account Description	FY21 & Prev Actual	FY22 Budget	FY23 Request	FY24 Estimate	Total
General Fund (CSEF)	0.0	3125.0	15150.0	0.0	18275.0
Other State Funds *(*specify funds below)*	4229.0	1311.0	0.0	10039.0	15579.0
Federal Funds	0.0	0.0	0.0	0.0	0.0
Internal Svc Funds/Interagency Transfer	0.0	0.0	0.0	0.0	0.0
Total	4229.0	4436.0	15150.0	10039.0	33854.0
*If Other State Funds, Specify Funding Source/Fund Name	Institutional Fund Balance, CARES Act Funding, Bonding				

Expenditure Categories *(dollars in thousands, amounts calculate upon exit, click outside the cell after your last entry)*

	FY21 & Prev Actual	FY22 Budget	FY23 Request	FY24 Estimate	Total
Personal Services & Employee Benefits	750.0	846.0	1109.0	1109.0	3814.0
Professional Services	3479.0	3590.0	13241.0	8130.0	28440.0
Travel/Lodging	0.0	0.0	0.0	0.0	0.0
IT Hardware	0.0	0.0	0.0	0.0	0.0
IT Software	0.0	0.0	800.0	800.0	1600.0
Other	0.0	0.0	0.0	0.0	0.0
Total	4229.0	4436.0	15150.0	10039.0	33854.0

3) NM HIGHER EDUCATION CYBERSECURITY INITIATIVE

C2: Information Technology
Data Processing - Computer Systems Enhancement Fund (CSEF)

Agency Name	Agency Code	Project Name	Priority (one is highest)	Projected Start Date	Projected End Date
Higher Education Department (HED)	95010	NM Higher Education Cybersecurity Initiative	3	4/1/22	6/30/24

Multi-Agency Project	Participating Agencies	Project Type Please select one of the options below:		
☒ Yes ☐ No	HED, UNM, ENMU	☒ New	☐ Replacement	☐ Existing

Revenue Project Cost *(dollars in thousands, amounts calculate upon exit, click outside the cell after your last entry)*

Category or Account Description	FY21 & Prev Actual	FY22 Budget	FY23 Request	FY24 Estimate	Total
General Fund (CSEF)			3240.0	3600.0	6840.0
Other State Funds (*specify funds below)					0.0
Federal Funds					0.0
Internal Svc Funds/Interagency Transfer					0.0
Total	0.0	0.0	3240.0	3600.0	6840.0
*If Other State Funds, Specify Funding Source/Fund Name					

Expenditure Categories *(dollars in thousands, amounts calculate upon exit, click outside the cell after your last entry)*

	FY21 & Prev Actual	FY22 Budget	FY23 Request	FY24 Estimate	Total
Personal Services & Employee Benefits					0.0
Professional Services					0.0
Travel/Lodging					0.0
IT Hardware					0.0
IT Software			800.0	1300.0	2100.0
Other			2440.0	2300.0	4740.0
Total	0.0	0.0	3240.0	3600.0	6840.0

C. REQUEST FOR REAUTHORIZATION OF C2 APPROPRIATIONS

No reauthorization requests are planned.

APPENDIX A – MAJOR APPLICATIONS

Name	Function
BAS	Function: Legislative bill analysis system Owner: *Planning & Research* URL*: https://bas.hed.state.nm.us
HEI Budgets	Function: Institutional Budget submission application Owner: *Institutional Finance* URL: https://budget.hed.state.nm.us/
CPTSS	Function: Capital Projects Report Submittal System Owner: *Capital Projects* URL: https://cptss.hed.state.nm.us/login
CCNS	Function: Common Course Numbering System, a.k.a. Course crosswalk Owner: *Academic Affairs & Policy* URL: https://ccns.hed.state.nm.us/
CYFD	Function: Financial Aid application system for CYFD Loan Program Owner: *Financial Aid* URL: https://cyfdapp.hed.state.nm.us/
eDEAR	Function: On-line data reporting system for all public postsecondary institutions in New Mexico Owner: *Planning & Research* URL: https://edear.hed.state.nm.us/app
HPLRP	Function: Financial Aid application system for HPLRP Program Owner: *Financial Aid* URL: https://finaid.hed.state.nm.us/
Academic Affairs	Function: For CIP Code, General Education or New Education Program Approvals Owner: *Academic Affairs and Policy Division* URL: https://academicaffairs.hed.state.nm.us
Transcripts *(internal)*	Function: Manage 60,000+ student credentials for closed schools Owner: *Constituent Services* URL: https://transcripts.hed.higher.ed (INTRANET ONLY)

TABLE A.1: Major HED Software Applications & Links

APPENDIX B – CORE INFRASTRUCTURE HARDWARE

TECHNOLOGY PLATFORM	PHYSICAL LOCATION	SUPPORTED APPLICATION(S)	AGENCY-OWNED INFRASTRUCTURE		
			QTY	BRAND & MODEL/VERSION	AGE (years)
x64 servers	2044 Galisteo Santa Fe	VMware vSphere	2	HPE DL360	3
SAS storage	2044 Galisteo Santa Fe	VMware vSphere	1	HPE MSA2050	3
Network switches	2044 Galisteo Santa Fe	All IPv6-based communications	4	Juniper EX4200	3
Firewall	2044 Galisteo Santa Fe	DMZ, VPN, and Internet management	1	Palo Alto PA-820	4
Wireless Access Points	2044 Galisteo Santa Fe	All IPv6-based communications	5	Ubiquiti AP Pro	3

TABLE B.1: Core HED IT Infrastructure hardware
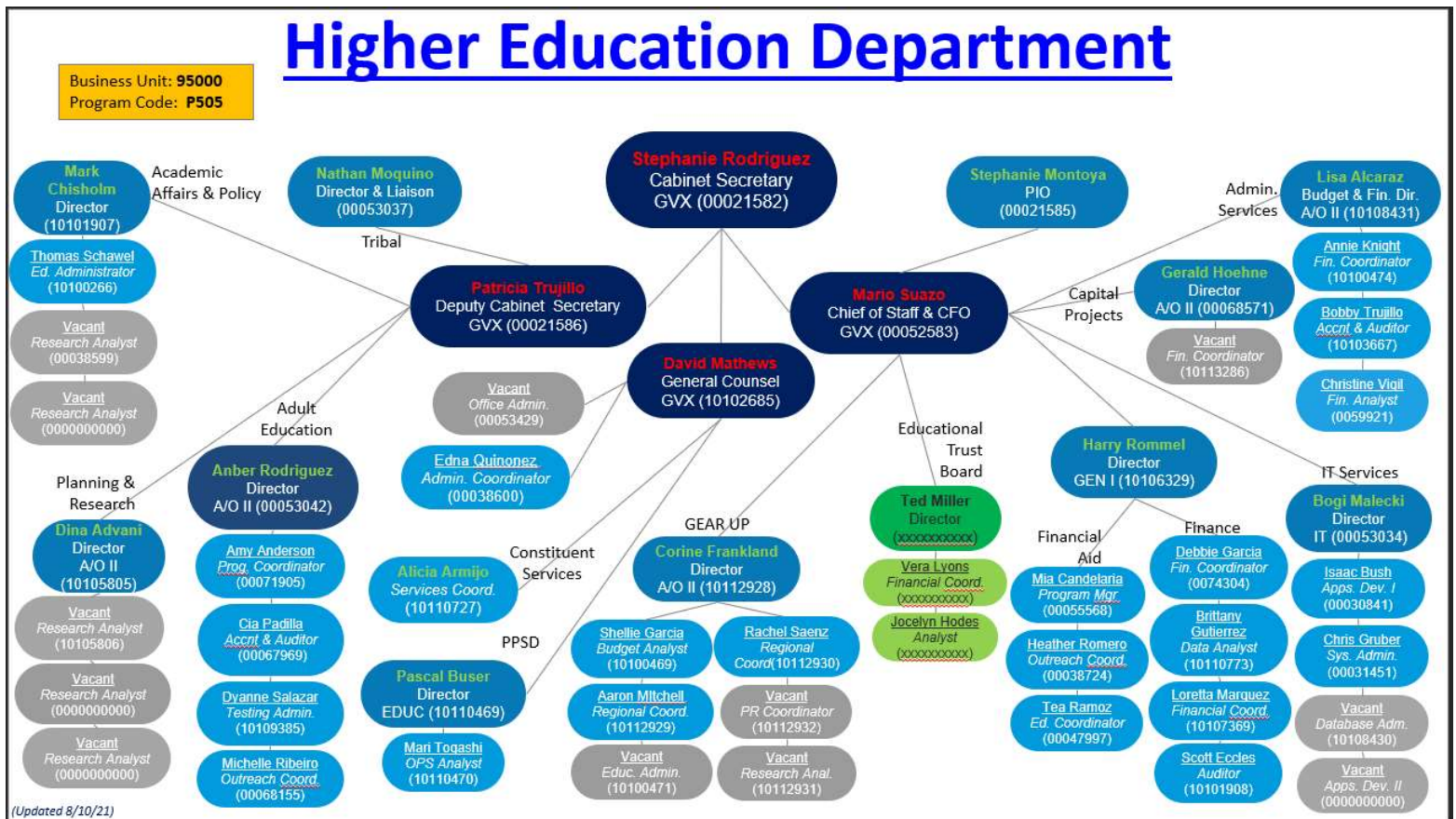
APPENDIX C – ORGANIZATIONAL CHART

FIGURE C.1: HED Organizational Chart

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