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Acknowledgements

This plan was developed by the LAHC Technology Advisory Committee, and the plan is thanks to their dedicated time and effort on behalf of the college:

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Los Angeles Harbor College Mission, Vision, and Values

MISSION
Los Angeles Harbor College promotes access and student success through associate and transfer degrees, certificates, economic and workforce development, and basic skills instruction. Our educational programs and support services meet the needs of diverse communities as measured by campus institutional learning outcomes.

VISION
Harbor College provides a stimulating learning environment that prepares members within the community to meet goals and opportunities successfully.

VALUES
Student Success, Excellence, Integrity, A Supportive Environment, Personal and Institutional Accountability, and Civic Responsibility.

Technology Planning Process
To develop this plan, the Technology Advisory Committee reviewed the current state of the technology systems and policies in use at Harbor College. It is important to ensure that the Technology Master Plan (TMP) was aligned with and supported the goals and objectives of the LAHC Strategic Educational Master Plan (SEMP). With that in mind, the members evaluated how the technology systems and policies were meeting the needs of the campus constituents in general, with a particular focus on how well the technology systems and policies are helping to meet the needs of educating the students.

Influences
In addition to the assessment of the needs, and alignment with the SEMP, there are also some recent events directly effecting technology within the LACCD which had a large influence on the TMP.

1. IT Assessments and Resulting Board Action
There were technology assessments done by the Burwood Group, Inc. on the technology in use at all LACCD campuses. The results from their assessment were summarized in a report released in August, 2016. As a follow-up to the report from the Burwood Group, a second assessment was done by Huron Consulting which was finished in Summer, 2018. While the Burwood report focused on the use of technology, the Huron report focused on technology staffing, policies, and procedures.

After reviewing these report, the LACCD Board of Trustees chose to follow the Huron report’s suggestion to transition the campuses in the LACCD from a decentralized structure, wherein every college maintains their own datacenter and locally manages their campus’ network, to a more centralized structure where all campus datacenter systems will be housed at two locations. Both the datacenter equipment and the campus networks will standardized so all campus will run off the same make and model of equipment, and
both the datacenter equipment and the networks will be managed by district personnel reporting to the CIO at the ESC. Campus IT groups will continue to support local campus systems, and should be able to focus more on the role of using technology to support the academic mission without having to focus as much of their resources and personnel time on either datacenter or network functions. The transition to the centralized system as envisioned in the Huron report will take at least a few years to be realized, but IT groups at all campuses need to be planning with this view of the future in mind.

2. Security Breach

There was a serious security breach that occurred to one of the other LACCD colleges. That breach had the potential to destroy a majority of the data being stored at the campus, including the backups, as well as shut down nearly all of the servers at the campus. Such a breach could have had repercussions which lasted for years. Further, the breach could have shut down the campus for a semester or more before they would have been able to restore operations.

This breach has highlighted the need to ensure all campuses carefully and conscientiously follow established network security procedures. In additions, all campuses need to be aware of the potential for new security threats and regularly be assessing risks and evaluating additional security mechanisms.

3. Looking Beyond Bond Funding

Much of the new technology brought onto the campus in the past decade has been purchased through association with construction projects and funded through one of the bonds. Measure CC promises to continue that process and allows for more direct use of bond funding to address technology needs which are not directly associated with a capital construction project. This should allow for the ability to address systemic needs which have not been directly addressed previously.

While the bond funding has been a blessing to renovate the campus and add tremendously to the technology resources available, there will be a need to support those resources when the bond funding ends and when existing equipment has exceeded the warranty and maintenance periods originally purchased. There is a need to align some of the college processes now to be able to address these financial needs in the near future.
TMP Objectives

While planning more than a few years ahead in particularly difficult in technology due to the rapid pace of change, the following objectives have been made in conjunction with the SEMP, and they should serve as guides to the IT group for the next 5 years:

1. Develop Service Level Agreements (SLA) for IT Services.
2. Implement a technology equipment and software replacement plan.
3. Implement appropriate IT staffing.
4. Support student success through the use of technology.
5. Support faculty and staff by providing training in enterprise software and services.
6. Ensure all classrooms have a baseline level of technology.
7. Partner with ESC and other campuses in developing shared standards and responsibilities.
8. Ensure network security.
9. Implement a process for new technology adoption.
10. Expand capabilities of the wireless network and wireless services.
11. Relocate the campus datacenter and ensure the datacenter and infrastructure is capable of meeting the growing campus needs.
12. Support the growing physical security capabilities and needs.

Please see the table below for the details on each of these objectives and how it aligns with the goals listed in the LAHC Strategic Educational Master Plan.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Alignment with SEMP Goal(s)</th>
<th>Activities</th>
<th>Measures</th>
<th>Responsible Entity</th>
</tr>
</thead>
</table>
| 1. Develop Service Level Agreement (SLA) for IT services | • Goal 3.1  
• Goal 3.2 | • Develop catalog of IT services  
• Develop SLA  
• Solicit feedback through TAC and other campus groups  
• Present to campus governing bodies (TAC, CPC) | • Complete SLA  
• Evaluate SLA | • VP Admin Services (AS)  
• IT Manager  
• TAC  
• CPC |

There is confusion about the proper method to request IT services and a lack of clarity about the response and resolution times that are expected from work requested of the campus IT group. As a professional organization, the IT group needs to develop a SLA defining its list of services as well as the expected response time to receive services and resolution times for the work to be completed. The SLA should also clarify which services are given priorities over others when conflicts exist.
### 2. Implement technology equipment and software replacement plan

<table>
<thead>
<tr>
<th>Goal 3.1</th>
<th>Goal 4.1</th>
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<tbody>
<tr>
<td>Inventory all campus IT SW and equipment</td>
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<tr>
<td>Determine replacement schedule</td>
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<tr>
<td>Develop replacement plan</td>
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<tr>
<td>Maintain inventory of IT SW and hardware</td>
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<tr>
<td>Ensure all equipment is within its replacement lifecycle</td>
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The purchasing and updating of equipment in the past has always been very sporadic and dependent on local departmental funding. This system has often created a schism wherein programs that have funding purchase and maintain the latest technology, while other departments which are no less important to the college mission are left using seriously outdated equipment. In addition, bond funding has brought a large amount of new technology into the campus, but it is unclear how that equipment will be maintained or replaced as time goes by. It is important we find a way for the college to centrally support and fund the technology within the campus at some baseline level for all groups and departments.

### 3. Implement appropriate IT staffing

<table>
<thead>
<tr>
<th>Goal 3.1</th>
<th>Goal 3.2</th>
<th>Goal 3.3</th>
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<tbody>
<tr>
<td>Evaluate IT needs</td>
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<tr>
<td>Present to campus governance bodies</td>
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<tr>
<td>Track time to handle service requests</td>
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<tr>
<td>Ability to support evening classes and faculty needs</td>
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<tr>
<td>Timely completion of IT service</td>
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<tr>
<td>Evaluation of ability to provide needed IT services</td>
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</table>

IT staffing is currently at its lowest level in the past fifteen years, yet the college now relies more heavily on technology than ever. The amount of technology equipment (computers, servers, networking) has increased well more than two-fold, and at the same time the IT group has been tasked with many other roles which were not present a decade ago. This lack of staffing needs to be addressed since we are told it is becoming a serious threat to IT operations. In addition, the new Board plan to centralize IT services should be carefully considered in the makeup of the IT department to ensure the expected focus on supporting academic activities.

### 4. Support student success through the use of technology

<table>
<thead>
<tr>
<th>Goal 1.1</th>
<th>Goal 1.2</th>
<th>Goal 1.3</th>
<th>Goal 2.1</th>
<th>Goal 2.2</th>
<th>Goal 2.4</th>
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<tbody>
<tr>
<td>Ensure needed form and capability of technology are available</td>
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<tr>
<td>Meet all ADA requirements</td>
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<tr>
<td>Look for ways to leverage technology in early alerts and interventions</td>
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<td>Develop training material as needed</td>
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<td>Expand methods to communicate with students</td>
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<tr>
<td>Evaluate effectiveness of technology in support of student success</td>
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| VP AS/SS/AA |
| Deans |
| Dept. Chairs |
| IT Manager |
| Faculty |
There has been a lot of growth in the types and amount technology that is being used across the campus. It is important to ensure that technology which is directly beneficial to student success is recognized and supported.

5. Support faculty and staff by providing training in enterprise software and services
   - Goal 3.1
   - Goal 3.2
   - Identify needs
   - Create training materials
   - Develop training classes
   - Evaluate through chairs, managers, and faculty/staff feedback
   - VP AS/AA
   - Deans
   - Dept. Chairs & Managers
   - IT Manager

There are many new systems being implemented across the district, in addition to local systems and software. To ensure the college is getting maximum benefit from using this new technology effectively, there needs to be training materials available along with periodic training on some of the enterprise systems and software.

6. Ensure all classrooms have baseline level of technology
   - Goal 2.1
   - Goal 2.2
   - Goal 2.4
   - Determine baseline level needed
   - Ensure ADA needs are met
   - Evaluate wireless needs
   - Ensure maintenance
   - Feedback from chairs and faculty
   - Student polls
   - VP AA
   - Deans
   - Dept. Chairs & Faculty
   - IT Manager

The use of technology in teaching can be a great benefit to the learning process and enhance student success. In order for faculty to develop lesson plans that incorporate the use of technology, there needs to be a baseline level of technology available in all classrooms.

7. Partner with ESC and other campuses in developing shared standards and responsibilities
   - Goal 3.1
   - Goal 3.2
   - Goal 3.3
   - Goal 4.4
   - Active participation in DTC and DAC meetings
   - Active participations in TPPC
   - Participation in evaluation and standard development groups
   - Campus needs are met in standards
   - Clear understanding of district vs campus responsibilities
   - VP AS
   - IT manager
   - LAHC TPPC representative
Maintaining good communication with others in the same field is nearly always beneficial as it can give additional ideas or perspectives on how to address issues. With the planned centralization of services, it will be particularly important to work closely with the ESC and other campuses to both coordinate how the services will be divided between campus and district personnel, as well as to ensure the needs of the campus are properly understood and addressed in the planning process. It is also important to have local campus personnel involved in developing standards to ensure a more full understanding of the standard.

| 8. Ensure network security | • Goal 3.1 | ▪ Regularly inform campus users of network security regulations  
▪ Deployment and maintenance of network security systems  
▪ Maintain software and systems patches  
▪ Regular backups with testing to ensure integrity | ▪ Lack of either external or internal intrusions  
▪ No loss of data | ▪ VP AS/AA/SS  
▪ IT Manager |

Network security is always important to ensure privacy and the integrity of the data stored on LACCD systems. The breach at a sister LACCD campus further highlights the need for network security as it had the potential to shut down all operations at the campus.

| 9. Implement process for new technology adoption | • Goal 2.1  
• Goal 2.4  
• Goal 3.1  
• Goal 3.2 | ▪ Develop plan on how to evaluate and adopt new technology  
▪ Present to campus governance groups | ▪ Evaluate with campus faculty, managers, chairs | ▪ VP AS/AA/SS  
▪ IT Manager  
▪ TAC  
▪ CPC |

There are many different areas which might be addressed by some form of technology. It is unrealistic to believe the IT group would be able to effectively support any form of technology which might be chosen to address a campus need. There needs to be a cooperative process for evaluating and selecting technology to ensure it can be successfully implemented and supported.

| 10. Expand capabilities of wireless network and wireless services | • Goal 2.1  
• Goal 2.4  
• Goal 3.1  
• Goal 3.2 | ▪ Ensure wireless capabilities across all campus areas  
▪ Add ability of wireless network to support administrative functions  
▪ Add wireless video projection in classrooms | ▪ Evaluation of campus wireless network meeting campus needs | ▪ VP AS  
▪ IT Manager  
▪ TAC |
The wireless network at LAHC has been reliable and effective for general network/internet access. With the further development of wireless technology, rather than continue to have all administrative computing resources available only via a hardwired connection, it would be beneficial to the college if we can expand the functions available through wireless connections. In addition there seems to be much to gain by eliminating the reliance on wired connections to the projectors in the classrooms.

| 11. Relocate campus datacenter and ensure campus datacenter and infrastructure is capable of meeting growing needs | • Goal 3.1  
• Goal 3.2 | • Design datacenter and all internal systems  
• Develop detailed plan to move services to datacenter  
• Design and implement robust campus infrastructure  
• Clear communication of any planned outages | • Successful rollout of new campus datacenter  
• Ability to add services as needed in future with existing infrastructure | • IT Manager  
• CPM group |

While the LACCD has a planned long-term goal of centralizing the campus datacenters, there is already a project in place for LAHC to move its datacenter which cannot wait for the realization of the LACCD plans. It is important that the campus datacenter and the underlying infrastructure be fully capable of supporting all campus needs for years to come. In addition, the successful rollout of the new datacenter will require disabling many systems in the old datacenter which the campus is currently reliant upon for daily operations, so a robust implementation plan and good communications to the campus are essential.

| 12. Support growing physical security capabilities and needs | • Goal 2.1  
• Goal 3.1  
• Goal 3.2 | • Expand support for cameras and video storage  
• Ensure ability to make emergency announcements  
• Add ‘panic button’ capabilities where needed  
• Support campus access control  
• Evaluate ability to add video analytics | • Evaluation in conjunction with campus security groups and campus sheriff’s dept. | • VP AS  
• IT Manager  
• LAHC Sheriff’s dept. |

As additional physical security systems have been added to the campus, their effectiveness is dependent on their ongoing support. Both the access control systems (card-key access to doors) and the video surveillance systems are highly technology oriented. These systems will be growing in the future, and an increased level of support will be needed. In order to improve the effectiveness of the video surveillance system, the addition of video analytics should be actively pursued.
LAHC IT Current Staffing

The LAHC IT staff is currently composed of the following people:

<table>
<thead>
<tr>
<th>Name</th>
<th>Job Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jerry Chau</td>
<td>Electronics Technician</td>
</tr>
<tr>
<td>Ivan Clarke</td>
<td>Manager, College Information Systems</td>
</tr>
<tr>
<td>Hovsep Kotelyan</td>
<td>Computer and Network Support Specialist</td>
</tr>
<tr>
<td>Catalina Martinez</td>
<td>Office Assistant</td>
</tr>
<tr>
<td>Jerry McClellan</td>
<td>Web Designer</td>
</tr>
<tr>
<td>Mike Nguyen</td>
<td>Computer and Network Support Specialist</td>
</tr>
<tr>
<td>Peter Thai</td>
<td>Senior Computer and Network Support Specialist</td>
</tr>
</tbody>
</table>

And those people are organized as follows:
LAHC IT Responsibilities

The following are the areas where campus IT has primary responsibility:

Hardware:
Setup, configure, and maintain all campus computers, laptops, and tablets.
Design, configure, maintain all campus servers.
Design, configure, and maintain all campus storage systems.
Configure and maintain all campus switches, wireless access points, and routers.
Design the campus network infrastructure and maintain network functionality.
Configure and maintain the campus phone system.
Configure and maintain all campus computer labs.
Maintain all campus security cameras and video storage systems.
Maintain campus AV (audio/visual) systems.
Install printers (including copiers), and provide network access as needed.

Software:
Manage network and desktop security systems.
Manage the campus email system.
Install and maintain campus enterprise software.
Manage the campus document management systems.

General Support:
Manage campus website
Provide AV and technology support for campus events.
Maintain campus enterprise software licenses.
Provide support for use of technology in the classrooms.
Manage local faculty, staff, and student accounts.
Provide support for districtwide user accounts (SIS, Office365, DEC, etc.).
Manage the pay-for-print system used by students.
Provide backups for campus systems.
Design and maintain campus disaster recovery plan and supporting systems.
Assist faculty and staff with use of campus technology systems.
Manage campus digital signage on main marquee and theatre building.

Campus IT has joint responsibility on the following items:

With ESC staff, manage the campus firewalls.
With CENIC, manage the campus internet connections.
With AT&T, manage the PRI lines coming into the campus.
Current LAHC Technology Equipment

1500 desktop computers
300 laptop and tablet computers
95 Servers (90 virtualized)
300 TB storage w/ 220 TB in use
AV systems in 90 classrooms and conference rooms
71 network switches supporting roughly 5000 network ports
285 wireless access points
200 network printers
640 phone handsets

The campus connects to the internet over a pair (two), 1Gb network lines. During the most recent Spring semester the campus was reaching 900Mb utilization (90% utilization) of the network lines during weekdays, and we will upgrade to dual 10Gb connections in the Summer of 2019.

The campus phone system uses 3 PRI lines for all calls into and out of the campus.