

State Data Center (SDC) Plan Update May, 2013

Executive Summary

The Office of the CIO (OCIO) has made the following updates to the SDC Plan according to RCW 43.41A.150. This statute requires the OCIO to produce a plan and schedule to migrate agency data centers to the SDC.

Near-Term

- Migration: The state will save \$23 million over five years by only operating one central data center instead of two
 - The new SDC Plan will migrate 100% of the computing hardware in Office Building 2 (OB2) to the SDC, shutting down data center activities in OB2¹ by 2015

Mid-Term

- Data Hall 2: the OCIO, with Consolidated Technology Services (CTS) and agency input, will develop principles for agency migration to the SDC for co-location, managed services, or shared services
 - OCIO is committed to working with individual agencies to ensure the required migration will occur when it makes clear business sense to do so
- Data Halls 3-4: The state will release its reservation on data halls 3 and 4 for data center expansion due to advancements in data center technology

Introduction

The SDC Plan lays out steps and financial impacts to consolidate data centers into SDC data halls 1 and 2, and sets a strategy for the use of data halls 3 and 4.

The previous plan of record had been to move 50% of the OB2 data center computing hardware to SDC data hall 1 to relieve OB2 heating overloads, while continuing to operate OB2 as a viable data center. To implement the old plan, the state would have to incur unacceptably high costs for operational repairs and urgent safety mitigations in OB2 to keep the end-of-life data center in service.

In the new SDC Plan, \$23 million in cost avoidance and savings can be realized over five years by migrating 100% of OB2 computing to SDC data halls 1 and 2 by June, 2015, and closing OB2 for data center operations¹. The complete OB2 migration would fill all of data hall 1 and 40% of data hall 2.

The remaining 60% of data hall 2 is reserved for computing workloads from agency data centers or other qualified tenants as soon as business benefits allow. The OCIO will work with agencies to:

- Develop principles that will guide agency migration to the SDC
- Define consistent measurements for costs, benefits, and risks for assessing the business value of agency consolidation to the SDC

The SDC is taking steps to increase value to agencies through offering more flexible tenant options.

¹ OB2 may continue to operate as a network hub

Due to advances in technology, the state is no longer reserving data halls 3 and 4 for future data center expansion. Criteria for authorized occupants of this space are being developed. A marketing project will be launched to engage government and business leaders to identify innovative and qualified uses for this space.

New SDC Plan: Data Halls 1 and 2

Data Center Migration Strategy

Central to the SDC Plan is the migration strategy for state agency data centers in Thurston County.

The data center migration strategy is to help agencies consolidate data centers to the SDC as mandated by RCW 43.41A.150, but in a manner that makes the most business sense for both the individual agency and the enterprise. This means:

- Agencies should continue to operate viable data centers during their useful economic lives
- Consolidating data centers into the SDC should occur when business benefits prompt a move, or facilities expenses or risks warrant data center migration and closure

The OCIO will work with individual agencies who are still operating viable data centers to establish principles and timelines for when migration should happen, and may grant consolidation waivers if needed.

Closing OB2 Data Center Operations

In keeping with this strategy, CTS is taking the lead to close the OB2 data center. While the old plan maintained OB2 for data center use, it has become clear that the cost to operate and maintain two data centers is not a wise use of taxpayer money. Especially when there are savings that can be realized by consolidating to one central data center. The additional costs of safety and operational repairs needed in OB2 give even more justification to move all of OB2's computing hardware to SDC.

CTS provided estimates for both the new SDC plan and the old plan of record as shown below:

	FY 2014	FY 2015	Projected			Total
			FY 2016	FY 2017	FY 2018	
Plan Of Record - Operate 50% of OB2 and Data Hall 1						
OB2 Operating and Repair Costs	\$13,295,685	\$9,674,650	\$9,964,890	\$10,263,836	\$10,571,751	\$53,770,812
Cost to Migrate 50% of OB2 Computing to SDC Data Hall 1	\$5,654,345	\$2,118,009	\$0	\$0	\$0	\$7,772,354
SDC Operating Costs, Data Hall 1	\$17,994,256	\$18,047,854	\$18,589,290	\$19,146,968	\$19,721,377	\$93,499,745
Total Cost to Operate 50% of OB2 and SDC Hall 1	\$36,944,286	\$29,840,513	\$28,554,179	\$29,410,804	\$30,293,129	\$155,042,911
New Plan - Close OB2, Operate SDC Halls 1 & 2						
OB2 Operating and Repair Costs	\$4,953,185	\$4,638,650	\$0	\$0	\$0	\$9,591,835
Cost to Migrate All OB2 computing to SDC Data Halls 1 and 2	\$10,333,645	\$6,797,309	\$0	\$0	\$0	\$17,130,954
SDC Operating Costs, Data Halls 1&2	\$18,543,867	\$18,597,465	\$19,155,389	\$19,730,051	\$20,321,952	\$96,348,724
Total Cost to Close OB2 and Operate SDC Halls 1 & 2	\$33,830,697	\$30,033,424	\$19,155,389	\$19,730,051	\$20,321,952	\$123,071,513

Estimates in fiscal years 2014 -15 are based on the CTS budget. Projections in the remaining years are adjusted for inflation. The new plan includes estimates to physically move agencies out of OB2 a la Carte (Co-location) to SDC Co-location, but do not include agency staff expenses for project management, testing, etc.

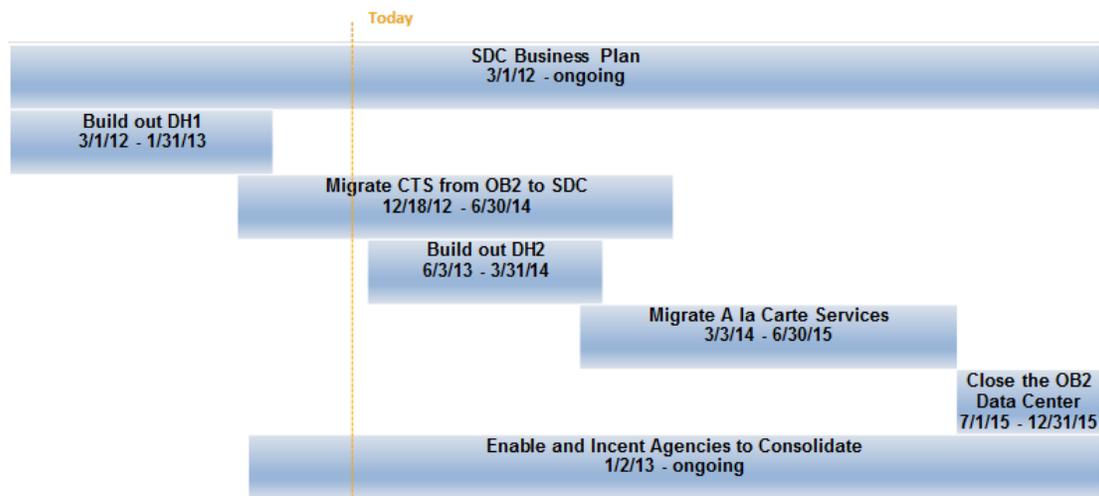
The new SDC Plan will cost \$123 million through FY 2018 for operations, maintenance and moving expenses, compared to \$155 million through FY 2018 under the old plan. This \$32 Million cost avoidance comes from avoiding operational and safety repairs in OB2 and eliminating the cost of operating two data centers.

The \$32 Million cost avoidance is offset by approximately \$9 Million needed by CTS to implement the new plan. The new plan will result in a net cost avoidance of \$23 Million.

It was noted that a portion of either plan is unfunded in the CTS budget. While \$9 Million in new funds will be required to implement the new plan, \$13 Million would be needed to stay in OB2 under the plan of record.

New Timeline for Data Center Migration

The state will consolidate OB2 to SDC data halls 1 and 2 and close OB2 by June, 2015. Here is the timeline associated with the new SDC Plan:



Key milestones in this timeline are:

Milestone	Activity
3/12 – 1/13:	Build out data hall 1 to support CTS computing services.
6/13 – 3/14:	Build out data hall 2 to support CTS co-location services.
12/12 – 6/14:	Migrate CTS and CTS hosting services for agencies from OB2 to the SDC.
3/14 – 6/15:	Move agency computing in CTS A la Carte to the SDC, preferably to the CTS shared environment, or if necessary, to co-location
7/15 – 12/15:	Close the OB2 data center as is.
Ongoing:	Enable and incent agencies to consolidate servers and/or data centers as soon as reasonably possible to the SDC shared environment or co-location.

Co-location services available in Hall 2

Why Consolidation: Savings and Cost Avoidance from a Shared, Homogeneous Platform

Although a popular approach in the 90’s and early 2000’s, moving disparate agency systems into a common data center is not the primary method of optimizing costs. The primary method comes from

transforming individual computing environments by virtualizing and migrating servers and applications onto centrally managed or shared homogeneous computing environments.

The goal of our policies regarding data center migration must be to move as much of the state's computing workload as possible onto a shared, homogeneous platform.

Of course, policy should not force departments to make bad business decisions. The OCIO will work with departments to develop principles and consistent metrics to help determine the right migration path.

To facilitate this, the OCIO and CTS are committed to competitive and flexible service offerings in the SDC to meet the needs of individual agencies. This wider array of tenant options could include:

- Co-Location: Space and power for independently-managed services.
- Managed Services: Infrastructure-as-a-service option including dedicated machines and racks with service provider management through the OS level, but not the application level
- Shared Services: Homogeneous environment where virtual servers run on a shared platform

With more of the enterprise moving to managed services or a shared homogeneous platform, we can shift the conversation from consolidation to innovation, and focus on driving business value inside agencies and across the enterprise.

New SDC Plan - Funding Dependencies

The new SDC Plan is based on several funding dependencies:

- Use SDC construction savings to build out SDC data halls, not other purposes
- Continue allocations to CTS for debt service on halls 1 and 2 to enable competitive rates

New SDC Plan: Data Halls 3 and 4

Data halls 3 and 4 were originally intended to accommodate growth, so they were built as unfinished concrete shells. However, with current innovations in technology, this need appears unnecessary for the foreseeable future.

The state is pursuing other options for this space that would still be in compliance with the terms for building construction bond funding and applicable statutes.

Allowable uses for this space must satisfy IRS rule 63-20 and Procedure 82-26 as follows:

- The tenant corporation (or organization) must engage in activities which are essentially "public in nature"
- It must be not organized for profit
- The corporate income must not inure to any private person
- The state or political subdivision must have a "beneficial interest" in the corporation while the indebtedness remains outstanding
- The corporation must be approved by the state or the political subdivision, which must also approve the specific obligations issued by the corporation
- Unencumbered legal title in the financial facilities must vest in the governmental unit after the bonds are paid

The FYI Properties lease on the building currently allows uses for this space as an office building, a data center, or small food retail for tenants, and at a minimum would likely allow any state governmental function.

The OCIO will work with CTS and agencies to broaden the spectrum of use cases for halls 3 and 4 in accordance with its allowable use, and find creative ways to market this space accordingly.

Future Updates to the Plan

This SDC Plan will be updated at key milestones throughout the data center migration process.

- Mar 2014 – Hall 1 and 2 build-out complete, co-location open for business to agencies
- Jun. 2015 – Agency A la Carte computing consolidated to the SDC, OB2 is closed

Information Technology Policies or Guidelines for Consolidation to the SDC

With input from agencies the OCIO will develop IT policies or guidelines to prepare for data center consolidation to the SDC. These could include:

- Business drivers and criteria for data center migration, including facility risks and expenses, and opportunities to improve redundancy and resilience
- Migration readiness for the SDC and agency data centers, IT infrastructure, and applications
- Goals for server virtualization levels, synchronizing equipment refresh with migration, and other ways to align technology planning, operations, investments, and consolidation

Background

From 2009 to 2012 agencies reduced the number of fully operational data centers in Thurston County from 29 to 14. This natural data center consolidation in the agencies stemmed mostly from a statewide server virtualization effort to reduce expenses and prepare for migration to the SDC. Agencies achieved 45% to 95% server virtualization levels over that four year period, yielding savings from fewer machines to manage, redirected/reduced staff, and lower expenses for power and maintenance.

Consolidated Technology Services (CTS) is building out the new State Data Center (SDC) located in the new 1500 Jefferson Building. It currently operates an aging data center in Office Building 2 (OB2) that is in need of replacement before important upgrades are required. The OB2 data center houses the computing workloads for CTS and numerous CTS customer agencies.

**Appendix A
Action Items**

The following action items are necessary to implement the new SDC plan:

1	The OCIO, with agency input, will develop principles and policies for agency migration to the SDC for co-location, managed services, or shared services	6/2013 - 10/2013
2	CTS will define the rates and on-boarding requirements for services in the SDC	6/2013 - 10/2013
3	The OCIO will work with each agency to determine when it will make the most business sense to migrate their data center to the SDC. This includes the criteria or events prompting the move, expected timeframes, and the best migration path.	8/2013 – 1/2014
4	Agencies will develop a data center migration plan with CTS based on the above agreement and begin managing according to it	8/2013 – 4/2014
5	CTS will build and manage a master migration plan with agency input and support	8/2013 – Ongoing
6	Agencies will begin migrating to SDC data hall 2	3/14- Ongoing
7	OCIO will finalize criteria for uses of Data Halls 3 and 4	6/2013 - 7/2013
8	OCIO will launch a marketing project to identify innovative and qualified uses for data halls 3 and 4	6/2013 – 4/2014