

COMMITTEE ON INFORMATION TECHNOLOGY

Budget and Performance Subcommittee

November 6, 2015

1 Dr. Carlton B. Goodlett Place, City Hall, Room 305
San Francisco, CA 94102

Agenda

1. Call to Order by Chair
2. Roll Call
3. Approval of Minutes
4. Discussion: COIT Budget Process – Forms, Scoring, & SharePoint
5. Project Update: Connectivity Plan
6. Project Update: Optical Network System (ONS) – Dept. of Tech.
7. Public Comment
8. Adjournment

3. Approval of Minutes

Action Item

4. COIT Budget Process – Forms, Scoring, & SharePoint


Matthias Jaime, COIT

COIT BUDGET FORM


Discussion Items

- Department Details Form
- Budget Form Changes
- Scoring Weights & Tiers
- Introductory Training Session

COIT BUDGET FORM



Project Submission





Duplicate This Request

Was This Project Previously Approved and Funded? Yes

Project Title


Fix the Network

Department: TIS - Technology  

Executive Sponsor: Miguel Gamino, Flavio Aggio

Project Manager: Jagan Deb

Budget Phase: FUNDED Project ID: TIS16369

Attachments:  Click here to attach a file Budget Year: FY 2015-16

PART I: PROJECT OVERVIEW

FY Start: FY 15-16 FY Finish: FY 17-18

SharePoint Link: <https://sfgov1.sharepoint.com/sites/ADM-COIT/SitePages/Home.aspx>

COIT BUDGET SCORING

Tier	Presentations	One Page Summary
Tier 1	All projects	All Projects
Tier 2	Nearly all present	All Projects
Tier 3	Members select	Members select

FY 14-15 Overview	# of Projects
Tier 1	15
Tier 2	19
Tier 3	20
TOTAL	54

COIT PROJECT SCORES

Question	SCORE			
	3	2	1	0
Highest Priority Project	Yes	-	-	No
Scope	Citywide	Multi- Department	Department Only	None
Compliance	Needed to become compliant	-	Dept is already in compliance	No legal requirements
Efficiency	Demonstrable impact is significant	Impact is moderate	Impact is minimal	None

COIT PROJECT SCORES

Question	SCORE			
	3	2	1	0
Financial Savings	>\$250K savings	Between \$100K-\$250K in savings	<\$100K savings	No savings
Infrastructure	Significant impact on City infrastructure	Moderate impact on many Depts' infrastructure	Some impact on Dept. infrastructure Only	No impact
Innovation	Significant Advance	Moderate	Minimal	None
Access & Transparency	Significant Impact	Moderate	Minimal	None

COIT BUDGET WEIGHTS

Item	Description	Weight
Highest Priority Project	Departments may only select one	10%
Scope	Project's range of impact	10%
Compliance	Needed to meet legal requirements	10%
Efficiency	Projected impact on efficiency	10%
Financial Savings	Estimated savings	10%
Infrastructure	Supports City infrastructure	30%
Innovation	Transforms core services	10%
Access & Transparency	Improves access to information	10%

COIT TRAINING

Training Timeline

- Nov: Initial testing/training with 3 departments
- Dec: SharePoint training sessions

BUDGET INSTRUCTIONS FIRST WEEK DECEMBER



CONNECTIVITY PLAN UPDATE



Connectivity Plan

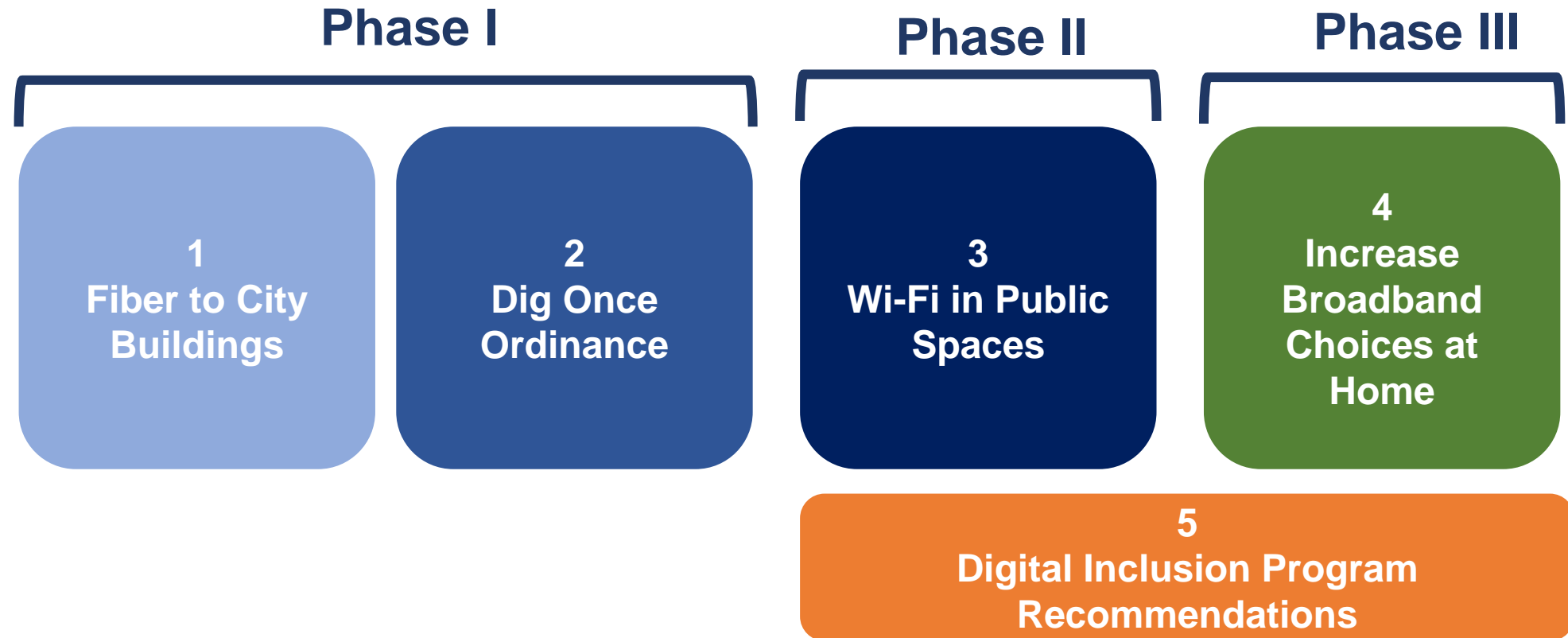
Objectives

- Project Updates
- Review of Phase I Recommendations
- Preview of next steps for the Connectivity Plan

Connectivity Working Group

- Department of Technology
- Committee on Information Technology
- Mayor's Office of Civic Innovation
- Mayor's Budget Office

Connectivity Plan Phases



The City and County of San Francisco supports a cross-sector approach toward digital access and literacy to ensure that all San Franciscans have the same opportunities to participate in civic life, make social connections, access education and employment opportunities, and be an advocate for their own health and well-being. To remain competitive in a global economy, the City advocates and supports the deployment of 21st century digital infrastructure.



you
live
here



Income by Subway



Graffiti



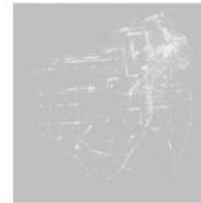
Bike Sharing
Efficiency



Coffee Shops



Bike Sharing



Awake



Menus



Bike Sharing
Efficiency



Bike Sharing

DIGITAL INCLUSION

*literacy and relevance
affordable connectivity
affordable devices*

*The tools, support, and literacy
skills to access education and
employment opportunities, make
social connections, participate in
civic life, and be an advocate for
your own health and well-being*



Transit Efficiency



Best Mode of
Transportation



Permanent Visas



Transit Efficiency



Permanent Visas



Street Greenery



Coffee Shops



Best Mode of
Transportation



Permanent Visas



APPROACH

- *In consultation with the working group every step of the way*
- *Build on Supervisor Mar's Digital Divide report*
 - *Review of national literature on barriers to connectivity*
 - *Connectivity efforts in other cities and counties*
 - *Inventory of City-funded programs*
 - *Quantitative data of home connectivity by demographics, income level, district*
- *Literature review of approaches to digital inclusion*
- *Engage with direct-service organizations*
 - *Discovery interviews (16 organizations, 2 advisors)*
 - *Design workshop (14 organizations)*





- LGBT
- Youth and young adults
- Seniors
- Women
- People with disabilities

- Under-represented neighborhoods
- Families and early childhood development
- Non-English speakers and ethnic communities

- Homeless
- Veterans
- Equipment / refurbishers
- Re-entry / recidivism
- Jobseekers



CBO WORKSHOP

Nov. 4, 2½ hours

14 CBOs

6 City agencies

Collective gap analysis

*Surface insights specific to SF's
hyperlocal scene*

Generate recommendations

Ideas to reach “end users”



SAN FRANCISCO MAYOR'S OFFICE OF CIVIC INNOVATION

EARLY FINDINGS

Barriers for individuals

- *LTE vs. value of home connection and the effect on form factor*
- *Support in native language and troubleshooting*
- *For jobseekers, software and equipment meet industry standards*
- *Cyber security / fear of surveillance / invasion of privacy*

Challenges for organizations

- *Computer labs: Outdated equipment and upgrading software/security*
- *Complications from transience and client displacement out of SF (i.e.: relationships with social workers, transportation difficulties)*



REPORT OUTLINE

Introduction

- *Mission of the steering committee*
- *Our report builds upon Supervisor Mar's report*
 - *National trends*
 - *Inventory of City programs and funding*
 - *Quantitative data on home broadband connection*

Summary of findings

- *Priority areas*
- *Bright spots and barriers*

Resource map of City and CBO programs

Recommendations



NEXT

- *Process the discussions, content, outcomes of the workshop*
- *Draft of findings, recommendations by late December / early January*



Fiber to City Buildings: Phase I Update

11 NEW BUILDINGS CONNECTED TO FIBER IN FY15-16

14 MILES OF TOTAL FIBER ROUTE MILES INSTALLED IN FY15-16

New Buildings

SFFD

- Fire Station 24
- Fire Station 26
- Fire Station 48
- Treasure Island Training Facility

Libraries

- Golden Gate Valley Branch, Octavia/Green
- Marina Branch, Webster/Chestnut
- Park Branch, Page/Cole
- Noe Valley Branch, Diamond/Jersey

Rec & Park

- Herz Clubhouse
- Coffman Pool

SFUSD Administration Building

Sheriff's Department 14th St

Work at Existing Buildings

- DPH: 3rd redundant entrance to new Hospital Building 25
- War Memorial

Facilities (Not Buildings)

SFMTA

- SFGO/Van Ness Corridor, Franklin St., OSV to Lombard, 33 Cabinet/intersections
- Lombard Corridor Tie Connection, Franklin to Lyon, 14 Cabinet/intersections
- Bush Corridor Tie Connection, Kearney to Van Ness, 12 Cabinet/intersections
- Traffic Signal Cabinets Along Bay Shore Blvd from Arleta to Sunnydale
- 2 locations on Raymond at Sawyer
- 2 locations on 3rd Quesada & Oakdale

PUC

- Washington & Drumm Pump Station

Fiber to City Buildings: Project Update

Upcoming Buildings To Be Connected:

- Mission Branch Library
- Fire Station 22
- Fire Station 3
- Fire Station 38
- Fire Station 39
- Fire Station 5
- Pump Station 2
- Fire Station 41
- Fire Station 10
- Fire Station 16
- Fire Chief's Residence

FY 2014/15 & FY 2015-16 Budget

Total Original Funding	\$375,000
Professional Services: CostQuest Contract	-\$163,194
Total Remaining Balance	\$211,806

Possible Uses for Remaining Funds

Estimated Cost

Residential Connectivity Survey	\$100,000
Fiber Inventory (Strand Level)	\$111,806

Fiber to City Buildings: Phase I Review

RECOMMENDATION	UPDATE
1 Establish performance standards	Developing standards for (1) fiber, e.g., loss and (2) networks on fiber, e.g., Fiber WAN, uptime and throughput.
2 Utilize best practices for managing construction and ongoing maintenance of fiber assets	Reviewing current practice.
3 Ensure that any conduit used or built is tracked properly including ownership and restrictions	Developing conduit tracking as part of Dig Once.
4 Issue policy to eliminate redundant private ISP lines unless exemption approved by COIT	Identifying possible redundant data connections.
5 Develop and implement leasing program	Creating mechanism for receiving inquiries Reviewing performance standards, testing and maintenance offerings

Fiber Plan Upcoming Discussion Items

- For Non-Work Order Projects, develop criteria for connecting City facilities
- Expand Connectivity goals to facilities and recognize non-buildings
- Develop cost estimates for fiber backbone work

Dig Once: Project Update

Project	Agency	Status	Next Step
Potrero	DPW	Scoping	Design
16th Street	MTA	Scoping	Design
Columbus Avenue	PUC/DPW	Scoping	Design
Geary BRT	MTA	Scoping	Design
Upper Haight	DPW	Scoping	Design
19th Avenue	PUC/DPW	Evaluation	Scoping
Junipero Serra	PUC	Evaluation	Scoping
Tenderloin Wifi Streetlamps	PUC	Evaluation	Scoping
Better Market Street	DPW	Evaluation	Scoping
N Judah	MTA	Evaluation	Scoping
L Taraval	MTA	Evaluation	Scoping

Dig Once Current Budget

Total FY14-15 & FY15-16 Funding	\$2,100,000
Consultant: Specifications Development	(\$89,458)
Remaining Funds	\$2,010,542

Planned Spending

Estimated Costs

Project Management	(\$75,000)
Mapping & Inventory	(\$300,000)
Design	(\$ 250,000)
Participation	(\$1,385,542)
Total Projected Spending	(\$2,010,542)

Dig Once: Phase I Review

RECOMMENDATION		UPDATE
1	Establish performance standards	Standards for conduit proposed in draft Dig Once Regulation.
2	Utilize best practices for managing construction of conduit	Oversight of conduit installation contained in draft Dig Once Regulations
3	Track conduit in asset management system	Reviewing alternatives for tracking conduit.
4	Develop and implement a performance based accounting model	Evaluating approaches to performance based accounting.
5	Develop and publish conduit maps for leasing opportunities	Conduit maps will be made available as conduit acquired, expected Q4 2015/16.
6	Develop and implement leasing program	Leasing program to follow dark fiber model. Expected Q4 2015/16.

WiFi In Public Spaces: Phase I Goals

ICT Plan Goal	Connectivity Objective
Support, Maintain, & Secure Critical IT Infrastructure	1. Provide #SFWiFi to staff to help them work more efficiently and effectively
Improve Access & Transparency	2. Deploy #SFWiFi in City buildings with public access 3. Deploy #SFWiFi in high value public spaces within San Francisco City boundaries

WiFi: Supporting City Services

- WiFi is an important part of delivering some City services
- WiFi is in high demand by City departments
- Recent Accomplishments
 - Market St. Enhancement – Resolved DNS (Domain Name Server) Issue, Repositioned 50% of APs
 - Installed 1st phase of WiFi in Veterans War Memorial Building (lobby and 1st floor conference rooms)
 - Provided secure WiFi access for Rec Park sponsored charity event in Civic Center Plaza

WiFi as a Public Service: History

- 2011: Public Housing & Non-Profits
 - 42 SFHA buildings
 - 6,050 residential units provided access
 - 22 DAAS Service Centers & 7 Non-Profits
- 2013: Market Street
 - 125 AP's
 - Approximately 106,000 users a week
- 2014: 33 Public Parks
 - 160 AP's
 - Approximately of 90,000 users a week

#SFWiFi Performance

- Sample taken during October 1 – 7, 2015

Metric	#SFWiFi on Market Street & 33 Public Parks	Market Street	33 Public Parks
Number of Unique Clients	126,228 users	106,788 users	90,885 users
Total Number of Sessions	3,543,446 sessions	2,604,565 sessions	850,294 sessions
Average Duration	10:56 minutes	12:27 minutes	6:52 minutes
Total Throughput (Data Uploaded & Downloaded)	11,500 GB	7,800 GB	3,400 GB

#SFWiFi Performance

- Sample taken during October 1 – 7, 2015

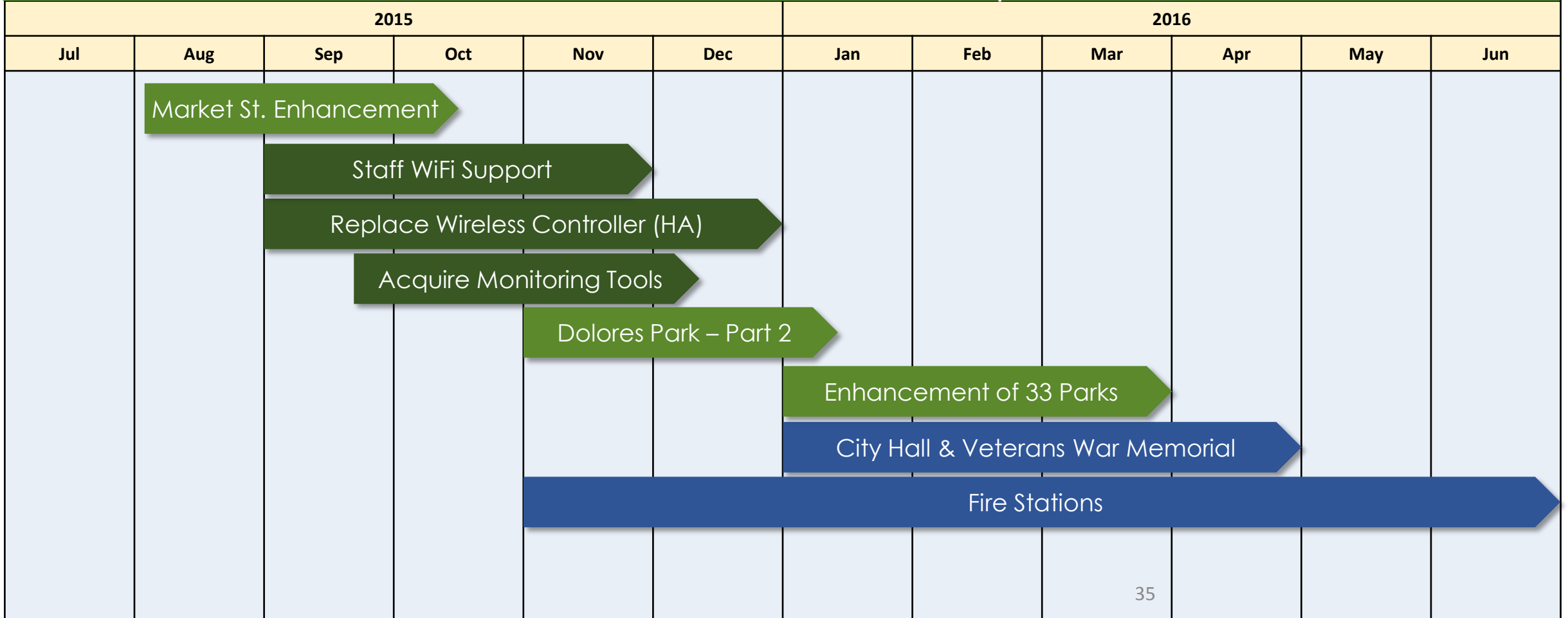
Metric	#SFWiFi on Market Street & 33 Public Parks	SFPL
Number of Unique Customers	126,228 customers	24,669 customers
Average Duration	11 minutes	37 minutes
Total Throughput (Data Uploaded & Downloaded)	11,500 GB	4,310 GB

WiFi Plans for FY 15-16

- Plans for FY 15-16
 - Staff WiFi Support
 - Replace Wireless Controller
 - Acquire Monitoring Tools
 - City Hall
 - Fire Stations

WiFi as a Public Service

#SFWiFi Enhancement and Expansion



WiFi: Phase I Review

RECOMMENDATION		UPDATE
1	Establish performance standards	Proposed specifications for #SFWiFi
2	Move from demand based model to strategic	Developing WiFi plan as part of Connectivity Plan Phase II
3	Adopt industry standard usage measures	See above.
4	Utilize best practices for managing installation and maintenance	Implementation of best practices in progress
5	Track #SFWiFi assets in an asset management system	Pending
6	Standardize equipment provider to reduce management and maintenance complexity	Pending
7	Develop and implement an accounting model for initial and ongoing costs	Draft model for initial and ongoing support costs developed
8	Publish real-time map of #SFWiFi locations for staff and public	Expected Q4

#SFWiFi Upcoming Discussion Items

- Performance Standards
 - Seamless Experience – Access to system is simple and users are able to roam within the network
 - Broadband Speeds – 25Mbps download speed/ 3Mbps upload speed
 - No Authentication– No banner page
 - Data Collection Policy– No identifiable user info is collected
- Expansion/Enhancement Areas
 - City Buildings
 - Public Housing
 - Parks and Recreation Centers
 - Other Public Spaces

Broadband Choices at Home

- Board of Supervisors Budget and Legislative Analyst preparing Analysis of Business Model Alternatives
- CostQuest Associates (CQA) Providing Estimates on expanding fiber to homes and public spaces

Home: Exploring Business Models

- Private Entrant
- Private Entrant + City Assets
- Public Dark Fiber/Private Service Provider
- Private Wholesale Operator
- Public Retail Provider

Public Spaces Wireless: Exploring Alternative Scope

- Pedestrian Traffic
- Need
- Opportunity

Broadband Choices at Home: Fiber

Developing Model

- Draft Model and reports sent to DT: 10/23
- CQA Send updated version of model/methodology: 10/28
- DoT and Departmental Review: 10/28 -11/06
- CQA send 2nd Wireline Draft: 11/10
- Final model and reports Delivered - 11/25

Analyze Alternative Business Models

Broadband Choices at Home: Wireless

Developing Model:

- Baseline model draft and high-level methodology/assumptions sent to client: 11/05
- CQA Incorporate Edits— 11/7 – 11/13
- Wi-Fi 2nd Draft model/methodology sent – 12/01
- Wi-Fi model/methodology delivered 12/16

Analyze Alternative Scope for Public WiFi

Public Connectivity: Phase I Review

RECOMMENDATION		UPDATE
1	Collect neighborhood scale data as none currently exists	Planned Residential Survey for Q3-4.
2	Conduct formal research and analysis of the various roles that government can play	"Broadband Choices at Home"
3	Engage the public in a discussion on the role of government	See Timeline below
4	Update report to include findings	See Timeline below

Connectivity Plan: Timeline

November

- Connectivity Steering Committee - WiFi
- CostQuest Fiber Model & Report

December

- CostQuest Wireless Model & Report
- Connectivity Steering Committee – Digital Inclusion

January

- Connectivity Steering Committee – Broadband Choices

February 18, 2016: COIT Action Item

6. Project Update: Optical Network System (ONS)

Eddie Eriksson, Department of Technology

Optical Network System

(Now Part of Fix the Network)

Data centers must communicate with each other for internal operations such as replication, backup, restore. **Clients** produce application-based demands on the network. These 2 types of demands conflict on our network today. ONS separates the 2 types for better performance, predictability and scheduling.

Objectives

- Provide direct point-to-point connections, between 4 data centers (SFO, 200 Paul, Rancho Cordova, DEM) and to other entities (e.g. data center consolidations)
- Enable high-speed data center service connectivity
- Separate and offload user-client traffic from data center traffic

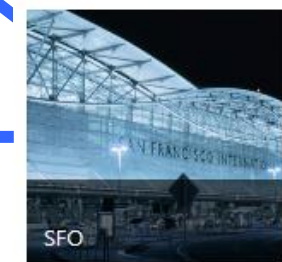


Outcomes

- Faster, isolated backup, replication, and service failover
- High availability of applications & services between facilities
- Clear security boundaries, more predictable traffic patterns
- Simplify service provisioning, such as onboarding new applications
- Accommodate a wide range of new, high-bandwidth applications
- Improve manageability, scalability, and efficiency
- Overcome distance limitations (Rancho Cordova >170km, SFO 63km)

Accomplishments Since August 2015

- Procured or identified cabinets for all 4 facilities
- Extended fiber to each ONS cabinet
- Completed fiber testing between each Phase 1 link



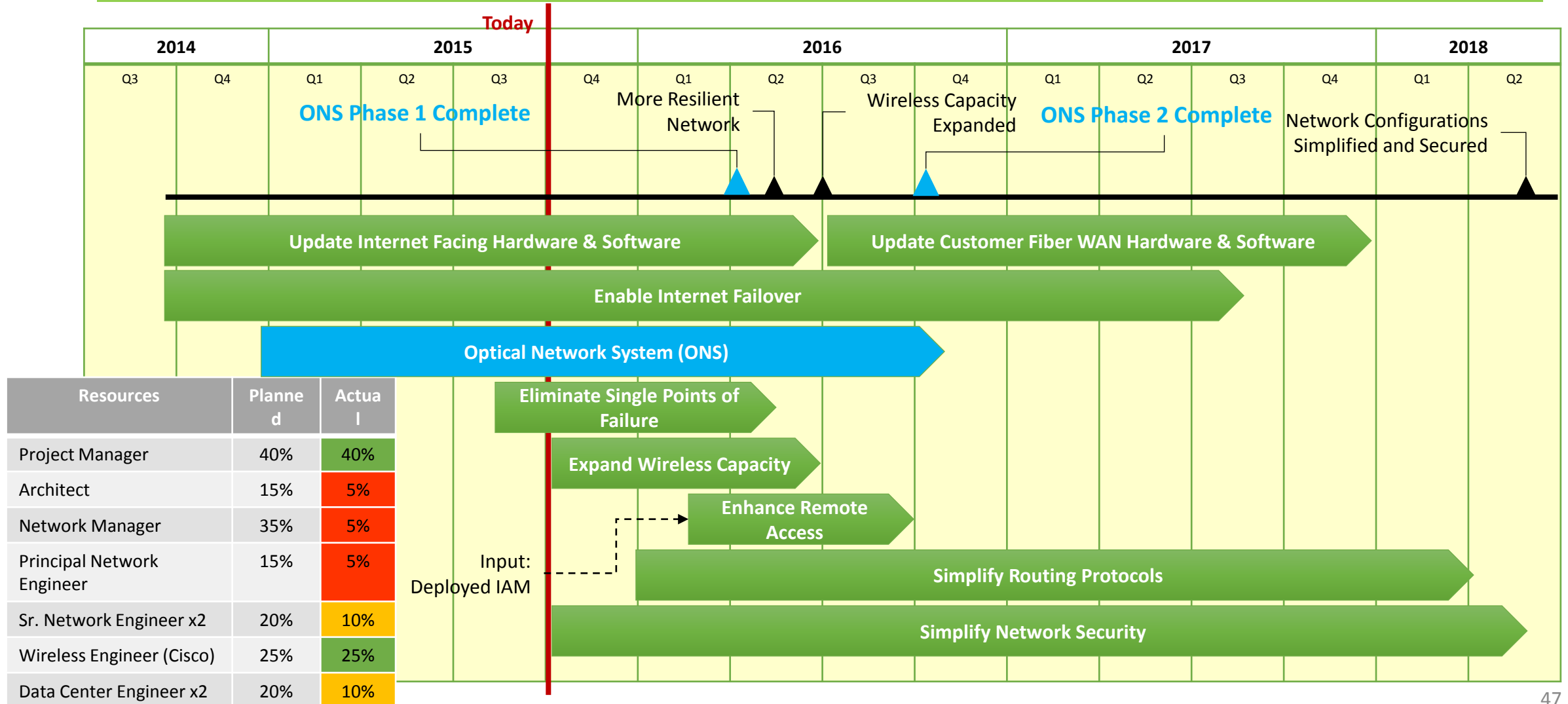
ONS Phase 1

Issue Log

Issue	Proposed Mitigation or Resolution	Resource
Equipment was configured with assumption that SFO – 200 Paul link was ~ 20 km long instead of the true fiber distance of ~60km. PG&E provided us a sub-optimal route that increased the distance.	Procure dispersion compensation units and amplifiers (\$37k) for 200 Paul and SFO to support 60 km distance between them	Project Manager

Fix the Network

Timeline



ONS Budget and Expenditures

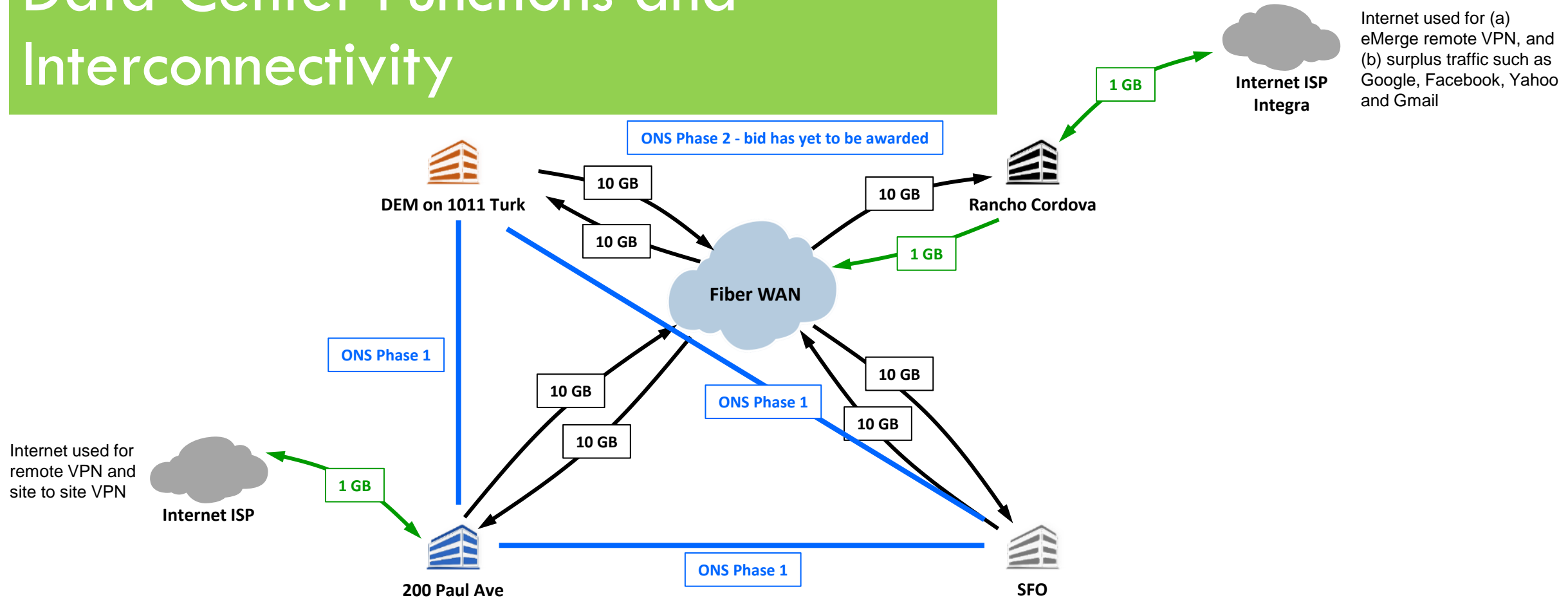
Equipment, Tools and Services	Cost	Origin of Funds
Total Budget	\$1,500,000	Department of Public Health
Cisco ONS equipment, hardware, software services	\$1,196,723	Department of Public Health
Remaining Funds: Planned expenditure for additional equipment to expand capacity on inter-data center links (10-20Gb)	\$303,277	Department of Public Health

Appendix A

Optical Network System (ONS)

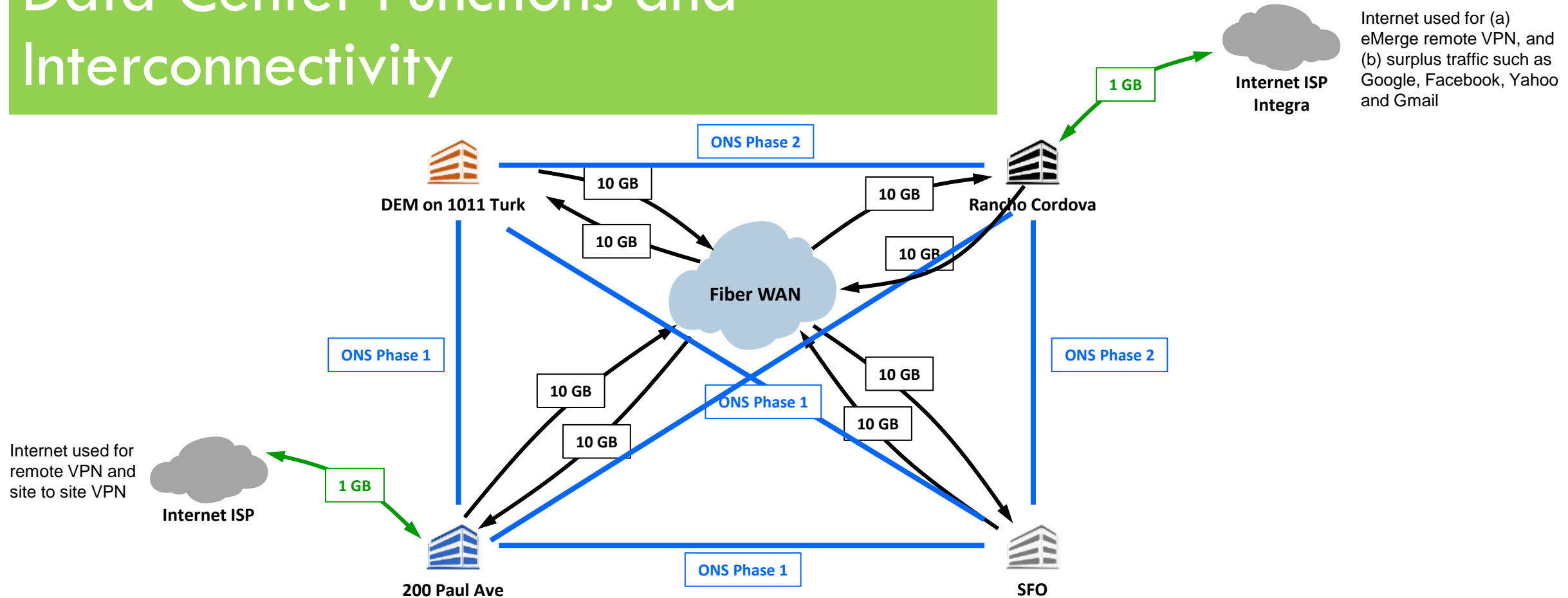
Target State 2016

Data Center Functions and Interconnectivity



Target State 2016

Data Center Functions and Interconnectivity



7. Public Comment
