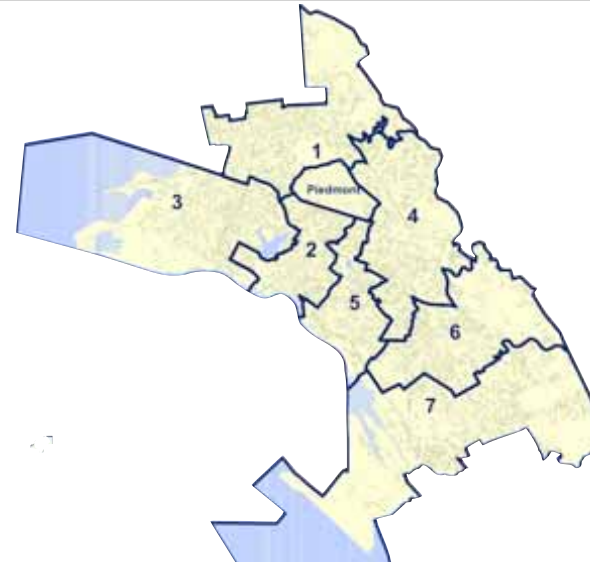# City of Oakland Wireless Broadband Feasibility Study

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Comprehensive assessment of needs, goals & priorities

- Assessment meetings with DIT staff

- Technical survey of city assets & environment

- Workshops for police, fire, emergency services, public works, finance, administration, parks, library, museum, human services

- Workshops for business, education, non-profits, public agencies

- Public focus groups by district

- Town Hall meeting

- Public comment via phone and email

Study Objective:
Conduct the necessary fact finding that will support the establishment of a sound vision for the deployment of an achievable and sustainable wireless broadband network.
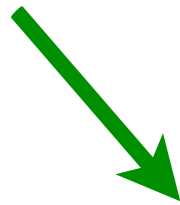
Broad, nearly unanimous agreement...

✓ Public Internet access via community anchor institutions

✓ Pay-as-you-go opportunities for business

🚫 Wireless Internet service to homes or individuals

➡ Widespread financial and technical failure in other cities

Needs, goals & priorities led to operational requirements
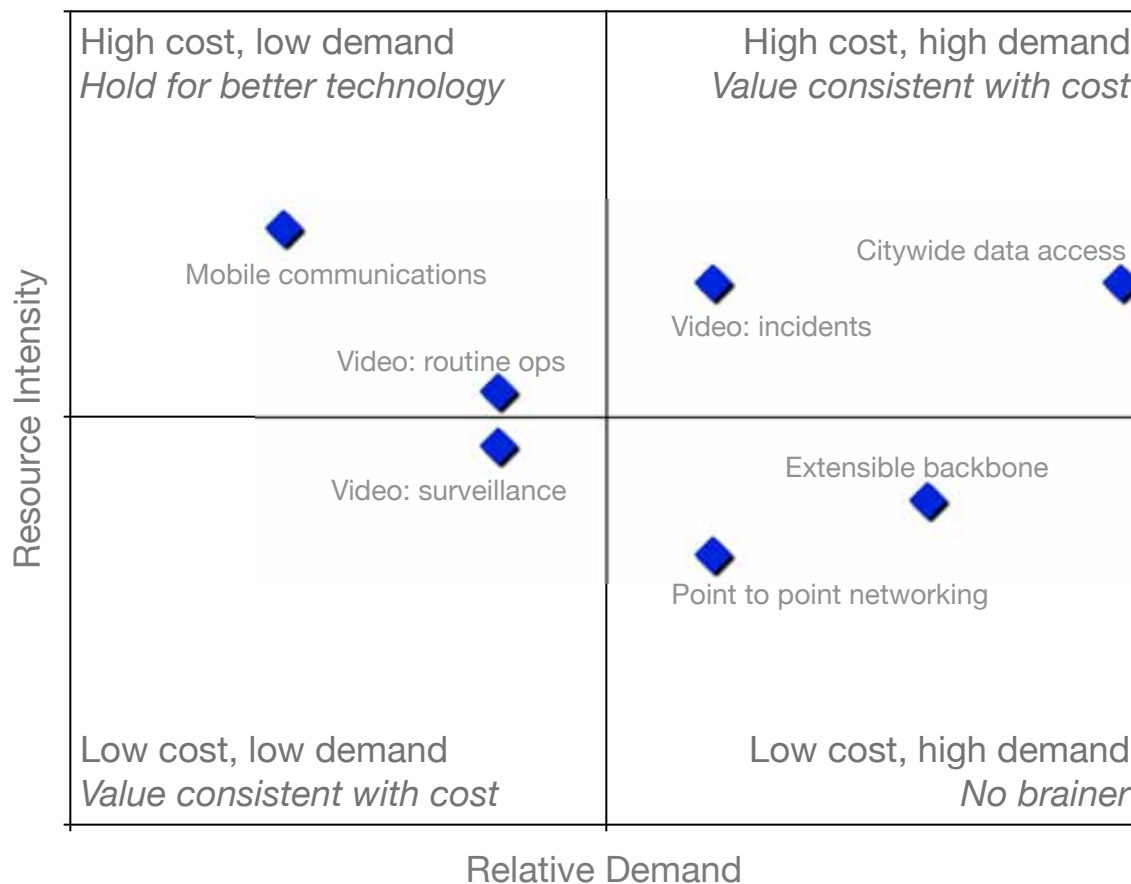
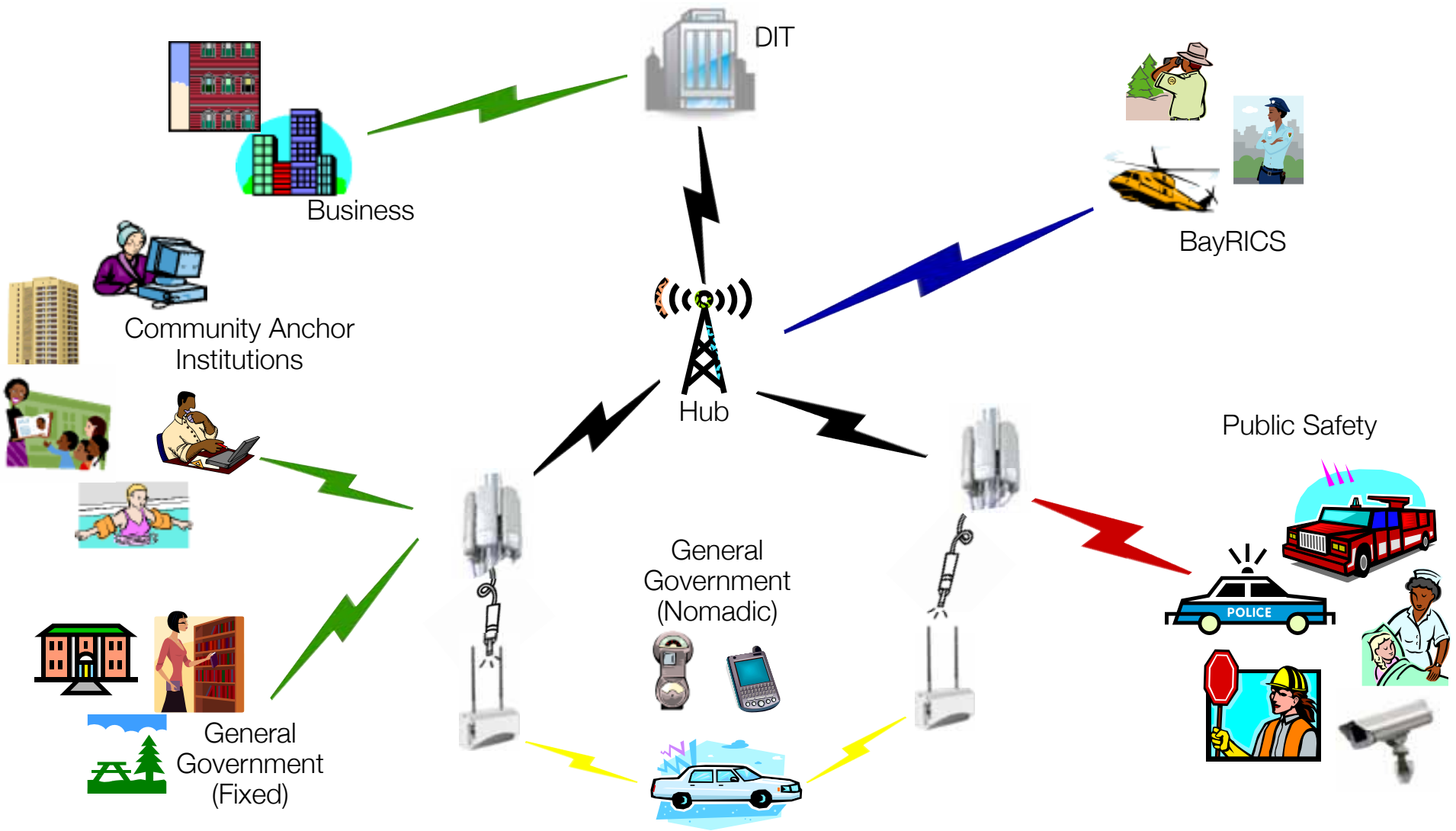| Priority	Strategic Goals
1	Sound financial planning
2	Free school access
3	Free public access at libraries, community centers, parks, etc.
4	Affordable access for the public
5	System facilitates improved productivity
6	Public project awareness

Operational Requirement	Public Safety	Emergency Services	Public Works	Finance & Admin	CEDA	Human Services	Parks & Recreation	Other Agencies	Business	Non-Profits	Public
Citywide data access	X	X	X	X		X	X	X			
Mobile communication	X	X	X								
Video: routine operations	X	X	X	X							
Video: incidents & events	X	X	X				X	X			
Video: surveillance & monitoring	X		X				X		X		
Point to point networking					X		X	X	X	X	
Extensible network backbone					X		X	X	X	X	X

Is desire consistent with cost?

Setting operational requirement priorities for the City of Oakland

High cost, low demand *Hold for better technology*	High cost, high demand *Value consistent with cost*
Low cost, low demand *Value consistent with cost*	Low cost, high demand *No brainer*

Resource Intensity

Relative Demand

Mobile communications

Citywide data access

Video: incidents

Video: routine ops

Video: surveillance

Extensible backbone
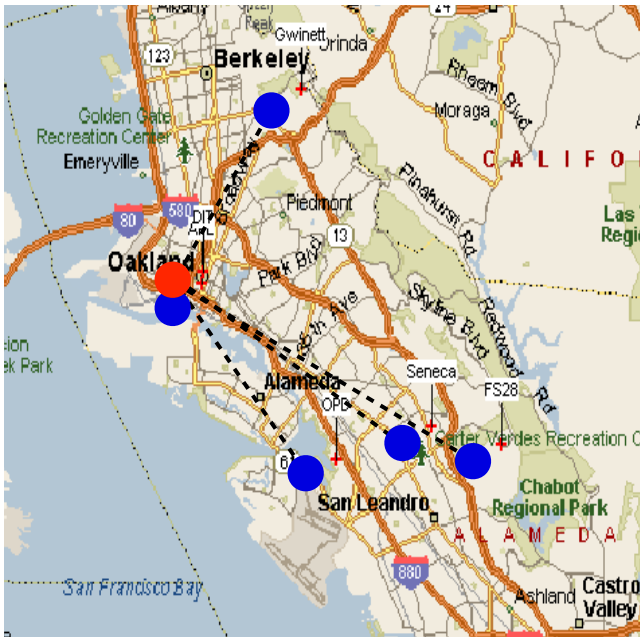
Point to point networking

1. Extensible network backbone

2. Point to point networking

3. Citywide data access

4. Video: incidents

5. Video: surveillance

6. Video: routine operations

7. Mobile communications

DIT

Business

Community Anchor Institutions

BayRICS

Hub

Public Safety

General Government (Nomadic)

General Government (Fixed)

Requirements drive design of reference architecture

Can it be done?

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From DIT to 5 hubs, to fire & police stations, then point-to-point links anywhere needed.
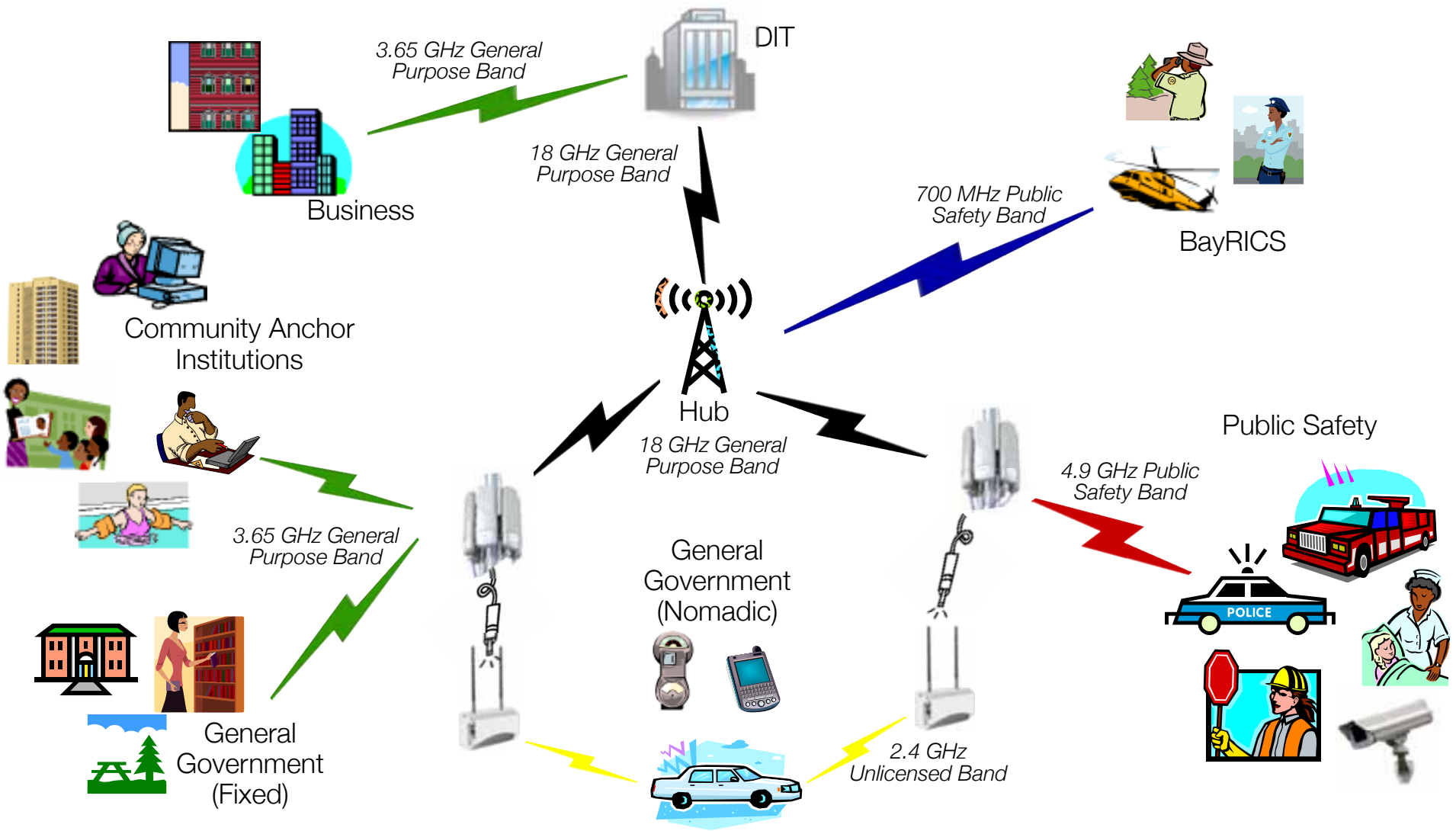
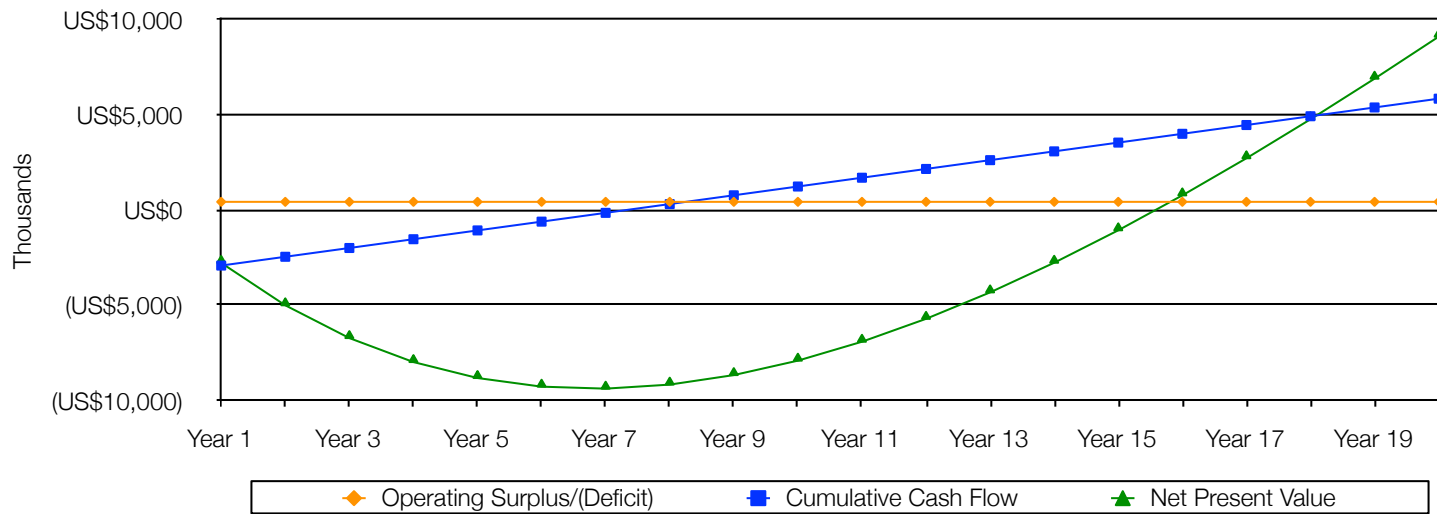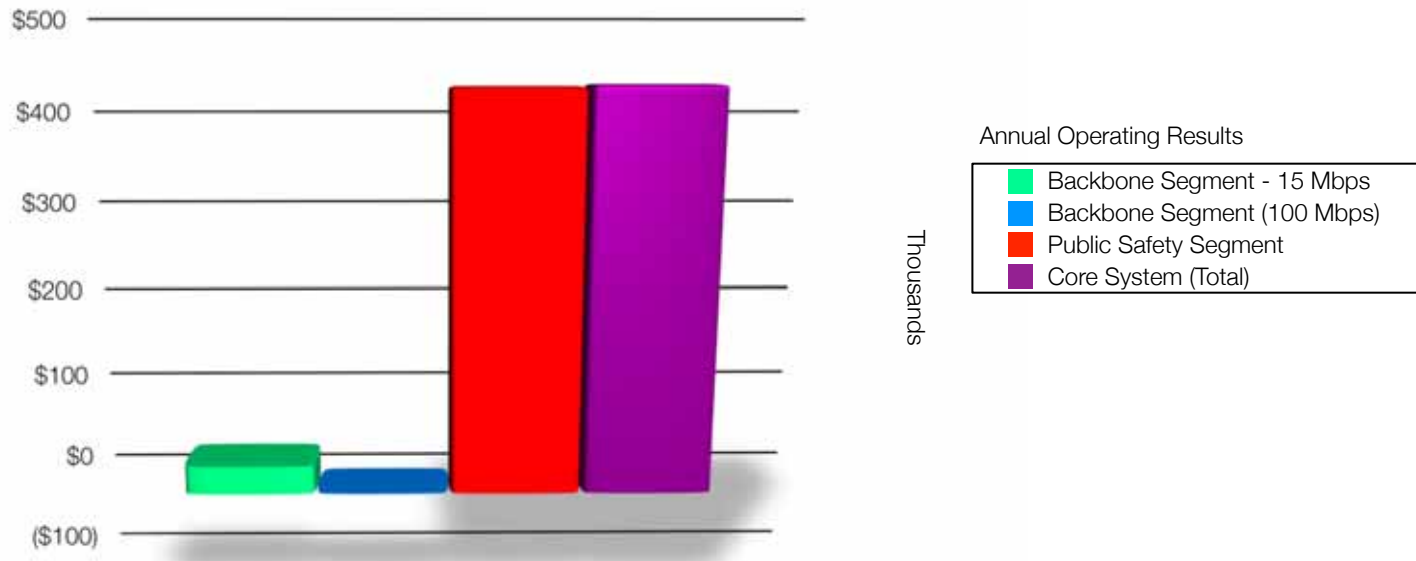Hubs also enable blanket coverage for regional public safety data system

Backbone enables flexible, citywide coverage for diverse applications

Yes, it can be done

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DIT

3.65 GHz General Purpose Band

Business

18 GHz General Purpose Band

700 MHz Public Safety Band

BayRICS

Community Anchor Institutions

Hub

18 GHz General Purpose Band

Public Safety

4.9 GHz Public Safety Band

3.65 GHz General Purpose Band

General Government (Nomadic)

General Government (Fixed)

2.4 GHz Unlicensed Band

Coverage, service levels technically feasible

Reference architecture one example of how

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Annual Operating Results

- ■ Backbone Segment - 15 Mbps
- ■ Backbone Segment (100 Mbps)
- ■ Public Safety Segment
- ■ Core System (Total)

Thousands

- Operating Surplus/(Deficit)
- Cumulative Cash Flow
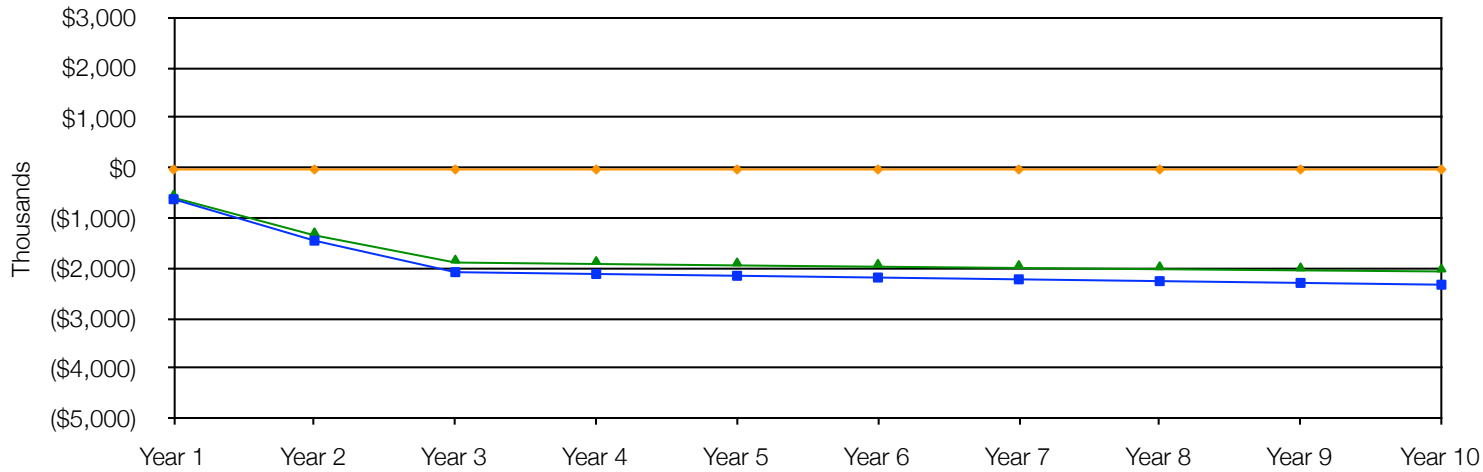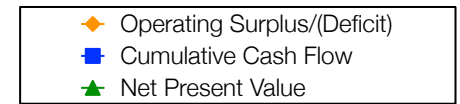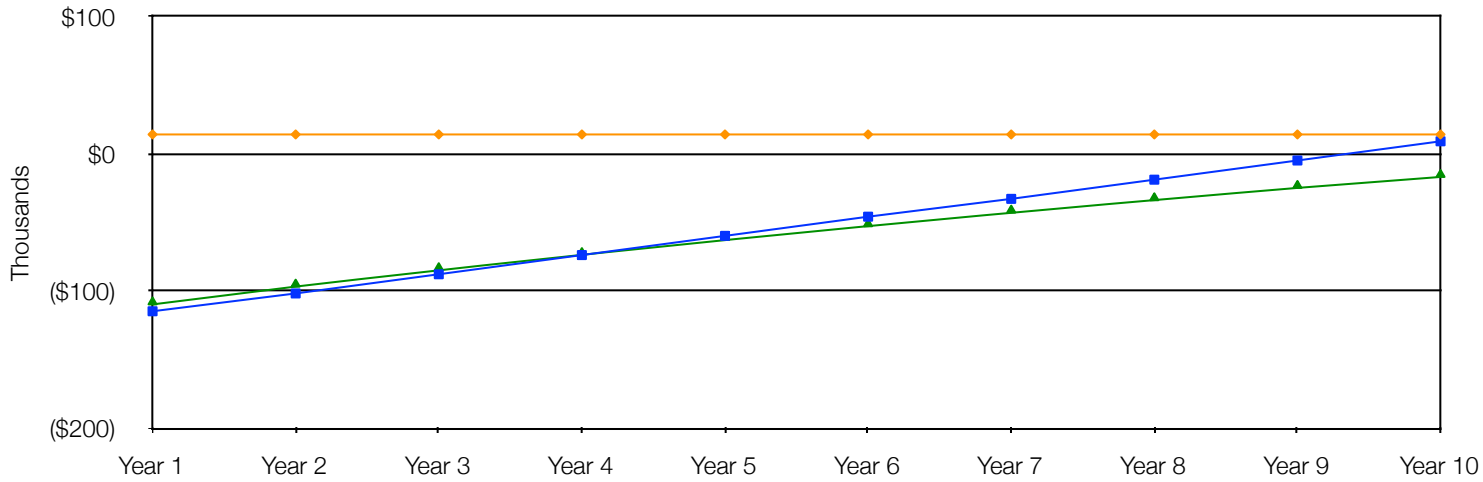- Net Present Value

Core system operates at a surplus, pays full cost over time

Higher capacity, and hard savings on current leased lines

Drinking Fountain Model for Public Access at Community Anchor Instituitons

Business & Entrepreneurship Opportunities

Legend:
- Operating Surplus/(Deficit)
- Cumulative Cash Flow
- Net Present Value

Core supports community anchor institutions, businesses

Business service pay-as-you-go, community service returns value

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Community Anchor
Institutions

Schools & Educational
Facilities - 200

Community
Organizations - 80

Neighborhood
Partnerships - 80

Community
Housing - 267

*Note: numbers are examples only, to illustrate
capacity. Actual site selection process is TBD.*

Human Services - 31

Libraries - 17

Parks & Rec - 38

City of Oakland
Facilities

Business-grade service

City sells network access and
packaged solutions on a wholesale
basis to small, local companies, who
in turn re-sell it to underserved
commercial properties, downtown
and potentially elsewhere.

Model supports hundreds of
potential public access sites

Creates opportunities for local
entrepreneurs

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Next steps

Stimulus program application deadline sets immediate agenda

- Determine which broadband grant programs are available to the City.

- Develop an implementation plan that meets schedule requirements and criteria for "shovel-ready" projects.

- Identify complementary stimulus program-funded projects and potential partners, per applications guidelines.

- Determine the source for the required 20% matching funds, including making any necessary applications to State of California agencies.

- Prepare and submit grant applications covering as many categories as practical by the 14 August 2009 deadline.

- Release an RFP to support the grant applications as soon as possible.

Questions?