

City of Long Beach

Fiber Network Infrastructure Update

Planning the Cornerstone Elements of a Next Generation Fiber Network

Technology & Innovation Department • The Broadband Group

November 28, 2018

Fiber Network Infrastructure Vision



Stakeholder Needs

In October 2015, the City announced five new innovation and economic development initiatives that will be implemented by the City and community partners. One initiative was the development of a “High Tech Infrastructure Plan” to maximize existing City assets, resulting in increased investment and quality Internet access for businesses and residents.

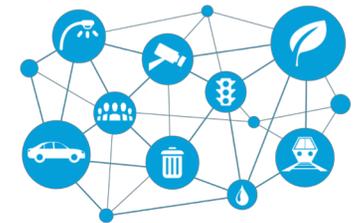


City Funds



Regulatory Issues

In consultation with industry experts, the City developed options (scenarios) appropriate for the City, considering the metrics specific to Long Beach, as well as best practices and lessons learned from other municipalities.



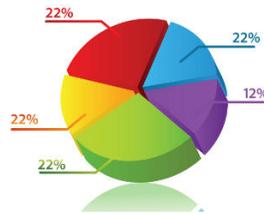
City Connectivity

Fiber Master Planning Considerations

Internal Department Needs Survey



Market Research *Commercial & Residential*



Economic Development & Public Safety Corridors



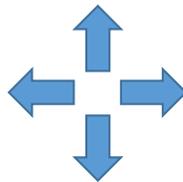
Financial Modeling



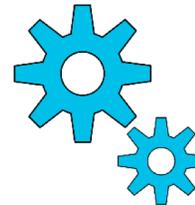
Smart Cities & The Internet of Things



Deployment Scenarios *City Build vs. Public- Private Partnership*



Engineering Analysis



Implementation Opportunities *Dig Once & Small Cell Policy*



City Build Scenarios

- **Scenario #1: Internal Needs**

- ~\$12.6 Million City Investment (12 Month Build Out)
- 143 City Buildings/Outside Plant Only
- Select Economic Development & Public Safety Corridors
- Cost Savings, but No Ancillary Revenue

- **Scenario #2: Internal + Business**

- ~\$32.8 Million City Investment
- Cost Offsets from Business Enterprise Broadband Service Offerings
- Revenue Pay-Back Estimated at 10 Years

- **Scenario #3: Internal + Business + Residential**

- ~\$182.5 Million City Investment
- Cost Offsets from Business Enterprise Broadband Service Offerings + Lease Payments from Network Tenants



City Build Scenarios #1-3

Scenario #1

Build Fiber Backbone & Laterals - Connect 143 City Buildings

- ~\$12.6 Million Cost

Scenario #2

Extend to Connect Commercial Corridors

- ~\$32.8 Million Cost
- Lease Excess Capacity to Network Tenant(s)
- Business Enterprise Services Offered by City or Network Tenant(s)

Scenario #3

Extend Network Citywide

- ~\$182.5 Million Cost
- Lease Excess Capacity to Network Tenant(s)
- Business Enterprise and/or Residential Services Offered by Tenant(s)

Key Updates



Stakeholder Needs

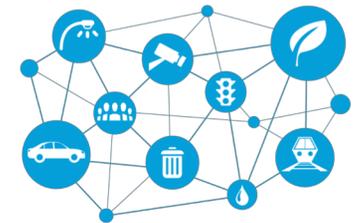
At the end of 2017, City Council approved implementation planning of the first scenario (Scenario 1) as well as a Request for Information (RFI) to collect relevant information and assess interest in potential partnership(s) for Scenario 1, 2, and 3.



City Funds



Regulatory Issues



City Connectivity

Key Updates

Scenario 1 Implementation Planning

- ✓ Met with City personnel to identify **existing, under construction, and planned** fiber and conduit.
- ✓ T&I provided a list of existing City data circuits from **Frontier, Charter Spectrum, and Verizon Wireless.**
- ✓ Key Risk mitigated: Identified potential **pathways across the LA River** using Port of Long Beach conduit in the Queensway or Ocean bridges.

Fiber RFI

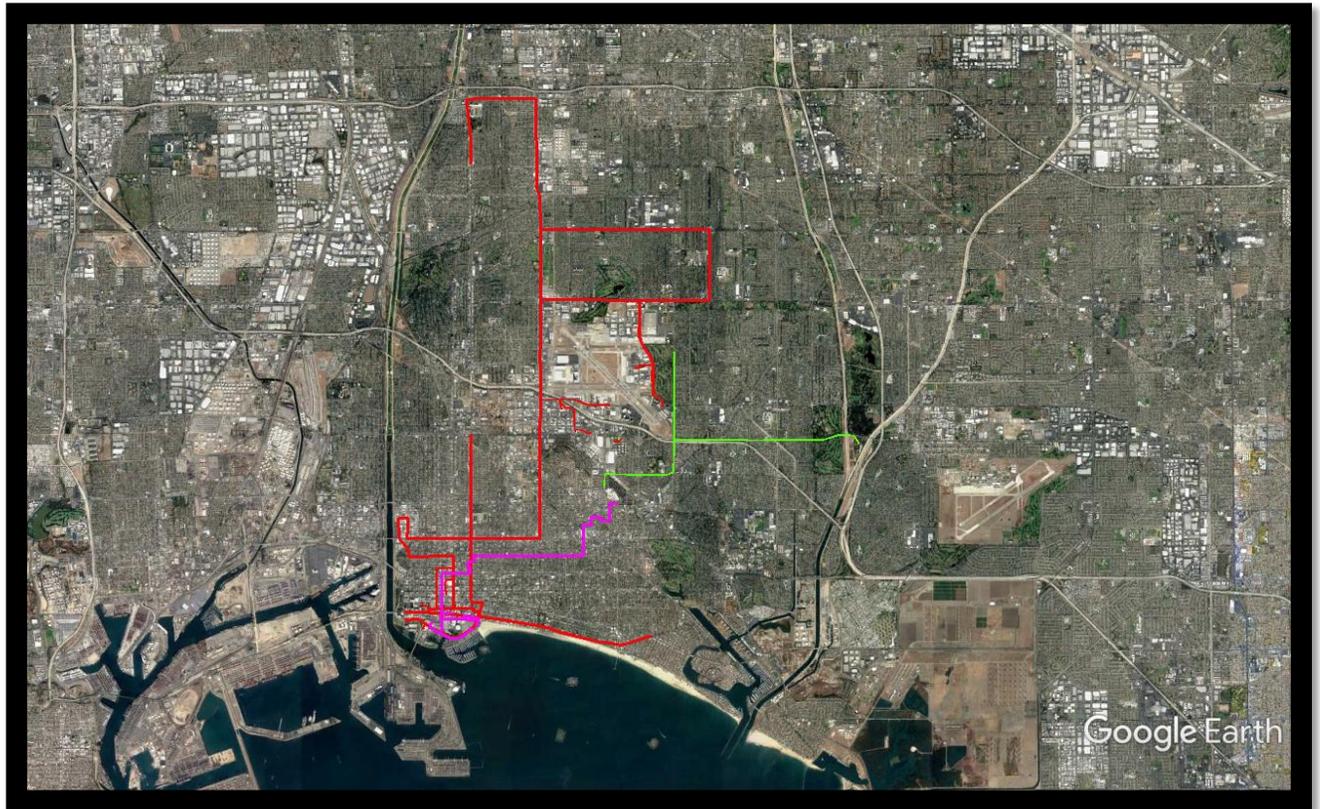
- ✓ T&I established RFI Strategy.
- ✓ Meeting with key internal City Stakeholders for input on the RFI.
- ✓ Discussions held with Purchasing Department to review City's RFI protocols.
- ✓ Drafting of RFI under development.

City Fiber Map

Existing City Fiber

Existing City Conduit

Existing Crown Castle Fiber



City Fiber Map

Existing City Fiber



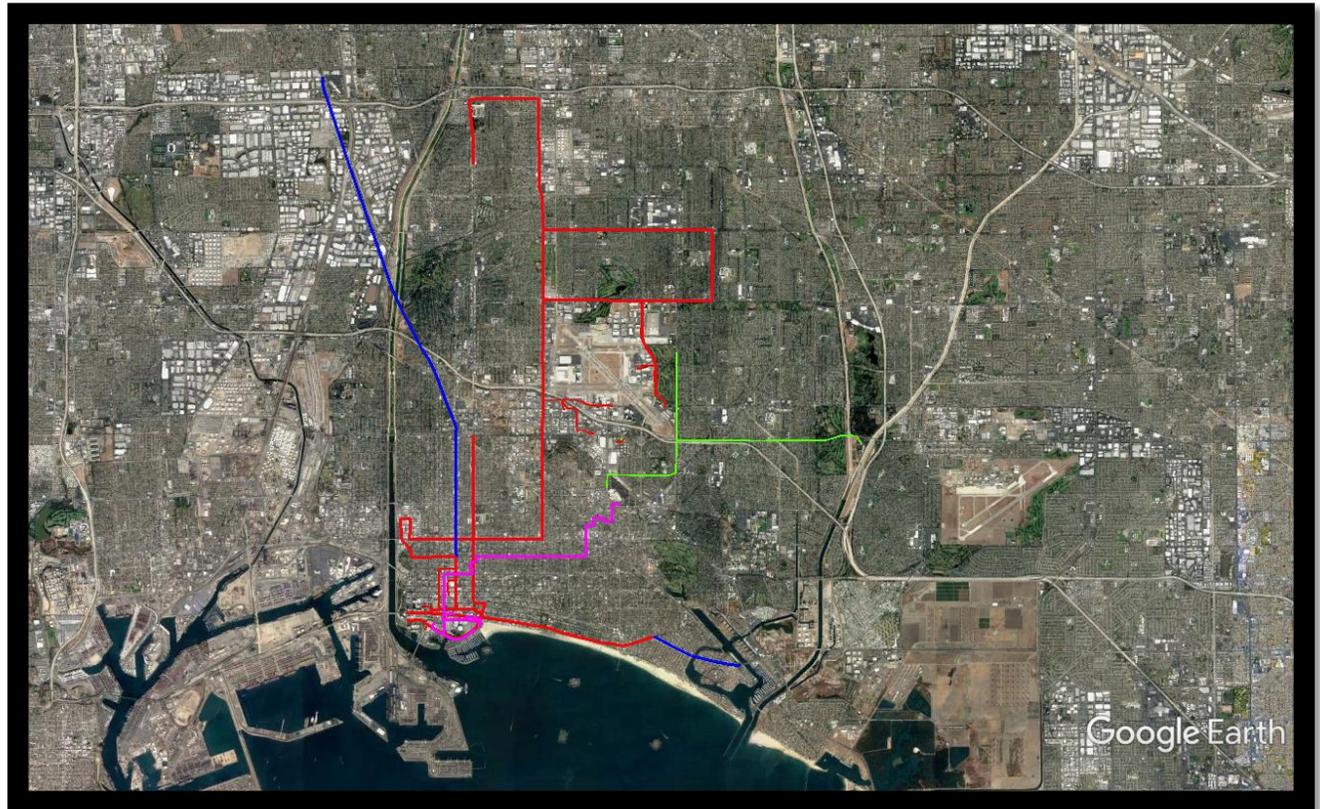
Existing City Conduit



Existing Crown Castle Fiber



Under Construction



City Fiber Map

Existing City Fiber



Existing City Conduit



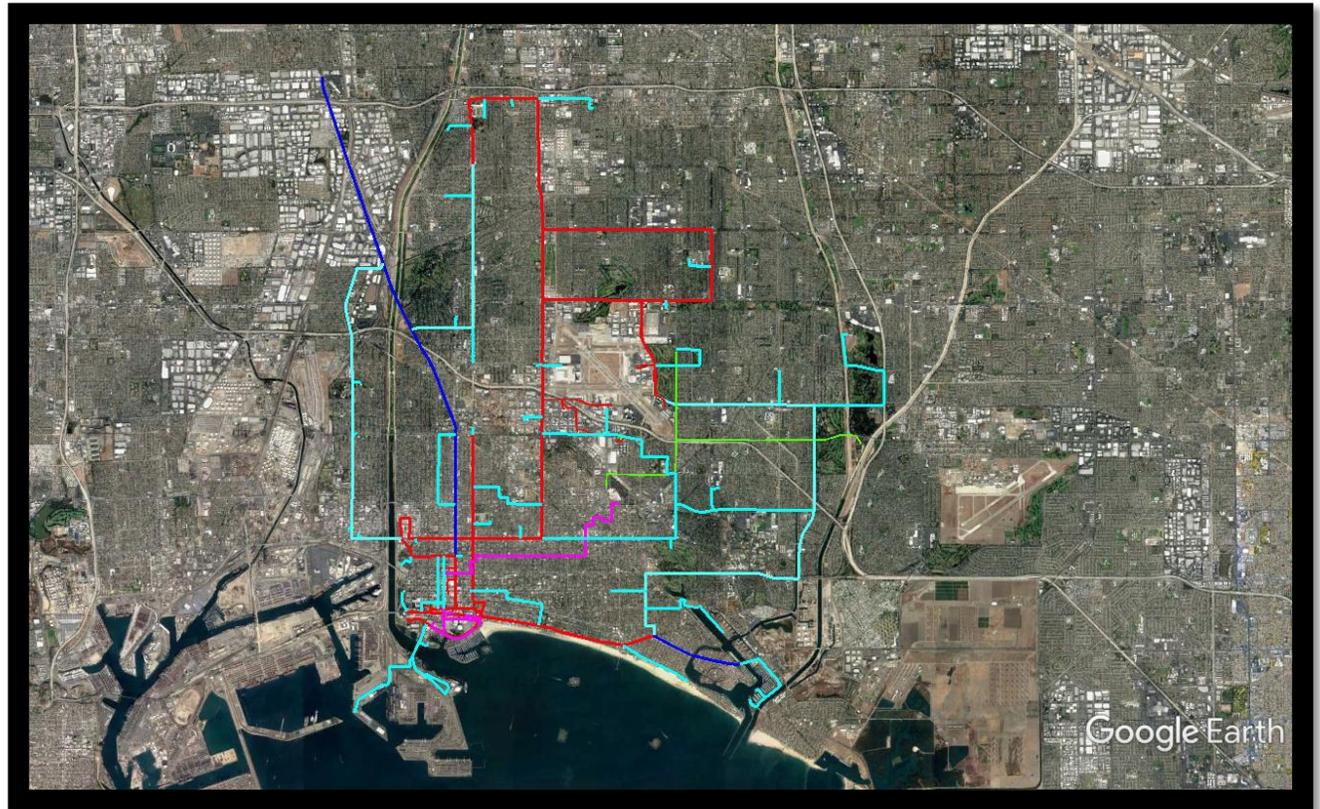
Existing Crown Castle Fiber



Under Construction



Planned



Request for Info: Fiber Optic Utilization Analysis

The purpose of the RFI is to **identify potential parties with a desire to expand the City of Long Beach's fiber infrastructure**. Increased fiber will improve wired and wireless connectivity throughout Long Beach to advance the City's business and functional operational needs, Public Safety System needs, Digital Inclusion objectives, and Economic Development objectives.

The City's Objectives are:

- Increase fiber for wired and wireless high-speed data connectivity for City buildings, community anchor institutions, public safety and other City services,
- Save on both current and future City communication costs,
- Create a foundation to support digital inclusion services and applications to close the "digital divide" for those living and working in Long Beach, and
- Advance Economic Development Goals as defined in the City's Economic Development Blue Print (2017)

Potential Respondents

- Asset owners of fiber, telecommunications conduit, and aerial poles in Long Beach (e.g., Verizon, Edison, Charter, Crown Castle, Frontier, Zayo, etc.)
- Potential anchor tenants of City fiber infrastructure (e.g., Charter, Frontier, Google Fiber, Wave, Inyo, etc.).



Next Steps

Next Steps & Considerations

- Finish RFI Draft and Circulate to T&I, Public Works, and Finance for Review
- Prioritize Fiber Routes
- Update Budget & Financial Model
- “Dig Once” Coordination
- Review RFI responses and evaluate Potential Partnership Development

