

City of Rancho Cucamonga Fiber Optic Master Plan



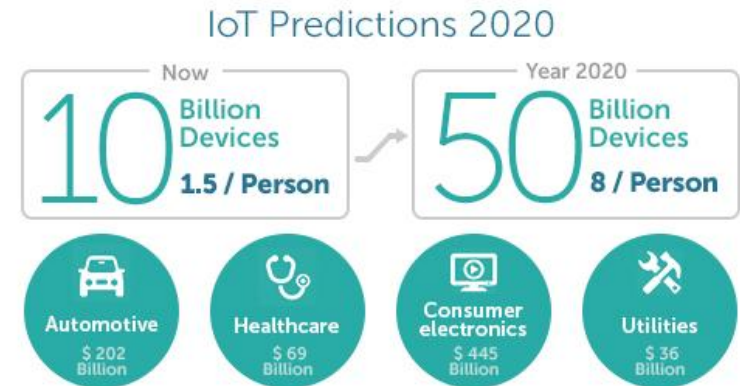
History

- January 2016: City Council authorized Magellan Advisors to perform a fiber optic feasibility study
- Spring 2016 to Spring 2017:
 - *Researched and evaluated:*
 - *the City's current supply of fiber optic assets*
 - *potential uses of surplus assets/infrastructure*
 - *current and future demand for broadband products and services*
 - *existing broadband providers in the City*
 - *Conducted community stakeholder interviews*
 - *(City Depts. 5 school districts, Chaffey College, Chamber of Commerce, regional developers, and the business community)*
 - *GOAL: Consider opportunities to promote long-term economic development for the City*
 - *May 2017: City Fiber Optic Master Plan completed*
 - *Sept 2017: City Council adopts Master Plan*



Findings: Demand for high speed

- The Internet of Things era has arrived!
- *Need more connectivity and speed.*
- High speed is an important “driver” for economic development and “smart city.”
 - *City’s Economic Development Strategic Plan*
- The internet now has to be viewed as a utility



Findings: Local opportunities lacking

- Limited fiber distribution infrastructure in the City
- Lack of broadband competition – Lack of choice
- Costs to construct are high – makes fiber access expensive

- Businesses wanting high speed broadband are paying line extension fees which can make services unaffordable
- Dedicated (enterprise) fiber services only available for those who pay for it



Findings: City is progressive

- Rancho Cucamonga's enterprise spirit:
 - Development of RCMU to start an electric utility
 - Purchase of citywide light poles from SCE
- RCMU is constructing fiber infrastructure as opportunities present themselves – Ad Hoc approach
 - Fiber Master Plan provides the long-term approach to development of a fiber broadband program
- The City has fiber assets today



Findings: City Assets

- Existing RCMU & City Fiber and conduit systems – 20 miles
- Traffic conduit – 38 miles of various conduit and copper/fiber cable sizing
- City/RCMU light poles
 - ~ 17,000 vertical pole assets
- Data center
 - Under construction



Uses for City Fiber-Optic network

CURRENT

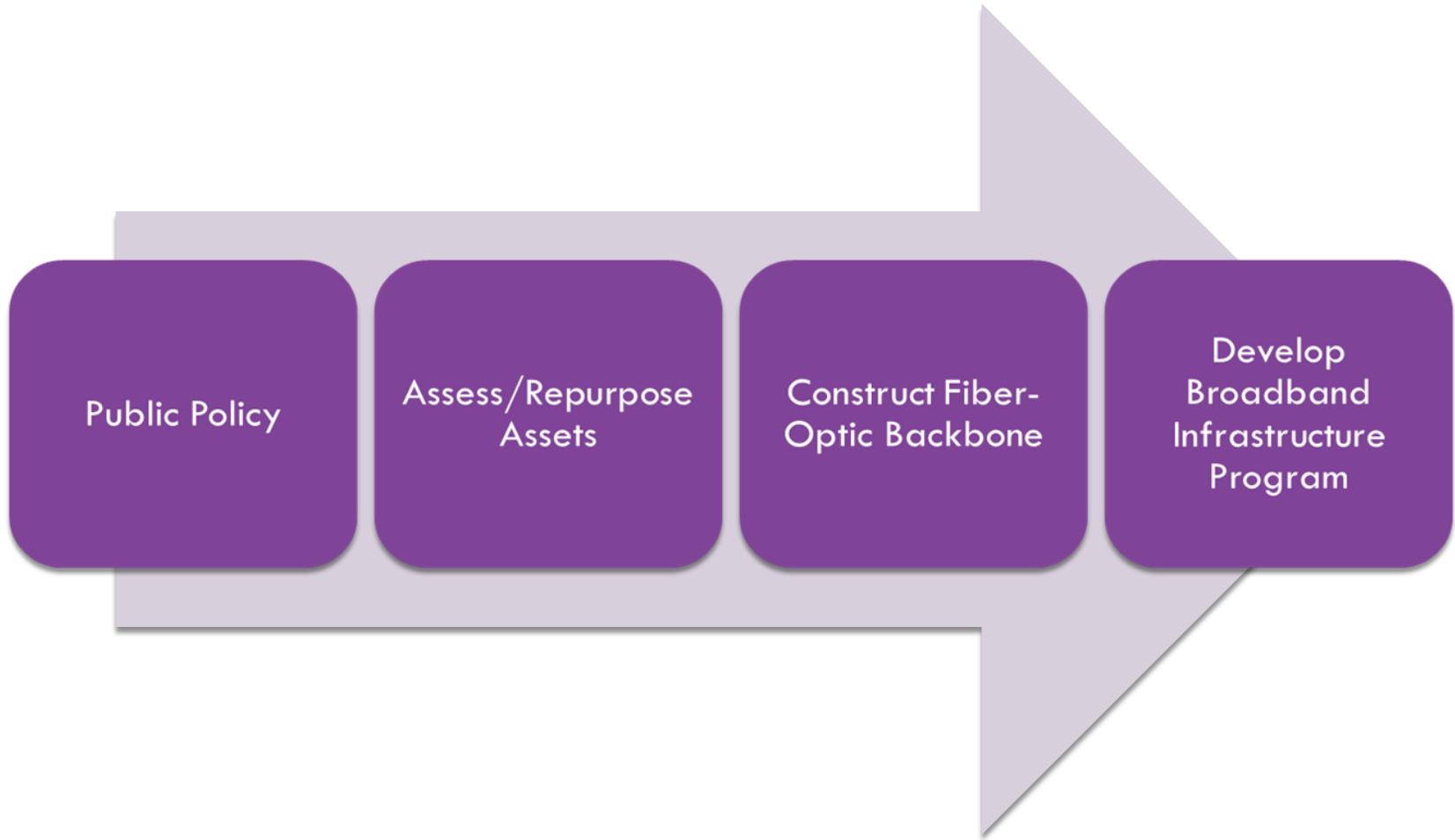
- IT and City operations
- Traffic management (mobility)
- Public safety and surveillance
- Alternate revenue through public infrastructure investment and leases

POTENTIAL FUTURE

- **Interconnect community anchors**
- **Smart city**
- **Backhaul for cellular services (5G and beyond)**
- **Offer choice and competition to the broadband business and residential market**



Master Plan Recommendations



Recommendations

- Review Public Policy
 - Fiber is critical infrastructure for the City and should be considered/funded in potentially the same way as other public assets
 - Condition new developments to put in-tract fiber infrastructure
 - Ordinance considerations: ROW management, wireless ordinance, joint trench/dig once
- Repurpose all City traffic conduit to “general” fiber use
 - Coordinate with Traffic Division’s Asset Study

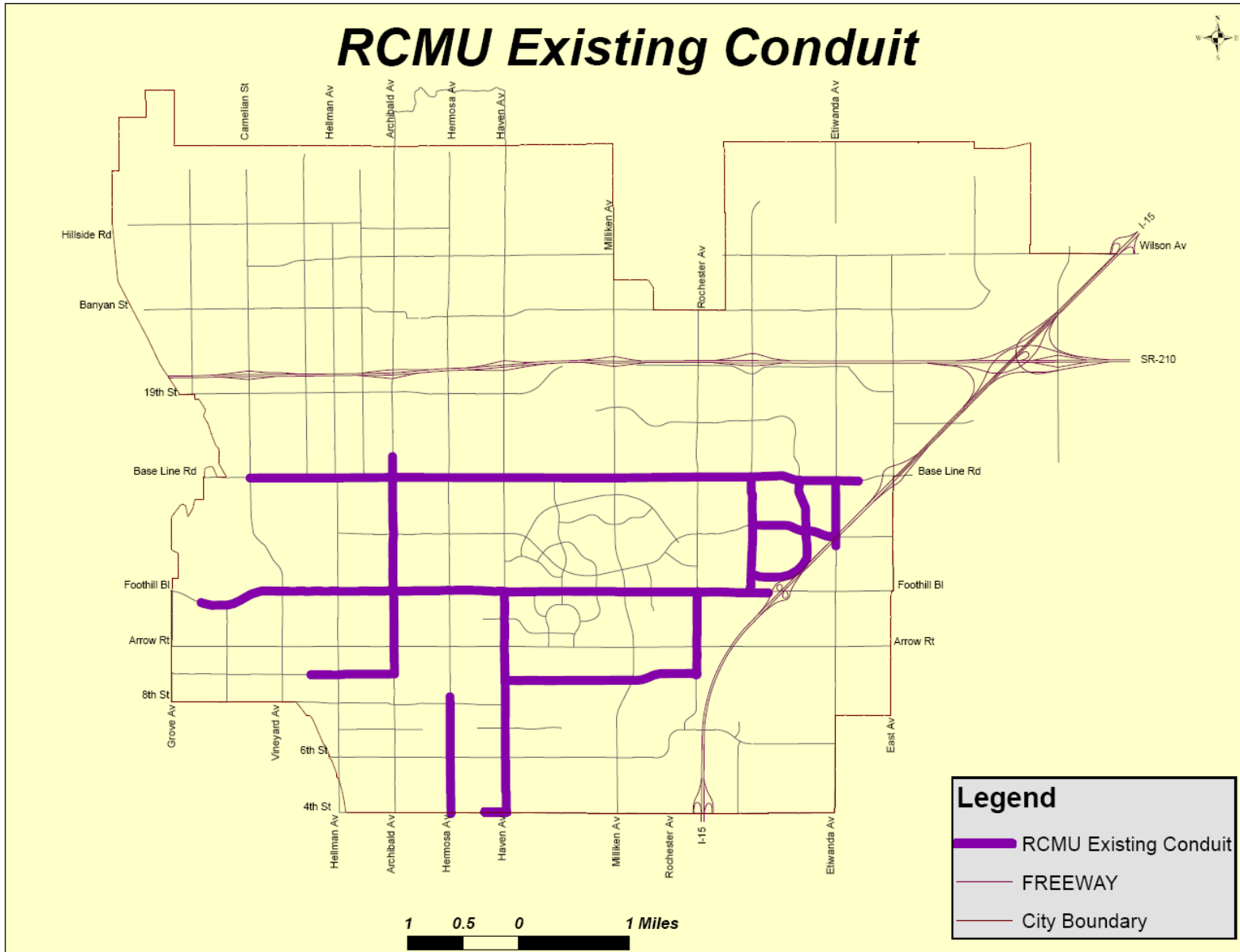


Recommendations

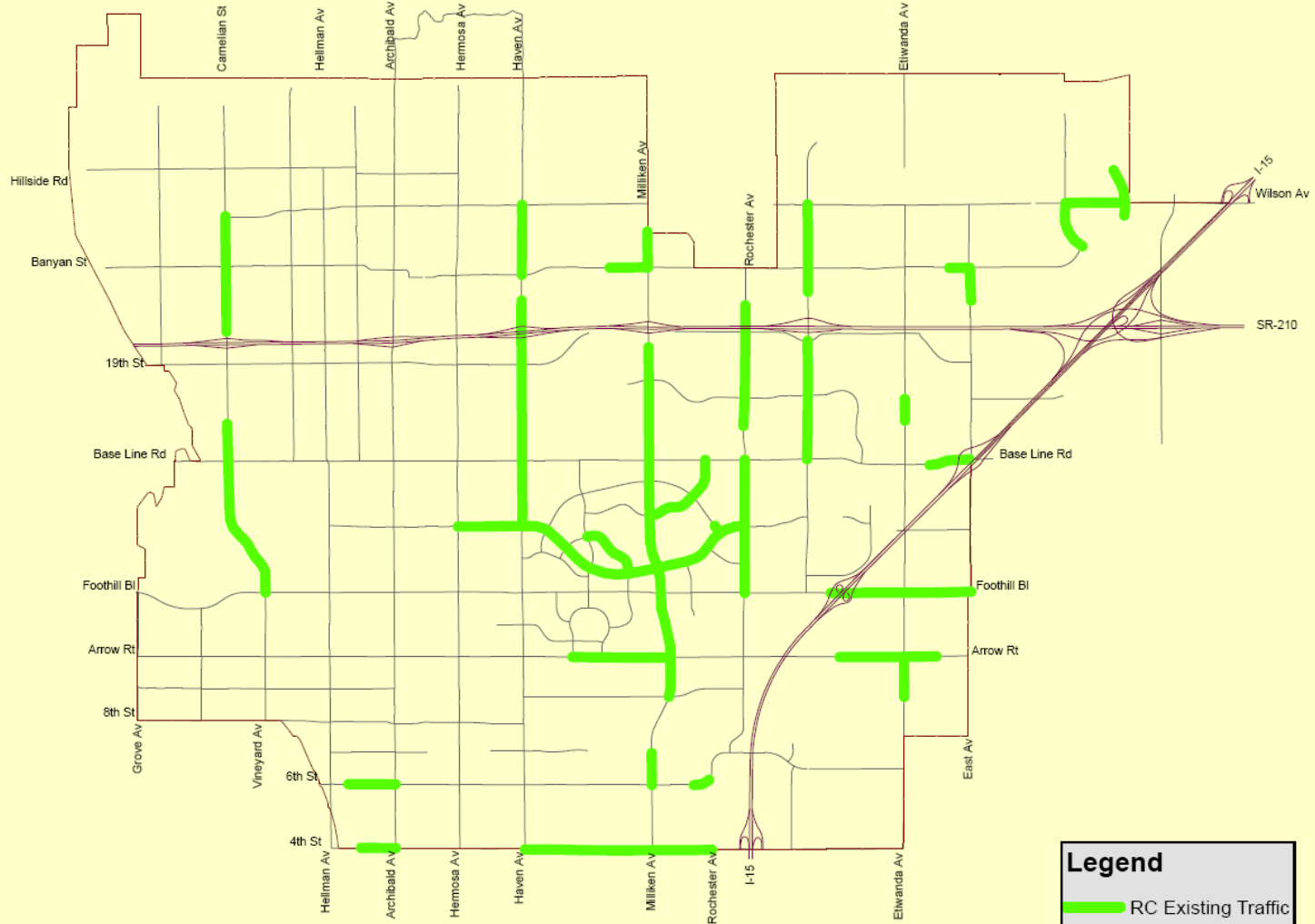
- Construct a Fiber Backbone throughout City
 - Finish segments to interconnect traffic conduit
 - Build out backbone to new areas using phased approach
 - Interconnect backbone to new City data center
 - Interconnect to Ontario and regional data centers
- Formalize RC Broadband Infrastructure Program
 - Phase 1: Develop, Brand and Market a BIP and establish a PPP with a private broadband retail provider
 - Phase 2: Begin Lit Transport, IP and Data Center Services
 - Phase 3: Fiber to the Home at The Resort (Empire Lakes GC)



RCMU Existing Conduit



City Existing Traffic Conduit



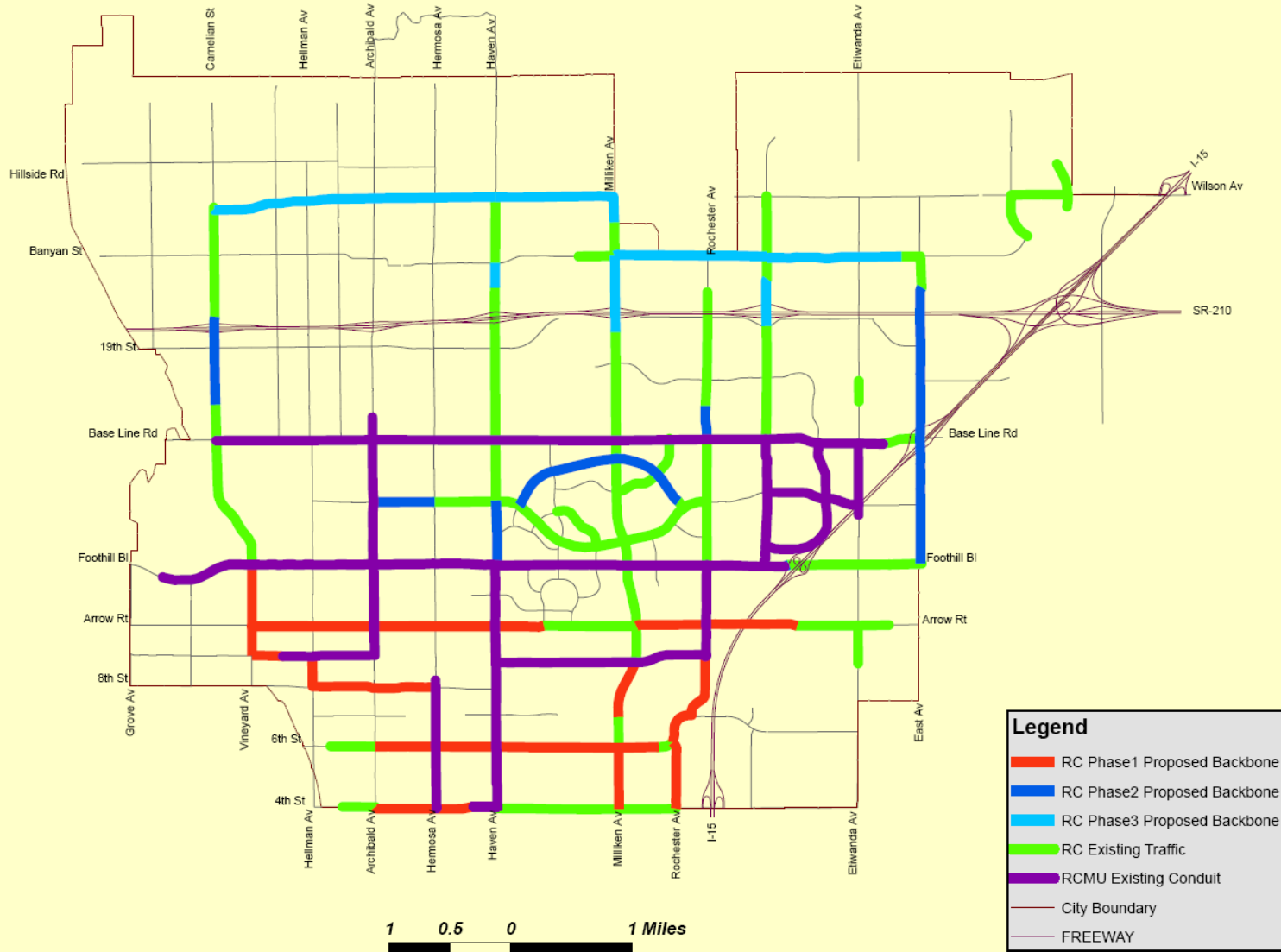
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Legend

- RC Existing Traffic
- City Boundary
- FREEWAY



City Master Plan + Existing Conduit



Capital Plan

- Six year - \$12 million capital investment plan to connect and expand the Fiber-Optic network over 60 miles of conduit infrastructure to key strategic areas.
 - 38 miles – repurpose existing traffic conduit
 - 29 miles – new conduit construction
- All revenues generated from the City Fiber network will be used to fund:
 - operations, debt service, and to expand and maintain the network and its services.



Recommendations Overview

- City is in the “broadband business” today – limited wholesale leasing revenue
- City believes fiber-optic communications is critical infrastructure
- City should take a phased/staged approach to the Master Plan (Crawl, Walk, Run)
- Wholesale business model keeps City out of direct retail competition, and enables private providers for service



Recommendations Overview

Through use of City assets, the City can:

- enable high speed broadband with choice/competition;
- generate new revenue;
- support economic development initiatives, and
- positively impact numerous community functions

