



# Request for Information

BID #1718-063017

**Fiber-Optic Network Design Standards**

*Submissions must be received no later than: July 28, 2017*

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Office of the City Manager  
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## Section I—General Information

### Summary

The City of Hayward is seeking information from internet service providers and related firms to assist in developing standard design specifications for the City's planned fiber-optic network construction project. This infrastructure project will establish a fiber loop consisting of 11 miles of new conduit and fiber optic cabling in the City's Industrial District. The City's goal in this RFI process is to establish a set of standards that meet the technical needs of internet service providers and end-users who may seek to lease city-owned conduit and dark fiber.

These standards will be applied in a forthcoming Request for Proposals (RFP) for fiber network design and construction services. Note that submitting a response to this RFI is not a guarantee in any way that a vendor will be selected for any subsequent RFP, nor does it preclude any vendor from responding to future procurement opportunities.

The remainder of Section I provides background information on the City of Hayward and the City's broadband initiatives. This includes information on the fiber construction project and draft specifications. Section II outlines the specific information requested from interested parties. Section III describes the submittal instructions.

### Project Background

#### *Community Overview*

Hayward is an economically and ethnically diverse city of approximately 150,000 residents within 45.32 square miles on the eastern edge of the San Francisco Bay. As a regional center of retail, industrial, and public activities, Hayward combines a hometown atmosphere, ideal climate, cultural attractions, parks, and recreational facilities with easy access to suppliers and customers throughout the Bay Area and beyond.

The City is known as the "Heart of the Bay" because of its central location in Alameda County—25 miles southeast of San Francisco, 14 miles south of Oakland, 26 miles north of San Jose, and 10 miles west of Pleasanton and surrounding valley communities. Hayward has two Bay Area Rapid Transit (BART) stations, an Amtrak station, its own executive airport, and an extensive network of freeways and bus lines that provide easy access to the San Francisco, Oakland, and San Jose international airports. The City also boasts easy access to the Port of Oakland, the fourth-busiest container port in the U.S.

The City leveraged its strategic location and natural assets to become a regional hub for commerce and trade. Today, Hayward is home to more than 7,000 businesses, ranging from family-owned retail shops and restaurants, to globally recognized manufacturers, distributors, and retailers. The City's key industries include:

- Advanced and specialized manufacturing;
- Clean and green technology;
- Food and beverage manufacturing;
- Life science and biotechnology; and

- Transportation and logistics.

The City's Industrial Corridor is a large crescent-shaped area of industrial-zoned land located along the City's western and southwestern boundaries. This roughly nine square miles of land is home to more than 5,100 businesses that employ nearly 47,500 workers. Per the City's General Plan, this corridor is expected to grow as an economic and employment center and evolve to achieve a healthy balance of traditional manufacturing and information- and technology-based uses.

## ***Project Background***

The City's adopted [Economic Development Strategic Plan \(FY 2014-2018\)](#) tasks staff to "explore a public/private partnership to secure broadband/fiber optic network in the industrial area." To achieve this task, which is programmed over the duration of the five-year plan, Economic Development staff developed, and is actively executing, a comprehensive work plan designed to meet near- and long-term needs. Core elements of this program include:

1. Collecting data on existing broadband resources and business needs;
2. Engaging with technology and service providers to identify each organization's plan or willingness to expand service to the Industrial Crescent and explore potential public-private partnerships;
3. Pursuing funding opportunities including federal economic development and public works grants for network design and construction; and
4. Developing a Fiber Master Plan to guide the City in planning, budgeting and implementing a telecommunications infrastructure project.

The ability to add this infrastructure to Hayward's Industrial Crescent will serve as a competitive advantage over other communities. Improved broadband connectivity in the City's industrial areas will support business attraction efforts. While the existence of fiber is only one of many site selection factors (such as lease rents, building configuration, traffic patterns, etc.), being able to market Hayward's broadband connectivity to the business community at-large not only helps satisfy a site selection criterion, it will strengthen the City's reputation as a center for innovation and growth.

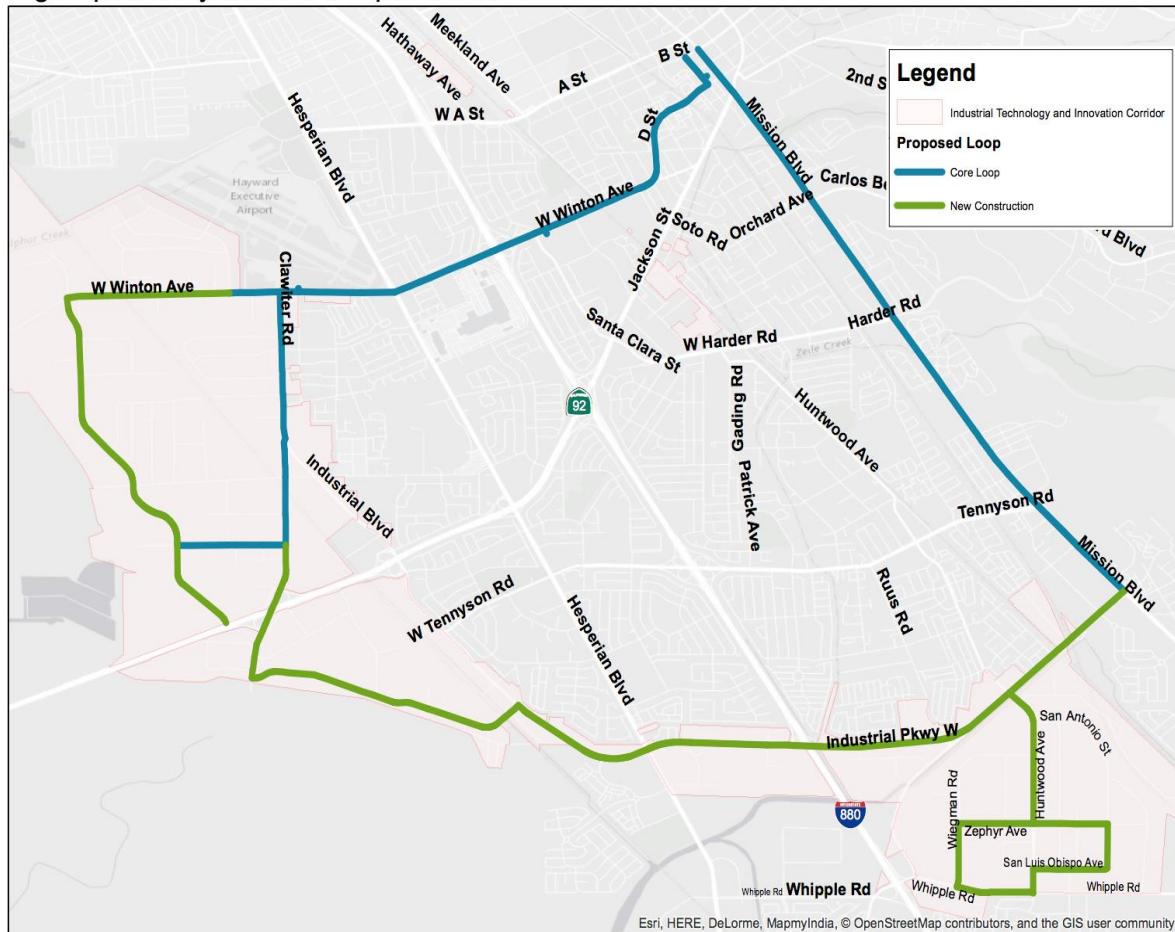
### ***Economic Development Administration Fiber Network Construction Grant***

In late 2016, the City was awarded a \$2.74 million grant by the U.S. Department of Commerce - Economic Development Administration to construct a fiber optic network in the Industrial Corridor. This system will serve as a backbone for a broader fiber network and will consist of existing infrastructure and newly constructed conduit and fiber. Specifically, this network must meet the following minimum specifications:

- Consist of 11 miles of high speed fiber optic cabling
- Include the installation of 97 pull boxes on 600 ft. intervals
- Install at least 3 railroad crossings and one major highway crossing.

The exhibit on the following page illustrates the route for the proposed 11-mile fiber loop.

## High-Speed Hayward Fiber Optic Network



The City has five (5) years to complete this project. Construction is scheduled to commence by October 2017 and must be complete by October 2020. However, it is anticipated that the timeline be extended due to timing concerns, Union Pacific and Caltrans permitting processing, and design guideline approvals.

### **Fiber Master Plan Formation**

In April 2016, the City initiated the formulation of a Fiber Optic Master Plan (Fiber Master Plan) to collect the data needed to analyze and recommend the most feasible path and business model to deploy a network with an initial emphasis on serving businesses in the Industrial Technology and Innovation Corridor. A draft plan was presented to City Council in January 2017 and a Final Plan is anticipated to be adopted by the Fall of 2017. The Draft Fiber Master Plan is [available at this hyperlink](#).

The most significant recommendation of the Draft Fiber Master Plan is the adoption of a business model to deploy a fiber optic network that meets the community's goals and reduces risk to the City. The plan recommends the City adopt a dark fiber business model in which fiber considered a type of infrastructure that the City manages and maintains. This approach involves the City installing the conduit and fiber required to deploy a network and providing one or more private partners with a license or lease to use the City-owned fiber. This partner then "lights" the fiber and offers services to end users.

### **Draft Fiber Network Technical Standards**

Prior to the issuance of a Request for Proposals for design and build of the fiber optic network funded by the EDA grant discussed above, the City seeks input from stakeholders on the technical specifications and design standards. The Draft Fiber Master Plan outlines the following technical specifications for construction of the network:

1. Four two-inch conduit, minimum SDR 11 High-density polyethylene (HDPE), each of a separate color or unique striping to simplify identification of conduits within vaults and between vaults, in the event conduit must be accessed or repaired at intermediate points. Conduit count can be reduced if the Industrial Corridor is assessed not to justify the capacity.
2. Composite anti-theft vaults having dimensions of 30" x 48" x 36" (W x L x D), placed in the sidewalk or available green space within the city or municipality ROW, as close to the curb or gutter as possible.
3. Vaults spaced at intervals of 600 feet or less, typically at the intersection of a city or municipality block.
4. Sweeping conduit bends with a minimum radius of 36 inches to allow cable to be pulled without exceeding pull-tension thresholds when placing high-count fiber cables (e.g., 864- count).
5. Conduit placed in the same trench directly above the excavator's infrastructure or, where this is not possible, placed with minimum horizontal offset, to minimize cost.

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## **Section II—Information Required**

The objective of this RFI is to solicit input to develop a set of standards that meets the needs of potential leasers or users of city-owned conduit and fiber. Therefore, the City requests feedback from interested parties on the draft standards listed in the previous section and requests responses on the following factors:

1. **Capacity**—What are the conduit and fiber needs of internet service providers or related vendors? Specifically for conduit, what size, type, interduct, etc. should be installed to accommodate future users' needs? For fiber, what fiber count and type should be installed?
2. **Segmentation**—Users need to have the appropriate level of separation from each other for commercial, security, or operational reasons.
3. **Access**—Vaults and handholes need to be placed to provide access to conduit and the ability to pull fiber. What are preferred distances and design characteristics of vaults for minimizing the cost of extending conduit to buildings
4. **Robustness**—What materials, construction standards, and placement needs exist to reasonably protect the fiber, and not unduly complicate maintenance and repairs?
5. **Architecture**—What conduit weeps, bend radius, and vault sizes need to be appropriate to meet provider demands?

6. **Other** – What other design criteria or issues should the City examine to ensure standards meet the needs of providers?

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## Section III—Submittal Instructions

### Submittals Requirements

The City of Hayward is asking interested parties to submit a response containing the following information:

1. Brief history of your firm and identification of a point of contact.
2. Brief description of experience providing similar services/supplies.
3. Responses to questions outlined in Section II.
4. Any other pertinent information or materials that support design decision-making.

### Due Date

Interested parties may submit an electronic PDF of all materials by July 28, 2017, 5:00 p.m. to the following point of contact:

Paul Nguyen, Economic Development Specialist  
City of Hayward  
777 B Street  
Hayward, CA 94541  
Ph. 510/583-5545  
[Paul.Nguyen@hayward-ca.gov](mailto:Paul.Nguyen@hayward-ca.gov)

### Communication Regarding This RFI

All communication from prospective respondents regarding this RFI must be in writing by email to Paul Nguyen, Economic Development Specialist ([Paul.Nguyen@Hayward-CA.gov](mailto:Paul.Nguyen@Hayward-CA.gov)) communication by telephone or in person will not be accepted.

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## Section IV—Next Steps

City will evaluate all responses to this RFI and work to develop a set of standard specifications. RFI respondents may be engaged individually to provide clarification and additional feedback.

Following establishment of general design standards, the City intends to issue a Request for Proposals (RFP) for the design and construction of the fiber optic network

All materials submitted in response to this RFI become the property of the City of Hayward and thus become public records of which may be subject to public review.

END OF REQUEST FOR INFORMATION