

**CITY COUNCIL MEETING
TUESDAY, JANUARY 24, 2017**

PRESENTATIONS

Item #5 WS 17-003

Draft Fiber Master Plan



DRAFT FIBER MASTER PLAN

Micah Hinkle, Economic Development Manager
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Paul Nguyen, Economic Development Specialist

January 24, 2017

High-Speed Hayward Activities Update



- ▶ Executing work program to establish a fiber-optic network loop to serve the Industrial Crescent

**1. Data
Collection &
GIS**

COMPLETE

**2. Foster
Public-Private
Partnerships**

UNDERWAY

**3. Pursue
Funding
Opportunities**

UNDERWAY

**4. Develop
Fiber Master
Plan**

UNDERWAY

3. Pursue Funding



- ▶ Submitted \$2.7M U.S. EDA grant application in June 2015
- ▶ Application moved forward to FY 2016
- ▶ EDA announces \$2.74M award September 2016
- ▶ Currently establishing federal reporting protocols and schedule

NEED • COMMITMENT • CAPACITY High-Speed Hayward Fiber Optic Network

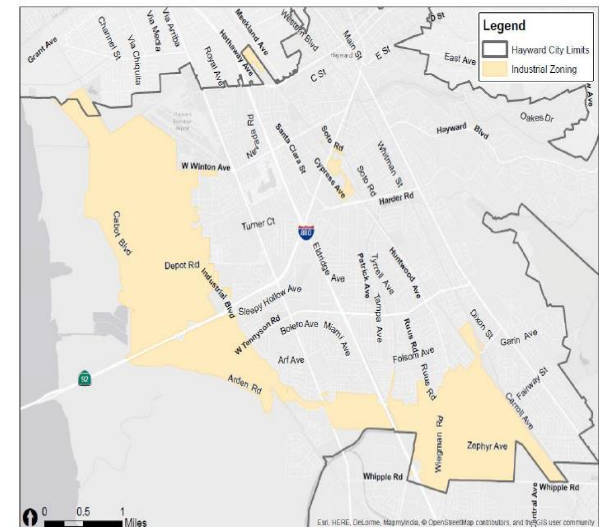
Project Location

The proposed project, a fiber-optic internet network, will be located within the City's Industrial Innovation and Technology Corridor.

Illustrated below, this corridor consists of nine-square miles of industrial-zoned land located along the Hayward's western and southwestern boundaries. This "industrial crescent" is home to 5,167 businesses that employ an estimated 47,523 workers.² The area includes over 42 million square feet of industrial buildings; approximately 4 percent or 1.6 million square feet is vacant. With an average age of 38 years, many of these buildings are underutilized and prime for repositioning given the current market demand for modern space.

Today, Hayward's Industrial Innovation and Technology Corridor is home to 5,167 businesses and 47,523 workers.

Exhibit 1: City of Hayward Industrial Technology and Innovation Corridor



4. Develop Fiber Master Plan



- ▶ Master Plan ensures fiber optic network is strategically planned, designed, constructed, and managed

Action	Date
✓ RFP & Consultant Selection	Sept. 2015 – Feb. 2016
✓ Council Authorizes Contract	February 23, 2016
✓ Contract Initiation	April 2016
✓ Staff Review of Drafts	August 2016 – January 2017
✓ Updates to CEDC	Sept. 2015, Feb. 2016, Oct. 2016
✓ Updates to CTAC	Oct. 2015, Dec. 2015, Nov. 2016
✓ Council Consideration of Draft Master Plan	January 24, 2017

Next Steps...



- ▶ Revise Draft Master Plan based on Work Session comments
- ▶ Return for Council Adoption
- ▶ Develop Fiber Grant Implementation Plan
- ▶ Initiate Scoping for Resource Requirements to Implement short and long-term recommendations.

Introduction to CTC Energy & Technology



- ▶ Joanne Hovis, President
- ▶ Thomas Asp, Principal Engineer
- ▶ Broadband/Fiber Master Planning for:
 - ▶ City of Palo Alto
 - ▶ City and County of San Francisco
 - ▶ City of Vallejo
 - ▶ City of Santa Cruz



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Fiber Optic Master Plan

City of Hayward, CA

January 24, 2017



Master Plan Objectives

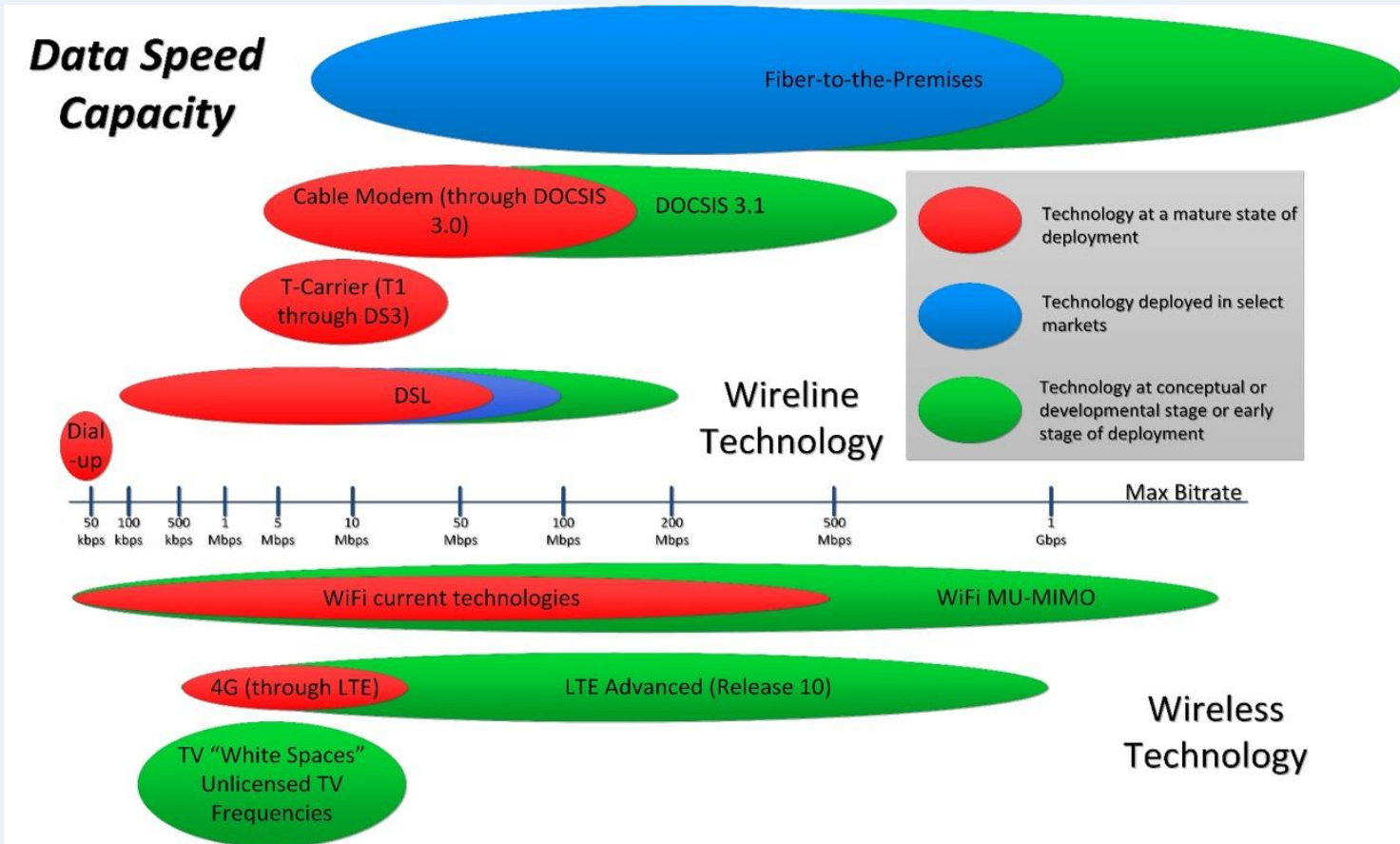
- Outline best potential path and business model to deploy a fiber optic network
- Emphasize the Industrial Corridor
 - Improved consumer choice for data connection (including Internet)
 - Economic Development
 - Job Creation within the community



Hayward Today

- Hayward is served similarly to comparable markets.
 - Some gaps in available service
 - Selected businesses have access to fiber-based connectivity or alternative technologies
- Hayward is ahead of similar cities
 - By simply commissioning this Master Plan, the City has set itself apart from many of its peers.
- Our recommendations outline potential steps the City can take increase broadband availability—especially to businesses—and thereby potentially advance its standing in a global economy.

Technology Capacity





Recommendations

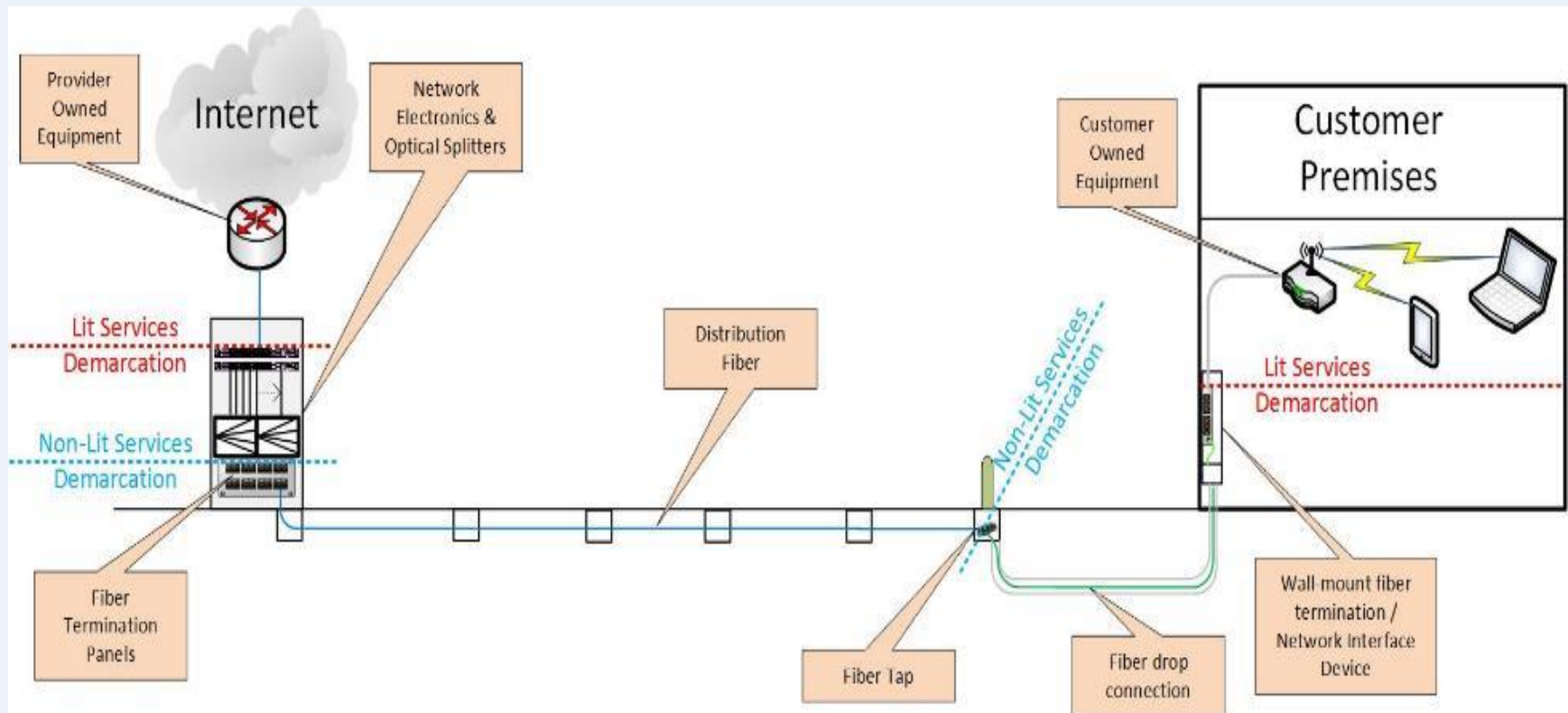
- Concentrate on the Industrial Corridor
- Consider a “Dark fiber” Public–Private Partnership model
 - City owns fiber
 - Private partner “lights” network and provides services to end users



Potential Business Models

- **Dark Fiber Model (Lowest Risk)**
 - City owns fiber, partner “lights” fiber and offers services to end users
- **Wholesale Services Model (Moderate Risk)**
 - City owns and “lights” fiber, offers services for partner to resell
- **Retail Services Model (High Risk)**
 - City owns and “lights” fiber, offers service to users

Schematic Map of Network Electronics





Dark Fiber Model

City

- Constructs fiber
- Owns fiber
- Maintains fiber
- Provides partner with license to use city-owned fiber

Private Partner

- Pays City per-passing fee
- Provides services users
- Manages:
 - Network electronics
 - Customer premises equipment
 - Customer contracts



Wholesale Service Model

City

- Deploys FTTP network
- “Lights” fiber
- Provides services to private partner
- Manages:
 - Construction and maintenance of fiber
 - Network electronics

Private Partner

- Pays City for services
- Resells services to end customers
- Manages:
 - Customer premises equipment
 - Customer contracts



Retail Service Model

- City deploys FTTP network
- City “lights” fiber
- Maintains network electronics, customer premises equipment, customer relations
- Provides service to end users

City Responsibilities per Model

City Responsibility	Model		
	Dark Fiber	Wholesale Service	Retail Service
Invest in and own outside plant (OSP)	X	X	X
Fund and perform fiber maintenance	X	X	X
Invest in own network electronics		X	X
Replenish network electronics		X	X
Manage electronics vendor contracts		X	X
Purchase and maintain CPEs			X
Marketing and customer acquisition			X
Conduct customer service			X

Cost Projections (Dark Fiber Model)

Cost Component	Total Estimated Cost
OSP Engineering	\$0.5 million
Quality Control/Quality Assurance	0.2 million
General OSP Construction Cost	3.2 million
Special Crossings	0.7 million
Backbone and Distribution Plant Splicing	0.1 million
Backbone Hub, Termination, and Testing	0.5 million
FTTP Lateral Installations	0.2 million
Total Estimated Cost:	\$5.4 million

This cost estimate is in addition to the conduit and fiber installation under the \$2.74 million EDA grant.



Further Recommendations

- City can make significant progress without the additional multi-million investment
 - Modify ROW ordinance to Dig-Once policy
 - Conduct in-depth audit of fiber records, and implement thorough management program
 - Construct segment to the Internet point-of-presence (POP)
 - Begin procurement process (RFI, RFP)
 - Offer dark fiber services to support key customers



Dig-Once Policy

- Modify rights-of-way (ROW) policy to
 - Place conduit or fiber during other projects
 - Utility replacements, road widenings, etc.
- Create construction opportunity
- Reduce construction costs
- Reduce digs and interruptions



Fiber Records and Management

- Conduct thorough evaluation of current fiber management system
- Create/continue using intuitive and straightforward system
- Continue to update “as-built” documents to avoid mistakes
- Appoint outside firm or inside staff to manage system
- Procure contractor for emergencies (fiber cuts, etc.)



Construct fiber to POP

- Construct .3 mile fiber segment to Point of Presence at 25070 O'Neil Ave.
- Allows hosting of services and electronics in datacenter environment
- Accessing multiple ISPs at rates lower than can be achieved at customer premises
- Direct access to peering (VoIP, Netflix, etc.)
- May encourage ISPs to use City fiber network



Procurement Process

- Signal interest to the private sector through release of RFI or RFP
- Describe type of investment required or sought by City
- Allows City to gauge interest from partners
- Provides feedback on price point potential partners may consider



Dark Fiber Services

- Lease strands to high-end customers
- Offer fiber strands between locations on network
- Customer provides electronics to “light” fiber
- City only responsible for fiber maintenance and repair
- Incremental expenses, providing revenue with minimal further investment



Questions

Item #6 WS 17-004

2016 Resident Satisfaction Survey



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City of Hayward: 2016 Resident Satisfaction Survey

December 2016

The City of Hayward commissioned Godbe Research to conduct a survey of residents with the following research objectives:

- Learn their overall perceptions of living in Hayward;
- Gauge their satisfaction with the job the City is doing to provide resident services and programs;
- Gathering feedback on:
 - Satisfaction with City services;
 - Public safety and police services;
 - Public safety facilities;
 - Contacting the City and customer service;
 - Communication and public information;
- Assess support for a bond measure to upgrade City public safety facilities; and
- Identify any differences in voter support due to demographic and/or voter behavioral characteristics.

- Data Collection Landline, cell phone and online interviewing
- Universe 114,843 adult residents in the City of Hayward, with a subsample of those likely to vote in the November 2018 election
- Fielding Dates November 12 through November 22, 2016
- Interview Length 22 minutes
- Sample Size 630 Adult residents ages 18 and older
311 Likely November 2018 voters
- Margin of Error $\pm 3.89\%$ Adult residents
 $\pm 5.53\%$ Likely November 2018 voters

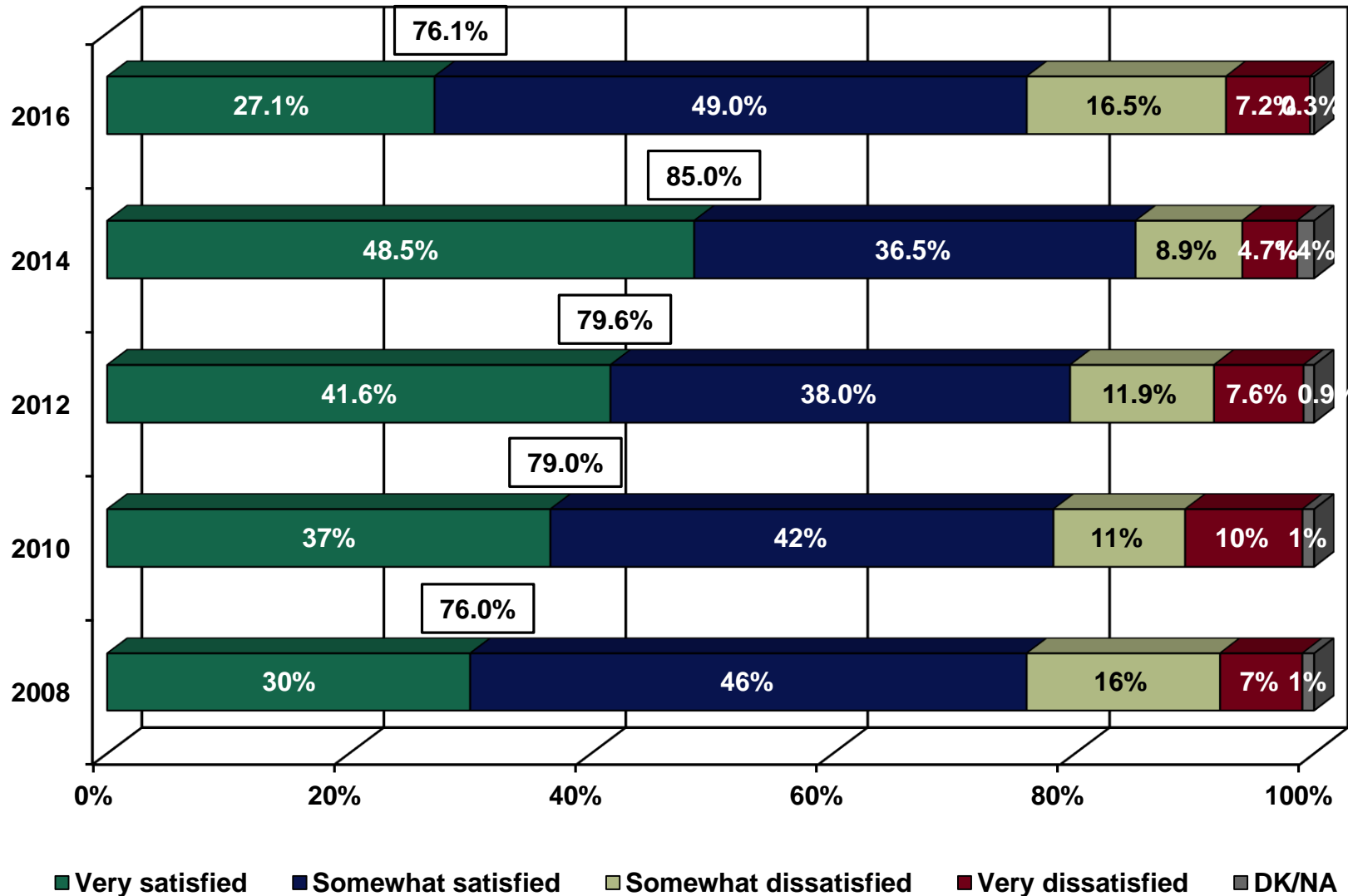


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Living in Hayward

Q1. Satisfaction with Quality of Life



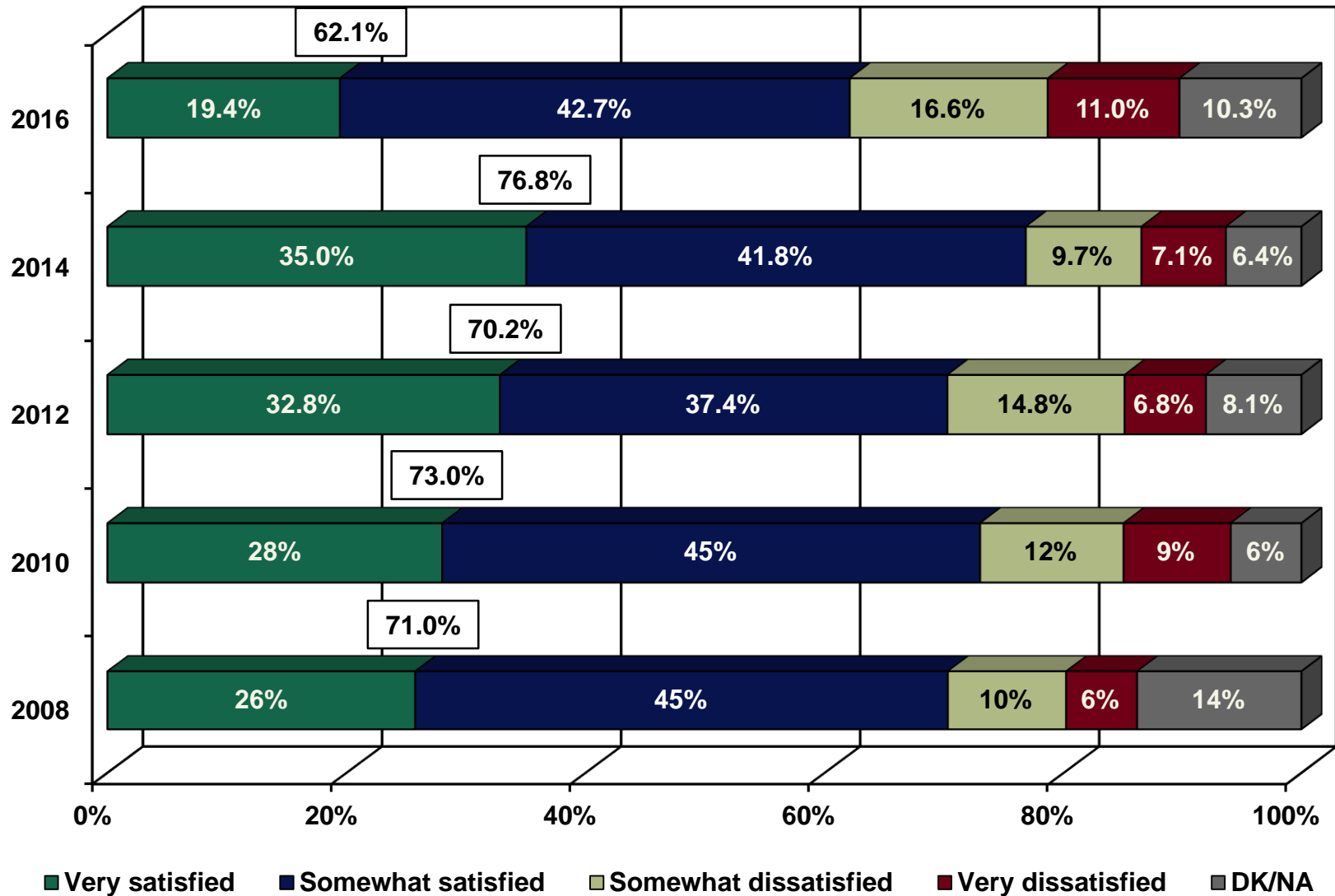


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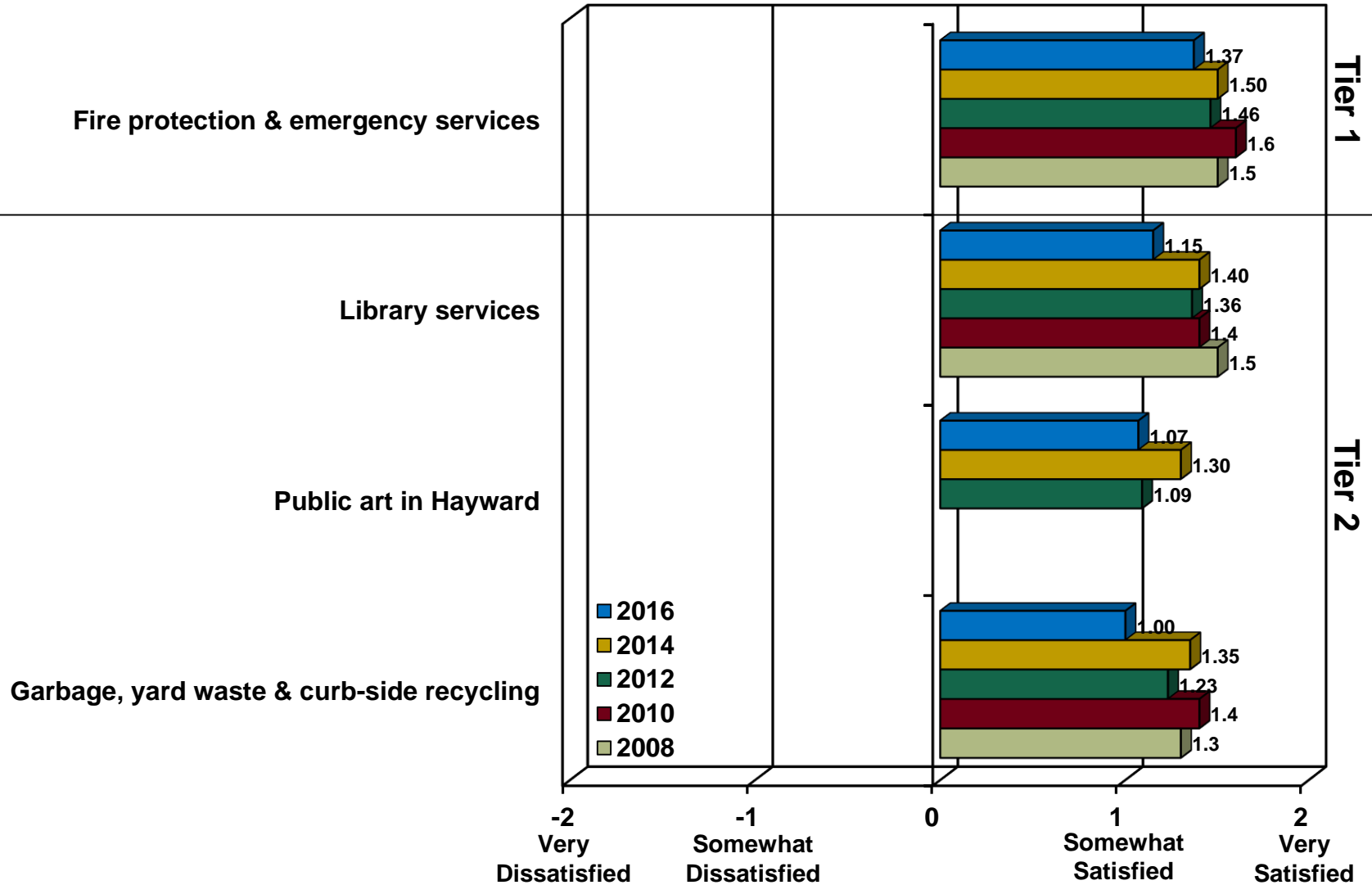


Satisfaction with City Services

Q2. Overall Satisfaction with City Services

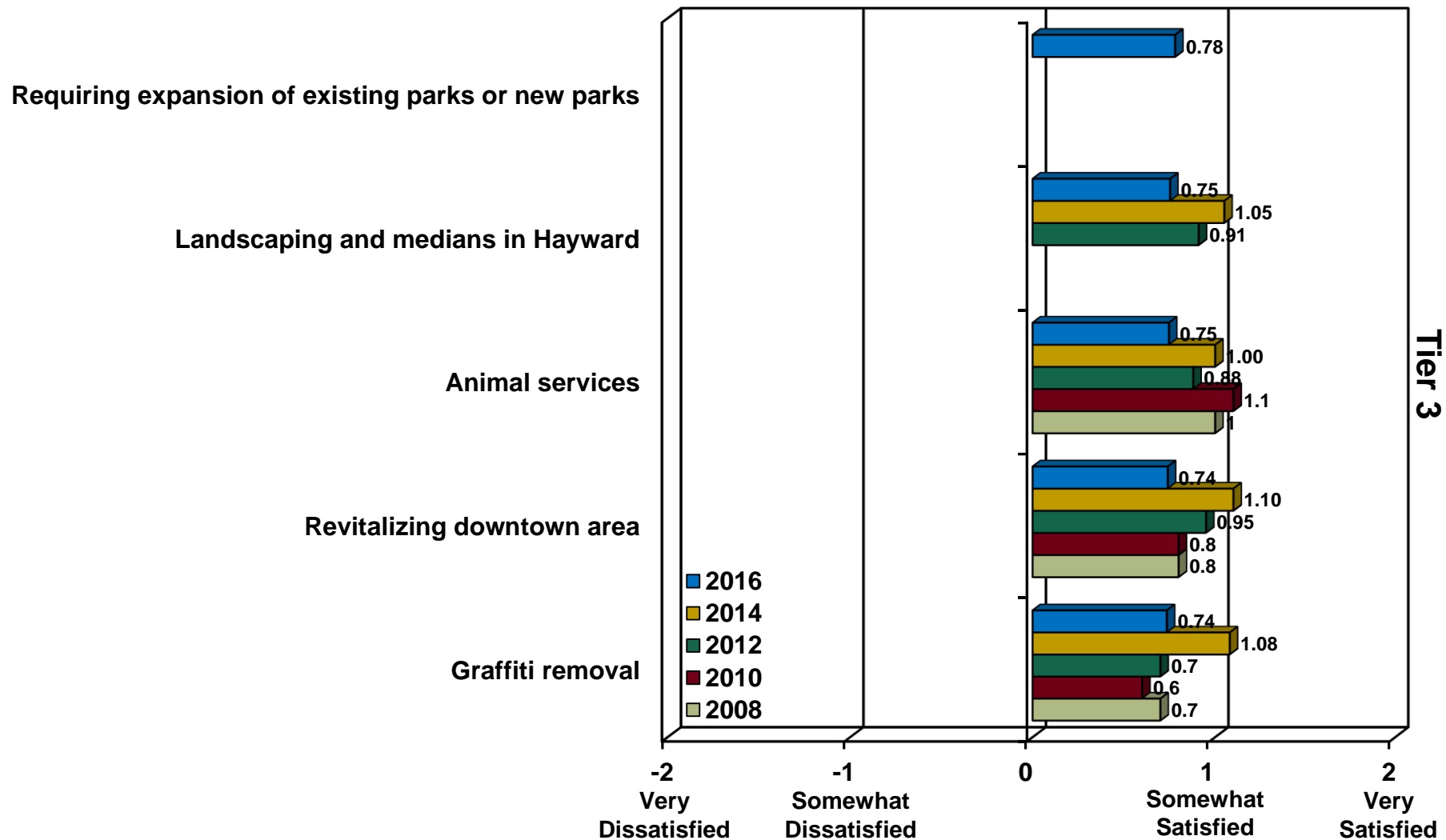


Q3. Ratings of City Services – Tiers 1 and 2



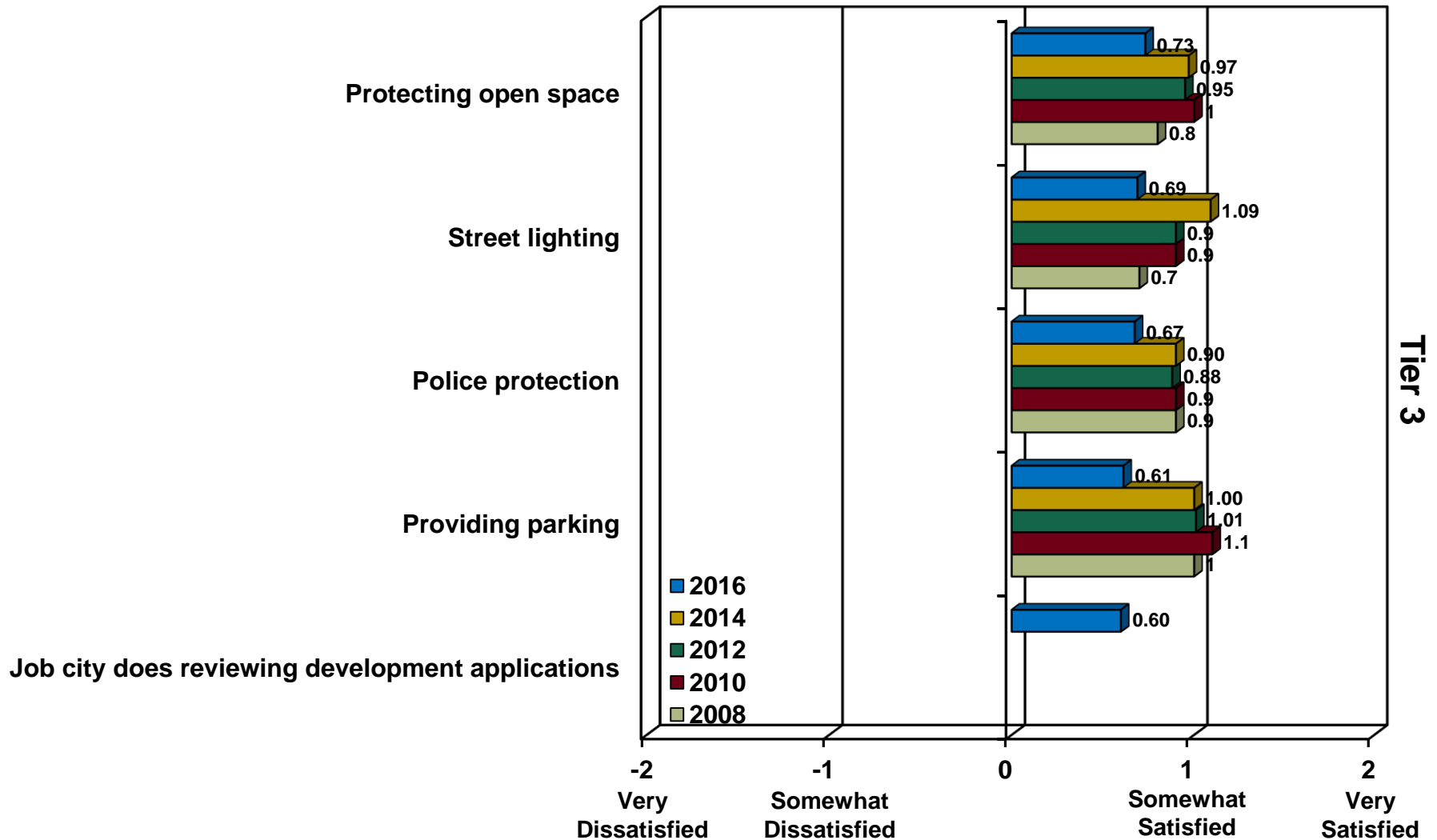
Note: The above rating questions have been abbreviated for charting purposes, and responses were recoded to calculate mean scores: "Very Satisfied" = +2, "Somewhat Satisfied" = +1, "Somewhat Dissatisfied" = -1, and "Very Dissatisfied" = -2.

Q3. Ratings of City Services – Tier 3 (Continued)



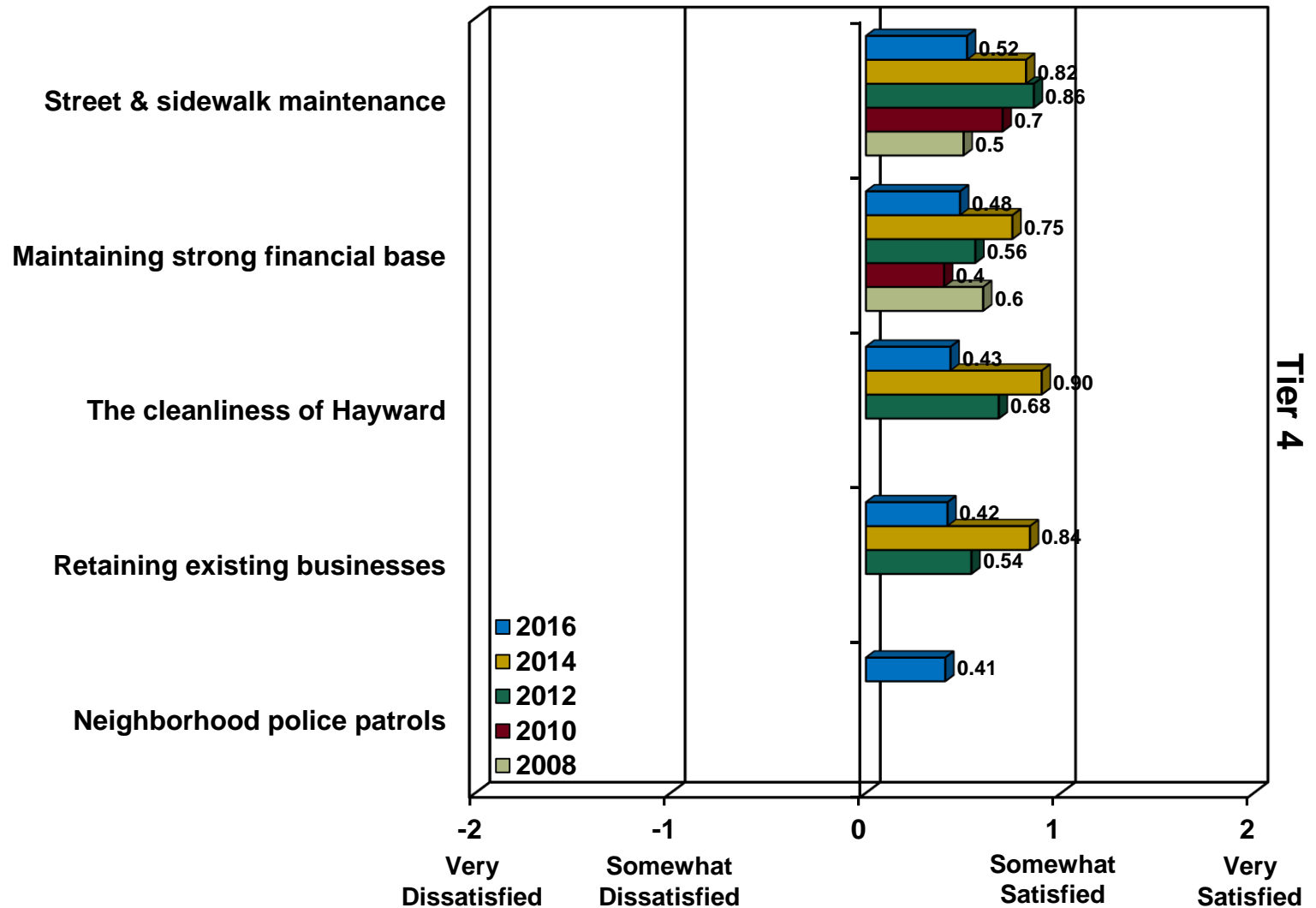
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Q3. Ratings of City Services – Tier 3 continued (Continued)



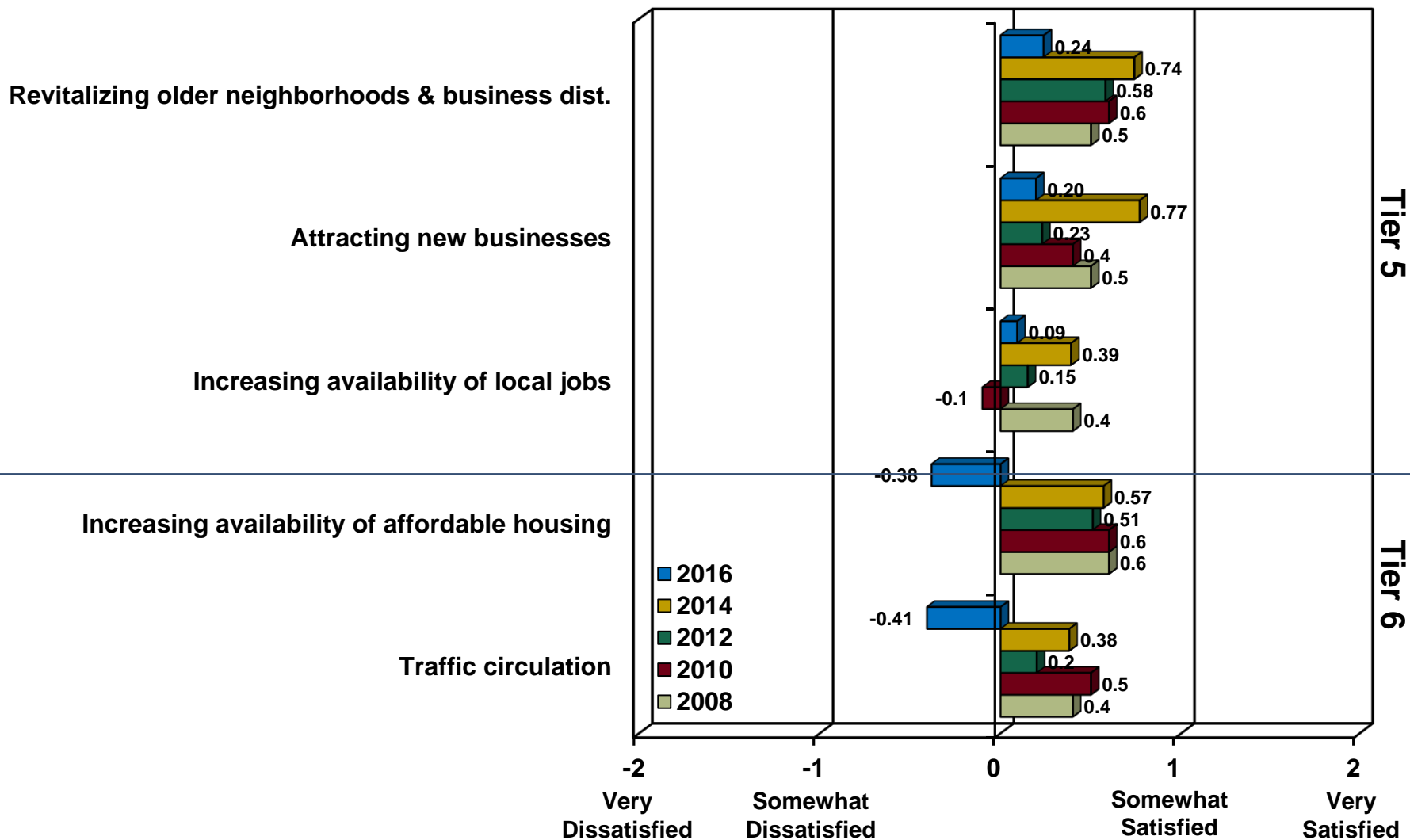
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Q3. Ratings of City Services – Tier 4 (Continued)



Note: The above rating questions have been abbreviated for charting purposes, and responses were recoded to calculate mean scores: "Very Satisfied" = +2, "Somewhat Satisfied" = +1, "Somewhat Dissatisfied" = -1, and "Very Dissatisfied" = -2.

Q3. Ratings of City Services – Tiers 5 and 6 (Continued)



Note: The above rating questions have been abbreviated for charting purposes, and responses were recoded to calculate mean scores: "Very Satisfied" = +2, "Somewhat Satisfied" = +1, "Somewhat Dissatisfied" = -1, and "Very Dissatisfied" = -2.

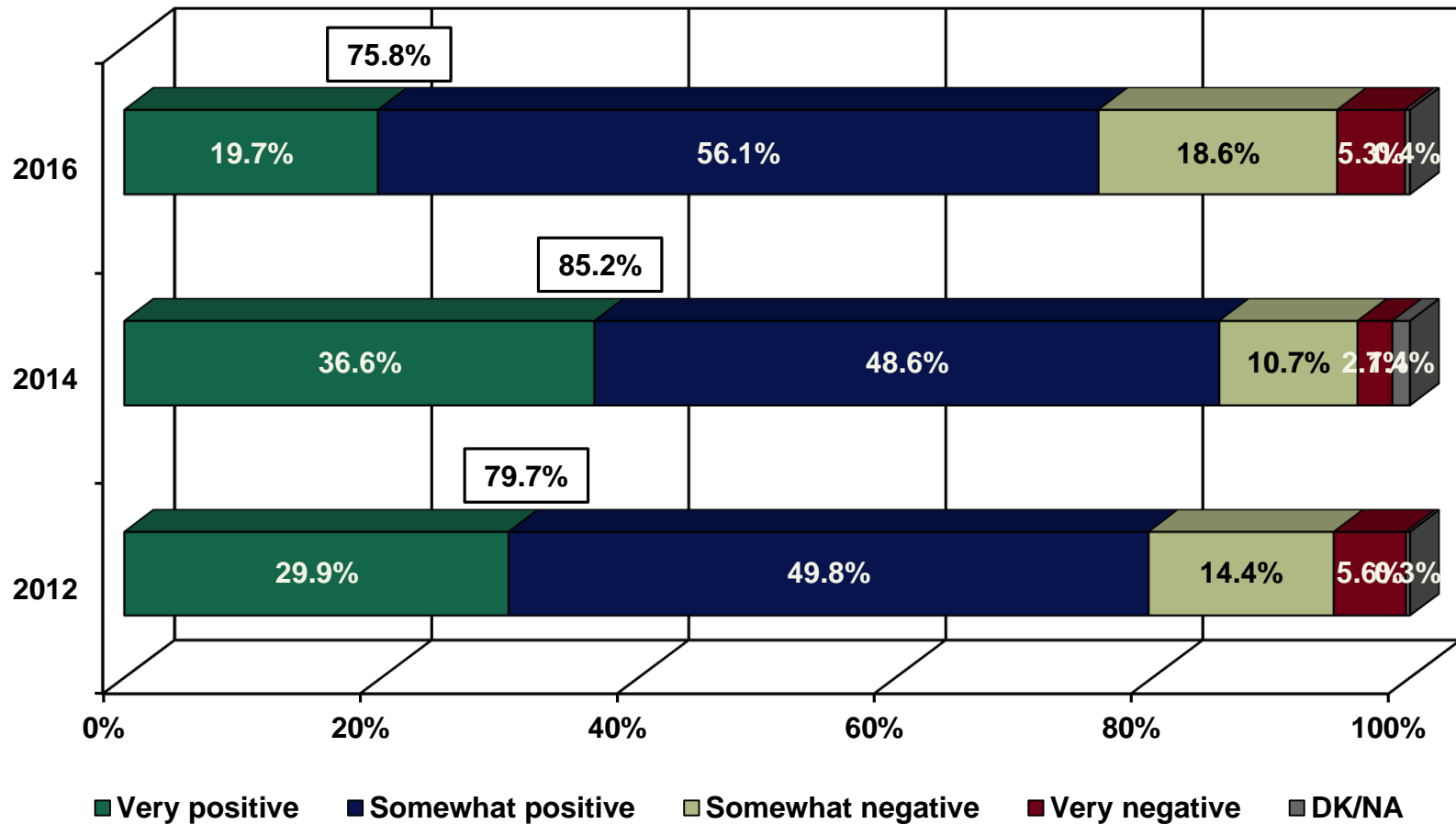


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Hayward Image

Q4. Perceived Image of Hayward



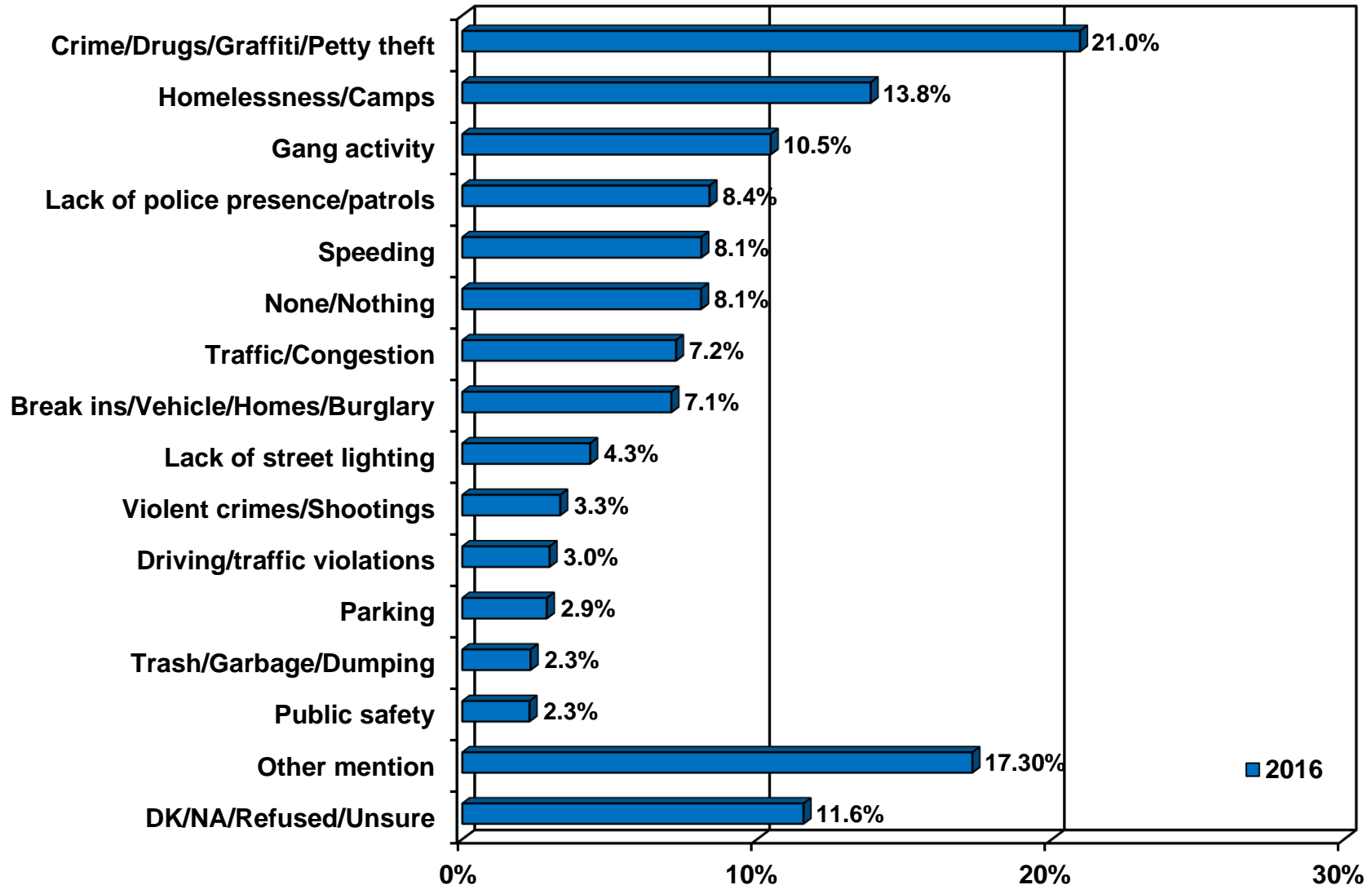


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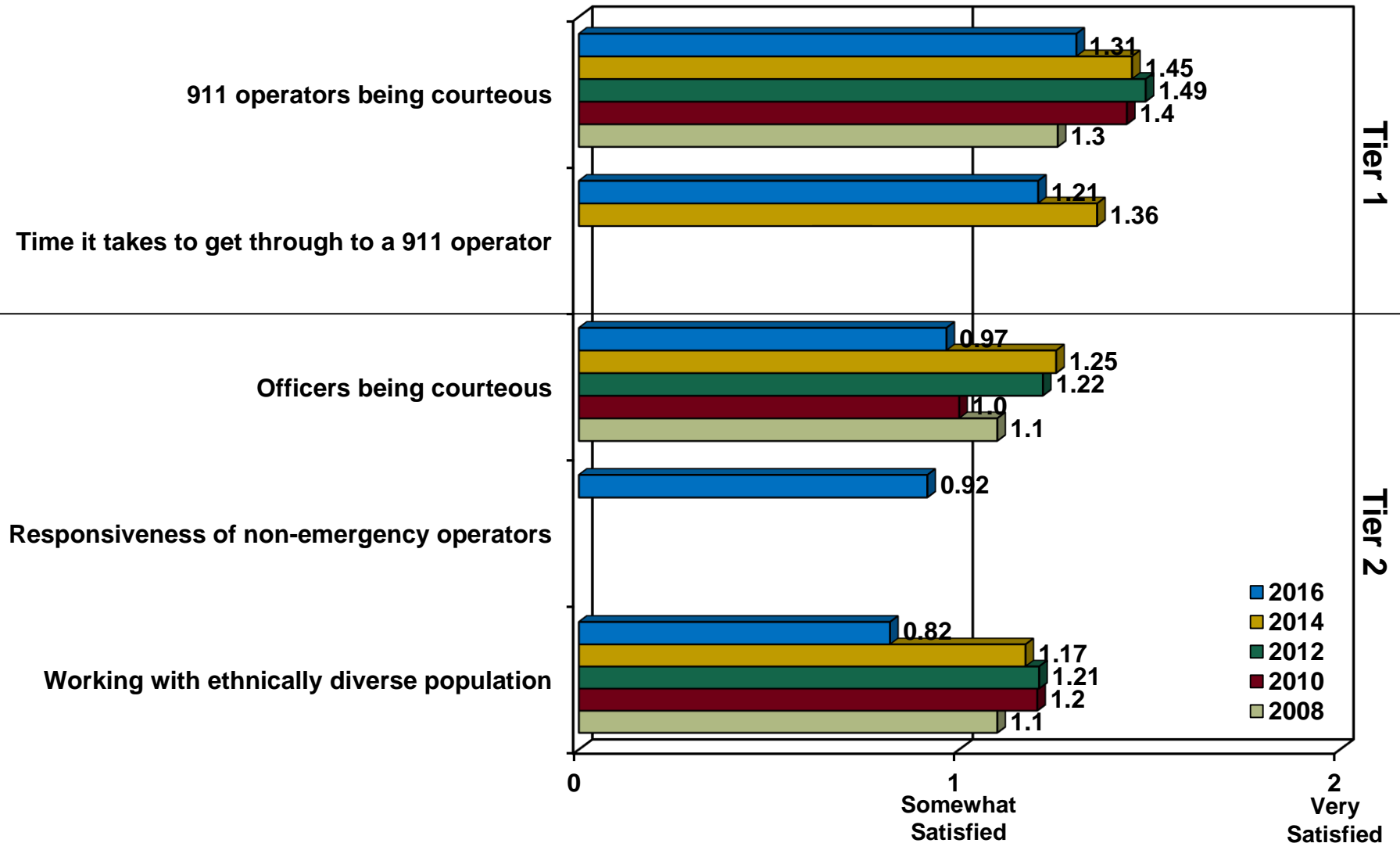
Public Safety and Police Services

Q5. Public Safety Concerns



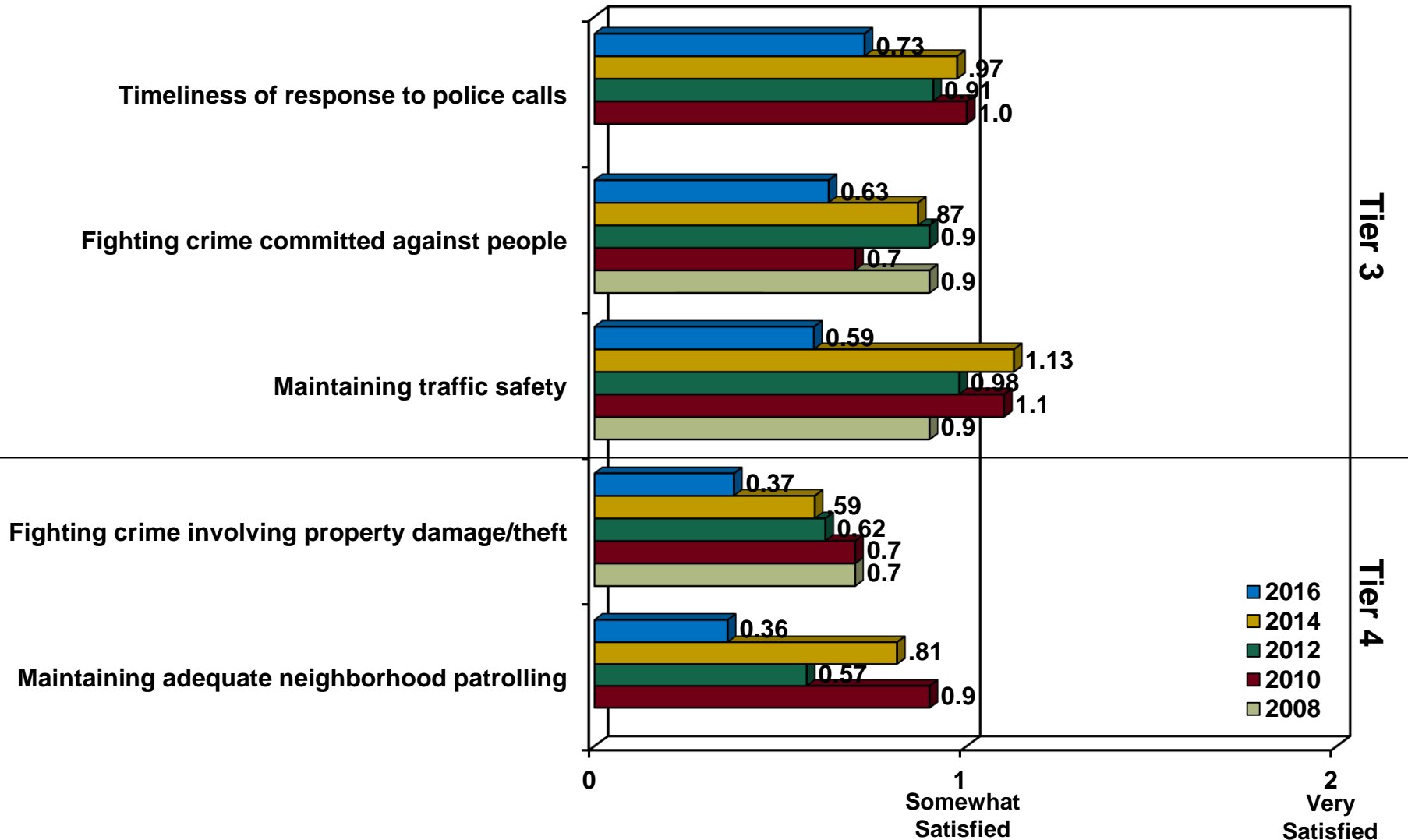
Note: Issues that were mentioned by less than 2 percent of the residents have been added to the "Other mentions" category for charting purposes.

Q6. Satisfaction with Police Services – Tiers 1 and 2



Note: The above rating questions have been abbreviated for charting purposes, and responses were recoded to calculate mean scores: "Very Satisfied" = +2, "Somewhat Satisfied" = +1, "Somewhat Dissatisfied" = -1, and "Very Dissatisfied" = -2.

Q6. Satisfaction with Police Services – Tiers 3 and 4 (Continued)



Note: The above rating questions have been abbreviated for charting purposes, and responses were recoded to calculate mean scores: "Very Satisfied" = +2, "Somewhat Satisfied" = +1, "Somewhat Dissatisfied" = -1, and "Very Dissatisfied" = -2.



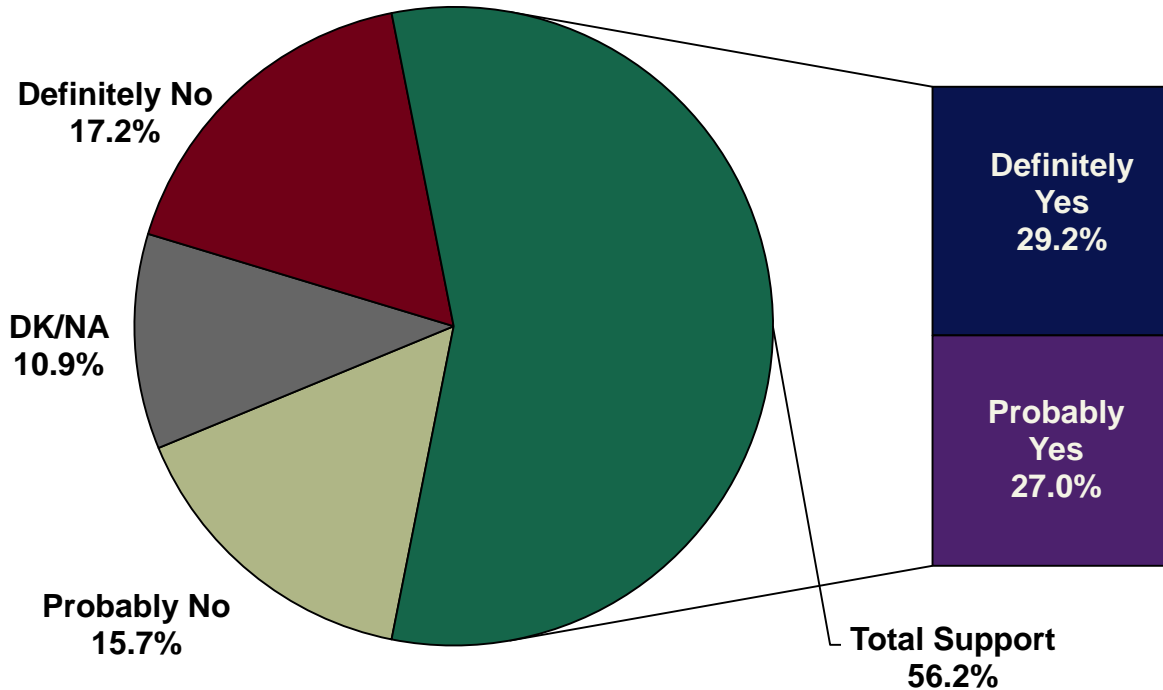
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Public Safety Facilities

Q7. Uninformed Support

November 2018 (n=311)



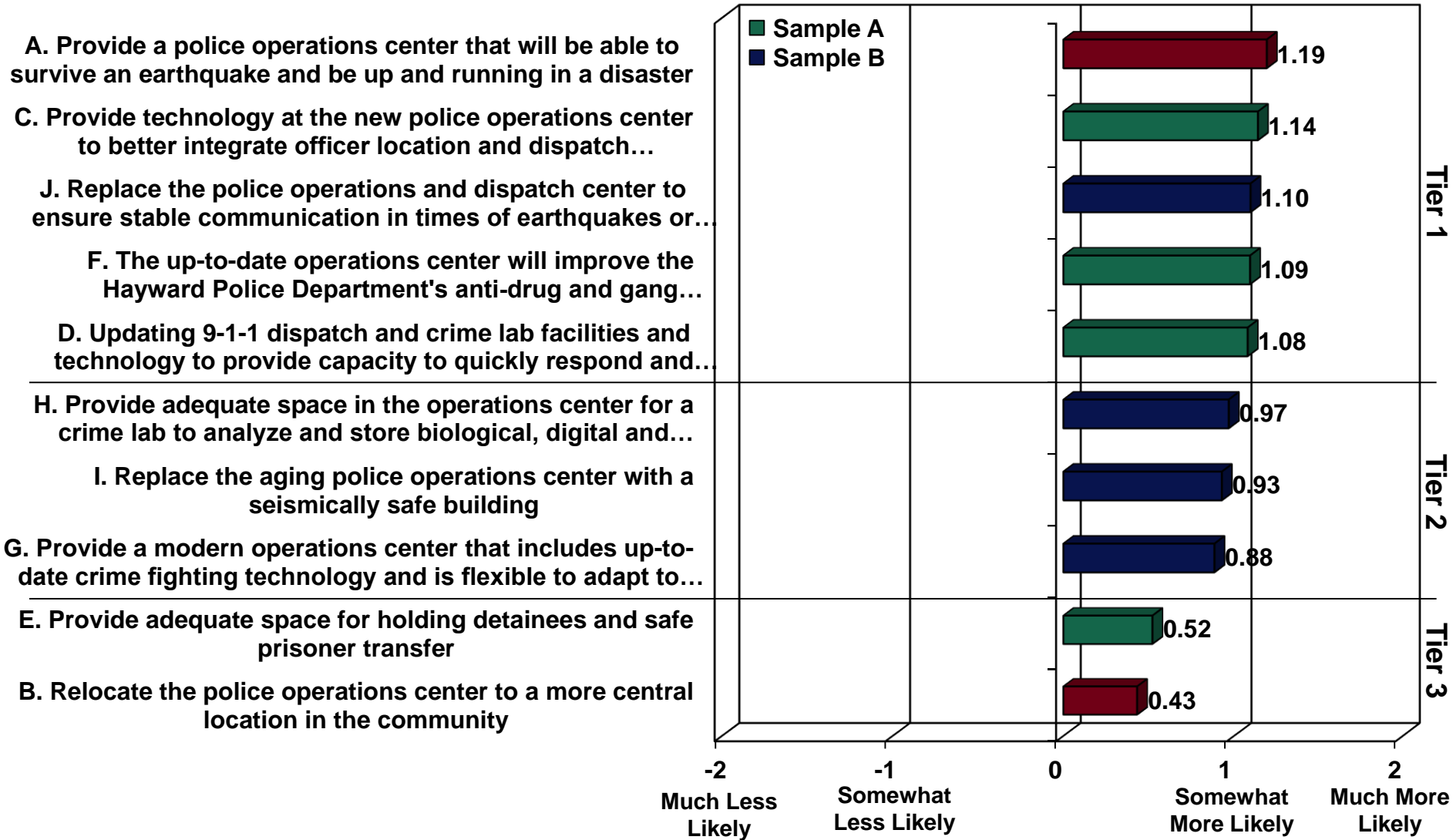
To upgrade City of Hayward public safety facilities, including:

- replacing the aging police operations center with a seismically safe building;
- updating 9-1-1 dispatch and crime lab facilities and technology to provide capacity to quickly respond and improve crime-fighting;

shall the City of Hayward issue \$95 million dollars in bonds, requiring an average debt service of \$10 million dollars annually, for 30 years, by assessing \$52 per \$100,000 of assessed value, requiring independent citizen oversight, project audits, and all funds be spent in the City of Hayward?

Q8. Features of Public Safety Facilities

November 2018 (n=311)



Note: The above rating questions have been abbreviated for charting purposes, and responses were recoded to calculate mean scores: "Much More Likely" = +2, "Somewhat More Likely" = +1, "No Effect" = 0, "Somewhat Less Likely" = -1, and "Much Less Likely" = -2.

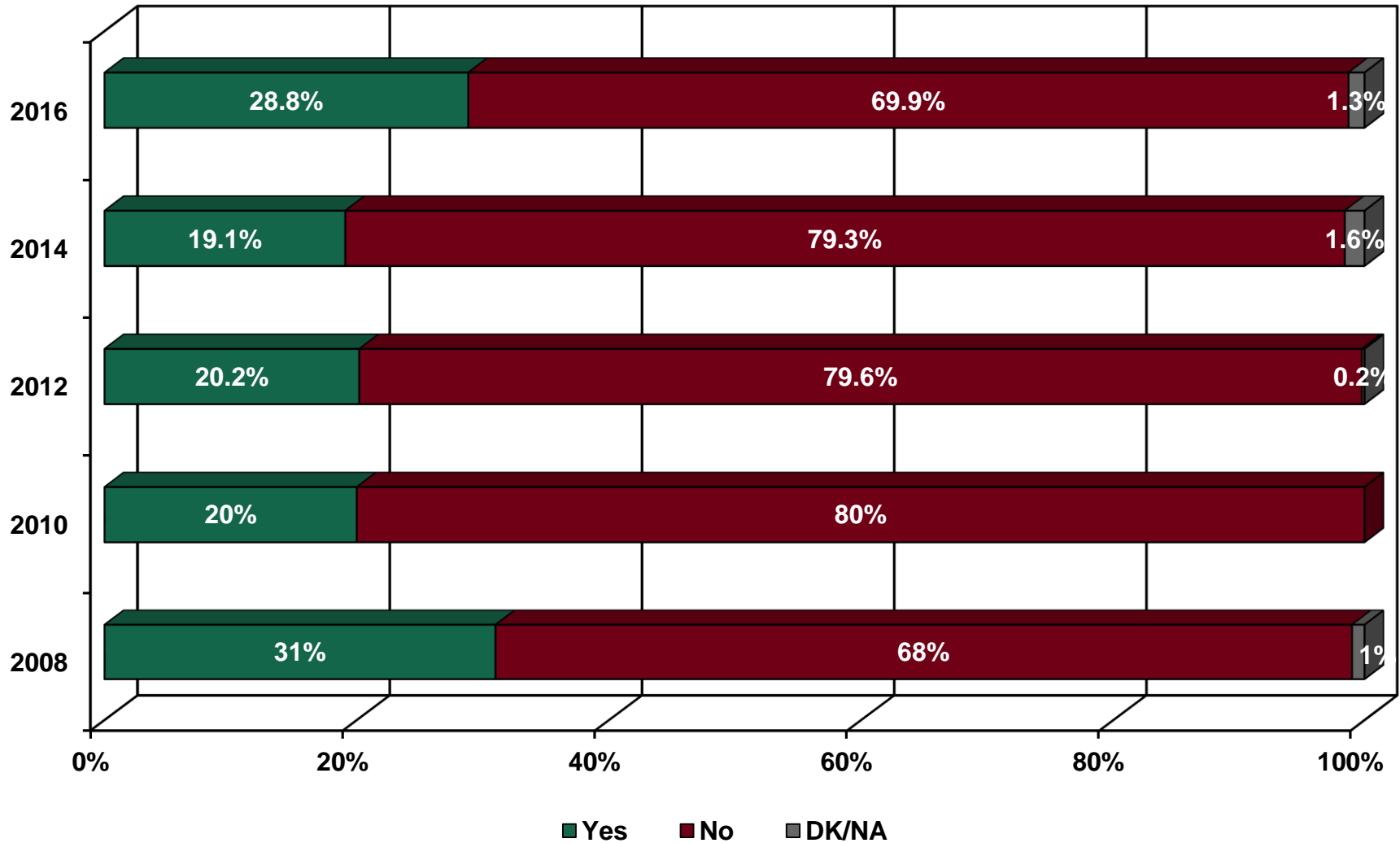


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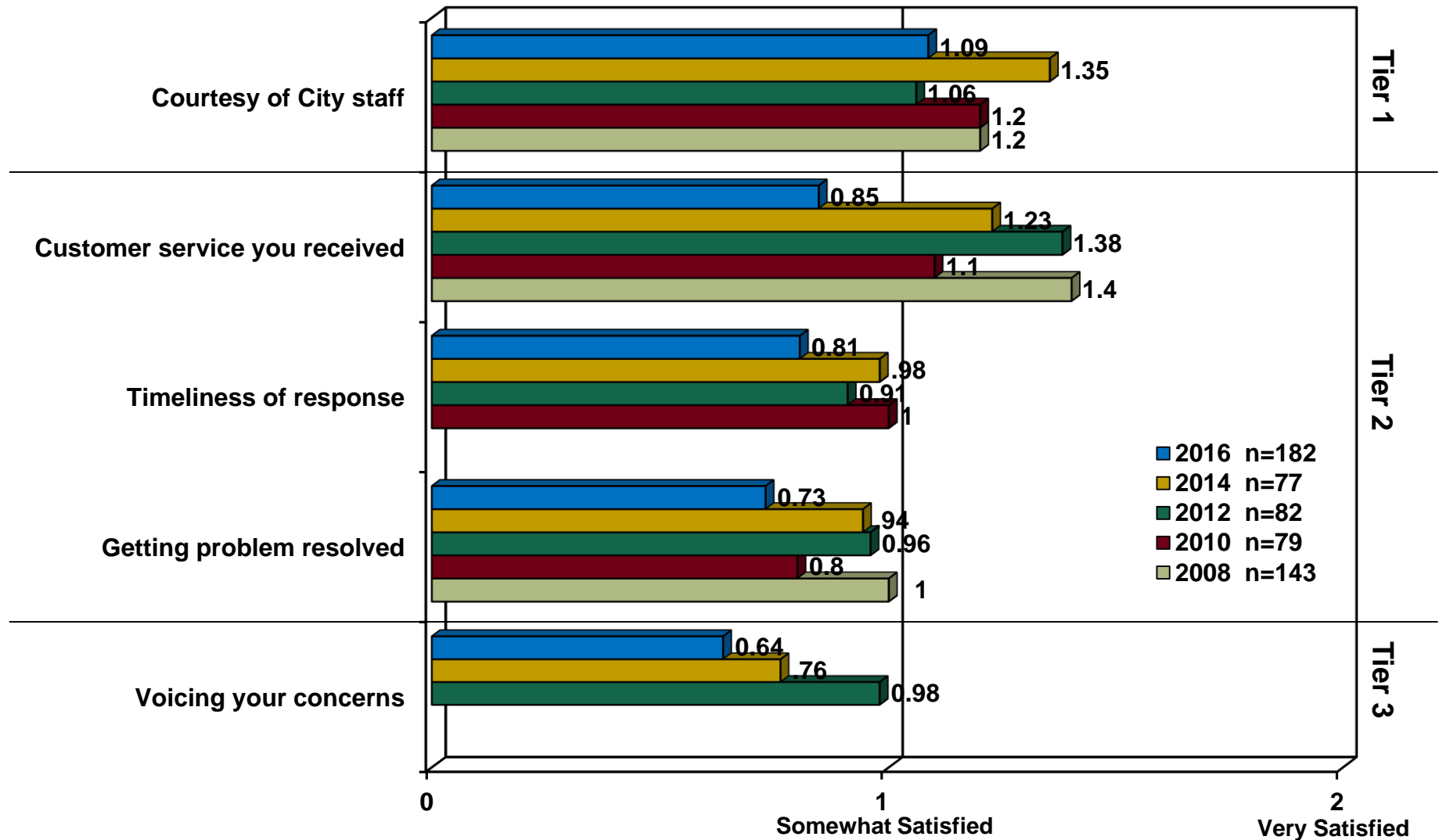


Contacting the City and Customer Service

Q9. Contacting the City

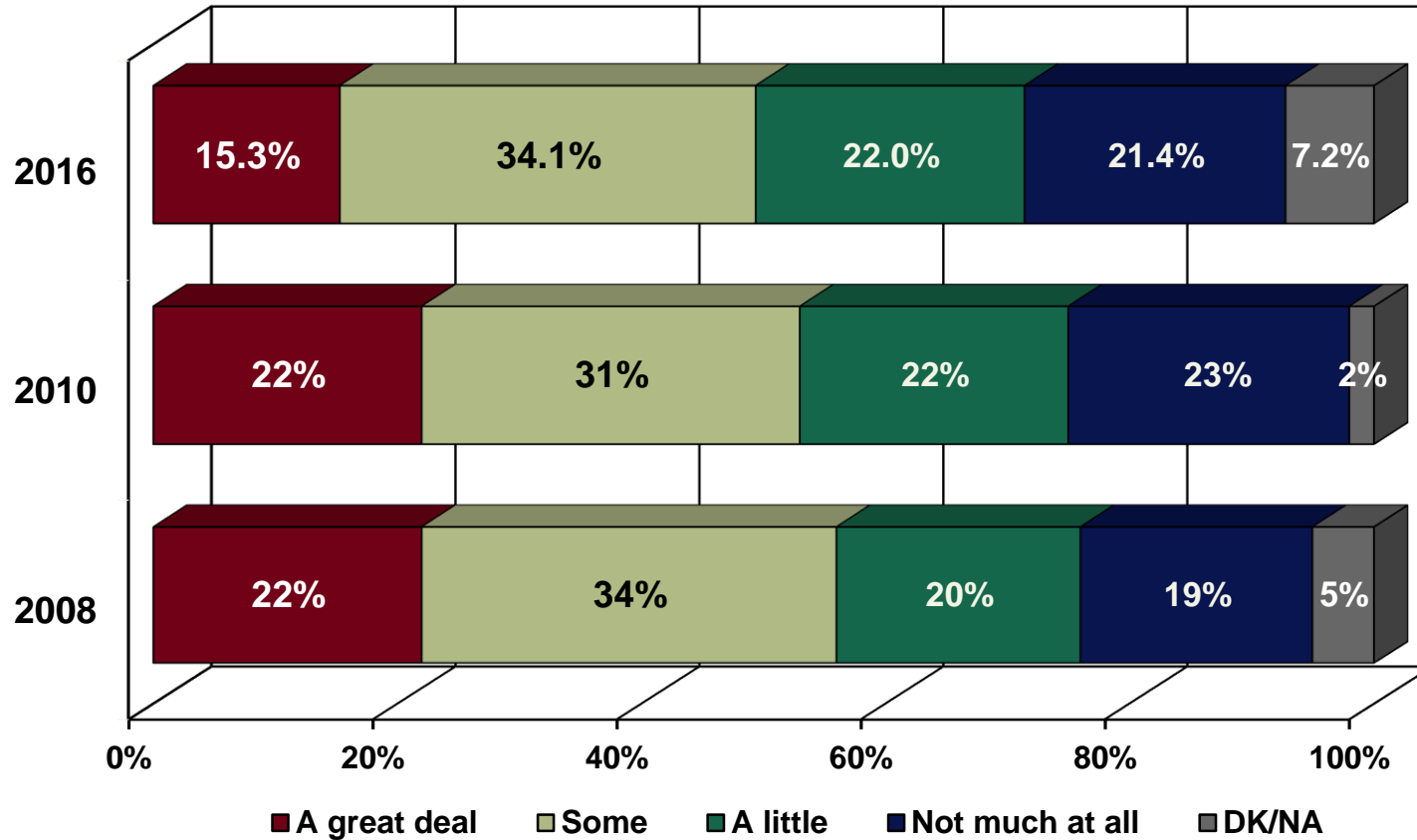


Q10. Customer Service Ratings

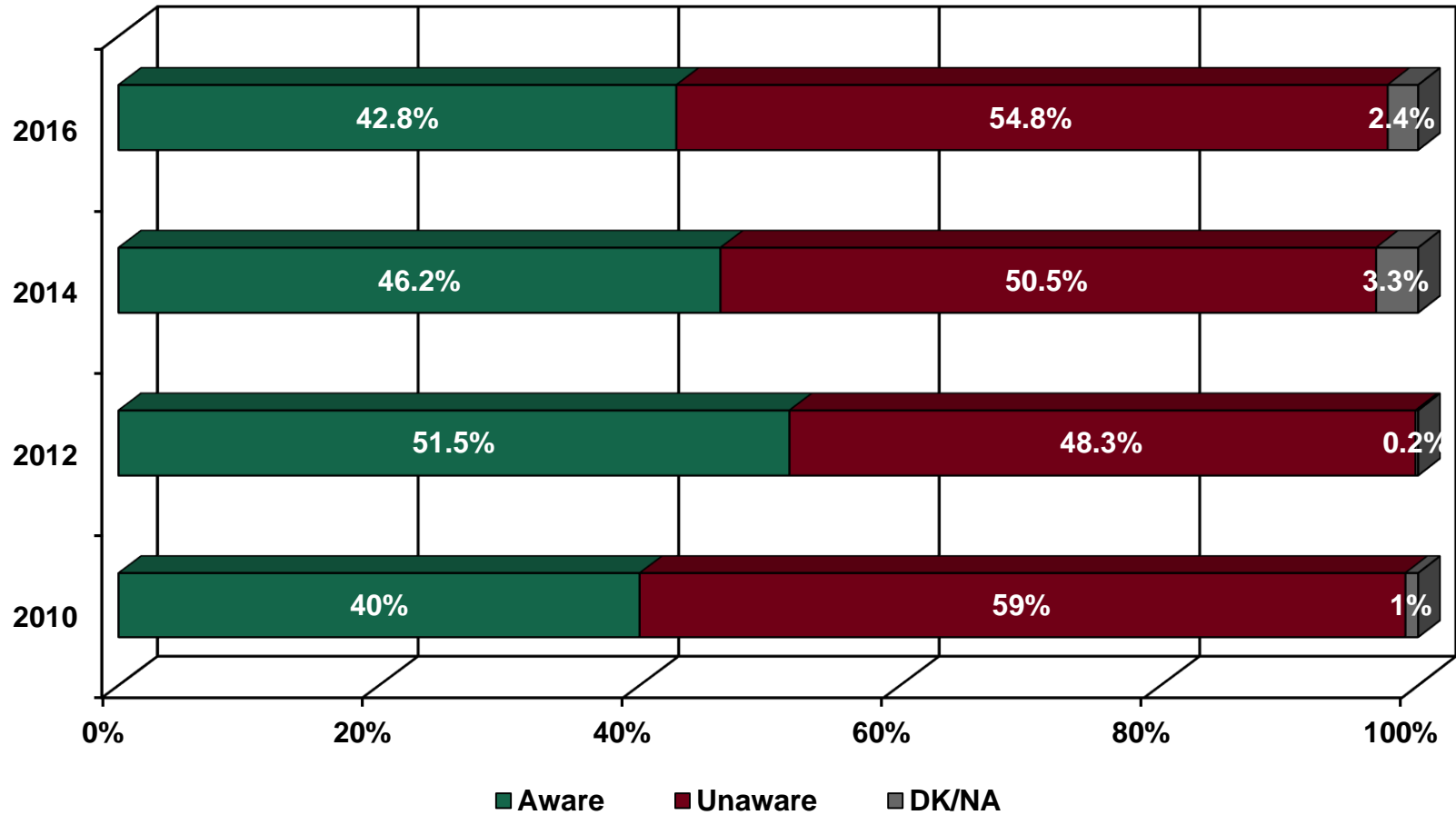


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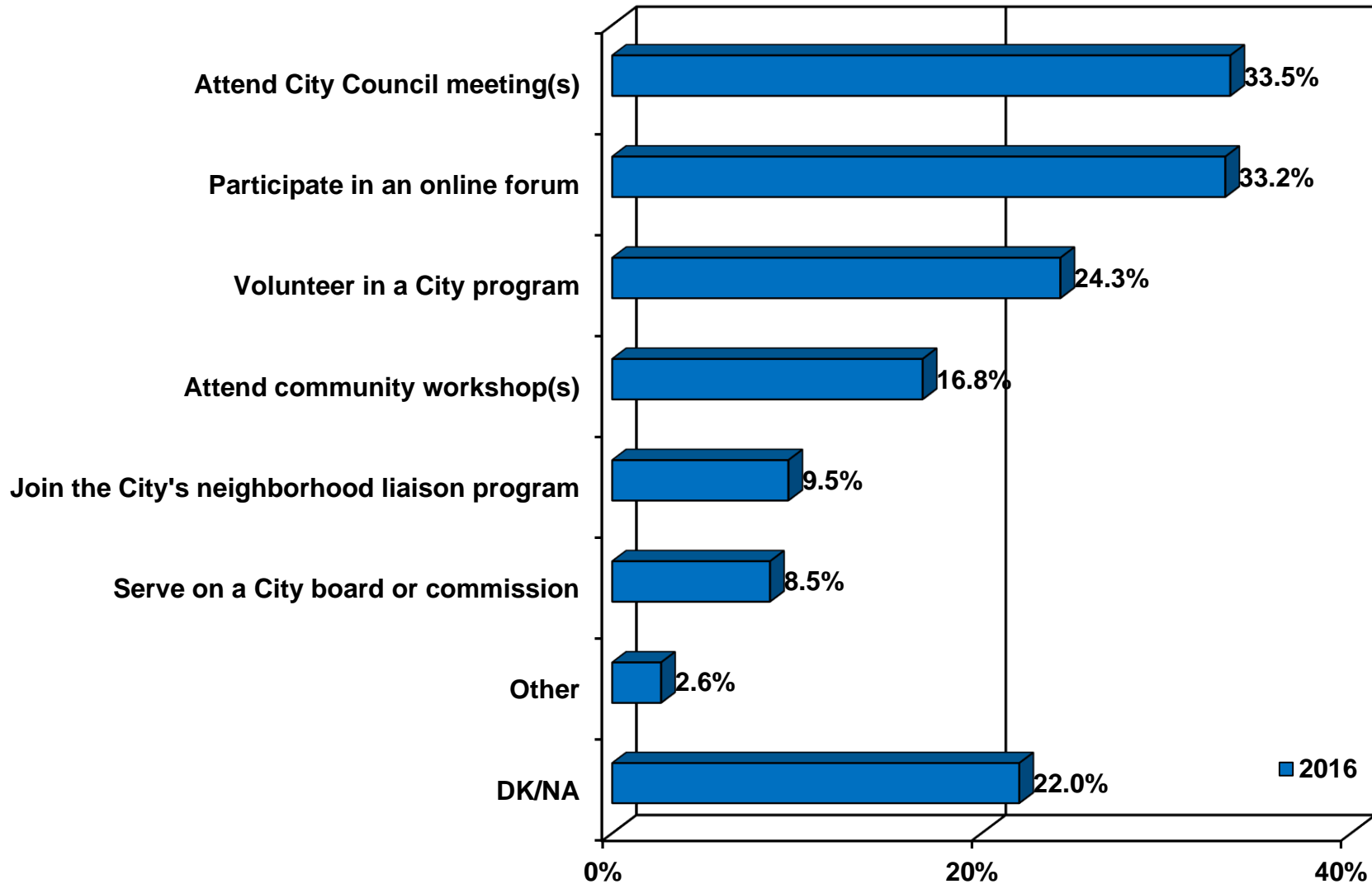
Q11. Opportunity to Voice Concerns



Q12. Awareness of City Council Meetings



Q13. Preferred Methods for Engaging with City



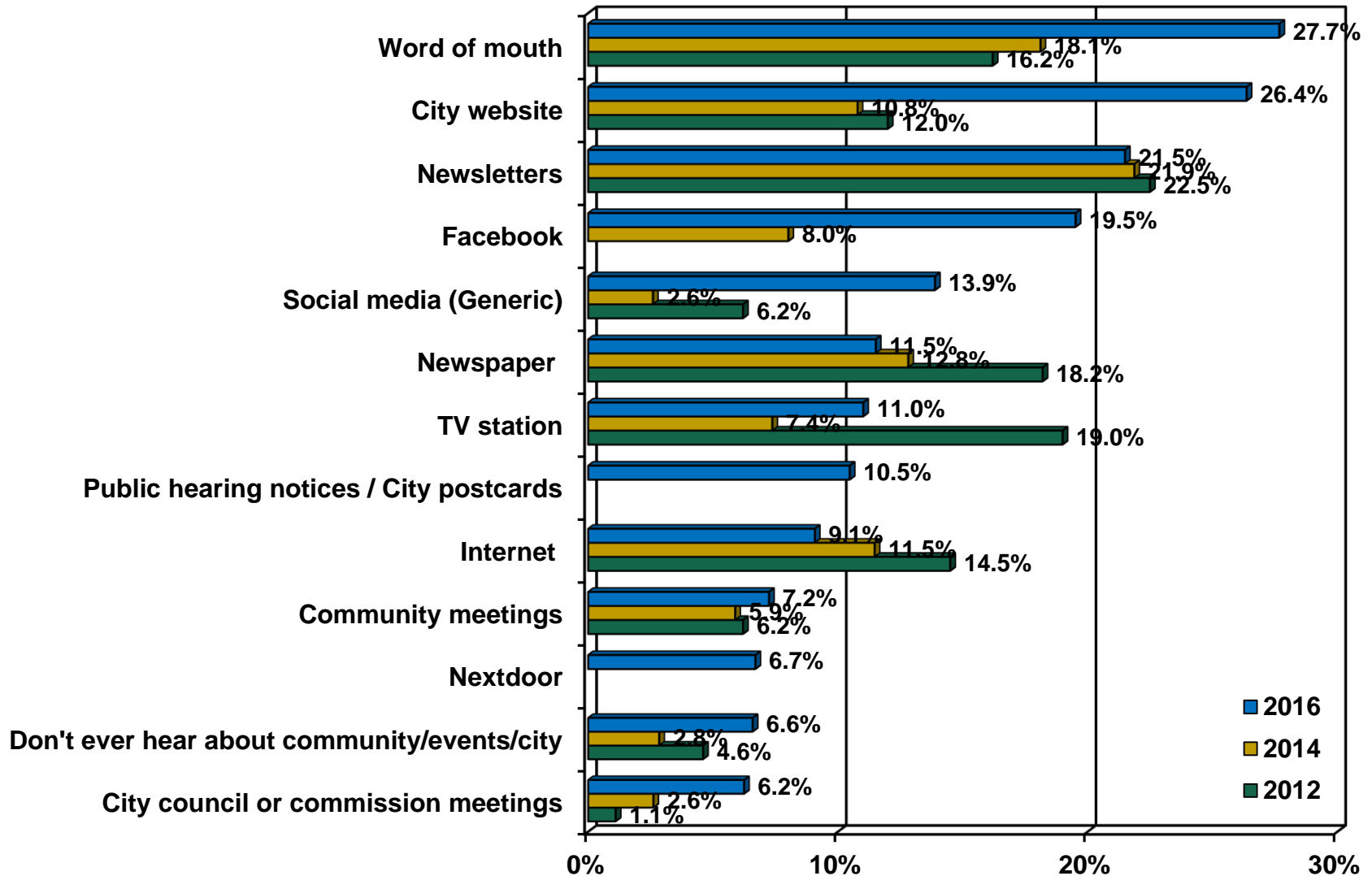


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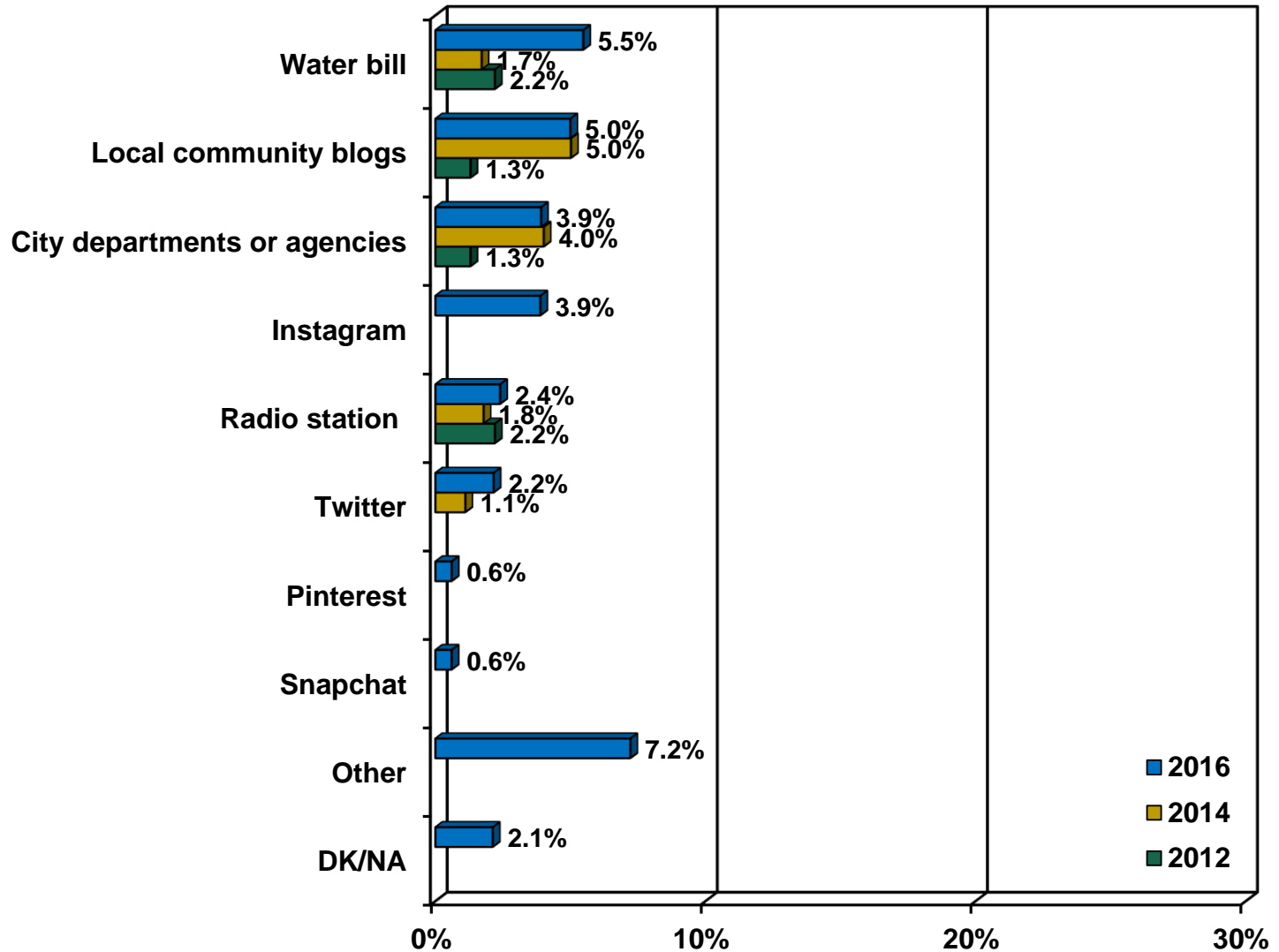


Communication and Public Information

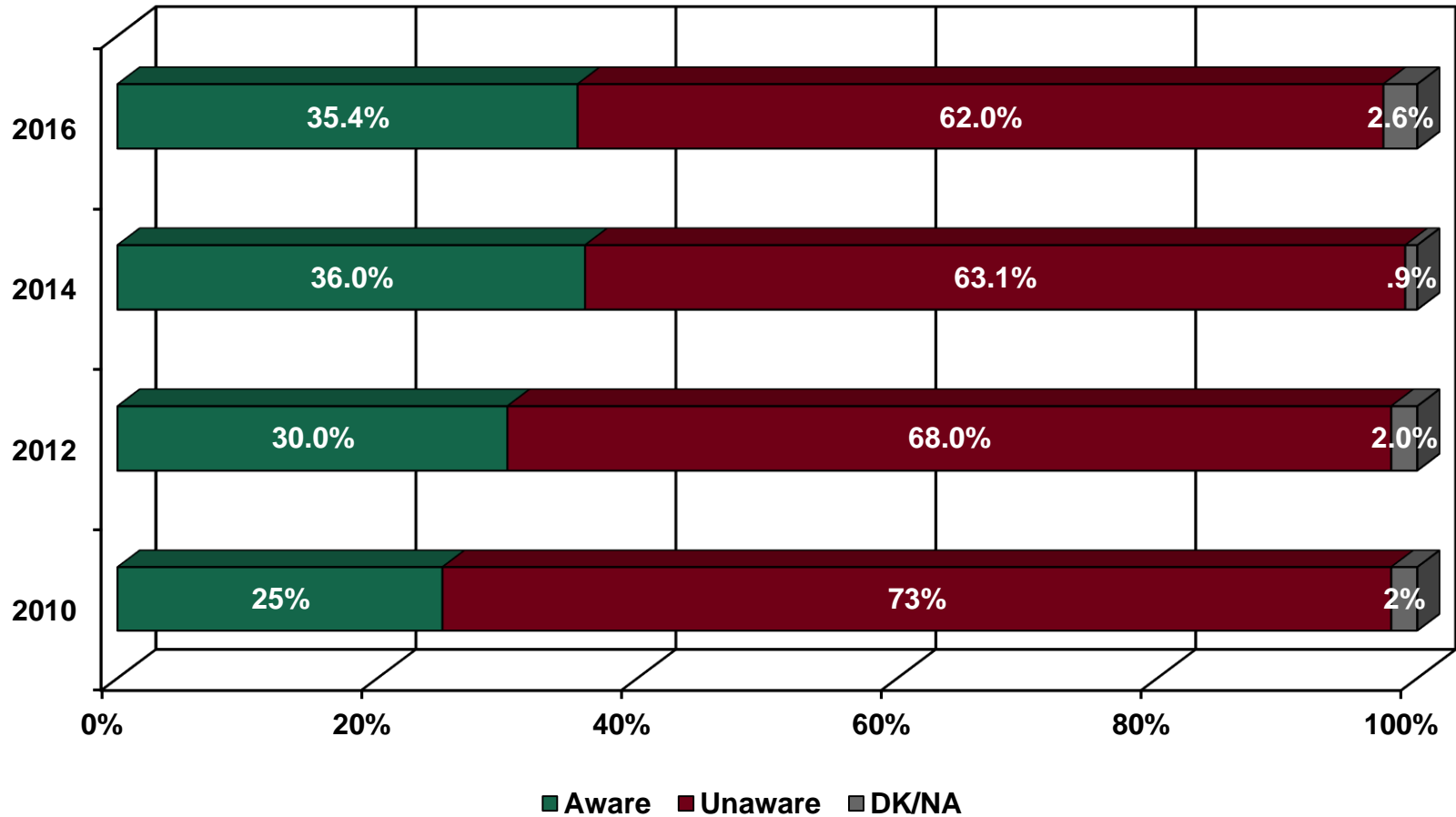
Q14. Information Sources for Local Community, Events and City Government



Q14. Information Sources for Local Community, Events and City Government (Continued)



Q15. Awareness of "Access Hayward"





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