



## AGENDA

SAN RAFAEL CITY COUNCIL - MONDAY, FEBRUARY 3, 2025

REGULAR MEETING AT 6:00 P.M.  
San Rafael City Hall, Council Chambers  
1400 Fifth Avenue, San Rafael, CA 94901

Watch online: <https://tinyurl.com/cc-2025-02-03>

or [www.youtube.com/cityofsanrafael](http://www.youtube.com/cityofsanrafael)

Listen by phone: (669) 444-9171

ID: 844-3204-9611#

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This meeting will be held in-person. This meeting is being streamed to YouTube at [www.youtube.com/cityofsanrafael](http://www.youtube.com/cityofsanrafael).

How to participate in the meeting:

- You are welcome to come to the meeting and provide public comment in person. Each speaker will have 2-minutes to provide public comment per agenda item.
- Submit your comments by email to [city.clerk@cityofsanrafael.org](mailto:city.clerk@cityofsanrafael.org) by 4:00 p.m. the day of the meeting.

If you experience technical difficulties during the meeting, please contact [city.clerk@cityofsanrafael.org](mailto:city.clerk@cityofsanrafael.org).

### **OPEN SESSION**

1. None.

### **CLOSED SESSION**

2. Closed Session: - None.

### **CITY MANAGER AND COUNCILMEMBER REPORTS:**

(including AB 1234 Reports on Meetings and Conferences Attended at City Expense)

3. City Manager and Councilmember Reports:

### **CONSENT CALENDAR:**

The opportunity for public comment on consent calendar items will occur prior to the City Council's vote on the Consent Calendar. The City Council may approve the entire consent calendar with one action. In the alternative, items on the Consent Calendar may be removed by any City Council or staff member, for separate discussion and vote.

4. Consent Calendar Items:

- a. **Approval of Minutes**

Approve Minutes of the Regular City Council Meeting of January 21, 2025 (CC)

*Recommended Action - Approve minutes as submitted*

- b. **Voter-Approved Tax Oversight**

Voter-Approved Tax Oversight Committee Annual Report for Fiscal Year (FY) 2023-24 (Fin)

*Recommended Action - Accept report*

c. **Merit Pay Award and Equity Adjustment for the District Manager/Engineer of the San Rafael Sanitation District**

Resolution Approving a 5% Merit Pay for Doris Toy, District Manager/Engineer, San Rafael Sanitation District (SRSD); And, Resolution Approving and Authorizing a 17% Equity Adjustment to the District Manager/Engineer Position Effective July 1, 2024, an Updated Salary Schedule for Unrepresented Executive Management to Reflect the Change, and Supplemental Budget Appropriation (HR)

*Recommended Action – Adopt Resolutions*

d. **Black History Month**

Proclamation Supporting Black History Month (HR)

*Recommended Action – Receive and file*

**SPECIAL PRESENTATIONS**

5. Special Presentations:

- a. Presentation from Caltrans on the Manuel T. Freitas and Highway 101 Roundabout

**OTHER AGENDA ITEMS**

6. Other Agenda Items:

a. **Canal Broadband Feasibility Study Final Report**

Canal Broadband Feasibility Study Informational Report (DS)

*Recommended Action – Accept report*

**OPEN TIME FOR PUBLIC EXPRESSION**

The public is welcome to address the City Council at this time on matters not on the agenda that are within its jurisdiction. Please be advised that pursuant to Government Code Section 54954.2, the City Council is not permitted to discuss or take action on any matter not on the agenda unless it determines that an emergency exists, or that there is a need to take immediate action which arose following posting of the agenda. Comments may be no longer than two minutes and should be respectful to the community.

**ADJOURNMENT:**

*Any records relating to an agenda item, received by a majority or more of the Council less than 72 hours before the meeting, shall be available for inspection online and at City Hall, 1400 Fifth Avenue, and placed with other agenda-related materials on the table in front of the Council Chamber prior to the meeting. Sign Language interpreters may be requested by calling (415) 485-3066 (voice), emailing [city.clerk@cityofsanrafael.org](mailto:city.clerk@cityofsanrafael.org) or using the California Telecommunications Relay Service by dialing "711", at least 72 hours in advance of the meeting. Copies of documents are available in accessible formats upon request. To request Spanish language interpretation, please submit an online form at <https://www.cityofsanrafael.org/request-for-interpretation/>.*

## MINUTES



SAN RAFAEL CITY COUNCIL - TUESDAY, JANUARY 21, 2025

REGULAR MEETING AT 6:00 P.M.  
San Rafael City Hall, Council Chambers  
1400 Fifth Avenue, San Rafael, CA 94901

Watch online: <https://tinyurl.com/cc-2025-01-21>

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Present: Vice Mayor Bushey  
Councilmember Hill  
Councilmember Kertz  
Councilmember Llorens Gulati  
Mayor Kate

Absent: None

Also Present: City Manager Cristine Alilovich  
City Attorney Rob Epstein  
City Clerk Lindsay Lara

Mayor Kate called the meeting to order at 6:00 p.m. and invited City Clerk Lindsay Lara to call the roll. All members of the City Council were present.

Mayor Kate provided opening remarks which included gratitude to City Staff, the wildfire devastation in Los Angeles, the new federal administration and a land acknowledgment.

City Clerk Lindsay Lara informed the community that the in-person meeting would also be recorded and streamed live to YouTube and through Zoom. She noted the two-minute timer for public comment and closed captioning on Zoom.

### OPEN SESSION

1. None.

### CLOSED SESSION

2. Closed Session: - None.

### CITY MANAGER AND COUNCILMEMBER REPORTS:

(including AB 1234 Reports on Meetings and Conferences Attended at City Expense)

### 3. City Manager and Councilmember Reports:

City Manager Cristine Alilovich reported on:

- Invited City Attorney Robert Epstein to introduce Andrea Visveshwara, the new Chief Assistant City Attorney
- Provided comments related to the transition of the President of the United States and the San Rafael Police Department
- Boards, Committees and Commissions Volunteer Opportunities on the Pickleweed Advisory Committee, Planning Commission and Voter Approved Tax Oversight Committee
- 2025 Public Service Award Nominations open
- East San Rafael parking permit program community meeting to be held January 28, 6 to 7 p.m. on Zoom with Spanish interpretation available
- 2<sup>nd</sup> Annual Lunar New Year Celebration: A Snake Hunt and Word Scramble Challenge downtown, to be held January 24 to February 24. Also, dance performances at Yet Wah restaurant on 4<sup>th</sup> Street to be held on February 1, 2, 15 and 16
- Special recognition to San Rafael Fire Department for their support in the Los Angeles fires, especially to Captains Nick Giusti and Garrett Northern and Paramedics Matt Lewis and Nick Crouch for their service at the Eaton fire

Fire Chief Abe Roman and Emergency Management Deputy Director Quinn Gardner provided comments related to the fires in southern California and addressed the dedication to fire safety in San Rafael.

City Councilmember Reports:

- Vice Mayor Bushey reported on a Central Marin Sanitation Agency meeting and a Marin Transit Board meeting.
- Councilmember Kertz reported on a Homeless Policy Steering Committee meeting and the Marin Wildfire Prevention Authority.
- Councilmember Hill reported on a tour of the sanctioned encampment on the north part of Mahon Creek.
- Councilmember Llorens Gulati reported on the Pickleweed “Peoples of the Canal” mural unveiling, the Hispanic Chamber of Commerce annual “La Posada” celebration, the Cal Cities Environmental Quality Policy Committee, the Resilient Community Sea Level Rise Collaborative event, and a Climate Change Action Plan (CCAP) quarterly meeting.
- Mayor Kate reported on a Sonoma Marin Area Rail Transit (SMART) meeting, a Laurel Dell 2<sup>nd</sup> grade City Hall visit, speaking at the Chamber Leadership Institute, and speaking at Montessori Junior High.

Mayor Kate invited public comment; however, there was none.

#### CONSENT CALENDAR:

Mayor Kate invited public comment; however, there was none.

Vice Mayor Bushey moved and Councilmember Llorens Gulati seconded to approve the Consent Calendar.

### 4. Consent Calendar Items:

- a. **Approval of Minutes**  
**Approve Minutes of the Regular and Special City Council Meetings of December 16, 2024 (CC)**  
*Approved minutes as submitted*
- b. **Memorial Bench for Judge Richard H. Breiner**  
**Approval of License Agreement and Memorial Bench (CA)**  
*Resolution 15366 - Resolution Authorizing Execution of License Agreement with SHM Loch Lomond LLC and Installation of Maintenance of Memorial Bench and Plaque Honoring the Late Honorable Richard M. Breiner, Judge of the Superior Court*
- c. **ADA Access Advisory Committee Appointment**  
**Appointment of Ted Jackson to an Unexpired Four-Year Term on the ADA Access Advisory Committee Through the End of April 2028 Due to the Expiration of Term of Timothy Lord (CC)**  
*Approved Appointment*
- d. **Planning Commission Alternate Member Appointment**  
**Appointment of Jeff Kent to a Four-Year Alternate Member Term on the Planning Commission Through the End of April 2029 Due to the Creation of Two New Alternate Member Architect Seats (CC)**  
*Approved Appointment*
- e. **Strategic Planning Services for Council Goals and Objectives 2026-2028 Agreement**  
**Authorize the City Manager to Enter into a Professional Services Agreement with Jacob Green & Associates ("JGA") for Strategic Planning Services in the Amount Not to Exceed \$90,000 (CM)**  
*Authorized the City Manager to enter into a Professional Services Agreement with Jacob Green & Associates ("JGA") for Strategic Planning Services for Council Goals and Objectives for 2026-2028 in an amount not to exceed \$90,000*
- f. **Miovision Traffic Camera Perpetual Services Agreement**  
**Authorize the City Manager to Enter into an Agreement with Miovision Technologies Incorporated for Traffic Camera Perpetual Service License in an Amount Not to Exceed \$206,483 (PW)**  
*Authorized the City Manager to Enter into an Agreement with Miovision Technologies Incorporated for a Traffic Camera Perpetual Services License for a Total Not to Exceed Amount of \$206,483; And, Authorized a Supplemental Budget Appropriation in the Amount of \$103,242 from the General Fund for the Agreement*

AYES: Councilmembers: Bushey, Hill, Kertz, Llorens Gulati & Mayor Kate  
 NOES: Councilmembers: None  
 ABSENT: Councilmembers: None

## **SPECIAL PRESENTATIONS**

### **5. Special Presentations:**

- a. [\*\*Presentation from Marin/Sonoma Mosquito & Vector Control District \(CC\)\*\*](#)

District Manager of Marin/Sonoma Mosquito & Vector Control District Peter Bonkrude

gave a presentation.

District Manager Peter Bonkrude responded to questions from the City Council.

Mayor Kate invited public comment.

**Speaker:** Jennifer Connor

District Manager Peter Bonkrude responded to questions from the community.

Councilmembers provided comments.

## **OTHER AGENDA ITEMS**

### **6. Other Agenda Items:**

#### **a. [Canal Community Based Transportation Plan](#) Status Update on the 2022 Canal Community Based Transportation Plan (PW)**

Assistant Public Works Director Joanna Kwok presented the Staff Report along with Public Works Director April Miller.

Staff responded to questions from the City Council.

Mayor Kate invited public comment.

**Speakers:** Dave Mariottini, Al Vetere

Staff responded to questions from the community.

City Council provided comments.

Councilmember Llorens Gulati moved and Councilmember Hill seconded to accept the informational report providing a status update on the 2022 Canal Community-Based Transportation Plan (CCBTP), including progress toward achieving the CCBTP goals.

AYES:	Councilmembers:	Bushey, Hill, Kertz, Llorens Gulati & Mayor Kate
NOES:	Councilmembers:	None
ABSENT:	Councilmembers:	None

*Accepted report*

## **OPEN TIME FOR PUBLIC EXPRESSION**

- Martin Coyne addressed the City Council regarding tree services by PG&E.
- Dave Mariottini addressed the City Council regarding camping in Gerstle Park.
- Dr. Cherry Levin addressed the City Council regarding Ordinance 2040.
- Richard Olive addressed the City Council regarding the reinstatement of Brandon Nail.
- Mark Allen addressed the City Council regarding Ordinance 2040.
- Alina Bermudez addressed the City Council regarding Ordinance 2040.
- Name Withheld addressed the City Council regarding tents throughout residential neighborhoods, high density housing and water resources, and crime.
- Robbie Powelson addressed the City Council regarding homelessness.

- Sara McEvoy addressed the City Council regarding homelessness.
- Dalyla Harris addressed the City Council regarding homelessness.
- Jason addressed the City Council regarding Ordinance 2040.
- Rosie Brekke addressed the City Council regarding Ordinance 2040.
- Michael Wolpert addressed the City Council regarding homelessness, Brandon Nail, and the good members of the Police Department.

**ADJOURNMENT:**

Mayor Kate adjourned the meeting at 8:20 p.m., in honor of Joe Garbarino of Marin Sanitary Service (creator of the nation's first curbside recycling program).

\_\_\_\_\_  
LINDSAY LARA, City Clerk

APPROVED THIS \_\_\_\_ DAY OF \_\_\_\_\_, 2025

\_\_\_\_\_  
KATE COLIN, Mayor



**Agenda Item No: 4.b**

**Meeting Date: February 3, 2025**

## **SAN RAFAEL CITY COUNCIL AGENDA REPORT**

**Department: Finance**

**Prepared by: Shawn Plate  
Finance Manager**

**City Manager's Approval** \_\_\_\_\_

**TOPIC: VOTER-APPROVED TAX OVERSIGHT**

**SUBJECT: VOTER-APPROVED TAX OVERSIGHT COMMITTEE ANNUAL REPORT FOR FISCAL YEAR (FY) 2023-24**

### **RECOMMENDATION:**

Staff recommends that the City Council accept the fiscal year (FY) 2023-24 Annual Report from the Voter-Approved Tax Oversight Committee.

### **BACKGROUND:**

The Voter-Approved Tax Oversight Committee was formed in September 2022 to consolidate oversight of the City's voter-approved tax measures into one five-member committee. The Committee provides independent oversight of all San Rafael voter-approved tax measures, Measures D, E, G, and R, to ensure the funds have been expended in accordance with the authorized purposes and prepares and submits to the City Council an annual report on the audited expenditures and revenues from each tax measure from the previous fiscal year.

At the October 24, 2024, meeting, the Committee received unaudited financial information for each voter-approved tax measure under its purview. At their December 17, 2024, meeting, the Committee reviewed the final audited fiscal year (FY) 2023-24 financial results for Measures D, E, G, and R and provided supplemental information responsive to requests made by the Committee at the October meeting. There were no changes to the financial statements related to any of the referenced funding sources between the unaudited data presented at the October 24, 2024, meeting and the audited financial information presented at the December 17, 2024, meeting.

Furthermore, at its December 17, 2024, meeting, the Committee considered a draft of its annual report to the City Council, as required by the Committee's charter, and approved forwarding the annual report to the City Council via this agenda item (See Attachment 1).

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**FOR CITY CLERK ONLY**

**Council Meeting:**

**Disposition:**



**ANALYSIS:**

*Measure D: Library Parcel Tax*

In 2016, San Rafael voters renewed an annual parcel tax to fund the San Rafael Public Library's opening hours and services. As a special-purpose tax, Measure D revenues can only be spent on library services in San Rafael to maintain hours of operation and provide services, equipment, programs, and materials. Measure D is scheduled to expire in 2027.

The audited financial statements for FY 2023-24 report Measure D revenues of \$1,183,140, expenditures of \$1,164,340, and an ending fund balance of \$852,746. The accumulation of fund balance results from two primary factors: vacant staff positions funded by Measure D and underspending on various line items over the life of the ballot measure.

The audited capital set aside fund balance was \$100,338. This capital set aside was earmarked for new and improved library facilities as directed by the City Council as part of the previous Measure C and was capped at \$500,000.

*Measure G: Cannabis Business Tax*

In 2018, San Rafael voters approved Measure G, a business excise tax on cannabis businesses. Measure G allows for a tax on cannabis businesses operating in the City of up to 8% on gross receipts and taxes different types of businesses at different rates. Current rates can be found on the [City's website](#). Measure G funds can be used for a variety of purposes, including police and fire services, street repair and improvements, and enhancing community centers. Measure G does not have an expiration date.

During FY 2023-24, total revenues reported in the Measure G Fund (216) were \$237,420, including \$215,231 in tax revenues and \$22,189 in interest earnings. Expenditures charged to Measure G for the fiscal year totaled \$117,023. The decrease in Measure G revenues from FY 2022-23 to FY 2023-24 can be attributed to ongoing challenges in the cannabis market as well as the temporary decrease in the cannabis tax rate from 4% to 2% for delivery non-storefront license types, effective [January 1, 2023](#). For FY 2024-25, staff budgeted \$225,000 in Cannabis Industry Tax revenues and \$170,386 in expenditures.

On [January 27, 2023](#), the San Rafael City Council committed the majority of the existing fund balance of \$968,251 to support the pilot Specialized Assistance For Everyone (SAFE) Team, which began in late FY 2022-23. The program has been initially supported using funds from the City's opioid settlement and grant funds, after which cannabis tax revenues are being utilized. Staff plan to return to the City Council at mid-year based on actual program needs and adjust transfers out to support the program's operations.

*Measure E: Essential Facilities Transactions and Use Tax (0.75%)*

San Rafael voters passed Measure E in 2013. Measure E is a three-quarter cent general purpose transactions and use tax that supports essential facilities in San Rafael, including critical improvements to our public safety facilities. Construction of the Public Safety Center was completed in 2020, and a variety of other facility construction and improvements are underway. Measure E is scheduled to expire in 2034.

During FY 2023-24, the City collected a total of \$14,361,735 of Measure E revenues. The majority of Measure E tax proceeds (\$9,574,490) are considered discretionary general fund revenues. This funding makes up a significant portion of the City's General Fund revenues, which support the general government, including public safety, community development, and library/recreation programs and services. The City does not track expenditures specific to Measure E revenues collected within the General Fund.

For FY 2023-24, \$4,787,245 in tax proceeds (one-third) represents funding earmarked for essential facilities. Most of the funds allocated for essential facilities are utilized to pay debt service for the Public Safety Center, totaling \$4,398,250. Since debt service payments are presently budgeted within the General Fund, the remaining portion of Measure E funds earmarked for essential facilities, net of debt service payments, are in turn transferred to the Measure E – Essential Facilities Fund (420). For FY 2023-24, \$384,188 was transferred to the Essential Facilities Fund.

The FY 2023-24 budget included \$3,367,904 in Capital Project appropriations within the Essential Facilities Fund. Capital expenditures recorded at year-end totaled \$580,082, or \$2,787,822 below budget. Capital expenditures included funding to complete renovations at Fire Stations 54 and 55 and repurposing of space within City Hall. The fund balance is anticipated to be carried over to complete projects identified in the Phase 1 Essential Facilities Master Plan.

For FY 2024-25, staff budgeted for total Measure E revenues of \$14,520,000 based on projections from HdL. A transfer of \$353,500, net of debt service payments, is budgeted within the Essential Facilities Fund for FY 2024-25. The FY 2024-25 Capital Budget includes appropriations of \$858,961 to support ongoing projects as well as a new project to upgrade the Public Safety Building antennae and communications network.

In addition, per the discussion at the Committee meeting on October 22, staff has included information related to the debt service schedule for the bonds being supported through Measure E. For more information related to the Measure E strategic plan approved by the City Council in 2015, see the following link:

<https://www.cityofsanrafael.org/documents/essential-facilities-strategic-plan-volume-1/>

*Measure R: Transactions and Use Tax (0.25%)*

Measure R was passed in 2020 by San Rafael voters. Measure R is a one-quarter cent general purpose transactions and use tax, often referred to as a local sales tax. Funds from this measure go to the General Fund and support a variety of City operations, including public works, recreation and library, administrative services, and public safety. Measure R is scheduled to expire in 2030.

FY 2023-24 was the third full fiscal year of Measure R tax receipts, during which \$4,713,640 of revenues were received. For FY 2024-25, staff has budgeted \$4,840,000 in Measure R revenues based on projections from the City's sales tax consultants, HdL.

**COMMENTS:**

During the Committee's review of FY 2023-24 financial information subject to the Committee's purview, several comments and questions arose related to the Committee's charter, for which the Committee has asked for clarification. In response, staff will review the current bylaws of the Voter-Approved Tax Oversight Committee and work with the Committee to determine if any revisions to the bylaws are needed.

**FISCAL IMPACT:**

Receipt of the FY 2023-24 Annual Report has no fiscal impact.

**OPTIONS:**

The City Council has the following options to consider on this matter:

1. Receive the report.

2. Take no action.
3. Direct staff to return with more information.

**RECOMMENDED ACTION:**

Staff recommends that the City Council accept the fiscal year (FY) 2023-24 Annual Report from the Voter-Approved Tax Oversight Committee.

**ATTACHMENTS:**

1. Voter-Approved Tax Oversight Committee Annual Report (FY2023-24), dated December 17, 2024
2. Voter-Approved Tax Oversight Committee Bylaws

**City of San Rafael**  
**Voter-Approved Tax Oversight Committee (VATOC)**  
**Annual Report**  
**December 17, 2024**

The City of San Rafael Voter-Approved Tax Oversight Committee met on December 17, 2024, and received a detailed report from City of San Rafael staff on the receipt and expenditure of funds during the fiscal year July 1, 2023 to June 30, 2024 pursuant to voter-approved Measure D (Library Parcel Tax), Measure E (Essential Facilities Transactions and Use Tax), Measure R (General Purpose Transactions and Use Tax), and Measure G (Cannabis Business Tax).

Voter-Approved Tax Oversight Committee is required to review the collection, expenditure, and prioritization of the use of these funds, and report to the City Council and the community annually on the expenditures under Guidelines and Policy adopted by the San Rafael City Council.

After review, the Voter-Approved Tax Oversight Committee finds that these funds were properly allocated in accordance with the Measures and approved guidelines.

Tracey Broadman

Charles 'Chuck' Friede



Caleb McWaters



Carsten Andersen



Stephen Roth



# VOTER APPROVED TAX OVERSIGHT COMMITTEE BYLAWS

## ARTICLE I. NAME AND PURPOSE

**Section 1.1. Name.** The name of this body shall be the City of San Rafael Voter Approved Tax Oversight Committee, hereinafter referred to as the “Committee.”

**Section 1.2. Purpose.** The Committee’s purpose is to review the collection and expenditure of voter approved tax revenues collected under the authority of voter-approved City tax measures and Resolution 15118 adopted by the San Rafael City Council on September 6, 2022.

**Section 1.3. Committee Responsibility.** The Committee’s authority is oversight only.

The responsibilities and duties of the Committee shall be limited to:

- 1.2 Review expenditures of Measure tax revenues to ensure the monies have been expended in accordance with the authorized municipal purposes of each Measure. To complete this review, the Committee shall:
  - 1.2.1 Understand allowable expenses of each existing Measure’s tax funds (as identified in the enacting Municipal Ordinance)
  - 1.2.2 Review documentation from City Council and from City Council-appointed advisory committees that pertain to the prioritization of use of each Measure’s tax funds.
  - 1.2.3 Review annual reports prepared by the City’s Finance Department that track the receipt and spending of each Measure’s tax funds.
  - 1.2.4 Prepare and submit to the City Council and the community an annual public report on the expenditures of each Measure’s tax revenues for the previous fiscal year.
  - 1.2.5 Fulfill the final responsibilities of each Measure’s responsibilities at the Measure’s termination, repeal or extension: Before submitting a final report: Review and report on the final expenditures of each Measure during the previous fiscal year, through its termination, to ensure that monies have been expended consistent with the authorized purposes of the Measure.

The Committee shall **not**:

1. Have any budgetary decision authority, shall not allocate financial resources, and shall not make budget or service recommendations to the City Council.
2. Have authority to direct, nor shall it direct, City staff or officials.

## **ARTICLE II. MEMBERSHIP**

**Section 2.1. Number of Members.** The Voter Approved Tax Oversight Committee shall consist of five (5) voting members.

**Section 2.2. Eligibility.** Members of the Committee shall be at least 18 years of age and reside within the City limits.

**Section 2.3. Appointment of Committee Members.** Members shall be appointed by the City Council. Appointments shall be published on the website for the City of San Rafael in accordance with Government Code Section 54973, as amended from time to time.

**Section 2.4. Terms of Appointment.** Each member shall serve a minimum term of four (4) years. An effort will be made to ensure that the terms are staggered, and not all of the appointments expire in the same year.

**Section 2.5. Term Limits.** Members shall be limited to two (2) consecutive four-year terms. Additional terms may be served if there is a break between terms.

**Section 2.6. Absence and Removal.** An unexcused absence from two (2) consecutive Committee meetings without notification to the Staff Liaison will constitute an immediate vacancy and shall be considered a voluntary resignation from the Committee. Previously dismissed Committee members may be eligible for reappointment.

**Section 2.7. Compensation.** Members shall serve without compensation.

## **ARTICLE III. MEETINGS**

**Section 3.1. Time and date of Regular Meeting.** Notification of meeting place, date, and time shall be rendered to the public through posting on the City of San Rafael website.



**SAN RAFAEL**  
THE CITY WITH A MISSION  
*established 1874*

**Agenda Item No: 4.c**

**Meeting Date: February 3, 2025**

## **SAN RAFAEL CITY COUNCIL AGENDA REPORT**

**Department: Human Resources**

**Prepared by: Marissa Sanchez, Human  
Resources Director**

**City Manager Approval:** \_\_\_\_\_

A handwritten signature in blue ink, appearing to be "CJ", is written over the City Manager Approval line.

**TOPIC: MERIT PAY AWARD AND EQUITY ADJUSTMENT FOR THE DISTRICT  
MANAGER/ENGINEER OF THE SAN RAFAEL SANITATION DISTRICT**

**SUBJECT: RESOLUTION APPROVING A 5% MERIT PAY FOR DORIS TOY, DISTRICT  
MANAGER/ENGINEER, SAN RAFAEL SANITATION DISTRICT (SRSD) AND  
RESOLUTION APPROVING AND AUTHORIZING A 17% EQUITY ADJUSTMENT TO  
THE DISTRICT MANAGER/ENGINEER POSITION EFFECTIVE JULY 1, 2024, AN  
UPDATED SALARY SCHEDULE FOR UNREPRESENTED EXECUTIVE  
MANAGEMENT TO REFLECT THE CHANGE, AND SUPPLEMENTAL BUDGET  
APPROPRIATION**

### **RECOMMENDATION:**

Staff recommends that the City Council:

1. Approve a resolution to approve a 5% merit pay award effective July 1, 2024 – June 30, 2025, for Doris Toy, District Manager/Engineer of the San Rafael Sanitation District; and
2. Approve a resolution to approve and authorize a 17% equity adjustment to the District Manager/Engineer position and to modify the salary schedule for Unrepresented Executive Management and authorize a supplemental budget appropriation of \$50,651 within SRSD's Fund 227 (Sewer Maintenance Fund), effective July 1, 2024.

### **BACKGROUND:**

Section 3.8 of the City's Personnel Rules and Regulations allows for merit pay awards to employees at the maximum step of their salary range who demonstrate exceptional performance. The section states that such awards may be granted for up to five percent (5.0%) above and beyond the salary range and may be effective for up to one year. Merit pay awards are intended to recognize meritorious performance beyond the scope of regular duties and are not disciplinary in nature.

The San Rafael Sanitation District (SRSD) Board has recommended a five percent (5.0%) merit pay award for Doris Toy, District Manager/Engineer, a city employee, in recognition of her outstanding leadership and performance from July 2023 through June 2024. Section 3.8 of the City's Personnel Rules

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**FOR CITY CLERK ONLY**

**Council Meeting:** \_\_\_\_\_

**Disposition:** \_\_\_\_\_

and Regulations allows for such merit pay awards for employees who demonstrate extraordinary performance beyond the scope of their regular duties. The City Manager is authorized to provide merit pay to city employees, however for the SRSD District Manager position, City of San Rafael's City Council must approve the merit pay award because the District Manager/Engineer reports directly to the SRSD Board, and not the City Manager.

The Unrepresented Executive Management Employee Group includes eleven positions assigned in various City departments, including the SRSD. On July 17, 2024, the City Council authorized a three percent (3.0%) base wage increase for the SRSD District Manager/Engineer, effective July 1, 2024.

The SRSD Board recommends the approval of a 17% equity adjustment for the District Manager/Engineer position, effective July 1, 2024. This is in addition to the three percent (3.0%) base wage adjustment that the City Council approved for the Unrepresented Executive Management Group effective July 1, 2024. This recommendation to increase the compensation for the SRSD District Manager/Engineer position addresses the ongoing gap between the City's compensation for this position and the broader labor market.

## **ANALYSIS:**

### ***Merit Pay Award***

Doris Toy has served as the District Manager/Engineer of the SRSD since 2009 and has performed work outside their typical duties over the past fiscal year. Despite increased responsibilities, including managing both the duties of the District Manager/Engineer and those of the Senior Civil Engineer position during a vacancy, Ms. Toy has successfully led several important projects for SRSD. The SRSD Board reviewed her performance in March 2024 and has recommended the 5% merit pay award for one year.

**Performance Highlights:** The following accomplishments were highlighted by the SRSD Board in their request for the merit pay award (Attachment 1):

- **Operational Consolidation with CMSA:** Doris led efforts to explore operational consolidation with the Central Marin Sanitation Agency (CMSA), aimed at improving service delivery, retaining staff, and enhancing cost efficiency.
- **Sewer Pipe Repair and Replacement Projects:** Under Doris's leadership, the SRSD exceeded its annual goal for sewer pipe replacement, replacing 2.3 miles of sewer pipe, surpassing the 1.6-mile target.
- **Bayside Acres Project:** Doris successfully initiated and managed the Bayside Acres project, which involved upgrading the sewer system for 19 properties.
- **Third Street Rehabilitation:** Doris coordinated with the City of San Rafael to ensure SRSD's sewer infrastructure was repaired and replaced alongside major infrastructure improvements on Third Street.
- **Vacancy Management:** Doris took on additional responsibilities during the Senior Civil Engineer vacancy, continuing to manage and advance the SRSD's projects despite staffing challenges.

### ***Equity Adjustment***

**Labor Market Comparison:** Over time, the compensation for the SRSD District Manager/Engineer has fallen significantly behind comparable agencies in terms of total compensation, excluding retirement costs. In comparison to the labor market average, these positions were 10% to 35% behind the market, with executive-level compensation levels not keeping pace with inflation or market trends. In July 2024, Council approved the equity increases for the Unrepresented Executive Management group with the exception of the District Manager/Engineer position as that position required further review and analysis.

**Need for Competitive Compensation:** Despite periodic equity adjustments in recent years, the compensation for these executive roles has not kept pace with the labor market. As a result, the City has



faced difficulties in recruiting and retaining highly qualified individuals for these critical positions. A 17% equity adjustment for the District Manager/Engineer position is proposed to bring compensation closer to market levels and help ensure the City remains competitive in attracting and retaining top talent.

**Impact on Retention and Recruitment:** This equity adjustment will improve retention by reducing the risk of turnover and help attract candidates with the necessary expertise and experience to lead the San Rafael Sanitation District through complex challenges and opportunities.

Doris Toy has demonstrated exceptional leadership in managing the SRSD's operations and in overseeing critical infrastructure projects despite the additional challenges of staffing shortages and strategic planning efforts. The City recognizes the need to offer competitive pay to retain and attract top talent and recommends the 17% equity increase to the SRSD District Manager/Engineer position, effective July 1, 2024.

**FISCAL IMPACT:**

The fiscal impact of this merit pay award has been accounted for in the SRSD's budget for FY 2023-2024 and will be paid out of Fund 227 (Sewer Maintenance Fund). The City requests the authorization of a supplemental budget appropriation of \$50,651 within Fund 227 (Sewer Maintenance Fund) to cover the cost of the 17% equity adjustment increase to the salary schedule for the District Manager/Engineer position. Funding to support this supplemental budget appropriation is being provided by the SRSD through the reimbursement provided to the City for the District's personnel costs.

**OPTIONS:**

The City Council has the following options to consider on this matter:

1. Approve the resolution to authorize a 5% merit pay award to Doris Toy.
2. Approve the resolution to authorize the 17% equity adjustment with the recommended budget augmentation.
3. Adopt both resolutions with modifications.
4. Direct staff to return with more information.
5. Take no action.

**RECOMMENDED ACTION:**

Staff recommends that the City Council:

1. Approve a resolution to approve a 5% merit pay award effective July 1, 2024 – June 30, 2025, for Doris Toy, District Manager/Engineer of the San Rafael Sanitation District; and
2. Approve a resolution to approve and authorize a 17% equity adjustment to the District Manager/Engineer position and to modify the salary schedule for Unrepresented Executive Management and authorize a supplemental budget appropriation of \$50,651 within SRSD's Fund 227 (Sewer Maintenance Fund), effective July 1, 2024.

**ATTACHMENTS:**

1. Letter from Kate Colin, Chair, San Rafael Sanitation District Board (January 7, 2025)
2. Resolution Authorizing a 5% Merit Pay for Doris Toy, District Manager/Engineer
3. Resolution Authorizing a 17% equity adjustment for the District Manager/Engineer position
4. Unrepresented Executive Management Salary Schedule effective July 1, 2024

## **SAN RAFAEL SANITATION DISTRICT**

DATE: January 7, 2025  
TO: Director Sanchez, City of San Rafael Human Resources  
FROM: Kate Colin, Chair, San Rafael Sanitation District  
SUBJECT: FY2023-24 Merit Pay for Doris Toy, General Manager, San Rafael Sanitation District

Per Personnel Rules & Regulations, Rule 3.8, on behalf of the San Rafael Sanitation District (SRSD) Board, I am requesting a 5% Merit Pay Award to Doris Toy for one (1) year in recognition of meritorious performance in the scope of her regular duties from July 2023 – July 2024. The SRSD Board made this recommendation based on Doris's March 2024 performance evaluation.

In 2023, the Board began exploring an Operational Consolidation Agreement with Central Marin Sanitation Agency (CMSA), and since then Doris has added many tasks to her daily workload. This was in addition to performing Senior Civil Engineer duties while maintaining District Manager duties as the Senior Civil Engineer position was vacant from April 2022 to November 2023 despite aggressive efforts to hire.

Notably, Doris worked on the following projects for the SRSD during this time period:

- Bayside Acres – This project is comprised of changing 19 properties to a new sewer lateral/pump system. This project was identified in 20xx as a priority project and Doris commenced this huge project.
- Sewer Pipe Repair and Replacement Project – The District's stated goal is to replace 1.6 miles of pipe every year. Doris and her team exceeded this goal and 2.3 miles of pipe was replaced.
- Third Street Rehabilitation – The City of San Rafael undertook (and completed) major infrastructure improvements along Third Street. As the street was opened, it was imperative that SRSD concurrently repair and replace its infrastructure (2,397 LF of sewer main and 430 LF of sewer lateral).
- Operational Consolidation – The Board began exploration of an operational consolidation with CMSA in 2023 to ensure that SRSD continues to provide excellent service to our ratepayers while maintaining exceptional staff. As SRSD's employee compensation are tied to the city's; SRSD has been unable to hire and retain engineers throughout recent years. In addition, cost efficiency continues to be a priority for SRSD. The strategic planning to start this exploration has been significant in terms of Doris's time.

For FY2024, Doris was willing to do the necessary work requested by the Board as mentioned above. Doris's commitment to the District and the District's employees have enabled the District to continue to exceed its goals even with the addition of the strategic planning efforts. Therefore, the SRSD Board wishes to award her with the 5% Merit Pay Award for a period of one (1) year.

Thank you in advance for consideration and approval of this matter.

## **RESOLUTION NO.**

### **A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN RAFAEL APPROVING A 5% MERIT PAY AWARD FOR DORIS TOY, DISTRICT MANAGER/ENGINEER OF THE SAN RAFAEL SANITATION DISTRICT, FOR FISCAL YEAR 2023-2024 PERFORMANCE OF DUTIES**

**WHEREAS**, Doris Toy, a City employee, has served as the District Manager/Engineer of the San Rafael Sanitation District (SRSD) and has demonstrated outstanding leadership and performance throughout Fiscal Year 2023-2024; and

**WHEREAS**, Doris Toy's performance in fiscal year 2023-2024 includes successfully managing several key projects such as the Bayside Acres sewer infrastructure project, exceeding the SRSD's sewer pipe repair and replacement goals, and leading the exploration of operational consolidation with the Central Marin Sanitation Agency (CMSA); and

**WHEREAS**, Section 3.8 of the City's Personnel Rules and Regulations allows for merit pay awards for employees at the maximum step of their salary range in recognition of meritorious performance beyond the scope of regular duties, and such awards may be granted up to 5% above and beyond the salary range for a period of one year; and

**WHEREAS**, the SRSD Board has recommended the approval of a 5% merit pay award effective July 1, 2024 – June 30, 2025, for Doris Toy in recognition of her contributions to the SRSD, which has resulted in the District exceeding its goals and successfully managing an expanded workload; and

**WHEREAS**, the City Manager is authorized to provide merit pay to city employees, however for the SRSD District Manager position, City of San Rafael's City Council must approve the merit pay award because the District Manager/Engineer reports directly to the SRSD Board, and not the City Manager; and

**WHEREAS**, the City Council has reviewed the request and concurs with the recommendation of the SRSD Board; and

**NOW, THEREFORE, BE IT RESOLVED**, by the City Council of the City of San Rafael, that a 5% merit pay award for Doris Toy, District Manager/Engineer of the San Rafael Sanitation District, is hereby approved, effective July 1, 2024 – June 30, 2025, in recognition of the work performed outside of her typical duties in addition to her leadership on several important projects for the San Rafael Sanitation District in Fiscal Year 2023-2024; and

**BE IT FURTHER RESOLVED**, that the merit pay award shall be effective for one year, beginning in July 1, 2024, and shall be granted in accordance with Section 3.8 of the City's Personnel Rules and Regulations.

I, Lindsay Lara, Clerk of the City of San Rafael, hereby certify that the foregoing resolution was duly and regularly introduced and adopted at a regular meeting of the City Council of said City held on Monday, the 3<sup>rd</sup> day of February 2025, by the following vote to wit:

AYES: COUNCILMEMBERS:  
NOES: COUNCILMEMBERS:  
ABSENT: COUNCILMEMBERS:

---

LINDSAY LARA, City Clerk

**RESOLUTION NO.**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN RAFAEL  
APPROVING A 17% EQUITY ADJUSTMENT TO THE DISTRICT MANAGER/ENGINEER  
POSITION, A SUPPLEMENTAL BUDGET APPROPRIATION, AND AUTHORIZING THE  
MODIFICATION OF THE SALARY SCHEDULE FOR UNREPRESENTED EXECUTIVE  
MANAGEMENT**

**WHEREAS**, the City of San Rafael recognizes the importance of offering competitive compensation to attract and retain highly qualified individuals for key executive positions, including the District Manager/Engineer of the San Rafael Sanitation District (SRSD); and

**WHEREAS**, a comprehensive labor market analysis has revealed that Executive-level positions within the City, including the District Manager/Engineer, are 10% to 35% behind market averages in terms of total compensation; and

**WHEREAS**, the SRSD Board has recommended a 17% equity adjustment for the District Manager/Engineer position, effective July 1, 2024; and

**WHEREAS**, the proposed equity adjustment will improve the City's ability to attract and retain top talent, reduce the risk of turnover, and ensure the District Manager/Engineer position is compensated at a level consistent with labor market trends; and

**WHEREAS**, the City's commitment to competitive compensation will enable the District Manager/Engineer to lead effectively through complex challenges and opportunities for the benefit of the community; and

**WHEREAS**, the proposed equity adjustment will require a supplemental budget appropriation of \$50,651 from available SRSD Fund 227 (Sewer Maintenance Fund); and

**WHEREAS**, the City Council has reviewed the request and concurs with the recommendation of the SRSD Board; and

**NOW, THEREFORE, BE IT RESOLVED**, by the City Council of the City of San Rafael, that a 17% equity adjustment to the District Manager/Engineer Position, is hereby approved, effective July 1, 2024, and the City Manager or designee is authorized to adjust the salary schedule for the unrepresented executive management consistent with this approval accordingly; and

**BE IT FURTHER RESOLVED**, that the City Council hereby authorizes a supplemental budget appropriation of \$50,651 from SRSD Fund 227 (Sewer Maintenance Fund) reflecting the cost of the 17% equity adjustment, effective July 1, 2024, to the District Manager/Engineer position.

I, Lindsay Lara, Clerk of the City of San Rafael, hereby certify that the foregoing resolution was duly and regularly introduced and adopted at a regular meeting of the City Council of said City held on Monday, the 3<sup>rd</sup> day of February 2025, by the following vote to wit:

AYES: COUNCILMEMBERS:  
NOES: COUNCILMEMBERS:  
ABSENT: COUNCILMEMBERS:

---

LINDSAY LARA, City Clerk

**SAN RAFAEL UNREPRESENTED EXECUTIVE MANAGEMENT  
SALARY SCHEDULE**  
**Effective July 1, 2024**

Grade	Position	A	B	C	D	E
2501	Assistant City Attorney	\$ 14,908	\$ 15,654	\$ 16,436	\$ 17,258	\$ 18,121
2001	Assistant City Manager	\$ 20,829	\$ 21,871	\$ 22,964	\$ 24,112	\$ 25,318
2502	Chief Assistant City Attorney	\$ 17,145	\$ 18,002	\$ 18,902	\$ 19,847	\$ 20,839
2300	Director of Community & Economic Development	\$ 15,770	\$ 16,559	\$ 17,387	\$ 18,256	\$ 19,169
4205	Director of Digital Service & Open Government	\$ 14,977	\$ 15,726	\$ 16,512	\$ 17,337	\$ 18,204
2205	District Manager/Engineer (SRSD)	\$ 16,413	\$ 17,234	\$ 18,095	\$ 19,000	\$ 19,950
2140	Finance Director	\$ 14,772	\$ 15,510	\$ 16,286	\$ 17,100	\$ 17,955
7101	Fire Chief	\$ 20,623	\$ 21,654	\$ 22,737	\$ 23,873	\$ 25,067
1106	Human Resources Director	\$ 14,908	\$ 15,654	\$ 16,436	\$ 17,258	\$ 18,121
2406	Library and Recreation Director	\$ 15,516	\$ 16,292	\$ 17,106	\$ 17,961	\$ 18,859
6101	Police Chief	\$ 20,623	\$ 21,654	\$ 22,737	\$ 23,873	\$ 25,067
2201	Public Works Director	\$ 16,075	\$ 16,879	\$ 17,723	\$ 18,609	\$ 19,540

**SAN RAFAEL UNREPRESENTED EXECUTIVE MANAGEMENT  
SALARY SCHEDULE**  
**Effective July 1, 2025**

Grade	Position	A	B	C	D	E
2501	Assistant City Attorney	\$ 15,952	\$ 16,750	\$ 17,587	\$ 18,466	\$ 19,390
2001	Assistant City Manager	\$ 21,454	\$ 22,527	\$ 23,653	\$ 24,836	\$ 26,078
2502	Chief Assistant City Attorney	\$ 18,345	\$ 19,262	\$ 20,225	\$ 21,236	\$ 22,298
2300	Director of Community & Economic Development	\$ 16,716	\$ 17,552	\$ 18,430	\$ 19,351	\$ 20,319
4205	Director of Digital Service & Open Government	\$ 16,325	\$ 17,141	\$ 17,998	\$ 18,898	\$ 19,843
2205	District Manager/Engineer (SRSD)	\$ 16,905	\$ 17,751	\$ 18,638	\$ 19,570	\$ 20,548
2140	Finance Director	\$ 15,953	\$ 16,751	\$ 17,589	\$ 18,468	\$ 19,391
7101	Fire Chief	\$ 21,241	\$ 22,303	\$ 23,419	\$ 24,590	\$ 25,819
1106	Human Resources Director	\$ 16,250	\$ 17,063	\$ 17,916	\$ 18,812	\$ 19,752
2406	Library and Recreation Director	\$ 16,602	\$ 17,432	\$ 18,304	\$ 19,219	\$ 20,180
6101	Police Chief	\$ 21,241	\$ 22,303	\$ 23,419	\$ 24,590	\$ 25,819
2201	Public Works Director	\$ 17,120	\$ 17,976	\$ 18,875	\$ 19,819	\$ 20,810



**SAN RAFAEL UNREPRESENTED EXECUTIVE MANAGEMENT  
SALARY SCHEDULE**  
**Effective July 1, 2026**

Grade	Position	A	B	C	D	E
2501	Assistant City Attorney	\$ 16,431	\$ 17,252	\$ 18,115	\$ 19,020	\$ 19,971
2001	Assistant City Manager	\$ 22,098	\$ 23,203	\$ 24,363	\$ 25,581	\$ 26,860
2502	Chief Assistant City Attorney	\$ 18,895	\$ 19,840	\$ 20,832	\$ 21,873	\$ 22,967
2300	Director of Community & Economic Development	\$ 17,218	\$ 18,079	\$ 18,983	\$ 19,932	\$ 20,929
4205	Director of Digital Service & Open Government	\$ 17,794	\$ 18,684	\$ 19,618	\$ 20,599	\$ 21,629
2205	District Manager/Engineer (SRSD)	\$ 17,412	\$ 18,283	\$ 19,197	\$ 20,157	\$ 21,165
2140	Finance Director	\$ 17,230	\$ 18,091	\$ 18,996	\$ 19,945	\$ 20,943
7101	Fire Chief	\$ 21,879	\$ 22,973	\$ 24,121	\$ 25,327	\$ 26,594
1106	Human Resources Director	\$ 17,550	\$ 18,428	\$ 19,349	\$ 20,316	\$ 21,332
2406	Library and Recreation Director	\$ 17,598	\$ 18,478	\$ 19,402	\$ 20,372	\$ 21,390
6101	Police Chief	\$ 21,879	\$ 22,973	\$ 24,121	\$ 25,327	\$ 26,594
2201	Public Works Director	\$ 17,634	\$ 18,516	\$ 19,441	\$ 20,413	\$ 21,434

**City of San Rafael**  
**Proclamation in Recognition of**  
**BLACK HISTORY MONTH 2025**  
**February 1 - 28, 2025**

- WHEREAS,** in 1976, as part of the nation’s bicentennial, Black History Week was expanded and established as Black History Month, and people across the United States and abroad have dedicated the month of February to honor and uplift the often-overlooked accomplishments of Black Americans in every area of endeavor throughout our history; and
- WHEREAS,** the 2025 Black History Month theme, “Reflections on Resistance: Black Struggles for Justice and Equality,” highlights the historical and ongoing contributions of Black Americans in advancing civil rights, equity, and social justice, serving as an opportunity to learn from the past and inspire future actions for a fair and just society; and
- WHEREAS,** Black history is American history, with Black Americans being an integral presence in our local, regional, and national community, making invaluable contributions in fields such as politics, science, education, the arts, and business, often against immense challenges and systemic barriers; and
- WHEREAS,** the legacy of resilience by Black Americans is a testament to the enduring fight for justice and equality, as seen in their advocacy for voting rights, desegregation, labor equity, and more, which have profoundly shaped the social, economic, and political landscape of our nation; and
- WHEREAS,** City of San Rafael supports and encourages employees and community members to delve into the stories of Black Americans, to celebrate their achievements, and to engage in initiatives that promote equity, inclusion, and understanding, particularly during this month of reflection and celebration; and
- WHEREAS,** recognizing Black History Month reaffirms the City’s commitment to fostering an inclusive community where diversity is celebrated, and all voices are heard.

**THEREFORE, BE IT RESOLVED** that the Mayor and City Council of the City of San Rafael hereby proclaim February 1 - 28, 2025, as Black History Month, and encourages all community members to recognize and honor the accomplishments, contributions, and ongoing resilience of Black Americans throughout history, present day, and for generations to come.



A handwritten signature in blue ink, appearing to read "Kate".

**Kate Colin**  
**Mayor**



**Agenda Item No: 6.a**

**Meeting Date: February 3, 2025**

## **SAN RAFAEL CITY COUNCIL AGENDA REPORT**

**Department: Digital Service and Open Government**

**Prepared by: Vinh Pham,  
Digital Infrastructure Manager**

**Sean Mooney  
Director, Digital Service  
& Open Government**

**City Manager Approval:** \_\_\_\_\_

**TOPIC: CANAL BROADBAND FEASIBILITY STUDY FINAL REPORT**

**SUBJECT: CANAL BROADBAND FEASIBILITY STUDY INFORMATIONAL REPORT**

**RECOMMENDATION:**

Staff recommends that the City Council receive the report.

**BACKGROUND:**

In June 2019, the Marin County Board of Supervisors approved the development of a Digital Infrastructure Strategic Plan to address digital and broadband equity challenges in Marin County made evident by the COVID-19 pandemic. The strategic plan, known as Digital Marin, included a roadmap to advance broadband deployment and digital adoption across the County. Digital Marin was adopted by the Board of Supervisors in February 2022 and supported by the San Rafael City Council by resolution in September 2022. One of the identified projects for Digital Marin was the "Canal Neighborhood Wi-Fi Project," a partnership between the City, County of Marin, San Rafael City Schools, Canal Alliance, and community partners to bring free public Wi-Fi to the Canal neighborhood. In Fall 2020, the Canal Wi-Fi network was deployed and continues to provide free Wi-Fi to the neighborhood, with an average of 600 visitors per day. Despite the success of the Canal Wi-Fi program, public Wi-Fi is not deemed sufficient to meet the broadband connectivity needs of multi-family households in the neighborhood. A permanent broadband infrastructure is recommended by the Digital Marin plan to reduce costs and increase access to the Canal Neighborhood.

In September 2022, the City of San Rafael, in partnership with Marin County, was awarded a Local Agency Technical Assistance (LATA) grant by the California Public Utilities Commission (CPUC) for \$258,620 to begin the process of addressing permanent broadband infrastructure needs for the Canal neighborhood. The grant-funded project included data collection, market analysis, and strategic plan

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**FOR CITY CLERK ONLY**

**Council Meeting:**

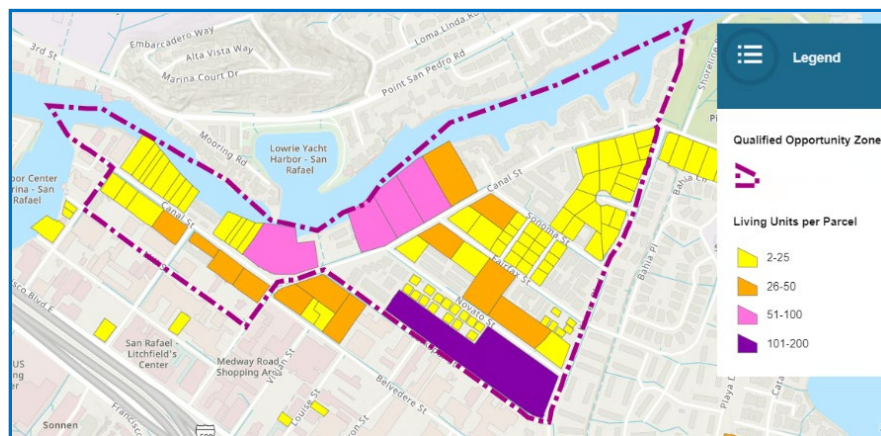
**Disposition:**

recommendations to analyze the Canal neighborhood, identify needs, quantify demand, calculate costs, estimate fees, and provide recommended project parameters and strategies to support the development of a shovel-ready infrastructure project.

In May 2023, the City contracted with EntryPoint Networks to provide project leadership, management, design, and strategic planning to deliver the following work products:

1. Local data collection, including geospatial files with resident survey data for broadband availability, price, and performance. Resident and property owner surveys were developed and completed to measure broadband satisfaction, experience, and affordability for residents. This data was collected to inform project planning and activities. The City partnered with Canal Alliance and Voces del Canal to support engagement and outreach efforts to community members in the Canal, build trust, and assess community needs. The team generated 609 surveys that were collected both in person at community events (Movies in the Park) and distributed online in coordinated outreach with community partners and trusted messengers in the community.
2. Local broadband market data and analysis related to availability, price, and performance for residents, particularly those residing in multi-dwelling living units, were collected to inform project planning and activities.
3. A high-level design, including material and labor cost estimates for a fiber to the living unit solution, and feasibility modeling, was developed that can inform municipal broadband funding applications.
4. Internet measurement data collected using technology developed by the University of Chicago and branded as NETRICS in the Canal Neighborhood. The methodology used for collection involved sampling randomized speed tests over a period of time to inform potential funding activities.
5. A Final Report providing explanatory narrative, findings, outcomes, and recommendations to inform municipal policies, strategies, and potential activities capable of supporting broadband improvements for the San Rafael Canal Qualified Opportunity Zone.

**ANALYSIS:**

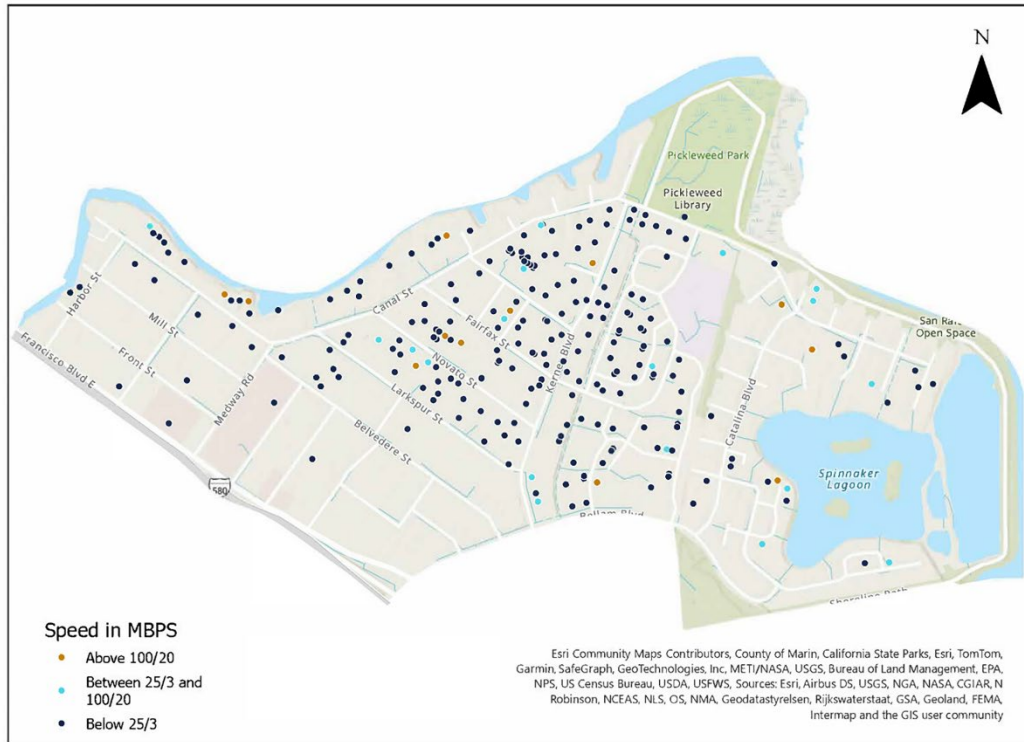


*Figure 1 San Rafael Qualified Opportunity Zone.*

The Canal neighborhood in San Rafael has significantly lower household incomes than surrounding neighborhoods. The demographics of the neighborhood at the focus of this study (Census Tracts 1122.03 and 1122.04) are designated as a Qualified Opportunity Zone area, with a median household income of

\$49,000 compared to a median household income for Marin County of \$121,700. These two census tracts have a population of **8,024**, representing **13.6%** of the City's total population of **59,000**. 89% of residents in this area identify as Hispanic or Latino.

## Availability of Internet in the San Rafael Area



*Figure 2 Internet availability in the Canal Neighborhood.*

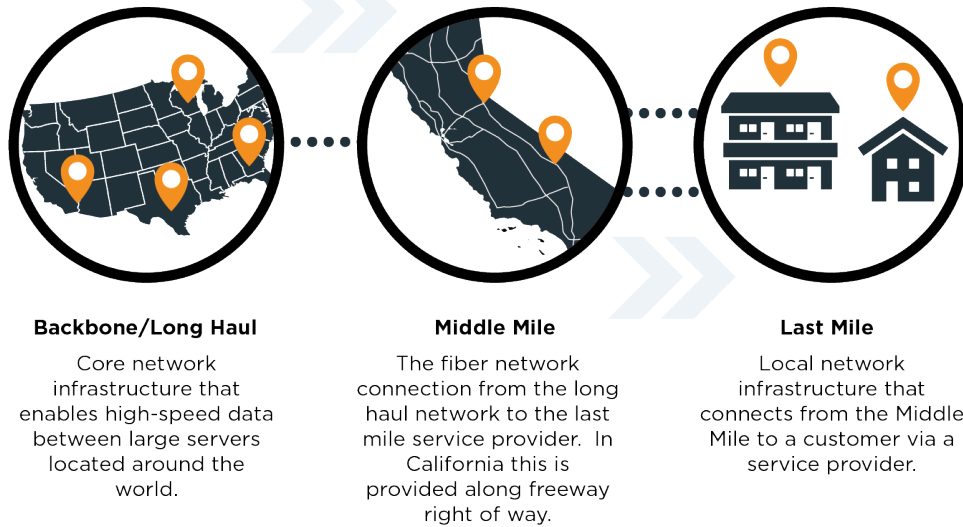
### What We Learned about Canal Neighborhood Internet Availability

Despite federal and state broadband map designations identifying the neighborhood as adequately “served” by incumbent provider Comcast, data collected via online and hard copy surveys for this report found households that were not provided with the level of service commiserate with federal standards. Comcast has announced technical upgrades intended to improve the area’s online subscriber experience, however, our study discovered:

- 50% of unserved respondents would use the Internet for education
- 91% of homes with children do not experience modern internet speeds of 100 megabits per second (Mbps) download speed and 20 Mbps upload speed or greater
- 44% of unserved households indicate that the monthly cost is the main reason they are unserved
- Unserved, underserved and served:
  - 62% of households are categorized as ‘unserved’
  - 28% of households are categorized as ‘underserved’
  - 10% of households are categorized as ‘served’
- 88% of respondents with Internet service want more providers in the Canal
- 59% of unserved people listed some barrier involving cost to be the reason they are unserved

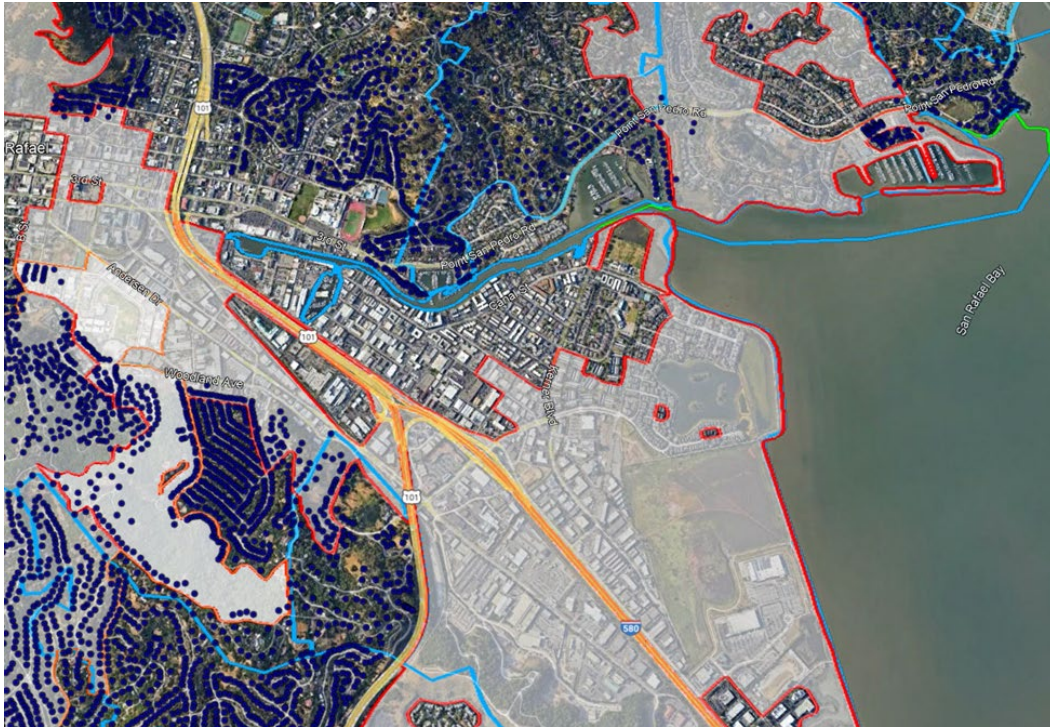


**“Last Mile” Grant Opportunities for Broadband Funding**



The term “Last Mile” (in the context of broadband telecommunications) refers to the final leg of a broadband network that connects local, city, or county-owned resources to the state-provided broadband network (referred to as the “Middle Mile.”) Current federal and state funding opportunities primarily focus on supporting “Last Mile” connections to the “Middle Mile” fiber network provided by the State of California. The Federal Funding Account, administered by the California Public Utilities Commission (CPUC), is a \$2 billion grant program for “Last Mile” broadband infrastructure projects to connect unserved Californians. Applications are open to cities, counties, tribes, non-profits, and broadband service providers.

The 2023 application window closed on September 29, 2023, and the program received 484 grant applications within the application window. At least two applications were received for every county in the state, with a total of more than \$4.6 billion in requests to fund broadband infrastructure projects to connect unserved Californians. AT&T submitted 250 projects totaling an estimated \$2.6 billion for funding, some of which specifically included areas of Marin County and San Rafael. However, applications from AT&T and other broadband providers excluded any improvements in the Canal neighborhood, as shown on the map below, most likely because the Federal Communications Commission (FCC) has deemed this area “served” by the existing service provider, Comcast. These findings support the conclusion that a strategic municipal plan coupled with public funding opportunities is advisable to narrow the digital divide for members of the Canal neighborhood.



*Figure 3 Map of AT&T FFA project areas outlined in red. The Canal neighborhood was excluded.*

From 2023 to 2024, the primary “Last Mile” funding opportunity for underserved communities was the Broadband Equity, Access, and Deployment (“BEAD”) Program which provided \$1.8 billion to expand high-speed Internet access in California. The Canal Neighborhood was deemed not eligible for BEAD funding because the Federal Communications Commission has determined that each property address in the neighborhood is adequately “served” by existing broadband providers. “Served” broadband connections are defined as download speeds of at least 100 Mbps and upload speeds of at least 20 Mbps.

#### The Challenge Process

Resident, market, and internet measurement data from the City’s Canal Broadband feasibility project were collected and submitted through the CPUC’s BEAD Program Challenge Process by The City of San Rafael and EntryPoint in coordination with the County of Marin’s Digital Marin team in an attempt to overturn the FCC’s determination that the Canal is adequately “served” and make broadband funding available for the area. The neighborhood’s incumbent cable operator (Comcast) submitted a rebuttal to the City’s challenge prompting the California Public Utilities Commission to overturn all submitted challenges, concluding that existing services provided by Comcast are sufficient, and successfully blocking any potential funding from the BEAD program for the Canal neighborhood.



*Figure 4 Photos taken of the Coaxial Plant during data collection in Q3 of 2023.*

The challenge process likely benefitted area residents because the local cable operator performed a technology upgrade in the Canal neighborhood to improve reliability and upload speeds just before the challenge window opened and data collection commenced. Other funding opportunities may become available soon, and the City is looking into options for local connectivity to the state’s “Middle Mile.”

The Final Report prepared by EntryPoint provides an explanatory project narrative, key project findings, activity outcomes, and recommendations to inform strategies, and potential future activities capable of supporting broadband improvements for the San Rafael Canal neighborhood and other underserved areas with broadband gaps. Additionally, as funding becomes available, EntryPoint developed a proposed broadband network design and map that proposes how to build out a City-owned fiber infrastructure in the Canal neighborhood connected to the state’s “middle-mile” fiber network. This tool will assist in future grant applications and potential opportunities to connect multi-family properties once a City-owned network is in place.

#### **Next Steps:**

The Digital team has outlined the following next steps from this effort to help address digital equity concerns in the Canal neighborhood.

1. **Pursue Grant Funding Opportunities** – We will continue to pursue grant funding opportunities to connect to the state’s “Middle Mile” network and build out infrastructure to support a fiber network in the Canal neighborhood in coordination with existing Capital Improvements in the neighborhood.
2. **Citywide Broadband Planning** – We are currently working in coordination with the Department of Public Works to inventory all City-owned fiber assets in tandem with a Citywide asset management project. We will be scoping a Citywide broadband plan to provide guidelines and roadmaps for City-owned broadband infrastructure.
3. **Expand and Promote Canal Wi-Fi Public Wi-Fi Network** – In 2024, the City took ownership of the Canal Wi-Fi public Wi-Fi network (built in 2020 with the County of Marin) and is currently developing a plan to upgrade existing equipment, expand the network, and promote it to the community.

#### **FISCAL IMPACT:**

This is an informational report, and as such, there no direct fiscal impact associated with the report. The California Public Utilities Commission (CPUC) awarded the City a total of \$258,620 in Local Agency Technical Assistance grant funds to conduct the feasibility study.

#### **OPTIONS:**

The City Council has the following options to consider on this matter:



1. Receive the report.
2. Take no action.

**RECOMMENDED ACTION:**

Staff recommends that the City Council receive the report.

**ATTACHMENTS:**

1. San Rafael Canal Broadband Feasibility Study and Market Report
2. San Rafael Canal Neighborhood Network Design



**SAN RAFAEL**

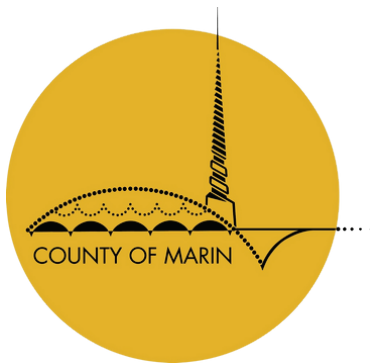
THE CITY WITH A MISSION

# **San Rafael Canal Broadband Feasibility Study and Market Report**

**January 2025**



This Broadband Feasibility Study and Market Report was commissioned by the City of San Rafael and funded by a Local Agency Technical Assistance grant from the California Public Utilities Commission. We would like to thank all of the partners that contributed to the project. We especially appreciate the invaluable collaboration and support provided by our local partners. Their commitment to improving our community's broadband access and affordability has been instrumental in collecting the data used in this report.



THANK  
YOU

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## Overview

In September of 2022 the City of San Rafael was awarded a Local Agency Technical Assistance (LATA) grant from the California Public Utilities Commission for an amount not to exceed \$258,620. LATA provides funding support for local agencies to expand broadband service to unserved and underserved Californians. The LATA project in San Rafael focused on gathering data to inform the development of a municipal approach to improve broadband service in areas where additional funding or competitive forces are needed.

The Canal District in San Rafael was strategically selected as the project focus area because, as a historically disadvantaged community, the neighborhood has been subjected to a pattern of disinvestment on the part of the area's incumbent broadband providers. The broadband market in the Canal District is a microcosm of the nationwide market failure that has resulted from providers concentrating their broadband investments in more affluent neighborhoods. Disadvantaged areas, like the Canal neighborhood, are often left to languish with a single terrestrial provider, aging legacy infrastructure, and service levels that do not meet regulatory requirements in terms of speed or reliability.

Most broadband policy today assumes that the private market model can address existing market failures, bridging the digital divide, and achieving the goals of ubiquitous and affordable broadband internet by incentivizing improvements using targeted public subsidies with "light touch" regulation. Public broadband programs focus public infrastructure investments and subsidies on "unserved" locations first, with any remaining program funds devoted to "underserved" locations. Locations considered "served" by incumbent providers are excluded from virtually all infrastructure funding programs, either explicitly or because these areas are simply not feasible within program guidelines.

The Broadband, Equity, Access, and Deployment (BEAD) program exemplifies how the categorization of locations as "unserved", "underserved", and "served" will influence broadband outcomes for the foreseeable future. BEAD is the single largest public broadband investment in United States history. The program provides \$42.5 billion in broadband infrastructure funding focused on installing broadband directly to unserved and underserved addresses. Each location's funding eligibility was initially based on data submitted to the Federal Communications Commission (FCC) by incumbent providers and provided for public review in a National Broadband Map. Based on the data submitted in 2023 by phone and cable companies, of the 16,865 they reported in San Rafael, only 170 scattered addresses were eligible for any level of BEAD funding.

Challenge processes were implemented to allow local governments, non-profits, and broadband service providers to review and contest the designation of locations as "served" or "unserved" on the National Broadband Map to improve the data being used to allocate BEAD funding. Because most local governmental agencies do not have either the funding or expertise to challenge industry data or to develop broadband solutions capable of leveraging BEAD funding, the LATA program was established to assist local agencies to meet this need.

With the expressed goal of developing a BEAD grant fundable broadband infrastructure improvement project for the Canal District, this LATA project focused on (1) collecting data to inform a BEAD challenge process to make the area eligible for funding, and (2) designing a solution aligned with BEAD



requirements, the following LATA work products were completed:

## 1. Data Collection:

- a. **Deliverable:** Survey development, execution and final report in a statistically relevant sample size organized in Geographic Information System (GIS) or mapped dataset with authoritative broadband demographics, satisfaction, experience, and affordability information.
- b. **Purpose:** Inform future city actions, such as BEAD challenge processes, funding eligibility and affordability rates for municipally supported solutions.

## 2. Market Analysis:

- a. **Deliverable:** Detailed broadband market report for the Canal District and the larger San Rafael area.
- b. **Purpose:** Document and provide current market availability, including availability, service levels, reliability, and costs to inform municipal policy and solution development.

## 3. Improvement Design:

- a. **Deliverable:** Fiber optic to the living unit infrastructure design, including unit counts for materials and labor, and feasibility modeling for a municipal fiber to the home or living unit infrastructure improvement.
- b. **Purpose:** Provide an adequate level of design and projected costs to inform a municipal fiber optic improvement that could be funded through a grant award.

## 4. Internet Measurement Data:

- a. **Deliverable:** Performance and reliability data for the Canal District that complies with BEAD challenge processes.
- b. **Purpose:** Provide data to inform a BEAD challenge proving that Canal District service locations should be changed from 'served' to 'unserved' based on collected data.

## 5. Final Report / Strategic Plan:

- a. **Deliverable:** Final summary report describing the tasks performed, final deliverable summaries and project outcomes.
- b. **Purpose:** Report and document final project findings for municipal leadership while also highlighting how project deliverables could be used to inform potential city actions to improve broadband access and affordability.

This report summarizes the key factors contributing to the lack of digital access, network reliability, and broadband affordability for residents in the Canal District to inform municipal policy, infrastructure, and business model recommendations capable of solving the broadband disinvestment dilemma.



## Problem Summary

Residents in the Canal District of San Rafael, CA face the following barriers to digital access:

- 1) Residents in the Canal neighborhood do not have access to fiber optic infrastructure
- 2) Average speeds sampled from Aug 1, 2023 – July 31, 2024, do not meet the current FCC guidelines of 100 x 20 Mbps.
- 3) Existing options are expensive
- 4) Residents do not have competitive choices for internet service providers.
- 5) Each of the above problems is more pronounced for residents living in apartment buildings, which represents a majority of residents in the Canal neighborhood.

## Fiber Optic Infrastructure

Analysis for this report did not identify any residents in the Canal District that have access to fiber optic connectivity. Comcast is the dominant internet service provider (ISP) in the Canal District and the company connects individual living units with coaxial cable.

Only 26% of last mile subscribers in the City of San Rafael have access to fiber optic internet connectivity and that is through AT&T. Those residents with access to fiber typically live in single-family detached homes and duplexes in medium to high-income census tracts.

A limited number of business addresses have access to fiber.

## Affordability

In San Rafael's Canal District, most residents and businesses subscribe to wireline internet services from the cable operator (Xfinity/Comcast) or from the incumbent telephone operator (AT&T) for DSL. Residents in the Canal neighborhood will pay just under \$70 for Xfinity's lowest speed option at 150 x 23.37 Mbps. Many communities in the country where there are multiple fiber providers are paying at or near \$70 for Gig speeds. For example, Google Fiber prices their Gig product at \$73. Sonic Fiber in nearby cities advertises symmetrical Gig speeds for \$59.99.

### Xfinity Residential

Xfinity advertises the following residential ISP services in San Rafael. Note that all rates, except for Standard Pricing, are available exclusively to new customers. Comcast is the primary high-speed internet provider for 18,295 of San Rafael's 24,701 housing units, and 96% of all multi-family units with eight or more units. This analysis presumes most residents in these homes are existing Comcast customers paying Standard Pricing for "internet only" service.



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Speed (Mbps) [Down / Up]	1-12 Mo Rate [Contract Required]	13-24 Mo Rate [Contract Required]	24-36 Mo Rate [Contract Required]	Standard Pricing [+ Taxes and Fees]	Pro Install [Fee]
150 / 23.37	\$29.99	\$67.00	\$67.00	\$67.00	\$100.00
300 / 23.37	\$40.00	\$40.00	\$79.00	\$79.00	\$100.00
500 / 23.37	\$60.00	\$60.00	\$89.00	\$89.00	\$100.00
*800 / 23.37	\$70.00	\$70.00	\$99.00	\$99.00	\$100.00
1000 / 23.37	\$75.00	\$75.00	\$109.00	\$109.00	\$100.00
1200 / 40.25	\$80.00	\$80.00	\$119.00	\$119.00	\$100.00
2000 / 306.2	\$130.00	\$130.00	\$130.00	\$130.00	\$100.00

Information in the table above is from Xfinity's website.

## Taxes and Fees often represent an additional (20%) of Standard Pricing

Shared Network – Speeds are “Up To” and are not guaranteed.

Speeds are not Symmetrical.

Modem with Managed WiFi - \$15.00 per month / \$25.00 per month after 24 months. Data Caps apply.

\* Larger families with school-aged children living in apartment buildings often require higher speeds to meet their in-home computing demands, particularly during peak hours. 800/20 Mbps would not be an unrealistic benchmark: \$124 monthly with modem.

## AT&T Residential

AT&T advertises the following residential ISP services in Northern San Rafael:

Speed (Mbps) [Down / Up]	Standard Pricing [+ Taxes and Fees]	Equipment [Fee]
300 / 300	\$60.00	\$150.00
500 / 500	\$70.00	\$150.00
1000 / 1000	\$85.00	\$150.00
2000 / 2000	\$155.00	\$150.00
5000 / 5000	\$255.00	\$150.00

Information in the table above is from AT&T's website.

## Taxes and Fees often represent an additional (20%) of Standard Pricing

Shared Network – Speeds are “Up To” and are not guaranteed.

## Speed & Reliability

According to mLAB data, the average broadband service in San Rafael is not meeting the FCC Definition of Broadband at 100/20 Mbps.

**Xfinity/Comcast's average speeds in San Rafael are 106.03 Mbps download / 13.21 Mbps upload.**

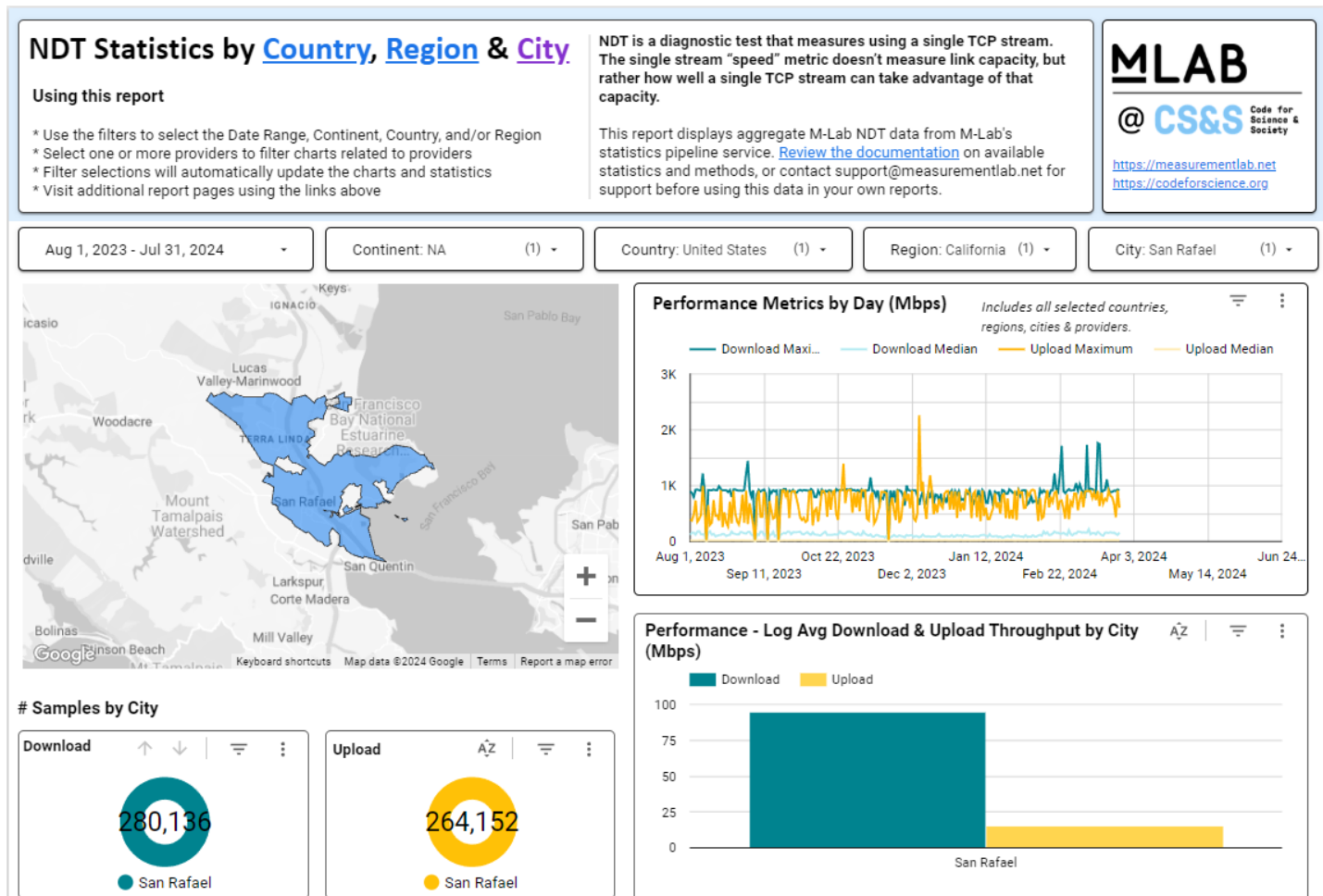
**AT&T's average speed in San Rafael is 70.75 Mbps download / 34.27 Mbps upload.**

**August 1, 2023 – July 31, 2024, Sample Size 280,136**



## Speed Test Data Detail

mLAB is an academic group that provides authoritative data from speed tests on a city-by-city basis across the United States. Academic and scientific research organizations rely on mLAB data. Every time an individual runs a speed test through an affiliate of mLAB, the data is saved in Cloud Storage hosted by Google and made available to the public. The data below is the speed test results in the City of San Rafael from August 1, 2023, to July 31, 2024. The sample size for this 12-month period includes 280,136 speed tests.



**FIGURE 10**  
**Speed Test Data Sample Size**

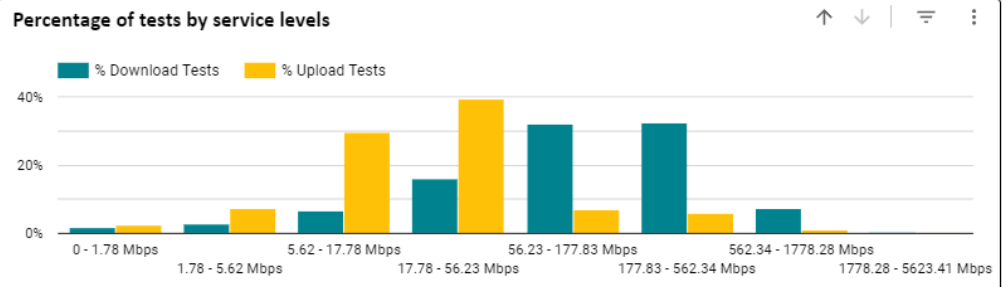
FIGURE 10 shows that there were over 280,000 download and Over 264,000 upload speed tests completed inside the City of San Rafael over 1 a one-year period using the mLAB's platform (between August 1, 2023, and July 31, 2024). The average download for all speed tests performed over that time was just under 100 Mbps with the uploads averaging around 15 Mbps as shown in figure 10.

**The average speed delivered by Xfinity/Comcast in San Rafael is 106.03 Mbps download / 13.21 Mbps upload. AT&T's average speed in San Rafael is 70.75 Mbps download / 34.27 Mbps upload.**

**Overall cumulative average speed in San Rafael is 94.48 Mbps download / 15.01 Mbps upload.**

NDT statistics used in this report are provided as daily histograms, consisting of the percentage of measurements within a range of "service levels" or speed ranges.

The chart on the right presents the histogram of tests that measured at these levels over the selected date range and locations, across all providers.



In the NDT dataset, each test is associated with the [Autonomous System](#) operating the IP address from which each test was conducted. This may be different than the ISP that offers service.

## Provider Statistics

Provider: AT&T Services, Inc., Comc... (2) ▾

### # Samples by Provider

#### Download

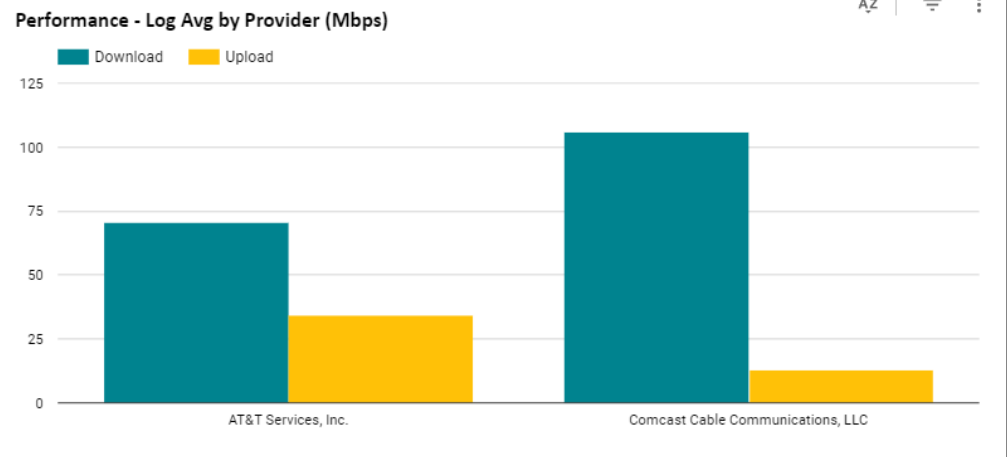


● AT&T Services, I... ● Comcast Cable...

#### Upload



● AT&T Services, I... ● Comcast Cable...



**FIGURE 11**  
**Speed Test Data Comparison between AT&T & Comcast**

FIGURE 11 shows the average results of the over 250,000 tests completed between August 2023 and July 2024 by provider. AT&T maintained an average download of approximately 70 Mbps and an upload average of approximately 30 Mbps. Comcast maintained an average download of just over 100 Mbps and an upload average of approximately 12 Mbps. It is important to note that this data represents the results for the entire City, not just the Canal District. There is currently no publicly available tool capable of collecting speed test data for just the Canal District. Some testing devices, using technology developed by the University of Chicago and branded as NETRICS were installed in the Canal District to collect a sampling of randomized speed tests over a period. Information specific to the data set collected by this activity is included later in this report.

## Comcast's Mid-Split Upgrade

On July 1, 2024, Comcast announced a "mid-split upgrade" in the San Rafael Canal neighborhood, seven days before the BEAD Challenged opened. The mid-split upgrade allowed for more spectrum to be dedicated to the upstream path, which means customers were able to access faster upload speeds. This is particularly beneficial for activities like video conferencing, online gaming, and uploading large files.

**Improved Network Performance:** By using 1.2 GHz of spectrum within the coaxial portion of the link, the mid-split upgrade enhanced overall network performance, making it more reliable and efficient. When



Comcast notified Marin County of this mid-split upgrade, they did not explain why this upgrade had not been made earlier for the residents of the Canal District.

On 8/6/24, representatives of Marin County submitted speed test challenges in the California Challenge portal on behalf of San Rafael, based on Netrics data provided by Merit Networks, Justin Campbell. Marin County filed six challenges based on Netrics speed tests, which showed Comcast service falling below the FCC standard of 100/20 Mbps. Marin County is now evaluating the full Netrics dataset in collaboration with Justin Campbell (Merit) before commenting further on the impact of Comcast's mid-split upgrade. More information related to this data collection and analysis will be provided as a part of a future strategic plan that will utilize the findings of this market analysis to inform a broader municipal strategy.

## Competitive Options for Internet Service Providers

Options for internet access in the City of San Rafael are limited – and this is particularly the case for residents of the Canal neighborhood. As stated earlier, Comcast is the sole internet provider to 66% of all San Rafael living units and the sole ISP to 96% of all MDUs with 8 or more living units in the City of San Rafael. The Canal District consists mainly of multi-family dwelling units. As a result, Comcast (Xfinity) is the sole internet service provider to 100% of the greater Canal District, including Bahia and Spinnaker.

Residents and businesses in the Canal neighborhood that are dissatisfied with cable offerings have no current options for terrestrial technology capable of delivering even a 25/3 Mbps experience, let alone 100/20 Mbps service. To obtain a fiber optic connection, the new connection must be within a city block of an existing fiber connection, or the resident or business must be willing to pay the amortization cost for the entire fiber extension in a contract requiring monthly payments of \$500 to \$3,000 for two to five years.

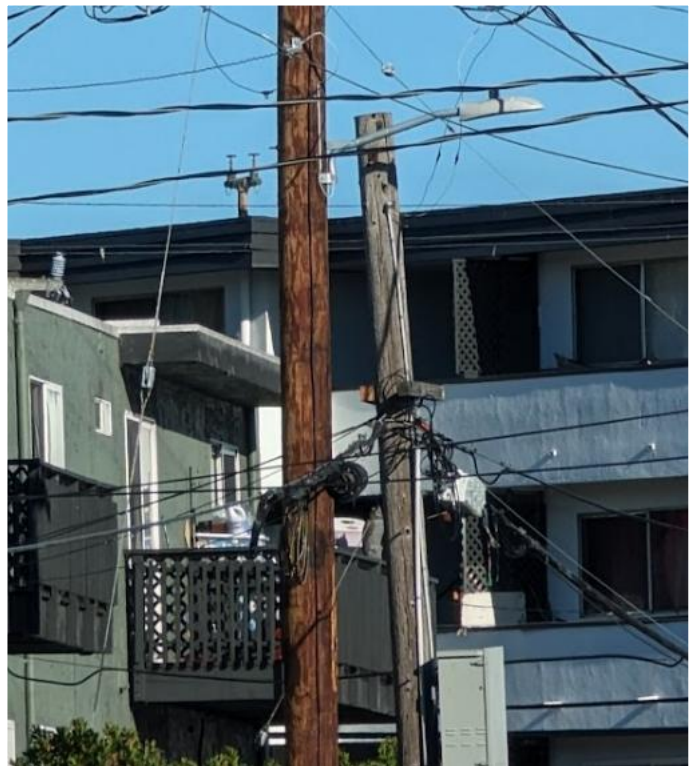
## MDU Broadband Barriers in the Canal District

Because the Canal District largely consists of Multifamily Dwelling Units (MDU's), the existing infrastructure presents a specific challenge to residents due to performance and network reliability gaps. These gaps may stem from a number of sources including aging infrastructure, links which are shared by multiple users, jury rigged building wiring, unreliable wireless systems which are tethered to the coaxial cable or are independent of the cable network, as well as too many endpoints sharing a common hub that creates congestion during times of high utilization as shown in the following images taken during a recent site visit to the neighborhood.





## Example of Infrastructure Neglect



Additionally, there are a number of complications related to deploying new fiber optic infrastructure into existing Multi-family Dwelling units (MDU's). These include:

- 1) Some owners of multi-tenant environments are incentivized to block competitive offerings into their rental units because they receive revenue sharing agreements from incumbents for exclusive marketing rights to MDU residents. In April 2024, the FCC issued its Open Internet Order, which adopted bright-line rules that prohibit blocking, throttling, and paid prioritization. Prior to taking effect, the 6<sup>th</sup> District Court overturned the order, stating that the FCC overstepped its authority without authorization from Congress. Had it not been overturned; the rule would have prohibited exclusive access and service contracts in residential and commercial multi-tenant environments.
- 2) It may be difficult to deploy new fiber infrastructure into old buildings because of construction barriers.
- 3) The economics of maximizing return on investment for private ISPs dictate that installation needs to be a relatively quick process, using relatively inexperienced technicians, and straight-forward installation methods.
- 4) The owners of multi-family units do not have strong incentives to invest in last mile fiber for their existing facilities even though existing cable providers may offer expensive packages and/or poor reliability.

There are 24,701 living units in the City of San Rafael, of which 4,427/18% are in apartment buildings with 8 or more units. There are 24,701 living units in the City of San Rafael, of which 4,427/18% are in apartment buildings with 8 or more units. Some owners of multi-tenant environments are incentivized to block competitive offerings into their rental units because they receive revenue sharing agreements from incumbents for exclusive marketing rights to MDU residents. It may be difficult to deploy new fiber infrastructure into old buildings because of construction barriers. The economics of maximizing return on investment dictate that installation needs to be a relatively quick process, using relatively inexperienced technicians, and straight-forward installation methods. The owners of multi-family units do not have strong incentives to invest in last mile fiber for their existing facilities even though existing cable providers may offer expensive packages and/or poor reliability.



## Summary of Relevant Demographic & Broadband Data

Census Tract	Supervisor District, Area, CT	Total San Rafael Living Units					AT&T Fiber Units		MDUs >= 8 units		
		Very Low Income	Low Income	Moderate Income	High Income	Grand Total Living Units	Total AT&T Fiber Units	AT&T Fiber % of CT	Total MDU Units	AT&T Fiber Units	%
112100	D2 San Rafael Brett Harte 1121			1802		1802	1385	77%	95	29	31%
110100	D1 San Rafael Montecito, Dominican 1101.00			2814		2814	1117	40%	459	26	6%
110200	D1 San Rafael Peacock Gap 1102				2948	2948	1006	34%	47	38	81%
111002	D2 San Rafael Gerstle Park 1110.02		2090			2090	865	41%	505	21	4%
108100	D1 San Rafael Upper Terra Linda 1081.00			2621		2621	755	29%	12		0%
109002	D1 San Rafael Sun Valley 1090.02			1952		1952	551	28%	364		0%
109001	D1 San Rafael Upper Lincoln 1090.01		1718			1718	245	14%	274		0%
108201	D1 San Rafael West Civic Center 1082.01		1076			1076	207	19%	468		0%
108202	D1 San Rafael Lower Terra Linda Nova Albion 1082.02			1489		1489	150	10%	266		0%
111001	D4 San Rafael Center Lower Lincoln 1110.01		951			951	64	7%	723	51	7%
106001	D1 San Rafael Smith Ranch Road 1060.01			2629		2629	61	2%	301		0%
112202	D4 San Rafael Bahia Spinnaker 1122.02		1316			1316		0%	239		0%
112203	D4 San Rafael Canal (South) 1122.03		452			452		0%	201		0%
112204	D4 San Rafael Canal (North) 1122.04	843				843		0%	473		0%
<b>Grand Total</b>		<b>843</b>	<b>7603</b>	<b>13307</b>	<b>2948</b>	<b>24701</b>	<b>6406</b>	<b>26%</b>	<b>4427</b>	<b>165</b>	<b>4%</b>
<b>% of Grand Total Living Units</b>		<b>3%</b>	<b>31%</b>	<b>54%</b>	<b>12%</b>	<b>100%</b>			<b>18%</b>		
<b>Grand Total Canal neighborhood including Bahia/Spinnaker</b>		<b>843</b>	<b>1768</b>			<b>2611</b>	<b>0</b>	<b>0</b>	<b>913</b>		<b>0%</b>

Marin County Median Household Income, family of 4	<b>\$ 136,000</b>			
	<b>Very Low</b>	<b>Low</b>	<b>Moderate</b>	<b>High</b>
MHHI Range - High	\$ 93,999	\$ 152,999	\$ 209,999	\$ 250,000
MHHI Range - Low	\$ -	\$ 94,000	\$ 153,000	\$ 210,000

Source: FCC Broadband Data Collection, provider data through 12/31/23

## The Canal Area - Relevant Community Data

The Canal Area comprises two neighborhoods of San Rafael, California, designated by the city as the "Canal Waterfront" and the "Canal." The Canal Area is bounded on the east by San Francisco Bay, on the north by the San Rafael Canal and on the south and west by Highways 101 and I-580 and by San Quentin Ridge. Land use is split almost evenly between residential and non-residential (commercial/industrial) uses.[1]

San Rafael's Canal Area represents a substantial portion of the low-income housing in Marin County. Further, the Canal Area is highly segregated with roughly a 90% Hispanic population and less than 5% white non-Hispanic population. According to the Canal Alliance 2023 Annual Report, as much as 72% of the population lives below the federal poverty line.

The population density of the Canal District in San Rafael is 58,409 people per square mile. California's urban areas have a population density of 4,790 people per square mile and the state has a population density of 253.9 people per square mile.

## Demographics and Housing

According to a 2021 San Francisco Chronicle article, the Canal Area represents a substantial portion of the low-income housing in Marin County, one of the most affluent counties in the United States. The Canal area is also one of the most segregated neighborhoods in Marin County, with more than a 90%



# Canal Broadband Feasibility Study and Market Report

Hispanic population and less than 5% white non-Hispanic population. The Chronicle article suggests that most of San Rafael's low-income residents live in the Canal Area. This area provides a location for workers who hold low-income jobs that are essential to the functioning of the community to live close to their place of employment. Although most residents in this area are low-income workers, most of the apartments in which they live are neither subsidized nor less expensive than comparable apartments elsewhere in San Rafael. Article: [This neighborhood in Marin is the most segregated in the Bay Area \(sfchronicle.com\)](https://www.sfchronicle.com/bayarea/article/This-neighborhood-in-Marin-is-the-most-segregated-in-the-Bay-Area-16280000)

The following demographic data was included in the County's 2024 Speed Test Challenge:

Area	Track	Block Group	Population	Sq Miles	People / Sq Mile	Age	Per Capita Income	Median household income	% Marin Med HH Income \$136,000	Housing Units	Per HH	Owner Occupied	Renter Occupied	Single Unit	Multi Unit
CANAL	1122	BG1	1,191	0.02	59,447	26	\$ 17,278	\$ 59,607	44%	221	5.40	16%	84%	11%	89%
CANAL	1122	BG2	1,342	0.02	61,459	28	\$ 39,538	\$105,361	77%	263	5.10	22%	78%	12%	88%
CANAL	1122	BG1	2,188	0.04	56,139	30	\$ 20,344	\$ 84,076	62%	481	4.60	10%	90%	11%	89%
CANAL	1122	BG2	2,501	0.04	56,592	27	\$ 18,399	\$ 50,972	37%	612	4.00	4%	96%	8%	92%
<b>TOTAL</b>			<b>7,222</b>		<b>58,409</b>	<b>28</b>	<b>\$ 23,890</b>	<b>\$ 75,004</b>	<b>55%</b>	<b>1577</b>	<b>4.78</b>	<b>13%</b>	<b>87%</b>	<b>11%</b>	<b>90%</b>



**Canal District Street Corner – San Rafael, CA (SF Chronicle Article: *This Neighborhood in Marin is the Most Segregated in Bay Area*, October 10, 2021)**

## Data Analysis

The broadband market data summarized in this report suggests that the Canal Neighborhood in San Rafael, California suffers from the effects of near monopoly status for the broadband service provider. There is only one terrestrial provider capable of delivering close to the 100/20 Mbps target and actual data provided in the report indicates that average speeds are below the FCC target. The lack of competition is likely contributing to lower service levels and higher consumer costs for broadband.

Digital infrastructure in the Canal District is a critical necessity for full participation in the economy, education, community life, and healthcare. Reliable and robust digital infrastructure is a basic requirement for the functioning of City services and operations, from finance to transportation to emergency services. Similarly, businesses require reliable and fast digital infrastructure to connect with customers, protect their supply chains and ongoing operations. Education and healthcare systems require digital infrastructure to connect with students or patients, to communicate between facilities, and ensure timely and appropriate services. Connecting to individuals from disadvantaged groups, either because of income, race, age, or language abilities, is even more critical to ensure these groups have full access and availability to benefit from today's digital applications.

Service delivery models which optimize profits rather than affordability and accessibility will inevitably create a digital divide. Due to the critical nature of digital infrastructure, ensuring a reliable and affordable network is a clear public policy concern and decisions focused on remedying the problem can have a far-reaching impact on all the systems that are important in a city for businesses and people.

## Solution

### Building a Sustainable Model that is Affordable and Available

#### Improving Affordability

The dominant national ISPs have developed a business model that is “rent seeking” and sustained by controlling the infrastructure. Network control allows incumbents to impose premium pricing on network rents (ISP fees). The actions listed below can effectively overcome these “rent seeking” practices and drive down the cost of access in a meaningful way. These include the following:

1. Separate and optimize the key cost components of digital access into the three main network categories: (1) Capital Infrastructure Investment, (2) Monthly Maintenance & Operations Expenses, and (3) Monthly Internet Access from ISPs and other digital services.
2. Apply for state and federal grants targeted to offset the cost of deploying new fiber-optic infrastructure.
3. Fund digital infrastructure with public money and keep the infrastructure in the public or non-profit domain. Services can be for-profit and privately owned and operated.
4. Apply established utility operational models for funding, construction, operation, and fees and leverage established municipal utility powers, tax exemptions, and liability benefits to drive costs down.





5. Put downward pressure on price by enabling dynamic competition between service providers via an open access network model.
6. Allow households in multi-tenant buildings to share the infrastructure, maintenance, and operations costs.
7. Allow subscribers to pay off any cost for infrastructure and eliminate that line item once the infrastructure debt has been retired.
8. Leverage automation to lower operational expenditures.

## Unbundled Infrastructure and Services

The dominant national ISPs bundle the infrastructure and services together to insulate the infrastructure owner from outside service providers. An open access model depends on unbundling or separating the primary functions and network costs into three buckets: 1) Infrastructure Capital Deployment, 2) Ongoing Network Operations, and 3) Services. To optimize each function and to enable the city to become a neutral host, it is important to unbundle the key network functions and costs.

## Public Infrastructure

Persistent barriers to universal internet access, availability, affordability, and adoption are now public domain concerns. Internet access is a necessary feature of modern life—like other utility infrastructure—and can no longer be considered a luxury item. The incentives for private industry are not aligned toward resolving persistent gaps and the solutions advanced by private industry have not addressed these critical public needs or provided effective sustainable solutions. Informed public policies coupled with targeted public investments are needed to provide lasting solutions. These public policies must be informed by the fact that reliable internet is now necessary for access to educational systems, economic activities, healthcare, public safety systems, and many other cultural and societal interactions.

## Fiber-Optic Infrastructure as a Public Utility

Managing Fiber-optic networks as a public utility makes sense because of the essential nature of the infrastructure. Utility frameworks, such as roads, water, sewer, storm drains, and electricity, exist to support essential functions critical for societal success. Providing digital access as a public utility will result in maximum service at the lowest possible cost for residents, businesses, and anchor institutions. Treating this as an amenity rather than a utility affects affordability, availability, and quality of service.

## Increased Competition Through Open Access

Open access is a model that divides the infrastructure and services into two separate systems and then shares the infrastructure between multiple service providers, like road systems and airports. A key goal of an open access system is to lower costs and improve service by increasing choice and competition. For an open access system to realize its potential, it is critical for the infrastructure owner to be a **neutral host of the infrastructure**. The role of a neutral host is to control and manage the infrastructure without privileging one service provider over another. A true open access network depends on enabling robust shared infrastructure that is operated on a non-discriminatory basis.

## Alignment with Users

Residents, business owners, and visitors in the Canal District should receive maximum value for minimum cost, following traditional utility models. Goals should be established for leveraging this infrastructure to enhance livability, increase economic development activity, enable important anchor institutions like healthcare and education, and care for natural and human resources. As digital infrastructure becomes increasingly important to each of these things, the significance of alignment between the network owner/operator and users also increases.

## Local Control Over Pricing and Reliability

Local control over critical infrastructure allows for the needs of residents and business owners to influence policy and regulations. Today's dominant ISPs are nationwide companies that are not organized to align the network with local needs and interests. Digital infrastructure can increase local value when it is owned and controlled by a local neutral host. The digital divide, education, economic development, public safety, and healthcare are all examples of variables that can best be understood and addressed locally. Control over network infrastructure will allow residents in the Canal District to leverage the power of the network.

## Economic Development

Historically, economic development has followed investment in infrastructure for all major systems including transportation, water, sewer, and communications. Until now, municipalities have mostly remained independent of a governance role over digital infrastructure, allowing private companies to decide where they will build, what they will build, the cost of services, and the kind of innovation that will happen on these systems. However, due to gaps in affordability and availability, municipalities are increasingly taking a more active role in the governance of this infrastructure.

## Financing

The most meaningful opportunity to improve affordability in the Canal District will come from accessing state and federal grants to offset the cost of deploying new fiber-optic infrastructure and then to pass the savings on to subscribers in the form of lower monthly subscription payments. For this to work, the infrastructure would need to be in a governance structure that is either a public or non-profit entity with a primary objective of improving the affordability and reliability of internet access for residents.

## Financial Feasibility

The Canal District is an area with high urban density, allowing for a combination of both underground (buried) or above ground (aerial pole) infrastructure construction. An accurate projection of infrastructure costs requires a low-level design and an analysis of both an aerial fiber and buried fiber implementation. Aerial construction can be much faster but requires pole make-ready work. Underground construction can be more resilient to weather events and other accidental damage but takes more time to deploy and is typically more expensive.

Ultimately, feasibility will depend on the quality and effectiveness of community engagement to educate residents on the value proposition of a locally controlled municipally sponsored network.

The cost summary below unbundles the core components of the fiber infrastructure capital stack (1. Infrastructure, 2. Maintenance & Operations, 3. ISP Services) and is a realistic projection of costs on a per premise basis. The \$9.99 cost for services assumes a competitive open access marketplace and is derived from experience with ISPs operating on other open access networks which have expressed a desire to provide similar pricing in new open access networks.

## Projected Monthly Cost to Subscribers

### Projected Monthly Subscription Cost

Projected Residential Services Monthly Costs	100% Aerial	70% Buried /30% Aerial	100% Buried
Infrastructure	\$28.00	\$32.00	\$35.00
Maintenance and Operations	\$25.00	\$25.00	\$25.00
ISP Services (Dedicated 1 GB Symmetrical)	\$9.99	\$9.99	\$9.99
<b>Monthly Total</b>	<b>\$62.99</b>	<b>\$66.99</b>	<b>\$69.99</b>

This next projection illustrates the savings to subscribers of accessing state or federal grants to cover the cost of infrastructure and passing those savings on to subscribers. The industry is accustomed to accessing public funding and then capturing the majority of the benefit of that funding rather than passing the benefit through to subscribers.

### Projected Monthly Subscription Without Infrastructure Cost

Projected Residential Services Monthly Costs	100% Aerial	70% Buried /30% Aerial	100% Buried
Infrastructure	\$28.00	\$32.00	\$35.00
Maintenance and Operations	\$25.00	\$25.00	\$25.00
ISP Services (Dedicated 1 GB Symmetrical)	\$9.99	\$9.99	\$9.99
<b>Monthly Total</b>	<b>\$34.99</b>	<b>\$34.99</b>	<b>\$34.99</b>

## Take-Rate

Take-rate reflects the percentage of premises which opt-in to taking a service and is critical to project success because the operational sustainability of a project depends on crossing a certain take-rate threshold to spread the common broadband infrastructure costs across a broad number of subscribers, therefore translating into a sustainable operating cost per premise. Achieving a viable take rate is primarily a function of creating value and then communicating that value to subscribers. Community engagement and digital literacy training will be important components for enabling successful outcomes.



## Network Management and Operations

The work required for network operations includes network monitoring, network management, outside plant repairs, and new customer installations. Network operations can be provided by a public body or by a third-party partner. The recommendation is to utilize third-party partners at least until the network is stabilized with an established and sustainable take-rate. At that time, the public body or non-profit can evaluate whether it makes financial and operational sense to move operations. Outsourcing logical network responsibilities (customer support, network operations center (NOC), monitoring, and troubleshooting) to a network management partner generally is preferred. The enclosed model includes a budget of \$25.00 per subscriber per month to cover the total cost of maintenance and operations.



# Key Project Findings



## Key Project Findings

### Market

Broadband provider data submitted to the Federal Communications Commission (FCC) for the Canal Neighborhood reveals only one option capable of meeting the FCC ‘Broadband’ definition which requires a terrestrial connection with a minimum download speed of 100 megabits per second (Mbps) and a minimum upload speed of 20 Mbps.

The entire City of San Rafael suffers from a lack of broadband market competition with the problem being particularly pronounced in apartment buildings:

- There are 24,701 living units in the City of San Rafael, of which 4,427 (18%) are in apartment buildings with 8 or more units.
- AT&T provides fiber service to 6,406 (26%) units, of which 165 (4%) are in apartment buildings with 8 or more units.
- **Comcast is the sole internet service provider to:**

- **66% of all San Rafael living units,**



- **96% of all MDUs with 8 or more living units, and**



- **100% of the greater Canal District, including Bahia and Spinnaker.**



**Conclusion:** The San Rafael broadband market, including the Canal District, is subject to a virtual monopoly that is very pronounced in the Canal neighborhood. This lack of competition is contributing to lower service levels and higher consumer costs for broadband. Market data indicates that there is consumer demand for more choice, enhanced performance packages, upgraded reliability, and improved affordability. These market conditions are a direct result of the existing infrastructure investments. Private investments to address these gaps are highly unlikely in the absence of a municipal broadband plan that identifies potential gap funding and strategic planning capable of supporting choice, equity and affordability.

### Infrastructure

Because the area largely consists of Multifamily Dwelling Units (MDU’s) supported by coaxial cable internet access, the existing infrastructure presents a specific challenge to the residents living in the Canal District because of performance and network reliability gaps.

Coaxial cable installations commenced in Marin County in the 1970’s. The cable plant serving the Canal District today is a hybrid system that utilizes multiple types of conductors through various segments of the network to modern technologies which offer higher data rates. Onsite review of the area’s cable installation found coaxial cables which were antiquated and poorly maintained. Using substandard cables, networking technologies, and





# Canal Broadband Feasibility Study and Market Report

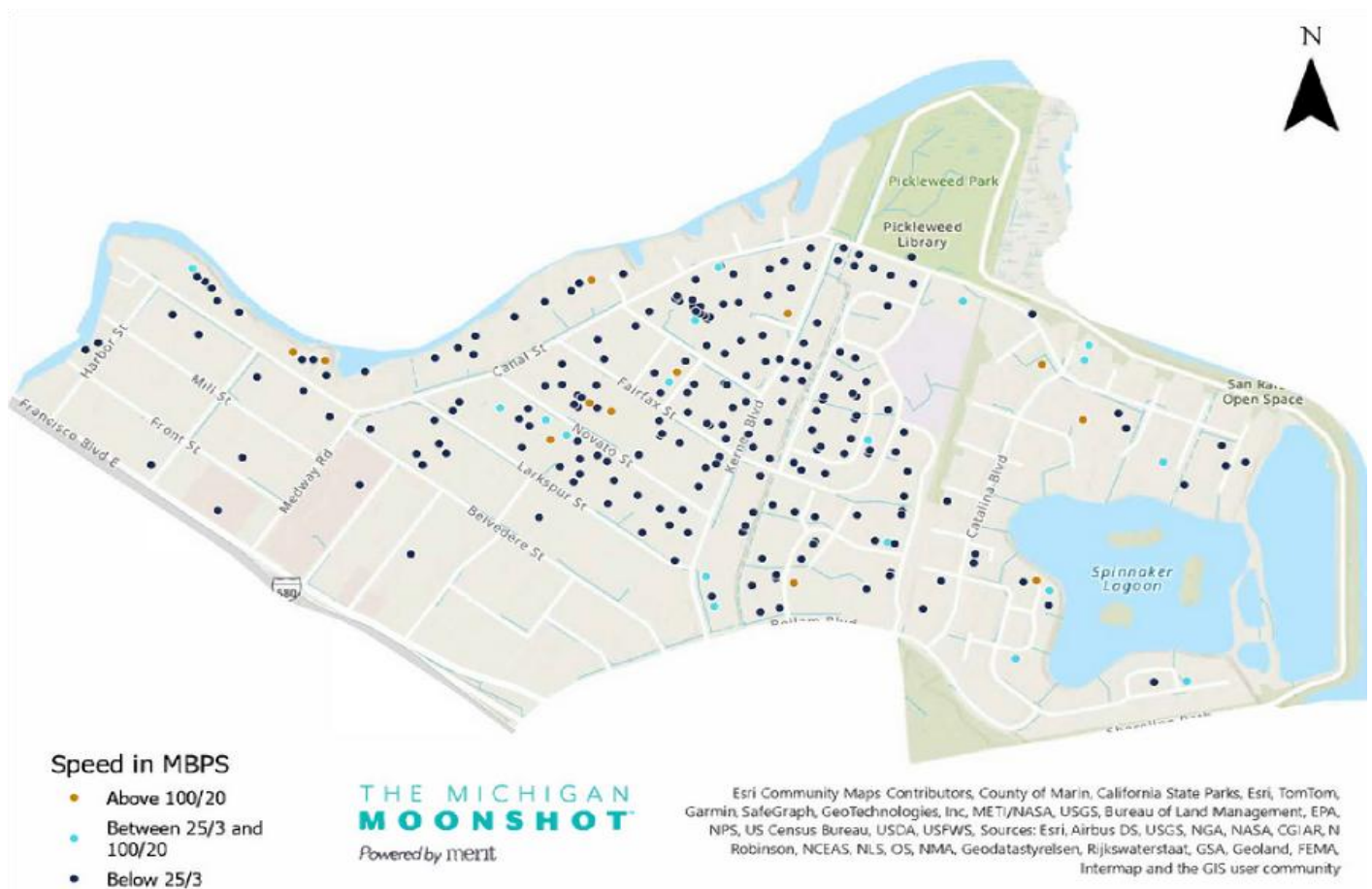
electronics used to transmit signals across the cables will result in subpar and unpredictable performance and reliability.



**Conclusion:** The Canal neighborhood suffers from a pattern of disinvestment resulting in unpredictable performance and reliability. Meaningful, long-term solutions should include addressing area infrastructure needs in a sustainable manner.

## The Lived Experience

Initial internet speed measurements and a resident survey of Canal District residents were collected in 2023.


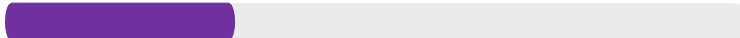
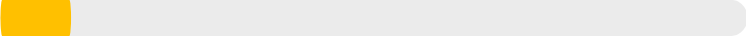








Survey speed data were placed into one of the following categories based on federal and state definitions:

1. **Unserved:** Below 25/3 Mbps,
2. **Underserved:** Between 25/3 Mbps and 100/20 Mbps, and,
3. **Served:** At or Above 100/20 Mbps.

According to these definitions, most households in the Canal Neighborhood that participated in this 2023 study were not properly served:

- **60% of households are ‘unserved’**  

- **29% of households are ‘underserved’**  

- **11% of households are ‘served’**  


Broadband is critical to a community’s ability to thrive and remain competitive in terms of education, economic development, talent retention, employment opportunities and population growth. The 2023 survey found that Canal District residents without broadband desire affordable service, and connected citizens believe that more provider options are needed.

- **90% of homes with children do not experience modern Internet speeds of 100/20 Mbps or greater.**  

- **56% of unserved respondents would use the Internet for education.**  

- **90% of respondents with Internet want more providers in the Canal neighborhood. 68% of these also agree that the cost of Internet access is too high.**  

- **53% of residents with no Internet access responded that they would pay \$25 or less per month for service, indicating a need for a low-cost option in the Canal Neighborhood.**  


**Conclusion:** Broadband is critical to the community’s ability to thrive and remain competitive in the areas of education, economic development, talent retention, employment opportunities and population growth. The data collected in 2023 found that the majority of residents were not receiving internet service levels that met the





FCC's broadband definition. Residents without broadband desire affordable service and connected residents believe that more provider options are needed.

## Project Outcomes

Over the next couple of years, billions of dollars will flow to states through the Broadband Equity and Deployment (BEAD) program to build the internet infrastructure that reaches communities without adequate (or any) access. This money will flow through state broadband offices. The broadband industry, particularly internet service providers (ISPs) and related organizations, have demonstrated a “love-hate” relationship for BEAD and other public programs. Incumbent organizations “love” that they can potentially access public funding to extend their private investments into new areas or collect a subsidy for delivering services in their established markets, but they “hate” that these programs could potentially fund competition in the form of new infrastructure or service subsidies. This is of particular concern for them when a program could fund a new infrastructure where they are currently providing inadequate or unreliable internet service using legacy technologies and dilapidated infrastructure.

The FCC's National Broadband Map was created to provide a comprehensive and accurate picture of broadband availability across the United States, with the immediate and primary goal of focusing BEAD and other public broadband programs on areas lacking broadband access and guide policy decisions to address the digital divide. The industry's reaction to the development of the map becomes evident when reviewing the map's history.

In May of 2023 the map identified more than 8.3 million U.S. homes and businesses that lacked access to high-speed broadband. A November 2023 map update adjusted this number to just over 7.2 million locations, and a May 2024 version shows 8.8 million locations that need better broadband service. There is no single reason for these up and down changes. A key factor that has driven these changes is that local stakeholders have challenged the availability of reliable internet services that meet the FCC definition for broadband. These challenges have resulted in entire areas that were previously shown as ‘served’ based on data provided by the area's incumbent provider being changed to ‘underserved’ or ‘unserved’, making BEAD or other public funding available for area broadband improvements.

This project's primary goal was to demonstrate eligibility of the Canal District for BEAD funding by the submission of a successful BEAD challenge and designing a municipal shovel project for a subsequent BEAD grant application. Comcast/Xfinity adjusted their network to eliminate underserved addresses. This undermined the project's key objectives but led to some positive outcomes for residents.

## Incumbent Network Upgrade

Internet testing performed before Comcast's mid-split upgrade shows that most addresses were not receiving adequate broadband internet service levels prior to the upgrade. Tests performed after the upgrade show that most of those same addresses are now receiving “served” broadband internet most of the time. While Comcast has not provided any reason for the timing of the upgrade, it is logical to conclude that this improvement, along with numerous other improvements being made across the country, were necessary for Comcast to defeat the BEAD challenges being submitted for addresses in their service territory. For this reason, one positive outcome from this LATA project is the network upgrades being performed by Comcast to improve service in disadvantaged areas that have been subjected to a pattern of deferred maintenance and disinvestment, like the Canal District.

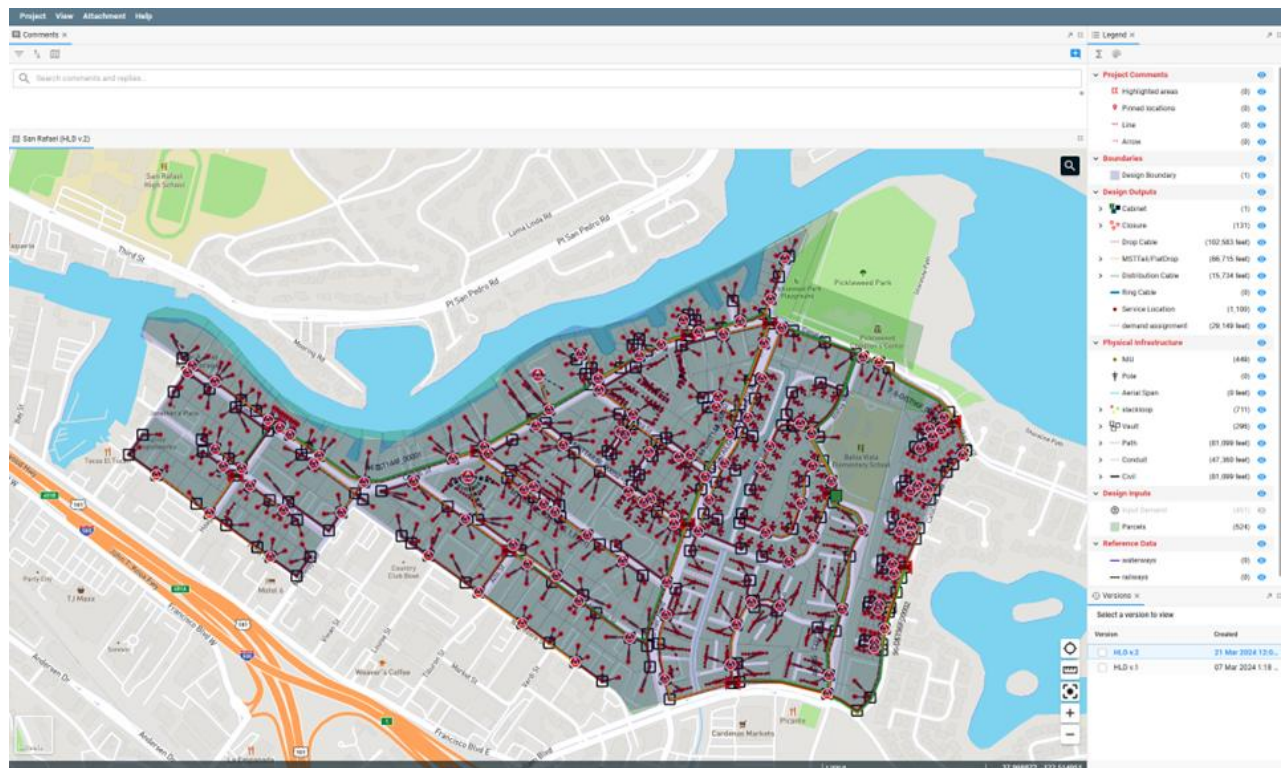
Although this does not address the lack of competition and the legacy infrastructure problems, it has resulted in an improved ‘lived experience’ for the residents, even though it enabled Comcast to successfully defeat the BEAD challenges submitted to the State by the project.

## Public Data

A second positive outcome from the project is the collection, documentation and analysis of important broadband consumer data and experience information. Historically, the industry has shaped broadband investments and service level expectations based on the market. As broadband evolves from an amenity service to an essential service, the consumers experience, service level needs, and a household’s monthly available internet budget should inform leadership, shape policy, and identify targeted public funding needs that are appropriately coupled to measurable public outcomes. The city now has a repository of historical consumer and internet measurement data with some market analysis and recommendations that should be used to shape municipal broadband policies and public funding support going forward.

## Infrastructure Design

A third positive outcome is the development of a fiber-to-the-living-unit infrastructure design that could support a future city-sponsored project. The city now owns this design, including geospatial data files complete with routes, distances, and unit counts. This level of design can be used now or in the future to submit a grant application for a public or private fiber project, to inform public policy with a better understanding of the costs associated with a fiber optic infrastructure improvement, the levels of public support that could incentivize a private investment, and the value of public assets that could be contributed to a broadband project or program.



**FIGURE 12**  
**Canal Neighborhood Municipal Fiber to the Living Unit Design**

## Recommendations

3

### Public Engagement

City leadership has served as the public champion for the broadband disadvantaged in San Rafael with this LATA project. Although the stated project goal of making the Canal District eligible for BEAD funding and applying for grant funding to build a municipal open access fiber installation in the area using BEAD funding was not achieved, service levels were improved, relevant broadband data was collected and analyzed, making city leadership much better informed and prepared to continue in this role.

This final report recommends that the city maintain regular updates to the data collected by this project, including monitoring potential funding opportunities for broadband improvement projects. Much of the data collected was submitted by the residents of the Canal District with the help of Marin County, Voces Del canal, and the Canal Alliance. The City should maintain a regular broadband engagement cadence with these organizations to monitor progress and inform municipal policies and actions. A brief annual review which summarizes the state of broadband in the Canal District posted publicly for review by area residents and elected leadership will help keep broadband access and affordability as a priority consideration.

### Industry Engagement

Broadband industry leaders have historically viewed their data as authoritative. They have been quick to dismiss consumer challenges as something the market would address if it were a real need. The data collected from the Canal District and nationwide highlights that this cannot be expected when the market is concentrated in areas with high returns while other areas are plagued by a pattern of disinvestment. San Rafael is something of a posterchild of this broadband disparity because multiple gigabit internet service providers are available on one side of a road at costs as low as \$50 per month for symmetrical (upload and download) 10 gigabit internet access, while the other side of the road may only have one Internet Service Provider (ISP) capable of offering 1 gigabit internet access (1 gigabit download with 20 megabits upload) for \$120 per month before taxes, fees, modem rentals, and other fees.

By using and maintaining the data collected in this report, the city can encourage new broadband investments and help incumbent operators understand and address the market failures in San Rafael. As broadband continues to evolve into an essential service, the authoritative data driving public broadband policy and funding should not be based on the theoretical maximum for their technology but by actual data collected at the consumer's premise. The City can help San Rafael's incumbent operators shift their maintenance and upgrade schedules to reflect this new reality by clearly establishing in policy what the municipal expectation from providers is when they are making use of the public Rights of Way (ROW). The City should also institute municipal policies that require broadband improvements whenever possible, such as when an area is redeveloped, or other roadway or utility infrastructure improvements occur.

### Conclusion

This project has highlighted the disparity in access and affordability that exists in San Rafael. Effectively closing these gaps will require a multi-pronged approach that focuses on infrastructure improvements, affordable access, and digital literacy. While this report focused on delivering an infrastructure improvement for the Canal neighborhood, the data collected, analyzed, and documented in the various reports paints a clear picture of what



# Canal Broadband Feasibility Study and Market Report

investments, upgrades, and improvements are needed to address the broadband market failure in San Rafael. Using this information and maintaining a focus on desired outcomes will help the City to implement effective policies to help close the gaps, evaluate and apply for any future municipal broadband funding opportunities, and participate in the larger State and national broadband discussions as broadband internet becomes an essential service.



# THANK YOU



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**SAN RAFAEL**

THE CITY WITH A MISSION

# San Rafael Canal Neighborhood Network Design Report

**January 2025**



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## Executive Summary

### Purpose

This report uses lay person terms to document and summarize the key assumptions, decisions, and resulting fiber optic plant design used to provide objective capital and operational cost data to inform a municipal broadband strategic plan for the City of San Rafael, California. This design report provides the basis for architecture decisions and the cost ascertainment and estimation methods used to model costs. These outputs have been developed to inform extensible municipal solutions capable of closing the digital divide for communities suffering from a lack of private broadband investment.

### Key Findings

- Fiber optic is the optimal network media for metro or suburban broadband infrastructure investments.
- An area in the Canal District containing 1,100 living units located inside 449 separate dwelling structures which range from single family dwelling units to duplexes, fourplexes, and multi-unit apartment buildings was designed using a desktop geospatial design tool to inform cost estimates.
- 39,879 feet of cable would need to be installed within the public rights of way and utility easements in order to provide a fiber optic connection for each living unit, resulting in an average of 36.25 feet per living unit. (39,879 feet divided by 1,100 living units equals a 36.25 feet per living unit average.)
- Underground construction options capable of achieving a per foot unit cost of \$59 or less would be required for capital recovery feasibility based on available market data.
- The resulting average per passing cost of \$2,138.75 (36.25 feet multiplied by \$59 per foot equals \$2,138.75) would result in a total mainline or passing construction cost of \$2,352,625 (\$2,138.75 per passing multiplied by 1,100 passings in the design area).
- The total drop cable required to connect the 449 separate dwelling structures is estimated to be 41,221 feet, resulting in an average drop length from the easement or right of way to the dwelling structure of 92 feet (41,221 feet of cable divided by 449 installations equals an average of approximately 92 feet per drop installation).
- Additional materials and labor will be required to extend fiber from the demarcation point where the fiber cable from the street terminates at the dwelling into the interior of each dwelling's living units.
- Based estimated construction costs from the design, achieving a monthly out of pocket cost of \$50 or less for consumers subscribing to this municipal fiber optic solution will require at least 7 out of every 10 living units passed by the fiber line to connect and pay for a connection. Alternatively, grant funding that could be used to reduce the amount of funding that will need to be recovered through monthly fees could help the network achieve feasibility if less than 7 out of every 10 living units passed by the fiber line to connect and pay for a connection.

### Solution Challenges

An effective multi-unit dwelling or apartment rental property solution will need to address two challenges:

1. The incentive misalignment for landlords to invest in property broadband improvements for tenants, and,
2. The nuances associated with applying typical fiber to the home feasibility models to multi dwelling units can create modeling inaccuracies.



## **Landlord and Renter Misalignment**

Natural incentives for landlords are focused on maximizing the return on their property investment while renters naturally focus on maximizing the value they receive from their rent payments. While these incentives are not mutually exclusive or diametrically opposed, they are often misaligned when it comes to broadband.

Many landlords have entered into bulk billing arrangements with broadband providers. Under such an arrangement, a company agrees to provide service to every living unit in the building. Renters are then billed a prorated share of the total monthly cost. Under these arrangements, tenants may be billed by either the landlord or the service provider and the landlord may receive a portion of the revenue generated.

Although the Federal Communications Commission has outlawed exclusive agreements that prevent competitors from offering service in multi dwelling units, landlords and providers are still utilizing non-exclusive agreements to profit and finding new ways to effectively limit a renter's options as a broadband consumer. For example, landlords and providers can require a competitive provider to install new wiring in the building by blocking access to any existing network cables, thereby driving up costs, limiting competition, and protecting their revenue.

Market forces also typically require a renter to select properties based on prioritizing affordability, "must have" elements, and amenities, in that order. This often results in a renter accepting expensive and unreliable broadband service in order to meet their rental needs within their existing budgets.

## **Fiber Feasibility Modeling**

Fiber-to-the-home (FTTH), also known as fiber-to-the-premises (FTTP), can deliver high speed internet access when optical fiber is installed and connected directly to every home, apartment building, or business. This approach for delivering high-speed internet services and greater bandwidth costs less to build today and offers superior performance compared to non-fiber coaxial cable and DSL (Digital Subscriber Line) connections.

Feasibility modeling for FTTP projects require fiber plant costs to be divided into two categories:

1. **Passing costs:** A fiber passing is a location that can be connected to a fiber optic network, usually because it's close to fiber infrastructure like utility poles, manholes, or fiber pedestals. The definition of a fiber passing can vary slightly by operator, but generally it's considered to be any location that can be connected to fiber running along a main road.

Passing costs are all of the costs required to make a direct fiber connection available to every serviceable location along a route or in an area. The cost per passing for fiber includes the cost of the following:

- a. **Core and distribution network equipment:** Located inside active facilities.
- b. **Backbone fiber route:** Aerial attached to poles or underground direct buried or in a duct or conduit.
- c. **Passive optical splitters:** Part of the cost per home-passed if used.

Factors that influence passing costs include:

- d. **Distance:** The further the distance between service locations, or the average passing distance, the more expensive it is to construct, resulting in higher rural passing costs.
- e. **Type:** Attaching aerial cables to existing poles is typically less expensive than installing underground depending on the condition of the poles and their readiness to accept a fiber attachment.



- f. **Terrain:** Challenging terrain like rocks, rivers, mountains, or forests can increase costs.
  - g. **Location:** Installing fiber under and around hard surfaces such as concrete and asphalt can cost more than placing it along the edge of a rural road, resulting in higher costs for metro or suburban areas.
  - h. **Labor:** Labor costs can account for over 65 – 90% of the total cost.
  - i. **Materials:** Material costs can account for 10 – 35% of the total cost.
2. **Drop costs:** A fiber drop installation consists of connecting a small, single strand, fiber optic cable to a strand inside of an aerial or underground passing cable located near the property in a public right-of-way or easement and extending that fiber into the living unit and connecting it to a premise device where the services are terminated. The access port, or the upstream electronics that communicate with the premise installed electronics is also part of the drop costs, as the number of required access ports is based on the number of drops and premise devices connected to the system.

Fiber drops can be installed overhead or underground, depending on the need. The installation process involves splicing the fiber strand from the main line to the home, apartment building, or business. There are several types of fiber drop cables, including flat, indoor, and outdoor self-supporting.

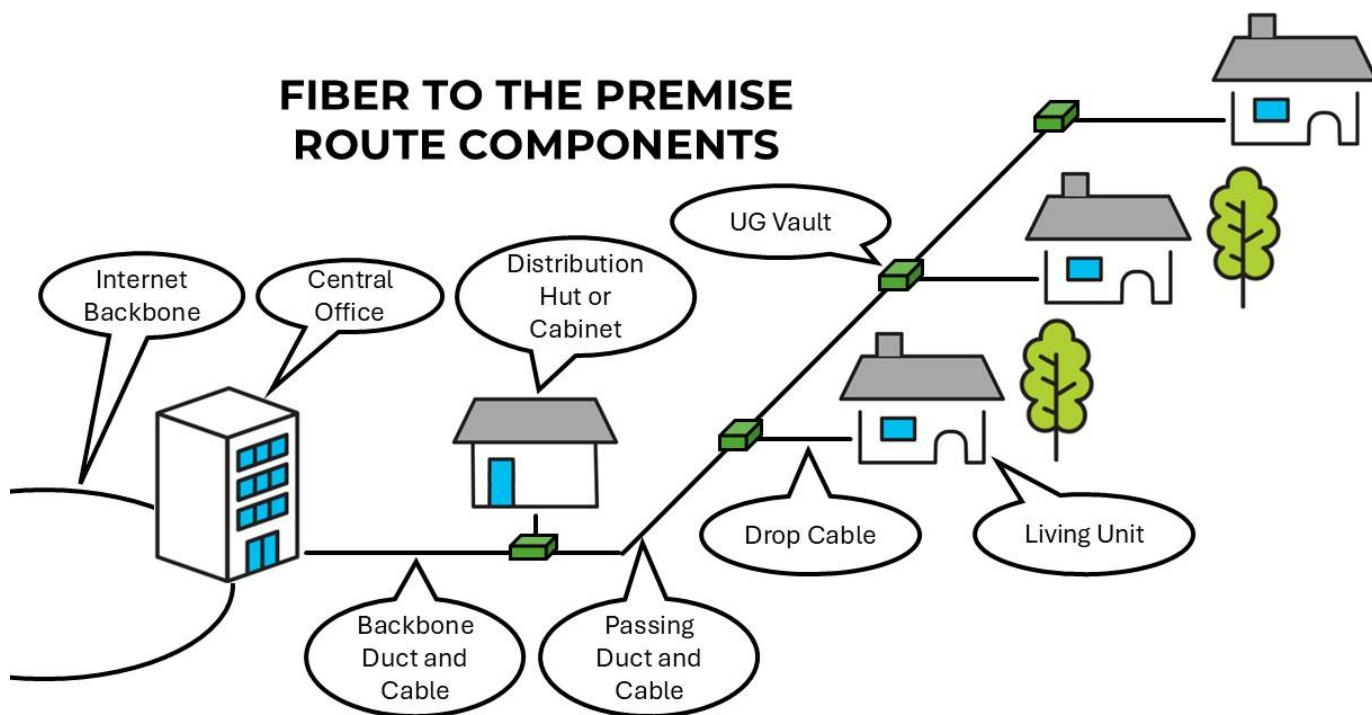
Factors that influence drop costs include:

- a. **Distance:** The further the distance between the distribution or passing cable and the dwelling or living unit, or the average drop distance, the more expensive it is to install.
- b. **Type:** Aerial installation, which involves running cables from existing poles to the dwelling unit, is typically less expensive than underground installation, which requires trenching and possibly conduit placement.
- c. **Location:** Installing fiber under driveways and parking lots costs more than underground installations in softscape areas requiring restoration such as yards and landscaped areas.
- d. **Premise equipment:** The type of premise equipment and the cost of the upstream access port can vary significantly depending on network design, equipment type, manufacturer, and supported functionality.
- e. **Labor:** Labor costs can account for over 65 – 90% of the total cost.
- f. **Materials:** Material costs can account for 10 – 35% of the total cost.

## **Multi Dwelling Unit (MDU) Considerations**

Traditional Fiber-to-the-premise (FTTP) models only include the costs required to terminate a single fiber drop on an exterior wall of the apartment building. Modeling in this way does not provide for any costs associated with improving the building's interior wiring or network cabling to assure that each living unit has fiber access.

This gap creates a challenge that is often expected to be the responsibility of either the landlord or the tenant(s), neither of which may be qualified nor prepared to address the need as shown in the following design graphics.



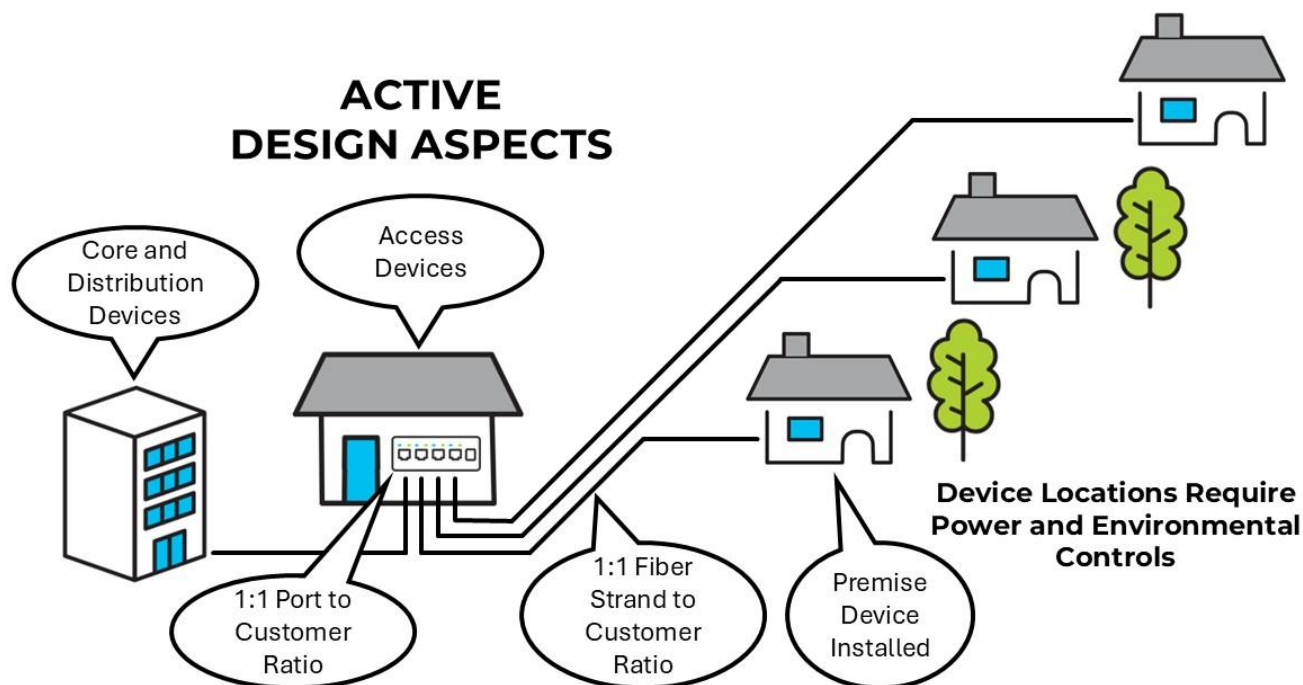
**FIGURE 1**

**Graphic showing the primary components required to construct a fiber to the premise infrastructure.**

Figure 1 shows the primary components of constructing an underground fiber to the premise infrastructure. These components include the installation of underground duct, vaults, fiber optic cable between active locations and the installation of network electronic equipment inside network facilities with power and environmental controls such as buildings, huts, cabinets, and the premises where the service is terminated.

Underground fiber optic infrastructure is used for modeling in this report because it is actually cheaper to construct than other wireline infrastructures such as copper DSL and coaxial cable. There is also a growing speed chasm between fiber and other alternatives, including wireless options. Additionally, this report assumes that a solution capable of supporting 30-year cost recovery models, which require a ‘future-proof’ infrastructure capable of handling the growing bandwidth demand well into the next 50 or more years. Underground installation was selected rather than aerial for these same reasons, including an emphasis on fixed predictable costs and maximizing the life span on the digital infrastructure.

The next several graphics are intended to provide a basis for understanding the specific design aspects used to model costs. They are presented in logical order from what would be assumed to be highest cost to the potentially lowest cost based on the level of design performed for this report and anecdotal data collected from similar projects.



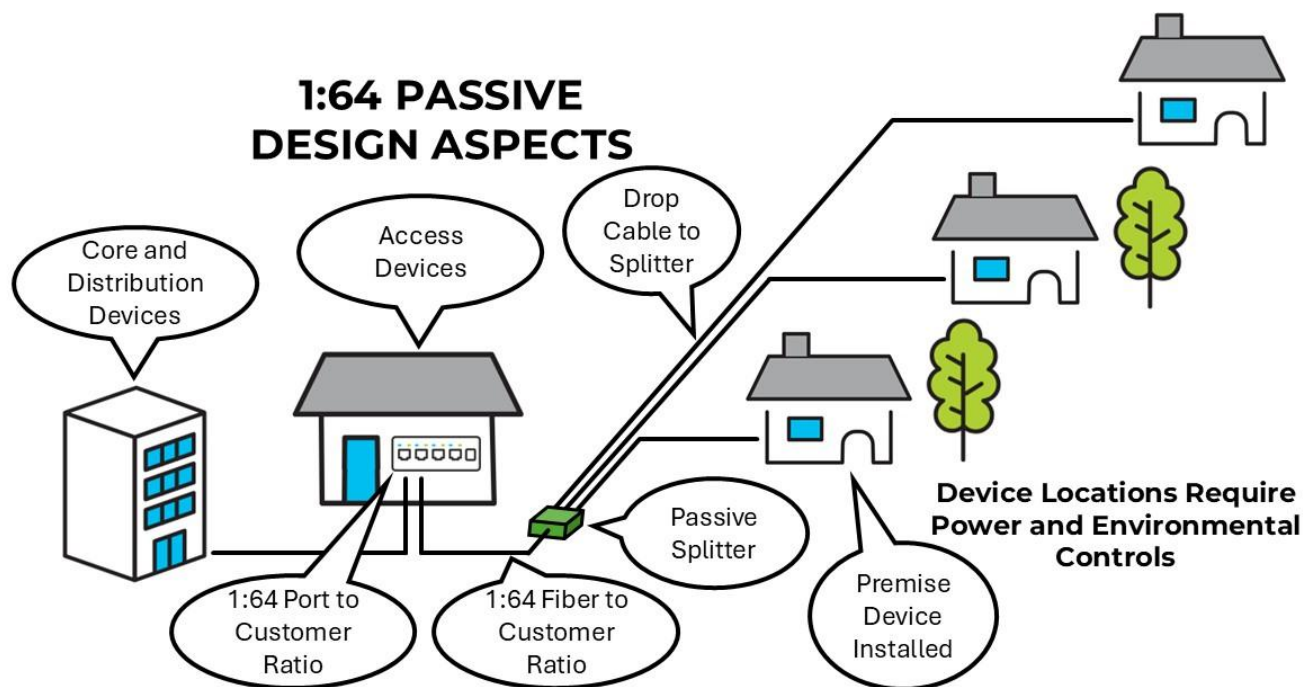
**FIGURE 2**

**Graphic showing the 1:1 port and fiber to premise ratio required for an Active fiber network.**

Figure 2 shows some specific design aspects associated with an Active fiber to the premise infrastructure.

Key metrics contributing to costs are the requirements for one access port and one fiber strand for every connection as shown. Put simply, in an Active installation, each customer has their own dedicated fiber optic strand within a cable from their premises to the next upstream location with active network equipment. Active network equipment is hardware that connects devices to form a network and is responsible for processing, amplifying, and transmitting data signals. These devices are powered by an electrical network and require some level of environmental control to protect the equipment from moisture and extreme temperatures. For these reasons, the requirement for a dedicated fiber strand to an active network access location and a dedicated access port for each customer is the primary factor contributing to cost to construct estimates.

In lay person's terms, an active network's primary costs come from the high strand (large cable and duct sizes and counts) and port counts (significant network racking space) required to construct a fiber-to-the-premise infrastructure. Distribution areas typically connect 2,000 to 3,000 customers to a single location with active electronics. This need is typically better served by a small fiber shelter or hut when compared to a cabinet because the total cost of ownership over 20 years is often less for a structure when compared to a cabinet due to the high recurring monthly costs for cooling and maintenance.



**FIGURE 3**

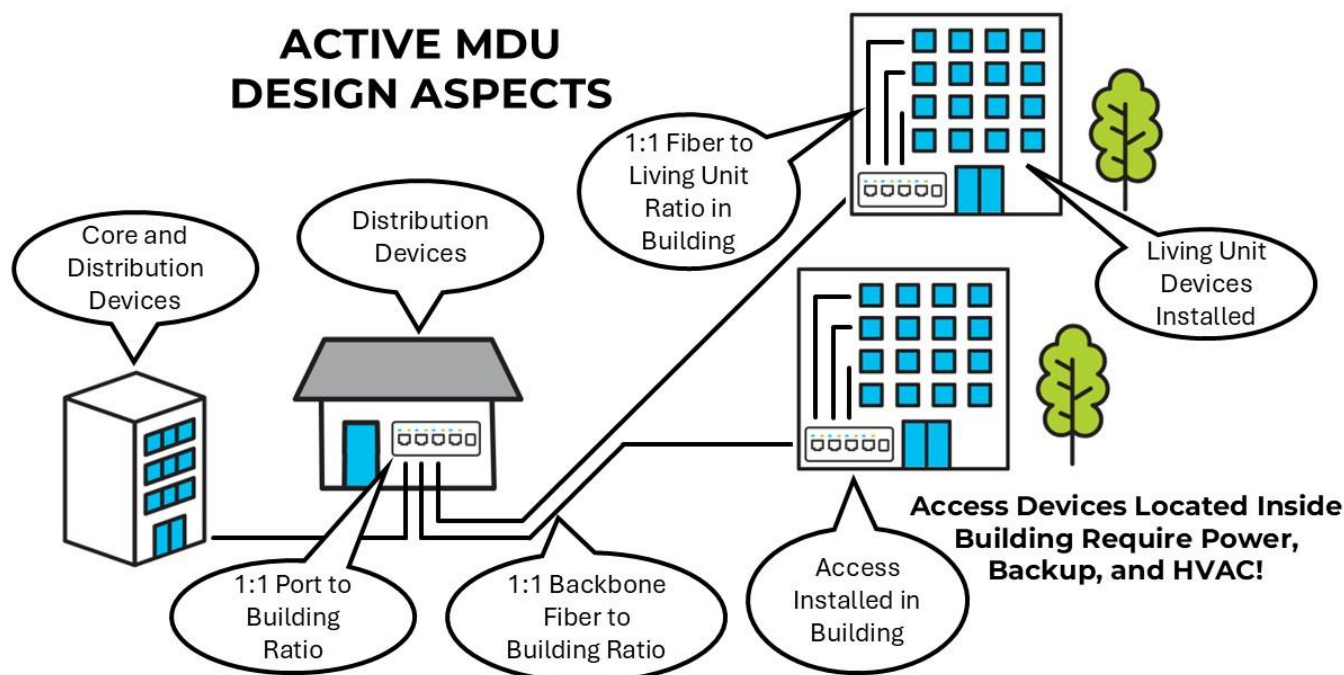
**Graphic showing the 1:64 port and fiber to premise ratio required for a Passive fiber network.**

Figure 3 shows some specific design aspects associated with a passive fiber optic to the premise infrastructure. Passive installations make use of splitters that allow customers to share fiber and access ports. For passive installations a key bandwidth consideration is the number of customers sharing a single fiber and access port. This report assumes that 64 premise endpoints or possible customers will share a single fiber and access port at the access cabinet or fiber hut. This report utilizes XGS-PON as the network standard to model costs.

XGS-PON is an updated standard for Passive Optical Networks (PON) that can support higher speed 10 Gbps symmetrical data transfer. The “X” in XGS represents the number 10, and the letter “S” stands for symmetrical, XGS-PON = 10 Gigabit Symmetrical PON.

Key metrics contributing to capital and operational cost reductions for a passive design come from reduced strand counts (smaller cable and duct sizes reduced by a ratio of 1:64) and reduced port counts (reduced by a factor of 1:64). Typical distribution areas of 2,000 to 3,000 connected properties are well served by small cabinets with simple heat exchangers that are easy to maintain for environmental controls. The splitters used in this design architecture do not require any power or environmental controls and may be easily housed inside various physical locations such as splice enclosures inside underground vaults due to their small size.





**FIGURE 4**

**Graphic showing the Access ports installed in the apartment as required for an Active MDU fiber network**

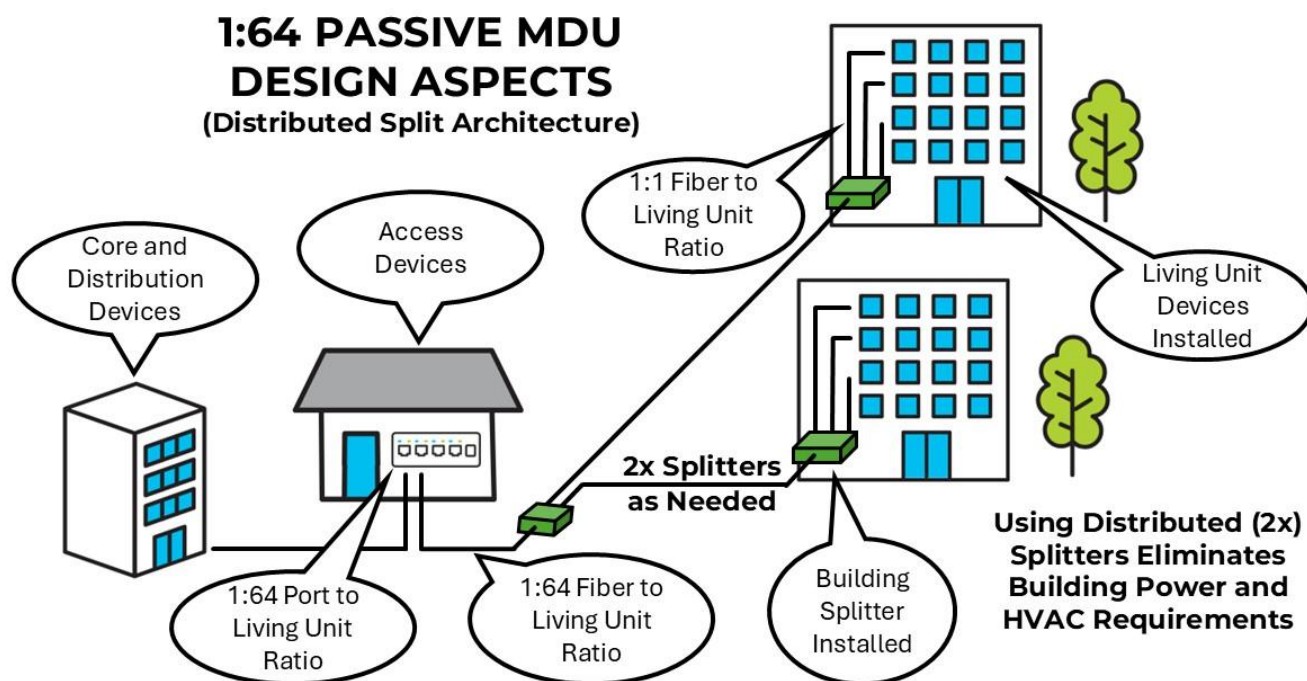
Figure 4 shows some specific design aspects associated with an active fiber optic to the apartment infrastructure.

Apartment design modifications typically move the access ports for the living units to the apartment building as this significantly reduces the cost to get fiber connectivity to the building. This modification essentially treats the port at the hut or cabinet and the fiber used to connect that port to network access equipment located in the apartment building as a backbone or distribution connection.

While this solution does significantly reduce the cost to connect an apartment building, it relies on racking, power, backup power, and environmental controls at the apartment building itself in order to provide the port count necessary to connect all of the living units. Access to these facilities will also need to be provided to the network operator at all hours in order to support operations. The dynamics associated with these design adjustments tend to improve costs to connect the apartment building by moving the drop infrastructure and costs to the building.

Shifting drop costs in this manner presents a number of challenges, including:

- Improving an interior building space to house network access equipment (with power and HVAC),
- Improving or installing interior network cabling to connect the building's access equipment to the premise equipment installed inside each living unit, and,
- Providing the necessary economic and operational functions to support these changes.



**FIGURE 5**

**Graphic showing 2x distributed splitters installed for a Passive MDU fiber network**

Figure 5 shows some specific design aspects associated with installing two splitters along the fiber route to an apartment. This type of architecture is called a distributed split fiber network. This method uses cascading stages to distribute connectivity first to the building and then to the living units inside the building.

This type of design change for apartments typically provides the following benefits:

- Distributed splitters can further reduce the required fiber strand count.
- Distributed splitters provide flexible split ratios and locations.
- Distributed splitters eliminate the requirement for locating active equipment at the apartment building for access ports.

## **Apartment Building Interior Network Wiring Considerations**

The existing apartment buildings in the Canal District have legacy interior network wiring installed.

Copper phone lines that would typically support Digital Subscriber Line or DSL connections were installed many years ago. Site visits and interviews with residents indicate that this phone wiring has not been maintained and is not in use for virtually all of the apartments in the area. For these reasons, a solution that relies on using existing phone cables should not be considered.

Cable coaxial lines are prevalent throughout the area. Site visits and interviews with residents indicate that coaxial cable supporting dissimilar standards and solutions has been disparately strung around and through the various apartment buildings and complexes over the years. While this has resulted in an inconsistent and



sometimes incompatible wireline building infrastructure, there are solutions capable of using these cables as an alternative interior wiring solution as part of a broader broadband infrastructure strategy.

Aside from the technical challenges associated with locating and testing a coaxial connection capable from a demarcation point on or in the building to each living unit, ownership and access challenges should be expected as the landlord or incumbent cable operator may or may not reserve ownership of these wirelines by contract. For these reasons, no solution that relies on existing coaxial cable has been modeled as a part of this report.

This report assumes a fiber all the way to the living unit solution that utilizes a distributed split XGS-PON architecture in an effort to maximize cost efficiencies while also guaranteeing a working solution from end to end without relying on legacy components that may or may not be available to support any portion of the solution.

## **Property Access Considerations**

Constructing broadband infrastructure solutions requires the installation of infrastructure on public and private land. Performing these installations requires Rights-Of-Way (ROW) permits, public utility easements, and licenses or agreements to provide access to the private properties where living units are located.

- Permits provide access to the public rights of way, such as streets, sidewalks, trails, or highways, and allow broadband operators to place infrastructure within and to access the right of way for purposes of construction or maintenance.
- Easements are typically created as a part of suburban development and acquired from private property owners to grant the right to use and access private property for a specified purpose.
- Private property access agreements are also needed to place infrastructure from a ROW or easement to a private residence or business, including the right to potentially access the interior of a multi-tenant dwelling in order to install or maintain the infrastructure. Such agreements may be embedded in a service agreement or contract for retail service(s).

## **Aerial and Underground Considerations**

Fiber and other wired infrastructure may be placed on poles owned by telephone and electric companies (aerial installation) or buried underground in the ROW or public utility easements.

- Aerial installations involve a preparatory process known as “make-ready” work, in which the poles are surveyed to determine if they need repair or replacement to support the new broadband cabling. A desired aerial broadband improvement may not be feasible due to the costs, delays, and disruptions associated with completing these processes. For this reason, the modeling for this report utilized an underground installation.
- Underground installations of fiber lines and other cables that support broadband run through conduit or duct that protects the cables from damage. Vaults containing splice enclosures where splitters may be located, and the fiber cable can be accessed to extend lines along diverse routes or directly to the properties, buildings, and apartments served.

## **Wireless**

Wireless is not considered a broadband solution for any suburban or metro area by the FCC. This limits federal and state funding initiatives to fiber with a preference for underground installation as providing the best long-

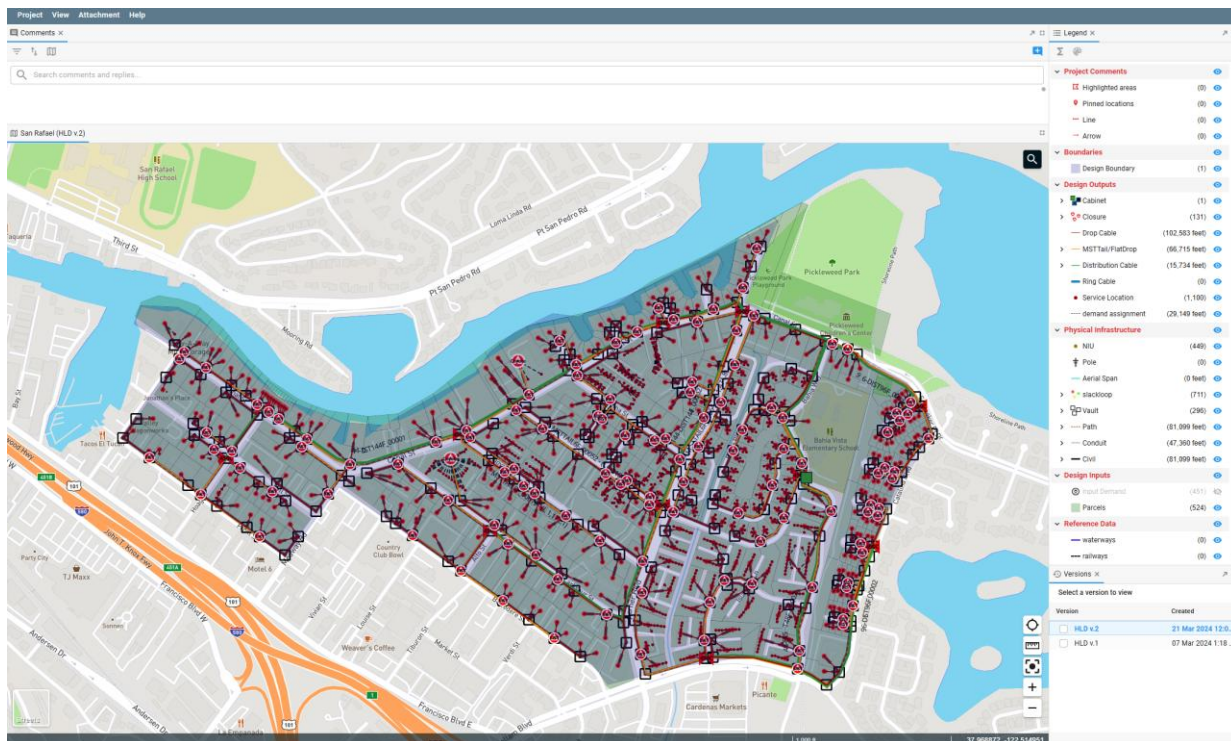
term return for any public investment. For these reasons, wireless is not contemplated as a solution or component for any portion of this report.

## Canal District Design

### Geospatial Desktop Design

An area in the Canal District containing 1,100 living units located inside 449 separate dwelling structures which range from single family dwelling units to duplexes, fourplexes, and multi-unit apartment buildings was designed using a desktop geospatial (GIS) design tool to inform cost estimates. This software design tool utilizes advanced algorithms and data-driven approaches to create highly optimized fiber optic network designs, significantly speeding up the planning and construction process for telecommunication networks by generating efficient designs based on various input data like geography, regulations, and existing infrastructure, allowing for faster deployment and cost reduction compared to traditional methods. Essentially, this translates complex network planning into a user-friendly platform that generates detailed designs with minimal manual intervention.

The resulting design is available to view online at <https://fond.biarrinetworks.com> where it can also be downloaded in standard GIS file formats such as SHP and KML files. A screenshot of the online application is shown in the following graphic.



**FIGURE 6**

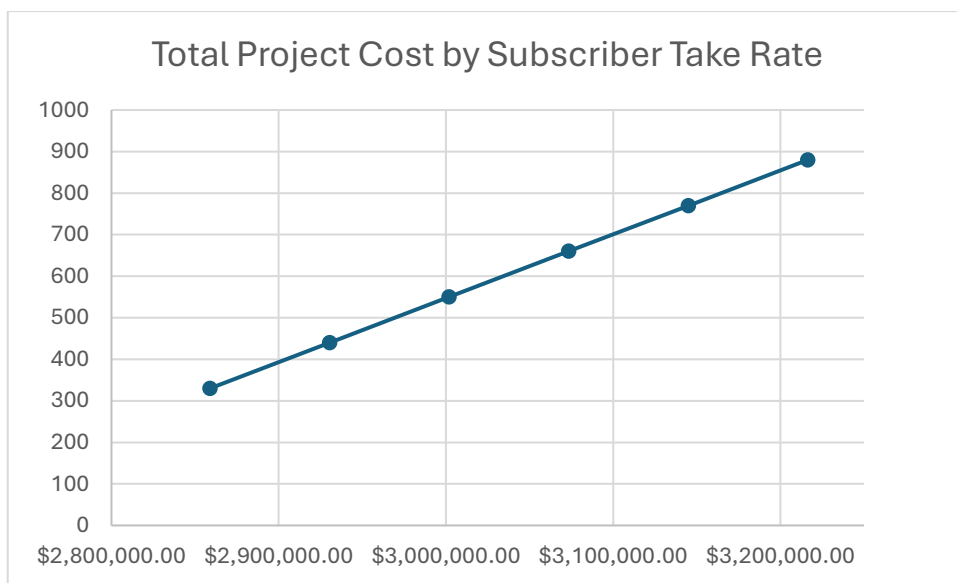
Figure 6 shows the area designed to inform model inputs such as total route distance, average passing distance, average drop distance, and property and living unit counts.

## Design Data

The design outputs show that 39,879 feet of fiber cable would need to be installed to 449 buildings and extended into 1,100 living units to provide a true fiber to the living unit multi-tenant solution. An order of magnitude cost estimate based on anecdotal information for similar installations results in an estimate of \$2,352,625 to construct the passing infrastructure in the ROW and public utility easements. An average drop length cost to extend fiber to each of the 449 buildings would be \$650 per extension resulting in a total cost of \$291,850 to terminate fiber and place a splitter at the building. Combining these costs results in an estimated total cost of \$2,644,475 before extending fiber inside of the apartment buildings or installing network devices in the apartments or living units.

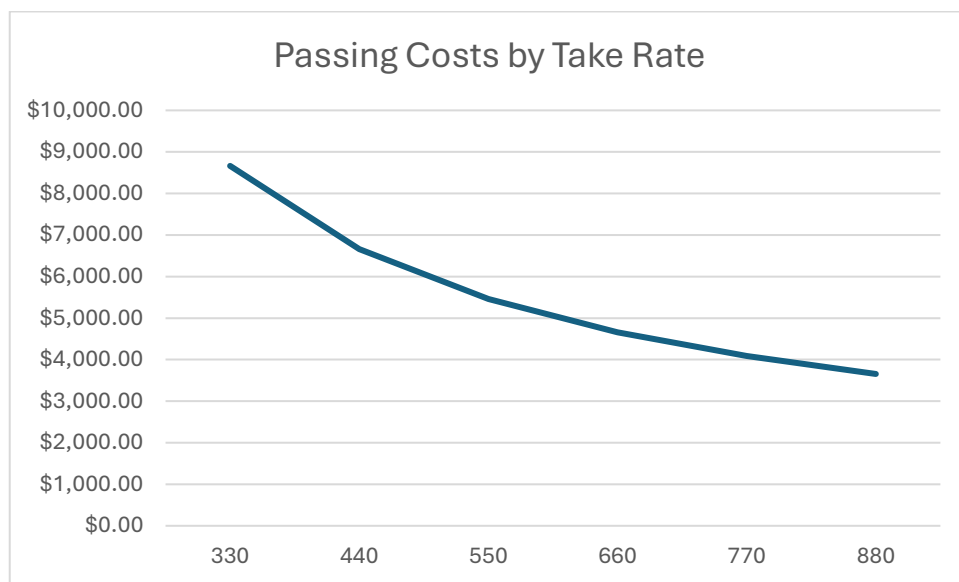
Fiber extensions and equipment installations for the individual living units is estimated at approximately \$650 per living unit. Combining all of these costs results in a total estimated project cost of \$2,858,975 if 30% of the living units passed sign up for service, \$2,930,475 if 40% of the living units passed sign up for service and \$3,001,975 if 50% of the living units passed sign up for service. The reason costs increase as the ratio of signups per unit passed, or take rate, increases is because more interior building wiring, access ports, and premise devices will be required.

The average cost per connected customer improves as the take rate increases because the cost to connect each building is now shared between a larger customer base as shown in the graphics below.



**FIGURE 7**

Figure 7 shows how total project costs increase as more subscribers request an install.



**FIGURE 8**

Figure 8 shows how the cost per subscriber is reduced as take rate increases and the common or passing costs are shared among more rate payers.

Take rates in excess of 70% (7 out of every 10 living units, or more, with access to the infrastructure connect and subscribe to services) or grant funding capable of reducing the total amount of capital required to be recovered through monthly fees will be required to achieve desired affordability targets (less than \$50 per month out of pocket) based on market data.

## Conclusion

Take rates in excess of 70% or grant funding capable of reducing the total amount of capital required to be recovered through monthly fees will be required to achieve desired affordability targets (less than \$50 per month out of pocket) based on market data and current municipal bond rates. These conclusions and the data inputs used to develop the proforma model will be documented as part of a final report.

# THANK YOU



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