

Rochambeau Avenue Fire Station Adaptive Reuse Feasibility Study

Prepared for:
Providence Redevelopment Agency
Providence, RI

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HP 525: Preservation Economics Course

Spring 2018

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Introduction

This feasibility study for the reuse of the historic Rochambeau Fire Station at 280 Rochambeau Avenue in Providence, Rhode Island was conducted by students in the 2018 Preservation Economics course in the School of Architecture, Art, and Historic Preservation at Roger Williams University in Bristol, Rhode Island. The study took place in partnership with the Providence Redevelopment Agency and was facilitated by the Roger Williams University Community Partnership Center.

The purpose of this study is to identify and examine feasible and historically appropriate rehabilitation and reuse scenarios for Rochambeau Fire Station. Erected in 1929, the Rochambeau Fire Station is one of the finer examples of early-twentieth-century municipal architecture in the city and is a contributing resource in the Elmgrove Gardens Historic District. The facility served the citizens of the surrounding neighborhoods for nearly 90 years. Following a consolidation of fire safety services in 2016, the City of Providence closed the Rochambeau Fire Station in January 2017. The Providence Redevelopment Agency is charged with the deaccessioning the vacant fire station from city ownership.

Students in the Preservation Economics class conducted architectural investigations to determine character-defining features of the fire station, examined property planning and use constraint, studied local real estate and commercial market factors, selected feasible reuse scenarios based on property and market research designed concept schemes for feasible reuse scenarios, calculated cost estimates based on price per square foot for use schemes, assessed potential financial intervention tools available for rehabilitation and reuse, and prepared a financial synthesis for residential and mixed residential and office uses.

The feasibility study team included graduate students Marjorie Drew, Matthew McCarty, Alan Pool, and Emeline Young and undergraduate students Lydia Costello, Diana Figueroa, Rosa Ramirez, and Gabrielle Riley. Students were supervised by Assistant Professor Elaine Stiles and advised and assisted by City of Providence preservation planner Jason Martin and principal planner David Everett, and deputy director and general counsel of the Providence Redevelopment Agency, Samuel Budway.

Executive Summary

This study was conducted to assess the feasibility of reuse scenarios for the Rochambeau Fire Station at 280 Rochambeau Avenue in Providence, Rhode Island, a contributing resource in the Elmgrove Gardens National Register Historic District. The study process identified and analyzed potential uses that would preserve character-defining features of the historic building, contribute to the community, and be financially feasible.

After analyzing the building, legal and planning limitations, community and political factors, and local real estate and commercial market factors, the feasibility study team identified two potentially feasible reuse scenarios:

- Concept 1: Mixed-use multi-family residential and office
- Concept 2: Mixed-use multi-family residential and community space

The team completed conceptual design schemes and financial synthesis for both uses and determined that both were likely feasible. The costs for Concept 1 and Concept 2 were comparable, however Concept 1, Mixed-Use Multi-Family Residential and Office, created a significantly larger cash flow. Concept 2, Use Multi-Family Residential and Community Use, however, more closely meets community objectives for the project. Furthermore, a nonprofit community organization or developer would likely have access to incentives unavailable to a for-profit developer which may improve the cost basis of the project.

One of the challenges with reusing Providence Rochambeau Fire Station is the lack of preservation-related incentives available to the property. It does not fall within the areas of intervention for the Providence Revolving Fund or qualify for low-interest financing from the Rhode Island Historic Preservation and Heritage Commission's Historic Preservation Loan Fund. Reuse and rehabilitation projects for the property would also be unlikely to meet the substantial rehabilitation standards for the federal historic preservation tax credit program or the Rebuild Rhode Island tax credit program. A project would therefore likely be dependent on developer equity and public or market-rate financing and housing and business incentives unrelated to historic preservation.

1.0 Objectives

The following objectives guided the student team's work in conducting this feasibility study:

- Preserving the historic character and integrity of the fire station
- Finding a use that contributed to and was compatible with the surrounding neighborhoods
- Finding a financially sustainable program of use
- Some maintenance of public access or use

In September 2017, the City of Providence Planning Department held an open house meeting at the fire station to solicit comment from the public on the future use of the building. While the majority of respondents wanted the building to remain a fire station, the following uses were also identified, in descending order of votes:

- Community/Youth/Rec Center
- Housing (one or two family)
- Arts Space/Theater/Arts Education
- Community Garden/Plant Agriculture/Farmers Market
- Fire Museum
- Roller Skating/Skate Park
- Coffee Shop
- Police Sub-station
- Park/Playground
- Small Business Incubator¹

The team considered the focus among public comments on public use and housing in shaping objectives for the feasibility analysis.

¹ City of Providence, "Rochambeau Fire Station Open House," <http://www.providenceri.gov/rochambeau-fire-station-open-house/>.

2.0 Property History and Significance Analysis

2.1 Historical Background

Located at 280 Rochambeau Avenue, Rochambeau Fire Station is a two-story, Tudor Revival style, brick building constructed in 1929. The building was originally constructed as a fire station and continued in that use until January of 2017. The parcel associated with Rochambeau Fire Station (Plat 93, Lot 166) was in the ownership of the Hazard Family from the late nineteenth century and the Johnston Family in the early twentieth century before sale of the land to the city in 1928.² According to Sanborn map research, the fire station is the first building constructed on the site.³ The Tudor Revival styling of Rochambeau Fire Station was intended blend the non-residential building early-twentieth-century domestic architecture of the surrounding neighborhood.

The establishment of Rochambeau Fire Station reflected the need for municipal buildings in the growing East Side residential areas as they expanded in the late nineteenth and early twentieth centuries. The East Side was originally a area of farmland and large family estates. Complicated land holdings involving the Brown Morris Estate and the difficulty of developing on the naturally wet land slowed development of the area until the early twentieth century. The area was platted for single-family residential development in several stages between the 1887 and 1928 by members of the Brown, Morris, and Dexter families. Transportation improvements during the period made development of outlying residential additions to the city feasible. The rise of the automobile, still a luxury at the time, made it possible for middle- and upper-class citizens to live further from the central business district of the city and commute to work. The East Side developed quickly in the early twentieth century as a district of middle and upper-middle class residential enclaves, with some slowing down due in part to the onset of to the Great Depression.⁴ Nearby, Hope Street became the primary commercial district for the adjacent neighborhoods, with the Rochambeau Avenue fire station, former Hope Street Theater, and the local library branch anchoring the district.⁵

In 2005, three of the Brown and Morris subdivision plats were listed on the National Register of Historic Places as the Elmgrove Gardens Historic District. The district is significant for its association with early streetcar and automobile-driven decentralization of the city and for its collection of distinctive examples of early twentieth-century architectural styles, including Tudor Revival.⁶

² City of Providence Plat Card for Plat 93, Lot 166. City of Providence Archives.

³ Sanborn Map Company. Providence. Volume 2, Sheet 90, 1921.

⁴ Cavanaugh, Kathryn and Mary Kate Harrington, National Register Registration Form for Elmgrove Gardens Historic District, Providence, Rhode Island. September 2003, 46, 55-57; Rhode Island Historical Preservation and Heritage Commission, *Historic and Architectural Resources of the East Side of Providence: A Preliminary Report*, Providence: Rhode Island Historical Preservation & Heritage Commission, 1989, 26. www.preservation.ri.gov/survey/publications.php.

⁵ Summit Neighborhood Association, "The Neighborhood," <http://www.sna.providence.ri.us/the-neighborhood/>.

⁶ Cavanaugh and Harrington, National Register, 46.

Rochambeau Fire Station is the only non-residential contributing building in the district. It is significant for its association with the expansion of city services to the growing residential additions of the East Side of Providence and as a distinctive example of Tudor Revival design. The fire station is one of seven Tudor Revival-style buildings in the Elmgrove Gardens Historic District.

2.2 Property Description and Character Defining Features

2.2.1 Exterior

Rochambeau Fire Station is situated on the northwest corner of Rochambeau Avenue and Mutual Place on an approximately one-quarter-acre lot (Figure 1).

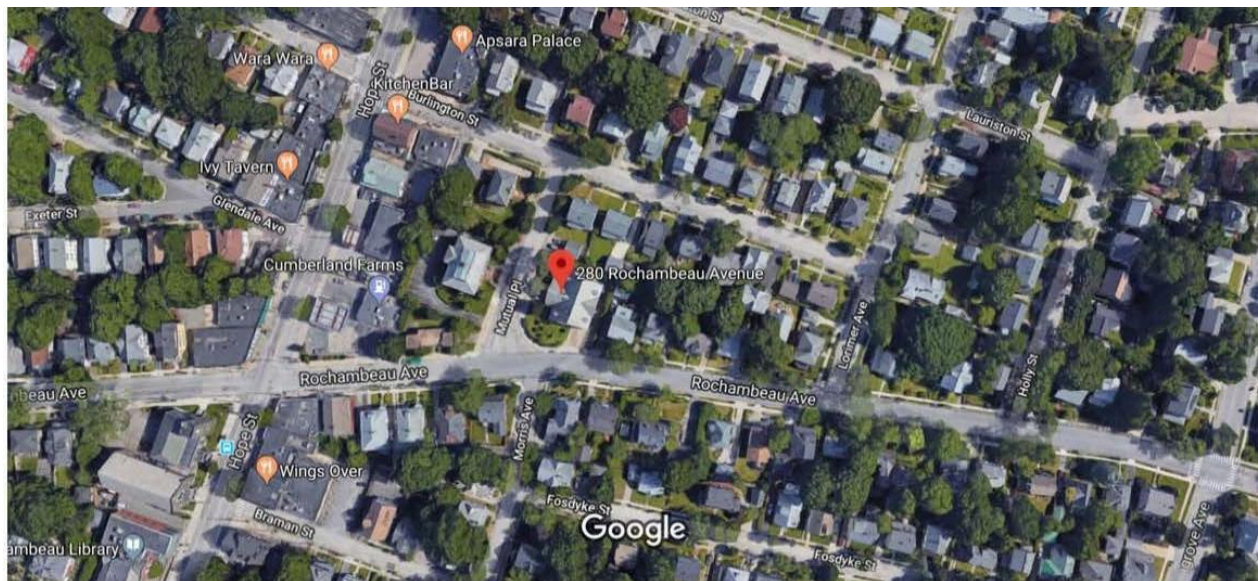


Figure 1. Location Map. Source: Google.

The two-and-a-half-story, cross-gable, reinforced concrete building is clad in red brick. The building rests on a concrete foundation and the roof is sheathed in slate. The main block of the building is oriented with the gable end toward Rochambeau Avenue, and features two prominent, telescoped, front-facing gables (Figure 2). The cross-gable extends from the west elevation of the main block, and a major gable dormer projects from the east roof slope. Gable dormers with clapboard siding are set on the ends of each roof slope of the main block and a skylight on the cross-gable ridge line lights an interior stairwell. A brick interior chimney is set on the west side of the main block at near the ridge line (Figure 3).



Figure 2. Main (south) elevation of fire house from Rochambeau Avenue.



Figure 3. Main (south) and west elevations showing cross gable form.

The main elevation features an engine bay entrance at the east end of the elevation. The opening has a low pointed arch opening and modern overhead door. A wood sign with raised letters above the entrance reads “Engine Co. 4.” The primary pedestrian entrance is set off-center on the main (south) elevation of the cross-gable block (Figure 4). It also features a low, pointed arch opening and has a historic, lit wooden plank door with decorative strap hinges. Secondary entrances to the building are situated on the west gable end of the cross-gable, and on the east end of the rear (north) elevation, providing egress from the engine bay. The

secondary entrance to the cross gable also has a low pointed-arch opening and lit, wooden plank door with strap hinges (Figure 5).



Figure 3. Mutual Place (west) elevation showing secondary entrance.



Figure 5. Main pedestrian entrance on south elevation of cross gable with historic wood door and light fixture.

Windows throughout the building are replacement, metal-clad sash. Windows appear in awning and double hung sash forms. The double-hung sash are set singly, in pairs, and as three-part windows. Windows on the main elevation feature wood louvered shutters.

Key decorative features include vertical decorative half-timbering and uncoursed brickwork in the apex of the main cross gable on the primary elevation of the main block, uncoursed brickwork and vertical and curved decorative-half timbering in the end gables of the east cross-gable block and west gable wall dormer, and half timbering decoration in the dormer gables (Figure 6). The fire station also retains several historic outdoor lantern light fixtures (Figure 7).



Figure 6: Example of uncoursed brickwork and decorative half-timbering in apex of cross gable.



Figure 7. Historic lantern light fixture on east side of engine bay entrance.

Exterior Character Defining Features:

- Cross-gable form and telescoped front-facing gables
- Location, size, and configuration of all exterior window openings
- Red brick cladding, including uncoursed brickwork in gable ends
- Half-timber ornament
- Low, pointed arch door openings
- Location and size of engine bay entrance
- Engine Co. 4 signage
- Historic wood doors
- Historic exterior light fixtures

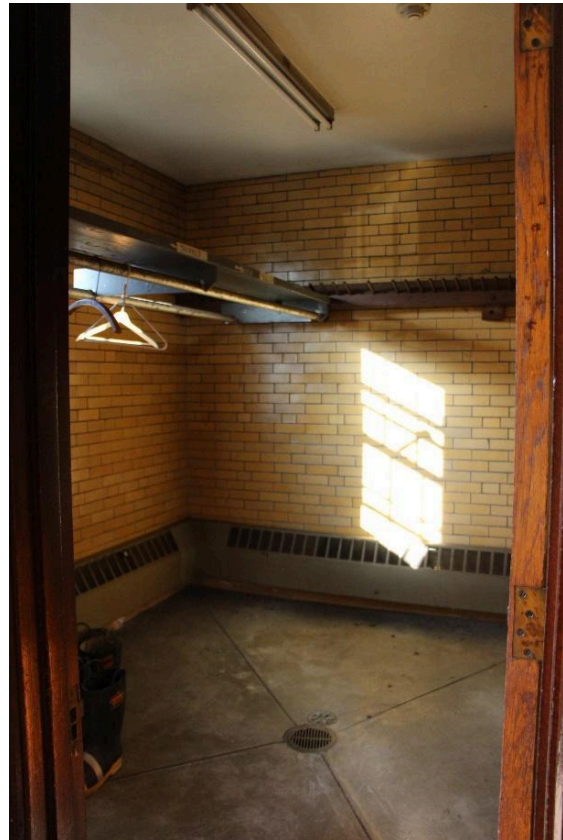
2.2.2 Interior

There are several spaces that distinguish the building as a firehouse, including the engine bay, two fire poles, equipment drying rooms, a commercial kitchen, a day room, communal bathroom, and overnight quarters on the second floor.

The first story of the fire station is composed of the engine bay, an operations room, equipment storage and drying rooms, a small bathroom, storage room, and kitchen (Figure 8). The engine bay spans the full depth of the building and has concrete floors, yellow fire brick wall cladding, and a concrete ceiling (Figure 9). Two fire poles leading from a day/bunk room on the second story to the engine bay are set on the east side of the bay (Figure 10). Typical finishes include asphalt tile or concrete flooring, yellow fire tile wainscoting, and plaster ceilings (Figures 11-13). Doors throughout are historic wood panel or lit doors. The kitchen features a mixture of historic wood and modern cabinets and fixtures, including a historic enameled sink (Figures 14 and 15). The bathroom features marble stall partitions. Lighting fixtures throughout are modern.



Figure 9. View of engine bay looking north.



Figures 10 (left) and 11 (right): Fire pole in engine bay and equipment drying and storage room.



Figure 12. Looking west down from staircase to stairhall showing typical finishes and arched door openings.



Figure 13. Operations/day room on first story looking north.



Figures 14 and 15. Built-in cabinets and pantry closet and enameled sink in kitchen.

The second story features a large communal bathroom and shower stall area, large open day/bunk room with small adjoining closet spaces, and three private overnight quarters rooms arranged around a central hall (Figures 15-20). Historic plans show that the sleeping room directly off the day room/dormitory was created with a partition sometime after construction (Figure 19). The bathroom features white ceramic tile wall and floor coverings, a series of historic porcelain sinks, and marble shower and toilet stall partitions with wood doors (Figures 20-22). Typical finishes are similar to the first story with asphalt tile flooring, plaster walls with picture rails, and coved plaster ceilings. Doors throughout are historic wood paneled and lit doors.



Figure 16. Skylit stairhall on second story looking toward bathroom.



Figure 17. Fire pole in second-story dormitory/day room.



Figure 18. Second-story day room/dormitory looking north.



Figure 19. Second-story day room/dormitory looking south, showing later partition for third private sleeping room



Figure 20. Private sleeping room on east end of second story.



Figure 21. Historic fixtures in second story bathroom.



Figure 22. Historic fixtures in second story bathroom.

The day room has access to an unfinished attic space spanning the length as the dayroom. A partial basement contains a large mechanical equipment area and a former coal room converted to storage use.

Interior Character-Defining Features

- Yellow fire brick wall cladding
- Fire poles
- Location and open volume of engine bay
- Historic cabinetry and built-ins in kitchen
- Coved ceilings
- Central stair circulation and bannisters
- Historic wood doors
- Historic finishes and fixtures in bathroom

Retaining the communal bathroom on the second story may not be feasible with many potential reuses of the fire station, however, the materials in the bathroom may be reused or repurposed. Retaining the fire poles in their current configuration may also be infeasible, but portions can be retained in the engine bay.

3.0 Community and Political Factors

3.1 Neighborhood Profile

Rochambeau Fire Station is located in the Blackstone neighborhood in the northeast corner of Providence's East Side. The site is also located close to the traditional boundaries of the Hope and Mount Hope (specifically Summit) neighborhoods (Figure 23).



Figure 23. Providence neighborhoods with Rochambeau Fire Station location indicated with star. Source: Creative Commons

The neighborhoods surrounding the fire station are primarily residential but are bisected by popular commercial corridors such as Hope Street, one block west of the fire station site. The adjacent neighborhoods include green and open space amenities such as the Blackstone Boulevard, Billy Taylor Park, Swan Point Cemetery, North Burial Ground, Lippitt Park, and Collier Field. Public transportation within the area is limited to bus service via the Rhode Island Public Transit Authority (RIPTA) R, 49, and 40 lines.

Survey of the Summit and Mount Hope neighborhood association websites and online forums identified several issues of attention or concern among residents for the areas closest to the fire station site:

- Future plans for several underutilized parcels along Rochambeau Avenue, such as the former Sears/Shaw's food market site.
- Redevelopment of the North Main Street and Blackstone Boulevard commercial districts
- A preference for small or local businesses in the neighborhood rather than of national or regional chains
- More commercial amenities spread throughout the residential area

3.2 Rochambeau Fire Station Open House, September 2017

In September 2017, the City of Providence Planning Department held an open house meeting at the fire station to solicit comment from the public on the future use of the building.

Approximately 50 people attended. While the majority of respondents wanted the building to remain a fire station, the following uses were also identified, in descending order of votes:

- Community/Youth/Rec Center
- Housing (one or two family)
- Arts Space/Theater/Arts Education
- Community Garden/Plant Agriculture/Farmers Market
- Fire Museum
- Roller Skating/Skate Park
- Coffee Shop
- Police Sub-station
- Park/Playground
- Small Business Incubator⁷

3.3. Political Factors

The fire station is situated in Ward 3 of Providence. Ward Councilor Nirva LaFortune is a Democrat and the first Haitian-American elected to the City Council. Councilor LaFortune's public policy issues revolve around education, open government, community safety, sound fiscal practices and making the community more welcoming and inclusive to all regardless of race or class. One of the local advocacy organizations that she has worked with is the The East Side Community Alliance, raising awareness on issues of economic division in Ward 3.⁸

⁷ City of Providence, "Rochambeau Fire Station Open House," <http://www.providenceri.gov/rochambeau-fire-station-open-house/>.

⁸ Nirva LaFortune, "Issues," <http://www.electnirva.com/issues.html>; Nirva LaFortune, "My Turn: Our communities must come together to fight racism," *Providence Journal*, August 18, 2017. <http://www.providencejournal.com/opinion/20170818/my-turn-nirva-lafortune-our-communities-must-come-together-to-fight-racism>.

3.4 Analysis

Based on analysis of community factors, community-oriented or residential uses would be the most likely to be acceptable to neighborhood residents.

4.0 Legal Limitations

4.1 Ownership & Deed Restrictions:

The City of Providence purchased parcel associated with 280 Rochambeau Avenue (Plat 93, Lot 166) from John T. Johnston in 1928, shortly before construction of the fire station.⁹ The city has owned the property since that date. No covenants, easements, or deed restrictions were found.¹⁰

4.2 Land Use

4.2.1 Comprehensive Plan

The Comprehensive Plan is a goal-oriented neighborhood plan focused on identifying needs and creating long-term objectives to better serve the community. Rochambeau Fire Station is part of the Mt. Hope, Hope and Blackstone Comprehensive Plan.¹¹ Local residents took part in the creation of this plan. Some of the goals and considerations set forth by the community in this plan are presented below. These factors may affect and should guide the future use of Rochambeau Fire Station.

- Preserve historic places¹²
- Promote small businesses¹³
- “Prohibit the encroachment of commercial uses into residential areas along Hope Street.”¹⁴
- “Identify potential partners such as businesses and non-profit organizations that can assist in completing specific projects.”¹⁵
- “Work with local universities and hospitals to create a more educational, vocational and recreational programs for neighborhood residents, particularly for youth.”¹⁶
- “Increase collaboration between institutions and neighborhood residents through educational program and services and by mentoring neighborhood students.”¹⁷

⁹ Providence Public Building Authority, “Plat 93 Lot 166 Rochambeau Ave.” (City of Providence Archives), October 5th, 1990. DB 2308/153.

¹⁰ Ibid.

¹¹ Providence Department of Planning and Development, “Providence Tomorrow: Mount Hope, Hope, Blackstone Neighborhood Plan. 2009,” 1-54, https://www.providenceri.gov/wp-content/uploads/2017/05/Planning-MHHB_NeighbrhdPlan_Digital.pdf

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

4.2.2 Zoning

The parcel associated with Rochambeau Fire Station (Plat 93, Lot 166) is currently zoned R-1 Residential District but is located immediately adjacent to an R-2 Residential and C-1 Neighborhood Commercial District associated with the Hope Street business district (Figure 24).

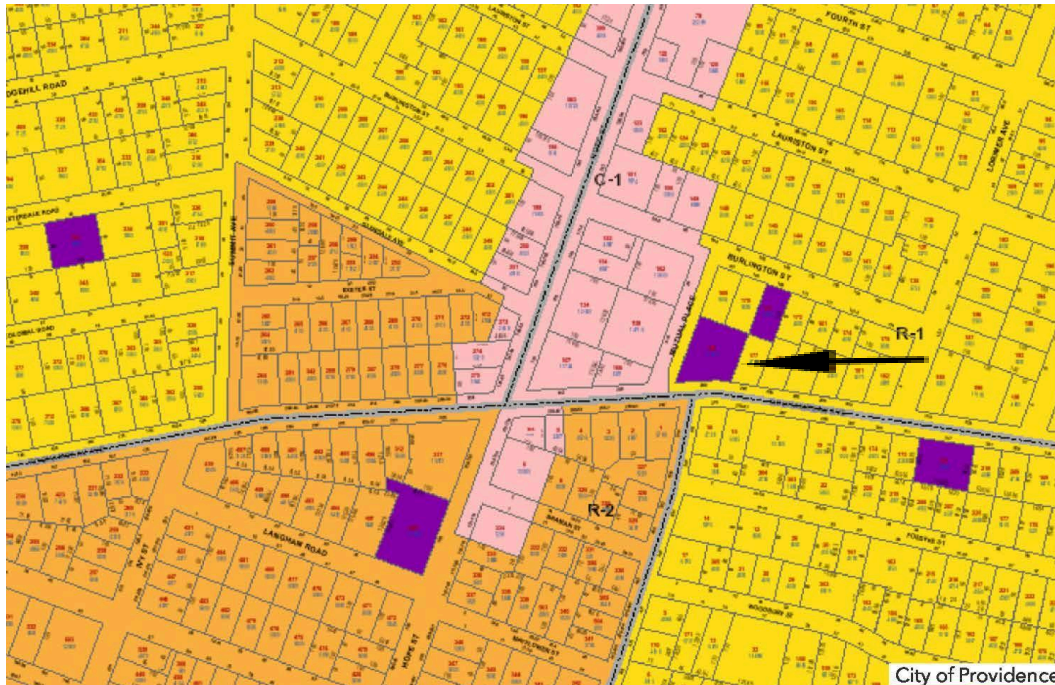


Figure 24: Location of 280 Rochambeau Avenue (arrow) showing proximity to R-2 and C-1 district boundaries. Source: pvdgis.maps.arcgis, accessed March 17th, 2018

According to the Providence zoning ordinance, “The R-1 Residential District is intended for detached single-family dwellings of low density residential development. Limited non-residential uses, which are compatible with surrounding residential neighborhoods, may be allowed.”¹⁸

R-1 Residential District permitted uses which may be appropriate for the fire station include:

- Detached single-family dwelling
- Community center
- Community residence
- Cultural facility
- Day Care up to 8 people
- Primary or secondary educational facility
- Place of worship

Additional uses may be allowed by special use permit.

¹⁸ City of Providence, Zoning Ordinance. December 24, 2014, 1-233.

According to the City of Providence Zoning Ordinance, “The R-2 Residential District is intended for areas of detached single-family and two-family, including semi-detached, residential development of moderate density. Limited non-residential uses, which are compatible with surrounding residential neighborhoods, may be allowed.”¹⁹ R-2 Residential permitted uses which may be appropriate for reuse of the fire station are identical to those of the R-1 Residential zoning, with the exception of permitting detached single-family and two-family dwellings and semi-detached single-family and two-family dwellings.

According to the City of Providence Zoning Ordinance, “The C-1 Neighborhood Commercial District is intended for areas of small to medium-scale commercial use, typically located along urban corridors”²⁰

C-1 Neighborhood Commercial District permitted uses that may be appropriate for reuse of the fire station include:

- Art gallery
- Art studio
- Bed and breakfast
- Day care over 12 people
- Multi-family dwelling
- Vocational educational facility
- Government office
- Hotel/motel
- Industrial design
- Lodge/meeting hall
- Medical/dental office
- Office
- Retail goods less than 3,500 sf

Commercial use for the site would require request for a variance or a request to extend the C-1 Neighborhood Commercial District zoning to the east side of Mutual Place.²¹

4.2.3 Building Codes

Any rehabilitation and reuse project at Rochambeau Fire Station would need to adhere to the universally recognized International Building Code (IBC),²² International Fire Code (IFC),²³ and International Plumbing Code (IPC).²⁴ Depending on the proposed use, the project may also

¹⁹ Ibid.

²⁰ Ibid.

²¹ Jason Martin, Interview with Rosa Ramirez and Matthew McCarty, March 2018.

²² International Code Council, “International Building Code,” International Code Council, 2018, <https://codes.iccsafe.org/public/document/IBC2018>

²³ International Code Council, “International Fire Code,” International Code Council, 2015, <https://codes.iccsafe.org/public/document/toc/546/>

²⁴ International Code Council, “International Plumbing Code,” International Code Council, 2015, <https://codes.iccsafe.org/public/document/toc/550/>

have to abide by the Rhode Island State Building Code,²⁵ Rhode Island State Property Maintenance Code,²⁶ Rhode Island Fire Safety Code,²⁷ Rhode Island State Energy Conservation Code,²⁸ Rhode Island State Plumbing Code,²⁹ Rhode Island State Electrical Code,³⁰ Rhode Island State Mechanical Code,³¹ Rhode Island State Rehabilitation Building and Fire Code for Existing Buildings and Structures,³² and the Americans with Disabilities Act.³³ When a use is determined for this site, specific codes and laws will become applicable.

4.2.4 Historic District

280 Rochambeau Avenue is a contributing property in the Elmgrove Gardens National Register Historic District in Providence.³⁴ The district is not a local historic district but the fire station property is included in the city's Industrial and Commercial Historic Overlay District. As such, any rehabilitation project for the fire station would require review and approval from the Providence Historic Preservation & Heritage Commission.

²⁵ Building Code Standards Committee, International Code Council, "Rhode Island State Building & Fire Code Regulations," Department of Administration, August 1st, 2014, <http://sos.ri.gov/divisions/Open-Government/State/rules-and-regulations/building-and-fire-codes>

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Ibid.

³⁰ Ibid.

³¹ Ibid.

³² Ibid.

³³ United States Department of Justice Civil Rights Division, "ADA Standards for Accessible Design" United States Department of Justice Civil Rights Division, September 15th, 2010. https://www.ada.gov/2010ADASTandards_index.htm

³⁴ Cavanaugh and Harrington, National Register, 1-66.

5.0 Local and Regional Market Factors

ESRI Business Analyst was used to examine local market profile and residential and commercial real estate markets in the neighborhoods surrounding the Rochambeau Avenue Fire Station. The market analysis area included a one-mile, three-mile, and five-mile radius from the project site for comparative analysis (Figure 25).

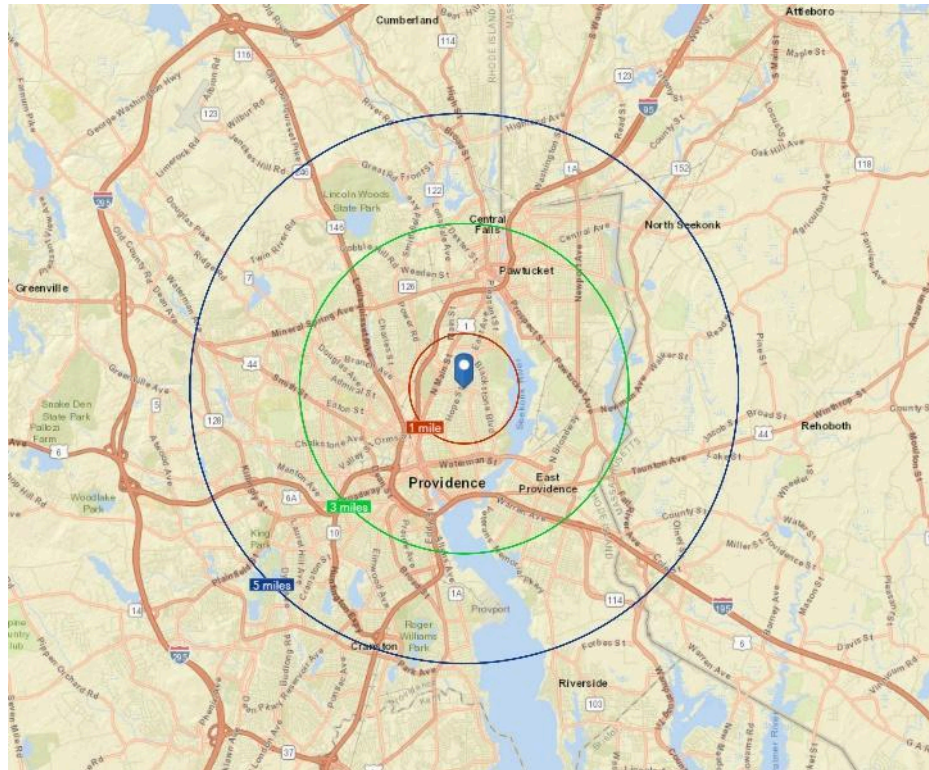


Figure 25. Map showing the one, three, and five-mile radii market analysis areas. Source: ESRI Business Analyst.

5.1 Market Area Demographics

According to the 2017 ESRI Market Analysis, the population within a one-mile radius of the fire house consists of 18,788 persons with a median income of \$68,867. That amount increased to 202,323 people within three miles (median income of \$41,434) and over 404,871 people within a five mile radius (median income of \$43,385). Seventy-five percent of the individuals in the one-mile radius are white, with African-American, Hispanic and Asian residents making up 7 to 10 percent of the market population. This area, according to ESRI Business Analyst, has strong demographic representation from professionals in the health care fields, as well as education, management, business, financial institutions, and retail.

Analysis of the market area using a five, ten, and fifteen-minute walking distance radius showed similar, but more concentrated trends (Figure 26). Within the fifteen-minute walking radius, the average age of residents was 39 and the average household size was two. Seventy-five percent

of the population was college educated and the average annual income is approximately \$80,000 (Figure 27).

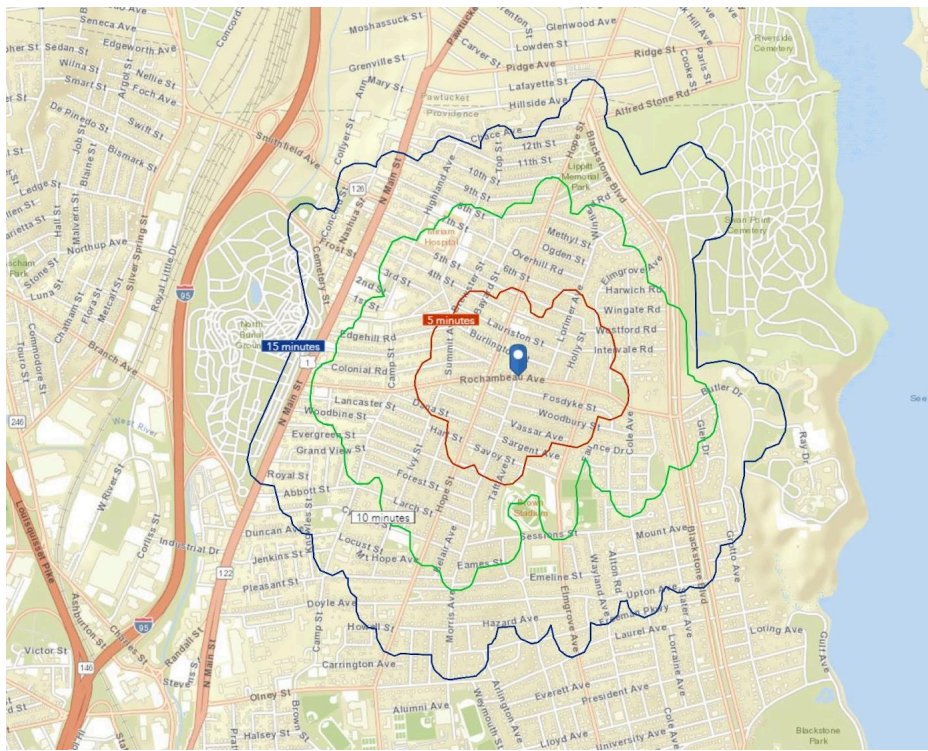


Figure 26. Map showing a five, ten, and fifteen-minute walking radius of the Rochambeau Fire Station.
Source: ESRI Business Analyst.

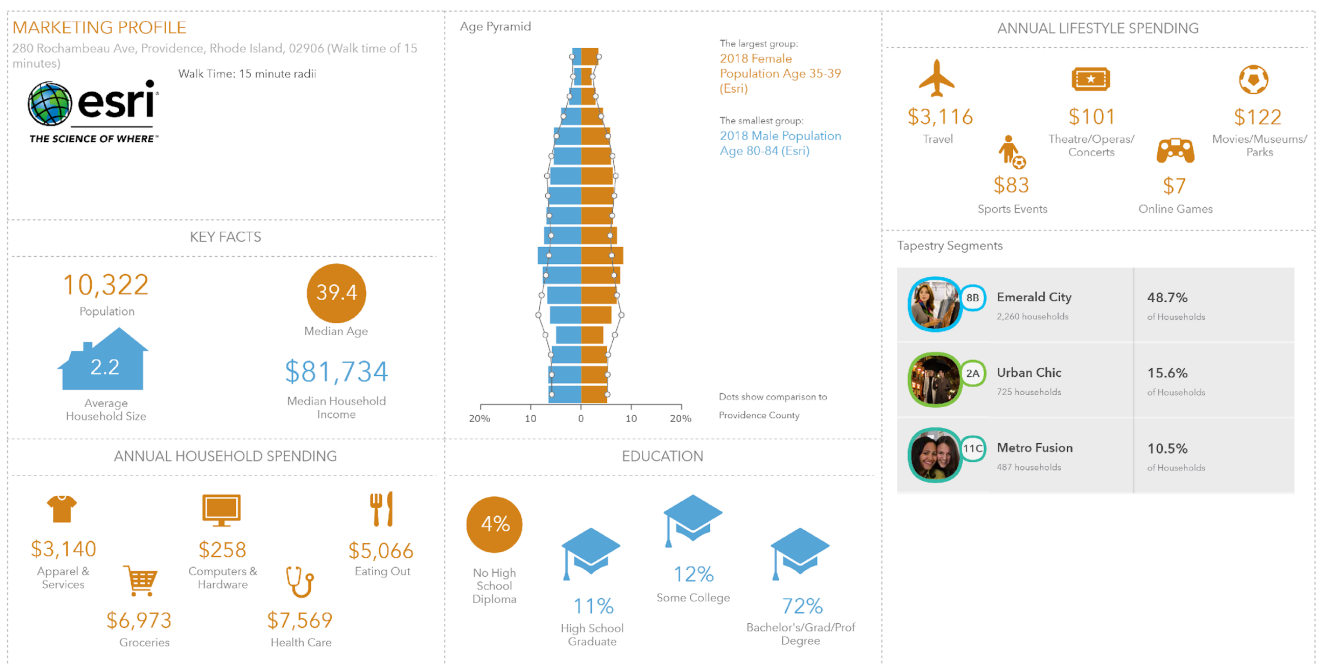


Figure 27. Infographic of Market Profile for 280 Rochambeau Avenue within a fifteen-minute walking radius. Source: ESRI Business Analyst

5.2 Business and Retail Analysis

The ESRI Business Analyst Business Summary for the market analysis area reports that there are 747 businesses and 13,908 employees working within the one-mile radius. Over half the business are in the service industry, including banks, insurance companies, restaurants and retail shops. The largest industry represented is health care and social assistance with 126 offices in the area. The second largest industry is retail, with the highest percentage being eating and drinking places and miscellaneous retail. There are 48 eating and drinking establishments to choose from within the one-mile radius area, making this small area competitive in the restaurant sector.

In the ESRI Retail Market Potential report for the market analysis area, the entertainment, grocery, and restaurant summaries outline consumer behavior in the one-mile radius and the likelihood of their behavior compared to the national average. Overall, there is a high number of commercial business located in the one-mile radius, including many restaurants within close walking distance of the fire station. There are dining options for all times of the day and multiple service businesses like salons and miscellaneous retail stores.

In the entertainment summary, 66.1 percent of the one-mile radius adult population had attended a movie in the last six months, higher than the national average. In comparison, only 18.1 percent went to live theater in the last twelve months, though this was still higher than the national average. Over half of the adult population had dined out in the last twelve months, but only 22.2 percent went to a bar/nightclub in the last six months, both still above the national average.

Based on this market analysis, a retail or entertainment establishment may face considerable competition in the neighborhood. However, field reconnaissance of the neighborhood revealed very few vacancies in local commercial spaces.

5.3 Residential Real Estate

The ESRI Business Analyst housing unit summary details housing types located within a one-, three-, and five-mile radius market analysis areas as of 2015, with forecasts to 2017. ESRI Business Analyst data was balanced with local real estate market analysis from brokerage firms and information from the online real estate information site Zillow (www.zillow.com).

Rental vs. Owner Occupied Units

In the one-mile radius, there have been consistently more renter occupied units than owner occupied units since 2000. The report forecasts that in 2017, 41.8 percent of housing stock within the one-mile radius is owner occupied in contrast to 49.6 percent renter-occupied units.

Median and Average Home Values

The median home value in the one-mile radius is \$360,066, compared to the three-mile value at \$221,705 and the five-mile at \$219,587.

The average home value in the one-mile radius is also higher at \$428,874, compared to the three-mile value at \$264,390 and the five-mile at \$251,922.

According to Sotheby's East Side of Providence Real Estate Market Snapshot, as of May 14th, 2018, there were 112 properties for sale with an average asking price per square foot of \$250.49. According to the same report, the average sale price over the past twelve months was \$501,239.08.³⁵

Vacancy Rates

The housing unit vacancy rate for both owner- and renter- occupied units in the one-mile radius is 8.6 percent, which is lower compared to the three-mile radius at 10.3 percent and the five-mile radius at 9.9 percent.

Rental Rates

Zillow indicated that there were 21 apartments available as of March 2018 on the East Side of Providence. Out of these 21 available apartments, the median rent was \$1,600 per month, and the average rent was \$1,700 per month.

Unit Types

The majority of the apartments for rent on Zillow were two- and three-bedroom units, showing a potential market gap for studio and one-bedroom unit apartments.

The market analysis suggests that the real estate market around the project site is stronger than in many other parts of the metropolitan area, has a relative balance of owner-occupied and rental housing units, and a relatively lower vacancy rate than in adjoining neighborhoods. Rental units are perhaps slanted toward the larger end of the scale in terms of bedroom size. that renter-occupied units on the East Side of Providence have more market appeal than owner-occupied condominium units.

5.4 Commercial Real Estate

According to MG Commercial's 2017 Rhode Island Market Analysis, the office market has a shortage of available class "A" office space and demand for this space high. This trend is due in part to large amounts of class "B" office space being converted into residential units and reducing the overall number of available office space in the region.

³⁵ "East Side of Providence Market Data," Mott & Chace Sotheby's International Realty, accessed May 14, 2018, <http://www.mottandchace.com/market-insights/east-side-of-providence>.

The vacancy rate for Providence class "A" office space is 10.2 percent, with rental rates ranging from a high of \$32 per square foot to a low of \$25 per square foot.³⁶

The commercial market profile suggests that reuse of the fire station's first floor as office space may prove competitive because of the need for class "A" office space and the site's proximity to restaurants and retail.

³⁶ MG Commercial, "Rhode Island Commercial Real Estate Market Analysis," accessed May 14, 2018, <http://www.mgcommercial.com/ri-market-analysis>.

6.0 Target Market

The target market area for this project is the East Side Providence neighborhoods surrounding Hope Street, North Main Street, and Blackstone Boulevard. Based on market segmentation analysis from ESRI Business Analyst Tapestry market segmentation, the target market area has a high proportion of what ESRI terms “Emerald City” residents. These individuals are well-educated, well-employed, younger, and mobile populations who are likely to have a college degree be employed in a professional occupation. The income in this segment is close to the US median. Emerald City market area residents are more likely to enjoy the arts, be highly connected via the internet, and make green or environmentally friendly choices. The Emerald City market segment is closely associated with lower-density urban neighborhoods similar to the East Side neighborhoods of Providence.³⁷

³⁷ESRI Tapestry Segmentation, “Emerald City,” 1.
http://downloads.esri.com/esri_content_doc/dbl/us/tapestry/8B_EmeraldCity_TapestryFlier_G79488_2-18.pdf

7.0 Intervention Tools

Rehabilitation of historic properties often requires financial intervention tools to gap between cost and value for the project. The study team assessed existing intervention tools typically available for historic rehabilitation and adaptive reuse projects and for community-centered projects in Providence and Rhode Island.

After completing the feasibility study the team determined that a rehabilitation and adaptive reuse project for Rochambeau Fire Station are unlikely is unlikely to qualify for typical incentives available at the national, state, or local level for historic rehabilitation work. The following factors disqualify the project from these incentives:

- The property would not incur sufficient eligible rehabilitation expenses to meet the substantial rehabilitation test for the **federal historic preservation tax credit** program.
- The property would not incur sufficient eligible rehabilitation expenses to qualify for low-interest financing through the **Rhode Island Historical Preservation Loan Fund**.
- The property would not incur sufficient project expenses or be large enough in square footage or unit size to qualify for tax credits under the **Rebuild Rhode Island Tax Act**.
- The property is not within a designated service/intervention area for low-interest financing from the **Providence Revolving Fund**.

The study team did identify a variety of other intervention tools unrelated to historic preservation that may be available to offset the cost-value gap in a rehabilitation project at Rochambeau Fire Station depending on future uses and nonprofit ownership structures, however, most had specific eligibility criteria for area demographics, industry sector, or project specifications that made them unlikely to apply to a project at Rochambeau Fire Station. Two exceptions were:

- Rhode Island Commerce Corporation Renewable Energy Fund: If the project includes installation of renewable energy sources, the Rhode Island Commerce Corporation Renewable Energy Fund (REF) provides grants for renewable energy projects at a variety of scales.
- Providence Redevelopment Agency: The Providence Redevelopment Agency has the ability to offer mortgage and other financing to properties on a case-specific basis.

8.0 Proposed Uses

After reviewing the property, market, and area characteristics detailed in Sections 1.0 through 6.0, the study team selected and analyzed four potential reuse concepts that might be appropriate uses for the building and be in line with regulatory, political, community, and market factors. These included:

- Single-family residential: This use complies with existing zoning, however the large square footage of the fire station and the character-defining nature of the engine bay make this use less likely to be economically or technically feasible. It also does not meet the objectives the study team outlined for reuse of the fire station.
- Community center: This use complies with existing zoning and meets many of the study team objectives. On the face, this use would also involve the fewest potential changes to the interior of the fire station. However, several factors pose challenges to this use:
 - Accessibility requirements for public uses on the second story would likely require significant structural changes to the fire station, some of which could adversely affect character-defining features.³⁸
- Multi-family residential (rental): This use requires a variance or extension of the adjacent R-2 or C-1 zoning district but is well-suited to the building type and size and appears competitive based on market analysis results. However, this use does not meet all of the study team objectives or meet the expressed desire of the local community for the building to have a community-oriented use.
- Mixed residential and office or community use: This use requires a variance or extension of the adjacent C-1 zoning district but is both well-suited to the building type and size and appears competitive based on market analysis results.

Based on this analysis, the study team selected two concepts for more detailed analysis:

- Mixed-use multi-family residential and office use
- Mixed-use multi-family residential and community use

8.1. Building Code Considerations for Proposed Uses

The primary building code considerations for the rehabilitation and reuse of the Rochambeau Avenue Fire Station relate to accessibility and fire safety.

8.1.1 Americans with Disabilities Act

The Americans with Disabilities Act (ADA) requires any public building, including historic buildings, be accessible to everyone. First-story changes to meet requirements for disabled access include creating at least one ADA-compliant bathroom and installing ramps in entry areas with steps. Currently the largest grade change is from the truck bay to the main level of

³⁸ In addition, without a potential community organization to use for analysis, the study team could not obtain program and financial details to complete a full feasibility analysis for the use.

the first floor, which measures approximately one foot high. The change in height may require installation of a long, sloping ramp in this location.

8.1.2 International Building/Fire Codes

Fire safety considerations include installation of a sprinkler system or other fire extinguishing system on the first floor for any proposed office or community space. Sprinkler systems would not be required in residential areas, but the second-floor units would require new fire alarms outside each sleeping area.

It is unclear whether the second story residential spaces would require a second means of egress. In general, sleeping areas are required to have a clear means of egress and the egress cannot be a window unless the opening is large enough and approved by a code official. (This appears to be most common in projects with special circumstances, such as rehabilitation of historic buildings. The International Building Code states that R-2 (multi-family residential) occupancies of four or fewer units may have one egress or one access to an exit as long as the maximum distance traveled to that exit is less than 125 feet. Based on this criterion, the main stairwell may serve as the sole means of egress from second-story spaces. If this method is not approved, additional stairways may need to be added to the building as second means of egress.

8.2 Parking Considerations for Proposed Uses

Article 14 of Providence's Zoning Ordinance outlines parking standards for new and change-of-use projects in the city. However, the ordinance states that in an effort to encourage reuse of existing structures, grandfathered deficiencies of vehicle and bicycle parking spaces due to insufficient space on the lot to accommodate parking are exempt from such requirements.³⁹ This parking relief makes both reuse scenarios feasible.

³⁹ City of Providence Zoning Ordinance, Article 14. Off-Street Parking and Loading, 1400 D, <https://www.providenceri.gov/wp-content/uploads/2017/08/Planning-Official-Zoning-Ordinance-June2017.pdf>.

9.0 Conceptual Design

The study team generated conceptual designs for a mixed-use project multi-family residential uses on the second story and an office or community space on the first floor.

The design concepts maintain or abide by the following objectives:

1. Preserve the historic integrity of the building including all character defining features
2. Recycle fixtures to reduce cost and maintain aesthetics
3. Create a floor plan that minimizes damage and maximizes comfort and efficiency
4. Provide features that are appropriate and expected for the intended users
5. Develop a space that does not prohibit access to individuals with physical constraints
6. Provide concepts that deliver on the requests made by the community

The original floorplan of the firehouse includes:

First Floor

- Large entry hall with 2 drying rooms
- Supply closet
- Bathroom (1 toilet, one sink)
- Kitchen
- Operation room/day room
- Engine Bay

Second Floor

- Stair Landing
- Officer Quarters/Dormitory
- Day Room
- Large bathroom (4 toilets, 8 sinks, 2 showers)

9.1 Concept 1: Mixed-Use Multi-Family Residential and Office

The first concept uses the first floor as a small office space or design studio, and residential use on the second floor (Figures 28 and 29).

Key Features, First Floor:

- Reception and conference room separated by a glass partition in operations room area
- Open design studio area with multiple desks in engine bay
- Lounge area placed by the bay door
- Main office in the rear corner of engine bay
- Break room/employee lounge in kitchen area
- Expanding existing bathroom with additional toilet
- ADA compliant bathroom in supply closet

- Laundry room (for residents) and storage area (for office/community tenant) in equipment drying rooms

Second Floor:

- Two one-bedroom, one-bath units in the day room/private sleeping quarters spaces
- One studio unit in the space of the existing communal bathroom
- New walls limited to partitions for kitchen and bathroom in units
- No changes to the landing and second-story hall

9.2 Concept 2: Mixed-Use Multi-Family Residential and Community Use

The second concept uses the first floor as community space, and places residential use on the second floor (Figure 30).

First Floor

- Offices in current operations/day room
- Flex space with multiple uses in engine bay
- Gender-neutral, ADA-compliant bathrooms in equipment drying rooms
- Storage in existing bathroom
- Kitchen remains unchanged

Second Floor

- Same layout as Concept 1

10.0 Financial Synthesis

The total gross rentable square footage of the fire station is 5,929 square feet.

10.1 Concept 1: Mixed-Use Multi-Family Residential and Office

Concept 1: Yearly Rental Income Schedule			
Tenant	Rentable Square Feet	\$/SQFT/Year ¹	Annual Rent
Studio Apartment	350	29	\$ 10,150.00
1 Bedroom Apartment	1000	21.6	\$ 21,600.00
1 Bedroom Apartment	1000	21.6	\$ 21,600.00
Office Space	3579	28.5	\$ 102,001.50
Gross Scheduled Income (GSI)			\$ 155,351.50

¹ The rental price per square foot was set based on market analysis research.

Concept 1: Capital Costs Budget			
Cost Category	Amount	Total Amount	Notes
Acquisition		\$897,435.00	
Purchase Price	\$854,700.00		Assessed value
Other Acquisition Costs	\$42,735.00		5% of purchase price
Hard Costs		\$582,570.00	Estimated rehabilitation cost for 6,375 square feet at \$90/square foot ¹
Soft Costs		\$99,036.90	
Architectural Fees	\$34,954.20		6% of hard costs
Construction Fee	\$29,128.50		5% of hard costs
Construction Overhead	\$34,954.20		6% of hard costs
Permits and Licenses	\$5,885.08		
Other Soft Costs	\$30,309.45		General conditions

Subtotal		\$681,606.90	
Contingency (15%)		\$102,241.04	
Total Capital Costs		\$1,681,282.94	

¹ The cost per square foot figure was reached by consulting with local contractors and a basic cost estimation process via RS Means.

Concept 1: Stabilized Year Operating Income Statement			
Category	Amount	Total Amount	Notes
Gross Scheduled Income (GSI)		\$155,401.50	
Studio Apartment (\$850/mo)	\$ 10,200.00		
Two apartments (\$1,800/mo)	\$ 43,200.00		
Office space (\$28.50/sq. ft.)	\$ 102,001.50		
Miscellaneous Income	\$ 12,000.00		Laundry and additional fees
Less Vacancy (10%)	\$ 15,540.15		
Effective Gross Income (EGIS)		\$ 151,861.35	
Fixed Expenses		\$ 38,170.23	
Property Taxes	\$ 31,410.23		\$36.75 per \$1,000 for commercial use
Insurance	\$ 4,000.00		
Outside Services	\$ 2,760.00		Trash hauling
Variable Expenses		\$30,027.15	
Administrative Costs	\$ 5,940.00		Property management @ \$495/mo.
Property Management	\$ 15,540.15		10% of GSI
Reserves for Replacement	\$ 8,547.00		1% of value
Total Expenses		\$ 68,197.38	
NET OPERATING INCOME (NOI)		\$83,663.97	
Less: Debt Service	\$50,030.92		4.5%, 30 years, 20% down payment
CASH FLOW		\$33,633.05	

10.2 Concept 2: Mixed-Use Multi-Family Residential and Community Use

Concept 2: Yearly Rental Income Schedule			
Tenant	Rentable Square Feet	\$/SQFT/Year ¹	Annual Rent
Studio Apartment	350	\$29.00	\$10,150.00
1 Bedroom Apartment	1000	\$21.60	\$21,600.00
1 Bedroom Apartment	1000	\$21.60	\$21,600.00
Community Center	3579	\$18.00	\$64,422.00
Gross Scheduled Income (GSI)			\$117,772.00

¹ The rental price per square foot was set based on market analysis research.

Concept 2: Capital Costs Budget			
Cost Category	Amount	Total Amount	Notes
Acquisition		\$897,435.00	
Purchase Price	\$854,700.00		Assessed value
Other Acquisition Costs	\$42,735.00		5% of purchase price
Hard Costs		\$582,570.00	Estimated rehabilitation cost for 6,375 square feet at \$90/square foot ¹
Soft Costs		\$99,036.90	
Architectural Fees	\$34,954.20		6% of hard costs
Construction Fee	\$29,128.50		5% of hard costs
Construction Overhead	\$34,954.20		6% of hard costs
Permits and Licenses	\$5,885.08		
Other Soft Costs	\$30,309.45		General conditions
Subtotal		\$681,606.90	

Contingency (15%)		\$102,241.04	
Total Capital Costs		\$1,681,282.94	

¹ The cost per square foot figure was reached by consulting with local contractors and a basic cost estimation process via RS Means.

Concept 2: Stabilized Year Operating Income Statement			
Category	Amount	Total Amount	Notes
Gross Scheduled Income (GSI)		\$117,772.00	
Studio Apartment (\$850/mo)	\$ 10,200.00		
Two apartments (\$1,800/mo)	\$ 43,200.00		
Office space (\$28.50/sq. ft.)	\$ 102,001.50		
Miscellaneous Income	\$ 12,000.00		Laundry and additional fees
Less Vacancy (10%)	\$ \$11,777.20		
Effective Gross Income (EGIS)		\$117,994.80	
Fixed Expenses		\$ 38,170.23	
Property Taxes	\$ 31,410.23		\$36.75 per \$1,000 for commercial use
Insurance	\$ 4,000.00		
Outside Services	\$ 2,760.00		Trash hauling
Variable Expenses		\$30,027.15	
Administrative Costs	\$ 5,940.00		Property management @ \$495/mo.
Property Management	\$ \$11,777.20		10% of GSI
Reserves for Replacement		\$ 8,547.00	1% of value
Total Expenses		\$64,434.43	
NET OPERATING INCOME (NOI)		\$53,560.37	
Less: Debt Service	\$50,030.92		4.5%, 30 years, 20% down payment
CASH FLOW		\$3,529.45	

11.0 Conclusion

The study team analyzed potential feasible reuses for the Rochambeau Avenue Fire Station based on four key objectives:

- Preserving the historic character and integrity of the fire station
- Finding a use that contributed to and was compatible with the surrounding neighborhoods
- Finding a financially sustainable program of use
- Some maintenance of public access or use

These objectives reflect community input on the future of the fire house registered at the September 2017 Providence Planning Department open house.

Based on the study team's analysis, the costs for Concept 1 and Concept 2 were comparable, however Concept 1, Mixed-Use Multi-Family Residential and Office, created a significantly larger cash flow. However, Concept 2, Use Multi-Family Residential and Community Use, more closely meets community objectives for the project. Furthermore, a nonprofit community organization or developer would likely have access to incentives unavailable to a for-profit developer which may improve the cost basis of the project. Additional intervention tools in the form of low- or no-cost financing, grants, or credits may be needed in order to rehabilitate the building for new uses.

It is the study team's hope that the objectives and findings in this report will be useful in further discussions about the future of the historic Rochambeau Fire Station, and that the building will continue to serve members of the Providence community for years to come.

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