Raleigh Fire Department Newsletter

Volume 8, Issue 4 Special Facilities Issue

New Fire Station 29

Address: 12117 Leesville Road. Status: Under Construction.

Currently under construction on the city's northwest border, Raleigh's first new fire station in seven years will house a single engine company and will serve a primary response area north of Interstate 540.

Three drive-through apparatus bays are prominent features of the facility.

"The design was dictated by current and future community needs," says Planning Officer Andrew Langan, "and not just the current apparatus in the Raleigh Fire Department's fleet."

"The three large bays will accommodate any future or larger-sized apparatus—such as ladder trucks—that are required for the needs of the coverage area," he adds.

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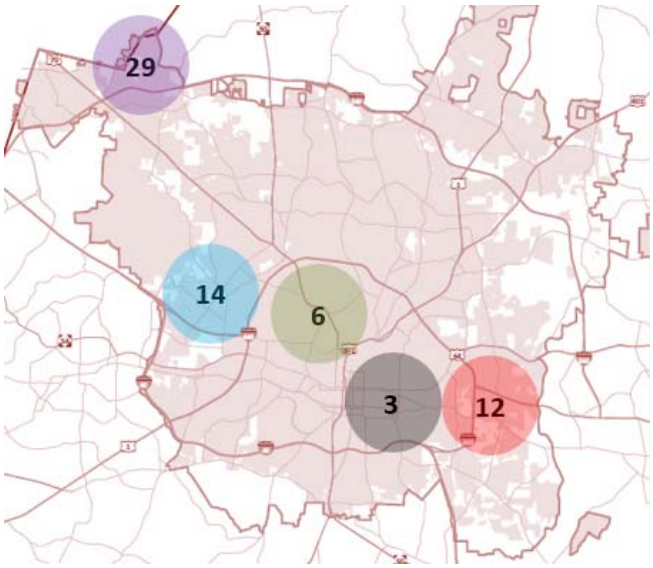
Inside This Issue

Future Fire Station Locations



The Raleigh Fire Department is presently working on six major fire station projects: four replacement stations (Stations 12, 14, 6, 3), one new station (Station 29), and one expanded station (Station 11).

This special edition of the newsletter presents an overview of these projects, as well as related facility projects and information.

The locations of the future fire stations are shown above with colored circles representing approximate four-minute driving distances from the area center. That's the current benchmark for engine company locations.

Along with community risk factors—such as residential population density and commerical or industry occupancies—these ensure maximum response coverage across the entire city limits.

Each city fire station houses at least one engine company. Other units include but are not limited to ladder companies, which are located based on eight-minute driving distances and community risk.

See a list of the City's current fire station locations at www.raleighnc.gov/fire. ■

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The expanded bay space will also help house spare (or reserve) apparatus, which have historically not all been stored indoors. This helps protect them and their expensive equipment from deterioration or damage.

Design Differences

The new fire station was designed by Williard Ferm Architects, who also designed Station 28 on Forestville Road and that opened in 2007. Differences between the two include:

- Central watch station with prominent views of the building's public entry as well as visual connection with the station's office and apparatus area.
- Office centrally located with direct access and views of the entry vestibule, apparatus area, watch station, and the outside of the building.
- Day room television area moved to an alcove to provide privacy from the building's front entry, while providing open access to living areas.
- Dormitory rooms grouped by company and with open floor plans, providing additional flexibility for using beds or vertical-oriented lockers, in varying configurations, to partition the spaces.
- Exercise room moved from the core of the building, providing daylight and exterior views.
- Outdoor equipment drying area added near the building's generator enclosure.
- Apparatus area incorporates a two-basin sink area for decontamination and other cleaning.
- Additional storage space.

Location Selection

The site for Station 29 was selected based on Geographic Information System (GIS) analysis of the area, which included residential areas annexed into the city in recent years. Four-minute (engines) and eight-minute (ladders) drive times were the benchmark for determining the best location.

This computation incorporated such factors as speed limits, traffic lights, and street directions. This helps the Raleigh Fire Department meet both national standards and local operational performance goals.

Fire protection for this area had previously been provided by contract with Durham Highway Fire Department as well as Raleigh Engine 23, located about three miles southeast on Pinecrest Road.

Growing population and development needs, and forecasted growth in the number of emergency calls, resulted in the planning and subsequent construction of a fire station to serve this area.

The "first due" area of Station 29 is north of Interstate 540 and consists primarily of residential occupancies, mostly single-family dwellings. It also contains intermittent commercial and industrial properties.

Estimated annual call volume during the initial years of operation is less than 750 responses. The fire station is expected to be completed in December 2014. ■

Relocating Fire Station 12

Address: 3409 Poole Road. Built 1974
Houses Engine 12 and Battalion 2.

Nearly half of the city's twenty-seven fire stations are over forty years old. They were designed for a fire service with smaller apparatus and fewer operational requirements. For the last few years, planning has been underway to replace some of these older, outdated facilities.

Next year, Station 12 will be moved one mile east, to the intersection of Poole Road and Bus Way. Construction of the building, designed by Stewart-Cooper-Newell Architects, is expected to begin this fall. Public art will also be placed at the site—a first for city fire stations.

Limited Footage

Built in 1974, Station 12 has housed a number of units alongside Engine 12, including a rescue unit, a service ladder truck, and a foam unit.

In 2004, a Battalion Chief was moved to Station 12. A small office was constructed in the rear of the apparatus bay, further limiting the amount of available space for vehicles.

For present operational needs, the station is too small. Notably, it cannot house a second company—the ladder truck that's needed in that response area.

The building has a limited heated area (4,189 square-feet) and an inadequate parcel size (0.63 acres) for expansion. Typically, 15,000 square feet of conditioned area is required for an engine, ladder, and battalion headquarters.

The new facility, which will contain roughly 17,000 square feet of interior space on a 3.4 acre site, will be better equipped for current needs and growth, as well as contingency operations.

Improved Response, Expanded Facilities

Moving Station 12 will enhance response coverage to the eastern limits of the city, along and west of the Neuse River. It will also include quarters for the Division Chief, presently housed in the basement of Station 8 on Western Boulevard.

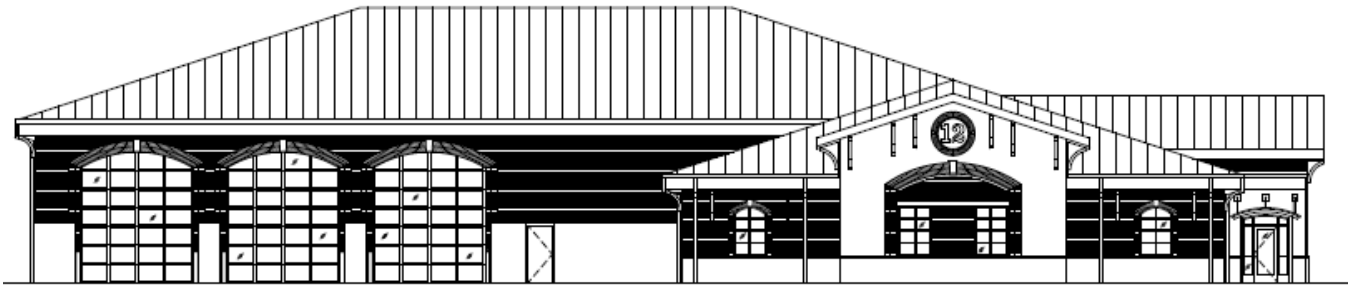
Originally designed with four drive-thru bays, the project was trimmed to three bays to stay within budget. Ladder 9 will be housed at this station in the future.

Special features of the new Station 12 will include indoor fill lines in the bays, for refilling apparatus water tanks; indoor and outdoor training equipment, including a confined space area and rappelling anchors; and an SCBA cascade system, as part of a project adding breathing air refilling systems at each of the Battalion headquarters.

Old Station 12

The department is presently analyzing the operational impact of retaining and maintaining the old station after it's been vacated. Among the proposals are retaining the station for use by Car 420 (Platoon Fire Marshal) and the department's EMS program, and/or housing Rescue 1, which is currently quartered at Station 21.

In particular, the EMS program would benefit from a new decontamination facility. Presently, any personnel or equipment exposed to blood, body lice, bed bugs, or other contagions are decontaminated at the training center, using facilities already taxed by recruit classes and regular training activities. ■



Relocating Fire Station 14

Address: 4220 Lake Boone Trail. Built 1974
Houses Squad 14, TSU 1, and a boat trailer

Built in 1974 and located on the west side of the city, Station 14 is also planned for replacement. It's located beside Rex Hospital on Lake Boone Trail. Land is being sought in the immediate area.

The planned facility will have over 15,000 square-feet, which is required for future Raleigh Fire Department growth, including the housing of both an engine and ladder company, operational headquarters, and the staging of reserve apparatus.

Similar in size and scope to Station 12, the new Station 14 will be designed to accommodate both a Battalion Chief and a Division Chief. It will house Battalion 3, which is presently located beneath Station 8. And it will include space for a second Division Chief, to be added when warranted by future growth.

Ladder Coverage Gap

Housing a ladder company at Station 14 will enable the city to mitigate a ladder service capability gap, which will aide in enhancing or sustaining its Public Protection Class 3 rating.

Geographically, there is a current response coverage gap for aerial services between Stations 17, 20, and 1, which house Ladders 3, 7, and 4.

Ladder companies, according to national standards, should have a maximum 2.5 mile response radius, equating to an eight-minute response time. Moving a ladder to this location and adjusting the other ladder locations—through analysis of coverage standards data—will help improve the coverage gap.

New Building = Better Building

While expanding existing facilities is considered during the planning process, building a new structure allows for a higher return on investment. The project can incorporate sustainable site and building materials/systems, and be designed to current building codes, including ADA compliance, to maximize operational effectiveness.

Says Assistant Chief of Services Garry Spain, "The design and construction processes for Station 29 and Station 12 provide a prime opportunity to extend those proven, resilient building materials and systems to Station 14. This simplifies long-term maintenance operations and helps reduce costs."

Adds Spain, "While the space and configuration of each station is driven by that particular facility's needs," adds Spain, "their trusted materials and systems are consistent across the stations."

Current Station 14 location

The Raleigh Fire Department has long been looking for land for Station 14, including parcels along Blue Ridge Road north of Wade Avenue. The latest prospects include parcels in the vicinity of Blue Ridge Road and Harden Road.

Existing Property is Valuable

The city has the opportunity to sell the current station's property, which is currently valued at an estimated $247,000 (land) and $318,000 (building). Since appraised values are typically 10% less than assessed values in current economic conditions, the city could expect a return of approximately $508,500.

Because the land is adjacent to the hospital and in an art/medical region, property valuation is considerable. And a Blue Ridge Road District Study is generating development strategies for this current region, which this parcel could be incorporated into as a future development proposal.

The Raleigh Fire Department is also collaborating with the study's stakeholders, to ensure the design and construction of a new Station 14 facilitates pedestrian-friendly development and maximizes cohesion with the study's near-, mid- and long-term planning frameworks. ■

Rebuilding Fire Station 6

Address: 2601 Fairview Road. Built 1949.
Houses Engine 6 and reserve engine.

The city's oldest fire station is also planned for replacement. Built in 1949 at the corner of Oberlin and Fairview roads, Station 6 responds to over 1,000 incidents a year. It resides in a community with increasing population, density, and critical infrastructure that require protection.

Old Building, Many Problems

Last year, a team of consultants were contracted to perform a visual inspection of the facility. They provided a conditions report that revealed structural, architectural, mechanical, electrical, and plumbing deterioration.

The most notable structural issue was significant cracking observed in the three masonry piers between the apparatus bay doors. Temporary shoring was subsequently installed.

From an architectural perspective, the facility is too small. Current and future service requirements of the Raleigh Fire Department require additional square footage.

Also, the mechanical, electrical, and plumbing elements were built to an obsolete building standard that has since been substantially improved, with life safety and building resiliency paramount.

Using the facility assessment information as justification, a business case for replacement was developed by various city stakeholders.

It analyzed possible solutions, including demolishing and rebuilding, performing small or large scale renovations, or maintaining the current station as is.

Cost versus benefit weighed heavily in the decision to select the rebuild option.

Multi-Story Station Planned

In May, City Council approved funding for the project, using debt financing of $3.7 million and $2.8 million from a portion of a Moore Square development bond.

Due to the small size of the lot, a multi-story facility will be constructed with features to include:

- Lower ground floor semi-subterranean parking for staff/visitors
- Ground floor apparatus/administrative space
- First floor living quarters.

The design will include elements that increase the capabilities of the fire station, notably providing space for both an engine and ladder company. Other improvements will include gender equitable living and bathroom facilities, and environmentally sustainable elements.

A tractor-drawn aerial ladder (or tiller) is planned for the station at a future time. This will address a coverage gap identified by the Insurance Services Office (ISO).

Community Participation

With the rich history of a fire station at this location—first in a nearby rented building from 1943 to 1948, and from 1949 to present at the current location—there are opportunities to preserve and incorporate certain historical building elements into the new design.

Since the station is highly revered by the surrounding community, citizen input will be sought during the project's design phase.

A series of community meetings will be held to keep the community informed and offer an opportunity for citizens to provide comment. ■

The original Station 6 at 2519 Fairview Road.

Expanding Fire Station 11

Address: 2925 Glenridge Road. Built 1971.
Houses Engine 11 and Ladder 2.

Located in the Brentwood community, Station 11 on Glenridge Road will be renovated and expanded this year.

The project consists of two parts. First, enlarging the apparatus bay.

"The size of the bay and the height of the doors are unsuitable for our current operational needs," says Facilities Manager Captain Scott White. "The current height is 11' 6" and the current length is 45' 6" on the left, and 50' 11" on the right."

"To accommodate modern apparatus, the minimum height should be 14 feet and the minimum length should be 60 feet," White adds.

Upon completion, Station 11 will house the newest aerial apparatus in the city's fleet: a 2014 Pierce 100-foot aerial platform, which is temporarily operating as Ladder 1 at Station 4.

It will replace the current Ladder 2, a smaller 75-foot Pierce aerial ladder.

The second part of the project will be renovations to the fire station, part of a multi-year project to upgrade the city's oldest fire stations.

Planned are interior and exterior expansion and renovation components, to include selective demolition, building envelope repairs, and mechanical, electrical, plumbing replacements as required. If the project budget allows, work will also involve architectural elements to enhance the look and feel of the station.

Station 11 is expected to be expanded from the current 4,923 square-feet to approximately 5,400 square-feet.

"The principal goal of this project is to extend the station's life by thirty years," says White.

Among the exterior changes will be a new concrete apron, due to the grade changes from the bay expansion. The rear parking lot and access drive, however, will not be changed.

"While the site is large enough to accommodate drive-through bays, this option was not feasible for this project," says White.

Work on Station 11 is projected to start in the fall of 2014 and is expected to be completed in six months. During the construction, the fire companies will be relocated.

Engine 11 will be moved to Station 7 on Glascock Street and Ladder 2 will be moved to Station 15 on Spring Forest Road. ❖

Moving Fire Station 3

Address: 13 S. East Street. Built 1953.
Houses Engine 3 and Mini 2.

Planning is also underway for moving Station 3 on East Street.

Land is being sought to the southeast of the current location, near the intersection of Rock Quarry Road and Martin Luther King Jr. Boulevard.

This will address a coverage gap between the current Station 3, north of Interstate 40, and the response area of Station 10.

The new location will also eliminate redundant response coverage, due to the close proximity of the current Station 3 to Station 1.

Relocating the station will allow the Raleigh Fire Department to further maximize response coverage.

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Small Station

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Station 3 is constrained by its limited square footage, which is far too small for current operational needs. The building is also experiencing structural, architectural, mechanical, electrical, and plumbing deterioration.

The effectiveness of the location is further constrained by the small parcel size (.16 acres), which cannot support a renovated or new facility of adequate size.

The Raleigh Fire Department is planning for a one-story, three-bay station that can accommodate two fire companies with an approximate total square footage of 11,000 square-feet.

The proposed location is 814 Rock Quarry Road, which is across the street from the Dr. Martin Luther King Jr. Memorial Gardens Park.

Future Fire Museum?

Once the new Station 3 is completed, the current building will be evaluated for possible use as a museum. The Raleigh Fire Department presently hosts a museum in a modular classroom building at the training center. The museum is operated by a non-profit organization. ❖

Training, Services Expansion

In addition to fire station projects, expansion of two other fire department facilities is planned: the Keeter Training Center off South Wilmington Street, and the Support Services Center on New Bern Avenue.

Keeter Training Center at 105 Keeter Center Drive
Classroom building built 1982, tower built 2006

The Raleigh Fire Department has a long-term goal of replacing the Keeter Training Center (KTC) with a larger comprehensive training facility that would incorporate classroom and administrative space, physical and fireground training areas, and an emergency vehicle driver (EVD) course.

The training grounds were opened in 1954. Over the decades, the grounds have been expanded. They presently include a training tower, a classroom office building, five modular classroom buildings, a bathhouse with restroom and shower facilities, a storage and maintenance building, and assorted sheds, shelters, and training props.

The project is proposed to be completed in phases, starting with the necessities first: the driver course and additional classroom facilities. This would be followed by a training tower, offices, auditorium, training equipment storage, and special operations training grounds.

Currently, the Raleigh Fire Department is working in conjunction with the Raleigh Police Department to develop a proposal for the acquisition of a parcel, or an assemblage of parcels off Old Poole Road, just south of the future site of Station 12. This land is expansive, centrally located, and adjacent to major thoroughfares. It offers benefits for both public safety departments to jointly develop. ❖

Support Services Center at 4120 New Bern Avenue
Built 2004

The Support Services Center provides apparatus and vehicle maintenance and repair, as well as quartermaster services that provide equipment, clothing, and supplies for the fire department's operation.

Due to operational growth since the facility opened in 2004, temporary storage has been added in the form of seventeen shipping containers.

The Raleigh Fire Department has a long-term goal to construct a supply building in place of the temporary containers. This would allow the current stock room to be vacated and used as additional space for the maintenance shop, which adjoins the stock room.

More information about both of these projects will be featured in future newsletter issues. ■

Future Fire Stations

How does the Raleigh Fire Department determine where a future fire station may be needed?

As the city grows, its fire protection needs also change. Additional fire companies and fire stations are needed to maintain the desired level of service to citizens, visitors, and infrastructure.

Numerous factors are analyzed—from population density to driving distances—to determine the optimal location for additional fire stations. These are then placed in a prioritized order for implementation.

But growth patterns and development plans can change. For example, there was interest east of the Neuse River in prior years, which led to plans for a prospective fire station in the area of Buffaloe Road and Old Milburnie Road.

Since the recession, those development plans have been curbed, and that location isn't as high on the list for a future fire station. However, there are longer-range plans to add a station in this region.

The Raleigh Fire Department is developing some GIS products to aid in identifying the optimal locations for future and relocated fire stations with a goal of maximizing response coverage.

Population densities, occupancy types and densities, capability levels, and other factors will be leveraged during the decision-making process.

The actual number of a planned station, such as Station 30 or Station 31, may change as the areas of greatest development need are sought first.

Long-range planning anticipates the addition of six or seven more engine companies and four or five more ladder companies.

Station 30, the next new fire station, is most likely planned for north Raleigh, adjacent to the first-in territories of Stations 4, 15, and 22.

Higher priorities are completing the new Station 29, renovating Station 11, rebuilding Station 6, and relocating Stations 12, 14, and 3. ❖

Facility Process Overview

How does the Raleigh Fire Department plan and execute such capital improvement projects (CIP) as new facilities? There are numerous steps, which involve many city departments:

1. Identify departmental needs in alignment with strategic and operational objectives.
2. Submit capital improvement projects to the city Budget Office, for consideration among other critical needs and municipal project priorities.
3. Solicit engineering/architectural firm to conduct either a conditions assessment (for legacy facilities that need improvement) or land surveys/feasibility studies (prior to acquisition for new construction).
4. Secure funds through City Manager and City Council formal approval for full funding in a budget year, or partial across multiple budget years. For example, land acquisition in FY15, design/engineering in FY16, and construction in FY17-18.
5. Acquire land, if needed.
6. Commence bidding process for project design firms.
7. Award contract to design firm.
8. Conduct schematic design phase and technical site surveys. This includes holding community meetings to keep citizens involved in design development process.
9. Conduct design development phase.
10. Conduct construction document phase, which includes cycles of plan review and permit approvals by City Inspections and Office of the Fire Marshal.
11. Commence bidding process for general construction contractors.
12. Award contract to general contractor.
13. Conduct construction administration phase, which includes both (a) monitoring construction activities, review/analysis of construction budget and processing of pay applications, review/analysis of submittals or shop drawings, and review/processing of requests for input (RFI) and (b) receipt of inspections and final occupancy certificate
14. Ensure that departmental resources are available to accept ownership of the completed city project and maintain the infrastructure going forward. ■

About This Special Issue

This special issue of the Raleigh Fire Department Newsletter is devoted to fire station and facilities projects. Thanks to Andrew Langan, Garry Spain, and Scott White for their assistance.

The newsletter is an otherwise quarterly publication for personnel, retirees, and citizens. The editor is Historian Mike Legeros. Back issues are available at the web site www.raleighfirenews.org.