

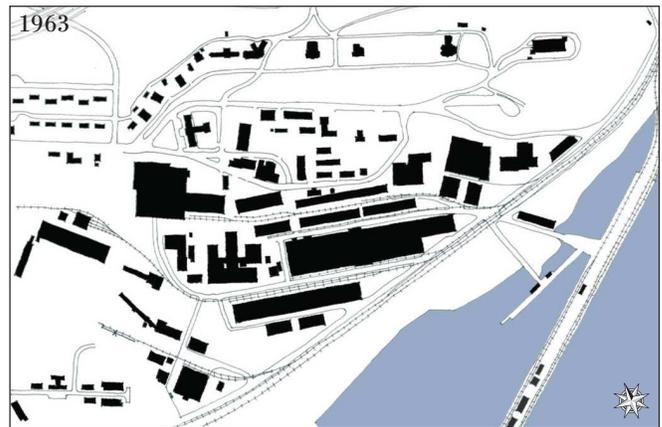
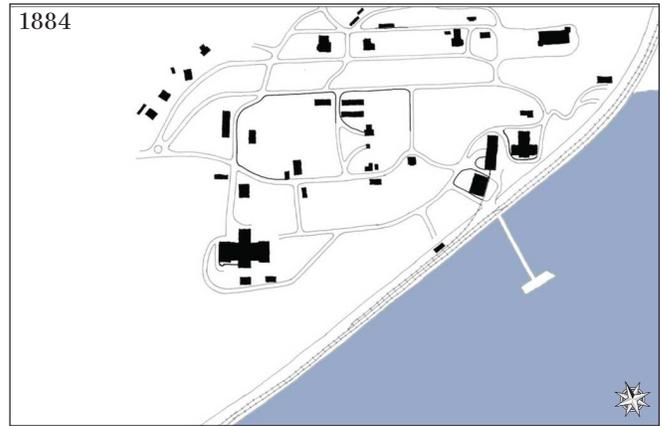
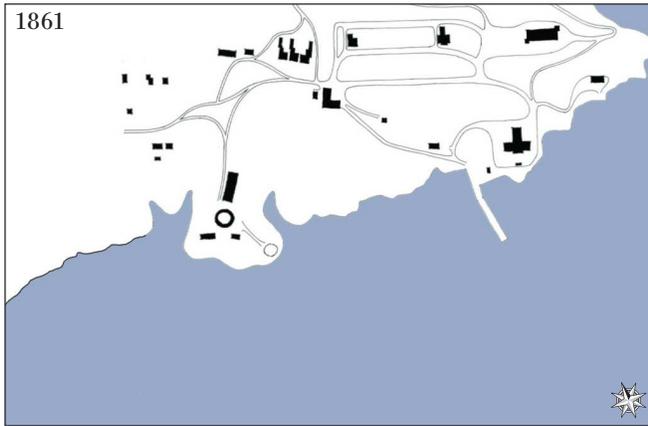


The Future of the Lower Arsenal

The project area is in many ways at a crossroads. Many of the industrial uses that grew to dominate the Lower Arsenal since its decommissioning in 1963 have started to become less prevalent. They are being replaced by residential, office, and artist-related uses. Some of the key historic landmarks, including the Commanding Officer's Quarters, the Duplex Officers' Quarters, and the Barracks (also known as the Bachelor Officers' Quarters), are in urgent need of restoration and investment. The opportunities for new investment and revitalization are decreasing due to limited connectivity, poor visibility, and degraded infrastructure within the area.

At the same time, the Arsenal presents a unique opportunity for improvement, with an eclectic mix of vibrant uses, a beautiful setting along the Carquinez Strait, and a collection of unparalleled 19th and 20th century historic buildings of national significance. The LAMUSP is based on the fundamental premise that a detailed refinement of the concept of "Mixed Use," as it is discussed in the Benicia General Plan, can result in a strategy for healthy revitalization that protects and enhances the historic resources of the area. The following chapter outlines this design strategy in light of the project area's historic and physical context.

Above left: View of the Carquinez Strait from the Jefferson Ridge; Above right: The Polk Street underpass.



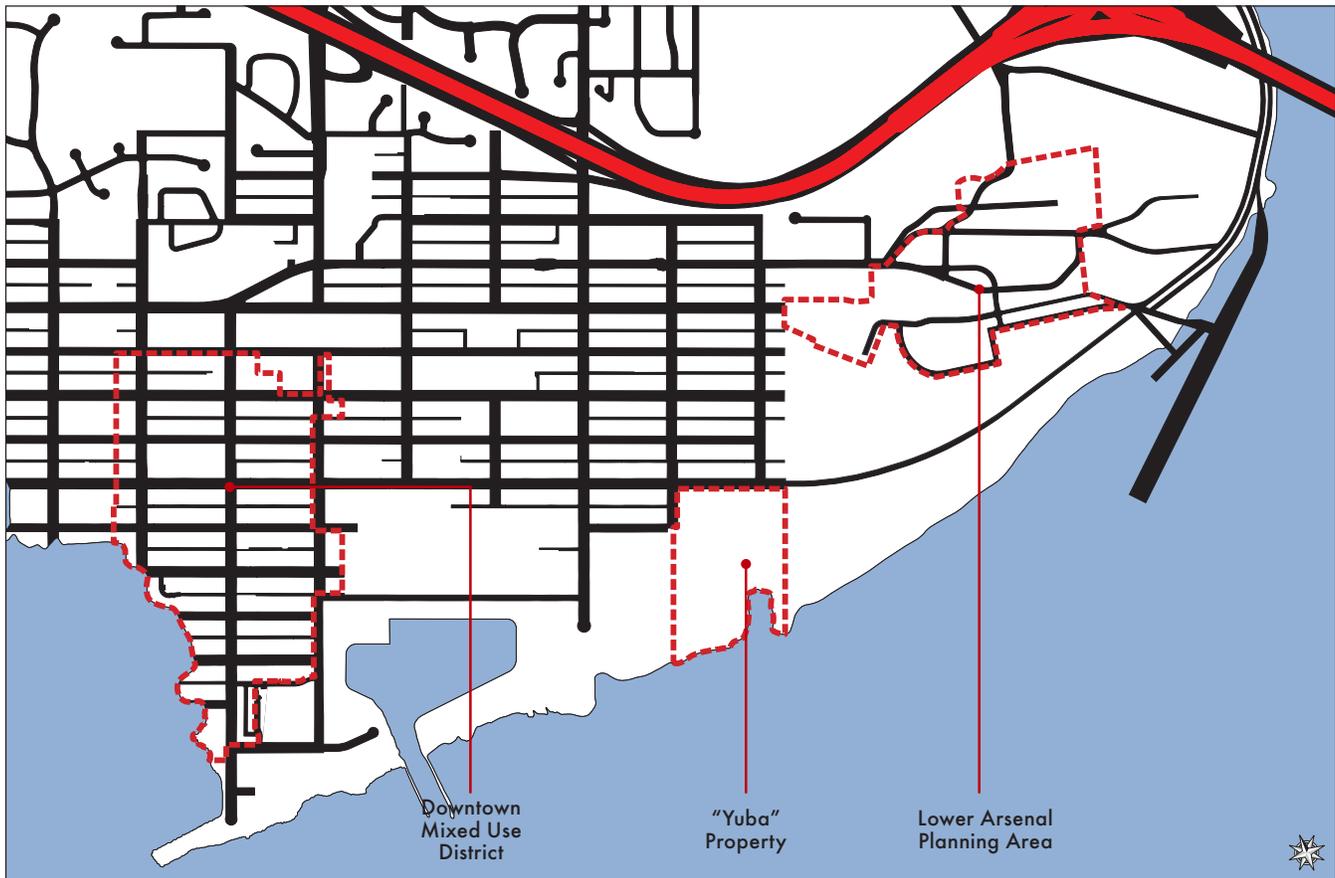
Historic Context

The project area comprises much of the Lower Arsenal, bisected from the Upper Arsenal by I-780 and I-680 in the 1950s.

After its initial establishment in 1849, the U.S. Army base was used through the mid-1850s as the a supply depot for the Quartermaster’s Corps. By 1859 it became the official location of the Arsenal with the construction of the Main Arsenal Storehouse (today known as the Clocktower). An illustration of the project area in 1868 shows its initial development, with an informal arrangement of buildings connected by narrow paths (built to accommodate horse-drawn carriages) that closely follow the natural topography. By the late 1870s the railroad was introduced to the Arsenal, and by 1894 the area developed further, albeit slowly, in a continued informal manner. Industries and structures for supply, storage, and repair began to cluster along the Strait, in close proximity to the railroad. The Jefferson Ridge began to take on a cohesive, organized character, with the addition of several residential buildings along Jefferson Street.

At the time of the Arsenal’s decommissioning in 1963, the area had undergone significant transformation and expansion due to periods of high activity during the two World Wars, the Korean War, and numerous post-war assistance agreements. The topography of the lower portion of the project area was altered significantly as the area

Clockwise from Top Left: The above illustrations depict the historic changes to the project area from around 1861 to present.



grew to accommodate at-grade rail access to the supply and storage facilities along the Strait, and many of the roads were widened to accommodate military vehicles.

Since the Arsenal's decommissioning and its transition to an active industrial port, the area has continued to undergo significant changes. The presence of I-680 and I-780 have diminished the significance of rail as primary access to the project area, and much of the built fabric of the former Arsenal that related directly to military-industrial activities has been torn down.

Above: Diagram describing the project area's limited connectivity and visibility with the rest of the City. Only Military East connects the project area to downtown Benicia, and the I-680/I-780 interchange provides no direct access.

Primary Challenges

Since the construction of the freeway and the loss of significant rail transport the project area has suffered from limited connectivity to Benicia and outlying areas. Primary access to the project area occurs via Military East. Further potential connections to the area via Bayshore Road have been constrained by the security needs of the port. Although the project area is immediately adjacent to the I-680/I-780 interchange, the nearest freeway access to the Arsenal is provided via the 5th Street exit along I-780.

This inadequate connectivity and poor visibility have presented limited potential for new development and reinvestment by property owners in the project area. These

Lower Arsenal Mixed Use Specific Plan
Opticos Design, Inc.

factors have contributed to the “deferred maintenance” and subsequent decay of many of the historic buildings, landscape, and infrastructure. Therefore, costs are mounting for rehabilitation and renovation.

Although new residential development projects have been proposed that may be appropriate due to the project area’s physical constraints, they may potentially conflict with existing industrial land uses.

Transportation and Circulation Issues

Several important streets, most notably Park Road, offer no pedestrian accommodation. Other key sidewalk segments throughout the project area are missing or overgrown. No bicycle facilities are provided.

The project area also presents a challenging wayfinding environment due to its complex network of streets and blocks. A few examples include:

- **Complex intersections.** The main example is the entrance to the Arsenal at the intersection of Military East, Polk Street, Jefferson Street, and Adams Street where visitors are immediately confronted by too many choices.
- **Unhelpful signage.** To respond to wayfinding challenges, individual users have often added signs which tend to add confusion.
- **Connections between the upper and lower portions of the Arsenal.** When heading to Jackson Street from Military East, for example, one must bear left onto Polk in order to turn right toward Jackson.

Key Opportunities

Despite these constraints, the project area features many of Benicia’s most unique assets. These include:

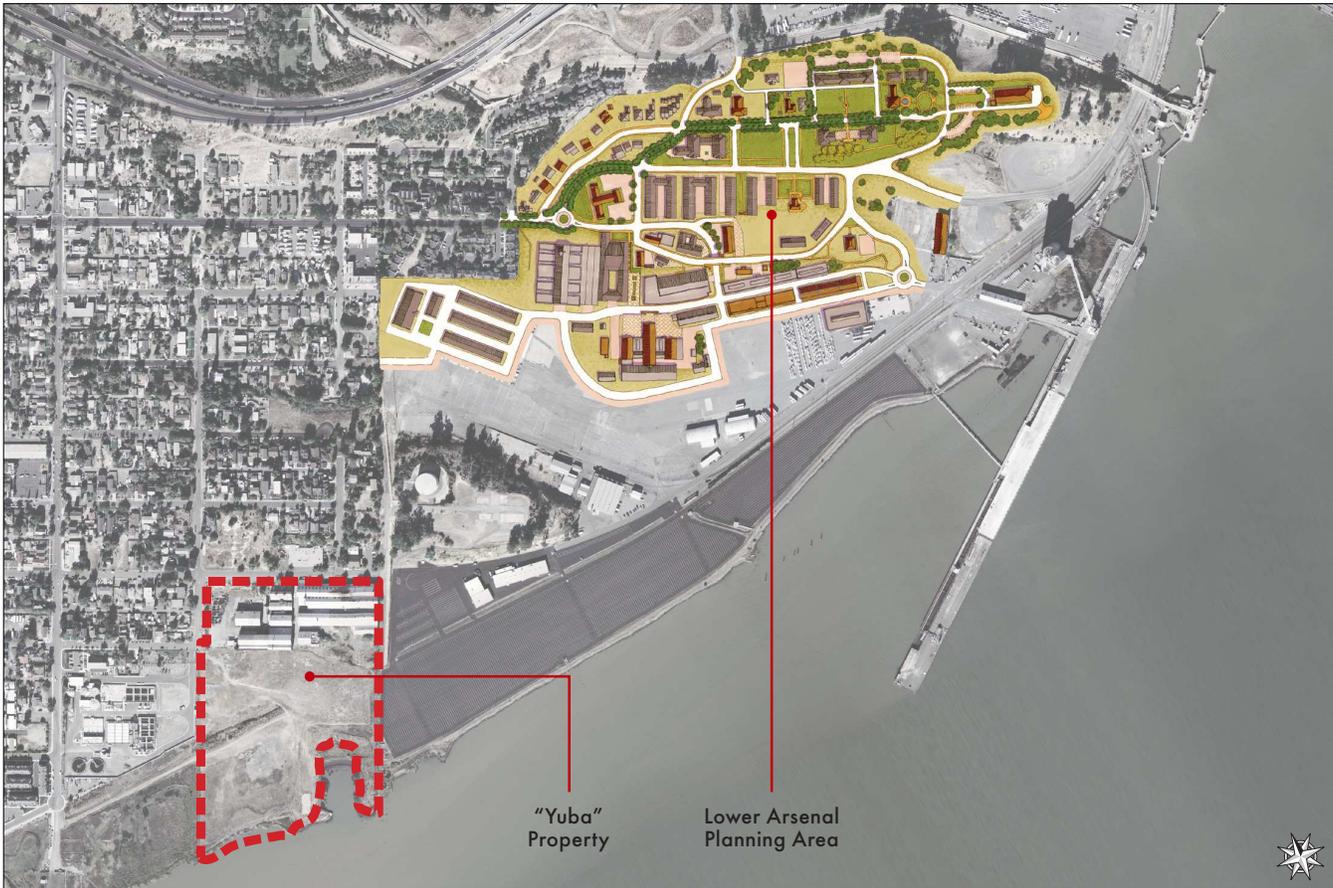
A thriving artist community. Many artists have located to the project area where they live and/or maintain studios. Arts Benicia has become a central figure in the artist community and holds great potential for helping it to maintain a more permanent foothold.

Historic buildings of national significance. The project area includes eight buildings designated as National Historic Landmarks as well as several buildings noted as Contributing to the Historic District. This collection of 19th and 20th century buildings, unique and perhaps unparalleled in the State of California, may hold great potential for the creation of a heritage tourism plan.

The Bay Trail. The completed portions of Bay Trail serve as the only regional transportation route that links of Downtown and the Arsenal. Once the new bike path on the Benicia Bridge is complete, both Arsenal and Downtown merchants can work to attract cyclists to their businesses, much as cities like Sausalito do. A high priority for the City should be improving access, by planning key spurs, to the official Bay Trail route for cyclists and pedestrians.



Top: The former Lieutenant’s Quarters, today the Jefferson Street Mansion; Center: Arts Benicia has a prominent presence in the Lower Arsenal; Bottom: The historic Clocktower.



Illustrative Vision Plan

The project area has slowly evolved over time into a diverse collection of buildings and uses that necessitates a fine-grained, detailed revitalization strategy. In order to respond to the different needs of diverse locales within the project area, and provide further insight and detail into the definition of “mixed use” in the Lower Arsenal, the plan considers design proposals for four distinct districts, or “zones,” that recognize the unique characteristics of each. Due to the delicate nature of many of the historic buildings in the area, these zones have been further detailed into distinct “sub-areas” that seek to solidify a cohesive vision for the project area as an interconnected network of high quality places. As this section is visionary in nature, the Vision Plan also addresses areas outside the immediate project area that will have a key role in the Lower Arsenal’s revitalization, including the adjacent City-owned Commanding Officer’s Quarters and Clocktower.

The plan envisions a future for the project area that fulfills the goals of the General Plan: a mix of compatible uses, with upgraded existing buildings, the preservation and adaptive reuse of historic buildings, and new, compatible buildings that house mixed use.¹



Top: Illustrative vision plan for the Arsenal project area. **Bottom:** Illustrative aerial of vision for the Arsenal project area.

(1) The illustrations on pages 2-5 to 2-22 are provided to illustrate implementation of the Specific Plan and the Form-Based Code and do not necessarily depict precise locations of structures or improvements.

Program Summary

The LAMUSP intends to provide a long-term vision of future development in the Lower Arsenal, and outlines a framework for new development and infrastructure improvements in the project area. In total, this vision foresees the development of over 741,000 square feet of mixed use over the life of the plan, which will result in a net increase within the project area of approximately 215,000 square feet of development.

This section describes these proposed improvements organized into the following zones:

Jefferson Ridge/Officers' Row Zone

Approximately 184,575 sf of new mixed use, including institutional, office, commercial, and limited residential uses

Approximately 46,000 sf of redeveloped mixed use, including institutional, office, commercial, and limited residential uses

2.99 acres open space

Adams Street Zone

Approximately 200,100 sf of redeveloped mixed use, including office, commercial, light industrial, work/live, and limited residential uses

1.30 acres open space

Grant Street Zone

Approximately 18,975 sf of new mixed use, including office, commercial, work/live, and residential uses

Approximately 13,800 sf of redeveloped mixed use, including office, commercial, work/live, and residential uses

22 Residential Units

0.92 acres open space

South of Grant Zone

Approximately 11,500 sf of new mixed use, including office, commercial, light industrial, and work/live uses

Approximately 266,915 sf of redeveloped mixed use, including office, commercial, light industrial, and work/live uses

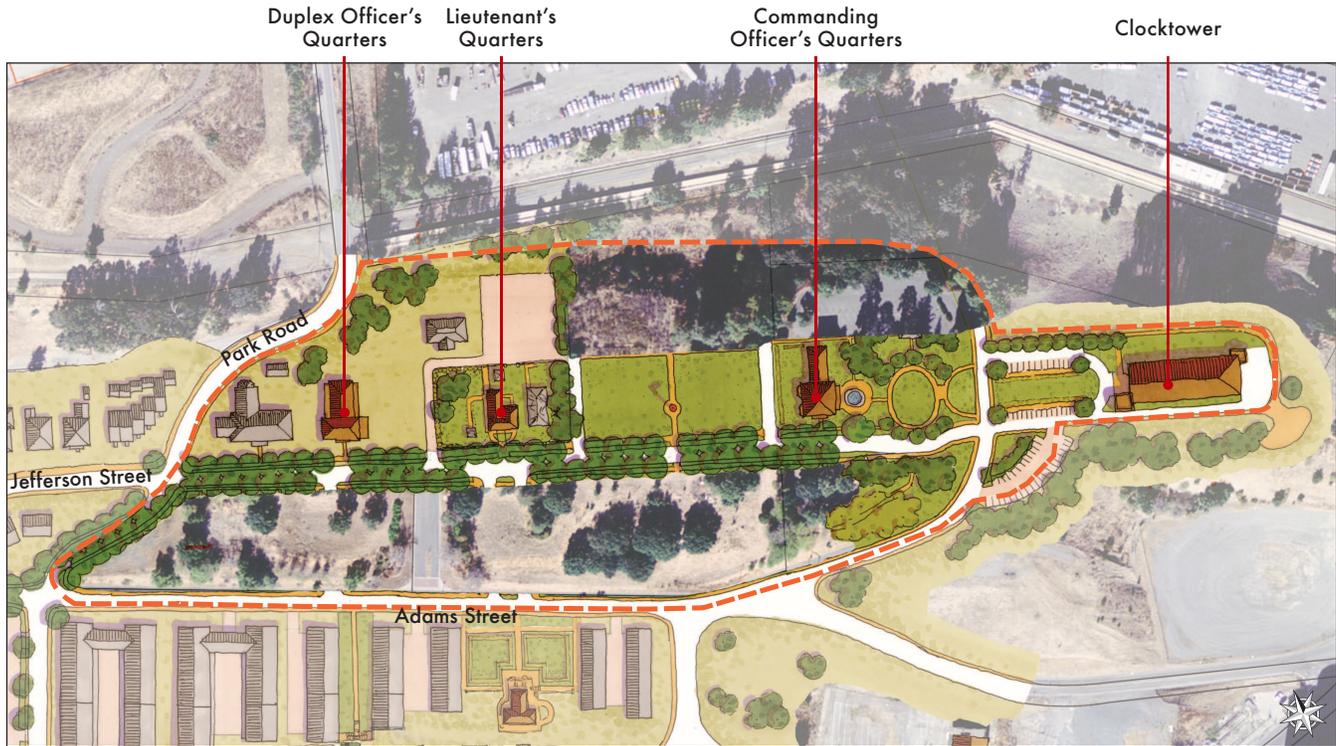
1.19 acres open space

Summary

741,865 sf of mixed use

22 residential units

6.39 acres open space



Jefferson Ridge/Officers' Row

The Jefferson Ridge includes a large portion of National Register District C as it was listed in 1975, and is characterized by the orderly row of stately historic mansions along Jefferson Street, including the Duplex Officers' Quarters, the Lieutenant's Quarters (today the Jefferson Street Mansion) and the Commanding Officer's Quarters. Together with the row of other stately houses along Jefferson to the west, the original Arsenal Storehouse (today the Clocktower) to the east, and the Arsenal Ridge open space to the south, this zone potentially represents a unified ensemble of high quality, 19th century architecture, and is thus at greatest risk of being compromised by potential new development.

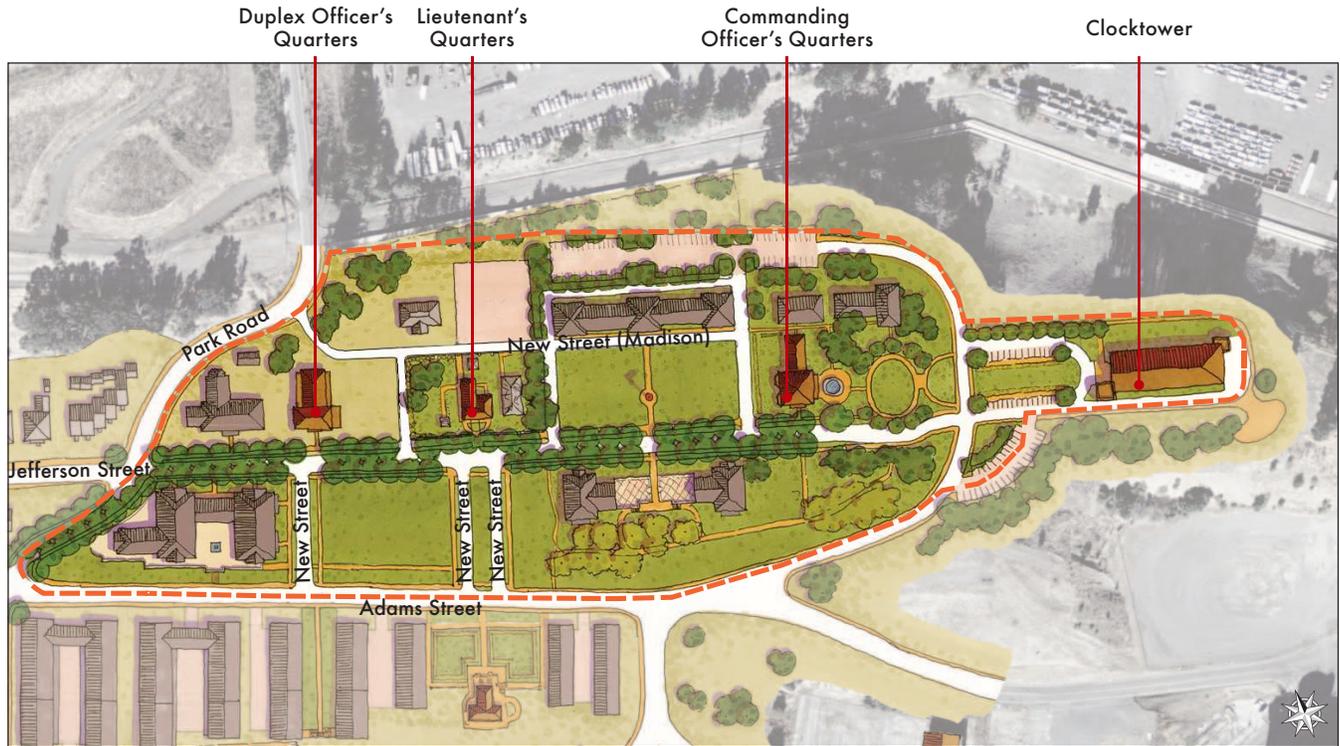
Option 1

Recognizing the historic significance of District C and its potential to function as a Heritage Tourism or other "destination" campus, a design option was considered that envisions the rehabilitation of the area's historic structures and landscapes, that does not attempt to incorporate any new buildings into the area around the Jefferson Ridge. This option would likely be possible if sufficient funding could be generated to purchase the property outright and thus not depend on new development to cover land costs.

This option envisions the renovation of the Commanding Officer's Quarters, the Jefferson Ridge open space and its heritage oak trees, and the continuation of Jefferson Street east to the Clocktower. It is envisioned that the Commanding Officer's Quarters may be renovated for destination, conference, and/or entertainment uses, taking full advantage of its location between the civic Clocktower and the recently renovated Jefferson Street Mansion (the former Lieutenant's Quarters).



Top: Illustrative vision plan. Existing historic structures are shown in brown; proposed new buildings are shown in grey. Above: Area Plan



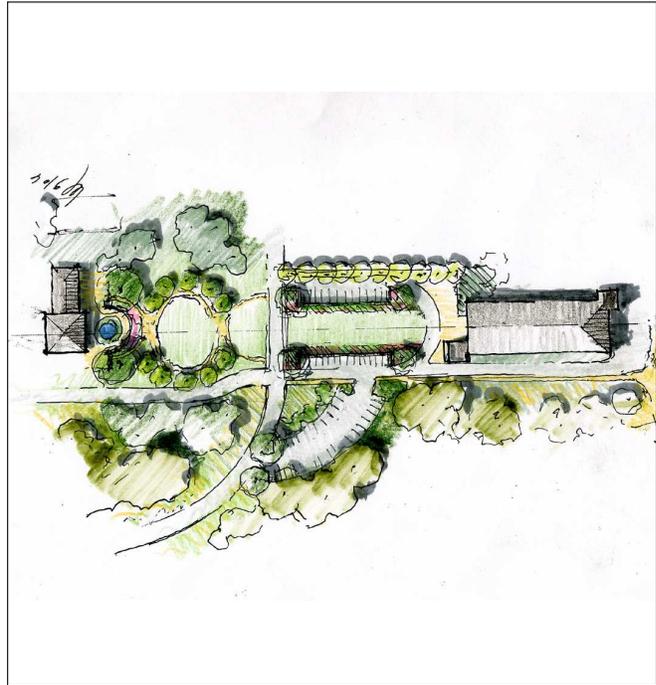
Option 2

An additional design option was also developed that sought to integrate new buildings into the landscape as carefully as possible. This option sought to recognize that certain negative aspects of the environment around the historic district - such as the presence of the elevated I-780 freeway - could only be successfully mitigated with the introduction of new buildings into the site, and the realities of private property development - whether ultimately for private or institutional means - will likely encourage new buildings to be built.

This option incorporates the three essential elements of the previous option - the renovated Commanding Officer's Quarters, the continuation of Jefferson Street to the Clocktower, and the renovation of the Jefferson Ridge open space - and combines them with a series of carefully placed buildings into the area. The organization of this option into "sub-areas" seeks to respect existing property boundaries and provide a series of high quality addresses along Jefferson Street.



Top: Illustrative vision plan. Existing historic structures are shown in brown; proposed new buildings are shown in grey. Above: Area Plan



Clocktower Green

Although outside the project area, the Clocktower Green is seen as an essential component of the area’s revitalization. The City-owned Clocktower is currently well used but suffers from a deteriorated setting. The neighboring Commanding Officer’s Quarters has sat vacant for many years.

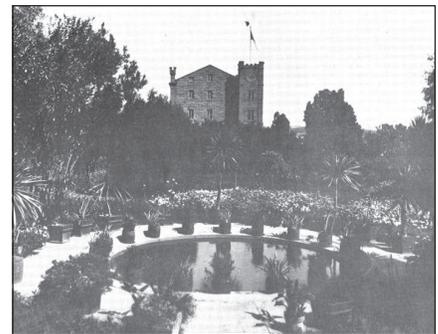
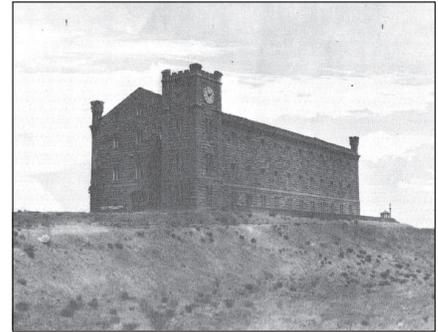
Historically the Commanding Officer’s Quarters and the Clocktower have had a very complimentary relationship. Although the actual character of the intervening space has fluctuated with changing tastes in landscape design, it was typically articulated as a formal, front lawn that both buildings addressed. The design envisions the return of a high quality open space here, flanked by the Clocktower and a renovated Commanding Officer’s Quarters. The design illustrates a series of intimate, connected spaces emanating from the front porch of the Commanding Officer’s Quarters to the Washington Street extension, including a modest fountain or reflecting pool and a broad elliptical walk. The existing parking in front of the Clocktower should be re-configured to incorporate a broad central landscaped space, with additional parking relocated along the ridge between Jefferson and Washington Streets.



Top Left: Illustrative view of the Clocktower as seen from a restored Commanding Officer’s Quarters; Top Right: Illustrative plan depicting restoration of formal landscape between the two buildings; Above: Area Plan

The grounds surrounding the Clocktower should also be renovated, and the City should explore the creation of a high quality public open space east of the Clocktower that can provide good access to the commanding views along the Carquinez Strait that the ridge provides.

The Clocktower Green is seen as a central component to a potential Heritage Campus or other institutional use that can benefit from a series of high quality, interconnected indoor and outdoor spaces suitable for conferences, entertainment, and hospitality-related functions. To this end, the plan also envisions the careful placement of additional buildings along the northern edge of the Commanding Officer’s Quarters grounds. These new buildings can assist in defining the formal Clocktower Green and can provide support and “back of house” spaces for new services that may locate in the Commanding Officer’s Quarters.



Above, from top to bottom: Three historic views of the Clocktower illustrate landscape conditions that existed in the past.



Officers' Square

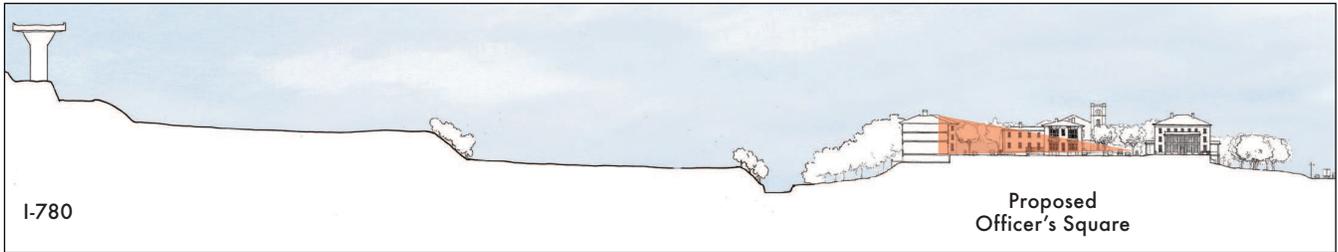
The Officers' Square envisions a new large, formally landscaped square between the Commanding Officer's Quarters and the Lieutenant's Quarters. Currently, this large undeveloped open space, which provides good views out to the ridgetop heritage oaks and the Carquinez Strait to the south, is defined on its northern end by the elevated I-780 freeway and views of industrial storage facilities and the Valero pipeline to the north and east.

The design proposes to define the northern edge of this square with a new, architecturally distinguished building, along a new east-west street that would parallel the historic Madison Street right-of-way. This building would effectively screen the square from the freeway, its related noise, and the unsightly elements in the ravine to the north. Across Jefferson to the south, the design proposes two new buildings that flank a publicly accessible viewing terrace which overlooks the heritage cork oaks and the buildings of the Lower Arsenal. The strong central axis of the composition seeks to establish and reinforce a new sight line between the Guard House, directly to the south, and the new building along the northern edge of the square.

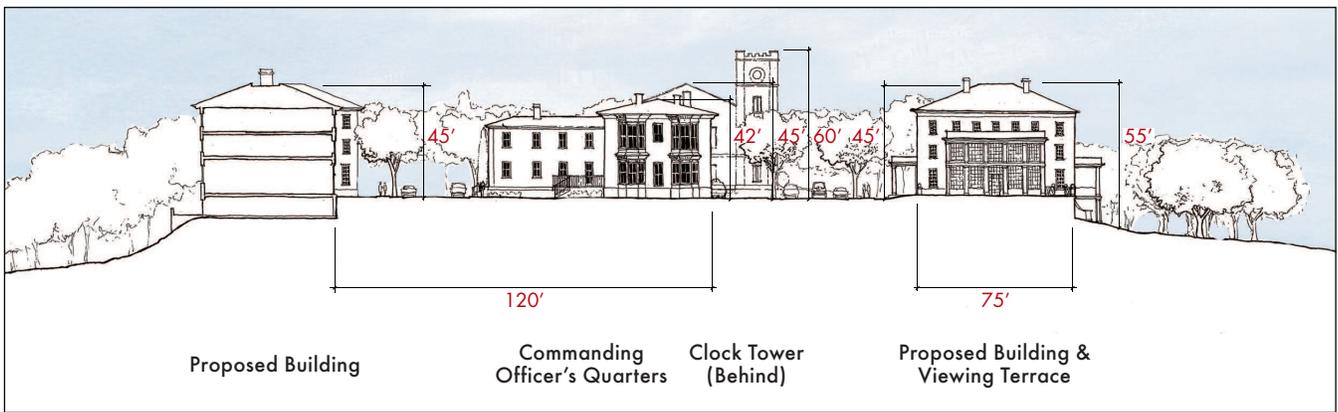
Historically, the grounds between the Commanding Officer's Quarters and the Lieutenant's Quarters would be periodically transformed to fit the tastes of the Arsenal's officers as well as trends in landscape design. The proposal envisions an open, formally planted space with a strong, central element, such as a tall flagpole, monument, or fountain. The space should be defined by a low hedge that runs along both sides of the sidewalk along Jefferson.



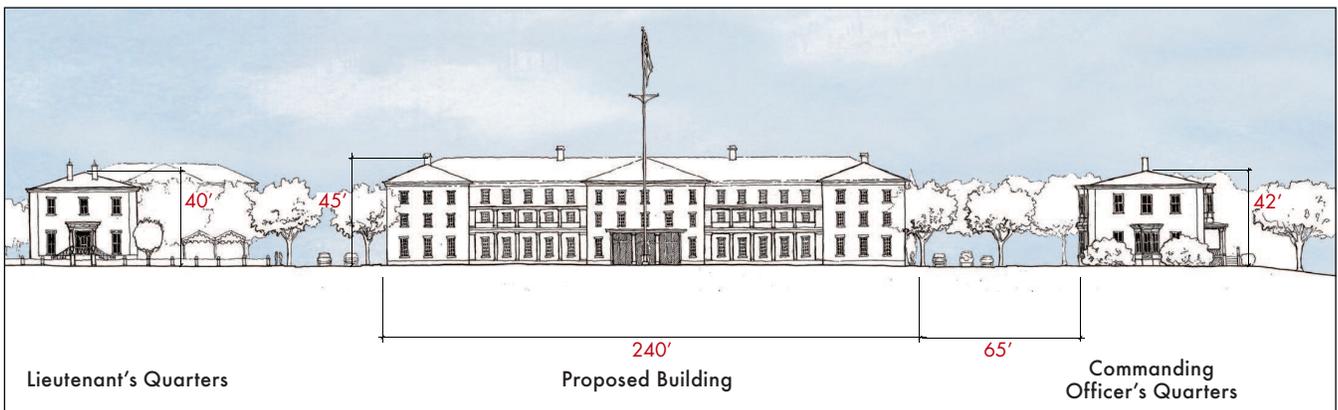
Top Left: View of existing Officer's Square area looking north, with the elevated I-780 freeway in the background; Top Right: Illustrative view of a new building lining the formal Officer's Square; Above: Area Plan



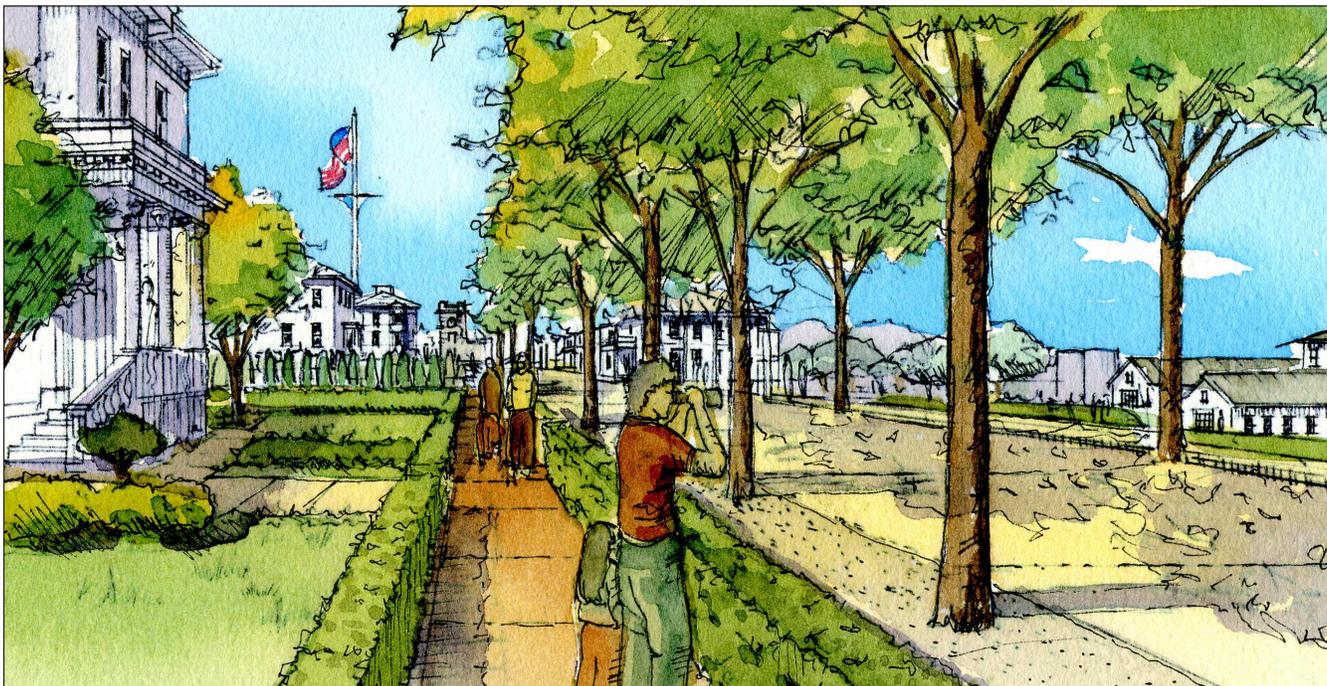
Above: Illustrative north-south cross-section looking east illustrates how a new building on the north side of the proposed Officer's Square may be utilized to screen the view of the elevated I-780 freeway.



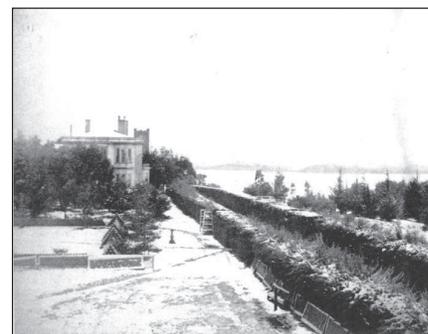
Above: Detailed view of the Officer's Square looking east, illustrating the compatible scale of new buildings with the existing Commanding Officer's Quarters and the Clocktower.



Above: View of the proposed Officer's Square looking north, illustrating the compatible scale of the new building with the existing Lieutenant's Quarters (left) and the Commanding Officer's Quarters (right).



The Officers’ Square, like the Clocktower Green, is intended to provide another high quality address for a potential Heritage Campus or other institutional use that can be compatible with the existing uses in the immediate area. Residential uses, if proposed for any of the new building sites, should be carefully considered for their compatibility with adjacent uses as well as their ability to provide a building of high quality, architectural character.



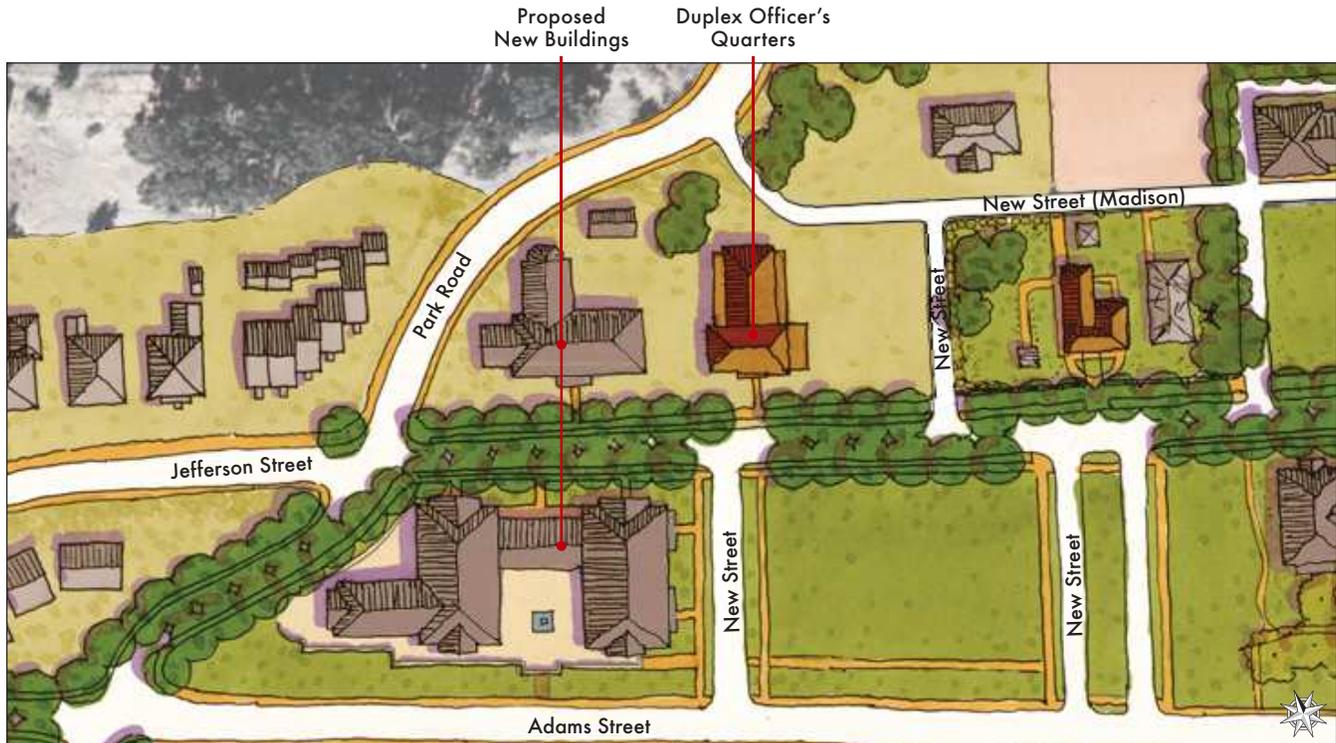
Top: Illustrative vision of a restored Jefferson Street as seen from the front of the Officers’ Duplex. Above: Historic image of the Officers’ Square area circa 1887 showing formal landscape hedge treatments.



Above: View from the existing open area between the Commanding Officer's Quarters and the Lieutenant's Quarters out to the grove of historic cork oaks and the Carquinez Strait beyond.



Above: The plan envisions two new, formally arranged buildings placed south of Jefferson on axis with the Officers' Square, framing a view of the historic oaks and the Strait beyond.



Jefferson Ridge - Western Gateway

The western end of the Jefferson Ridge, defined by the intersection of Park Road and Jefferson Street, was considered for its potential as a gateway into the ridgetop area. A residential proposal at the northwest corner of Park Road and Jefferson Street was recently approved to replace an existing school and day care facility. The plan envisions two additional new buildings to properly define the area as a gateway, one at the northeast corner of Park Road and Jefferson Street, adjacent to the existing Duplex Officers' Quarters, and one at the southeast corner along the Jefferson ridge.

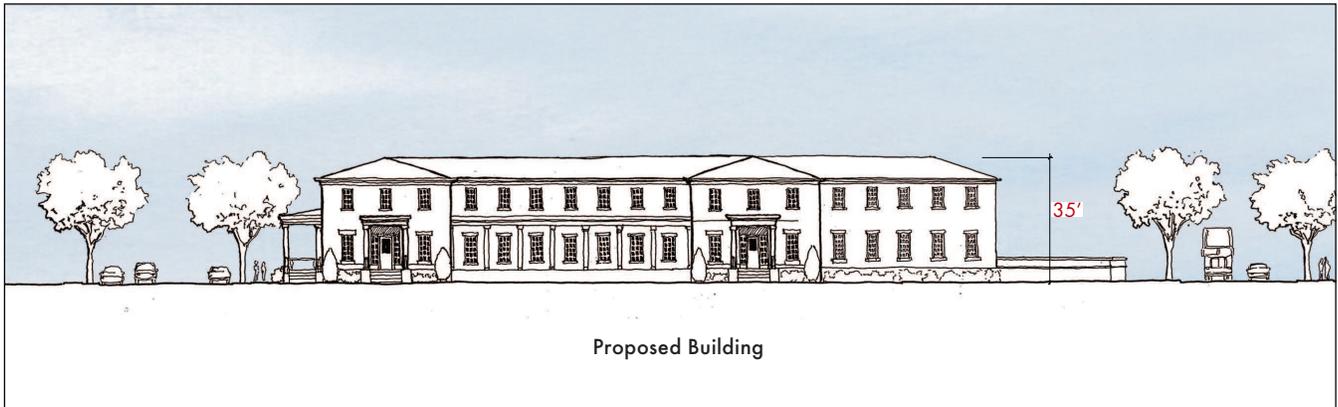
The plan also envisions a new structure at the northeast corner that is similar in size, shape, and character to the existing Duplex Officers' Quarters, and provides a high quality frontage along both Jefferson and Park. At the southeast corner, a much larger building is proposed that defines a south facing courtyard and terrace. This building form intends to provide a high quality frontage on all four sides that can be effectively sighted across the slope of the ridge.

These two building proposals provide additional opportunities for the extension of a Heritage Campus. In the event that the Duplex Officers' Quarters may be renovated to also accommodate such a use, this institutional address could extend across the entire ridge, from the intersection of Park Road and Jefferson Street eastward to the Clocktower. Residential uses, if proposed for either of the building sites, should be carefully considered for their compatibility with adjacent uses as well as their ability to provide a building of high quality, architectural character.

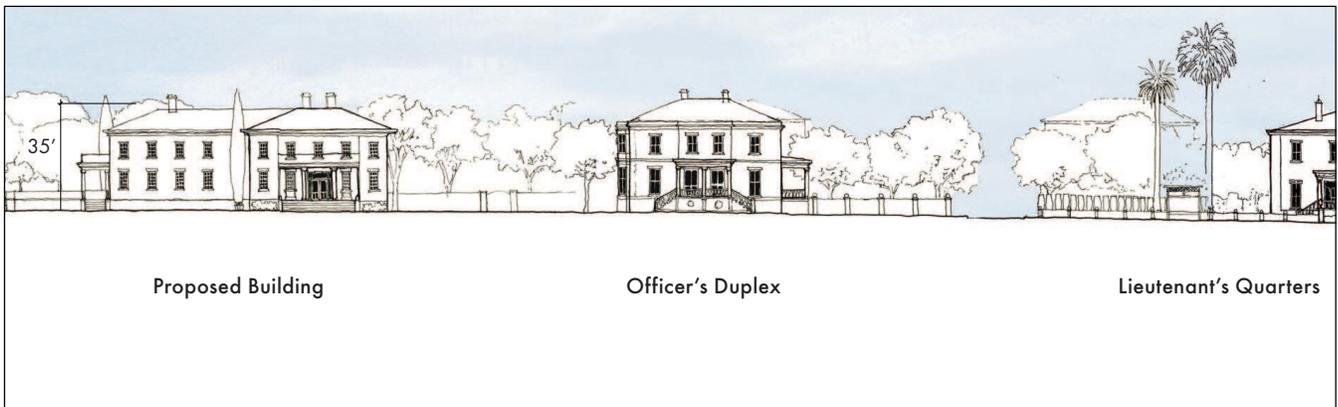
Additional buildings could be accommodated along the New Street that would follow the historic Madison Street right-of-way, providing a consistent, high quality frontage along the Street's northern edge.



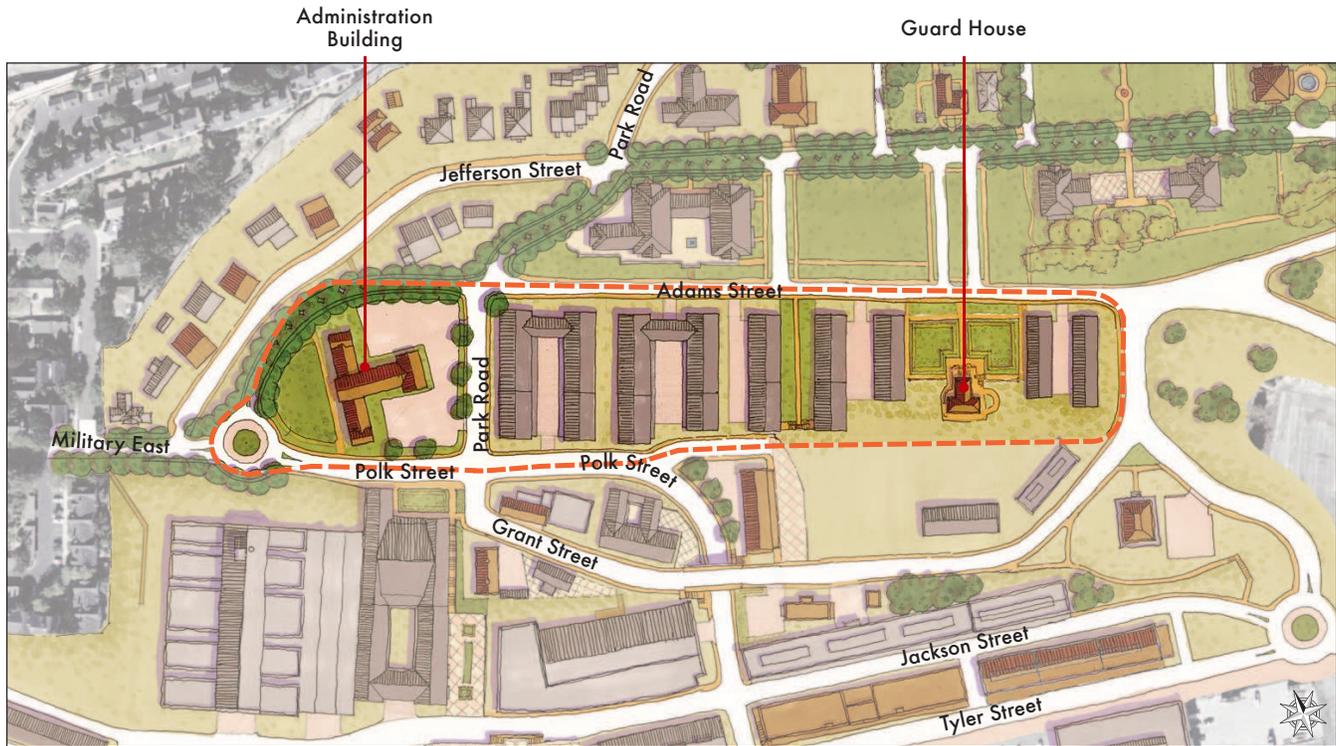
*Top: Illustrative vision plan of the Western Gateway area. Existing historic structures are shown in brown; proposed new buildings are shown in dark grey; other existing structures are shown in light grey.
Above: Area Plan*



Above: North elevation of proposed courtyard building located at the intersection of Park Road and Jefferson Street.



Above: View of the north side of Jefferson Street illustrating a proposed new building west of the existing Officer's Duplex.



Adams Street

Adams Street extends from the Administration Building at the intersection of Park Road and Polk Street eastward to the intersection of Adams and Grant Streets. It is currently characterized by the 1942 Administration Building, a series of light industrial properties along Adams, and the 1872 Guard House.

The plan envisions that Adams will continue to provide primary access for heavy trucks and service vehicles traveling between Military East and the Port, despite the gradual land use changes that may occur in particular areas of the LAMUSP project area. To this end, Adams Street is envisioned as a one-sided street that is industrial in character, and that can continue to support a mix of industrial and industrial-compatible uses that can effectively “showcase” the area’s signature historic buildings. New zoning standards will seek to encourage the intensification and redevelopment of existing properties with industrial, work/live, office, commercial, and related uses.

The design proposes a new roundabout at the intersection of Military East, Adams, and Polk Streets to appropriately mark the entry into the Arsenal and improve traffic circulation and orientation at this difficult intersection.

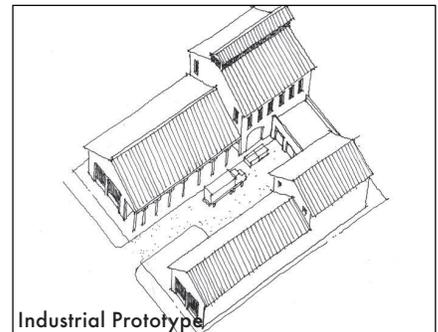


*Top: Illustrative vision plan of the Adams Street area. Existing historic structures are shown in brown; proposed new buildings are shown in grey..
Above: Area Plan*

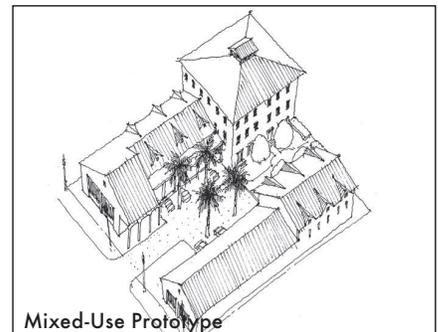


Along Adams Street, new zoning standards will seek to encourage the intensification and redevelopment of existing properties over time with industrial, work/live, office, commercial, and related uses. The plan envisions that new buildings in this area will have internal courtyards that can provide a setting for active uses that minimizes potential conflict with surrounding neighbors. In the case of industrial uses, the courtyards may internalize problems of noise and visual clutter associated with light industry. In the case of work/live, office, or residential uses, the courtyards may provide a safe haven that is protected and removed from adjacent industry.

The building courtyards will have a north-south orientation and provide additional opportunities for view corridors between the Jefferson Ridge and the lower portions of the project area. Built form will be most rigidly controlled along the Adams Street frontage in an attempt to provide a regularized, contextual series of buildings that form an elegant backdrop for the area's historic structures.

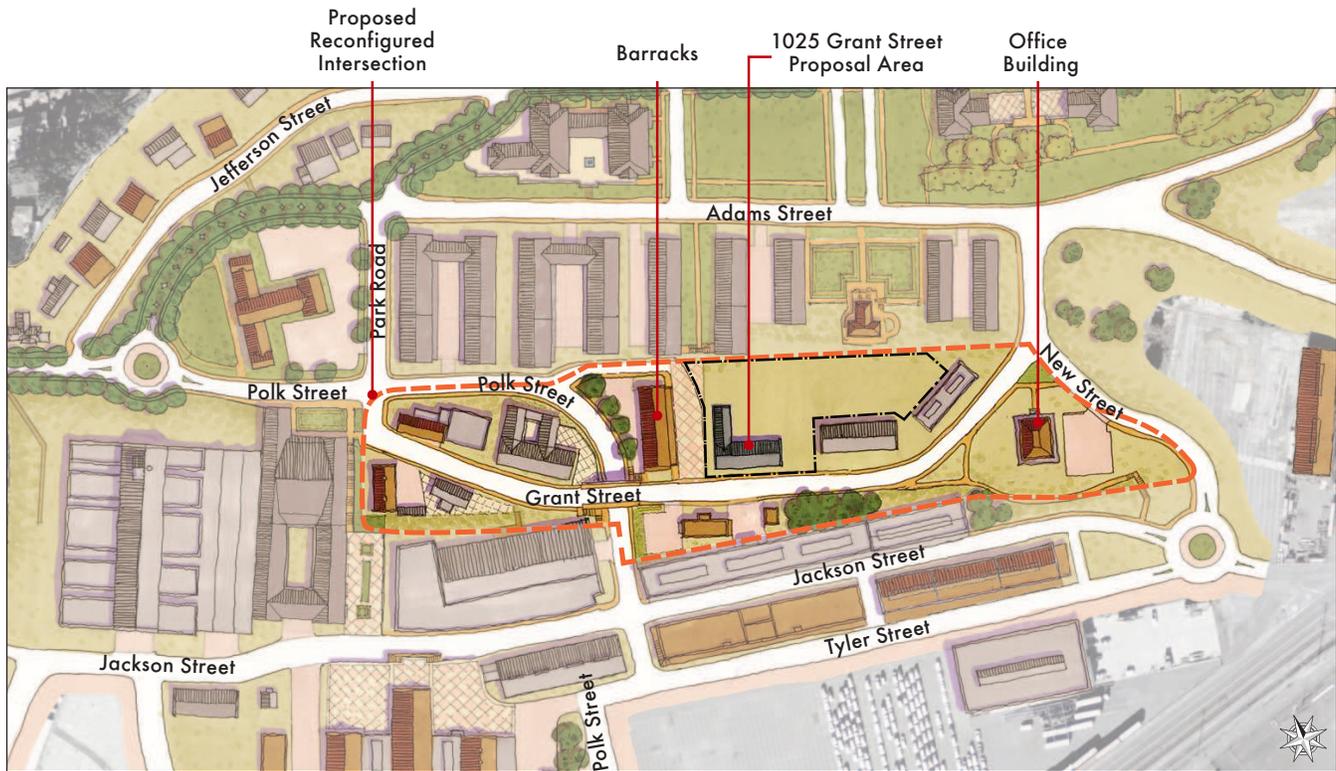


Industrial Prototype



Mixed-Use Prototype

Above, from top to bottom: Illustrative vision of new buildings along the south side of Adams Street; conceptual designs for courtyard buildings along Adams.



Grant Street

The Grant Street area encompasses properties along both sides of Grant Street between the 1942 Administration Building to the west and the 1870 Office Building to the east. The area is currently composed of an eclectic mix of buildings and uses oriented on a great diversity of lot sizes and shapes, and includes several buildings of historic significance, including the Administration Building, the Barracks, and the Office Building.

Grant Street is unique in the project area in that it provides an intimate, pedestrian-friendly environment across its length. Industrial traffic through the area - beyond that servicing needs of local businesses along Grant - is unnecessary and easily provided along Adams Street to the north. Also, Grant Street has a strong sense of physical enclosure due to the gentle curves at its western and eastern ends. The plan thus envisions that this zone may be encouraged to develop as an enclave that can support a mix of uses, and that residential uses may be more heavily encouraged in a manner that will be less prone to conflicts with neighboring industrial uses.

The “enclave” nature of this zone can be encouraged by physical improvements to the immediate area around the existing intersection of Polk and Grant Streets. The existing intersection is disorienting and confusing, particularly for visitors attempting to navigate to Jackson and Tyler Streets who must bear to the left in order to go right and enter the Polk Street underpass. The design envisions that this intersection can be reconfigured to provide direct access to Polk Street and the lower portion of the project area as well as a new development parcel on the western edge of the zone. This new outparcel should be encouraged to develop with a new building that provides urban frontage along Military East and Grant Streets, and may include a small, publicly accessible plaza that provides an opportunity for visitors to stop and orient themselves before proceeding into the different zones of the project area.



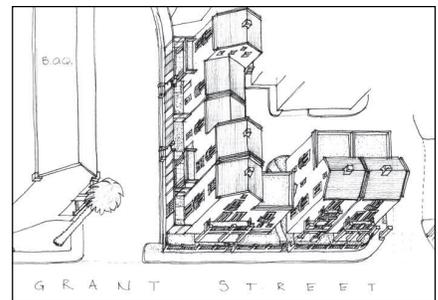
*Top: Illustrative vision plan of the Grant Street area. Existing historic structures are shown in brown; proposed new buildings are shown in grey.
Above: Area Plan*



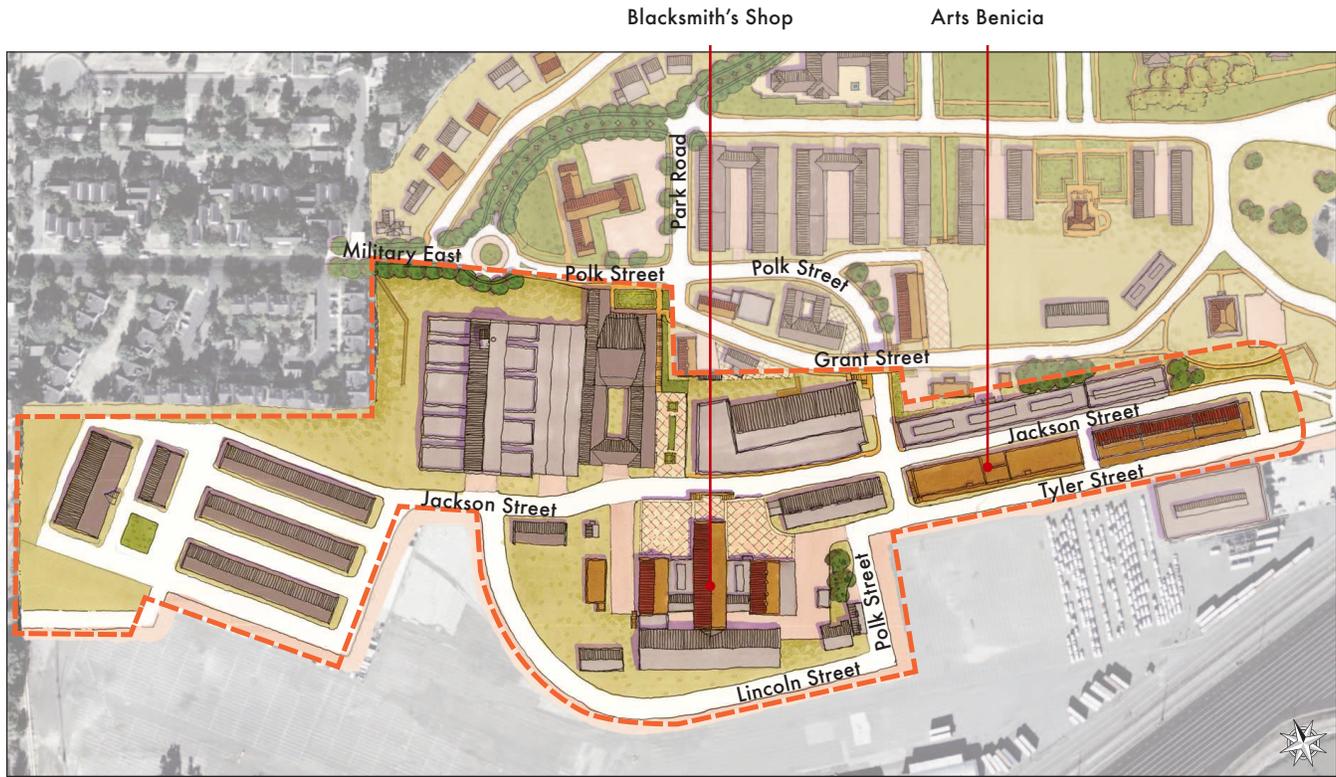
The redevelopment of this existing parcel will also provide improved visual and physical access to the Blacksmith’s shop directly to the south.

The plan envisions that the area directly east of the Polk Street underpass may evolve successfully into an urban node that is activated by renovated historic structures and new buildings providing ground floor commercial and live/work spaces. A new development proposal for the undeveloped parcel at 1025 Grant Street will provide such buildings and compatible uses across from the Storehouse, and new frontage along the eastern edge of the Barracks should encourage its renovation and the creation of a high quality, urban plaza between the two properties. Additional properties in the area will be encouraged to redevelop with similar building types.

At the eastern end of Grant Street, the grounds surrounding the Office Building should be renovated to provide a fitting setting for the historic building and an appropriate visual termination for the neighborhood. The Office Building parcel should be expanded eastward via the creation of a new street that can connect to Jackson and Tyler Streets outside of existing Port property, effectively creating an additional access point for the lower portion of the project area.



Top: View of future Grant Street looking west; **Middle:** Existing conditions; **Below:** Proposal for 1025 Grant Street begun prior to Specific Plan process illustrating compatible buildings along Grant Street.



South of Grant Street

The area south of Grant Street includes the remaining LAMUSP project area north of the Port. This area includes an eclectic mix of industrial and artisan-related uses that occupy a series of large footprint buildings. Jackson and Tyler Streets follow the alignments of old rail beds and thus many of the buildings are set on high plinths that facilitated loading and unloading onto rail cars. For the most part, buildings in the area have been designed to maximize flexibility, with simple, utilitarian forms, large, single-span open spaces, and clerestory lighting. The zone includes a few historic structures, including the 1876 Blacksmith’s Shop and the 1919 Storehouse, which today houses the Arts Benicia facility.

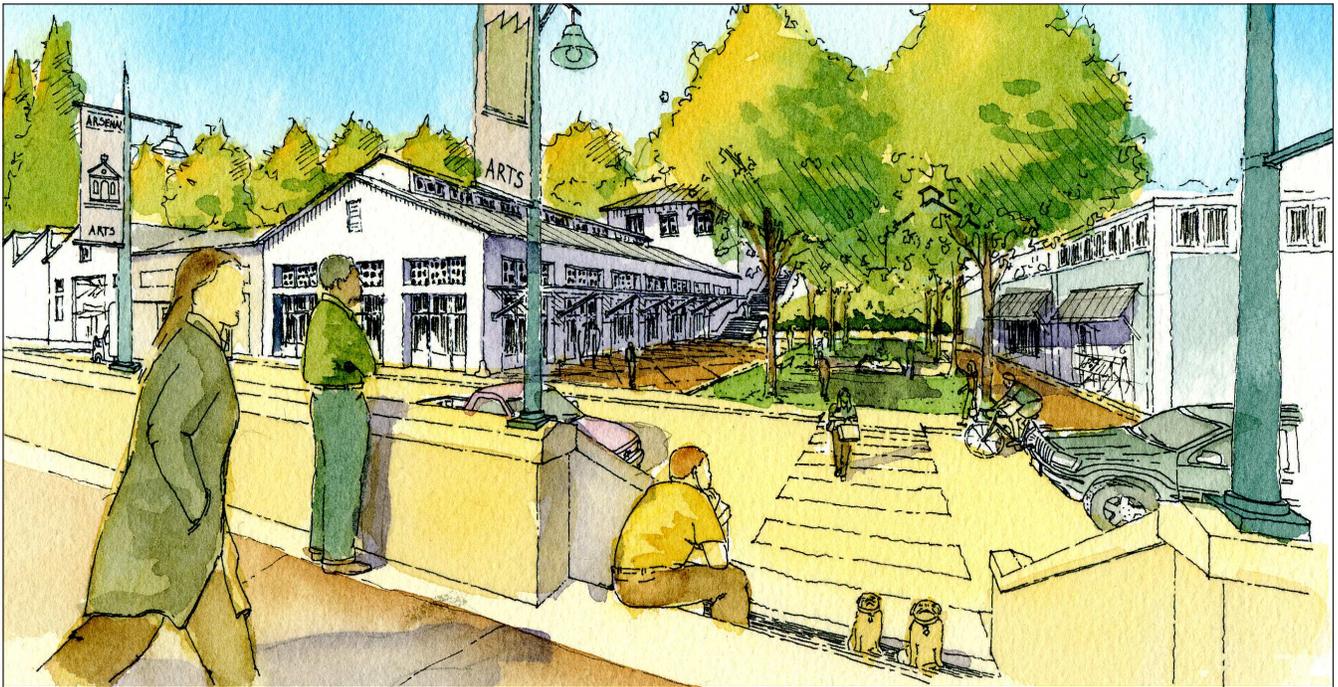
Access into this portion of the project area is currently limited to the Polk Street underpass and is considerably constrained by the needs of the adjacent Port facility. Due to subsequent low levels of traffic and irregular rights-of-way, the area provides an environment of flexibility and informality.

The plan envisions this area continuing to provide an appropriate environment for industrial and artisan-related uses. Although physical infrastructure improvements can assist with wayfinding and orientation, the area should continue to be informal and flexible in nature.



Top: Illustrative vision plan of the South of Grant Street area. Existing historic structures are shown in brown; proposed new buildings are shown in grey; other existing structures are shown in light grey.

Above: Area Plan



The plan envisions change in three principal areas. At its eastern end, a new intersection at Jackson, Tyler, and a New Street outside of the existing Port property can provide an additional access point into this portion of the project area. The open area to the north of the Blacksmith's Shop should be reconfigured to provide a high quality, publicly accessible plaza. This space may be viewed as an extension of the linear open space that would extend southward from Grant Street once the eastern portion of the area can be encouraged to redevelop. The spaces could be connected by a small pedestrian bridge that would span the Jackson Street right-of-way, creating a visual terminus at the western end of Jackson in coordination with the deflected view of the Blacksmith Shop's end gables.

At the area's western end, the design envisions the ultimate redevelopment of the current storage facility into an interconnected network of streets and blocks. This parcel should be viewed as an opportunity for the City to encourage the creation of additional space for artists in a series of simple buildings.

The area south of Grant may ultimately provide direct vehicular connections to Benicia's downtown at two principal locations: K Street via a western extension of Jackson Street and H Street via Bayshore Road inside the Port. Although security needs of the Port will influence the viability of both alternatives, the K Street connection may be possible with minimum effect on Port operations and is recommended for further study.

The extension of Jackson Street west through this redeveloped parcel may ultimately allow a connection to K Street and the downtown street grid, in particular if the Port can make land available for such an extension.



Top: Illustrative vision of Jackson Street looking west; Above: Existing conditions

Circulation and Transportation

In order to have a minimum impact on the historic character of the project area, the design envisions modest changes to its transportation network that will support historic resources while improving safety, wayfinding and overall access.

Parking

The Arsenal currently enjoys sufficient parking to meet its needs. However, the encouragement of new infill development and reinvestment in existing properties will bring new challenges to providing sufficient parking due to the isolation and complexity of the project area. The City should encourage the development of shared, managed parking solutions in the project area that serve all users, and should work with existing Arsenal stakeholders to explore a variety of transportation programs for the Arsenal, including:

- Shared parking arrangements
- Special event management
- Shuttle programs
- Bicycle and pedestrian improvements
- Promotion of alternative transportation programs

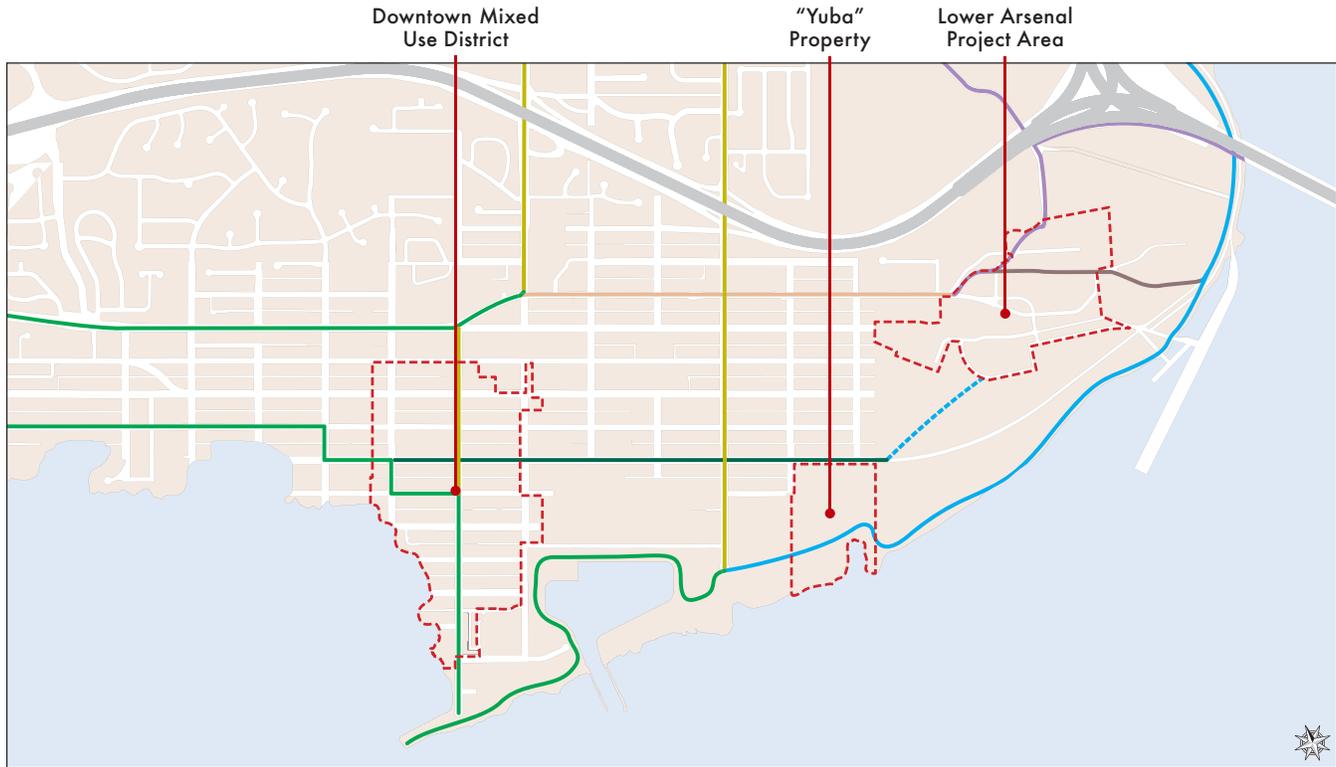
Many of the recommendations in this chapter may be handled by the City's existing Traffic, Bicycle, and Pedestrian Safety Committee (TPBS). In the future, however, a Transportation Management Association, or TMA, may be more appropriate to handle the complex transportation issues in the LAMUSP project area. A TMA is a public-private partnership formed to oversee common transportation programs. Property owners should be required to join the Arsenal TMA as a condition of development approval on new projects.

Local examples of successful TMAs include the Emeryville Transportation Management Association (www.emerygoround.com) and the Sacramento TMA (www.sacramento-tma.org).

Improvements to parking should start with better management of the existing parking supply. Key parking principles for the Arsenal are similar to those for the Downtown and include:

1. **Put customers first.** The Arsenal's best parking spaces should be reserved for customers, ensuring the highest turnover and productivity in commercial areas, with customers always able to find a space on their desired block throughout the day.
2. **Manage parking.** The Arsenal should make most effective use of its existing supply before spending resources building new parking. This means using parking management techniques to balance supply and demand, including time limits, motorist information and, if and where appropriate, pricing. These tools should be used to maximize customer convenience and ensure 15% availability in all parking lots and along all block faces at all times. If pricing is ever used, its primary intent should be ensuring proper levels of availability - not revenue generation (parking pricing programs should use modern pay station devices that accept credit cards, debit cards and other payment media). A primary responsibility of an Arsenal TMA would be parking management.

3. **Park once.** Communities work best when designed to assume that customers will park once and make several trips without moving their cars.
4. **Share parking.** Because office, retail, restaurant, residential and institutional uses experience peak parking at different times of day, it is important that Arsenal uses share parking as much as practical. The Arsenal's parking supply could be treated by the TMA as a single, carefully managed pool.
5. **Make the walk compelling.** In order to take advantage of the "park once" concept, it is important that the walking environment be pleasant and interesting.
6. **Design parking well.** When new parking is provided, it is critical that it does not detract from the Arsenal's pedestrian environment. Garage door widths should be minimized. Parking lots should be attractively landscaped.
7. **Allow for incremental expansion of parking.** While the Arsenal currently has sufficient total parking supply, additional parking may be desired.
8. **Set appropriate parking requirements.** Parking demand varies more by location than it does by land use, so it is important to tailor the Arsenal's parking requirements to its unique conditions. To allow for simple changes in occupancy, there should be a single requirement for shared, non-residential parking. Typically, peak parking demand in park-once environments varies from 1.9 to 2.4 spaces per 1,000 square feet of non-residential development. Exemption from parking requirements should be considered for historic buildings and adaptive re-use opportunities in the project area.
9. **Encourage in-lieu parking payment.** In order to support compact and walkable development in the downtown, developers throughout the Arsenal should be encouraged to provide an in-lieu fee rather than building on-site parking. These fees can be used to construct and maintain parking nearby, or support alternative transportation arrangements. This is especially important for adaptive reuse of existing buildings.
10. **Support adaptive reuse.** If the costs of rehabilitating historic building are too high, the City may waive both the parking requirement and the in lieu fee requirement for historic buildings that meet certain requirements.
11. **Support active industrial uses.** In order to maintain and expand industrial uses in the Arsenal, the City may also choose to waive or significantly reduce parking requirements for these users.



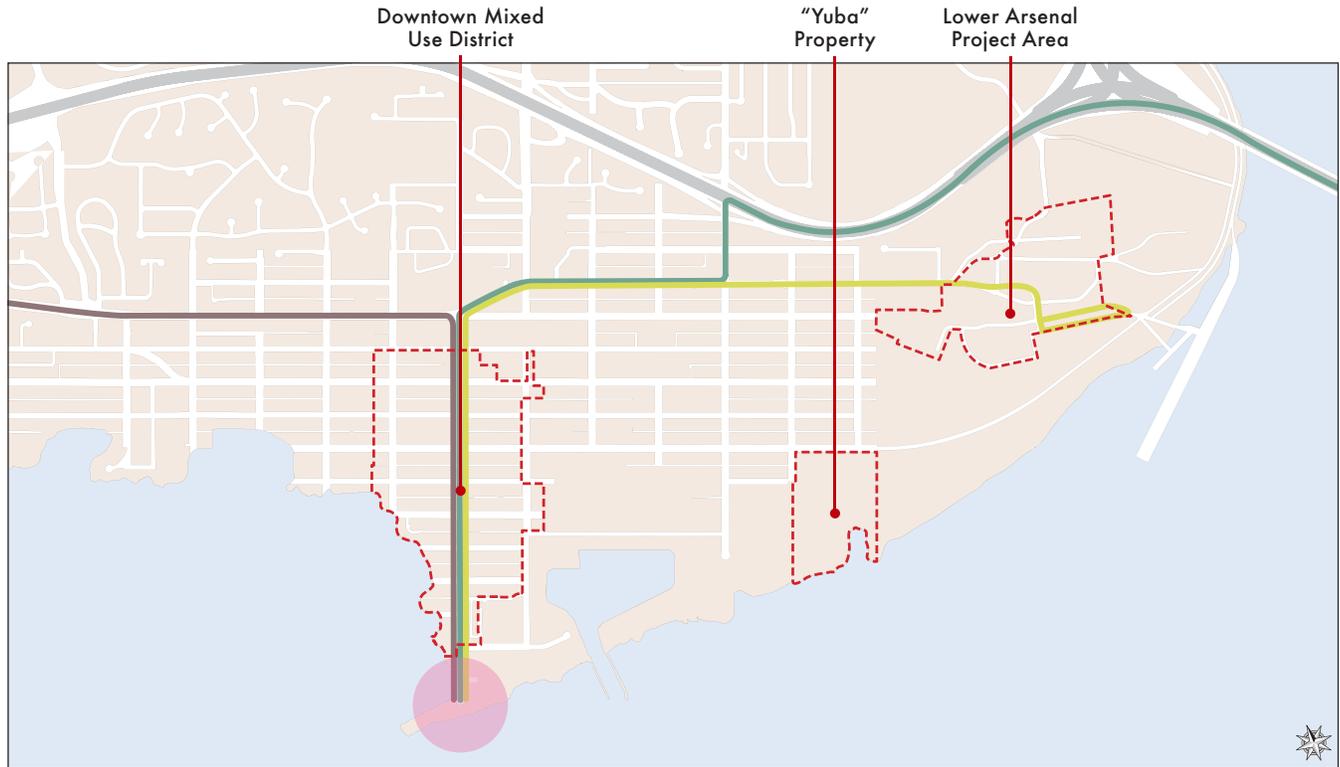
Bicycle Connections

With the impending completion of the Benicia Bridge bike path, Benicia stands to benefit greatly from increased regional bicycle access, tying into the extensive path system on the south side of the Carquinez Strait and extending west to Vallejo and the Carquinez Bridge. To take advantage of these new connections, the City should prioritize the following bicycle improvements, in order:

1. **Park Road from Benicia Bridge path to Military East.** Park Road currently has no accommodations for either bicyclists or pedestrians, and improving it is key to connecting Downtown and the Arsenal to the new bridge path.
2. **Military East.** Extending the bike lanes from Military West to the Arsenal will require eliminating some on-street parking on Military East.
3. **H Street to Arsenal.** H Street offers a low-volume alternative to Military East for connecting Downtown and the Arsenal, particularly if right-of-way can be obtained to construct a path along the west edge of the Arsenal.
4. **West edge path.** With the agreement of Amports, it may be possible to construct a bike path connecting H Street and Jackson Street, along the western edge of the Arsenal. This would provide a more direct connection between the lower Arsenal and the Downtown. It would also allow I, J, K and L streets to be connected into the Arsenal for cyclists and pedestrians, providing a property value enhancing amenity for residents living east of Downtown.
5. **Adams Street to Bayshore.** As the Arsenal is developed, care should be taken to ensure good bicycle access along Adams, including bicycle lanes where widths permit – particularly in the uphill direction. Where widths are inadequate, traffic calming is appropriate.
6. **Bayshore Trail.** The Port of Benicia presents significant security and access challenges. If these challenges can be addressed, continuing the shoreline trail along Bayshore or the shoreline itself would be desirable.

Key

- Existing Bicycle Routes
- Future Bicycle Routes
- Proposed Routes:
- Park Road - Military East
- Military East
- H Street to Arsenal
- West Edge Path
- Adams Street to Bayshore
- Bayshore Trail



Transit

Benicia Breeze provides excellent coverage throughout the city, but these services are designed primarily to appeal to those without other transportation options. Routes are infrequent, and most run in long one-way loops, resulting in time consuming trips. As the Arsenal grows, more frequent and direct service may be warranted, especially if ferry service is reestablished.

In the short run, an Arsenal TMA could work with Benicia Breeze to establish more frequent special event shuttles between downtown and the Arsenal. In the longer run, frequent, all-day service connecting the ferry terminal, downtown and the Arsenal should be explored.

Key

-  Downtown - Arsenal
-  Possible Ferry Location

Wayfinding

Wayfinding is the science of spatial orientation - literally, finding one's way in a place. Places work well when it is obvious to a visitor how to get from A to B. The correct path should be intuitive, with landscape, building design, street trees, vistas and other tools guiding people where they want to go. In wayfinding, signage is a sign of failure. If we need signs to direct us, then we have not designed the built environment sensibly.

As noted earlier, it is challenging for even regular visitors to find their way through the Arsenal, despite its small size and clear vistas. To correct this problem, the following measures are recommended:

Create identifiable districts. With too many destinations competing for visitors' attention, the Arsenal should be treated as easily identifiable districts. This allows visitors to make fewer choices as they move toward their destination. The street pattern of the Arsenal allows it to be divided into four primary areas, as it has been described in the vision plan:

- The South of Grant Area, accessible via the Polk underpass. This district has a unique character, quite different from the other parts of the Arsenal, due to the level streets oriented along former rail lines and industrial buildings. Signage along Military East, at Polk/Grant and other key intersections should point toward the Railroad District, rather than identifying the various uses therein.
- Jefferson Ridge and Officer's Row, accessible via Jefferson and Washington.
- The Adams Street Area.
- The Grant Street Area.

Create secondary routes. Access to Jefferson Ridge and the Railroad district is hampered by street closures that restrict access. The LAMUSP seeks to address this problem, through the following improvements:

- Connection of Jefferson Street from Park Road east to the Clocktower
- Reconnection of Tyler Street to Grant Street with a new roundabout intersection
- Restoration of Madison Street one block north of Jefferson Street
- The ultimate connection of Jackson Street to H Street.

Develop a signage plan. As uses change in the Arsenal, a coordinated signage program should be developed and maintained. A Transportation Management Association would be appropriate for such an endeavor.

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