



**Orange County
Transportation Authority**

**Site Selection & Master Planning
For The
Transit Security & Operations Center (TSOC)**

Task 2 Deliverable

**Existing Facility Assessment
& Need for Relocation - Final**

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Prepared by



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ABBREVIATIONS / ACRONYMS

ADAAmericans with Disabilities Act
AHJ.....Authority Having Jurisdiction (the local permitting agency)
CBC.....California Building Code
EOC.....Emergency Operations Center
IS.....Information Systems
IT.....Information Technology
OCTA.....Orange County Transportation Authority
PA.....Public Address Systems
SCRRA.....Southern California Regional Rail Authority
TSOC.....Transit Security Operations Center
TPS.....Transit Police Services (also referred to as the Sheriff’s Department)
VSS.....Video Surveillance Systems (also known as CCTV)

I. BACKGROUND

The Orange County Transportation Authority's (OCTA) core operational and security functions are currently centralized at the "Garden Grove Annex" building (hereinafter the Annex) located at 11800 Woodbury Rd, Garden Grove, CA 92843. Within this existing facility, the following OCTA functions are currently housed:

- Operations Training (Bus)
- Central Communications (Bus)
- Field Operations (Bus)
- Transit Police Services (Bus, Paratransit, & Rail)
- Emergency Operations Center (Agency wide)
- File Storage

The main issue with the Annex is that the space required for some of the above functions is not adequate. Space is un-available for growth or addition of new functions that are required by OCTA's projected operations. Structural upgrades of the Annex required to meet essential services building standards in California also pose significant challenges that may be considered unfeasible.

As such, OCTA has initiated a feasibility and planning study for a replacement facility, named the Transit Security & Operations Center (TSOC). This TSOC will generally house the above functions, provide adequate space for these functions, improve efficiency of room layouts, provide space for future functions, and be designed to current essential services standards per the latest edition of the building code.

STV Incorporated (STV) has been retained by OCTA to support the development of the new TSOC in this regard.

II. PURPOSE

The purpose of this report to confirm whether or not the Annex is adequate for OCTA's current and future transit and security operations. In analyzing and documenting the limitations of the Annex, OCTA may more accurately determine if the operations and security functions are to remain at the Annex, or if they must be relocated to a new facility.

To complete this task, STV studied the existing facility, interviewed OCTA staff, and reviewed floor plans, and reviewed reports prepared previously by other consultants.

III. GENERAL CRITERIA

During May and June 2013, STV visited the Annex on multiple occasions, met and discussed with OCTA staff, took photographs, and documented existing conditions. The following criteria were used by STV in reviewing and analyzing the Annex during these visits:

- Available parking
- Efficiency of floor plans
- Reoccurring maintenance and repair issues
- Number of staff in relation to room sizes
- Storage space
- Concerns from users
- Items to be improved
- Security and access
- Safety and hazards
- Architectural integrity
- Structural systems
- Plumbing systems
- Heating, ventilating, and air conditioning (HVAC) systems
- Electrical systems
- Restroom facilities
- Video Surveillance System (VSS)
- Americans with Disabilities Act (ADA)*
- California Building Code (CBC)*

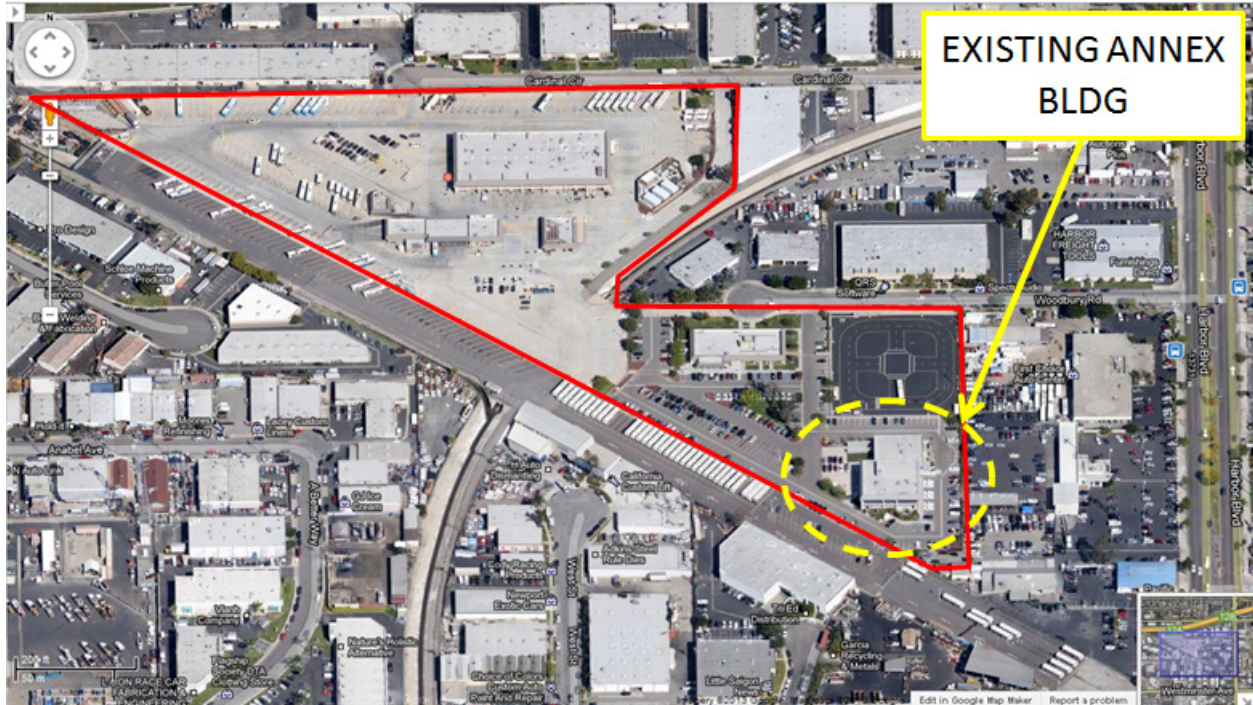
*Note: STV's assessment of the Annex did not include a detailed analysis of code deficiencies. However, general code deficiencies that may have been observed during our site visits are included in this report for information.

STV's assessment of the Annex does not include any cost estimates for remediation or repair. These can be provided by STV at the request of OCTA. STV did not perform any analysis or identification of hazardous material.

STV's following assessment is organized into three major categories: the Site, the Physical Building itself, and the OCTA Functional Departments.

IV. SITE

The Annex is located on the same site as the Garden Grove Maintenance Facility, the Bus Operations Building, and the Operator Training Course.



Aerial image of Garden Grove Base

A. PARKING

The Annex shares a parking lot with the existing Bus Operations building. Together the two buildings share a total of approximately 356 parking spots, including 15 ADA stalls. Of this number, approximately 121 standard parking stalls and 5 ADA stalls (for a total of 126) are immediately adjacent to Annex building.

Because of the on-site “overflow” parking and reserved areas to the south of the Annex building, parking on the base is sufficient for current needs. However, the following are exceptions:

- Field Operations indicated that the location of their delegated parking in relationship to their storage/supply room is not ideal or efficient. The field supervisors regularly load/unload supplies and materials from their vehicles, yet must walk 30-40 feet to an entrance, pass through a hallway, through a second door, and through an interior gate to reach their storage area located in the center of the building.

- The Sheriff officers regularly unload their “warbags” from patrol cars to an exterior storage room on the east side of the building near the dog kennels. In doing so, they must park temporarily in the drive aisle while unloading, and then re-park their vehicles on the south side of the building when done.
- During large training events, the parking lot approaches full capacity.

B. SITE SECURITY

The following site concerns were communicated by OCTA and Sheriff’s staff, or observed by STV:

- A flood control channel intersects the site and has become a byway for vagrants and teenagers. OCTA Security and Sheriff’s staff indicated past issues with trespassers entering the OCTA site from the flood control channel. A new site without such a flood control channel would eliminate this adjacent byway and lessen trespassing events in this regard.
- The OCTA Security and Sheriff’s staff indicated that the adjacent automotive repair, industrial, and salvage properties may employ a workforce that is not conducive to the location of a secured operations center or Sheriff’s station. Several of these adjoining properties have direct visual access to the Sheriff’s parking area which is not preferred.
- The back-up generator and fuel tank are located in the parking lot. It is suggested that they are located within a secured area to avoid tampering and vandalism.

C. SITE ACCESSIBILITY (ADA) AND EGRESS

Upon this initial assessment, the following code deficiencies were observed¹ in regards to ADA accessibility, the path of travel, and egress (exiting) required by the California Building Code:

- The ADA parking stalls and curb ramp near the front entrance of the Annex are not compliant. The curb ramp encroaches into the parking stalls which is prohibited. Upon visual observation, it appears the slope of the parking stalls may exceed that which is permitted by code.
- The exterior stair at the front entrance is missing slip resistant nosing at each tread.
- The south stair from the break room is missing one handrail and needs slip resistant nosing at each tread.
- The exterior stair at exterior patio is missing handrails on both sides and needs slip resistant nosing at each tread.
- The exterior ramp at the east entrance is missing one handrail.

¹ Observations are based upon comparison to current code. Accessible facilities of the Annex may have been compliant with code when they were constructed.

The above items are relatively minor to correct, and may be required by the local building department in order to receive building permit approval of any future renovations or upgrades of the Annex.

V. PHYSICAL BUILDING

This section documents the limitations or issues observed in regards to the physical building itself. Observations were limited to what was visually seen while walking the premises, and/or items that were verbally communicated by OCTA staff. STV did not perform a detailed building investigation; STV did not access concealed spaces (such as within walls or above ceilings) or test building equipment (such as HVAC units or water heaters, etc.).

The Annex was originally designed in 1985 under California Building Code edition at that time and constructed in 1987. Under that code edition, the building was designed as a Type V, non-rated, fully sprinklered building, as noted on the record drawings.

A. ARCHITECTURAL

General observations reveal the Annex building is in good working condition architecturally. For example, the floor, doors, walls, ceiling, windows, and roofing appear to be properly maintained by OCTA staff and do not indicate need for immediate replacement. The following is a list of items for OCTA's review.

- The Annex has decades of partial interior remodels which has resulted in a very inefficient floor plan (as described in section VI). The ground floor is split-up into three separate and distinct areas, with no internal circulation connecting them; staff exits the building and re-enters another entrance to access each of these three areas. Significant interior improvements are recommended to correct circulation and adjacency issues.
- Due to past water leaks above the ceiling of Server Room 110, many ceiling tiles are damaged and in need of replacement. Darker stains are present and STV was unable to determine if these dark areas are due to mold growth. It is recommended that OCTA replace these tiles and consult a remediation/testing expert if there is concern as to the presence of mold.
- The metal stud framing for interior walls is not suitable to support the large, new LCD monitors that are to be wall mounted and replace the older style projector screens. This has prompted large and obtrusive plywood backing plates on both sides of the walls where an LCD monitor is desired to be located. This item is not easily remedied without removing gypsum board and installing additional metals studs and backing within the wall.
- Several tenant improvements (interior remodels) have occurred at the Annex since its original construction. It is assumed that the permitted designs at those times addressed code upgrades required for egress (emergency exiting) and fire protection. However, based on a review of the record drawings, it appears the last tenant improvement was constructed

in 1998. Further code review and analysis of Annex is needed to determine if upgrades would be required under today's version of the California Building Code (CBC), and if required by the local agency having jurisdiction (AHJ) prior to any new construction.

A.1. ACCESSIBILITY (ADA) & EGRESS

- Second floor Men's restrooms are missing the protective wrap at lavatory drains and hot water supply lines as required by the CBC.

B. STRUCTURAL

An essential services facility is one which is designed to ensure the serviceability of the building after a major seismic event. They are designed "stronger" than typical buildings. Hospitals, fire stations, police stations, and emergency operations centers (EOC) are examples of essential service facilities. OCTA requires this type of building to house their EOC and core operations and security functions which are located at the Annex.

However, it is obvious that the current building was not intended or designed as an essential services facility, based on STV's review of as-built documents provided by OCTA, including the geotechnical report and structural engineer's calculations and reports, completed by other consultants. These were provided to STV by OCTA and include the following:

- *Structural Evaluation of Multiple Buildings at Garden Grove Base*, By the Owen Group, February 2004
- *Structural Calculations for the Seismic Retrofit of the OCTA Garden Grove, Annex Building*, by ABS Consulting, May 16, 2005
- *Geotechnical Investigation, OCTA Annex Building, Garden Grove*, by Diaz-Yourman & Associates for ABS Consulting, May 20, 2005

The geotechnical report review makes it clear that the site has a liquefaction potential during a major seismic event. To mitigate this liquefaction problem, the two options provided in the reports appear to be viable solutions: Either 1) pressure grouting under existing building footings to densify soil or 2) retrofit current footings into a pile foundation system with structural slab on grade. Both of these are viable, but are extremely costly methods and will disrupt the current operations of the building during construction. To accomplish either one of these options includes removal of OCTA staff from most areas of the building, sawcutting and removal of concrete flooring, and interior shoring and excavation.

STV also reviewed the structural calculations done by ABS Consulting and the original structural drawings. We concur with the findings of ABS Consulting. The building's lateral resisting system is comprised of moment frames in both directions which is common for pre-1994 earth quake standards. For post-1994 earthquake design standards however, moment frame buildings require special testing during construction which the Annex did not obtain. This testing is especially important for a building to be "qualified" as an essential services facility.

The retrofit recommendation provided in ABS's report also appears to be viable solution, however this includes significant costs and will require major disruption of OCTA staff and operations similar to what is described above. Additionally, ABC's recommendation focused on upgrades for life-safety events only; a greater amount of retrofitting would be required to convert the Annex building to an essential services facility per current code.

The Owen Group report is a comprehensive report regarding the Annex which provides a detailed analysis of the building's structural capabilities. Their conclusions are based on structural calculations, as well as computer modeling of the building under seismic events in regards to FEMA-356 forces. Their report concludes that the existing building does not meet basic life-safety structural requirements and this "could pose life-threatening hazards, if not retrofitted"². According to this report, life-safety is described per the following:

*"Life Safety (LS) sets a minimum performance level for new building. According to FEMA, LS is defined as a performance level which includes significant damage to both structural and nonstructural components during a design earthquake, consider some margin against either particular or total collapse. Injuries may occur but level of risk for life threatening injuries and entrapment is low. Although considerable structural damage is expected, no serious loss of life is anticipated. Basically, the structure may partially fail but no overall collapse is predicted and the occupants can most probably walk out of the building. Building may or may not be repairable."*⁸

Since the Owen Group concludes that the building does not meet the above description for basic life-safety requirements, STV recommends that OCTA revisit the recommendations and conclusions of the Owen Group Report if the building is to remain occupied. STV recommends that the cost estimates prepared by Owen be also be reevaluated, since current construction costs may be different than when the report was prepared in 2004.

In conclusion, we concur with the previous findings and recommend that a replacement building is the best solution to meet OCTA's requirement for an essential services facility. Per the Owen Group report options for retrofitting to an essential services level may not be viable, or may be extremely costly, and will temporarily disrupt staff and operations.

Further consideration, structural analysis, and cost estimates should be conducted by OCTA if the Annex is to be repurposed for non-essential service functions, and upgraded to meet current code and life-safety standards. STV is able to provide these services for OCTA if requested.

² Page 24 of 32, from *Structural Evaluation of Multiple Buildings at Garden Grove Base*, By the Owen Group, February 2004.

³ Page 6 of 32, from *Structural Evaluation of Multiple Buildings at Garden Grove Base*, By the Owen Group, February 2004.

C. HVAC

Although the main rooftop air conditioning unit and central boiler were replaced less than five years ago and appear to be in good working condition, the existing HVAC systems are considered insufficient for current and/or future needs based on the following items:

- In the Field Operations office area, work cubicles and computer stations are over-crowded. The AC unit for this space is not able to accommodate the heat load of overcrowded staff and computers. Staff indicates the temperature is generally uncomfortable warm; several desk fans are apparent in this space.
- The HVAC unit for Dispatch Center is located inside the room above the ceiling. This is disruptive to the dispatchers when repairs and servicing of the unit is required.
- The distribution and controls for Central Communications is not adequate. The surrounding offices and EOC room are not zoned properly.
- The first floor server room is not cool enough for the amount of IT equipment present; the air conditioning equipment appears to be undersized.
- In the first floor server room, the air conditioning unit is located in the ceiling above the area of the IT server racks. This location is not recommended for maintenance and leak issues, yet the small size of the room prohibits a more suitable location. Previous condensation leaks have damaged IT equipment in this room.
- In the telephone/electrical room, the room temperature is satisfactory.
- The thermostat for the Systems Operations room is located in the adjacent Sheriff office area, and therefore does not have effective control of the room temperature.
- Sheriff locker rooms do not have adequate ventilation or supply air.
- The Central Communications breakroom does not have adequate ventilation. Food odors are returned into the building's HVAC system.

In summary, most of the AC units for the building appear to be at capacity or inadequate to cool the existing heat loads of occupants and equipment. Adding future staff and equipment will worsen the conditions without upsizing HVAC units or adding new units to the building. Future interior remodels should include relocation of registers and ductwork for proper distribution and zoning, as well as relocation and addition of thermostat controls for a properly designed system.

D. PLUMBING

Since most of the plumbing systems are concealed in walls, floors, or ceilings, the below is based on information gathered from OCTA staff and STV's observations:

- The plumbing fixture count based on the number of building occupants is not adequate per current code standards. Further calculations are required to determine the number of fixtures required and the amount of renovation required to provide adequate fixture counts.
- In the first floor server room, the condensate drain line for the air conditioning unit leaks with water collecting on the floor. This leak has damaged IT server equipment in the past. OCTA staff has improvised by providing a small bucket in this room that may be dumped periodically; this is far from ideal.
- Water-type fire sprinklers are present in both server rooms. It is recommended that in addition to this, that non-water type fire protection systems be provided for protection of the numerous IT server racks and equipment.
- The toilets at the ground floor men's restroom have had plumbing back-ups (apparently due to papertowel use in the toilets) and the resultant overflow water floods into the adjacent electrical/telephone Room from beneath the walls. At a minimum, it is recommended to seal the bottom of the restroom walls, both sides. Standing water in electrical rooms should receive prompt attention and remediation whenever present.

E. ELECTRICAL

Generally, the building's electrical capacity appears to be adequate for the current loads, functions and needs. However, the electrical system capacity is insufficient when considering additional or future loads that may be required for operations. Below is a summary of observations:

- In many rooms, the number of electrical and data outlets is insufficient for the amount of computers, monitors, printers, etc. in the room. This has prompted the usage of numerous power strips with cords and cables cluttering the underside of workstations. OCTA may wish to review this to determine if this poses a safety or fire hazard. Connected loads to branch circuits should be analyzed where these conditions prevail.
- The existing 250KW emergency generator is near full capacity and will not permit loading of additional or future emergency power circuits for the building.
- The EOC does not have outlets beneath the conference table. Even though outlets have been added on the ceiling above the table, STV observed wires and cables crossing the walking aisles from the adjacent walls, which could pose a safety risk. The outlets on the ceiling pose a safety risk for staff trying to access them.
- The grounding rods for the lightning protection antennas pass 2-3 feet within the IT equipment located in the second floor Server Room. In the event of an electrical arc, the adjacent IT equipment may be severely damaged.

- The size of the electrical room is at full capacity and will not allow the addition new electrical equipment for expansion.
- The power capacity in the Field Operations and Central Communications breakroom is not adequate for microwave use. Circuit breakers commonly trip when staff uses the microwaves in these areas.

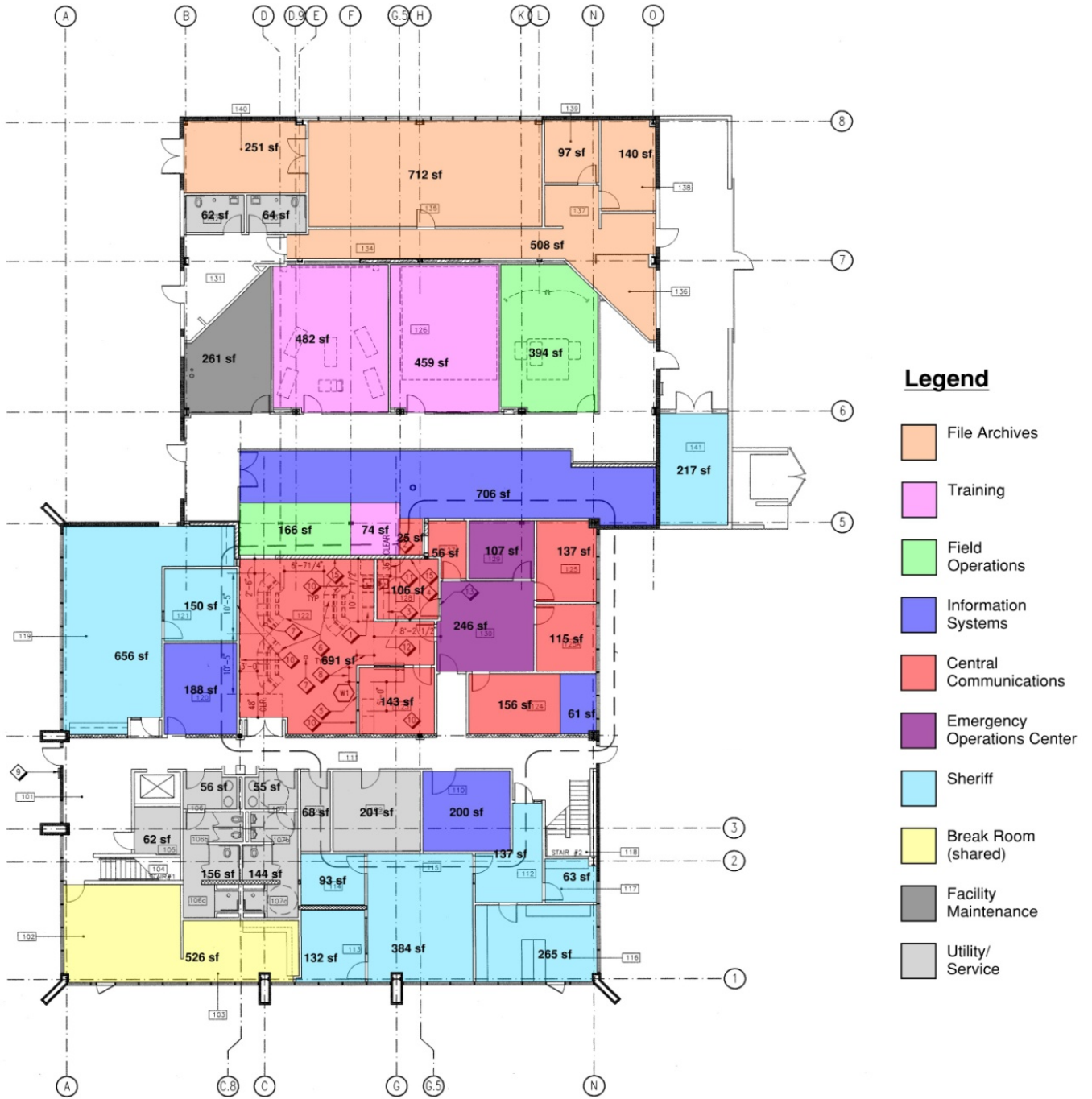
VI. INDIVIDUAL DEPARTMENTS/ FUNCTIONS

STV interviewed OCTA staff and Sheriff staff at the Annex to understand and document how the constraints and limitations of the Annex may affect the productivity and efficiency of their individual departments, including future growth and expansion. The following sections describe these issues. The below table summarizes these findings while the following exhibits demonstrate the location and spaces of each department.

Table 1
Annex Building
Staff Quantities and Square Footage of Departments

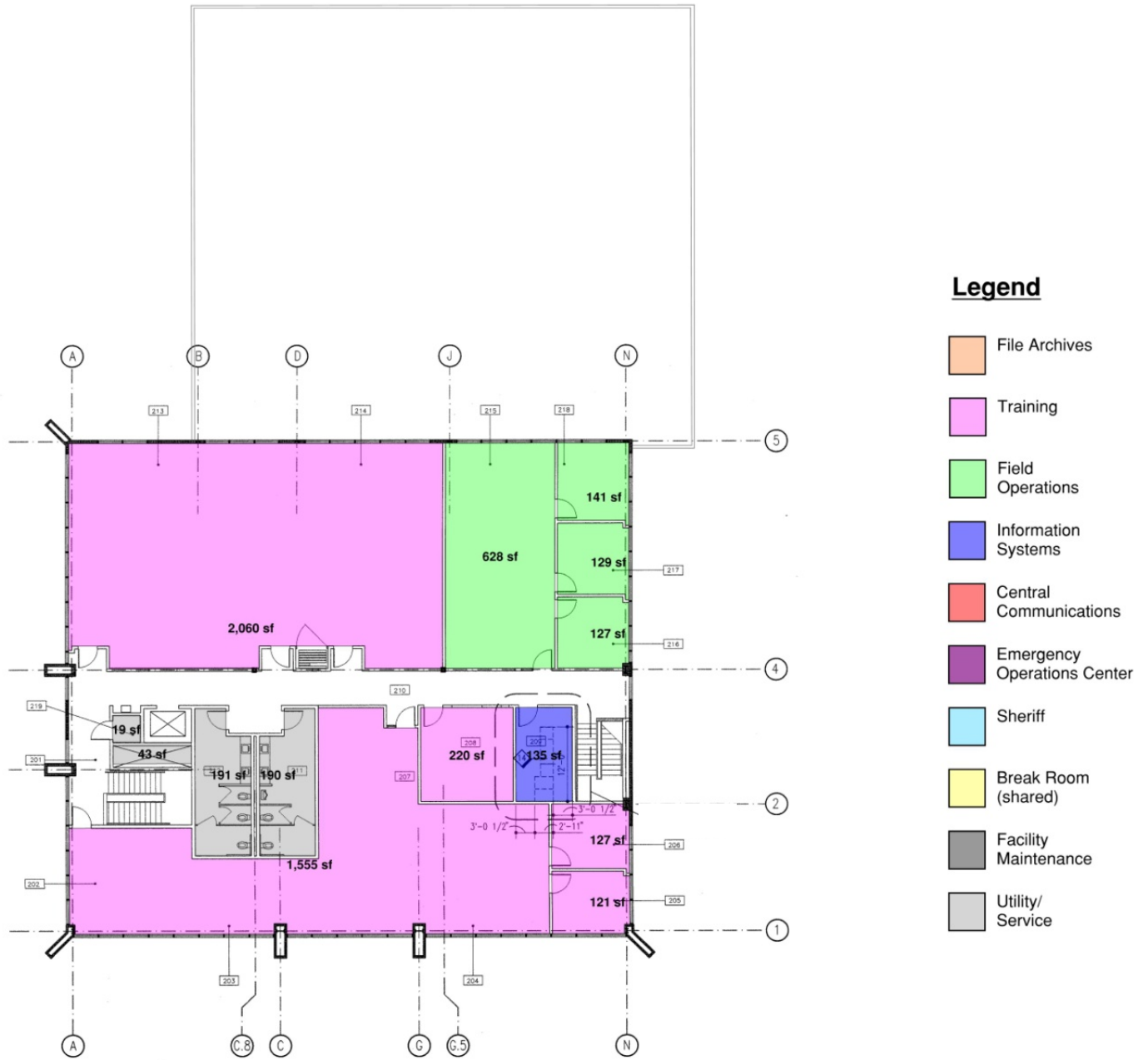
Department/ Function	Current Number of Staff	Future Number of Staff	Current Sq. Feet	Current Needs Satisfied?*	Future needs allowed for?*
Central Communications (Fixed route only)	4	7	1,429	Yes	No
Emergency Operations Center	0	2	353	No	No
Transit Police Services (Sheriff)	25	32	2,097	No	No
Field Operations	18	26	1,585	No	No
Records Storage	0	0	1,708	No	No
Information Systems	1	2	1,290	No	No
Operations Training (not including trainees)	11	15	5,098	Yes	Yes
Breakroom (shared)	na	na	525	Yes	Yes
Facility Maintenance	na	na	261	Yes	Yes
Utility/Service	na	na	1,312	Yes	No
Circulation (approx.)	na	na	4,342	No	No
Total:	59	84	20,000	-	-

*See following sections for detailed explanations.



First Floor Plan (As-Built)

Not To Scale



Second Floor Plan (As-Built)

Not To Scale

A. CENTRAL COMMUNICATIONS

Central Communications (sometimes referred to as Radio Control or the Dispatch Center) coordinates the entire fixed route bus and paratransit operations and security for OCTA. The Dispatch/ Radio Control Center currently has adequate console workstations; five workstations are present for the three dispatchers on duty. The extra two provide room for growth or training. Of the five total, three are the older style and two are the newer style consoles.

- The size of the room is small in comparison to the size and number of workstations; comfortable walking aisles around the workstations are not possible.
- The size of the room will not accommodate future dispatchers that may be required for rail operations, without major remodel of existing walls and relocation of departments and functions in adjacent rooms.
- Fire alarm panels for the building are located within the Dispatch Center. They should be relocated to another area of the building that does not require maintenance personnel or firefighters to enter the Dispatch Center.
- Central Communications staff requested their own restrooms to accommodate the unique job description of the dispatchers.
- A raised access floor is preferred to accommodate the underfloor wiring of the workstations. This will prevent costly sawcutting and trenching of concrete floor when moving the workstations within the room.

B. EMERGENCY OPERATIONS CENTER (EOC)

The EOC is located directly adjacent to the Dispatch Center and is surrounded by offices and a small breakroom. The existing EOC is comprised of a small conference table and event monitors.

- The EOC is relatively small in size. A larger, properly sized room will provide more comfort and may reduce emotional stress during an emergency event. The conference table seats eight, but a flexible system of tables and chairs is preferred.
- The floor plan of the EOC currently functions more as a large hallway and serves as a passage for staff into adjacent rooms. The EOC should be separated in this regard to limit the amount of occupants merely "passing through". This is especially important during an event that requires limited staff within the EOC.
- More wall space is required for maps, white boards, large LCD monitors, and smart boards. This is currently prevented by several doors entering directly into the EOC from surrounding rooms.

- OCTA requires 2 part time offices for the EOC; there is no office space available for this need.
- There is no space for a small EOC conference/policy room.
- The large training room on the second floor is being renovated to serve as a backup Crisis Communications Team room. Ideally it should be located on the first floor adjacent to the EOC, but there is no available space.
- Data outlets mounted on the ceiling above the conference table require staff to climb the conference table or chairs, causing a safety hazard. Hanging cables plugged into these outlets visually distract from viewing presentations on the projector screen.

C. THE TRANSIT POLICE SERVICES (SHERIFF)

The first obvious concern with the Transit Police Services (also referred to as TPS, or the Sheriff's Department) is that their staff is split-up and located in two different areas of the Annex. The administration staff and right-of-way (ROW) deputies are located at the west side of the building, while the sergeants and patrol officers are located at the southeast corner of the building. This proves inefficient for their duties and communication. Other issues include the following:

- The Sheriff's spaces are not adequate to support the anticipated 6 additional officers/staff required for future growth. The size of the administration office area will not allow for additional workstations for future deputies.
- The Briefing Room is combined with the Report Writing room and functions as an overall workroom. The functions of evidence tagging, eating, breaks, briefing, and report writing all occur within this room. This various functions of this room can be distracting, especially during shift changes when additional officers and dogs are present. It is recommended that these functions be located in separate rooms, similar to many police stations.
- The Briefing Room is too small to comfortably accommodate all Sheriff staff during a full department briefing or conference.
- The Report Writing area is too small to accommodate 13 total stations that are required for future expansion. Currently there are 6 workstations.
- Three sergeants are located in one small office. These three officers share two desks. It is preferred they each have their own desk or office. There is no space to accommodate a future fourth sergeant.
- The evidence lockers are currently located in the entrance hallway. This should be located in a separate, secured room. This room should have a countertop and computer workstation within it for logging of evidence.

- The Sheriff Department does not have a centralized file storage area. Files are stored in the Women's locker, some are located in the administration office area, and some located offsite.
- The armory is currently located with the kitchenette, and also used to store radios, dog food, and miscellaneous supplies. The armory should be secured in a separate room. The size of the current room will not allow additional gun safes.
- Locker rooms are undersized for the current number of staff. Rooms will not permit future growth.
- The Men's Locker room has windows and an exterior glass door (with blackout film on the door). For security and safety reasons, this is not ideal.

C.1. K-9 AREAS

- The kennels are located in an outdoor storage area that is not near Briefing/Work room; there is no visual connection between the officers and their respective dogs.
- There are currently three outdoor kennels. A fourth kennel is preferred for visiting or training dogs; available space may not permit this.
- No drains available to capture water and waste when hosing down the kennel cages; canine waste must be washed down towards the parking lot drains.
- The hose bib does not supply adequate pressure, since it appears this hose bib piping has been subsequently added and is undersized.
- A small outdoor "dog run" for is preferred, but space is not available.

D. FIELD OPERATIONS

Field Operations currently has two section supervisors, one office specialist, and 15 field supervisors.

- The Field Operations Department is split-up in different parts of the building causing gross inefficiencies and hinders supervision of certain rooms. The administration office area is on the second floor, while the field supervisor's conference and locker rooms are on the first floor in a "semi-remote" part of the facility.
- The Field Operations office area on the second floor is grossly undersized for the number of occupants, workstations, and computer equipment present.

- The 15 field supervisors share nine workstations. Though not all field supervisors are present in the room at one time due to staggered shifts, occasionally all nine workstations may be in use with one to two people waiting.
- The size of the section supervisors' offices are relatively small to the amount of secured file storage they require within their office.
- There is no space for a future section supervisor if bus service is expanded.
- The radio packs are located in the common office space. All valuable items (radios, laptops, cameras, radar guns) should be located in a secured storage room with visual access, and proper air conditioning for heat load of chargers.
- Tall cubicle partitions prevent observing when field supervisors are present in the room. These tall cubicles are not preferred by the section supervisors.
- The location of the bulk items storage room for Field Operations is inefficient. It is located in the center of the building. When staff restocks supplies or unloads equipment from their vehicles to this area, they must move their vehicles from their dedicated parking area to the opposite side of the building, walk 30-40 feet to an entrance, pass through a hallway, through a second door, and through an interior gate. This storage area is best located on an exterior wall with direct access to a vehicle loading area.

E. OPERATIONS TRAINING

In general, the Annex meets most of the needs and functions of the Operations Training department. Operations Training must be located on a site with the drivers training course and should be located on an OCTA base; this currently occurs at the Garden Grove base. Existing classroom and instructor space is generally adequate for current and future needs. Items for improvement are listed among following the bullet points.

- Size and amenities of both second floor training rooms are adequate. The large training room 219 holds approximately 40 occupants comfortably. The smaller training room 220 holds approximately 25 comfortably.
- Size, quantity, and amenities of the instructor cubicles and the manager office are adequate. Several spare cubicles exist for future growth.
- Training room 149 on the first floor is undersized. It currently holds 16 trainees but 20 is preferred.
- Training room 149 and the Simulator room are on the first floor in a "semi-remote" area of the building. Instructors must exit the building, walk along a sidewalk, and re-enter the Annex at a different entrance to access these rooms. Ideally, all training rooms should be located in the same vicinity of the building.

- The simulator is no longer needed for training; this room can be converted into a “physical training” room.
- Training files are stored outside in a shipping container in driver’s training course; it is preferred these items be stored within the building but there is no available space.
- The second floor storage room for training materials is adequate; but would be more efficient with direct access from training rooms and not across the hallway.
- The GAM Center (digital room) should be larger with countertop space for rolling out large prints.
- Lighting and HVAC of the training rooms are adequate.
- Acoustical qualities of training rooms could be improved, but rooms are generally adequate.
- The ceiling mounted projector in the large training room 219 “wobbles” due to the HVAC unit on the roof.
- Because of the large expanses of windows in the large training room 219, there is no ability to properly darken the room for slide shows. Several window blinds in the large training room 219 are damaged.

F. INFORMATION SYSTEMS / INFORMATION TECHNOLOGY

The existing Garden Grove Annex Building presents several challenges to maintaining a modern information technology infrastructure. Over the years, additional equipment has been installed but the infrastructure (conduits and outlets) has not been upgraded. The facility was not designed for modern IT & IS equipment and the various systems currently used by OCTA personnel, such as:

- Lack of available network ports throughout the building has required the use of additional hardware installed in offices, taking up additional floor, wall, and shelf space.

Many critical systems, such as Computer Aided Dispatch (CAD), Automatic Vehicle Location (AVL), and radio communications for the bus network, operate from this building and rely on head-end equipment in the communication rooms. These rooms, however, suffer from a lack of adequate space, cooling, and environmental protection such as:

- The existing head-end equipment is distributed between three different rooms, with Systems Operations (maintenance workstations) located down the hall in a separate room. Despite the fact that all of the equipment is associated, space constraints have forced the equipment to be separated.
- System maintenance, expansion, and upgrade activities have been greatly hindered by lack of available space. Due to the critical nature of these systems, the existing system must be

kept operational while an upgrade or replacement is installed, tested, and commissioned. This effectively doubles the required space for a system during these times. Some systems that are replaced also contain historical data that must be maintained for several years, taking up additional space.

- Lack of adequate cooling within the communication rooms has led to additional HVAC units being installed within the rooms. These units take up additional space and have been known to be the source of water issues in the room, causing damage to vital equipment.
- The Orange County Sheriff's Department maintains equipment that is located in the same rack as OCTA equipment. Staff working on one system has access to the other, which has led to interference and unintended downtime of various systems. Separation of this equipment is not possible due to space limitations.
- Building lightning protection rods are installed through one of the communication rooms. Although this is designed to protect the building and associated equipment from a lightning strike, a large surge through these rods could cause damage to critical IS equipment installed nearby.
- Although the communication rooms are equipped with a combination of fire detection and fire suppression systems, the sprinkler system has the potential to cause more damage than a fire. A water sprinkler previously discharged in one of the Annex server rooms it required 1-2 months to repair. Modern data centers are equipped with waterless fire suppressants that are designed to protect critical equipment.
- The IT/Communication staff only has one desk space in the Annex. There is no adjacent workstation for visiting IS staff, or training space.
- The large storage room for IS needs additional heavy-duty shelving to efficiently store items and conserve floor space.

G. RECORDS STORAGE

There are two main types of file storage at the Annex.

- Working files and reports: Staff accesses these regularly to perform their job duties. As noted in their respective sections, Field Operations & Sheriff Department do not have adequate space for this type of file storage.
- Long term archived files: These are stored in a relatively large archive file room and adjacent hallway at the north end of the building. This is a shared-use file room with very tall heavy-duty shelving. These rooms are at full capacity, which has prompted the Sheriff department and Operations Training to store their long term files both off-site and in the parking lot (within a shipping container).

VII. CONCLUSION

Generally, the physical building itself is in good working condition and well maintained. The majority of the issues identified in section V, Physical Building, are potentially correctable (if budgets allow), and in themselves are not considered by STV a need for a replacement facility.

However, based on other factors identified in this report, STV considers that the Annex building is *not adequate for OCTA's current and future operational and security needs*. The overall findings of this report demonstrate a replacement facility is the most viable option to meet OCTA's needs. In summary:

- The Annex does not have the physical space to accommodate many of the current needs or future needs of OCTA's core operations.
- Significant costs and disruption to existing operations are required to seismically upgrade to an essential services facility
- Departments are segregated in different areas of the building and/or on different floors. This proves highly inefficient. To resolve this problem, occupants must be removed temporarily from large portions of the building while extensive interior demolition and improvements occur, to provide logical and efficient operational adjacencies.
- Significant costs are required to properly resolve the HVAC capacity, zoning, and distribution issues discussed.
- Because security and operations centers generally contain more IT equipment than a typical office building, significant costs are required to provide adequate number of data and electrical outlets throughout the building.

If a replacement facility is opted, the Annex may be repurposed to house solely the Operations Training department, and long term archived file storage. Based on discussions with OCTA staff and our observations, STV considers that the Annex is adequate for these functions. Interior improvements are recommended to correct floor plan adjacency issues. However, STV recommends that OCTA revisit the recommendations and conclusions of the Owen Group report if the building is to remain currently occupied (see section V.B above). Further studies of the Annex may also be required to determine the extent of non-structural code required upgrades that may be triggered when interior improvements are performed.