



Orange County Fire Authority  
**AGENDA STAFF REPORT**

Board of Directors Meeting  
July 25, 2024

Agenda Item No. 3A  
Discussion Calendar

**Ambulance Transportation/  
Emergency Medical Services System Analysis  
and Request for Proposals for Ambulance Partners**

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**Summary**

This agenda item is submitted to provide the results of the Citygate Emergency Medical Services System Analysis and to seek approval to issue a competitive RFP to research private ambulance partner(s) for ambulance transportation serving the five Exclusive Operating Areas (EOAs) managed by the County of Orange. The timing of this proposed action is essential for alignment with the County of Orange's upcoming competitive process for new Emergency Ambulance Transportation contracts, as outlined in Attachment 1. *The action being requested with this agenda item is only a preliminary step allowing OCFA to continue researching a potential partnership. This action is non-binding, and no final decisions will be requested from the Board until staff returns at a future meeting.*

**Prior Board/Committee Action(s)**

At its regular September 28, 2023, meeting of the OCFA Board of Directors, the Board approved a Professional Services Agreement with Citygate Associates to perform an emergency ambulance system analysis and provide ambulance service options for consideration by the OCFA.

**RECOMMENDED ACTION(S)**

1. Receive and file the Citygate Emergency Medical Services System Analysis report.
2. Direct staff to issue an RFP to identify potential private ambulance partner(s) for ambulance transportation serving one or more of the five Exclusive Operating Areas managed by the County of Orange.
3. Using the results from the RFP, direct staff to design a non-binding public/private partnership(s) to present to the Board of Directors for further consideration at a subsequent meeting, and for potential direction to submit a proposal to the Orange County RFP for the provision of 9-1-1 Basic Life Support emergency ambulance response.
4. Adopt the proposed resolution establishing a written policy in compliance with Health and Safety Code 1797.231.

**Impact to Cities/County**

Assessing feasibility to create a public/private partnership is non-binding and staff will return to the Board for consideration and direction on next steps.

## **Fiscal Impact**

Costs for the completed analysis are funded in the Adopted Budget, including some remaining funds authorized in the contract with Citygate to continue using their services to assist staff in designing potential partnership(s).

Increased Cost Funded by Structural Fire Fund:	\$0
Increased Cost Funded by Cash Contract Cities:	\$0

## **Background**

The experience of the Covid pandemic stressed Emergency Medical Systems (EMS) across the county and brought to light areas in our local system that were fragile under pressure. Covid, along with the annual increase in call volume has prompted OCFA, at the direction of the Board of Directors to review the EMS system as a whole. This includes, but is not limited to dispatch, fire department paramedic response, private Basic Life Support (BLS) ambulance response, hospital capacities and over-all through-put of the EMS system.

Last year, the 132,874 medical responses made up to 75% of the OCFA's entire call volume. These medical responses were handled by OCFA as the Advanced Life Support (ALS) provider and a Basic Life Support (BLS) private ambulance provider, each performing mission-critical functions in a system that demands far greater coordination than currently exists. The current EMS system provides service from different stations, separate dispatch centers and different training and Quality Improvement programs. The only two fire departments in Orange County that do not provide direct daily operational oversight for ambulance services are OCFA and Placentia.

With these concerns in mind, OCFA's professional staff sought the Board's direction to study the ambulance service delivery system and to provide options for the Board's consideration. Rather than running parallel, independent services, partnership and collaboration can provide a better coordinated, more efficient, and resilient EMS response.

### ***Board's Direction to Study the Ambulance Service Delivery System***

At the July 27, 2023, Board of Directors meeting, a scope of work was approved to study the ambulance service delivery system within OCFA's jurisdiction to identify enhancements that can be achieved through the engagement of OCFA as a regional EMS provider. At the September 28, 2023 meeting, the Board awarded a contract to Citygate Associates to perform the study. The Citygate study focused on the following (see Attachment 2):

- Improving response times.
- Improving quality of care.
- Improving sustainability and economics for the cities in OCFA jurisdiction.
- Identifying revenue sources to re-invest into EMS system enhancements.

Citygate identified an ambulance service delivery system within OCFA jurisdiction that is fragmented across County, local governments, multiple private ambulance contractors and a regional fire agency that provides ALS. Our service area is managed through 10 ambulance service contracts, half managed by the Orange County EMS and the other half under individual city management. All 10 of these contracts operate within the OCFA jurisdiction. Each piece of the EMS puzzle is of great value to the EMS system, but what is missing is an entity with the ability to develop critical partnerships that will create efficiencies through collaboration. These efficiencies and collaboration can help build a resilient prehospital system that can evolve to meet the changing needs of the people we serve.

To bring scale and leadership to a fragmented EMS system, a key recommendation from Citygate is to explore public/private partnerships with private ambulance providers. State law authorizes a fire agency like OCFA to enter into a written subcontract with a private ambulance service for the purpose of contracting with the County (Health & Safety Code 1797.231(a)(1).) The first step to implement such a subcontract is to solicit interest in a partnership agreement from private ambulance providers through a competitive RFP process. Per prior Board authorization allowing for expanded services, staff would amend the previously approved Professional Services Agreement with Citygate (resulting from competitive RFP SK2628) to further define the consulting services they will provide to assist OCFA in soliciting proposals and creating non-binding public/private partnership agreements. Staff would then return to the Board later this year for approval of the proposed partnership agreement(s) and direction to submit a proposal to the Orange County RFP for the provision of 9-1-1 Basic Life Support emergency ambulance response.

***Resolution Adopting Policy in Compliance with H&S Code 1797.231 (Attachment 3)***

Health & Safety Code Section 1797.231 (Attachment 4) requires policy parameters to be adopted by a fire agency when entering into a subcontract with private ambulance service providers, ultimately for the purpose of the fire agency contracting with a county for provision of those emergency ambulance services. Health & Safety Code Section 1797.231 clearly delineates the policy requirements to be adopted, all of which OCFA fully supports.

***Current Request***

Staff supports the recommendation by Citygate to assess feasibility and design of public/private partnership(s) with private ambulance providers through a competitive RFP bid process. This process would result in direct negotiations to identify how scale and leadership would improve our EMS system. The design of partnership(s) with private ambulance providers will clarify operational costs and final revenues. OCFA will directly discuss areas of efficiencies that can lead to improvements. Examples of areas to examine are combining dispatch functions, joint training and Quality Improvement, co-location of resources and tiered dispatch and response protocols. OCFA would work to establish agreements for the sharing of ambulance resources between contracted areas and neighboring cities to optimize response times and effectiveness.

Citygate closely examined and estimated revenues in excess of costs with a combined OCFA/private ambulance partnership. Once these revenues are being generated and with a conservative approach, these revenues can be reinvested into this county's EMS system enabling the Board to explore new services that some neighboring agencies are already implementing. The City of Beverly Hills and San Diego fire departments, for instance, are growing their Community Paramedicine programs where EMS personnel are proactively going out into the community to provide services to high volume system users. Additionally, San Bernardino County Fire has established a Nurse Navigation system that places a nurse in the dispatch center to assist low acuity calls for service where an emergency response and ambulance transportation to a local emergency room may not be the level of care that is best for the patient.

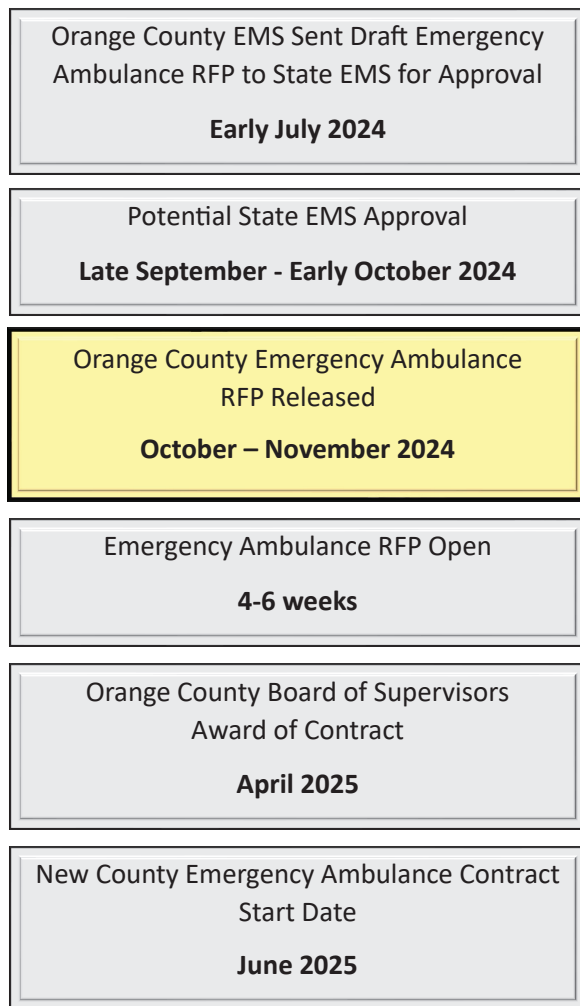
***Recommendation***

It is recommended that the Board direct staff to issue an RFP to identify private ambulance partner(s) for ambulance transportation serving the five Exclusive Operating Areas (EOAs) managed by the County of Orange and design a non-binding partnership to present to the OCFA Board of Directors for further consideration. If staff is successful in designing one or more partnerships, staff will return to the Board for consideration and direction on submitting a proposal to the Orange County EMS RFP with a subcontracted private partner(s).

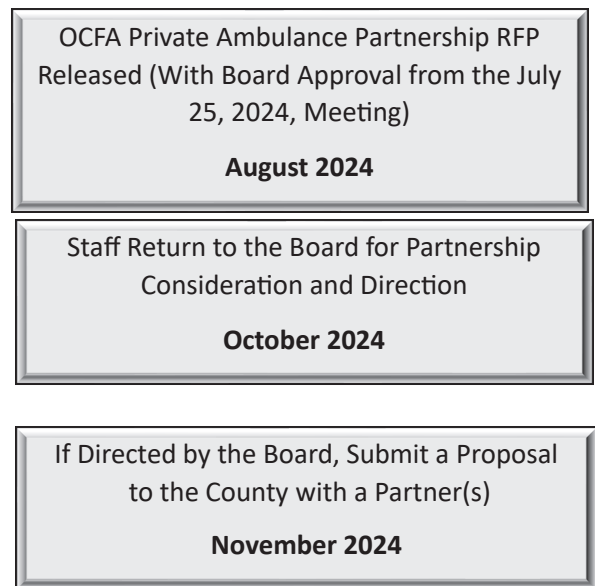
**Attachment(s)**

1. Anticipated RFP Timeline - County of Orange 2025-2030 9-1-1 Basic Life Support Emergency Ambulance Transportation Services
2. Citygate Emergency Medical Services System Analysis
3. Proposed Resolution no. 2024-05
4. CA Health and Safety Code 1797.231

### Orange County EMS Estimated Timeline



### OCFA Estimated Timeline





**CITYGATE**  
FIRE & EMS

**EMERGENCY MEDICAL  
SERVICES SYSTEMS ANALYSIS**

**ORANGE COUNTY FIRE AUTHORITY**

**JULY 18, 2024**



**CITYGATE**  
FIRE & EMS

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## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
<b>Executive Summary</b> .....	<b>1</b>
Policy Choices Framework.....	2
Regional Approach Considerations .....	2
Options for OCFA to Contribute to the Improvement and Sustainability of the Ambulance System.....	4
Recommendations.....	4
Findings .....	6
<b>Section 1—Introduction and Project Background</b> .....	<b>9</b>
1.1 Report Organization .....	9
1.2 How the Work was Completed .....	9
<b>Section 2—Background – Current Structure and Delivery Review</b> .....	<b>11</b>
2.1 Orange County Fire Authority Overview.....	11
2.2 Provision of Ambulance Care Overview.....	11
2.3 OCFA EMS & Training Department .....	13
2.4 OCFA Ambulance Coordination and Integration Needs .....	15
2.4.1 What Does Coordination Mean in First Responder and Ambulance Services? .....	17
2.4.2 A Systems Approach.....	18
<b>Section 3—Ambulance Service Demand Analysis</b> .....	<b>22</b>
3.1 The Ambulance Deployment Analysis.....	22
3.2 Ambulance Deployment Analysis Findings.....	26
3.2.1 EOA A .....	26
3.2.2 EOA B.....	27
3.2.3 EOA C.....	27
3.2.4 EOA D .....	27
3.2.5 EOA E.....	27
<b>Section 4—Partnership Ambulance Economic Analysis</b> .....	<b>29</b>
4.1 Public/Private Partnership Economic Analysis Framework and Goals .....	29
4.2 Ambulance Service Integration Improvements .....	29
4.3 Key Economic Metrics and Inputs.....	29
4.4 OCFA Coordination with a Private Ambulance Partner .....	30
4.5 Ambulance Revenue-to-Costs Modeling .....	30
4.5.1 California Ambulance Provider Medi-Cal Payments History and Current Rate Structure.....	31
4.5.2 Ambulance Public Provider Payments (PPIGT).....	32
4.5.3 Ambulance Payment Categories and Counts in EOA Areas A-E.....	33
4.5.4 Ambulance Payments to Fire Departments and OCEMS .....	35

4.5.5	OCFA EMS & Training Department Staff Impacts for Ambulance System Coordination.....	36
4.5.6	County EOA Areas A-E Integrated Economic Forecast.....	37
<b>Section 5—Overall Evaluation and Recommendations.....</b>		<b>39</b>
5.1	Regional Approach Considerations.....	39
5.2	Options for OCFA to Contribute to the Improvement and Sustainability of the Ambulance System.....	40
5.3	Recommendations .....	41

**Appendices**

- Appendix A: Map Atlas
- Appendix B: EOA Deployment Analysis Exhibits

**Table of Tables**

Table 1—OCEMS-Approved Transport Ambulance Rates.....	34
Table 2—Payor Type.....	34
Table 3—Capitated Payment Amounts.....	35
Table 4—Integrated Economic Forecast.....	37
Table 5—Operating Charges.....	38

**Table of Figures**

Figure 1—Systems Thinking and Integration in Ambulance Systems .....	3
Figure 2—OCFA EMS & Training Department Organizational Chart – EMS Functions .....	15
Figure 3—Systems Thinking and Integration in Ambulance Systems .....	18
Figure 4—Operations Diagram: Response Activities.....	19
Figure 5—Operations Diagram: Readiness and Response Metrics .....	20
Figure 6—OCFA Region B—Incident Hot Spot Map.....	24
Figure 7—OCFA Region B—Incident Bar Chart Map .....	24
Figure 8—OCFA Region B—Incident Scatter Plot Map .....	25
Figure 9—OCFA—Demand for One Day Area B.....	25
Figure 10—OCFA—Ambulance Count by Hour – Area B.....	26



## **EXECUTIVE SUMMARY**

The Orange County Fire Authority (OCFA) retained Citygate Associates, LLC (Citygate) to conduct an Emergency Medical Services (EMS) Systems Analysis. The study provides recommendations to enhance the EMS patient transportation system in OCFA’s jurisdiction. As the ambulance transport system evolves throughout the state, OCFA desires to understand operating and economic options so OCFA can continue to contribute to the improvement and sustainability of the ambulance system in Orange County (County). OCFA defined the study’s work around two objectives:

1. Provide recommendations to enhance the EMS patient transportation system in Orange County using a regional approach focused on:
  - Improved response times.
  - Improved quality of care.
  - Improved sustainability and economics for the cities within OCFA that under legacy transport rights contract themselves for ambulances in addition to in the five County-managed Exclusive Operating Areas (EOAs).
  - Identify revenue sources to re-invest into identified system enhancements.
2. As the ambulance transport systems evolve throughout the state, outline options for OCFA to contribute to the improvement and sustainability of the ambulance system in Orange County, taking into consideration:
  - Ambulance contract operational oversight as needed by an independent city and OCFA separate and distinct from the County’s clinical and contract compliance needs.
  - Regional program management options through public/private partnerships to provide single point, seamless daily operational oversight within OCFA’s operational area.
  - Consideration of an OCFA public/private bid partnership bid on one or more County EOA transportation areas.

Throughout this report, Citygate makes key findings, and, where appropriate, specific action item recommendations. Overall, there are 17 key findings and three specific policy action item recommendations.

## **POLICY CHOICES FRAMEWORK**

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As the OCFA Board of Directors (Board) understands there are no mandatory federal or state regulations directing fire service response times and outcomes. The level of service provided, and any resultant costs, are the choice of local communities in the United States. However, in California the provision of ambulance services is more complicated. The County is the final policy maker, not the OCFA.

While small, local ambulance companies were typical 50 or more years ago, the advent of advanced training and the resultant need for quality control caused California to pass legislation establishing the Emergency Medical Services (EMS) Act in 1980. It created the California EMS Authority to provide oversight of the planning, implementation, and evaluation of EMS and ambulance systems. Local control was passed to the counties. Local EMS Agencies (LEMSAs) then managed via mandatory countywide plans ensuring adequate patient and transportation care.

To stabilize an area from having too many ambulances while other areas within a county may have too few, a solution evolved. The State used an exemption to the Sherman Anti-Trust Act to allow the counties to create Exclusive Operating Areas (EOAs or franchises) where, through competitive bidding, one ambulance provider would be awarded an exclusive contract for a period of years.

In Orange County, there are three types of ambulance system provision, two of which use contracts with local, well-established private ambulance companies. Some cities, such as Huntington Beach, provided fire service ambulances before 1980 and are grandfathered to continue. Other cities, such as Buena Park, had contracted for private ambulances for decades, and have rights to continue. In areas where there were no grandfathered operations, the County EMS Agency manages five EOAs and competitively bids them. The next bid cycle is approaching later this year. In four of the EOAs, ambulances are staffed at the Basic Life Support (BLS) level and the fire engines provide Advanced Life Support (ALS or paramedic) in the OCFA area. In County EOA-A, ambulances are staffed at the Basic Life Support (BLS) level, but Placentia contracts for non-transport paramedic delivery from an ambulance company, not its firefighters.

This report discusses how, if found feasible by the Board of Directors, OCFA could offer system integration enhancements or submit a type of bid known as a public/private partnership for the County EOAs. If OCFA chooses to do so, it must submit a proposal as any other public or private entity would, under the County's framework and California statutes. This policy framework is important regarding how the Board might choose to proceed since the Board does not have *independent* policy control, or the final decision over the service provider chosen for the EOAs.

## **REGIONAL APPROACH CONSIDERATIONS**

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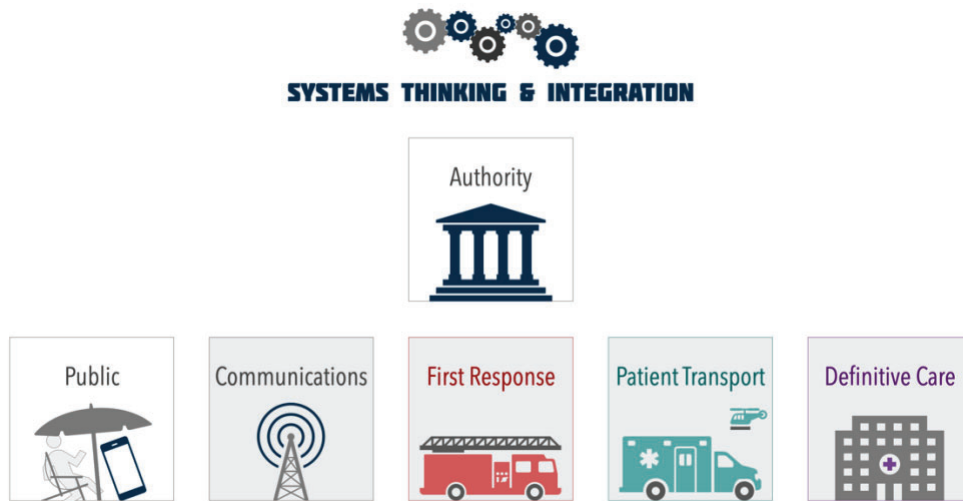
As the findings in this study identify, the current ambulance service delivery system has fragmented operational and economic abilities across County, local government, and private

contractors. There are ten ambulance service areas under either County or city management. Considering the scope of the OCFA service area today, there is little to suggest that a newly designed, purpose-built organization and *operational* coordination would have so many “owners” under different contracts and responsibilities. While mutual aid exists, it can be slow with real imbalances. Nothing in the legacy transport system was designed for high volume, borderless economic efficiencies. In general:

- ◆ The system is not broken; patient care is delivered.
- ◆ The system has great private sector partnerships that should continue.
- ◆ The system stakeholders care, are patient centric, and are stuck in a decades old bureaucratic framework.
- ◆ The system is not built for economic efficiencies under a single coordinating provider in a large service area. In many areas, contract boundary limits stifle immediately sending the closest, best-fit resource. The current multi-provider and County agency ambulance system is not an integrated system.
- ◆ No single entity “owns customer service” from receiving the 9-1-1 call, to the patient being cared for and released in the field or transported to a hospital.

A systems approach can visualize all steps needed, from call to disposition, along with each entity accountable for each step as shown in the following image.

**Figure 1—Systems Thinking and Integration in Ambulance Systems**



In a best-practices-based system, under a single entity, performance metrics can be designed for each of the five macro activities in a way that enables immediate *adaption and resource*

*management each hour, not days later via a bureaucracy interaction.* The emergency services owner of a public/private system uses metrics and stated outcome objectives to design, operate, and continually improve the system. Assessing quality of service and system performance is critical to sustained success and economic efficiency.

## **OPTIONS FOR OCFA TO CONTRIBUTE TO THE IMPROVEMENT AND SUSTAINABILITY OF THE AMBULANCE SYSTEM**

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As this study's technical operational and fiscal research found, OCFA, despite its large service area, is not being used as an integrator and hourly/daily single point of operational control in a system of fire paramedic first response and ambulance transport. Key themes identified are:

- ◆ The ambulance demands and challenges vary across the EOAs and no one EOA can or should be served without adjoining area ambulances being needed to level out readiness capacity at peak hours of the day.
- ◆ OCFA's daily staffing is not being used to provide immediate-need surge ambulances at peak demand points or for mass causality incidents.
- ◆ The five County EOAs in total need to operate *at a minimum* from a low of 26 ambulances to high of 31 across a 24-hour-per-day, year-round plan.
- ◆ There is no reason for separate ambulance company dispatching centers; OCFA can provide these services, as Ventura County Fire or the City of San Diego have for their ambulance contractors for years.
- ◆ An integrated system within OCFA could provision and coordinate hourly and quality control patient care from the receipt of the 9-1-1 call to arrival at a hospital.
- ◆ The newer Public Ambulance Provider Inter-Governmental Transfer (PPIGT) enhanced Medi-Cal payment could add approximately \$6.3 million in net new revenues if a public agency operated the County EOA's ambulance service and subcontracted to a private provider. These new revenues are not accessible or provided to private ambulance contractors.
- ◆ There is sufficient revenue room, *even without PPIGT-added revenues*, to negotiate a successful public/private partnership within available revenues, avoiding a public agency subsidy and allowing cost savings to be used for EMS delivery enhancements.

## **RECOMMENDATIONS**

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The fundamental policy themes that drive the Board's considerations on the issues researched are:

1. Can a more direct involvement of OCFA, given its large service area, deliver day to day improvements in coordination and delivery of ambulance care?
2. Would a public/private partnership provision of ambulance care tightly combine the best of public safety and the private sector for services, redundancy, and fiscal stability?

There are many positive ways the OCFA could bring its scale and leadership to smooth out and improve the ambulance transport system. It should try to do so. Exploring options, with considered due diligence, for fiscally responsible improvement is good government.

Even without the supplemental PPIGT Medi-Cal payments, there should be estimated revenues of \$1M to \$3M in excess of costs with a combined OCFA / private ambulance partnership. With the enhancement of PPIGT revenues of an estimated \$6,368,066, there are significant additional revenues for enhanced EMS services as the County, State, and health care insurers enable delivering them. However, to gain these additional revenues, the public provider becomes fully responsible to keep ambulance operations within net revenue and not incur a General Fund subsidy. The ambulance provider is a contractor, to be paid regardless by the public provider if they perform to contract requirements. For this reason, Citygate suggests public providers establish an Enterprise Fund within their agency budget to separate and track all charges and revenues in the ambulance system.

In considering these recommendations, if OCFA chooses to attempt to establish a public/private ambulance partnership, the next nonbinding step is to open an OCFA RFP bid process to competitively select private ambulance partners and to design a partnership whose operational costs and final revenues must be presented to and approved by the OCFA Board of Directors. Assessing feasibility is not yet a binding commitment to create a public/private partnership.

Based on the research-driven findings in this study and our knowledge of EMS systems in California, overall patient care can be improved beyond being faster or better. More importantly, an integrated system can be much more *agile and resilient*, allowing it to pivot immediately using the full capabilities of OCFA to mitigate unplanned resource demand, shortages, and impacts by natural events. Increased economic efficiencies in a public/private partnership (even more so with public provider federal payments) will allow stronger ambulance deployment which improves access to care for everyone. Citygate offers the following recommendations to address the OCFA's two key questions.

**Recommendation #1:** OCFA should add a small number of staff positions for increased ambulance oversight on behalf of its deployment in the County EOA areas A through E and for the five legacy transport rights cities inside OCFA that do not have the EMS ambulance contract management expertise.

**Recommendation #2:** Given the need for integration and the promising economics, the OCFA should consider constructing a public/private partnership to bid the County EOA service areas in later 2024.

**Recommendation #3:** In constructing a public/private partnership, and consistent with the newest state laws on EMS, the OCFA Board should direct staff to include in the partnership design discussions:

- Do what is right for patient care.
- Provide positive working conditions to increase stability in the ambulance workforce and strive to make it a transition step for some into the OCFA
- Strive to work with at least two ambulance companies.
- When revenues exceed operating expenses, include maintaining an operating reserve for billing downturns, then direct the excess revenues into enhanced neighborhood-based EMS care or access to alternatives other than emergency room care.

## **FINDINGS**

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The following findings are provided in the order they are technically provided in this report; as such, this is *not* a list of priorities or severities.

**Finding #1:** The five ambulance contract EOAs managed by OCEMS contain 1,221,393 residents protected by OCFA.

**Finding #2:** The five cities inside OCFA with legacy transport contract management rights account for another 721,426 residents.

**Finding #3:** The combination of the five ambulance EOAs plus the five legacy transport rights cities inside the OCFA total 1,942,819 residents, and 97 percent of all OCFA EMS responses.

**Finding #4:** In 2023, OCFA's EMS responses were 75 percent of all demand. OCFA is the largest provider of pre-hospital EMS in the County and has a significant interest in the operation of ambulance services.

- Finding #5:** With 132,874 EMS responses in 2023 that include a minimum of one patient each, if OCFA were a hospital emergency department, it would have been the 12<sup>th</sup> busiest in the United States.<sup>1</sup>
- Finding #6:** The provision of pre-hospital EMS and ambulance transport within the OCFA service area is fragmented between a County agency, the OCFA, five ambulance contracting cities, and two private ambulance contractors to the County and five cities.
- Finding #7:** The fragmentation of EMS delivery between the County, cities, and the OCFA creates a large, complex set of overlapping dependencies to keep the system stable.
- Finding #8:** The informal aspect of coordination creates a real burden on the different providers without a clear, integrated conflict resolution pathway that always keeps the patient first.
- Finding #9:** The current fragmentation of responsibilities does not scale well to current or future system volumes. A fresh-start design would have one process owner from 9-1-1 call to patient delivery to appropriate care. That process owner would have all the digital data and be transparent to patients, public officials, and rate payers regarding quality of service and cost.
- Finding #10:** The ambulance demands and challenges vary across the EOAs and, while each can have a singular deployment plan, no one EOA can or should be served without adjoining area ambulances being needed to level out readiness capacity at peak hours of the day.
- Finding #11:** The topography and limited road network on the edges of the major population clusters will require more ambulances to maintain response times and meet minimum demand.
- Finding #12:** For economic analysis in this study, the five EOAs in total need to operate *at a minimum* from a low of 26 ambulances to high of 31. To that quantity, some peak-hour readiness units should additionally be deployed in the areas with the highest demand and simultaneous incident rates.
- Finding #13:** The Public Ambulance Provider Inter-Governmental Transfer (PPIGT) enhanced Medi-Cal payment could add approximately \$6.3 million in revenue if a public agency operated the County EOA's ambulance service and subcontracted to a private provider.

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<sup>1</sup> OCFA 2023 Statistical Annual Report and <https://www.beckershospitalreview.com/rankings-and-ratings/hospitals-with-the-most-ed-visits-in-2022.html>

- Finding #14:** The PPIGT payment program is voluntary in California and is fragile. The PPIGT revenues should **not** be expected to balance costs for minimum ambulance services. The enhanced revenues should be used first to establish a modest reserve fund for billing downturn events and, second, for EMS enhancements for EMS needs and patient care destination diversion programs.
- Finding #15:** The estimated collected revenue for FY 2024/2025 in County EOA Areas A through E range from a low of \$51,688,221 to a high, with PPIGT included, of \$58,056,288.
- Finding #16:** The revenue model results are enough to strongly indicate there is sufficient revenue room, *even without PPIGT added revenues*, to negotiate a successful public/private partnership within available revenues, avoiding a public agency subsidy.
- Finding #17:** If total revenues, more so with the PPIGT added revenues, exceed operating expenses, they provide resources for system enhancements.



## SECTION 1—INTRODUCTION AND PROJECT BACKGROUND

The Orange County Fire Authority (OCFA) retained Citygate Associates, LLC (Citygate) to conduct an EMS Systems Analysis. Citygate Associates, LLC's (Citygate) detailed work product for the Orange County Fire Authority (OCFA) is presented in this volume. Citygate's scope of work and corresponding Work Plan was developed consistent with Citygate's Project Team members' experience in fire and EMS service delivery and administration. Citygate utilizes California State EMS statutes and regulations, those of the County of Orange EMS Agency, along with various national publications as best practice guidelines.

### 1.1 REPORT ORGANIZATION

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The technical sections of this report review the EMS system partners' delivery of services inside OCFA's jurisdiction for operational and day-to-day coordination. Next, an ambulance deployment (capacity or need) technical review is provided to measure the likely need and performance objectives of the ambulance transport system in the County EOAs. Based on operating needs, a fiscal section then reviews the revenues and economics of the current and possibly different ambulance transport systems regarding not only status quo viability, but whether there are revenues available for enhanced services and regional coordination. The last section provides an overall analysis of *implementable* options available to the OCFA Board with resultant recommendations tied to the existing regulatory structure and revenues.

This report cites findings and makes recommendations, if appropriate, that relate to each finding. Findings and recommendations are numbered sequentially.

### 1.2 HOW THE WORK WAS COMPLETED

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This study utilized deep technical data for operational demand and response performance across diverse geography and population densities for both current system coordination and patient care improvements. The study also utilized input and data as necessary from the currently contracted ambulance companies and the Orange County Local EMS Agency (OCEMS). All the partner agencies cooperatively participated by sharing viewpoints and data as needed. Citygate obtained digital EMS incident data from the OCFA dispatch center and operating economic data from OCEMS. Citygate also compared some of the County EOA revenue economics with data elsewhere in Orange County. The economic analysis considered the regulations and current policies for ambulance transport payments in California by Medicare, Medi-Cal, and commercial insurance companies.

Both OCFA and OCEMS provided geographic mapping data as needed. In addition, Citygate has been updating OCFA's Standard of Response Cover (SOC) deployment in parallel.

Citygate analyzes fire crew and deployment in detail, but the calculated hour-over-hour need for ambulances at different times of the day and the need to generate a rule-compliant private sector work schedule is also specialized. Given this, Citygate has a subcontract partner, BrandtVX, that has the detailed computational models necessary for ambulance crew deployment.

Both firms obtained a tremendous quantity of EMS data from the OCFA dispatch system by which to model ambulance crew deployment. Thus, this study leveraged deep analysis into all OCFA's demands by local area for 9-1-1 services, risks, and populations to be protected. The results of this study are based on a solid technical understanding of the system today and growth expected in the OCFA's operating area.

## SECTION 2—BACKGROUND – CURRENT STRUCTURE AND DELIVERY REVIEW

### 2.1 ORANGE COUNTY FIRE AUTHORITY OVERVIEW

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OCFA was formed in 1995 as a Joint Powers Authority (JPA) and is an independent entity similar to special districts under California statutes. The current service area includes 23 cities and the unincorporated County areas. A 25-member Board of Directors governs OCFA via its appointed Fire Chief. At the end of 2023, OCFA’s services were organized across seven divisions, eleven battalions, and 78 fire stations. The primary staffed first response units include 68 engine companies, 18 truck companies, and another 10 specialty apparatus. The year-round daily emergency unit staffing was 374 personnel. The 2023/2024 General Fund budget was \$494,023,809.

OCFA protects 586 square miles, a resident population of 1,942,819. In 2023, OCFA responded to 173,344 incidents, or a rate of 475 per day or 20 per hour. Its command, control, operations, and business services units are scaled to provide the right care to the needed incident within response times for best practice outcomes. In times of local or wide-area disasters, OCFA has its own disaster plan and Department Operations Center. It must coordinate with the 23 cities and County emergency operations centers. It sends and receives local and wide-area mutual aid daily with its partnering fire departments.

In the attached Map Atlas, Maps 1–3 show the OCFA jurisdiction, the fire station locations, and the resident population densities it protects.

### 2.2 PROVISION OF AMBULANCE CARE OVERVIEW

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As a result of the EMS system regulatory environment, over many decades the delivery of 9-1-1 system paramedic care and ambulance transport across Orange County has been provided by fire departments and private ambulance companies. The EMS system partners chose to deliver paramedics to 9-1-1 incidents via fire departments and then the private ambulance companies, staffed with Emergency Medical Technicians (EMTs), transport patients as needed.

Map #3 shows the three types of ambulance delivery: firefighters on ambulances; cities contracting with an ambulance provider; and OCEMS contracting and providing oversight to five County designed EOAs, which include cities and unincorporated areas.

All five EOAs, as shown in Map #4, are inside the OCFA service area, except for the City of Placentia in EOA-A which provides its own fire services. As a result of ambulance company mergers over the decades, there are two companies providing 9-1-1 emergency ambulances to County EOAs A-E: Emergency Ambulance and Care Ambulance (now owned by Falck, a multi-national corporation).

**Orange County Fire Authority**  
Emergency Medical Services Systems Analysis

The following table lists the key demographic factors about the five County-contract-managed EOAs and the cities inside the OCFA with legacy transport rights to self-manage their own ambulance contracts separate from the County (called legacy transport rights agencies after California Health and Safety Code Section 1797.201). The table cites the resident population of each area, the total OCFA EMS incident dispatches in each area for 2023, and the area’s EMS incident count as a percent of all OCFA EMS responses. The incident count is any EMS response, transported or not.

<b>EOA</b>	<b>Cities Included</b>	<b>Population</b>	<b>EMS Incidents</b>	<b>% of OCFA EMS Incidents</b>
<b>Region A Emergency Ambulance</b>	Yorba Linda and unincorporated/county islands: Brea unincorporated, Tonner Canyon, Chino Hills State Park, County Club, Fairlynn, and Placentia (data here <i>exclusive</i> of Placentia)	70,800	3,847	3%
<b>Region B Care Ambulance</b>	Cypress, La Palma, Los Alamitos, Seal Beach, Stanton, and unincorporated/county islands: Rossmoor, Bolsa Chica, Midway City, Carmel/Lampson, Dale, Augusta, Katella/Rustic, Mac-Syracuse	172,396	13,758	10%
<b>Region C Care Ambulance</b>	Irvine, Tustin, Villa Park, and unincorporated/county islands: John Wayne Airport, Irvine Sphere of Influence, Tustin, Cowan, Lemon Heights, North Tustin (Orange and Tustin portions), Villa Park, Silverado Canyon, El Modena, Lincoln/Glassell, North El Modena, Olive Heights, Orange Park Acres, Santiago Creek)	447,827	21,733	16%
<b>Region D Care Ambulance</b>	Laguna Hills, Laguna Niguel, Laguna Woods, Aliso Viejo, Dana Point, and unincorporated/county islands: Aliso Woods, Aliso Canyon, unincorporated Laguna Wilderness, Emerald Bay	203,417	17,548	13%
<b>Region E Care Ambulance</b>	San Juan Capistrano, Rancho Santa Margarita, Mission Viejo, Lake Forest, and unincorporated/county islands: Ortega Highway, Trabuco, O’Neill Park, Las Flores, Coto de Caza, Modjeska, Upper Trabuco/Cooks	326,953	19,972	15%
<b>Region A-E Totals</b>		<b>1,221,393</b>	<b>76,858</b>	<b>57%</b>
<b>Legacy Transport Cities</b>	Garden Grove, Santa Ana, Westminster, San Clemente, and Buena Park	721,426	53,419	40%
<b>Total All OCFA</b>		<b>1,942,819</b>	<b>130,277</b>	<b>97%</b>

The OCEMS paramedic model requires two paramedics be on each ALS unit, almost all of which, including OCFA, are on neighborhood-based fire engines, ladder trucks, or squads. When a more

seriously ill patient requires paramedic care, one or both fire paramedics accompanies the patient to the hospital. Less acute patients are transported by the EMT ambulances. There are only two fire departments in Orange County that *do not* directly transport patients: OCFA and Placentia.

- Finding #1:** The five ambulance contract EOAs managed by OCEMS contain 1,221,393 residents protected by OCFA.
- Finding #2:** The five cities inside OCFA with legacy transport contract management rights account for another 721,426 residents.
- Finding #3:** The combination of the five ambulance EOAs plus the five legacy transport rights cities inside the OCFA total 1,942,819 residents, and 97 percent of all OCFA EMS responses.
- Finding #4:** In 2023, OCFA’s EMS responses were 75 percent of all demand. OCFA is the largest provider of pre-hospital EMS in the County and has a significant interest in the operation of ambulance services.

### **2.3 OCFA EMS & TRAINING DEPARTMENT**

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OCFA is the Advanced Life Support (ALS or Paramedic) service provider for 23 cities and unincorporated Orange County areas operates from 78 fire stations. Paramedic first response is handled by a combination of paramedic engines, trucks, and four squads. OCFA’s career-staffed stations deploy with two paramedics on the primary firefighting/rescue units.

Providing paramedic care is a significant responsibility for any agency, public or private. Overall, OCFA employees 722 paramedics of all ranks and another 523 Emergency Medical Technicians (EMTs). The EMS & Training Department (Department) of the OCFA provides emergency medical care quality oversight, employee training, and logistical support programs to all OCFA employees providing direct patient care or supporting those who do.

The EMS system has possibly the most stringent regulatory requirements with which OCFA must comply. The reason for regulatory compliance and quality is stated in two words—patient care. OCFA paramedics and EMTs provide *healthcare* and mistakes can worsen a patient’s condition. This medical care service is the largest service provided by any section of OCFA. As such, the OCFA Board of Directors and Executive Management manage EMS as would any other large *healthcare provider*.

**Finding #5:** With 132,874 EMS responses in 2023 that include a minimum of one patient each, if OCFA were a hospital emergency department, it would have been the 12<sup>th</sup> busiest in the United States.<sup>2</sup>

The EMS & Training Department staff hold the trust for quality patient care just as passionately as a field care giver does. Department staff know that quality patient care starts with employee training and appropriate equipment and then progresses through follow-up oversight. The current OCFA EMS & Training Department contains a total 18 fulltime personnel with a shared Assistant Chief over EMS & Training Department, as follows:

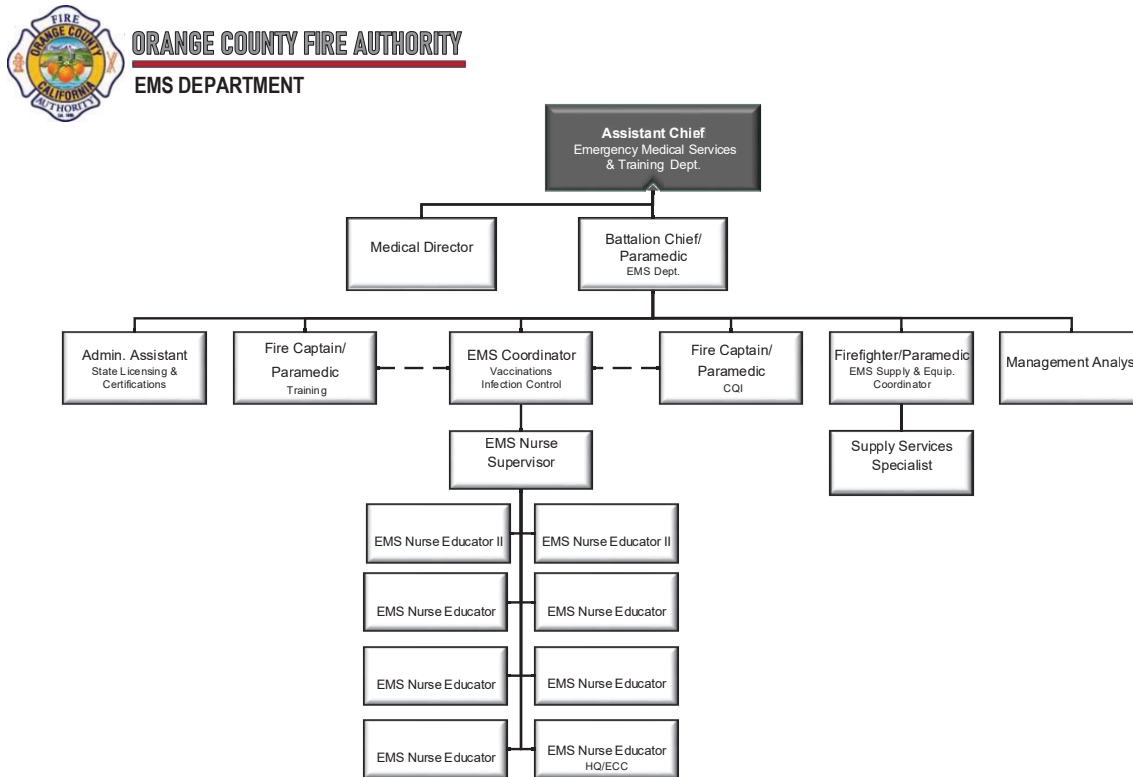
- ◆ .5 Assist Chief of EMS (Training)
- ◆ 1 Medical Director
- ◆ 1 Battalion Chief
- ◆ 1 Management Analyst
- ◆ 1 EMS Coordinator
- ◆ 1 Nurse Supervisor
- ◆ 8 Nurse Educators
- ◆ 2 Fire Captains
- ◆ 1 Administrative Assistant
- ◆ 1 Firefighter/Paramedic
- ◆ 1 Supply Services Specialist

The following is the EMS & Training Department’s organizational chart for the EMS-related functions only. This shows the scale of the existing Department and, considering the specialty capabilities in place, that it is capable, with small additions, of managing one or more ambulance contracts.

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<sup>2</sup> OCFA 2023 Statistical Annual Report and <https://www.beckershospitalreview.com/rankings-and-ratings/hospitals-with-the-most-ed-visits-in-2022.html>

**Figure 2—OCFA EMS & Training Department Organizational Chart – EMS Functions**



6/26/2024

The EMS & Training Department provides all EMS training, quality assurance oversight, medication and specialty supplies, and interagency coordination. The OCFA Medical Director provides clinical guidance and oversight to both line care givers and dispatchers. The EMS Assistant Chief, Battalion Chief, and EMS Coordinator work with OCEMS, the State EMS Authority, area fire departments, and the 9-1-1 transport ambulance companies.

## 2.4 OCFA AMBULANCE COORDINATION AND INTEGRATION NEEDS

The current BLS ambulance system functions within a decades old model structured by 40-or-more-year-old regulations that could not have foreseen the Orange County of today, nor the high incident volume demands on EMS. These structures predated the consolidation of fire services into what became the OCFA. When paramedicine was added to pre-hospital care, the populations were smaller, and ambulances were dispatched for serious emergencies. The overall system volume was a fraction of that found currently. Multiple, smaller ambulance companies served communities across the southland. In communities where fire departments had not been operating

ambulances for decades, the private companies could overlap their service areas (competing even for incidents or territory), or choose to not serve less profitable, lightly populated areas.

The EMS Act of 1980 was designed to bring the provision of ambulance service and providers into a more organized system. The creation of county EMS agencies, and their resultant countywide EMS plans requiring periodic state agency review, did just that. Since 1980, ambulance companies have also merged or quit the business. EMS care became very advanced and, with it, needed complexity for training, quality oversight and the policy direction for equitable response times to all similar population density areas.

By 2024, OCFA provides the first responder paramedic care for a resident population of 1.9 million people, which is 60 percent of the County not counting employment, people in cars, mass transit, or tourism. The private 9-1-1 response ambulance companies for OCEMS and city competitive contracts have reduced to two – CARE (owned by Falck International) and Emergency Ambulance. In addition to the five OCEMS-managed EOAs inside OCFA, there are five other cities within the OCFA first responder system with legacy transport rights to manage their own ambulance company contracts:

- ◆ Buena Park – Emergency Ambulance
- ◆ Garden Grove – Falck
- ◆ San Clemente – Falck
- ◆ Santa Ana – Falck
- ◆ Westminster – Emergency Ambulance

At present, the ambulance companies have no contractual obligations directly with OCFA; their performance-based contracts are with the County or the legacy transport rights cities. When there are issues that cause a delayed ambulance response or require quality or logistics follow-up with OCFA, the ambulance companies and, as needed, the County and cities must informally coordinate.

The County has contractual requirements for response times and quality of care, but that data is kept by the ambulance companies and given as required to the County. At present, most, if not all the five cities, have no EMS-experienced city hall managers that are at ease with ambulance contract management. Some are now informally asking OCFA, as their fire department, for assistance. However, as with the OCEMS-managed contracts, OCFA does not have a contractual standing with the ambulance companies.

Incident response data is now digital, but when provided to others, data cleaning and the application of measurement rules can create final measurement differences. There is little agency-to-agency digital verification of data quality and practices. Thus, OCFA has the primary paramedic



delivery responsibilities but does not have complete end-to-end data and quality control from the 9-1-1 call to patient arrival at a hospital.

#### **2.4.1 What Does Coordination Mean in First Responder and Ambulance Services?**

1. Understanding the daily ambulance deployment plan by hour and the stresses on that plan.
2. Ability to see a regional, big picture, emerging change in ambulance demand and ability to redeploy ambulances without being limited by artificial city or EOA boundaries. Examples include weather events, freeway closures, wide-area emergencies, hospital emergency rooms going on bypass, mass casualty incidents, staffing shortages due to illness, etc., to name a few.
3. Ability to quickly surge or adjust crews – When ambulance deployment is under stress, OCFA has many more first responder crews and paramedics on duty than all the ambulance companies, even at peak demand hours of the day. OCFA has no means to *immediately* surge fire paramedic crews onto reserve ambulances to maintain equitable neighborhood response times. The ambulance companies can call personnel back to work, which takes time, or happen to have crews coming on/off duty. These methods are not robust or immediate, and they lack single command and control coordination.
4. Ability and access to document and improve response – When there is an unusual occurrence that impacts response time, communication between agencies, or patient care, there is no one management and data custody process to intervene, learn, document, and immediately improve if needed. OCFA staff must find and coordinate with private ambulance supervisors or OCEMS staff daily. OCFA has no contractual standing to gain compliance from another entity, public or private.
5. Ability to know, understand, and comply with performance metrics and regulations – Cities with transport contracts inside the OCFA are not familiar with ambulance contract response time or clinical performance metrics and regulations, nor deployment planning for their needs. They can ask the OCFA for assistance, but OCFA has no contract relationship with the provider.
6. Ability to provide consistent quality and oversight across the service area – OCFA and the ambulance providers do not integrate clinical quality oversight or shared training over the combined public/private care team.
7. Ability to provide consistent, predictable revenue/billing information – Where a client City with a transport contract has ambulance revenue/billing questions, OCFA is limited in how it can assist.

## 2.4.2 A Systems Approach

The current multi-provider and County agency ambulance system is not an integrated system. No single entity “owns customer service” from receiving the 9-1-1 call, to the patient being cared for and released in the field or transported to a hospital. A systems approach can visualize all the steps needed from call to disposition along with each entity accountable for each step, as shown in the following figure.

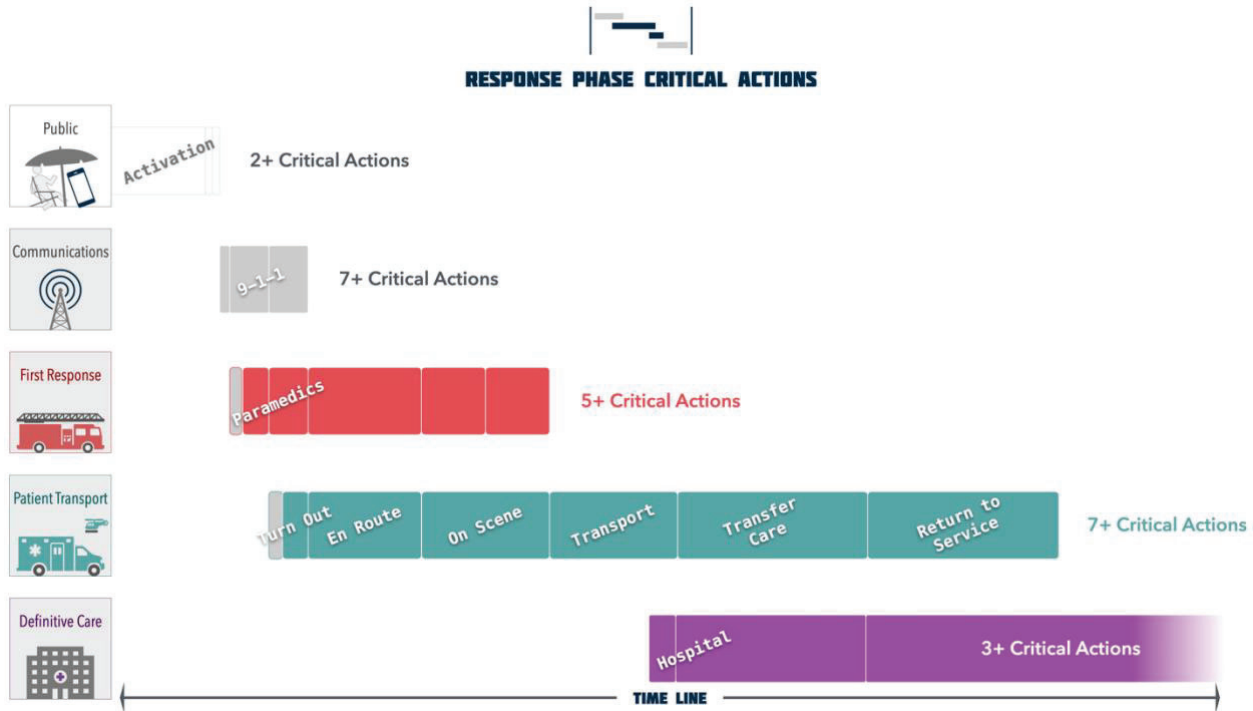
**Figure 3—Systems Thinking and Integration in Ambulance Systems**



Each subsystem in the sequence of care has both a *readiness* (capacity) and *response* component. The response component contains a collection of critical actions that are today within each subsystems’ exclusive scope of control. The following illustration depicts the subsystem response activities, and critical system integration points. Each subsystem is a self-contained activity; however, elements of each often overlap and require integration. When response activities are evaluated, correlations become visible and increase opportunities to identify causal relationships.

This graphic is a product of Citygate’s subcontractor on ambulance deployment for OCFA, BrandtVX, that conducted the ambulance deployment data analysis with Citygate. It shows how every EMS call, from 9-1-1 provider to hospital arrival, needs a minimum of 21 discrete critical actions across five measurable major elements, all to deliver the right care, to the right patient, in the right timeframe.

**Figure 4—Operations Diagram: Response Activities**



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At present, OCFA only has full responsibility for five first-response critical actions and partial control in the seven communications-based critical actions to send the ambulance request to the correct ambulance company, who then dispatches and controls their unit. Seven of the 21 critical actions are the responsibility of ambulance providers, who also share and *duplicate* some of seven communication-based actions. Hospitals are accountable for three critical actions. OCFA, OCEMS, and two ambulance companies share and overlap the public education component.

In a best-practices-based system, under a single entity, performance metrics can be designed for each of the five macro activities in a way that enables immediate *adaption and resource management each hour, not days later via a bureaucracy interaction*. The emergency services owner of a public/private system uses metrics and stated outcome objectives to design, operate, and continually improve the system. Assessing quality of service and system performance is critical to sustained success and economic efficiency.

Recognizing the 21 critical actions, a single entity can manage the EMS system hourly using Optimal Deployment Science (ODS)<sup>3</sup> to provide the rigorous metrics at each subsystem step. Measuring response time as the sole indicator of performance only captures *four* critical actions. Beginning-to-end metrics coordinate EMS delivery more than has been historically possible.

<sup>3</sup> BrandtVX, LLC.

**Figure 5—Operations Diagram: Readiness and Response Metrics**

<b>Public</b> 	<b>Combined Score</b> <b>91%</b>	<b>Readiness</b> <b>90%</b>	Public Recognition
		<b>Response</b> <b>92%</b>	Public Intervention
<b>Communications</b> 	<b>Combined Score</b> <b>91%</b>	<b>Readiness</b> <b>90%</b>	Communication Capacity
		<b>Response</b> <b>92%</b>	Deployment Plan
<b>First Response</b> 	<b>Combined Score</b> <b>92%</b>	<b>Readiness</b> <b>91%</b>	Mutual Aid Agreements
		<b>Response</b> <b>93%</b>	Serviceable Unit Hours
<b>Patient Transport</b> 	<b>Combined Score</b> <b>93%</b>	<b>Readiness</b> <b>91%</b>	Mutual Aid Agreements
		<b>Response</b> <b>94%</b>	Serviceable Unit Hours
<b>Definitive Care</b> 	<b>Combined Score</b> <b>93%</b>	<b>Readiness</b> <b>92%</b>	Bed Capacity
		<b>Response</b> <b>94%</b>	Response Phase Critical Actions

- Finding #6:** The provision of pre-hospital EMS and ambulance transport within the OCFA service area is fragmented between a County agency, the OCFA, five ambulance contracting cities, and two private ambulance contractors to the County and five cities.
- Finding #7:** The fragmentation of EMS delivery between the County, cities, and the OCFA creates a large, complex set of 21 overlapping critical actions to keep the system stable.
- Finding #8:** The current informal aspect of coordination creates a real burden on the different providers without a clear, integrated conflict resolution pathway that always keeps the patient first.
- Finding #9:** The current fragmentation of responsibilities does not scale well to current or future system volumes. A fresh-start design would have one process owner from 9-1-1 call to patient delivery to appropriate care. That process owner would have all the digital data and be transparent to patients, public officials, and rate payers regarding quality of service and cost.

## SECTION 3—AMBULANCE SERVICE DEMAND ANALYSIS

One of the goals of this study is to analyze the newer opportunities for a fire department to partner with a private ambulance provider to either (a) directly provide integrated services if the city/county fire department held legacy transport rights, or (b) to form a partnership and offer an *integrated, single source* bid to agencies competitively bidding one or more EOAs.

This pathway was codified on October 4, 2021, when the State of California enacted Assembly Bill (AB) 389 which included provisions for a County Board of Supervisors to contract with a fire agency and for the fire agency to subcontract service, in whole or in part, to a private provider. These rules are now codified in California Health and Safety Code (HSC) Sections 1797.230-231. This legislation built upon historical statute and case law in California. In Orange County, the Emergency Medical Services (EMS) Office, a division of the OC Health Care Agency, is the Board of Supervisors-designated LEMSA. Under State law, the LEMSA is responsible for medical direction and quality assurance of a local EMS system.

Later this year, OCEMS will conduct a regular five-year competitive procurement for the five County-managed EOAs. At different times next year, Garden Grove’s and Santa Ana’s ambulance contracts will expire and must be rebid.

An analysis of a public/private partnership must include three main components.

1. The demand for 9-1-1 ambulances across the geography by volume for each hour of the day. Demand for ambulances generates the quantity of personnel needed on work schedules for daily, year-round service. This then drives ambulance labor costs, which is the largest cost center to accurately model compared to administrative and oversight staffing.
2. An economic assessment of ambulance fee-for-service revenues from all sources and estimated to be net, not gross invoiced amounts due to “capitated” payments from some sources.
3. An assessment of what new personnel or technical costs a fire department would incur in a partnership to manage its ambulance provider?

This report section will address the demand for ambulances across the five County EOAs as they will be opened for bidding later this year. The section to follow will model revenues and macro administrative costs in a partnership.

### 3.1 THE AMBULANCE DEPLOYMENT ANALYSIS

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Citygate obtained from OCFA five years of digital incident data containing 2,587,303 unit responses, including high quality GPS movement tracking for approximately the last six months.

Additionally, OCEMS provided total transport counts and billed-to-the-patient payor types for fiscal year 2022/2023. The deployment analysis in this section uses calendar year 2023 readiness (available units) and historical response data from OCFA to model the ambulance deployment in each of the five EOAs.

The ambulance deployment analysis must assess both a *readiness and response* component:

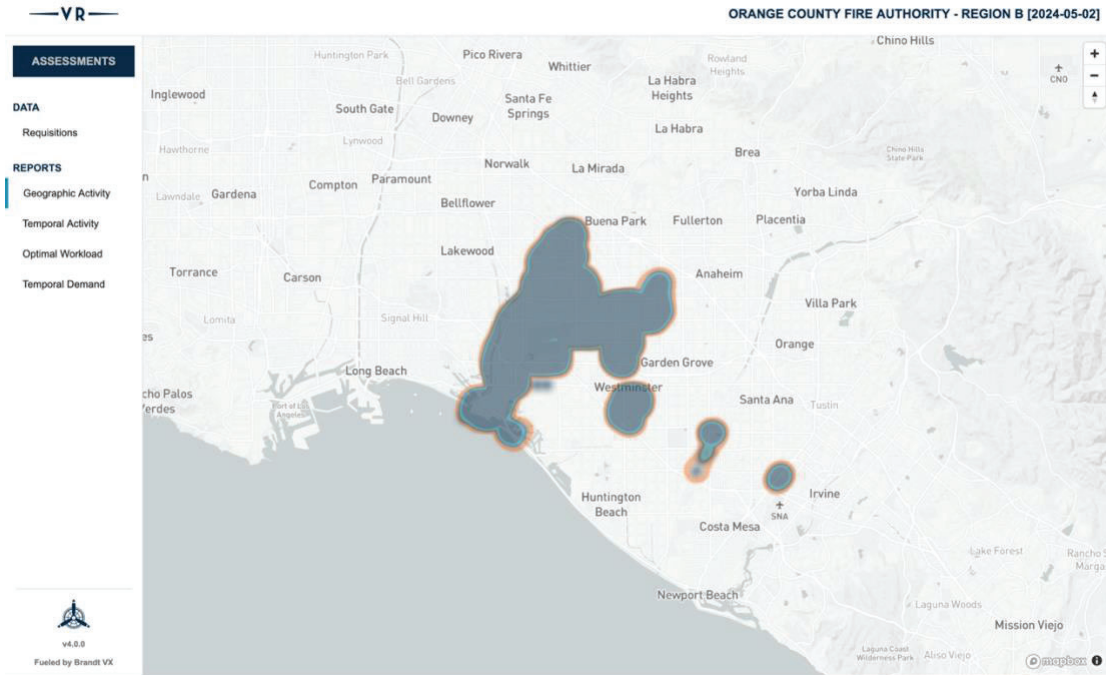
- ◆ *Readiness* is quantity of units needed to not only meet the estimated peak demand but to still have units ready for the unexpected. Said this way, a healthy system is not chronically operating with late response times or running completely out of units.
- ◆ *Response* is the spacing of the needed units across the geography to deliver the designated response times. Thus, ambulances are spaced apart, much like fire stations.

The first analysis step looks at the historic demand for ambulances separately for each EOA. The demand model is by hour of the day and displays volume in seven-day patterns for fine detail clarity. Several visualizations and data tables of demand are produced.

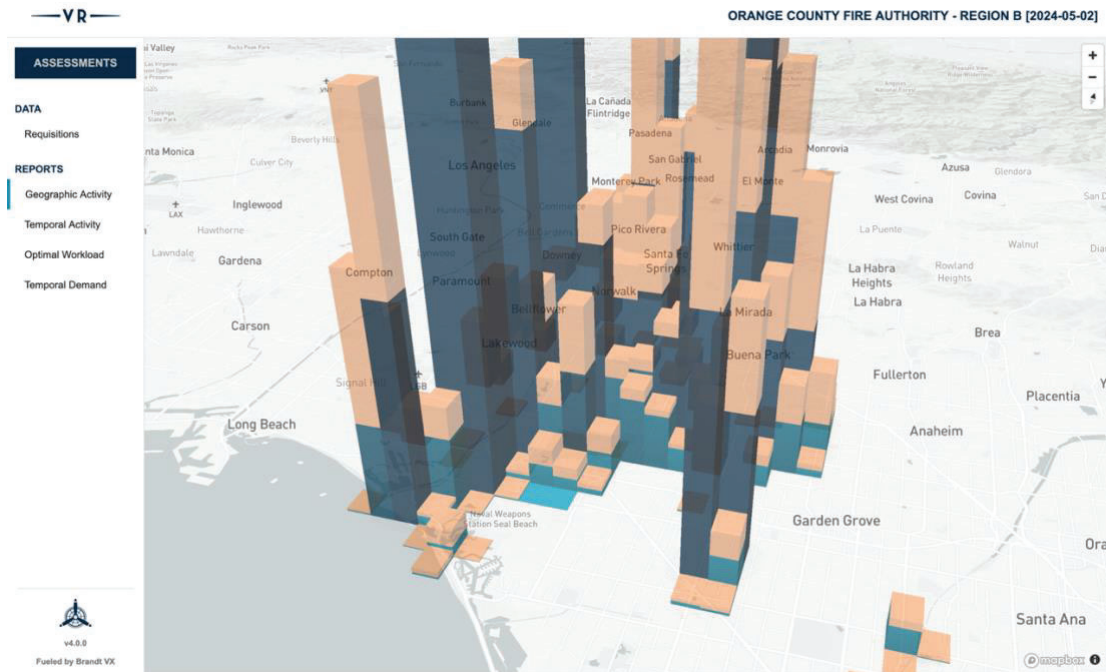
1. A geographic map of hot spot (density) demand intensity for ambulance service.
2. A 3D geographic model of volume and response time performance across an EOA to understand where exactly high demands occur, including simultaneous incidents. Displayed in orange topped bars are locations with response time delays past the County’s contract requirements. These delays are “raw,” being all counts, as the incidents are not yet adjusted by OCEMS for allowable exemptions for issues not within a contractor’s control. However, this visualization is useful to understand areas of stress.
3. A geographic scatter plot map of each individual location. Unlike the 3D volume map, incidents are plotted on top of each other in dense demand locations. Where response times are longer than contracted for, each plot location will show in orange. This is just a different way to understand areas of intense stress. Some of these areas are very difficult to reach quickly with a modest number of ambulances on duty given the topography and road network layout limitations in some areas.

The following is a small size sample of each of the above three visualizations for EOA Area B. To save space in the text sections of this report, all exhibits are contained in Appendix B of this report in larger scale. In the maps that follow, green means “meets response” criteria, and orange means exceeded response criteria. However, the orange does **not** relate to contractor compliance. Some of these slower incident responses only missed compliance by seconds to a minute, and others were OCEMS-contract-allowed exemptions due to temporary conditions beyond contactor control.

**Figure 6—OCFA Region B—Incident Hot Spot Map**

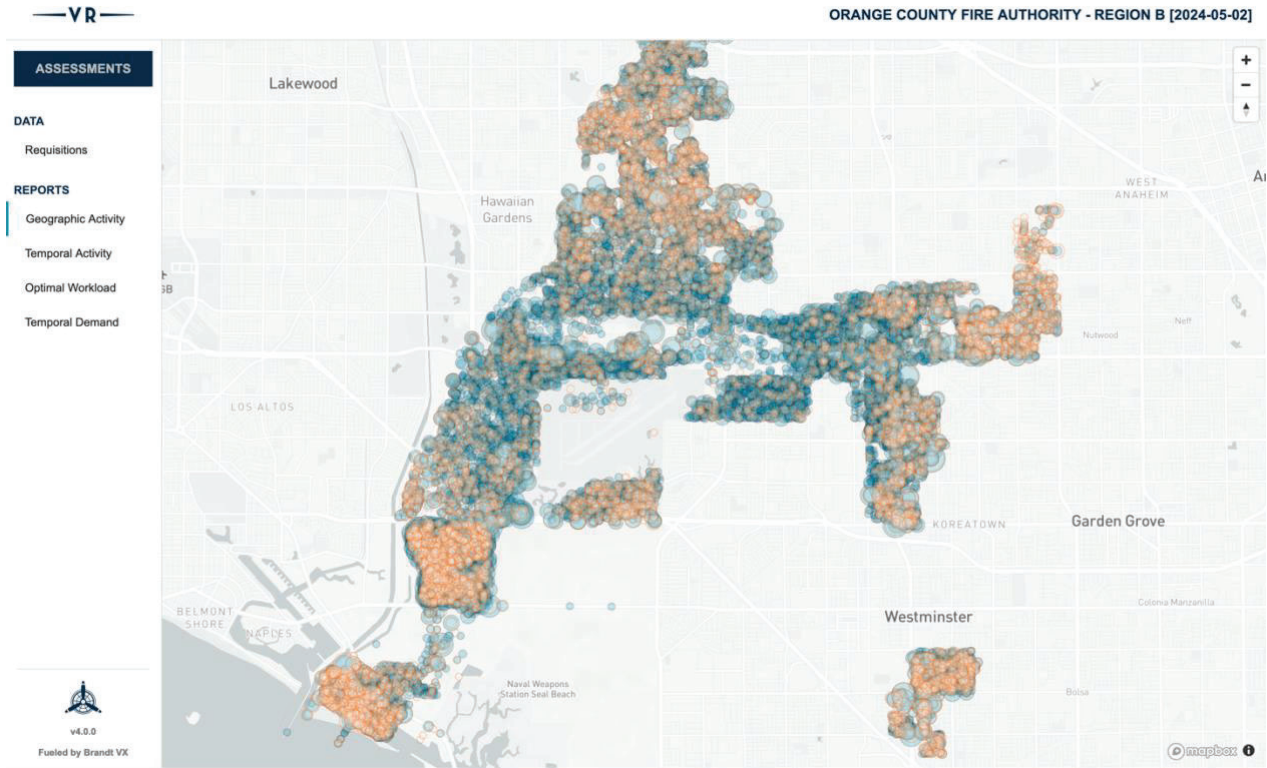


**Figure 7—OCFA Region B—Incident Bar Chart Map**



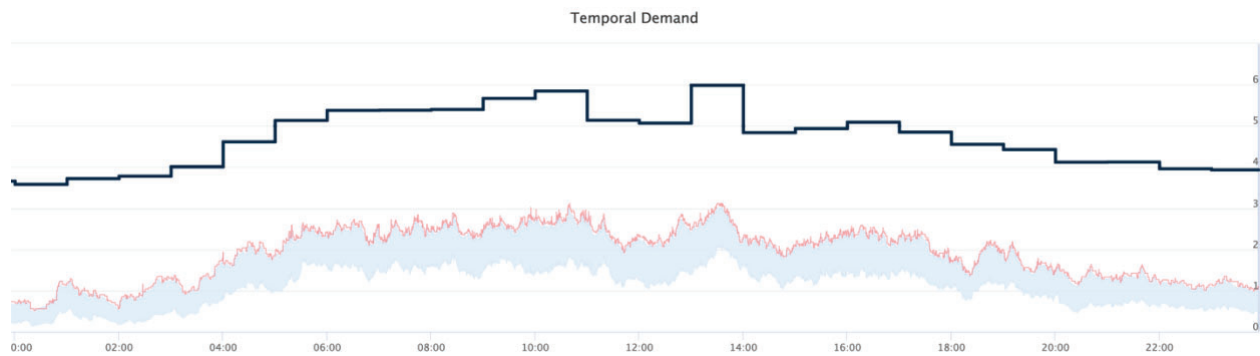


**Figure 8—OCFA Region B—Incident Scatter Plot Map**



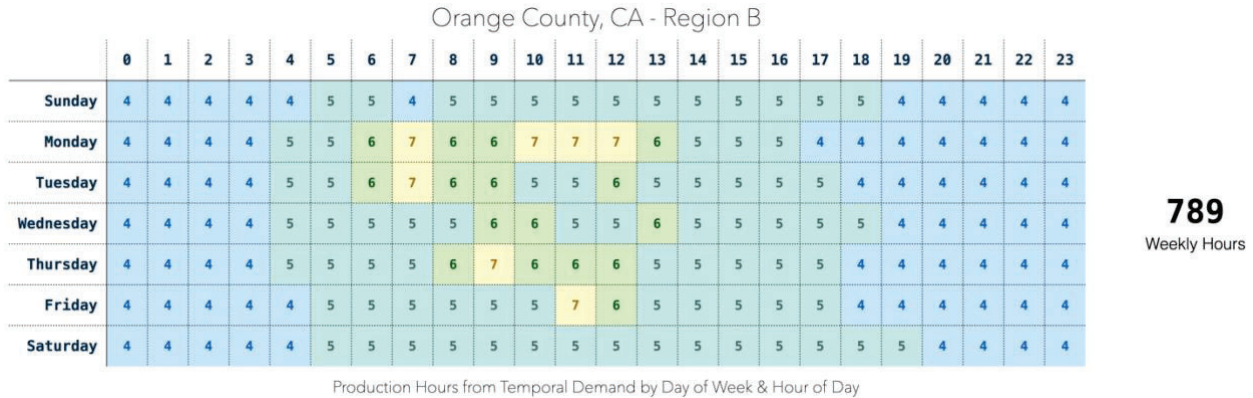
Other analysis exhibits were also produced for this study. The following figure for Area B shows the projected minimum *demand* for units (using historical data) as a somewhat jagged band of ambulance usage. The black line above the band is the *readiness* measure projection line which shows the ambulance quantity needed to ensure adequacy. There is a 24-hour demand curve starting at midnight on the left side of the figure. As people start the active part of the day, demand for services increases, levels somewhat mid-day, and then tapers down to midnight on the right of the image.

**Figure 9—OCFA—Demand for One Day Area B**



The consumption and readiness measures by area then are used to build a schedule of the total unit hours needed to meet demand and provide capacity for *readiness* beyond barely staffing to meet historical demand.

**Figure 10—OCFA—Ambulance Count by Hour – Area B**



The last step is to use these unit hours as input to the cost-of-service analysis to be discussed in the next section of this study

It is important to deploy to meet both a *readiness* and *response* component. There is a floor or minimum number of *response* ambulances needed. Then, to absorb peak and simultaneous incidents, more units must be available—*readiness*. This becomes complicated with EOAs that are separated from helping each other geographically, or by contract boundaries, different contractors, and/or dispatch centers. A smaller contract must support itself economically and is strained to deploy more units than revenue can support.

### 3.2 AMBULANCE DEPLOYMENT ANALYSIS FINDINGS

Using the analysis tools described previously, the analysis area summary measure observations follow.

#### 3.2.1 EOA A

Ambulance use is normally between zero and one without Placentia. An estimate for Placentia is two ambulances. Not pictured, intermittent spikes reach two or three ambulances assigned with moments of extreme use almost always four or less. Ambulances seem to be well deployed as there are very few areas where response times are not met (very little orange on the maps). A likely schedule calls for an overnight low of three ambulances and daytime peak of four ambulances, plus what Placentia needs.

### **3.2.2 EOA B**

Ambulance use is normally between one and three. Not pictured, intermittent spikes reach four to six ambulances assigned with moments of extreme use almost always seven or less. Ambulances seem to be centrally deployed around the airport with extended response times in all directions with areas farther from the airport generally experiencing more delays. A likely schedule calls for an overnight low of five ambulances and daytime peak of six.

### **3.2.3 EOA C**

Ambulance use is normally between one and four. Not pictured, intermittent spikes reach six or seven ambulances assigned with moments of extreme use almost always eight or less. Ambulances seem to be centrally deployed with extended response times in all directions with areas farther from the center of the region generally experiencing more delays. A likely schedule calls for an overnight low of six ambulances and daytime peak of seven.

### **3.2.4 EOA D**

Ambulance use is normally between one and four. Not pictured, intermittent spikes reach five or six ambulances assigned with moments of extreme use almost always seven or less. Ambulances seem to be centrally deployed with extended response times in all directions. The largest area impacted by extended response times is both east and west of the golf course on the northwest side of the region. A likely schedule calls for an overnight low of six ambulances and daytime peak of seven.

### **3.2.5 EOA E**

Ambulance use is normally between one and four. Not pictured, intermittent spikes reach six or seven ambulances assigned with moments of extreme use almost always eight or less. Ambulances seem to be centrally deployed with extended response times in all directions—especially in the foothills on the east side of the region (while volume is much lower in this area, delays are near constant). A likely schedule calls for an overnight low of six ambulances and daytime peak of seven.

In addition to these modeling results, Citygate also conducted an analysis of OCFA first responder workload for 2023. Given both deployment results, OCFA has an operational demand picture for the **entire** demand for EMS service from the quantity of dispatchers needed, to first responders, and then ambulances in all the differing neighborhoods served by the OCFA.

The deployment and economic focus of this study is the feasibility or not, of a public/private partnership proposal to the County-managed five EOAs. As a result of the ambulance workload measures combined with Citygate’s first responder workload knowledge, we find the following for EOA ambulance deployment.

**Finding #10:** The ambulance demands and challenges vary across the EOAs and, while each can have a singular deployment plan, no one EOA can or should be served without adjoining area ambulances being needed to level out readiness capacity at peak hours of the day.

**Finding #11:** The topography and limited road network on the edges of the major population clusters will require more ambulances to maintain response times and meet minimum demand.

**Finding #12:** For economic analysis in this study, the five EOAs in total need to operate *at a minimum* from a low of 26 ambulances to high of 31. To that quantity, some peak-hour readiness units should additionally be deployed in the areas with the highest demand and simultaneous incident rates.

## SECTION 4—PARTNERSHIP AMBULANCE ECONOMIC ANALYSIS

To assess the feasibility of OCFA providing more coordination of ambulance services, both in County EOAs or with legacy transport rights, and/or taking on transportation leadership in a public/private partnership, economic impacts must be modeled. This section reports the costs of the transportation system integration and then the administrative impacts to the OCFA EMS & Training Department; the costs are largely the same either for a transportation partnership or for only assisting its city partners with transportation oversight. There are several economic considerations and model inputs that are contained in the analysis to follow and are listed here.

### 4.1 PUBLIC/PRIVATE PARTNERSHIP ECONOMIC ANALYSIS FRAMEWORK AND GOALS

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- ◆ Use existing private ambulance contractors to leverage the quality operators and their workforce in Orange County.
- ◆ Design the system within economic realities to not just maintain, but to improve response times and *readiness capacity*.
- ◆ Understand that for the bulk of the transportation ambulances, Firefighter EMTs or non-sworn dedicated role EMTs are typically more expensive and would risk unnecessarily displacing the current workforces.

### 4.2 AMBULANCE SERVICE INTEGRATION IMPROVEMENTS

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- ◆ Leverage the strengths of OCFA's paramedics and EMTs for peak-hour and immediate supplemental catastrophic incident ambulance response by adding immediate-use, reserve ambulances in key fire stations.
- ◆ Leverage the strengths of the existing OCFA dispatch command center, field supervising chiefs, and the EMS & Training Department to manage the provision of care from 9-1-1 receipt to hospital delivery.
- ◆ Provide County and city elected officials one point of operational data and agency responsibility with transparency and an end-to-end system built to best practices.

### 4.3 KEY ECONOMIC METRICS AND INPUTS

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- ◆ Use the recent ambulance payor mix ratios as received and cross checked from two sources—OCEMS data for FY 22/23 and third-party billing data in the aggregate—for the rest of the County.

- ◆ Use the transport counts for 2023 and the County-approved ambulance rate increases for the five County EOAs for FY 24/25.
- ◆ For just ambulance staffing costs, use total compensation per hour in the Countywide ambulance market.
- ◆ Calculate the added value of increased Medi-Cal payments to a public program provider under the newer Public Provider Inter Governmental Transfer Program (PPIGT).
- ◆ Use the ambulance staffing hours needed to provide robust deployment.

#### **4.4 OCFA COORDINATION WITH A PRIVATE AMBULANCE PARTNER**

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- ◆ Identify the capacity and, if needed, the added OCFA EMS & Training Department staff to provide ambulance contract coordination to the cities with legacy transport rights inside the OCFA and to coordinate an ambulance system in a public/private partnership.
- ◆ Ensure any EMS & Training Department staff additions are only for increased services, not legacy needs.
- ◆ Identify any likely added technology or other OCFA staffing impacts in a public/private partnership.

#### **4.5 AMBULANCE REVENUE-TO-COSTS MODELING**

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Ambulance service studies require a careful economic assessment. This report does not provide a comprehensive review of all the complexities to ambulance revenues. However, this section does provide an abbreviated review before assessing ambulance payor types and percent of total transports and payments – *all of which, except basic rate setting, are not controlled by local government.*

Unfortunately, in the American health care system, the ambulance revenue structure is complicated and heavily regulated by the Federal and State governments. Historically, ambulance services are fee-for-service systems with little to no local government taxpayer subsidies. Under the California EMS system regulations, local governments set transport fee rates in a structure defined largely by Medicare and, in California, Medi-Cal payment rate rules. The approved rates also are used when billing those covered by commercial insurance, have no insurance, or to other institutions, like prisons.

Decades ago, when most employed persons had robust employer-provided health insurance, private commercial health insurance payments were the largest portion of ambulance revenues and

were predictable as they paid close to, if not all, the local published rates. Federal Medicare and state Medi-Cal payments were not the largest part of the revenue mix. In addition, Federal and State aid historically never paid full cost recovery for what an ambulance transport truly costs the provider. Local government and private ambulance companies accepted as the norm, *for decades*, that ambulance care was fully paid by health insurance, not the local taxpayers.

But increasingly since 1970, the public became used to paramedic-level care, with prompt response times in urban areas. In the 1980s and 1990s, call volumes were smaller, and for acute emergencies. By 2024, the upheavals in the economics of American health care, combined with decreases in access to health insurance through employers, have made 9-1-1 EMS the only health care option for many. In the same period, as commercial insurance availability decreased, and the population grew and aged, Federal Medicare and State Medicaid (California Medi-Cal) became the largest quantities of ambulance payments—but they still *did not* want to pay true cost, even as increased volumes demanded more and more staffed ambulances.

#### **4.5.1 California Ambulance Provider Medi-Cal Payments History and Current Rate Structure**

Many transport systems across America are under severe fiscal stress, and some of the largest are being restructured.<sup>4</sup> Over the last decade in California, there were three major changes to improve Medi-Cal ambulance payments; before, payments averaged a little over \$100 plus mileage and limited supplies per transport. First, a state program called Ground Emergency Medical Transport (GEMT) slightly increased payments to only public ambulance providers. That created an imbalance, and the private ambulance sector was successful in getting the State to try a more expansive approach called a Quality Assurance Fee (QAF) in addition to GEMT. These two programs increased an average Medi-Cal payment from an average of \$140 to approximately \$339, which is still well below full cost recovery.

In late 2019, the California legislature allowed another change to increase Medi-Cal ambulance fees through the same federal health care payment structures that states and county/local government medical programs already use, called Inter Governmental Transfers (IGT). However, this payment structure can only apply to ambulance services *operated at a loss by government agencies*. Assembly bill 1705 (Chapter 544, Statutes of 2019) enabled a program named PPIGT<sup>5</sup> for *Public Provider* Inter Governmental Transfers.

To be eligible for PPIGT, a government agency must “own” the costs and revenues for the ambulance system. Thus, the agency has full exposure if costs exceed revenues. Owning the system means the government agency—either with its own employees or via contracted private sector ambulance employees—pays 100 percent of the service costs and must have a

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<sup>4</sup> <https://www.star-telegram.com/news/local/fort-worth/article288610976.html>

<sup>5</sup> <https://www.dhcs.ca.gov/provgovpart/Pages/PPGEMTIGT.aspx>

Medicare/Medi-Cal provider number and bill the transported party and (as presented) their insurance plan. All net revenues accrue directly to the government agency. In the traditional EOA, private provider model, the ambulance company bills, receives revenues, and either retains all profit or incurs all losses—typically without a governmental subsidy.

Under the PPIGT program, revenues more than costs (profit) or losses are incurred by the government agency. Losses, of course, must be offset by the taxpayer unless, over multiple years, some excess revenue has been placed in reserves to offset a revenue downturn. However, these risks are the same as they are for *all other local government health care programs* that receive Medicare and Medi-Cal revenues in the IGT system. If any IGT program does not save for volume-caused revenue downturns, or if the federal/state government lowers payments, then the local government IGT health programs are exposed. Therefore, providing ambulance services directly only adds small exposure to the already-significant local government health care economics.

#### **4.5.2 Ambulance Public Provider Payments (PPIGT)**

PPIGT ends up paying a calculated average full transport cost for Medi-Cal patients. It is a complicated process, typically foreign to local governments, but standard for decades for hospitals and other governmental health care agencies that bill Medicare and Medi-Cal. In brief, the original Medicare federal legislation said a taxpayer should not be taxed twice—fees at the local level plus paying their federal taxes where the health care received was not fully covered by the Medicare/Medicaid rules. In a roundabout calculation, the federal system says, if state/local government health service is underfunded by federal payments, then the “loss” is not the taxpayers’ fault, so the federal system makes up the loss to the local agency which had to pay the difference between the actual amount and the federal normal payment. To prove the loss, local agencies must provide direct cost of care calculations, resulting in a federal underpayment. The “loss” is *transferred* to the federal system as proof, and then the loss plus the supplemental payment is returned to the local agency. Thus, an Inter-Governmental Transfer (IGT) occurs. Literally billions of federal health care dollars flow to the states and counties this way. The recent California bill added to this system a pathway for *local government* ambulance providers to obtain IGT revenues for loss recovery. This is again complicated for ambulances, as participation in the IGT payment system is voluntary. With a county health care system, it is easier as it is a one-to-one relationship – “Here is the loss calculation and loss payment to then get both paid by the Federal system via the State.”

But for government ambulance providers in California, the new system is not one-to-one as California Health Services receives loss reports from all the public ambulance providers, and then calculates a Statewide average loss payment for *each agency* to pay up their loss—*on a voluntary basis*. In other words, the State will pay every submitter the loss if they enroll, but it expects every provider to upload their loss, voluntarily, as the State will not use its General Fund dollars for this. With a little over two years of PPIGT experience, some local agencies are not submitting their



losses. At some point, if the aggregate local government loss uploads fall short of the supplemental payments back to public ambulance providers, the State has the right to end the program and Medi-Cal fees revert to the old system.

As of the 2024, California PPIGT provides a total Medi-Cal ambulance payment of \$1,065.12.<sup>6</sup> The current Medi-Cal payment under the GEMT/QAF process to the public and private ambulance companies is \$339.00. Thus, there is an increase gross payment of \$726.12 per transport. Using a forecasted 2024 number of 10,242 Medi-Cal transports, the increased payment before billing and State fees is \$7,436,921.04 of new system revenue.

The added PPIGT revenue is reduced by a deduction of a 10 percent California handling fee for the program. In addition, many agencies contract the complicated ambulance billing to private billing companies at a fee of approximately 3.25 percent per bill. A net PPIGT amount is also the new funding above the existing QAF Medi-Cal payment. Therefore, the new PPIGT revenue per Medi-Cal transport is reduced to a net of \$621.76. This net amount multiplied by the FY 22/23 10,242 Medi-Cal transports still yields new revenues of **\$6,368,066**, which a private ambulance company *cannot* access. This is a large sum to reinvest into the EMS system. As of April 2024, California Department of Health Services said there were 259 public ambulance providers in the PPIGT program ranging from the very largest, such as the City of Los Angeles, to small, one-ambulance fire districts.

**Finding #13:** The Public Ambulance Provider Inter-Governmental Transfer (PPIGT) enhanced Medi-Cal payment could add approximately \$6.3 million in revenue if a public agency operated the County EOA’s ambulance service and subcontracted to a private provider.

**Finding #14:** The PPIGT payment program is voluntary in California and is fragile. The PPIGT revenues should **not** be expected to balance costs for minimum ambulance services. The enhanced revenues should be used first to establish a modest reserve fund for billing downturn events and, second, for EMS enhancements for EMS needs and patient care destination diversion programs.

#### 4.5.3 Ambulance Payment Categories and Counts in EOA Areas A-E

To model ambulance revenues, both gross and net received, the model needs the counts of transports, local public agency’s approved ambulance rates, the type of transport (either basic or advanced life support), and, for each transport, the type of insured bill issued, commonly called

<sup>6</sup> <https://www.dhcs.ca.gov/provgovpart/Pages/PPGEMTIGT.aspx>

the “payor type.” The type of bill is driven by two factors: the County’s approved rates and the capitated allowable charges for Medicare and Medi-Cal bills.

The following table shows the OCEMS-approved transport ambulance rates as of July 1, 2024.

**Table 1—OCEMS-Approved Transport Ambulance Rates**

Type of Charge	Basis for Charge	Effective 7/1/2024
<b>Emergency Basic Life Support (BLS) Base Rate<sup>1,2</sup></b>	Applicable for urgent or Code 3 response at the request of a public safety employee	<b>\$2,238.88</b>
<b>Emergency Advanced Life support (ALS) Base Rate<sup>1,2</sup></b>	Applicable for urgent or Code 3 response at the request of a public safety employee	<b>\$2,712.19</b>
<b>Mileage</b>	Per patient mile or fraction thereof	<b>\$23.28</b>
<b>Standby time</b>	Per 30 minutes after the first 30 minutes	<b>\$157.63</b>

<sup>1</sup> BLS & ALS Base Rates apply in Orange County Fire Authority Jurisdictional areas (except for Buena Park, San Clemente, and Westminster)

<sup>2</sup> Oxygen & medical supplies included in base rates

For this study’s revenue model, the best data for transport counts and payor types was obtained from OCEMS for FY 22/23. Revenue collected by payor type data allows the total counts of transports to be divided into counts by actual payor types. The following are the payor types and percent of transports used in this study’s revenue estimate.

**Table 2—Payor Type**

Type	Percent of Total
<b>Insurance</b>	20.10%
<b>Private Pay</b>	5.57%
<b>Medicare/Comp/VA</b>	57.19%
<b>Medi-Cal/Medicaid</b>	17.14%
<b>Total</b>	<b>100.00%</b>

In the County EOA areas (not counting Placentia in Area A), 65 percent of the transports have been billed at the BLS rates. Advanced Life Support (ALS/paramedic) transports are 35 percent of the total. Additionally, 17 percent of the Medicare patients also are enrolled in Medi-Cal. They are called “Dual Benefited” billings, and the resultant payment is more than only the Medicare rate by approximately \$650 per patient in this category.

The final economic payment factor are the limits of Medicare and Medi-Cal coverage in 2024. While a billing party can bill the full allowable charge per OCEMS rates, the reality is the Federal and State payments come back paid to the “capitated” amounts as shown in the following table.

**Table 3—Capitated Payment Amounts**

Service Component	Medicare Allowed 2024	Medi-Cal Allowed
<b>ALS</b>	\$599.69	\$1,065.12
<b>BLSE</b>	\$505.00	\$1,065.12
<b>Mileage</b>	\$8.94	\$3.19
<b>Oxygen</b>	-	\$8.89
<b>Night</b>	-	\$8.89
<b>EKG</b>	-	\$14.46
<b>Average<sup>1</sup> ALS</b>	\$645.55	\$1,081.07
<b>Average BLSE</b>	\$550.86	\$1,081.07

1. Based on 5.13 transport miles and 90% collections on Medicare allowable other than dual benefits'

Some ambulance revenue models will show an ambulance system has a “valuation” in total dollars at the maximum billed amount, *by multiplying the maximum rates by total transports*. However, that statistic is significantly greater than a realistic one only using the Medicare and Medi-Cal capitated rates. In the revenue estimate for this study, the billed-out amount will *only* be the Federal and State capitated amounts to generate a conservative and realistic estimate. Some agencies do try to collect the underpayment from the patient, but most Medicare plans no longer allow that. Another industry term is that when using capitated rates, the billing party accepts “assignment,” which is accepting the Medicare / Medi-Cal limit as payment in full.

#### **4.5.4 Ambulance Payments to Fire Departments and OCEMS**

The next factor in modeling the economics of EOAs A through E are what payments the current ambulance revenues must make to OCFA for paramedic care and response supplies which can be charged to the patient’s insurance provider. Second, the transport system makes a payment to OCEMS for its clinical oversight and regulations work.

OCFA currently receives a combination of ALS transport and supply reimbursement fees passed through from the BLS ambulance providers servicing the County EOAs and the .201 legacy transport rights cities who hold separate ambulance contracts. OCFA collects \$274.38 for ALS transports *that receive any resultant payment* in County EOAs B through E. Emergency Ambulance EOA A pays that charge plus \$30.43 for supply reimbursement on all transports, excluding no-pays. The estimated total for these payments to OCFA in 2024, included in the economic model to follow, is \$4,815,745.

OCEMS is the LEMSA and, accordingly, may recover its costs in administering the contracts for 9-1-1 emergency ambulance services. Patients shall not be directly billed for these costs. OCEMS payments are for Procurement Costs, County Compliance Monitoring, and Contract Compliance Management. Therefore, ambulance companies serving EOAs A through E shall pay OCEMS in FY 24/24, \$14.83 per patient transport for calls originating from the 9-1-1 system. For the estimated total transports used in the integrated economic model to follow, this amount totals close to \$888,136. Since this cannot be billed to patients, it is a “doing business fee” charged by the County that must come from corporate overhead before profit.

#### **4.5.5 OCFA EMS & Training Department Staff Impacts for Ambulance System Coordination**

Section 2.3 of this study reviewed OCFA’s EMS & Training Department structure and duties. While the Department handles the provisioning and quality oversight of the Authority’s caregivers, it does not have any contract oversight responsibilities for the private ambulance companies that transport in the County EOAs or the legacy transport rights cities. Some of the legacy transport cities have asked OCFA to assist more directly on their behalf with contract terms compliance; quality of care; daily operational issues, such as mutual aid in and out impacts; and billings oversight.

Citygate and OCFA reviewed the likely added workload to deliver these services to the transport rights cities and the County’s five EOAs should a public/private partnership be feasible.

It was determined that just 2.5 personnel (Full Time Equivalent or FTEs) would be needed *either* to only assist the legacy transport cities and, if needed, also a public/private partnership for transport in the County’s five EOAs. The reasons are that once the 2.5 positions are added, they have capacity for a larger service area as the two ambulance companies are the same and most of the data is already partially within OCFA. Thus, scale works in OCFA’s favor and even more so in a public/private partnership where all the first response, ambulance, and payor data are with OCFA from beginning to end.

The envisioned positions are:

- ◆ 1 – Non-Sworn, mid-manager for coordination of the contractor operations with the OCFA resources, data, and chain of command from 9-1-1 receipt to hospital.
- ◆ 1 – Compliance/Fiscal Analyst that will be the liaison to the billing contractor to ensure quality data and procedures capture all the required data for billing by field personnel.
- ◆ .5 – Information Technology Technician to maintain data connections and reporting.

The total compensation for these 2.5 FTEs totals \$768,603.

#### 4.5.6 County EOA Areas A-E Integrated Economic Forecast

Forecasting revenue requires knowledge of several key factors, including the number of patients transported, the level of care they receive, the type of insurance they use, and other metrics as described previously. The forecast uses three-point-estimates for each metric. The three-point-estimate are based on the anticipated best case, likely case, and worst case for each metric, and uses the result of each as inputs in the forecast model. The result is a forecast that is well balanced, neither needlessly conservative nor overly ambitious. The summary analysis for revenues uses the inputs described previously and average values for mileage and other incidentals as the payor rules allow. The integrated economic forecast is shown in the following table.

**Table 4—Integrated Economic Forecast**

Payor Mix	Incident Percentage	2024/2025 Estimated CHARGES		2024/2025 Estimated PAYMENTS	
		ALS	BLSE	ALS	BLSE
Commercial Insurance	20.10%	\$11,903,049.38	\$18,410,660.03	\$10,474,683.46	\$16,201,380.82
Private Pay	5.57%	\$3,298,506.72	\$5,101,859.52	\$230,895.47	\$357,130.17
Medicare/Comp/VA	57.19%	\$7,721,100.78	\$12,235,906.23	\$7,643,889.77	\$12,113,547.17
Medi-Cal/Medicaid	17.14%	\$3,901,178.17	\$7,245,045.17	\$3,862,166.39	\$7,172,594.72
<b>Subtotal</b>	100.00%	\$26,823,835.05	\$42,993,470.95	\$22,211,635.09	\$35,844,652.88
<b>Total</b>		<b>\$69,817,306.00</b>		<b>\$58,056,287.97</b>	

In summary, the net revenue available for operating expenses is \$58,056,288. This estimate includes a PPIGT Medi-Cal supplemental payment *above that* of the current GEMT/QAF payment. If the PPIGT program were to be stopped, the remaining revenue to support the BLS ambulance system in Areas A through E would be \$51,688,221. To cross-check this model, Citygate worked with a large ambulance billing company with payor history behaviors across the rest of Orange County. Their model used OCEMA volume and payor mix data, with **2023** OCFA ambulance rates and the addition of PPIGT revenues. The net revenue in this “check” model was \$54,076,154 which is very comparable to the Citygate model using 2024 rates, providing high confidence in this study’s revenue forecast.

**Finding #15:** The estimated collected revenue for FY 2024/2025 in County EOA Areas A through E range from a low of \$51,688,221 to a high, with PPIGT included, of \$58,056,288.

The next step in the analysis is to subtract well-known operating costs from the net revenues. The charges in the following table for ambulance crews can be closely identified based on public data for BLS ambulance staffing total compensation in Orange County and the number of ambulance hours needed from the Citygate deployment model. The other charges are from existing contracts or public agency sources.

**Table 5—Operating Charges**

Expense Type	Net Revenue Maximum	Net Revenue Minimum
	\$58,056,288	\$51,688,222
<b>Ambulance Staffing</b>	\$20,000,000	\$20,000,000
<b>Contract Payor Billing 3.5%</b>	\$2,031,970	\$2,031,970
<b>Fee to OCEMS</b>	\$888,136	\$888,136
<b>Charges to OCFA</b>	\$4,815,745	\$4,815,745
<b>OFCFA EMS Staff Adds</b>	\$768,603	\$768,603
<b>Subtotal</b>	\$28,504,454	\$28,504,454
<b>Operations \$\$ Available</b>	<b>\$29,551,834</b>	<b>\$23,183,768</b>

The operations remaining funds must include ambulance company headquarters staffing, ambulances, maintenance, supplies, insurance, rent, technology, dispatch, and profit, to name the largest categories. In this model, Citygate has chosen not to speculate what all the remaining costs per item could be as they are subject to negotiation with the private ambulance companies, based on which provides the most cost effective logistical and quality oversight services.

If the OCFA Board of Directors should pursue trying to form a public/private partnership with one or more of the private ambulance companies, these other charges are best negotiated between the parties regarding whom should perform what, at the best overall system cost.

**Finding #16:** The revenue model results are enough to strongly indicate there is sufficient revenue room, *even without PPIGT added revenues*, to negotiate a successful public/private partnership within available revenues, avoiding a public agency subsidy.

**Finding #17:** If total revenues, more so with the PPIGT added revenues, exceed operating expenses, they provide resources for system enhancements.

## SECTION 5—OVERALL EVALUATION AND RECOMMENDATIONS

The study was to provide recommendations to enhance the EMS patient transportation system in OCFA’s jurisdiction. The two central themes are as follows.

1. Provide recommendations to enhance the EMS patient transportation system in Orange County using a regional approach focused on:
  - Improved response times.
  - Improved quality of care.
  - Improved sustainability and economics for the cities within OCFA that under legacy transport rights contract themselves for ambulances in addition to in the five County managed EOAs.
  - Identify revenue sources to re-invest into identified system enhancements.
2. As the ambulance transport systems evolve throughout the state, outline options for OCFA to contribute to the improvement and sustainability of the ambulance system in Orange County, taking into consideration:
  - Ambulance contract operational oversight as needed by an independent city and OCFA separate and distinct from the County’s clinical and contract compliance needs.
  - Regional program management options through public/private partnerships to provide single point, seamless daily operational oversight within OCFA’s operational area.
  - Consideration of an OCFA public/private bid partnership bid on one or more County EOA transportation areas.

### 5.1 REGIONAL APPROACH CONSIDERATIONS

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As the findings in this study identify, the current ambulance service delivery system has fragmented operational and economic abilities across County, local government, and private contractors. There are ten ambulance service areas under either County or city management. Considering the scope of the OCFA service area today, there is little to suggest that a newly designed, EMS delivery plan would have so many “owners” under different contracts and responsibilities. While mutual aid exists, it can be slow with real imbalances. Nothing in the legacy transport system was designed for high volume, borderless economic efficiencies. In general:

- ◆ The system is not broken; patient care is delivered.

- ◆ The system has great private sector partnerships that should continue.
- ◆ The system stakeholders care, are patient centric, and are stuck in a decades old bureaucratic framework.
- ◆ The system is not built for economic efficiencies under a single coordinating provider in a large service area. In many areas, contract boundary limits stifle immediately sending the closest, best-fit resource. The current multi-provider and County agency ambulance system is not an integrated system.
- ◆ No single entity “owns customer service” from receiving the 9-1-1 call, to the patient being cared for and released in the field or transported to a hospital.

## **5.2 OPTIONS FOR OCFA TO CONTRIBUTE TO THE IMPROVEMENT AND SUSTAINABILITY OF THE AMBULANCE SYSTEM**

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As this study’s technical operational and fiscal research found, OCFA, despite its large service area, is not being used as an integrator and hourly/daily single point of operational control in a system of fire paramedic first response and ambulance transport. Key themes identified are:

- ◆ The ambulance demands and challenges vary across the EOAs and no one EOA can or should be served without adjoining area ambulances being needed to level out readiness capacity at peak hours of the day.
- ◆ OCFA’s daily staffing is not being used to provide immediate-need surge ambulances at peak demand points or for mass causality incidents.
- ◆ The five County EOAs in total need to operate *at a minimum* from a low of 26 ambulances to high of 31 across a 24-hour-per-day, year-round plan.
- ◆ There is no reason for separate ambulance company dispatching centers; OCFA can provide these services, as Ventura County Fire or the City of San Diego have for their ambulance contractors for years.
- ◆ An integrated system within OCFA could provision and coordinate hourly and quality control patient care from the receipt of the 9-1-1 call to arrival at a hospital.
- ◆ The newer Public Ambulance Provider Inter-Governmental Transfer (PPIGT) enhanced Medi-Cal payment could add approximately \$6.3 million in net new revenues if a public agency operated the County EOA’s ambulance service and subcontracted to a private provider. These new revenues are not accessible or provided to private ambulance contractors.



- ◆ There is sufficient revenue room, *even without PPIGT-added revenues*, to negotiate a successful public/private partnership within available revenues, avoiding a public agency subsidy and allowing cost savings to be used for EMS delivery enhancements.

### **5.3 RECOMMENDATIONS**

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Based on the research-driven findings in this study and our knowledge of EMS systems in California, overall patient care can be improved beyond being faster or better. More importantly, an integrated system can be much more *agile and resilient*, allowing it to pivot immediately using the full capabilities of OCFA to mitigate unplanned resource demand, shortages, and impacts by natural events. Increased economic efficiencies in a public/private partnership (even more so with public provider federal payments) will allow stronger ambulance deployment which improves access to care for everyone. Citygate offers the following recommendations.

**Recommendation #1:** OCFA should add a small number of staff positions for increased ambulance oversight on behalf of its deployment in the County EOA areas A through E and for the five legacy transport rights cities inside OCFA that do not have the EMS ambulance contract management expertise.

**Recommendation #2:** Given the need for integration and the promising economics, the OCFA should consider constructing a public/private partnership to bid the County EOA service areas in later 2024.

**Recommendation #3:** In constructing a public/private partnership, and consistent with the newest state laws on EMS, the OCFA Board should direct staff to include in the partnership design discussions:

- Do what is right for patient care.
- Provide positive working conditions to increase stability in the ambulance workforce and strive to make it a transition step for some into the OCFA
- Strive to work with at least two ambulance companies.
- When revenues exceed operating expenses, include maintaining an operating reserve for billing downturns, then direct the excess revenues into enhanced neighborhood-based EMS care or access to alternatives other than emergency room care.

There are many positive ways the OCFA could bring its scale and leadership to smooth out and improve the ambulance transport system. It should try to do so. Exploring options, with considered due diligence, for fiscally responsible improvement is good government.

Even without the supplemental PPIGT Medi-Cal payments, there should be estimated revenues of \$1M to \$3M in excess of costs with a combined OCFA / private ambulance partnership. With the enhancement of PPIGT revenues of an estimated \$6,368,066, there are significant additional revenues for enhanced EMS services as the County, State, and health care insurers enable delivering them. However, to gain these additional revenues, the public provider becomes fully responsible to keep ambulance operations within net revenue and not incur a General Fund subsidy. The ambulance provider is a contractor, to be paid regardless by the public provider if they perform to contract requirements. For this reason, Citygate suggests public providers establish an Enterprise Fund within their agency budget to separate and track all charges and revenues in the ambulance system.

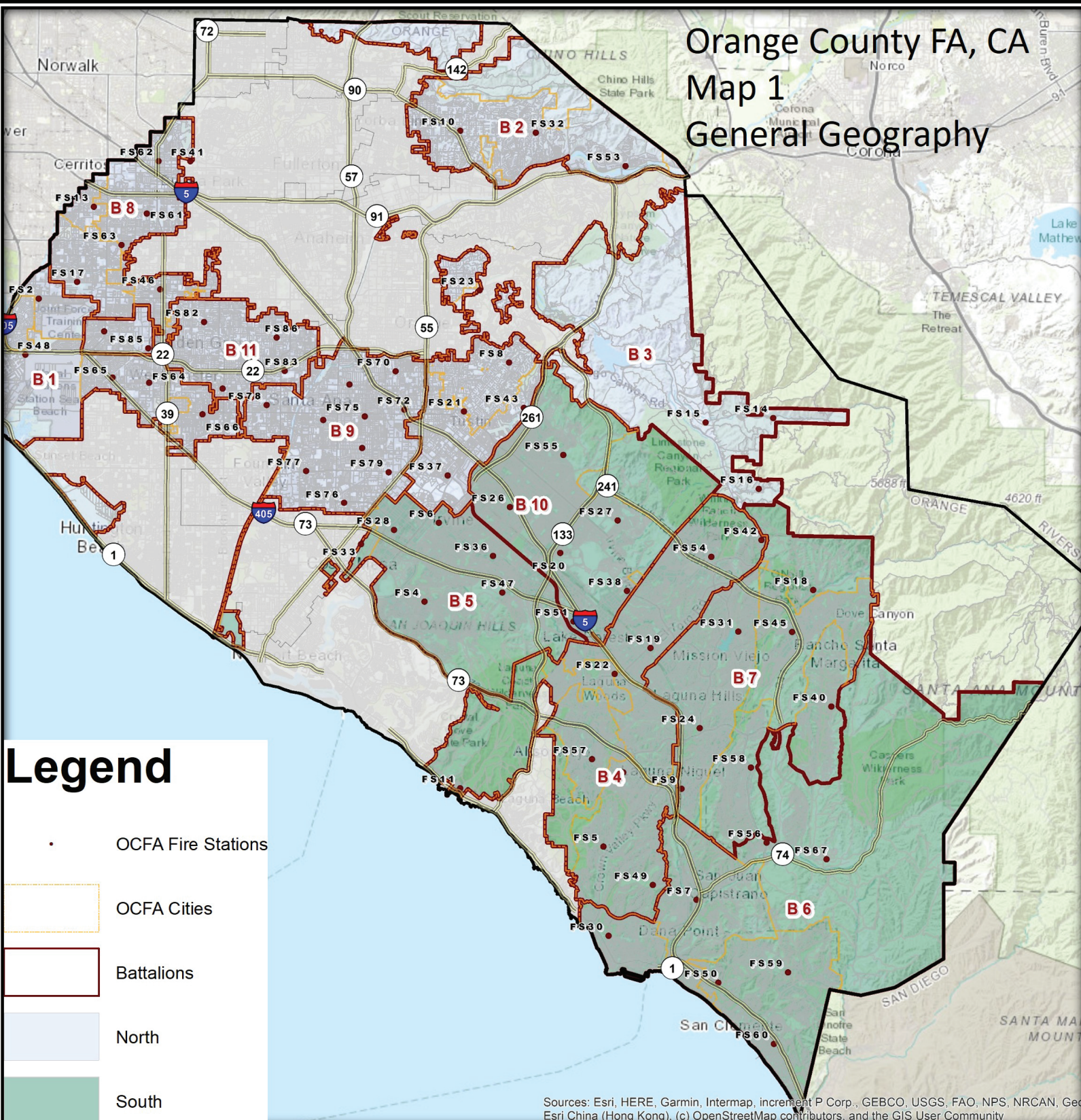
In considering these recommendations, if OCFA chooses to attempt to establish a public/private ambulance partnership, the next nonbinding step is to open an OCFA RFP bid process to competitively select private ambulance partners and to design a partnership whose operational costs and final revenues must be presented to and approved by the OCFA Board of Directors. Assessing feasibility is not yet a binding commitment to create a public/private partnership.

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**APPENDIX A**

**MAP ATLAS**

# Orange County FA, CA Map 1 General Geography



## Legend

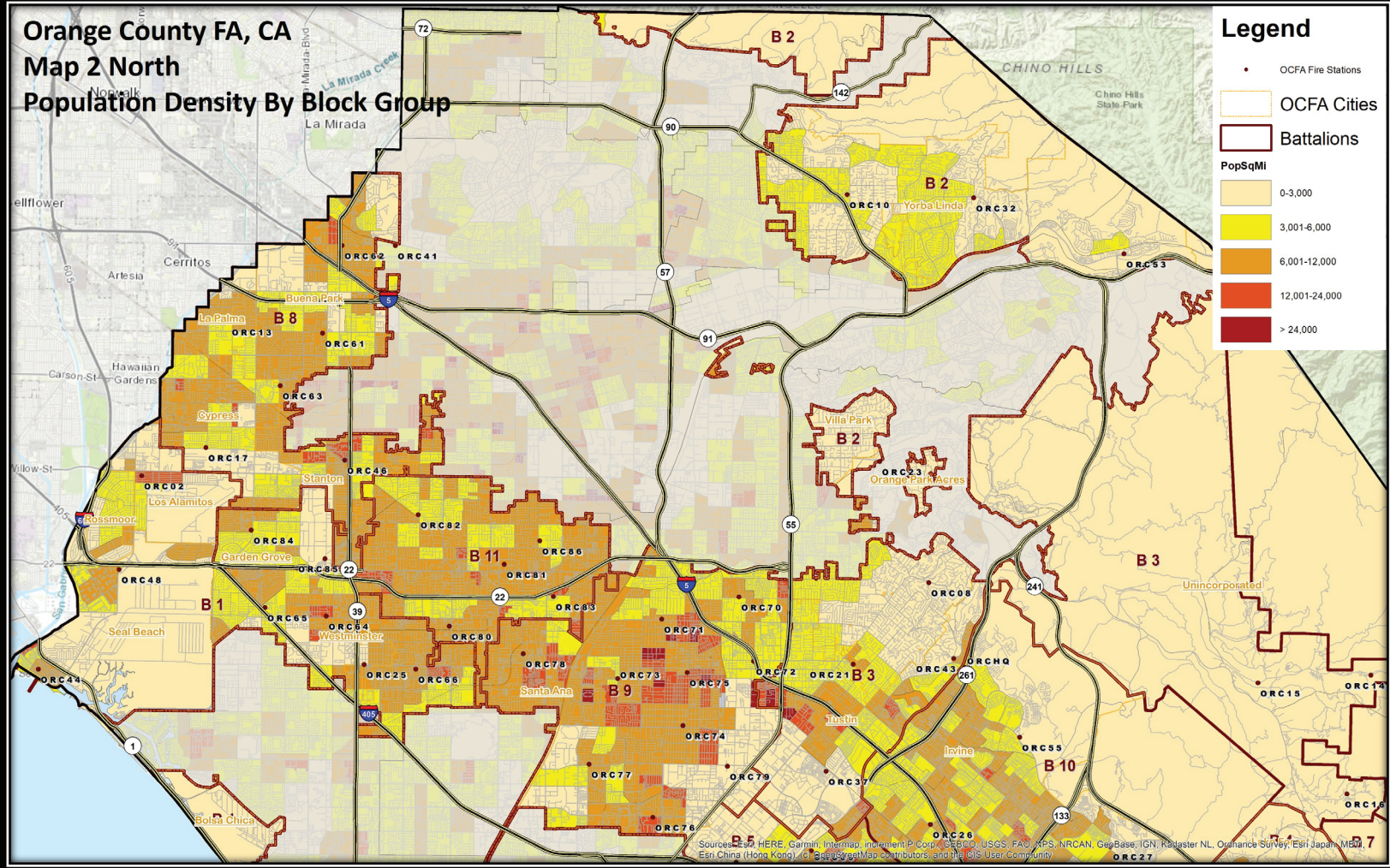
- OCFA Fire Stations
- OCFA Cities
- Battalions
- North
- South

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, Geo Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

# Orange County FA, CA Map 2 North Population Density By Block Group

### Legend

- OCFA Fire Stations
- OCFA Cities
- Battalions
- PopSqMi
  - 0-3,000
  - 3,001-6,000
  - 6,001-12,000
  - 12,001-24,000
  - > 24,000

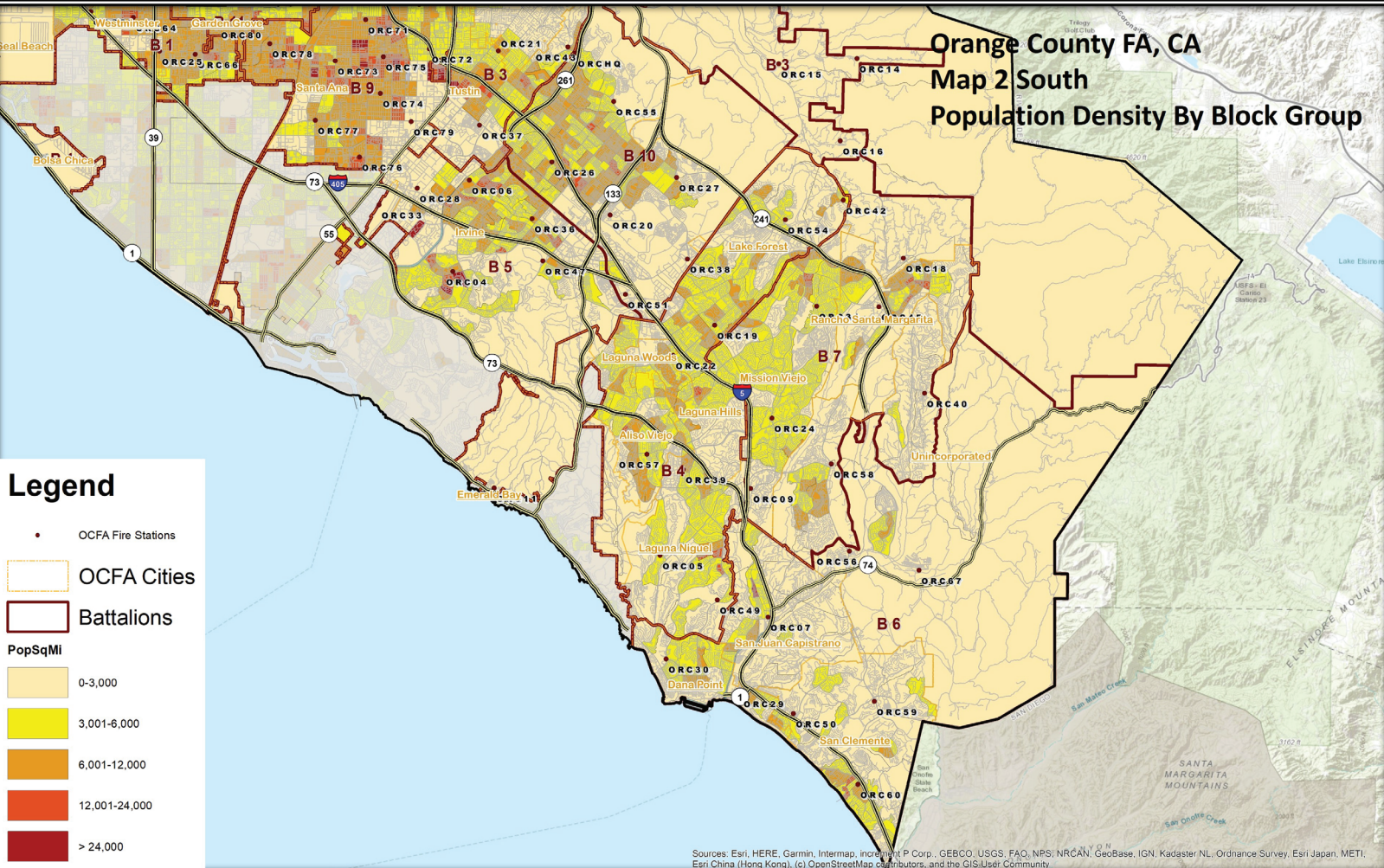


Source: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeBCo, IGN, Roadster NL, Ordnance Survey, Esri Japan, MEI, Eri China (Hong Kong), Swisstopo, Mapbox Contributors, and the GIS User Community

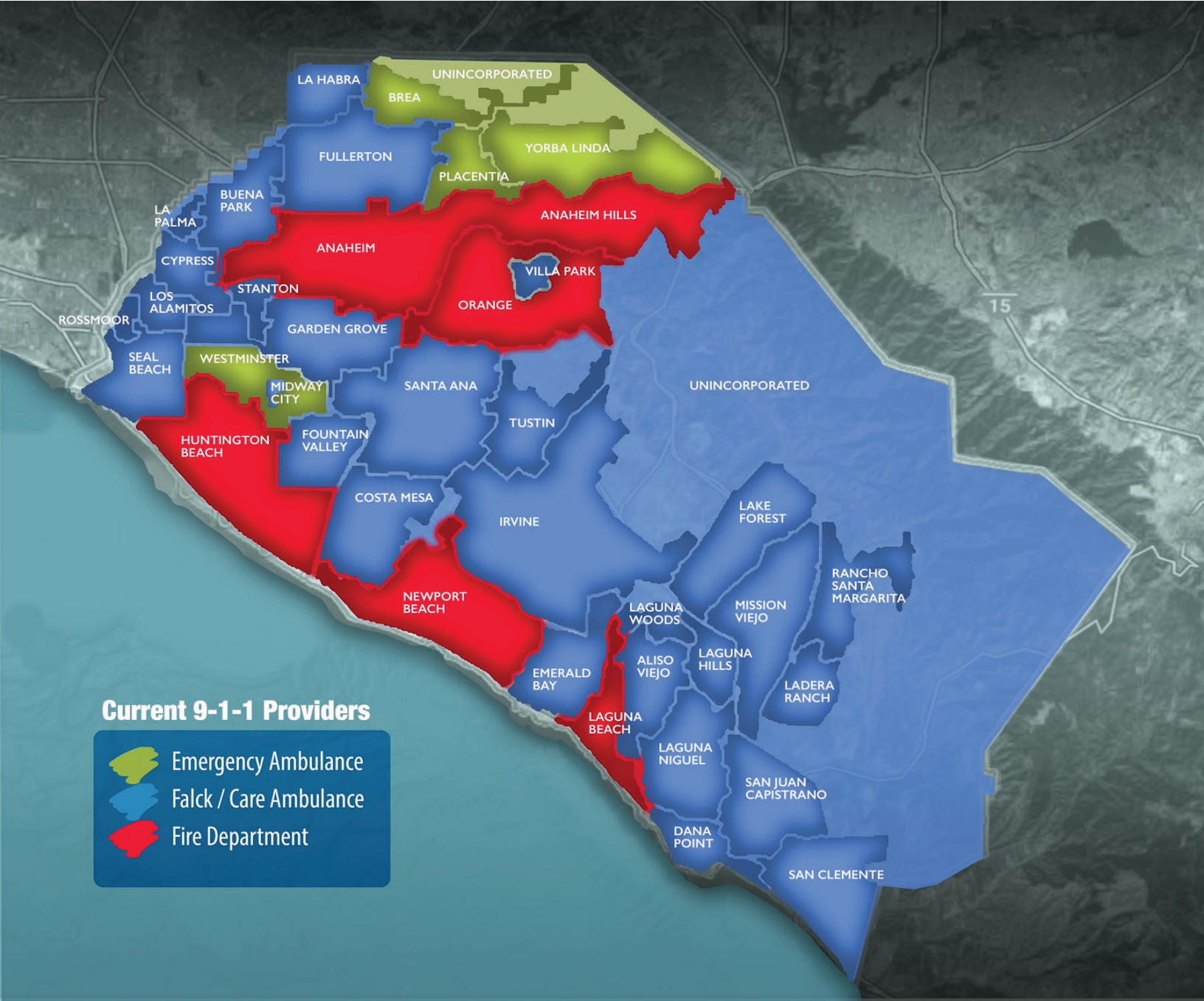
# Orange County FA, CA Map 2 South Population Density By Block Group

### Legend

- OCFA Fire Stations
- OCFA Cities
- Battalions
- PopSqMI**
- 0-3,000
- 3,001-6,000
- 6,001-12,000
- 12,001-24,000
- > 24,000

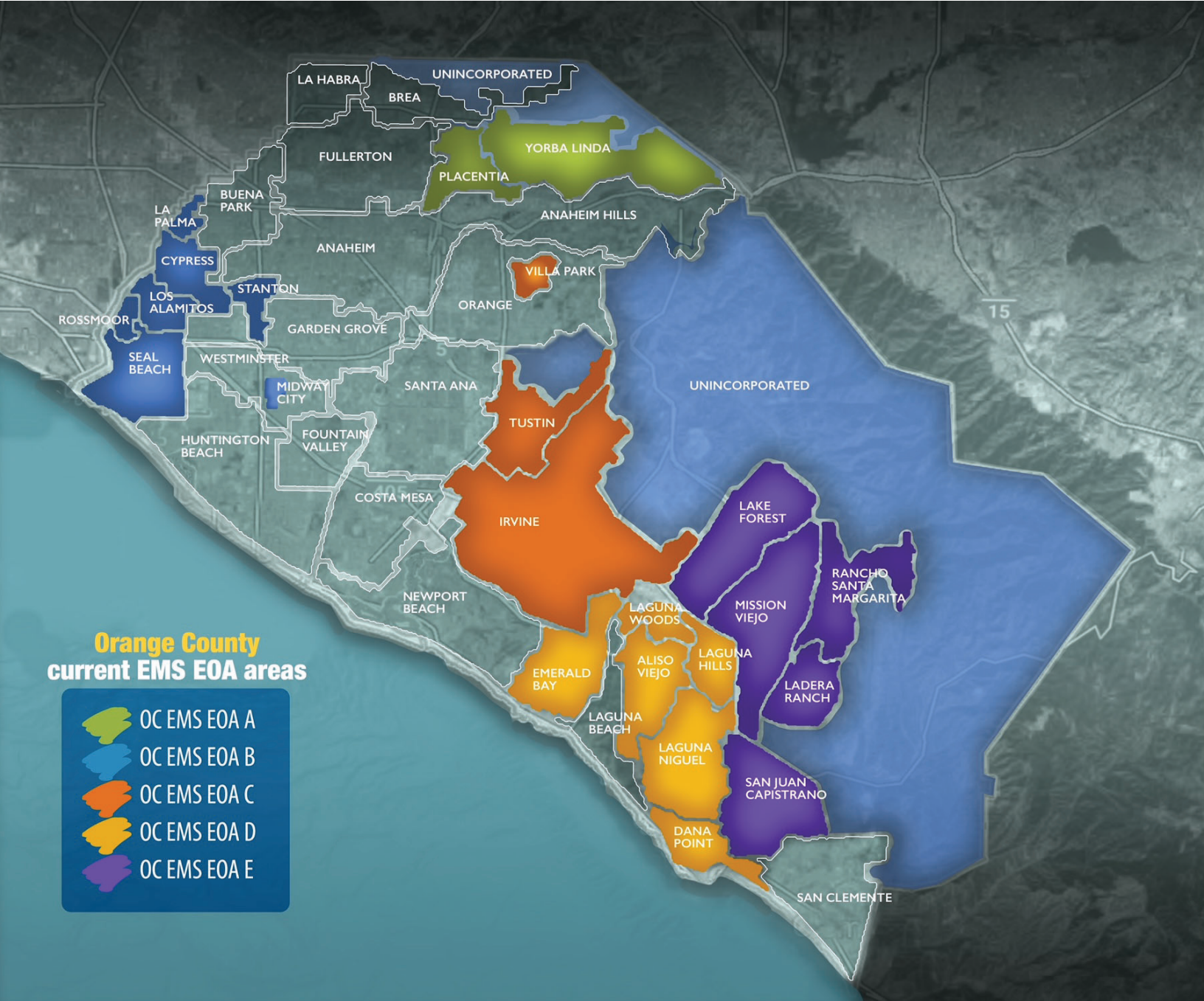


Sources: Esri, HERE, Garmin, Intermap, Incorpoin P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community.



**Current 9-1-1 Providers**

-  Emergency Ambulance
-  Falck / Care Ambulance
-  Fire Department



**Orange County  
current EMS EOA areas**

-  OC EMS EOA A
-  OC EMS EOA B
-  OC EMS EOA C
-  OC EMS EOA D
-  OC EMS EOA E

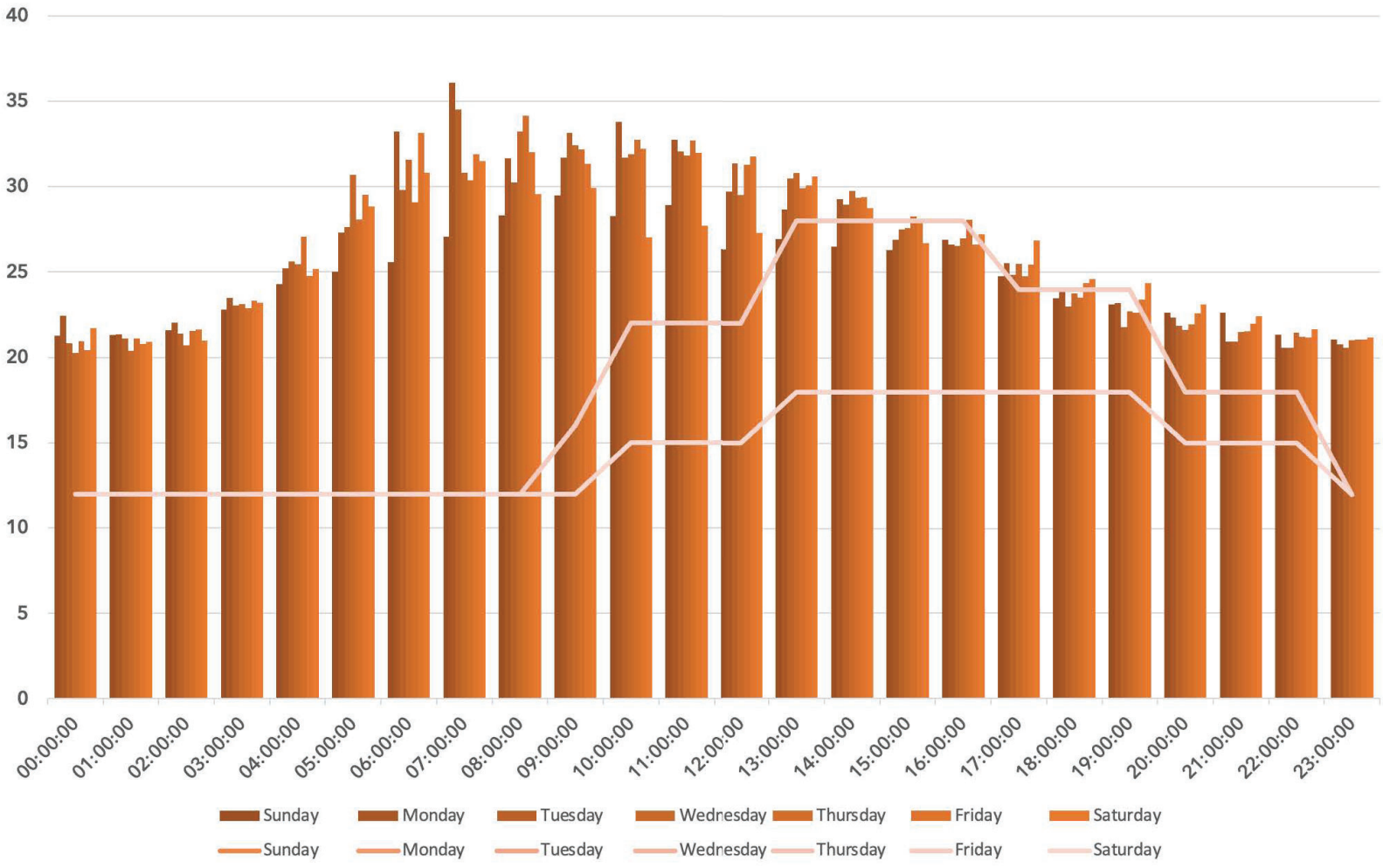


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**APPENDIX B**

**EOA DEPLOYMENT ANALYSIS EXHIBITS**

# Orange County Fire Authority, CA Demand Analysis & Schedule Regions A, B, C, D, & E



ASSESSMENTS

DATA

Requisitions

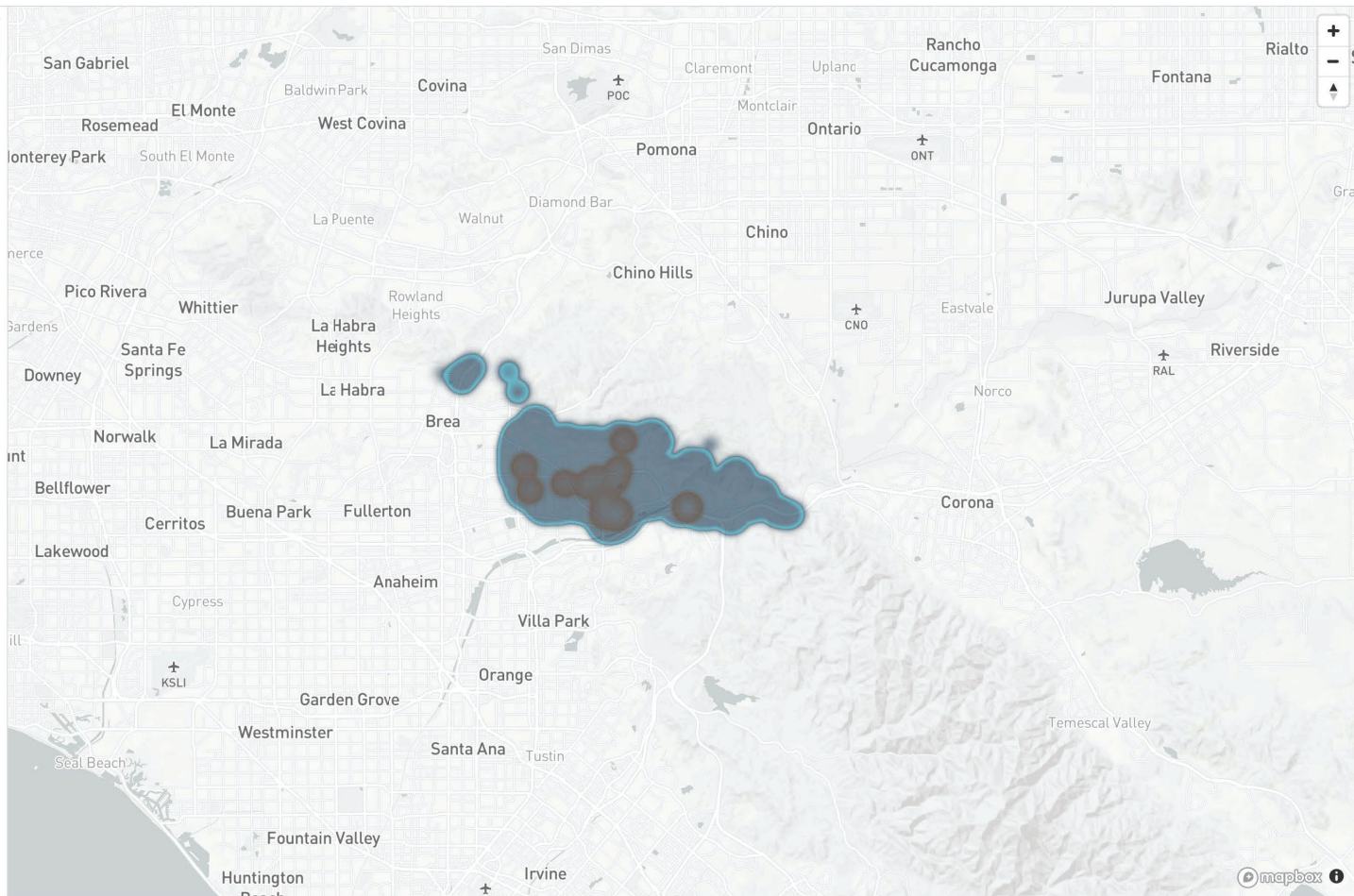
REPORTS

Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



v4.0.0

Fueled by Brandt VX



ASSESSMENTS

DATA

Requisitions

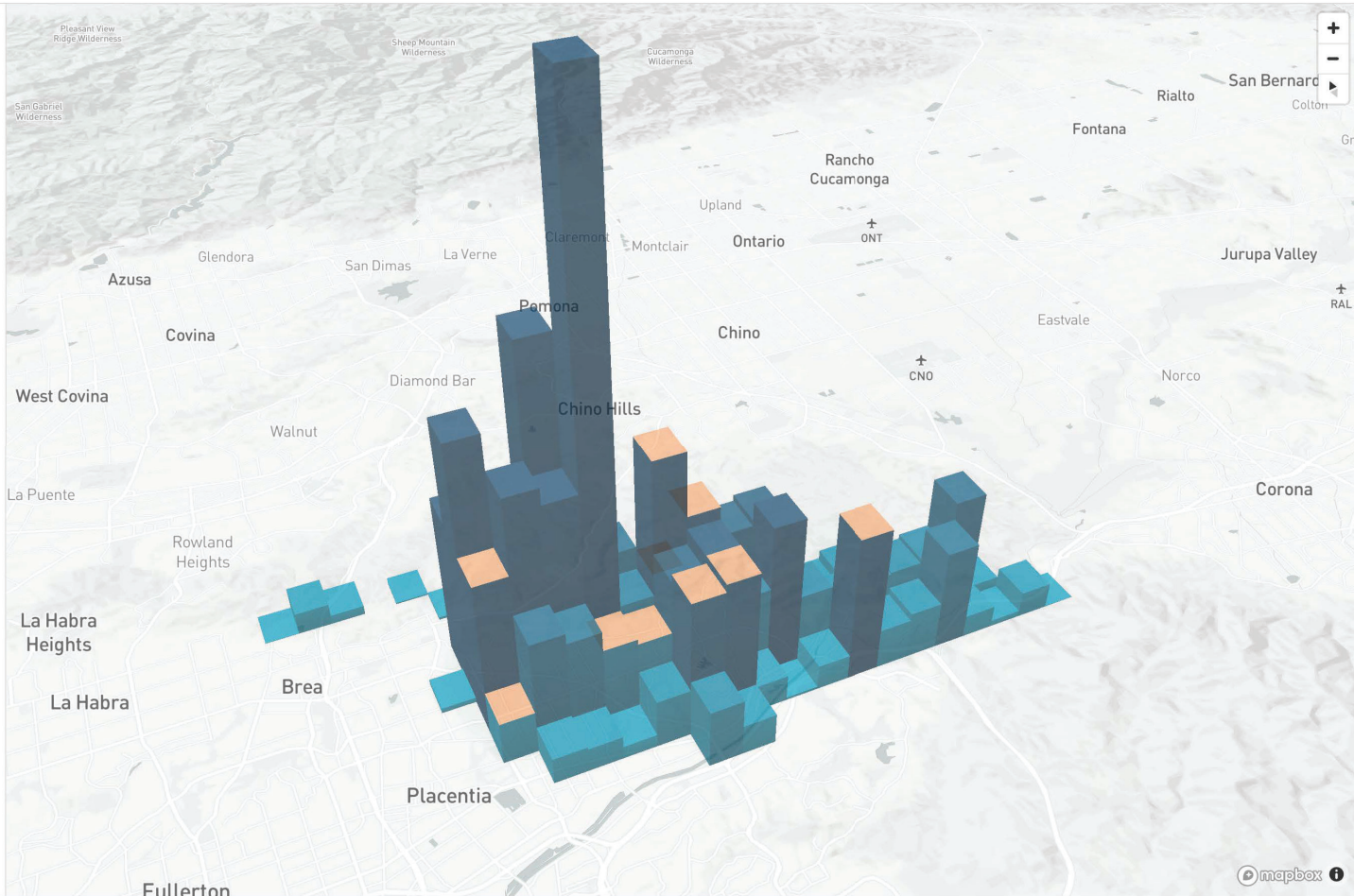
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Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



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ASSESSMENTS

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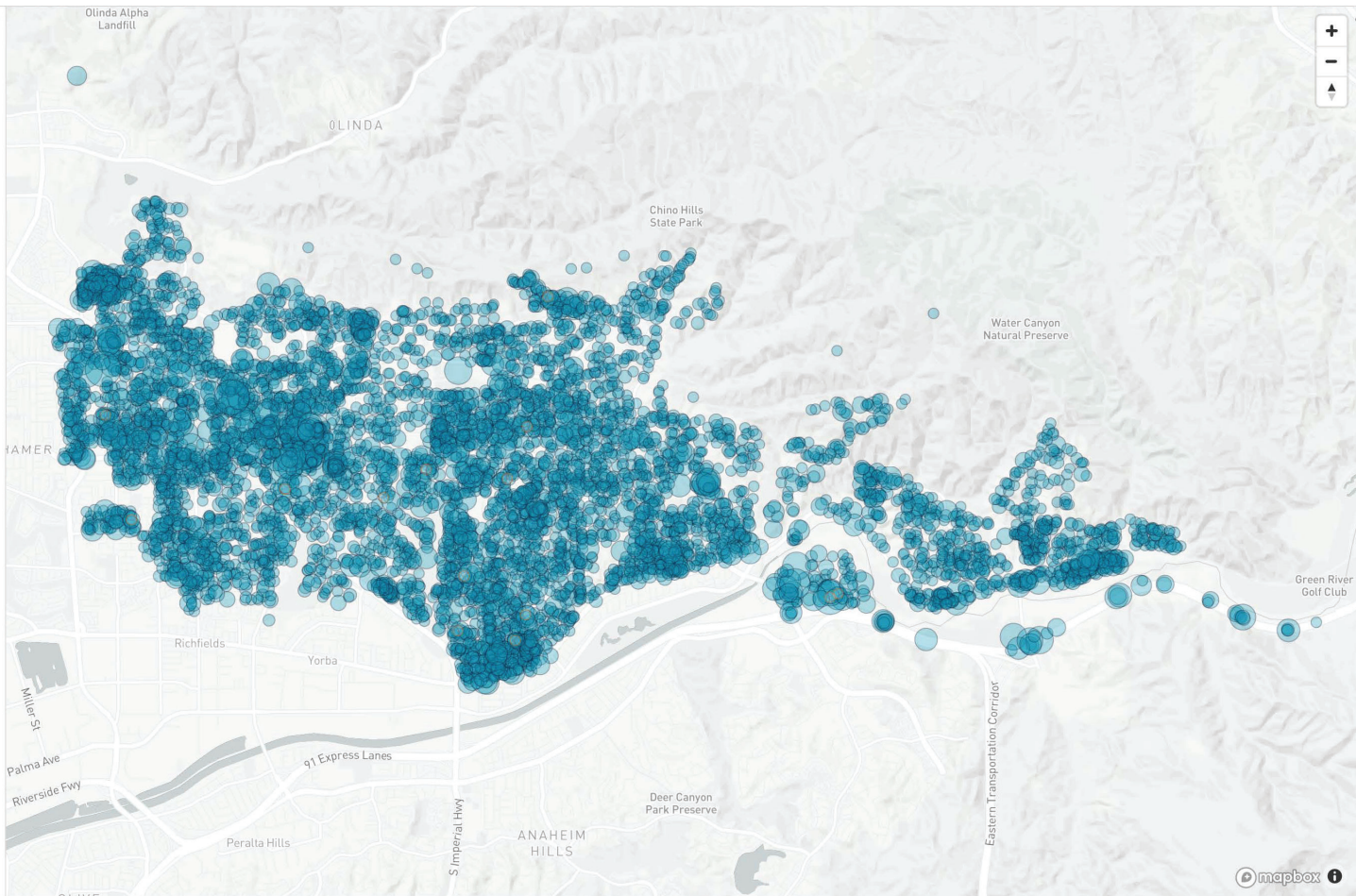
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Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



ASSESSMENTS

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Requisitions

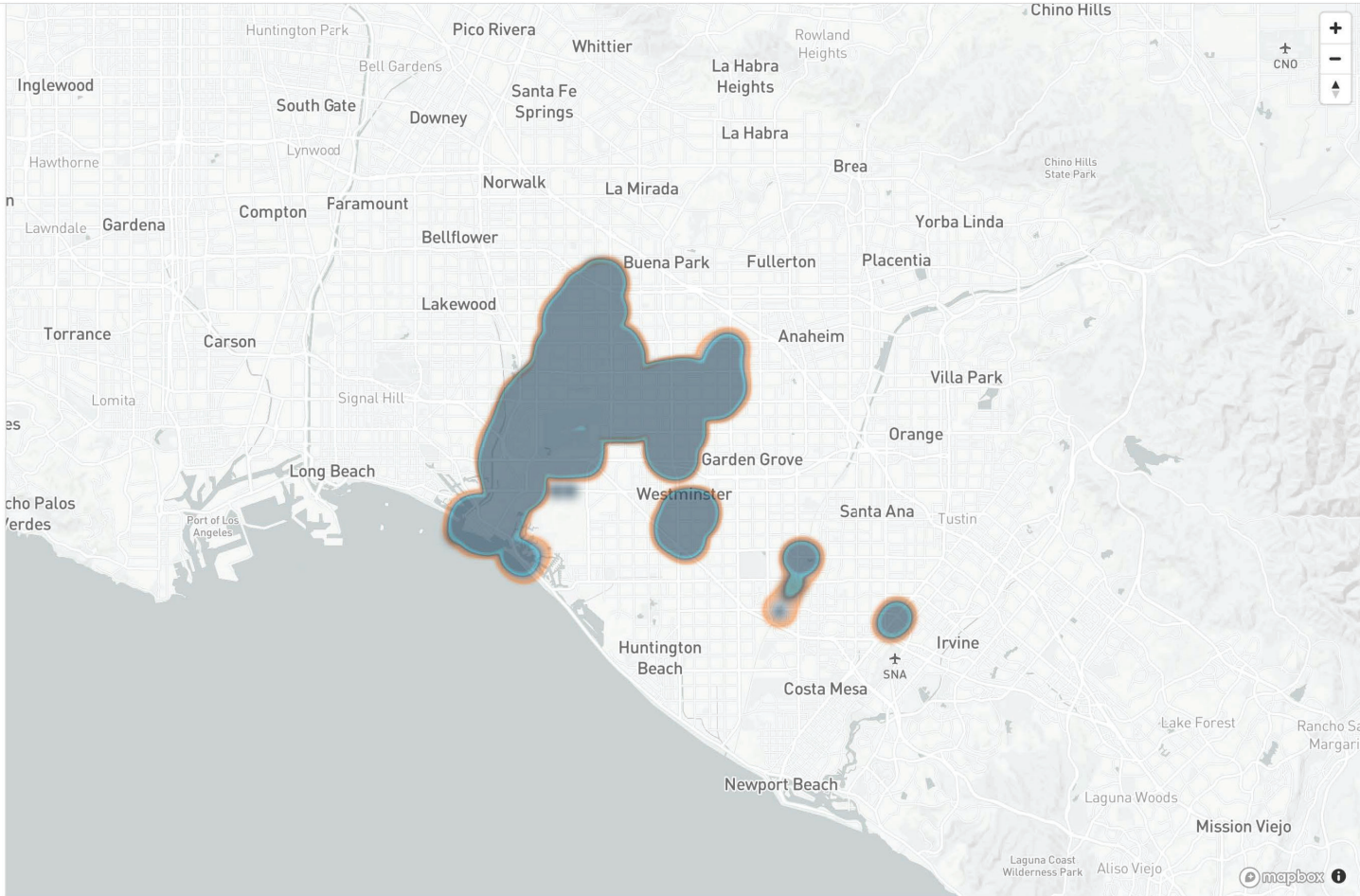
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Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



v4.0.0

Fueled by Brandt VX



ASSESSMENTS

DATA

Requisitions

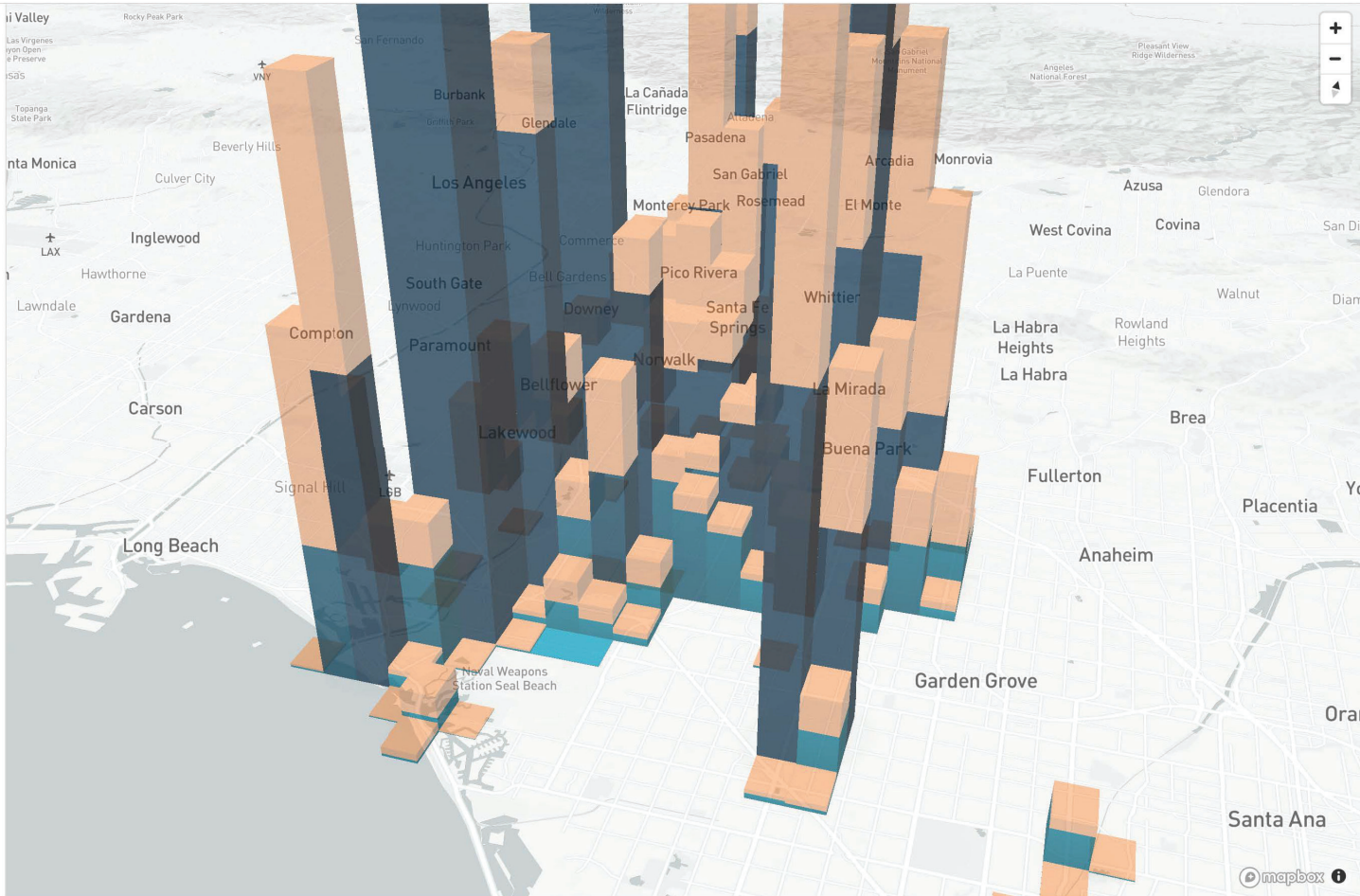
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Geographic Activity

Temporal Activity

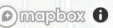
Optimal Workload

Temporal Demand



v4.0.0

Fueled by Brandt VX



ASSESSMENTS

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Requisitions

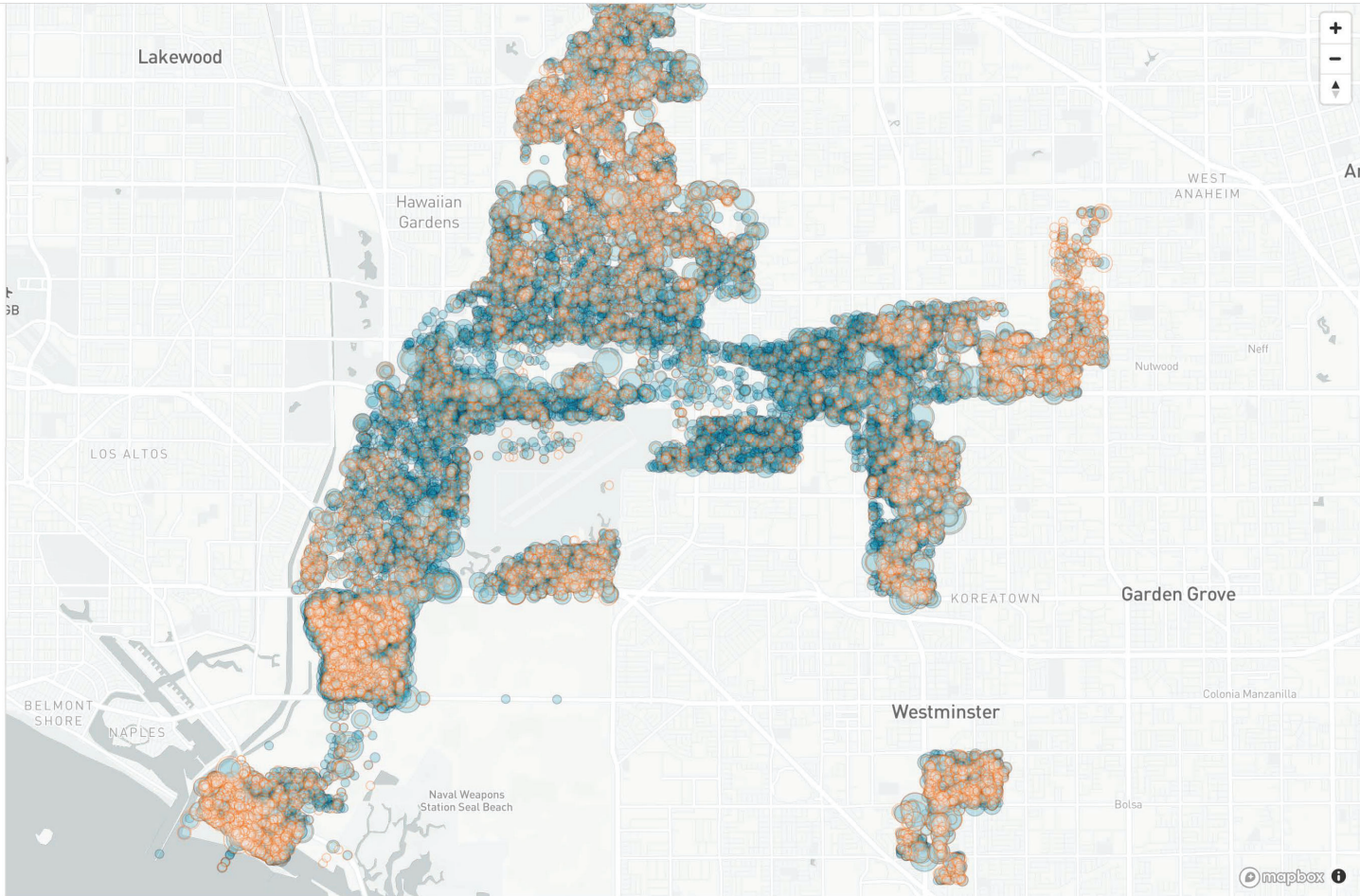
REPORTS

Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



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Fueled by Brandt VX



ASSESSMENTS

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Requisitions

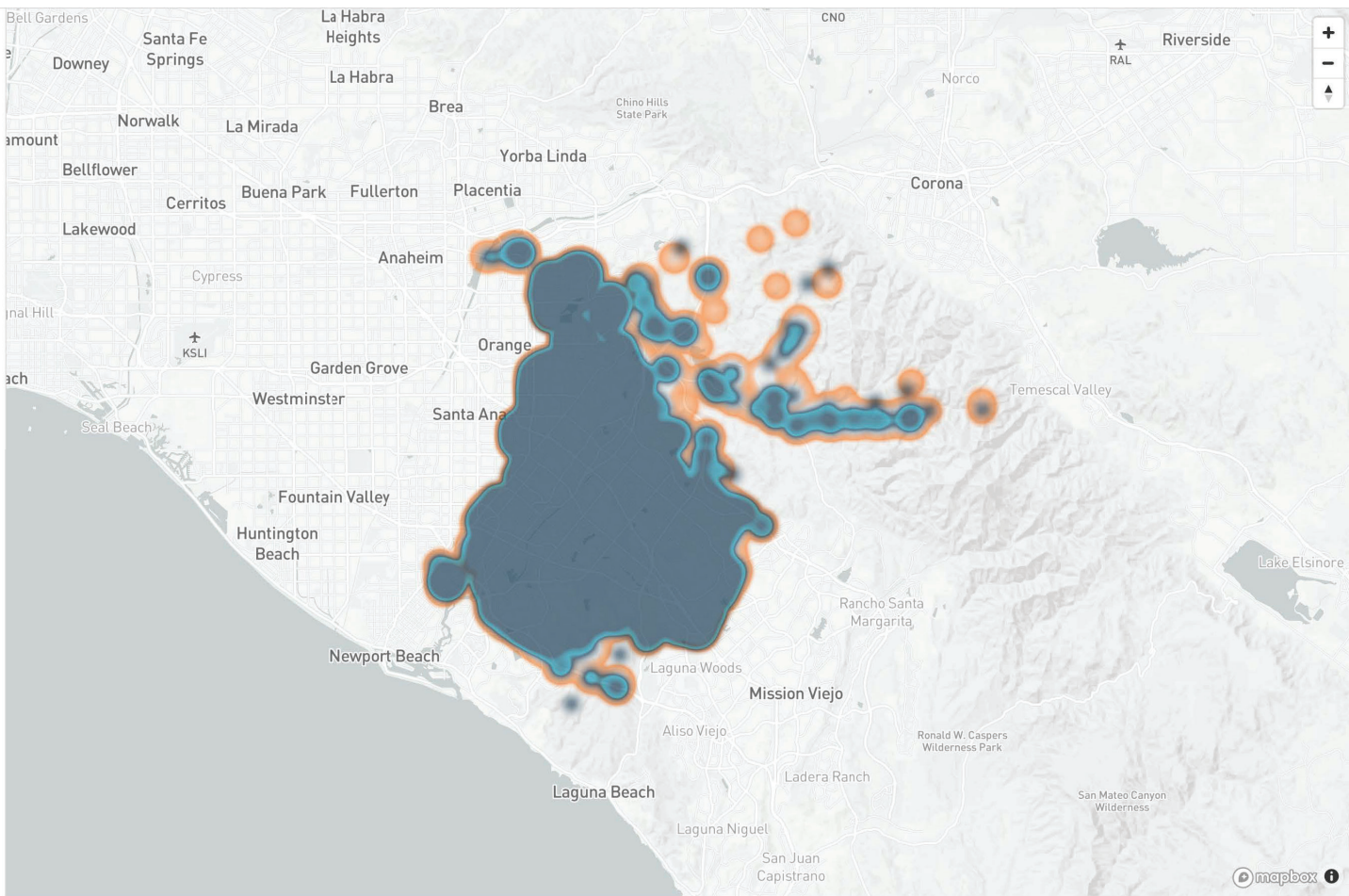
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Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



v4.0.0

Fueled by Brandt VX



ASSESSMENTS

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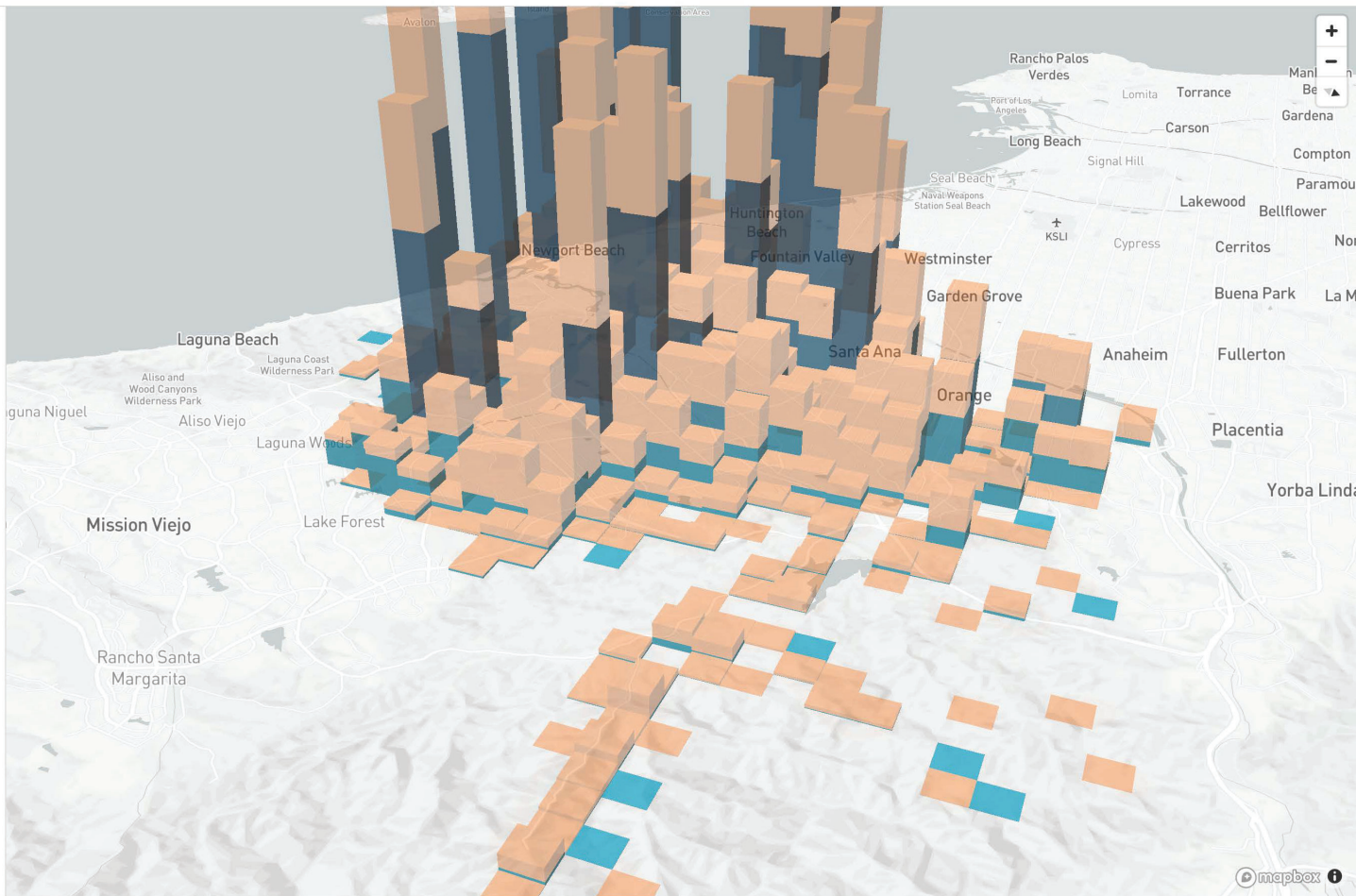
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Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



ASSESSMENTS

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Requisitions

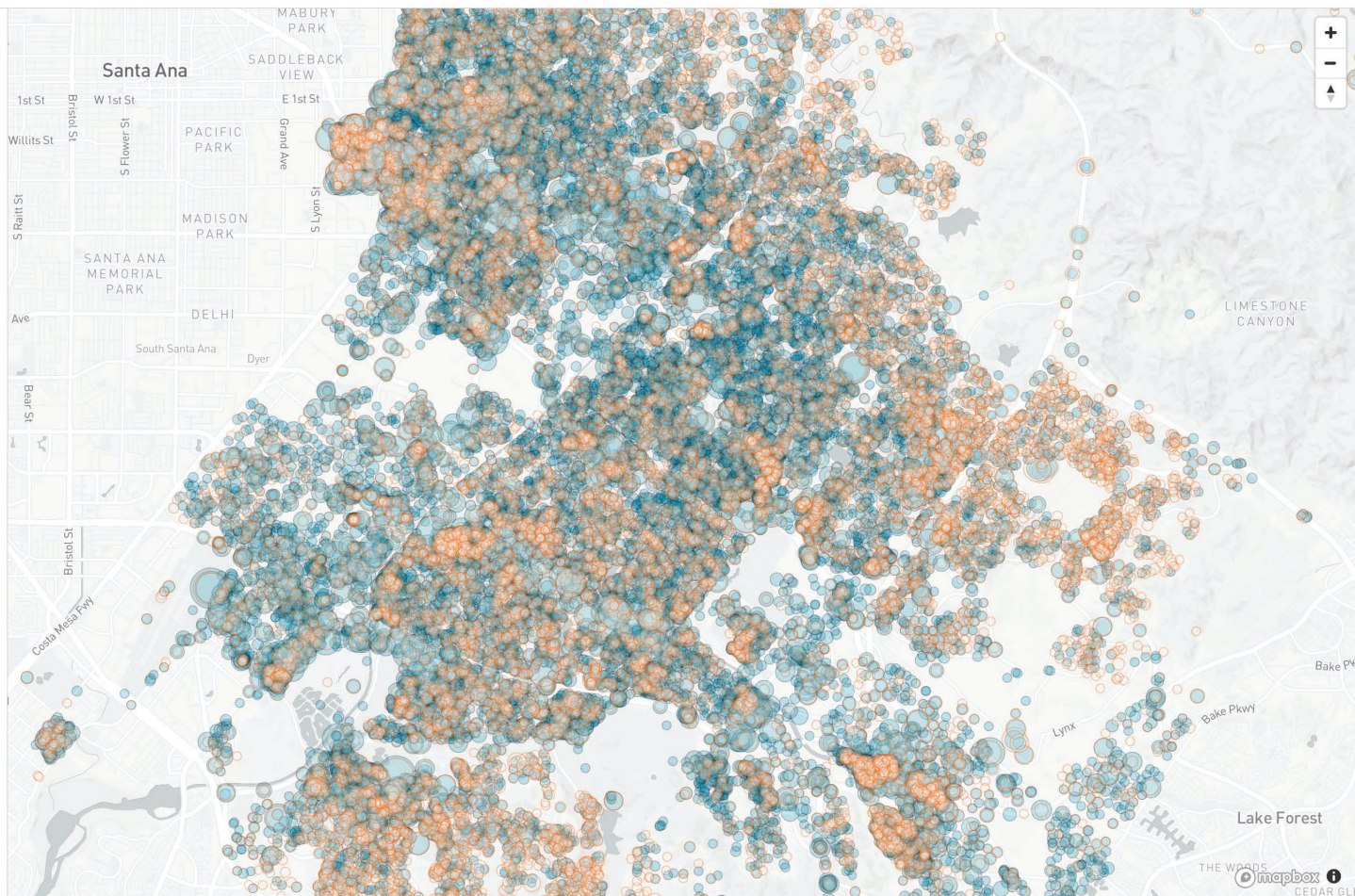
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Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



v4.0.0

Fueled by Brandt VX

ASSESSMENTS

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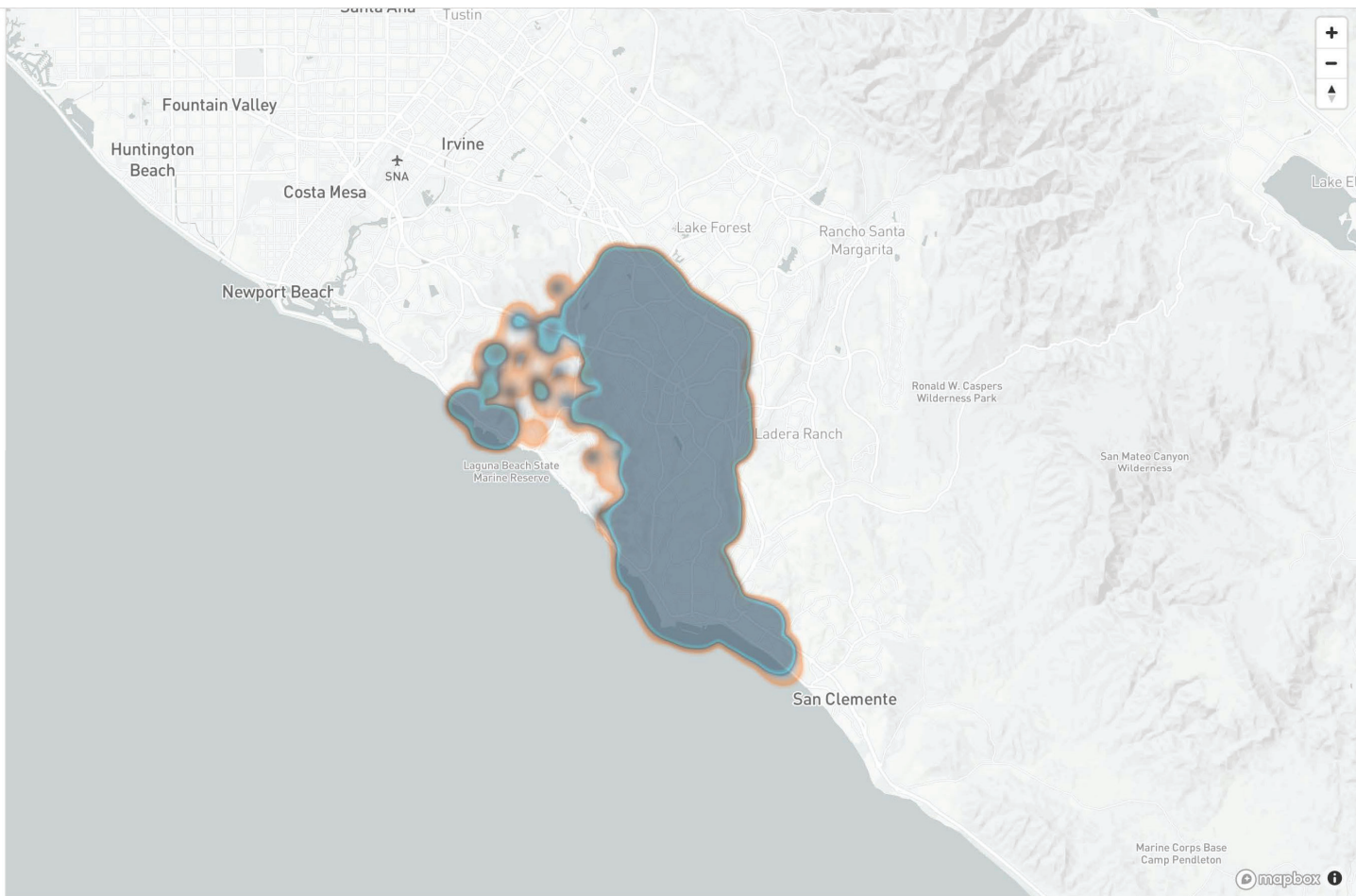
REPORTS

Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



v4.0.0

Fueled by Brandt VX

Marine Corps Base  
Camp Pendleton



ASSESSMENTS

DATA

Requisitions

REPORTS

Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



v4.0.0

Fueled by Brandt VX

ASSESSMENTS

DATA

Requisitions

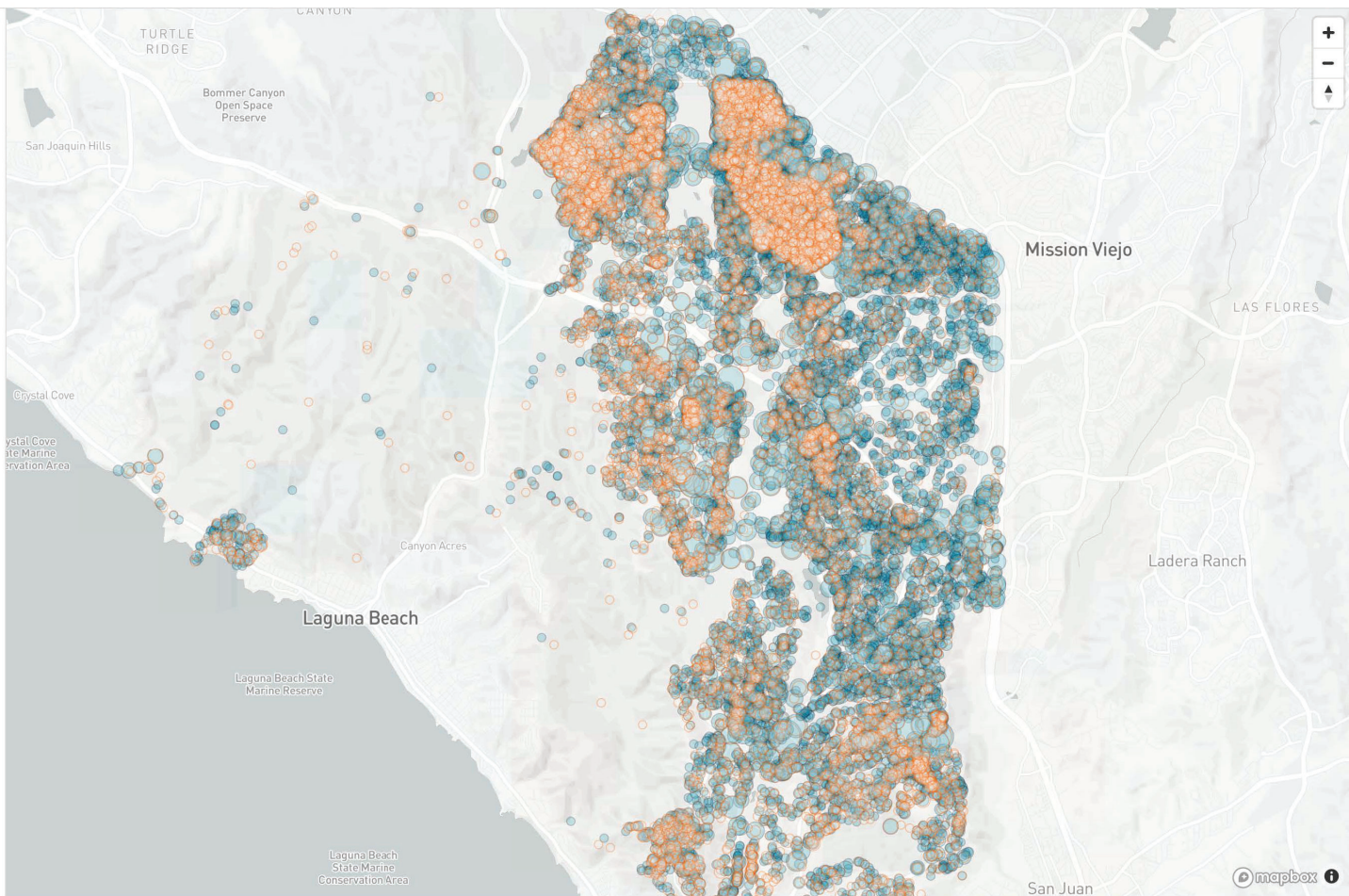
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Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



ASSESSMENTS

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Requisitions

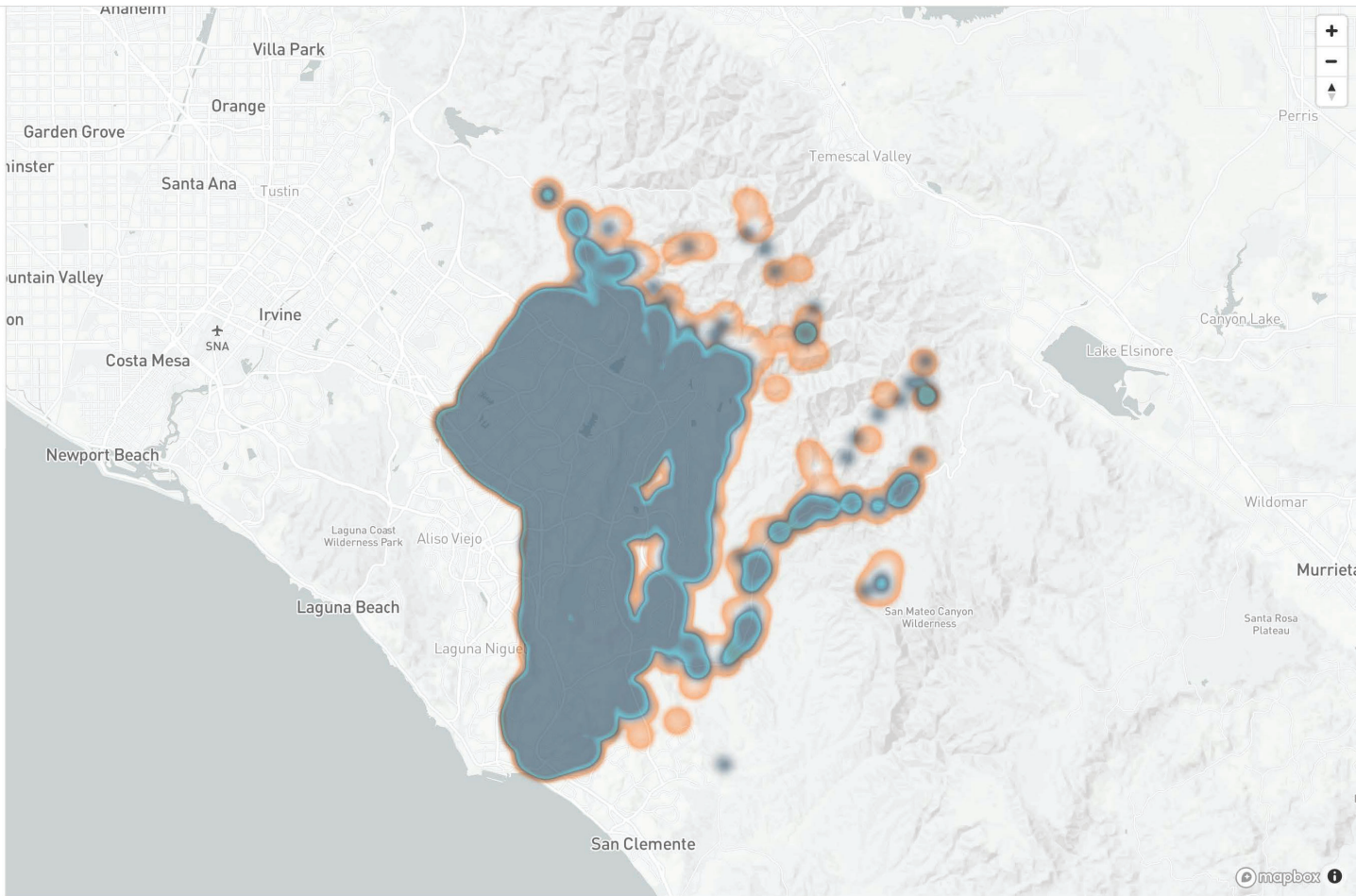
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Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



ASSESSMENTS

DATA

Requisitions

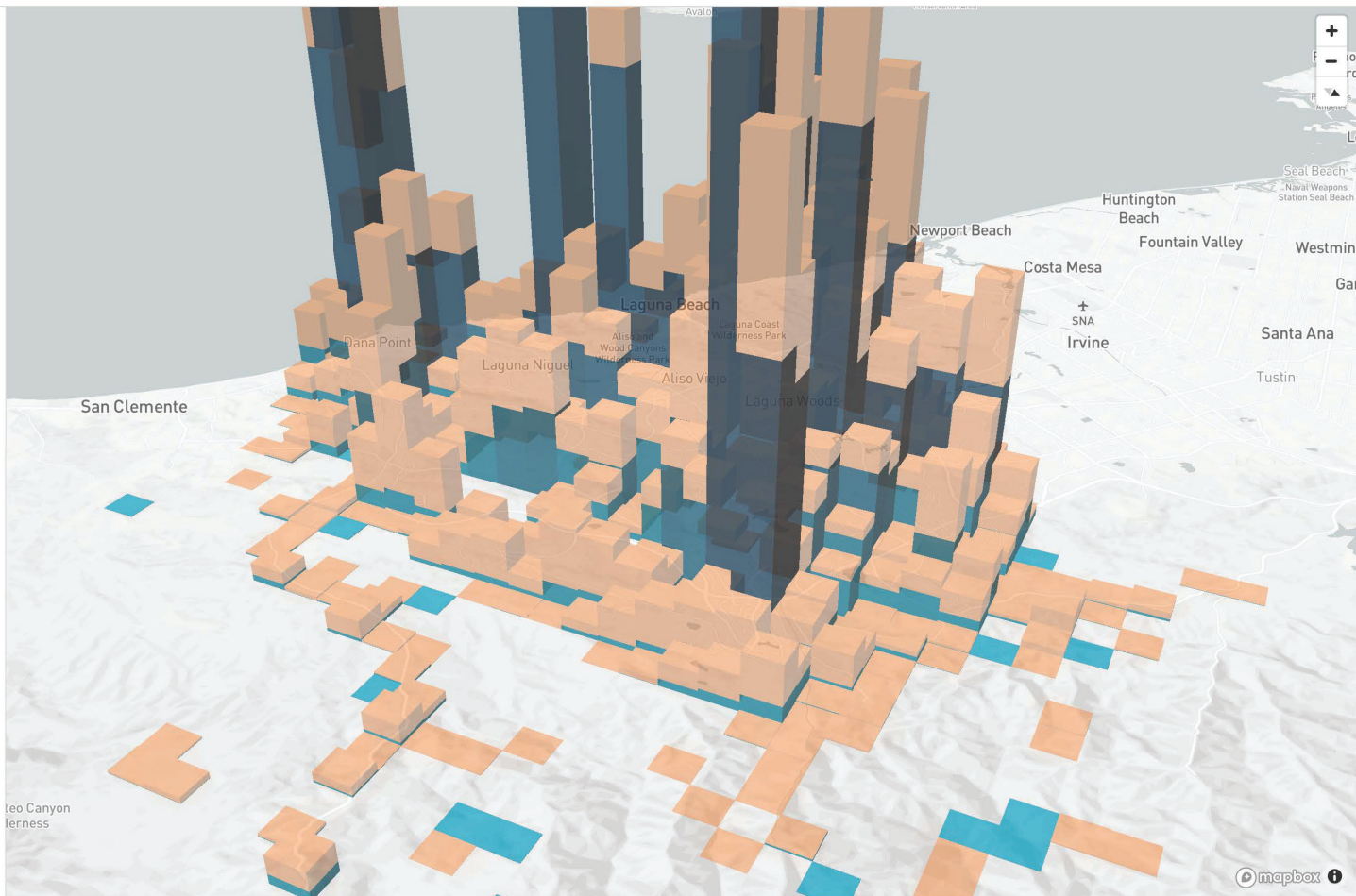
REPORTS

Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



v4.0.0

Fueled by Brandt VX



ASSESSMENTS

DATA

Requisitions

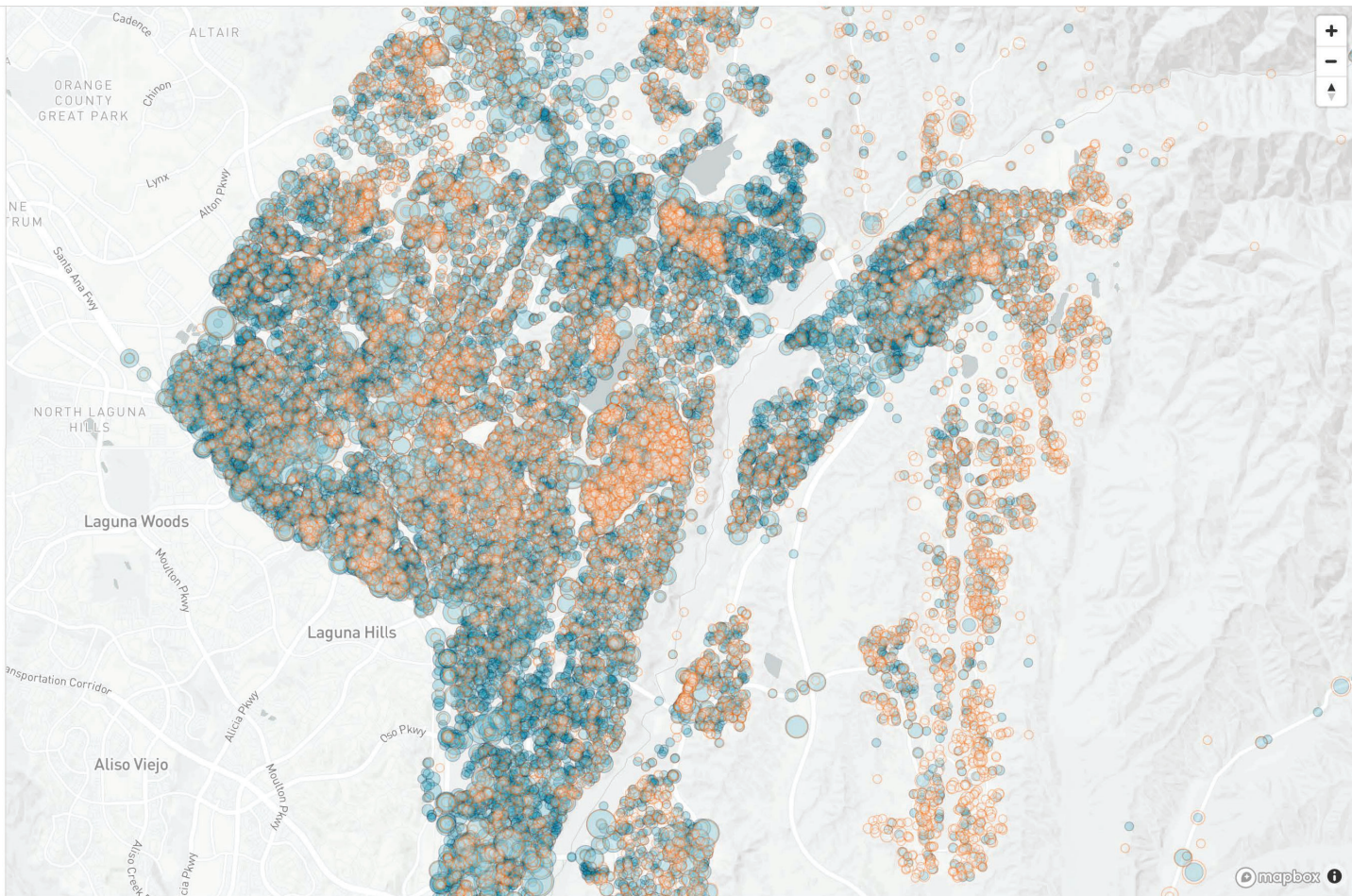
REPORTS

Geographic Activity

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ASSESSMENTS

DATA

Requisitions

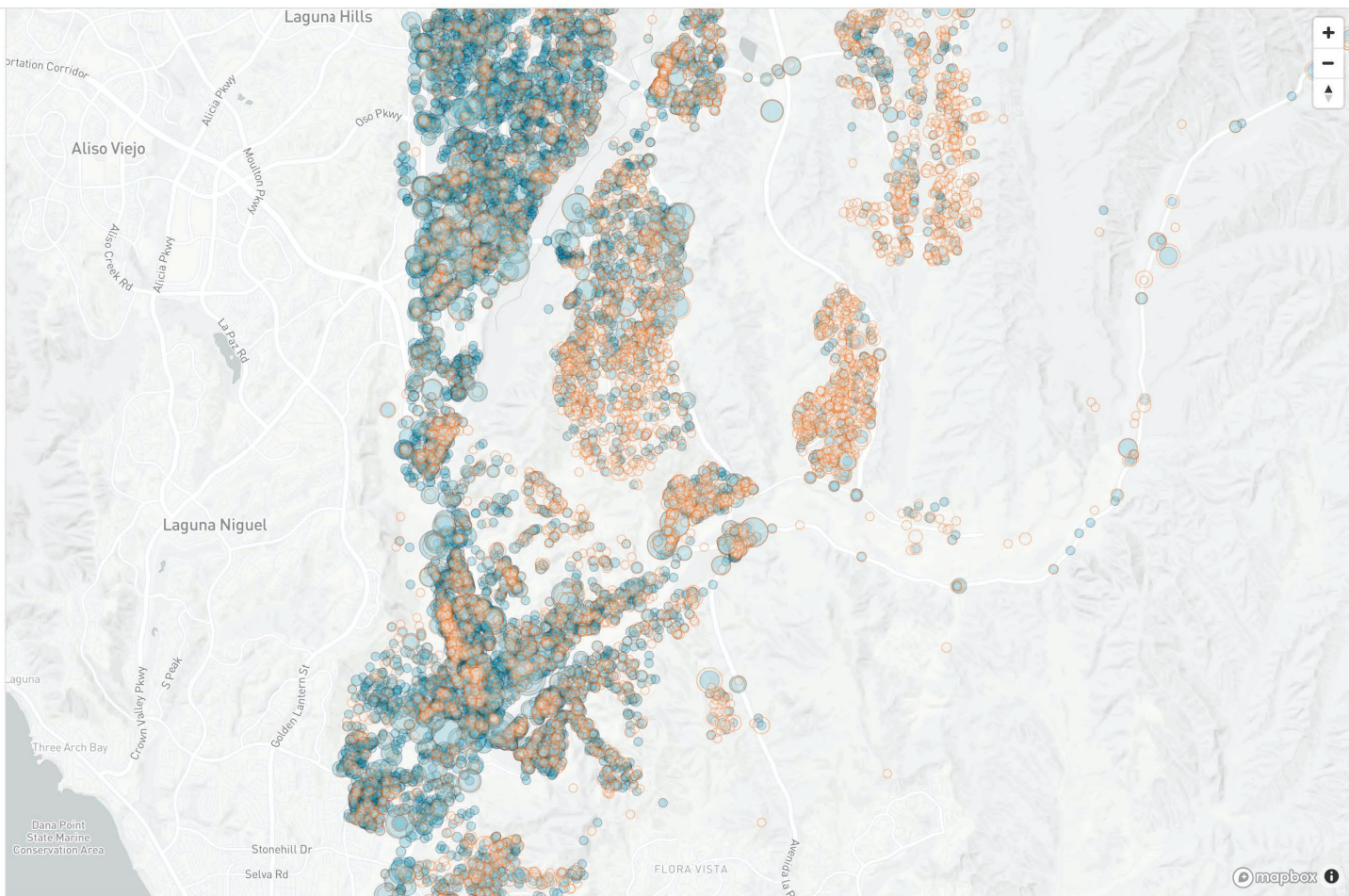
REPORTS

Geographic Activity

Temporal Activity

Optimal Workload

Temporal Demand



v4.0.0

Fueled by Brandt VX

ASSESSMENTS

- DATA
  - Requisitions
- REPORTS
  - Geographic Activity
  - Temporal Activity
  - Optimal Workload
  - Temporal Demand



## RESOLUTION NO. 2024-05

A RESOLUTION OF THE ORANGE COUNTY FIRE  
AUTHORITY BOARD OF DIRECTORS ADOPTING POLICY  
IN COMPLIANCE WITH HEALTH AND SAFETY CODE  
1797.231

*WHEREAS*, pursuant to Health and Safety Code section 1797.230, a county may contract for emergency ambulance services with a fire agency that will provide those services, in whole or in part, through a written subcontract with a private ambulance service.

*WHEREAS*, pursuant to Health and Safety Code section 1797.231, a fire agency may enter into a written subcontract with a private ambulance service for the purpose of contracting with a county.

*WHEREAS*, for the purposes of Health and Safety Code section 1797.231, the definition of a "fire agency" includes a joint powers agency created for the provision of fire protection services.

*WHEREAS*, on or after January 1, 2022, a county may not enter into or renew a contract for emergency ambulance services with a fire agency, as defined in subdivision (b) of Section 1797.230, that includes a written subcontract with a private ambulance service, unless the fire agency adopts a written policy that requires the written subcontract to be awarded pursuant to a competitive bidding process consistent with Section 20812 of the Public Contract Code.

*NOW THEREFORE BE IT RESOLVED*, that by adopting this Resolution, the Orange County Fire Authority (OCFA) Board of Directors is hereby adopting the required written policy to require any written subcontract with a private ambulance service to be awarded pursuant to a competitive bidding process consistent with Section 20812 of the Public Contract Code, and sets forth issues to be considered during the fire agency's competitive bidding process, which may include, but are not limited to, all of the following:

1. Whether safeguards are in place to prevent an entity submitting a bid, including an officer, employee, agent, representative, or other official of the entity, from participating in the deliberations of OCFA in awarding the subcontract.
2. Whether consideration for awarding the written subcontract is given only to bidders who submit complete applications in response to a written request for proposals, written request for qualifications, or other similar written request for bids. The written request shall not be prepared in whole or in part by any entity submitting a bid in the competitive bidding process, including an entity's officers, employees, agents, representatives, or officials.
3. Whether the written request described in paragraph (2) adequately describes criteria to evaluate a bidder's demonstrated ability and commitment to providing cost-efficient and high-quality services, which may include, but are not limited to, the following:

- A. Experience and history providing emergency ambulance services in a safe and efficient manner.
- B. Managerial experience and qualifications of key personnel.
- C. Effectiveness of operational processes and assets, including quality of ambulance fleet and equipment, dispatch, customer service, and working conditions of ambulance personnel.
- D. Performance monitoring and quality control.
- E. Reasonable service rates and charges.
- F. Financial stability to maintain an uninterrupted and consistent level of service.

*IT IS FURTHER RESOLVED* that in entering into a written subcontract with a private ambulance service as described in subdivision (a) of Health and Safety Code section 1797.231, the Orange County Fire Authority shall:

1. Provide the ambulance service provider with reasonable advance written notice of any operational changes under the written subcontract between the OCFA and the ambulance service provider.
2. The OCFA shall, in a timely fashion, use best efforts to address concerns raised by the ambulance service provider employees regarding any operational changes under the written subcontract and shall communicate its written responses to those concerns to the ambulance service provider.
3. A bidding ambulance service participating in an OCFA competitive bidding process pursuant to this section shall demonstrate in its response to a written request for proposals, written request for qualifications, or other similar written request for bids that its ambulance service employees are provided with all of the following:
  - a. Comparable wages, benefits, and staffing generally consistent with those provided to ambulance service employees in the same geographic region.
  - b. Specific mechanisms to ensure adequate and open communication with the OCFA in order to facilitate immediate notice to the recognized employee organization or official representative of the ambulance service provider's employees whenever operational changes are proposed and noticed by the OCFA, as required by subdivision (c), and are likely to have a material impact on the employees' wages, hours, or other terms and conditions of employment.
  - c. Effective access to the OCFA by the recognized employee organization or official representative of the employees to directly provide input on operational changes, as described in paragraph (2), and, if requested by the recognized employee organization or official representative of the employees,

facilitation of immediate access to the OCFA to allow the employees to set forth specific concerns about the operational changes.

*PASSED, APPROVED, AND ADOPTED* this \_\_\_\_ day of \_\_\_\_\_, 2024.

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JOHN O'NEILL, CHAIR  
Board of Directors

APPROVED AS TO FORM:

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DAVID E. KENDIG  
General Counsel

ATTEST:

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MARIA D. HUIZAR, CMC  
Clerk of the Authority

# California Code, Health and Safety Code - HSC § 1797.231

Current as of January 01, 2023 | Updated by [FindLaw Staff](#)

(a)(1) A fire agency, as defined in [subdivision \(b\) of Section 1797.230](#), may enter into a written subcontract with a private ambulance service for the purpose of contracting with a county as described in [paragraph \(1\) of subdivision \(a\) of Section 1797.230](#).

(2) This subdivision is declaratory of existing law regarding a fire agency's powers and authority to subcontract for emergency ambulance services.

(b) On or after January 1, 2022, a county may not enter into or renew a contract for emergency ambulance services with a fire agency, as defined in [subdivision \(b\) of Section 1797.230](#), that includes a written subcontract with a private ambulance service, unless the fire agency adopts a written policy that requires the written subcontract to be awarded pursuant to a competitive bidding process consistent with [Section 20812 of the Public Contract Code](#). The written policy shall set forth issues to be considered during the fire agency's competitive bidding process, which may include, but are not limited to, all of the following:

(1) Whether safeguards are in place to prevent an entity submitting a bid, including an officer, employee, agent, representative, or other official of the entity, from participating in the deliberations of the fire agency in awarding the subcontract.

(2) Whether consideration for awarding the written subcontract is given only to bidders who submit complete applications in response to a written request for proposals, written request for qualifications, or other similar written request for bids. The written request shall not be prepared in whole or in part by any entity submitting a bid in the competitive bidding process, including an entity's officers, employees, agents, representatives, or officials.

(3) Whether the written request described in paragraph (2) adequately describes criteria to evaluate a bidder's demonstrated ability and commitment to providing cost-efficient and high-quality services, which may include, but are not limited to, the following:

(A) Experience and history providing emergency ambulance services in a safe and efficient manner.

(B) Managerial experience and qualifications of key personnel.

(C) Effectiveness of operational processes and assets, including quality of ambulance fleet and equipment, dispatch, customer service, and working conditions of ambulance personnel.

(D) Performance monitoring and quality control.

(E) Reasonable service rates and charges.

(F) Financial stability to maintain an uninterrupted and consistent level of service.

(c)(1) A fire agency that enters into a written subcontract with a private ambulance service as described in subdivision (a), shall provide the ambulance service provider with reasonable advance written notice of any operational changes under the written subcontract between the fire agency and the ambulance service provider.

(2) The fire agency shall, in a timely fashion, use best efforts to address concerns raised by the ambulance service provider employees regarding any operational changes under the written subcontract and shall communicate its written responses to those concerns to the ambulance service provider.

(d) A bidding ambulance service participating in a fire agency's competitive bidding process pursuant to this section shall demonstrate in its response to a written request for proposals, written request for qualifications, or other similar written request for bids that its ambulance service employees are provided with all of the following:

(1) Comparable wages, benefits, and staffing generally consistent with those provided to ambulance service employees in the same geographic region.

(2) Specific mechanisms to ensure adequate and open communication with the contracting fire agency in order to facilitate immediate notice to the recognized employee organization or official representative of the ambulance service provider's employees whenever operational changes are proposed and noticed by the contracting fire agency, as required by subdivision (c), and are likely to have a material impact on the employees' wages, hours, or other terms and conditions of employment.

(3) Effective access to the contracting fire agency by the recognized employee organization or official representative of the employees to directly provide input on operational changes, as described in paragraph (2), and, if requested by the recognized employee organization or official representative of the employees, facilitation of immediate access to the fire agency to allow the employees to set forth specific concerns about the operational changes.

(e) This section does not limit a fire agency's authority to enter into agreements with other public entities, including agreements to provide for ambulance services.

(f) The requirements of this section are within the exclusive jurisdiction of the governing body of the fire agency.



(g) This section does not supersede [Section 1797.201](#) and shall not alter, modify, abridge, diminish, or enlarge the requirements for creating, establishing, or maintaining an exclusive operating area under [Section 1797.224](#).