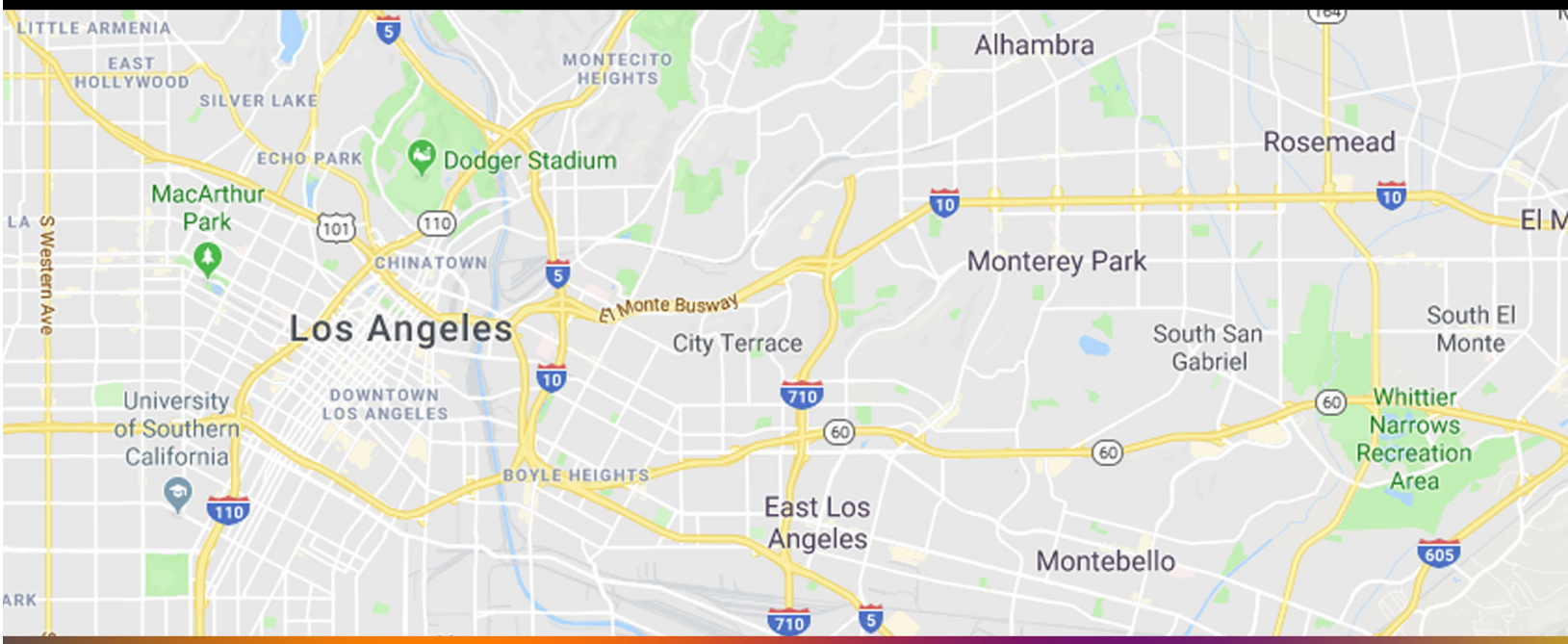
POLICE OFFICER

JUAN JOSE DIAZ

END OF WATCH

July 27, 2019

Mobility After Action Report



Officer Diaz Funeral: Mobility AAR

Produced For:	Department of Homeland Security (DHS) Science & Technology Directorate (S&T)
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Executive Summary

After the murder of Officer Juan Jose Diaz, the Los Angeles Police Department (LAPD) contacted Mobility 4 Public Safety (M4PS) to inquire about the possibility of using a mobile collaboration app to augment voice communications during Memorial Service operations. As a member of the Mobility Acceleration Coalition (MAC) under the Department of Homeland Security (DHS) Science & Technology Directorate (S&T), LAPD had participated in mobile app deployments during the 2019 Los Angeles Marathon, Dodgers' Opening Day, and May Day protests earlier in the year. The use of a secure, mobile collaboration app was effective in reducing radio traffic, improving situational awareness, and enhancing multi-agency information sharing.

The funding for the premium application used previously had been depleted, so LAPD was advised that the licenses were no longer active. Recognizing the operational value of a secure, enterprise-class messaging and collaboration platform but no funding to maintain such an app, the MAC shifted focus to finding a scalable and sustainable enterprise platform to meet the requirements of public safety.

MAC members had evaluated and/or tested over a dozen applications before concluding that there were two potentially viable platforms. They began testing the one they believed to offer the better user experience. The plan was to conduct the initial field deployment at a community event on August 18, 2019. M4PS and LAPD agreed that a high-profile event with such a short planning window was not the ideal operation to launch; however, they knew the value public safety collaboration tools could provide and agreed that the potential benefit outweighed the risk. If the app did not perform as intended, officers would not be worse-off as they still had their radios and individual texting capabilities.

M4PS worked closely with LAPD Operations-Central Bureau (OCB) Special Events Unit (SEU) to develop a plan and deploy the app prior to Officer Diaz' visitation on Sunday, August 11 and Memorial Service on August 12. Based on the short timeline, LAPD opted to limit the deployment to supervisors to ensure a manageable scope and number of users.

As with previous deployments, the use of public safety collaboration successfully reduced radio traffic, increased situational awareness, and improved information sharing across departments and groups supporting the operation. M4PS and LAPD leveraged their prior experience to develop a deployment plan which would account for feature differences across platforms.

This Mobility After Action Report (AAR) contains the following sections:

1. Project Background
2. Operational Overview: planning, deployment, and end-user feedback
3. Lessons Learned

We hope this report will provide valuable insights to advance the adoption of secure, public safety messaging and collaboration apps as formal operational communications tools.

Background

As public safety has been expanding the use of mobile broadband technologies to support operational communications, the use of messaging and collaboration apps have become a critical tool for many public safety practitioners and operations. The first documented large-scale deployment of collaboration to support public safety operations was Super Bowl LI (SBLI) in Houston, Texas in 2017 under the Harris County FirstNet Early Builder Program. Additional details about this inaugural event can be found in the SBLI After Action Report (AAR). Since then, public safety collaboration has become a standard tool for many special events in the Houston area including the Houston Chevron Marathon, both Bush funerals, presidential visits, and other festivals, parades, etc.

In 2019, the same mobile collaboration app was utilized for a number of events in the Los Angeles region through the Mobility Acceleration Coalition (MAC) program under the Department of Homeland Security (DHS) Science & Technology Directorate (S&T). The results in Los Angeles mimicked those in Houston. The 2019 Los Angeles Marathon (LAM) realized unprecedented collaboration and real-time information sharing between fire/EMS, law enforcement, transportation and public works across City of Los Angeles, Los Angeles County, West Hollywood, Beverly Hills, and Santa Monica. As experienced in the Houston region, users reported significantly reduced radio traffic, enhanced situational awareness, and improved information sharing across departments and jurisdictions. More about the 2019 AAR deployment can be read in the 2019 Los Angeles Marathon Mobility AAR.

These represent examples of coordinated deployments, centrally administered with users across multiple organizations utilizing a single mobile app with groups and "channels" created based on the Event Action Plan (EAP). Public safety agencies in the Houston area evolved to using the regional public safety collaboration app for daily operations and even disaster response.

But these large-scale, coordinated deployments are not the only use cases for first responder messaging. In fact, many public safety personnel are using free, commercial apps every day for a variety of operational purposes. Publications such as "South Dakota Public Safety Broadband Network Interoperability Use with Mobile Broadband" and "Public Safety Messaging: A New Frontier for Collaboration and Interoperability" by the Texas Department of Public Safety (TXDPS) highlight the need for low or no cost, secure messaging and collaboration platforms that meet the unique requirements of the diverse and often unique requirements of public safety practitioners.

Due to lack of sustainable funding after the sunset of the Harris County FirstNet Early Builder program and lack of product funding in the MAC program, it became apparent that the ability to scale the adoption of secure public safety messaging/collaboration tools needed to be able to compete with the free, commercial apps increasingly being utilized by responders without access to enterprise collaboration tools.

The MAC shifted its focus to identifying a technically viable and sustainable platform to support the different agencies in both of these large metropolitan areas to continue the momentum for interoperable mobility adoption. Based in large part on the public safety messaging requirements developed by the TXDPS Broadband Strategic Advisory Group, MAC members evaluated over a dozen applications. While there are a variety of collaboration tools on the market, our conclusion was consistent with those of South Dakota and Texas - no platform currently exists in the market that meets the economic and technical requirements of the public safety industry.

Through the evaluation process, it was determined that public safety would benefit from the use of open source platforms which can be:

1. privately hosted in a secure, cloud environment
2. customized for the unique requirements of public safety
3. exclusively used by public safety personnel without co-mingling with the general public
4. adopted with low cost of entry
5. scaled inexpensively

After the murder of Officer Juan Diaz by a local gang, LAPD contacted Mobility 4 Public Safety (M4PS) – prime contractor for the MAC - to see if the collaboration licenses were still available for use during funeral operations. The commercial app used previously was no longer available, but the MAC had been testing one of two potentially viable open source collaboration platforms identified during product evaluation efforts. While there was concern about conducting an initial deployment with such a short planning timeline and high-profile operation, LAPD and M4PS agreed that officers would still have their radios as a fallback if the app did not perform as well as the previous app. With the potential to significantly improve communications by augmenting voice radio, the decision was made to proceed with the deployment.

Operational Overview

Planning

Officer Diaz' funeral was scheduled for August 12, 2019 with a viewing the evening of August 11, 2019. M4PS worked with LAPD Special Events to identify mobile app users based on the EAP being developed. Due to the short planning timeline, a preliminary org chart was provided with assignments being completed from the Incident Commander down to Branch Directors.

The previous app required individual user account activation through the following email verification process:

1. Agency provides user information to M4PS
2. M4PS imports user list through admin portal
3. App sends invitation emails to individual users with activation link
4. User clicks link to activate account and set password

5. Once activated, user could be added to operational channels

The requirement for end-user action was one of the biggest barriers to adoption and scalability for a variety of reasons, including:

1. End users deleting invitation emails as spam
2. End users ignoring invitation emails from unknown senders (M4PS app administrators)
3. Public safety shift schedules: people being off prior to the start of the operational period never seeing the invitation email
4. End users without department issued phones not having access to department email when not in an office or on shift

Due to the known limitations when requiring end user action and the short planning timeline, M4PS emphasized the need for an alternate account creation process that would minimize end user action during the configuration and setup activities. The platform being used allowed 1) administrators to set a temporary password during account creation, and 2) bulk import users. But it did not allow both at the same time. Administrators could individually create user accounts with a common temporary password, OR bulk import users which would require an email code to be sent to each user individually to set their own unique password.

Due to these technical limitations, M4PS initially planned to manually create each individual account. Oasys International, the application development company provided by DHS to support public safety customizations, wrote a script to allow for the bulk import of users along with assigning of a common, temporary password. This automation yielded significant efficiencies during the account activation process. Feedback from the end users was that the process was incredibly straight-forward and aided the wide adoption by identified app users.

Unlike prior deployments where many users waited until roll call at the event to activate their accounts, most were setup prior to the start of the operational period. For those users that had not been included in the lists sent before the event, personnel were onsite to quickly activate accounts and add them to the appropriate channels.

Deployment

The mobile app deployment included approximately sixty users. The vast majority were LAPD personnel with a few from LADOT and California Highway Patrol (CHP) who were co-located with LAPD in the Command Post (CP).

Channels were created in a similar manner to prior deployments consistent with the organizational chart and operational requirements defined in the EAP. The Incident Commander added a position to the CP for an “app coordinator” who was assigned to manage the sharing of information through the app. This officer had worked all prior LAPD mobile app deployments and was familiar with the process. She was a member of all operational channels and would move content across channels as operationally necessary to enhance situational awareness. An

example is that she would copy messages from the #cathedral channel to the #operations channel so that traffic and cemetery groups had insight into the timing of activities. She would also transcribe radio transmissions coming in from different radio channels into an appropriate channel such as #lapd.all which was a Read Only channel in which only certain supervisors had permission to send messages. Each deployment has benefited from having a designated person responsible for information management.

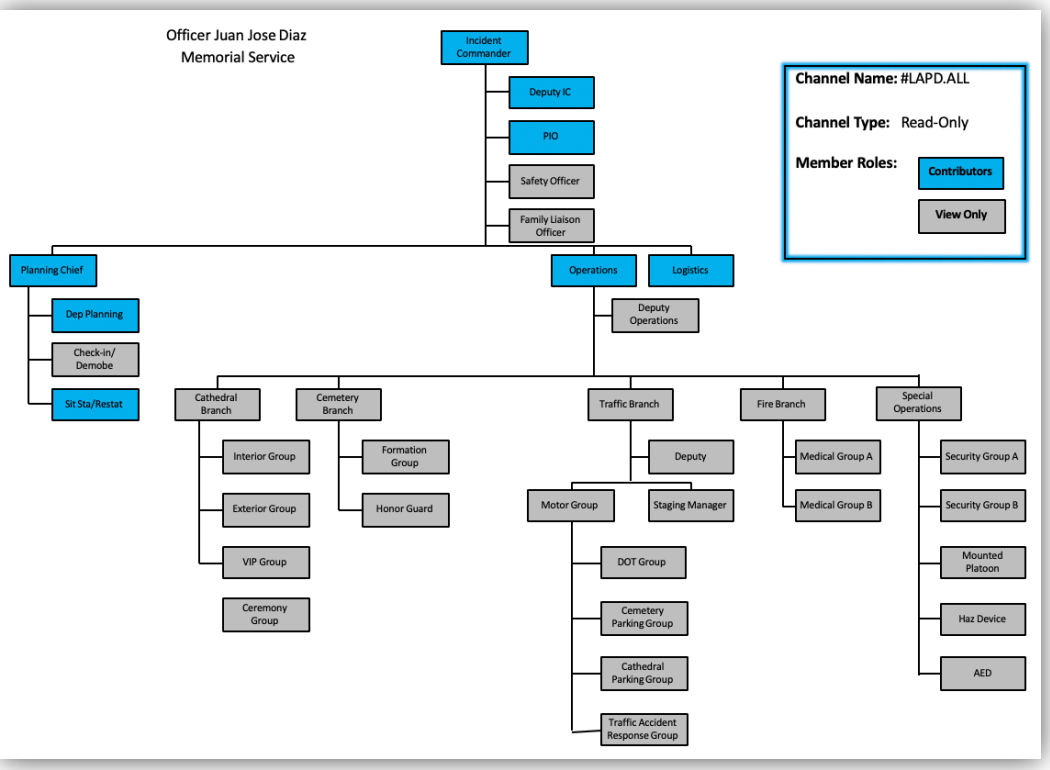


Figure 1 Example Channel Diagram - #lapd.all

A complete diagram of all users and channels can be found in Appendix A.

End User Feedback

There was a mix of LAPD personnel who had participated in previous app deployments and others who were using a public safety collaboration platform for the first time during a large-scale, pre-planned operation. Below is a summary of the user feedback.

Benefits

1. **App installation and setup process** was straight forward, and instruction guide was easy to follow.
2. The app was **intuitive** to use with no end user training.

3. With a short timeline, loaner phones were not provided. Most users **preferred using personal phones** and not having to carry another device.
4. Broadcasting messages **reduced radio traffic**.
5. **Improved situational awareness** for groups who would otherwise not get a lot of the information from other divisions and groups.
6. The **log of messages** was valuable for keeping track of the timeline and ability to go back and review later.
7. Users liked the **"Reaction" feature** which allowed members of Read Only channels to respond to messages with an emoji such as a thumbs up. Reactions allow members to acknowledge receipt without creating push notifications for all other members of the channel. While they like the feature and see it having value, most users were not properly trained in it to fully optimize the it during this deployment.

Challenges

1. The lack of end user training **limited the use of collaboration features** to enhance information and reduce distracting notifications. With the short planning time, no formal end user training was conducted. A PDF instruction guide highlighting a few key features was distributed via email prior to the event.
2. The short planning timeline **limited development of an effective Concept of Operations (ConOp)** for some groups.
    a. The cathedral branch had a high volume of activity due to 1) the number of users setup with the app by the Branch Director, 2) the amount of activity taking place in the Area of Operation (AOR), and 3) the distributed positions of cathedral branch personnel.
    b. The cemetery branch, on the other hand, did not have much activity due to the nature of their operation. The branch was comprised of roughly twelve officers who maintained close proximity to one another. They did not have the need to utilize the radio or mobile app for communications since the group was small and close enough to one another to rely on verbal, in-person communications. This limited the situational awareness in the CP during the operational activities at the cemetery. An effective use of the app for this operational environment would have been to focus on using it to send status updates and post messages to improve information sharing between the field users and CP personnel rather than collaboration amongst the cemetery group.
3. Users experienced a **delay** between **receiving notifications** on the phone and the actual content of the message becoming visible in the app. This feedback came predominantly from cathedral branch personnel who indicated that the cellular service was poor due to the concrete construction of the facility.

Lessons learned

1. **Engage Early in Planning Process** – as with all mobility deployments, the earlier the use of the tools can be incorporated into the planning process, the more effective the deployment can be structured to maximize operational effectiveness. Mobile broadband technologies are still in their infancy in public safety operations. The National Incident Management System (NIMS) Incident Command System (ICS) structure does not yet have formal guidance, procedures, staffing models, or templates for incorporating the use of mobile technologies into operational planning. IC's should indicate their intent to utilize mobility technologies to Special Events Units and other Planning divisions as early as possible to integrate technology resources formally into the planning process.

2. **Executive Buy-In and Defined ConOp by User Group** – mobile technologies, particularly mobile apps, offer a variety of benefits and present new challenges. The adoption of new tools requires careful planning to optimize effectiveness and mitigate risks or unintended consequences. As seen by the diversity of use across branches, it is important to meet with Section Chiefs, Branch Directors, and other key leadership to develop ConOps for each functional group that fit into the overall operational model. The users, use cases, and information flows should be tailored to each operational unit.

3. **End-User Training** prior to deployment is always important for proficiency and to generate the greatest value from the tool(s). By the nature of public safety operations, training on new tools – particularly those being deployed as a proof-of-concept – is not always feasible. Mobile apps must be intuitive enough for effective use with little or no training to be effective operationally. Public safety collaboration apps have the advantage of being highly flexible in the ways they are configured and deployed. Well-defined ConOps will improve the configuration of these apps which can often mitigate the need for advanced training to utilize at least the base capabilities of the app(s).

4. **Improve Explanation of Collaboration Tool to Support ConOp** – explaining how mobile apps are being utilized to support operations by better defining channels, users, roles and other configurations prior to the event can help users conceptualize the overall purpose of the tool and improve effectiveness. M4PS provided a channel guide with color-coded diagrams of each channel that defined the users and roles within each channel. This visual tool helped users better conceptualize the deployment plan, how information would flow across teams, and how the collaboration app could be used to augment voice communications. Formalizing the model of visually representing the app configuration relative to the EAP org chart has significant potential for developing a repeatable process to support the insertion of mobility planning earlier in the planning process.

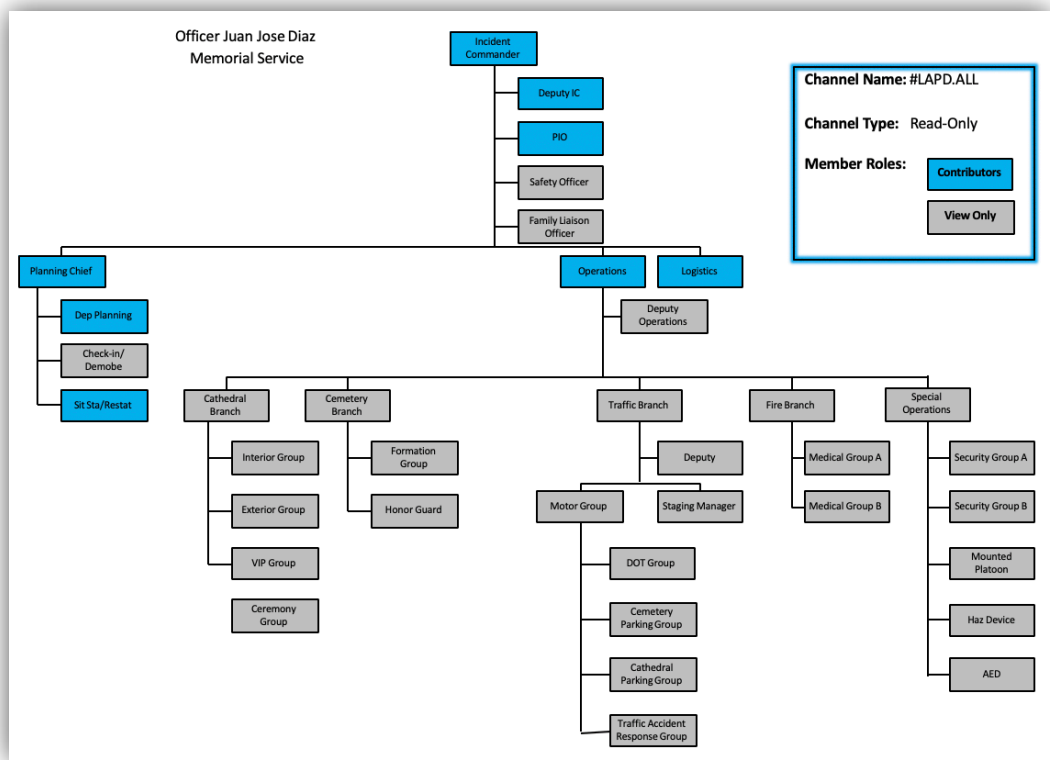
Conclusion

M4PS and MAC members appreciate the leadership of the LAPD for supporting the adoption of interoperable, mobile broadband technologies. Operationalizing new technologies is often difficult, especially in law enforcement and public safety where lives are on the line. Having strong leadership who sees the value technology can offer, commits the resources to successful planning, and leads by example, are several of the keys to success which have contributed to the success of the LAPD mobility deployments.

There is still a long way to go before these technologies become mission critical tools for public safety, but the lessons learned from these early deployments are key to demonstrating operational effectiveness, developing viable products, building user proficiency, securing sustainable funding, and creating repeatable processes for planning and implementation.

M4PS once again thanks the LAPD, particularly Commander Marc Reina and the Operations-Central Bureau, for their leadership in advancing the mission of public safety mobility and interoperability.

Appendix A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Memorial Service
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Family Liaison Officer
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Channel Type: Read-Only
Member Roles:
Contributors
View Only
Planning Chief
Dep Planning
Check-in/ Demobe
Sit Sta/Restat
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Security Group A
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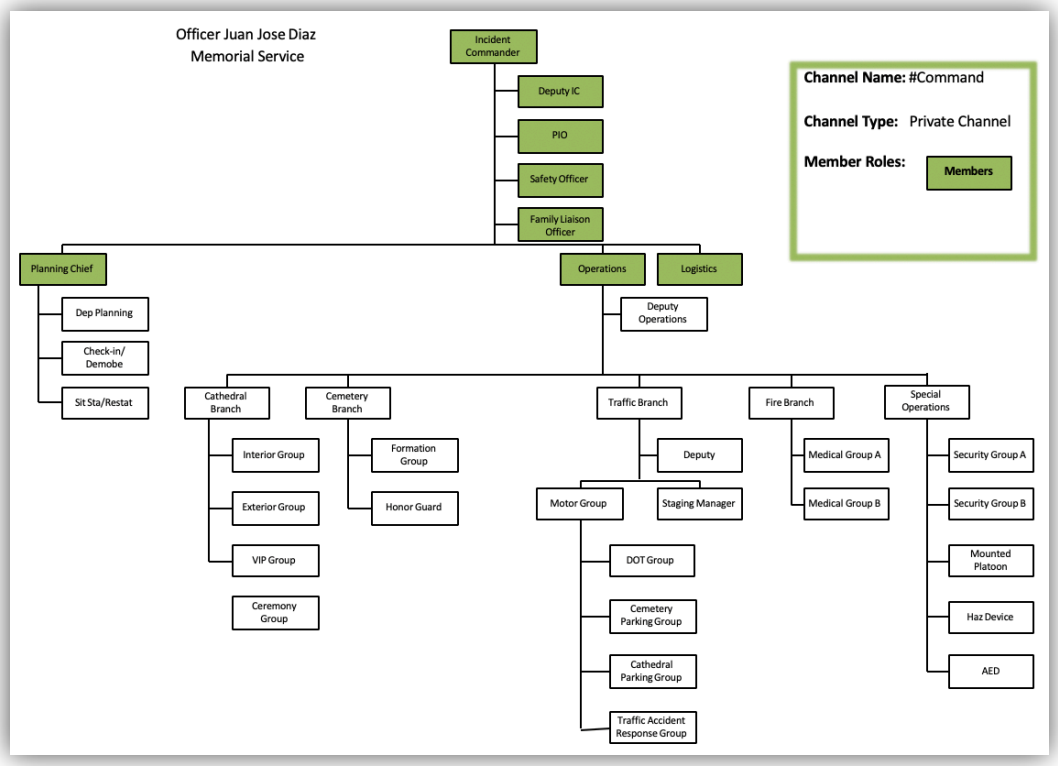
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Staging Manager
DOT Group
Cemetery Parking Group
Cathedral Parking Group
Traffic Accident Response Group
Medical Group A
Medical Group B
Security Group A
Security Group B
Mounted Platoon
Haz Device
AED
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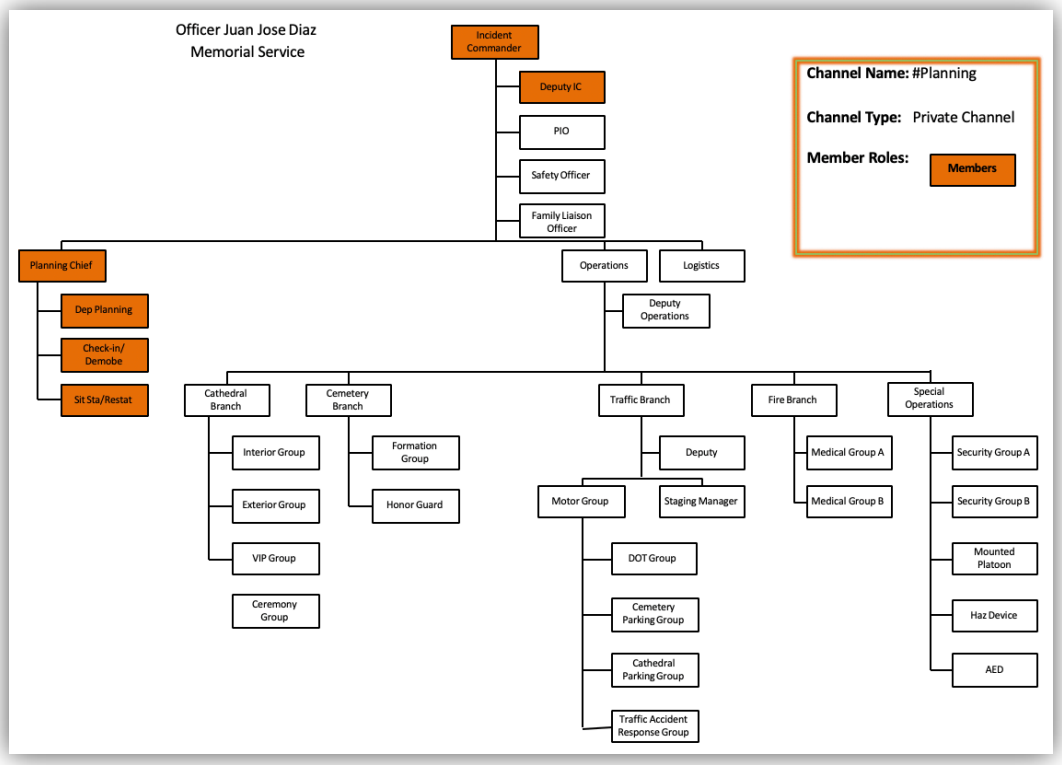
Channel Type: Private Channel
Member Roles: Members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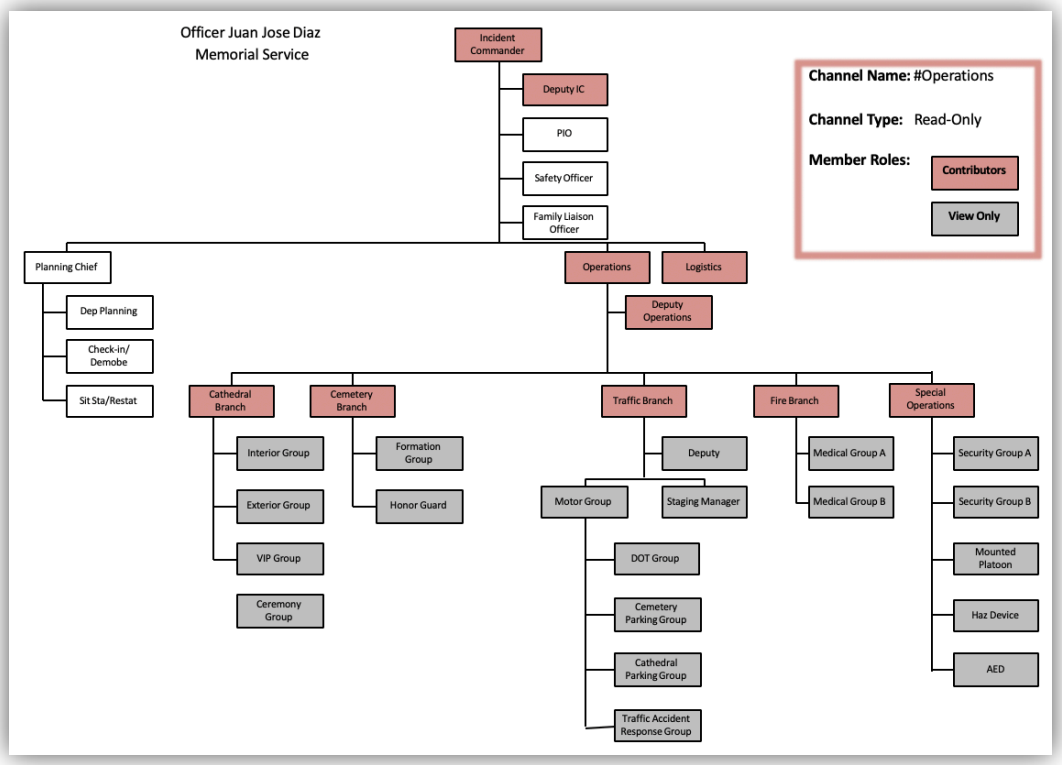
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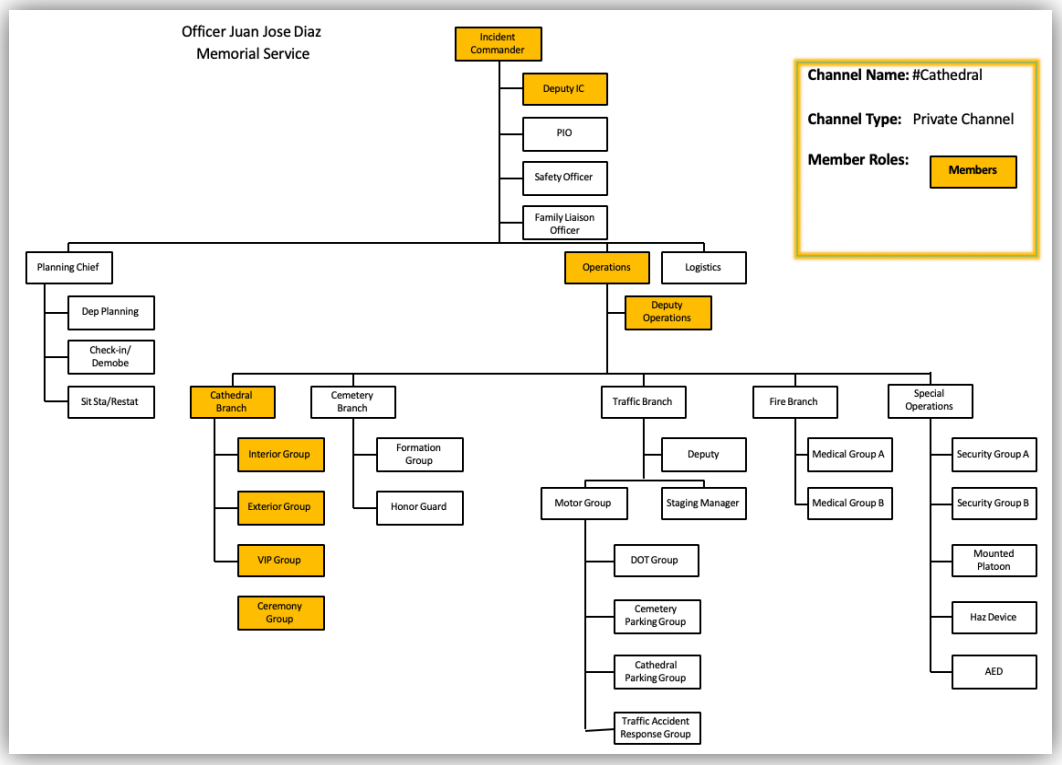
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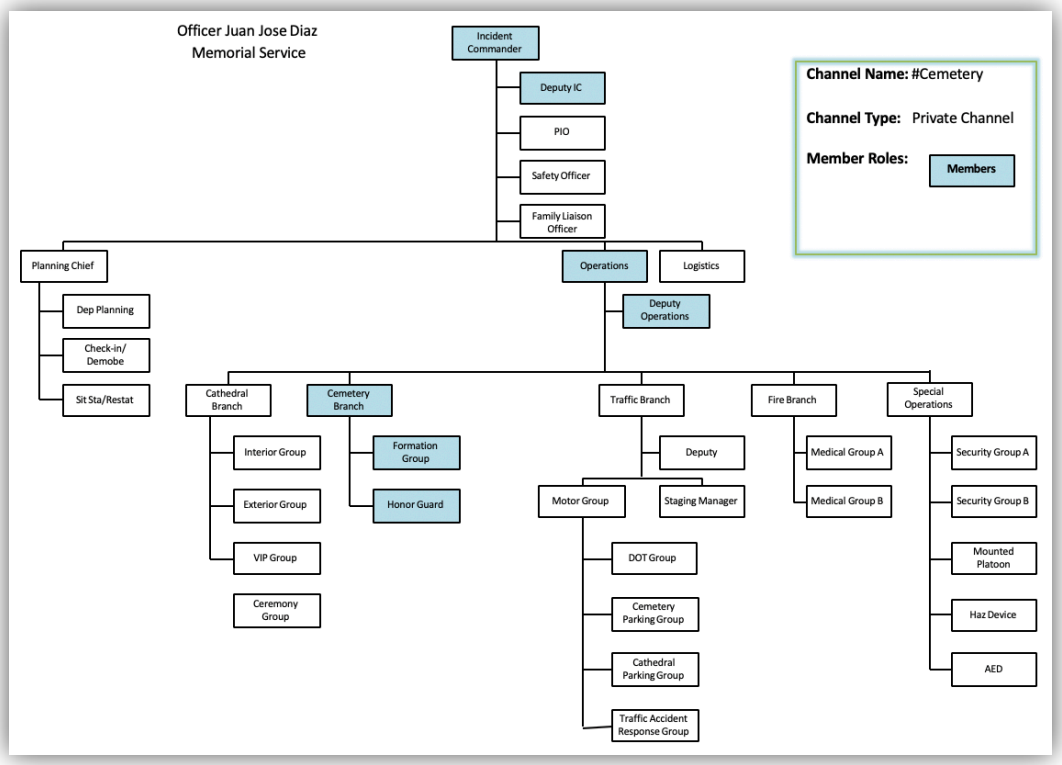
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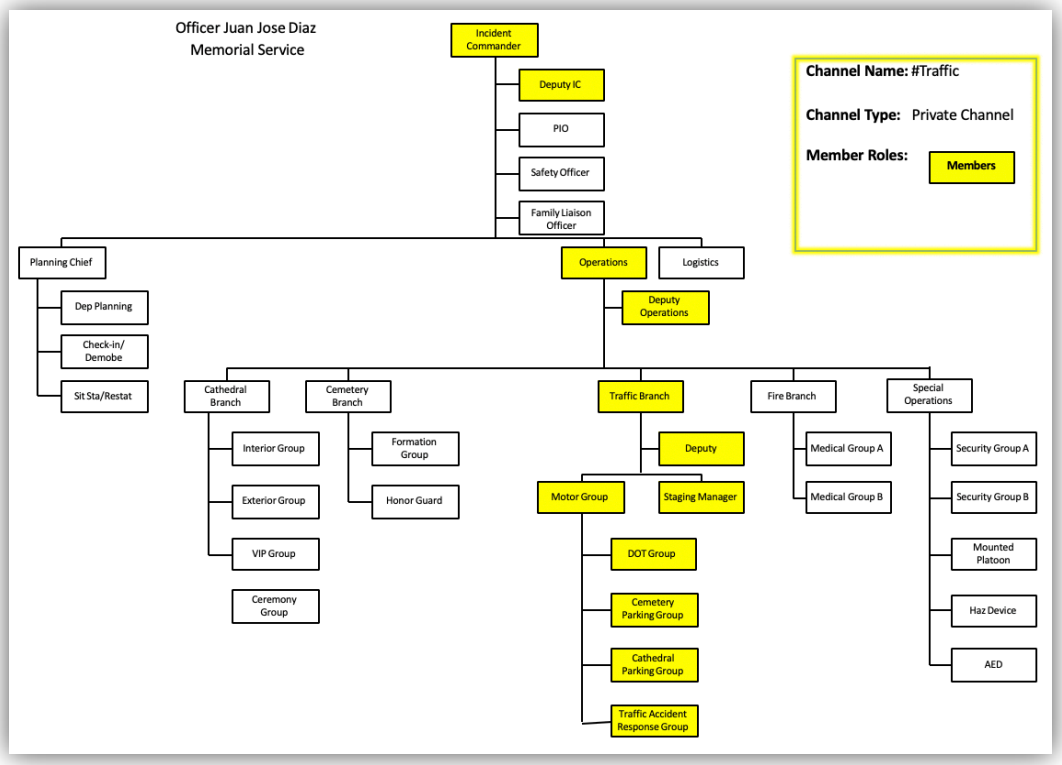
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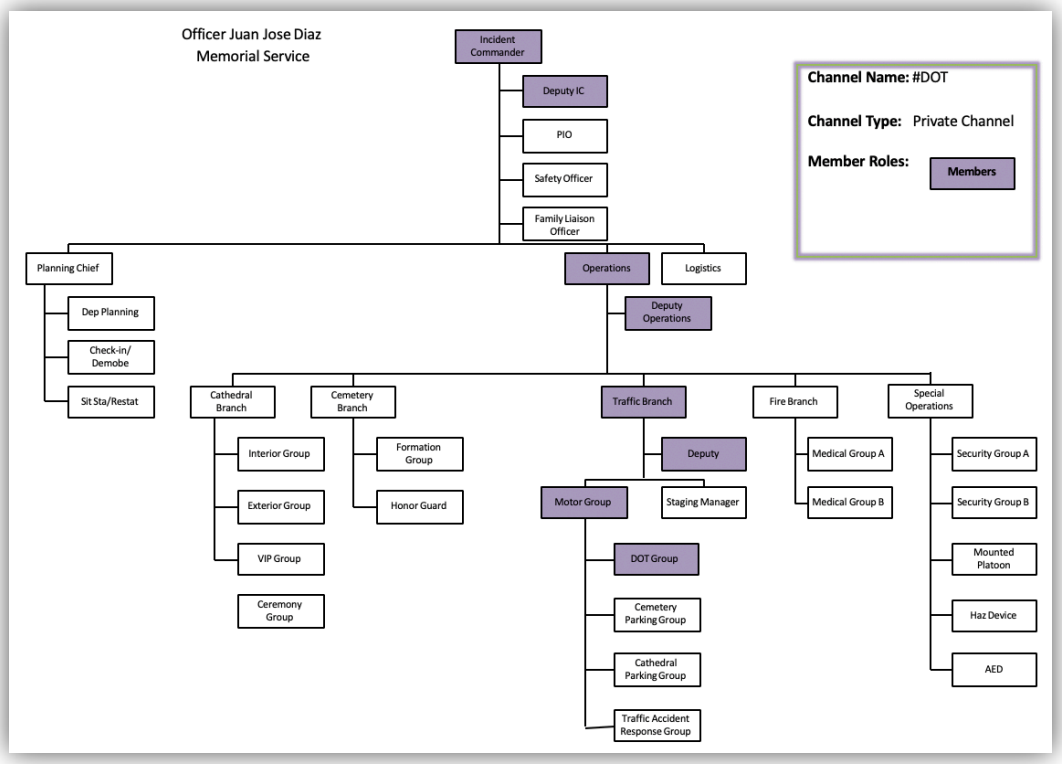
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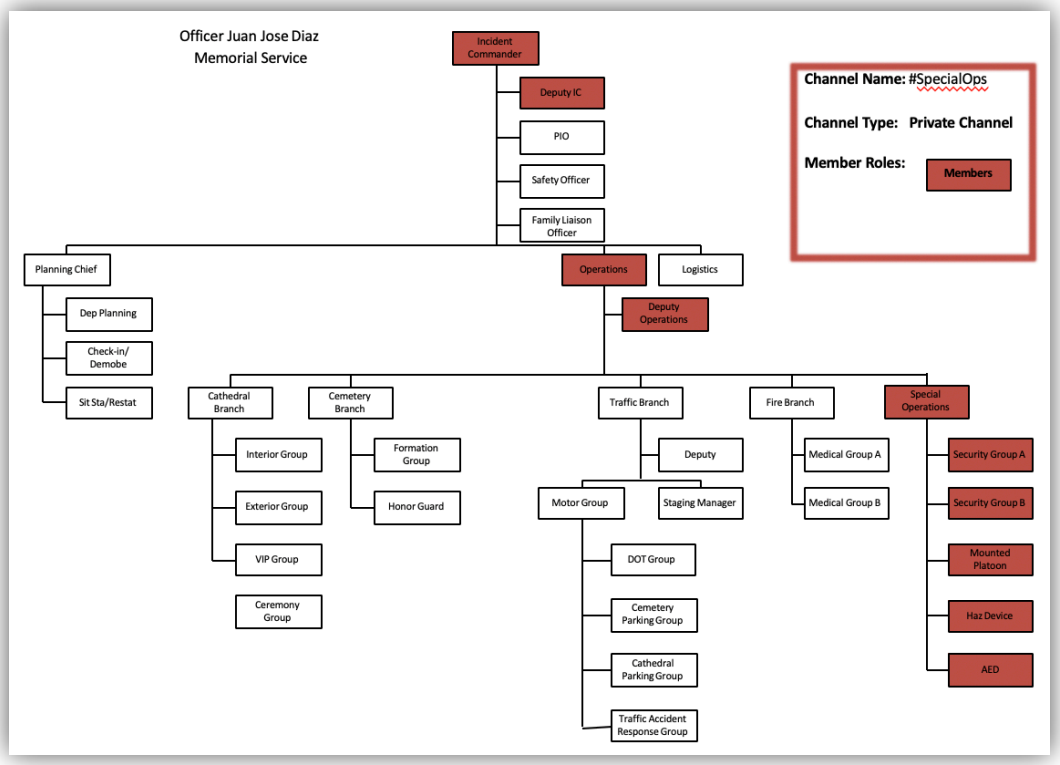
Channel Type: Private Channel
Member Roles:
Members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