



Office of the City Manager

CONSENT CALENDAR

October 12, 2021

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Abraham Roman, Interim Fire Chief
Liam Garland, Director, Department of Public Works

Subject: Purchase Order: Braun Northwest for Two (2) 2022 North Star 155-1 Type 1 Ambulance

RECOMMENDATION

Adopt a Resolution satisfying requirements of City Charter Article XI Section 67.2 allowing the City to participate in HGACBuy contract bid procedures and authorizing the City Manager to execute a purchase order for two (2) 2022 North Star 155-1 Type 1 Ambulances with Braun Northwest, Inc. in an amount not to exceed \$650,000.

FISCAL IMPACTS OF RECOMMENDATION

The purchase of two (2) North Star 155-1 Type 1 Ambulances will not exceed \$650,000 and includes delivery, CA tire fees, and sales tax. Funding for this purchase will be provided through the FY2022 budget in Measure FF (Fund 164).

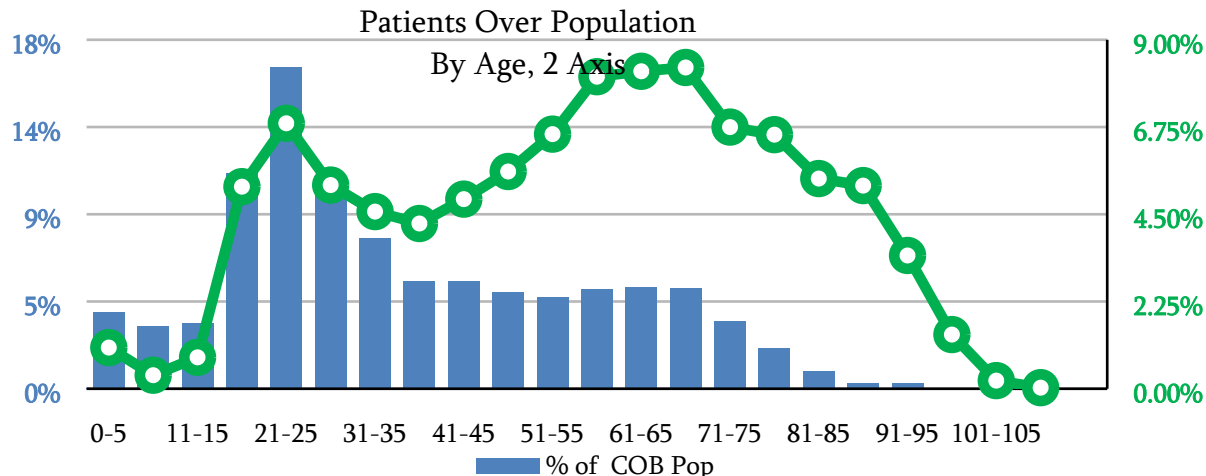
CURRENT SITUATION AND ITS EFFECTS

This purchase will add two additional ambulances to the Department's fleet. The ambulances are critical emergency medical response vehicles utilized throughout the city to respond to medical emergencies. These vehicles are required to allow the planned expansion of the Emergency Medical Services (EMS) Division in response to rising call volume, rising Unit Hour Utilization and to appropriately staff for the changing risk profile of the City's population that has occurred, and will occur, in the coming years.

AGE DISTRIBUTION AND PATIENT POPULATIONS

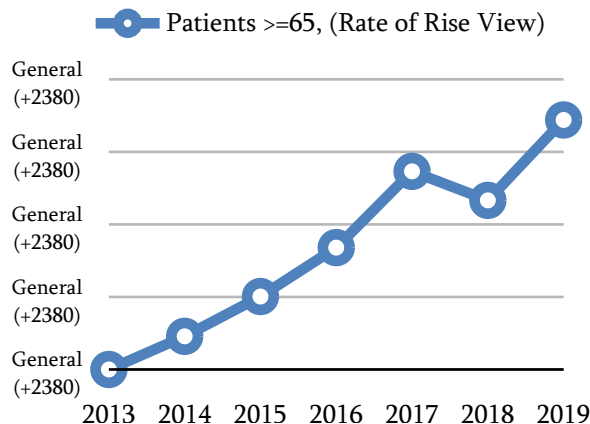
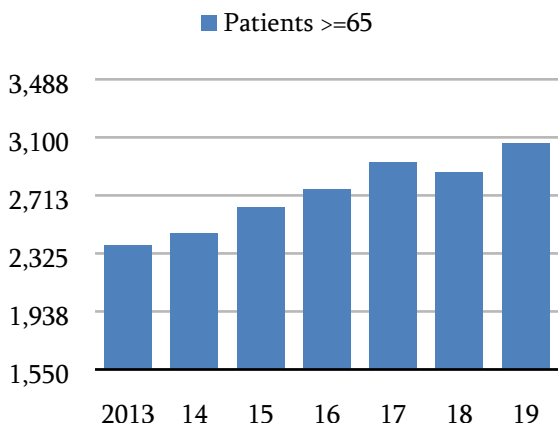
We know that as our population ages, use of emergency services will rise. In the table below, the blue bars represent residents by age and the green line is the percentage of 911 calls each group makes annually. Patients between the ages of 18-23, and those 65 or older, account for roughly half of all the documented patients in Berkeley. While people over the age of 50 are a minority they make up over 60% of all EMS calls. More concerning, given our aging population, people over the age of 65 makeup 14% of the population and account for 40% of EMS calls. We know Berkeley's population is aging,

and that trend will increase the demand for emergency services - specifically ambulance transport - over the next 5-20 years.



Patients between 18-23 years account for about 10% of patients. This group is only matched by similarly binned groups of elderly in this respect. For example, if ages are binned individually by year, in 2018 the 19-year-old group (at 1.8%) is responsible for as many documented patients as the 61-year-old group. They each account for more documented patients than any other single age group from 0-60 years old. The likely reason for the proportion of this group in both patients and population are the students. Given the constancy of this segment of patients historically, it is safe to assume that this is unlikely to change — i.e., these patients are not going away, and will likely be increasing according to the UC Berkeley Long Range Development Plan (LRDP).

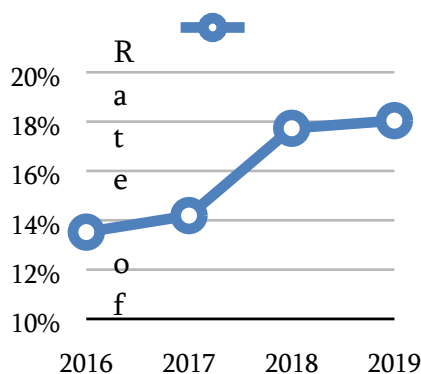
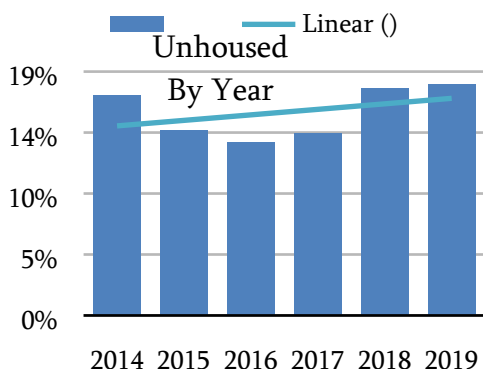
Census data shows a steady increase in the ≥ 65 segment of the Berkeley population since 2000 (see Tables, below). The census increase was +1.5% for the decade ending in 2010, and +2% again by 2018. During the past 7 years, the number of documented patients from this patient group increased by about 10%. When adjusting for changes in call volume, the increase has been at least 1% per year, conservatively 7%. Like the 18–23-year-old segment, this patient group is not likely to diminish in coming years. In fact, in the state of California the number of those over 65 will nearly double by 2030 (CA State Department of Finance). When examining the population distribution of Berkeley, there is a significant segment of the population between the ages of 51-65 (about 20%) that will move into the center of the highest demand-for-service group by 2030, give or take.



With no change in the current rate of growth for the >65 population, there could be more than a 7% increase in these patients by 2026, just following the historic norm. With an increase in this population segment by merely an additional percent, the number of documented patients in this group could increase by 3.5%. While this appears to be a small increase, consider a 2% increase in total rate of growth for this segment of the population (from 2% to 4%), could account for more than a 14% increase in patients before the end of the decade. Even if the mortality average is fixed at 85 years of age (the approximate average mortality for men and women in Berkeley is 84.85), the city has more people aging into this group than aging out of it by more than 2%.

THE UNHOUSED

Another consistent patient group the Department provides service to are the unhoused. The number of unhoused patients, if taken in total, equal approximately 14% of all documented patients since 2013. There has been an upswing to almost 18% during the past 16 months. It should be noted that the documentation the Fire Department has may under-play the total numbers each year, because there is not a field in the data collection program that requires a responder document whether someone is unhoused.

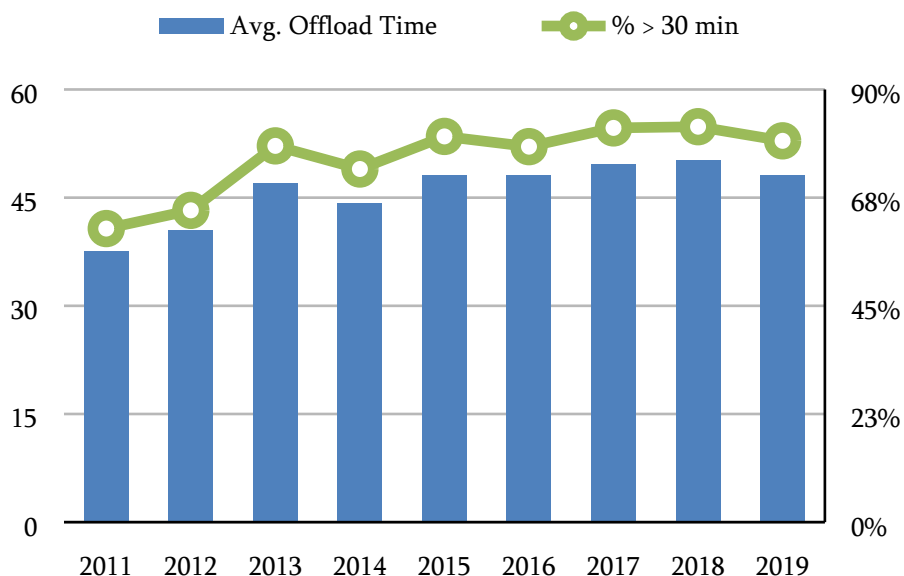


PATIENT OFFLOAD TIMES AND UNIT HOUR UTILIZATION

Unit Hour Utilization (UHU) is a calculation that measures the amount of time a transport unit (ambulance) is staffed, on duty, and assigned to incidents (response, on-scene, transport, and at hospital). UHU provides a standardized, shorthand way to measure workload levels in the system and to allow comparison to other systems. UHU is a factor not only of patients, but also of time—and the latter can be taken up by a traffic jam just as well as lack of bed availability at a hospital.

The current staffing (firefighter/paramedic) and deployment configuration (24hr shifts) requires personnel assigned to ambulances to have other responsibilities that include training and development, cleaning and stocking of the station and apparatus; physical fitness; shopping, cooking meals, and rest periods. Together, it is estimated this impact to total available time in a 24-hr period is between .70 and .65, therefore the UHU in the current system configuration and staffing should never rise above .30 to .35, respectively.

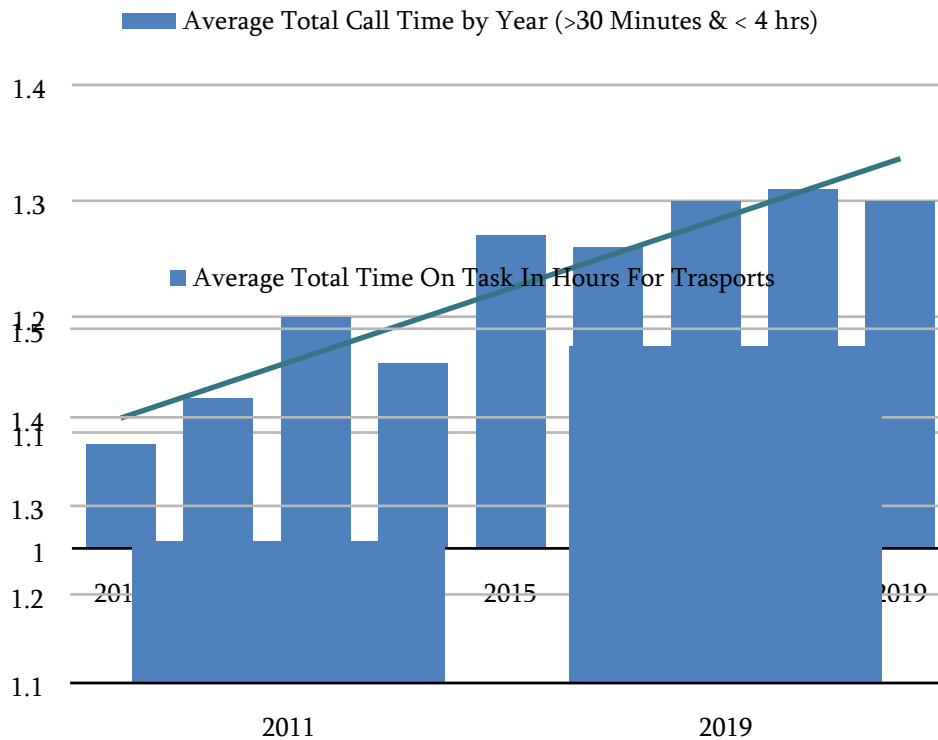
One of the major changes that directly affects ambulance UHU is the increase in patient offload time at hospital. According to the gross Computer Aided Dispatch (CAD) data, the average time an ambulance spent offloading a patient in 2011 was 37 minutes. Offload time reached a peak of just over 50 minutes in 2018, an increase of 13 minutes per call, on average, or about 34% from 2011 averages. During the same period, the number of calls with a greater than 30-minute offload time increased by 21%. Most of this upward trend occurred between 2011 and 2015. Since then, it has been constant. 2015 was the first year during which 80% of patients took more than 30 minutes to offload at the emergency room, compared to 61% in 2011.



Small changes in the time an ambulance spends with a patient from dispatch to leaving a hospital (Time on Task) can greatly affect calculated UHU. For example, if ambulance UHU is calculated with a hypothetical 1-hour total turnaround time (Berkeley turnaround time is longer) for each documented patient in 2018, with four ambulances it produces a UHU of .19. By adding just 15 minutes to each call, the UHU jumps to .24. The higher the UHU, the more occurrences in which a Berkeley ambulance *will not be available* for 911 calls in the system (given the number of calls and ambulances remained constant). In these instances, ambulances must be summoned from adjacent jurisdictions which increases response times and pulls ambulances out of those communities.

To make another comparison, in a model with three ambulances, the UHU would be .25 with the same number of transports, above. If all measures remain the same but the hospital patient offload time is increased by 12.6 minutes, the UHU rises to .24 even with four ambulances — the same UHU with a significant increase in resources (three to four ambulances), *and no change in call volume*.

To determine the average Time on Task for Berkeley ambulances, calls lasting longer than 30 minutes and less than 4 hours were used. On average, in 2018, these calls



lasted 1 hour and 18 minutes (7023 records). There were other calls that will, in aggregate, have some impact on real world UHU (an additional 5016 in 2018 for instance), however, in dealing with averages *and* to specifically capture patients *actually transported*, dispatches lasting under 30 minutes (for instance some lasted 3 seconds or less), will alter the mean calculation enough that it does not provide an accurate picture of those calls. Conservatively, there is still a growth trend when looking at calls lasting more than 30 minutes and less than 4 hours over the past 9 years.

The calls that were not included (<30 minutes and > 4hrs) will have further impact on total time on task, and therefore UHU. These are difficult to accurately review as part of the same group, but for the sake of argument, if those dispatches are also considered, averaging them, but still excluding those over 4 hours, the average time on task increases again. When this difference is applied to UHU, it rises to .47, which is likely too high, but is indicative that these “ignored” calls do have a real impact on UHU.

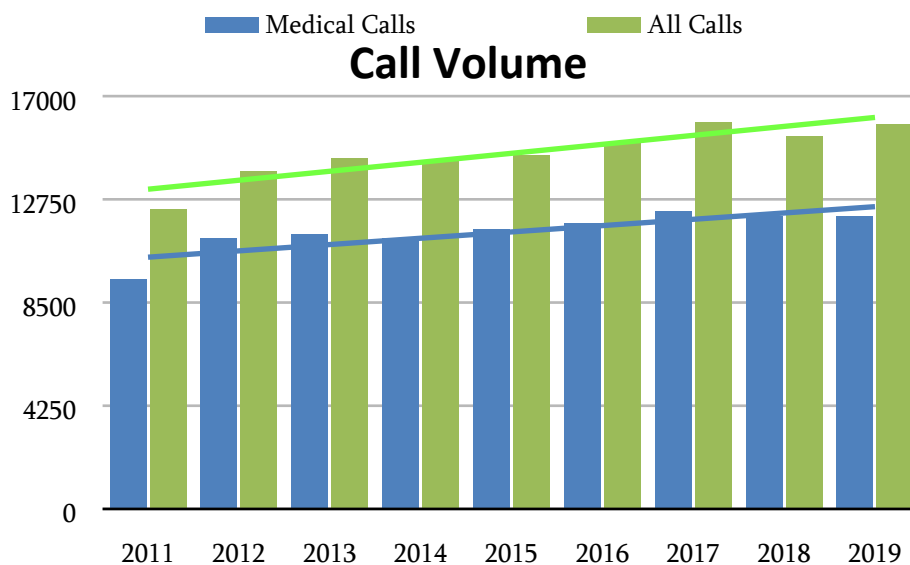
Returning to removing the service calls lasting fewer than 30 minutes results in a UHU of .26 in 2011 with three ambulances, and the same again in 2019 with four ambulances in service — that result comes with disregarding more than 8000 calls for service, most of them in 2019 (5134 in 2019, and 3113 in 2011).

POTENTIAL ALTA BATES CLOSURE

If Alta Bates Hospital were to close its emergency room, the City can expect a significant increase in transport times and thereby increase in UHU for Berkeley ambulances. According to Electronic Health Record (EHR) data, the Department delivered 4353 (62%) of patients to Alta Bates in 2018. When the expected increase in round trip transport time (to Summit or Kaiser Oakland) is applied, UHU for 2018 would have increased 21% with just those calls alone — transporting 2,669 (38%) fewer patients. This additional transport time would bring the overall UHU up to .30, without weighting the average, but still ignoring calls for service lasting less than 30 minutes, which yields an underestimation of UHU. If Alta Bates closes, the city should conservatively expect to experience an increase of at least 14% to UHU without adding a single call for service.

TOTAL CALL VOLUME TRENDING

Although there has been some small variation in total call volume year by year, over the past 9 years both medical and other service requests are consistently trending upward — the R2 values lending confidence to the trending slopes, especially in medical call volume (see Call Volume, below). There is no reason to expect this trend to change given the total population growth and ongoing development planned within the city. It can be predicted that call both overall call volume and medical call volume will continue to increase with the population over the next decade.



Based on CAD data, the increase in both medical and total call volume since 2011 was 22% (rounded). Considering total population growth for the same period as a rounded 7% or 8730 (according to census data), predictions for population and call volume growth can be made. By 2028 the city may have a population of 130,393, which may generate a call volume of 19,335 calls for service, at the historical rate of rise. Of those, we can estimate 15,274 will be medical calls, a number almost equal to our total call volume in 2019.

VEHICLE SUMMARY

The new ambulances will have a compact and efficient design, and are custom-built for quality, durability, and maximum functionality. The aluminum construction is designed to reduce weight and provide superior crash protection. The Fire Department has adopted the pilot "Safety Model" design which provides enhanced employee and patient safety in the event of a vehicle collision, including roll overs. Vehicle design includes five-point safety restraints for caregivers and patients in the rear of the ambulance, rounded corners inside the vehicle, and equipment storage compartments with multiple points of access facilitating caregivers' ability to get needed supplies quickly without having to move around the patient compartment unrestrained. The vehicles also meet the Department's internal commitment to its labor group and employees to create a carcinogen free environment. All surfaces in these vehicles are non-porous and accumulated cancer-causing particulate can be wiped clean.

This purchase supports the City's Strategic Plan Goal of creating a resilient, safe, connected, and prepared City.

BACKGROUND

If a purchase request exceeds \$25,000, the Department of Finance, General Services Division solicits bids or "piggybacks" off competitively bid contracts to ensure the City's departments is receiving the best pricing.

The City of Berkeley has been a no-cost member of Houston-Galveston Area Council (HGACBuy), a Cooperative Purchasing Program that has offered inter-local purchasing since 2008. HGACBuy provides procurement services that make the government procurement process more efficient by establishing competitively priced contracts for good and services made available to local governments nationwide.

Products and services offered through HGACBuy have been subjected to a public competitive bid process. On April 3, 2020 HGACBuy released an Invitation to Submit a Competitive Bid, No. AM10-20 for Ambulances, EMS and Other Special Service Vehicles. The solicitation was nationally advertised for thirty-four days. On May 7, 2020, twenty-four proposals were submitted and reviewed by the Houston-Galveston Area Council who selected Braun Northwest, Inc. as one of the best responsive and responsible proposers to meet the specifications, thusly awarding Contract No. AM10-20.

HGACBuy charges an order processing fee for each sale successfully completed through their contract. For this purchase a flat fee charge of \$1,000 will be paid directly to HGACBuy by Braun Northwest, Inc.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

For every fleet purchase, Public Works staff researches the feasibility and availability of fully electric vehicles and hybrid-electric powertrains to support the City's transition off fossil fuels. Staff research found that there are no viable electric or hybrid electric

ambulances for consideration. There are several companies in early development stages and the Fire Department is interested in testing them when models become available.

In addition to the lack of readily available and tested electric ambulances, there is no current infrastructure at the Fire Stations to support electric charging of vehicles. The new ambulances will be run on 100% renewable diesel. Usage of renewable diesel also complies with the City's Fossil Free Recommendations. This purchase aligns with the 2020 Municipal Fleet Electrification assessment that recognized the lack of commercially available and viable medium and heavy-duty vehicles. The Municipal Fleet Electrification Assessment proposed to install 51 Charging Stations with 100 chargers and upgrade all 129 vehicles in the light duty fleet to EV by 2030. To Date, PW has installed 31 charging stations and 61 chargers. In the next two years, another five charger installations are planned and contingent on an additional budget allocation of \$850,000, primarily for installation at the Corporation yard. In 2020, the fleet included 46 Hybrids and 15 plug-in hybrid-electric vehicles. Since then, the fleet has added 6 EV Sedans, 3 Hybrid SUVs for the Police Departments (PD), and 4 hybrid pickup trucks. In current FY, the city is processing orders for 11 EV Sedans, 8 PD hybrid SUVs. Public Works is on track to complete conversion of sedans and SUVs to EVs by 2028, two years ahead of the assessment's schedule. In additions, the city fleet has reduced its consumption of traditional gasoline by 33% from a high in 2000, in part due to some of the changes above and because so much of the fleet runs on renewable diesel. Twenty on of the last years vehicle replacements were either hybrid or run-on renewable diesel.

RATIONALE FOR RECOMMENDATION

The new Ambulances are essential vehicles utilized to respond, provide treatment and transport for members of our community that experience medical emergencies. Given the increasing EMS call volume and the potential significant impacts of a closure or reconfiguration of services at Alta Bates, this expansion is necessary.

ALTERNATIVE ACTIONS CONSIDERED

None. Vehicles selected specifically to efficiently and effectively provide requested services.

CONTACT PERSON

Greg Ellington, Superintendent, Department of Public Works (510) 981-6469

ATTACHMENTS

1. Resolution



RESOLUTION NO. ##,###-N.S.

PURCHASE ORDER: BRAUN NORTHWEST, INC. FOR TWO (2) NORTHWEST 155-1, TYPE 1 AMBULANCE

WHEREAS, two (2) North Star 155-1 Type 1 ambulance is needed by the City of Berkeley Fire Department to provided ambulatory services in Berkeley; and

WHEREAS, Charter section 67.2 allows the City to purchase goods without undergoing a competitive bid process if the City uses pricing obtained by another entity through a competitive bid process; and

WHEREAS, on April 3, 2020 HGACBuy released an invitation to submit a Competitive Bid, No. AM10-20 for Ambulances, EMS & Other Special Service Vehicles. The solicitation was released for approximately thirty-four days and twenty-four bids were submitted and reviewed. On May 7, 2020 Houston Galveston Area Council selected Braun Northwest, Inc. as the best and most responsive bidder to meet the specifications, thusly awarding Contract No. AM10-20; and

WHEREAS, funds in the amount of \$650,000 are available in the FY2022 budget in the Measure FF Fund (Fund 164).

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to execute a purchase order for two Type 1 Ambulances with Braun Northwest, Inc. in an amount not to exceed \$650,000.