

2020 CHIPPER PROGRAM REPORT

Impacts and insights from our
most ambitious program to
date



The **curbside** pick up chipper program enabled Marin residents to conveniently remove thousands of cubic yards of flammable vegetation. The program increased the public's awareness of the need to create fire adapted communities.



2020 CHIPPER PROGRAM OVERVIEW

The Marin Wildfire Prevention Authority (MWPA) approved FIREsafe MARIN's (FSM) request for \$500,000 to conduct a curbside pick up chipping program for residents of Marin County. The initial chipper program provided at least one curbside pick up service for each of the approximately 70 Marin Firewise Sites and two additional days of service to each of the 17 agencies that constitute the MWPA. The additional chipper service was used to equitably distribute the program benefits across the County and allowed participating agencies to determine areas of most need within their jurisdiction.

Agencies often elected to utilize the chipper crews to clear hazardous vegetation that had accumulated on public land.

As a direct result of the busy fire season, and in particular the Woodward Fire in West Marin, demand for chipper services skyrocketed. FSM submitted a second request for up to \$230,000 in funding to extend the chipper program and was approved by the MWPA Board of Directors.

The program provided additional service to West Marin, areas impacted by the fire, and allowed FSM to revisit areas of high demand.

The program was managed with software created by a local company called FireAside. This software scheduled reservations, mapped efficient routes, estimated pile size, collected photos of all piles chipped, and generated satisfaction surveys which showed that the program was extremely popular and well received by residents.

During the five months of the program, FSM made 2,478 curbside pick ups, removed 14,766 cubic yards of biomass, and delivered over 2,500 cubic yards of chipped material for conversion to energy. Some material was also chipped in place and spread on site at owner's request.

The program came in \$73,154 under budget. Total program expense was \$656,846.



PROGRAM GOALS

Wildfire safety should be available to everyone.

Over the years, the residential chipping programs throughout the County have subscribed to a static and recurring list of goals. Not least of which is simply the removal of hazardous vegetation and the dissemination of prevention and safety information.

While these were also paramount in 2020, FSM elected to include and guide the program with a couple of additional goals. Namely, ensuring that FSM are working diligently to provide this free service across the broad spectrum of residents in our communities and also reduce the overall carbon footprint of residential cleanup and removal.

Equitable distribution of services and provide opportunity for more low income and aging residents to access the program

Reduce hazardous vegetation on residential property

Increase program participation with curbside service

Reduce environmental impact by greatly decreasing number of trips to pick up and dispose of material

Provide incentive for communities to become Firewise certified

Educate the public about the need to maintain defensible space on private property



PROGRAM DESIGN

The Requirements

There are approximately 20,000 residences within Marin's 70 Firewise communities. Based on FSM's past experience managing chipper programs, it was estimated that approximately 10% of homes in a given community would participate in a curbside program. Once contracted, a chipping crew is able to pick up, chip and dispose of qualified vegetation from approximately 30 homes per day. The initial budget allowed FSM to provide one time curb service to approximately 2000 residences (10% of Firewise) utilizing two contracted crews each making 30 pick ups per day.

In addition, the original budget enabled FSM to provide two crew days – each making 30 stops – to each of the 17 MWPA member agencies. Assuming a 10% participation rate, this allowed potential service to an additional 500 non-Firewise homes in each of the 17 MWPA jurisdictions. However, agencies frequently chose to utilize the additional days to remove hazardous vegetation from public land.

20,000

TARGET DWELLINGS

70

FIREWISE
COMMUNITIES

60

PICKUPS
PER DAY

35

LARGE SCALE
COMMUNITY
JOBS

2,000

TARGET FIREWISE CURBSIDE PICK UPS PLUS
ADDITIONAL PICK UPS FOR NON-FIREWISE



PROGRAM DESIGN

The Specifics

The program started in the Ross Valley because FSM had conducted many chipping programs in this area and this experience gave the best opportunity to beta test the program.

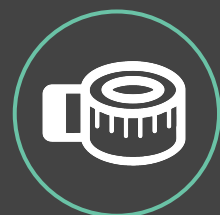
Based on history and experience from previous years, the program needed to optimize design around three critical areas:



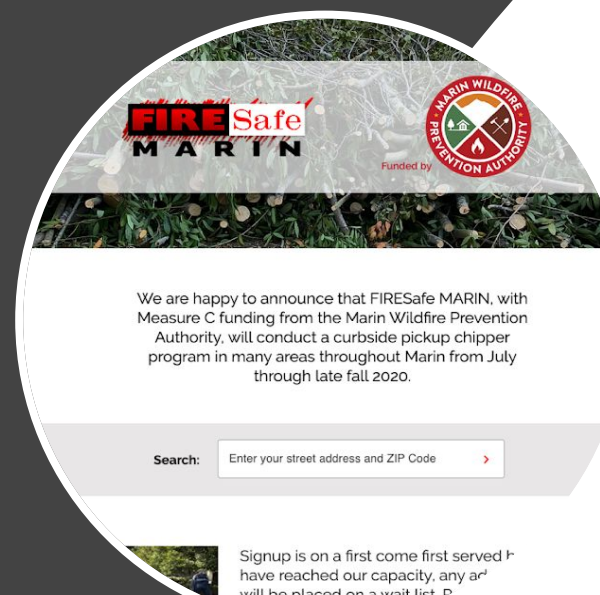
Registration



Schedule



Pile Size



Schedule

The chipper program started on July 6 and ended December 1. Most weeks two crews were scheduled to work Monday to Thursday keeping Fridays open to address unanticipated problems that may have come up earlier in the week.

Pile Size

Chipper piles were limited to 10'x4'x4' but in practice all material placed at the curb was removed. This will be an important issue to address in future programs. Items chipped were: shrubs, brush, limbs, woody bushes, pampas grass, scotch broom, cypress, juniper, bamboo, and tree limbs up to 8" in diameter. Roots and palm fronds could not be chipped, but if separated by residents were taken for disposal. All material needed to be free of rock/gravel/dirt.

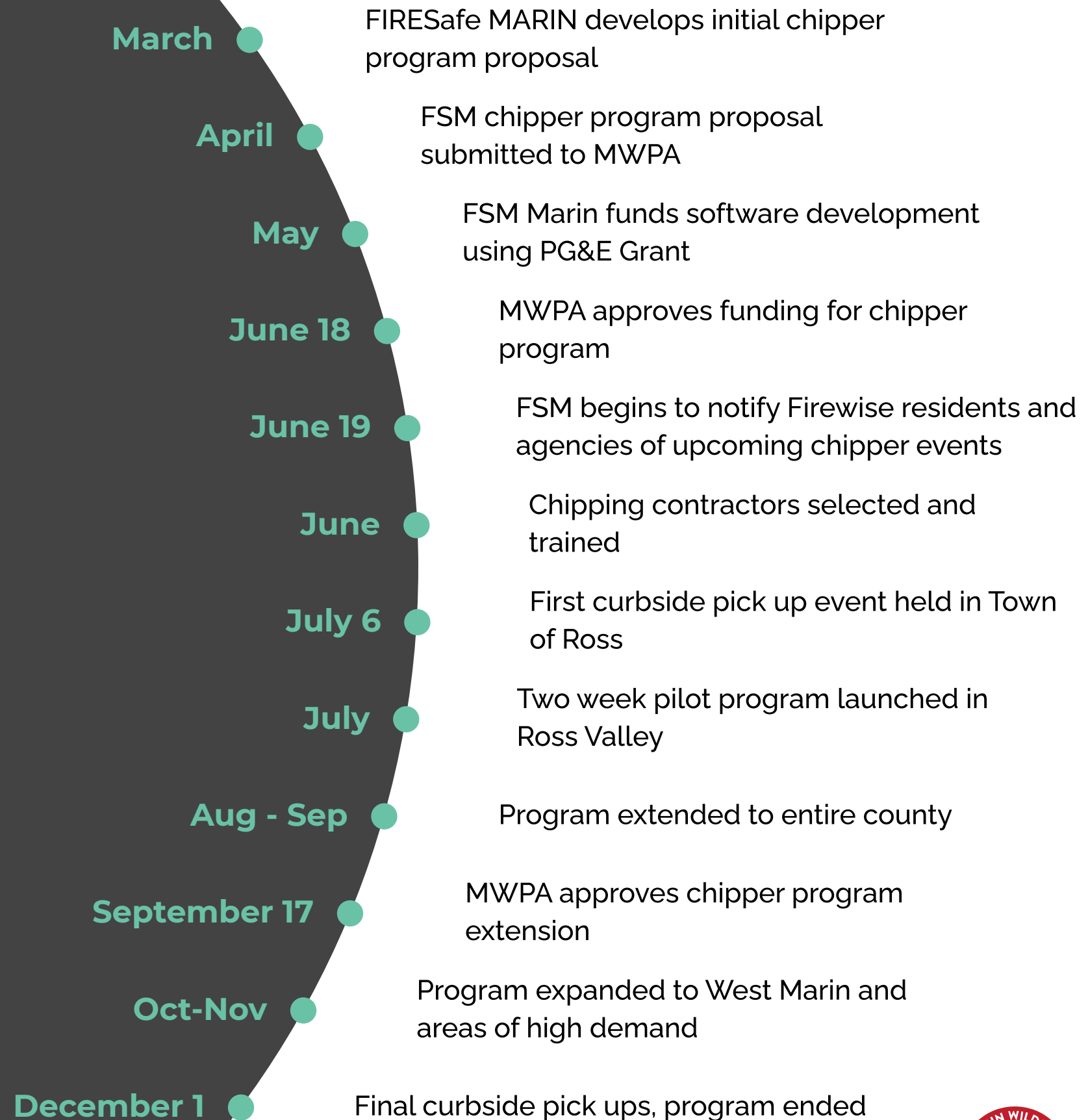


TIMELINE

Great results with a very quick turnaround.

FIRESafe MARIN developed the first chipper program proposal in March 2020.

Funding was approved by the MWPA on June 18. The first chipper pick ups took place in the Town of Ross on July 6. The program was extended by the MWPA on September 17. The program concluded on December 1.

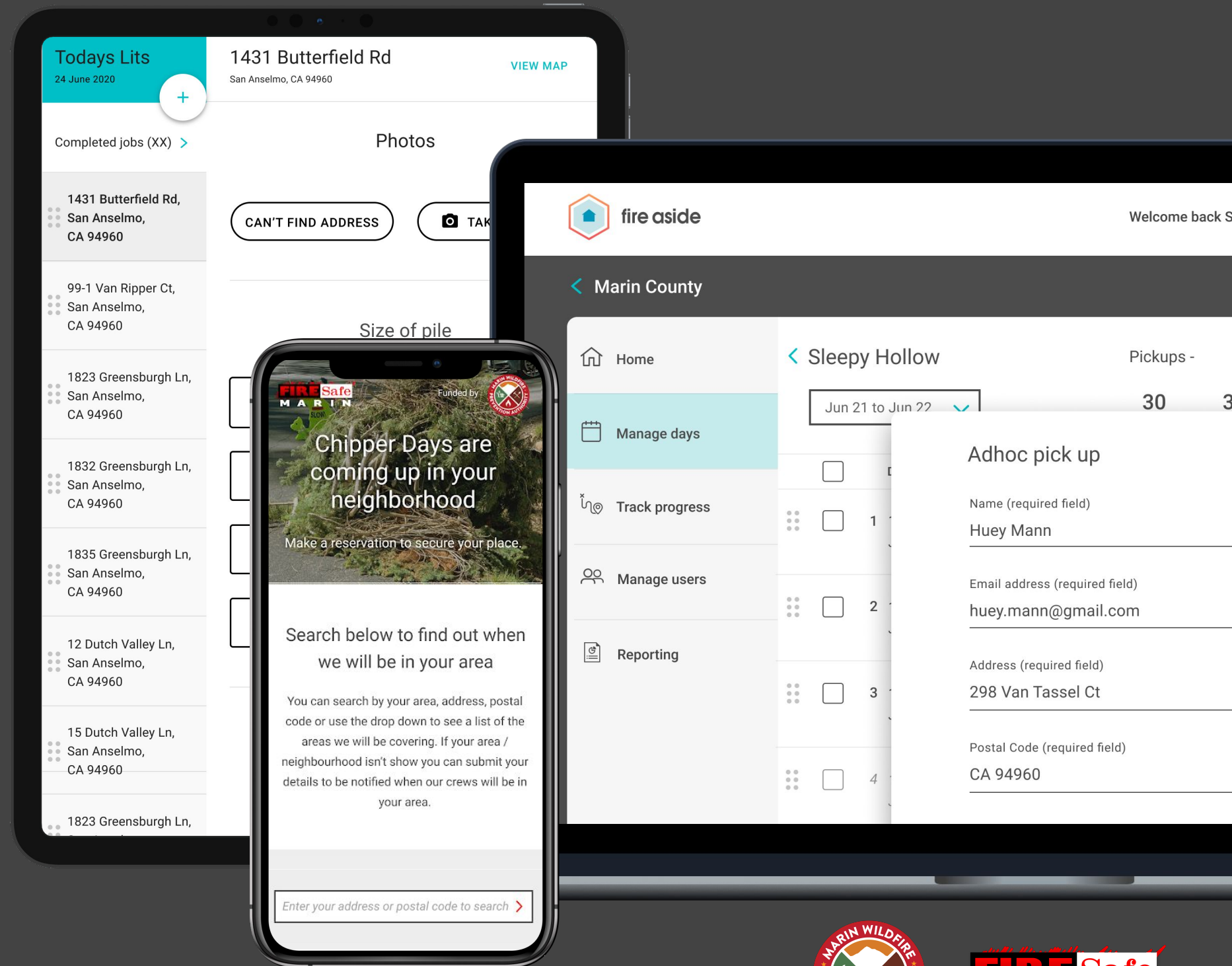


CHIPPERDAY SOFTWARE

Enabling the program to scale while capturing data to measure participation and fuel removed.

The kickoff to define requirements was held on June 10th. Registration to residents was available on June 29th and processed 68 registrations in the first 24 hours.

iPads were issued to the field crews on July 9th.

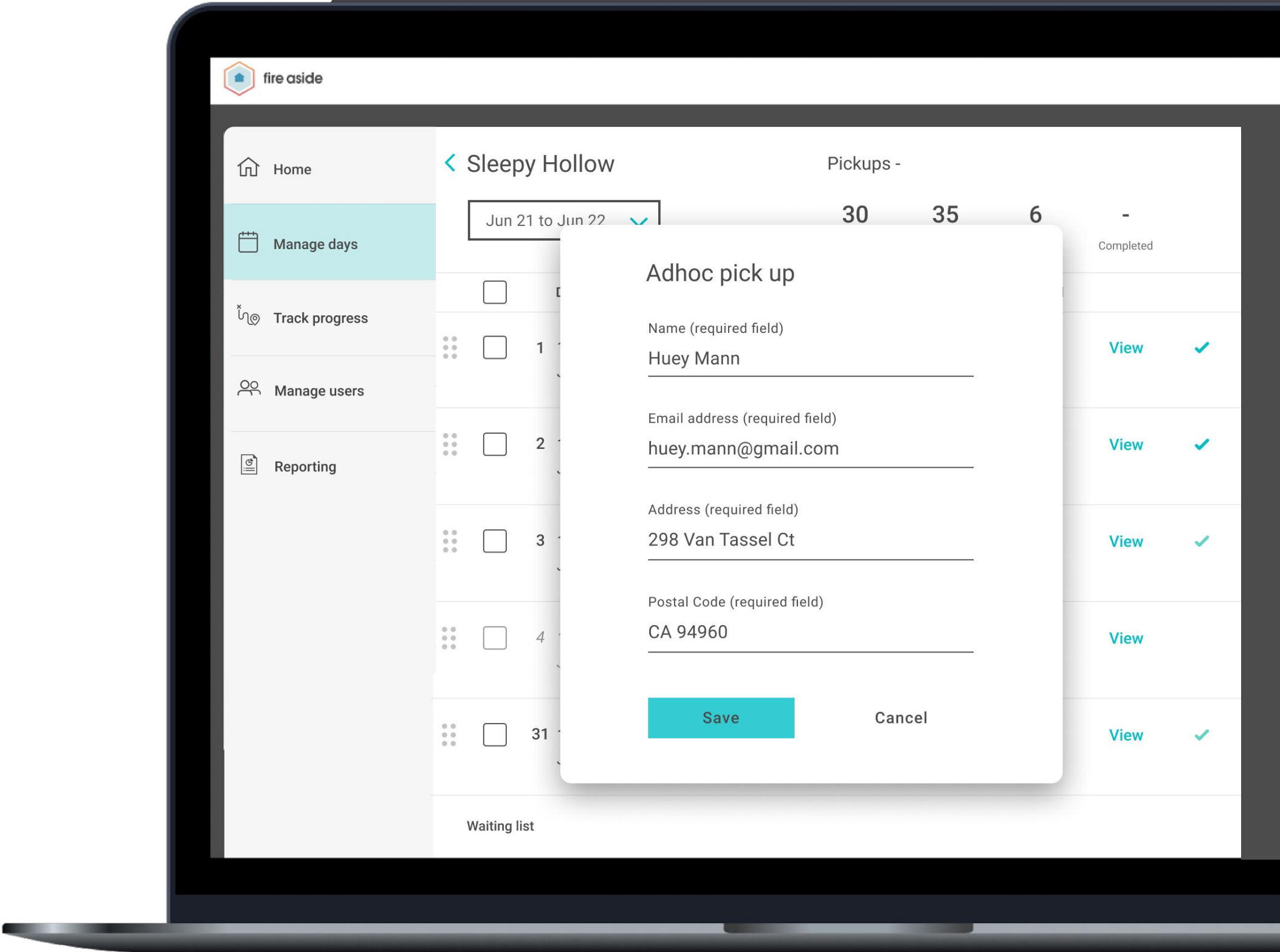


PROGRAM ADMIN

Creating, managing, and tracking events in the ChipperDay software was essential to managing the program.

Key Admin Features:

- Create and manage events, track crews (in real-time), and review performance.
- Event management includes defining parameters including geographical boundaries (firewise, town, etc), date(s), reviewing registrations and clearing waitlist and/or manually adding residents.
- Crew tracking provided real-time updates (assuming cell coverage for crews) to view progress and photos.

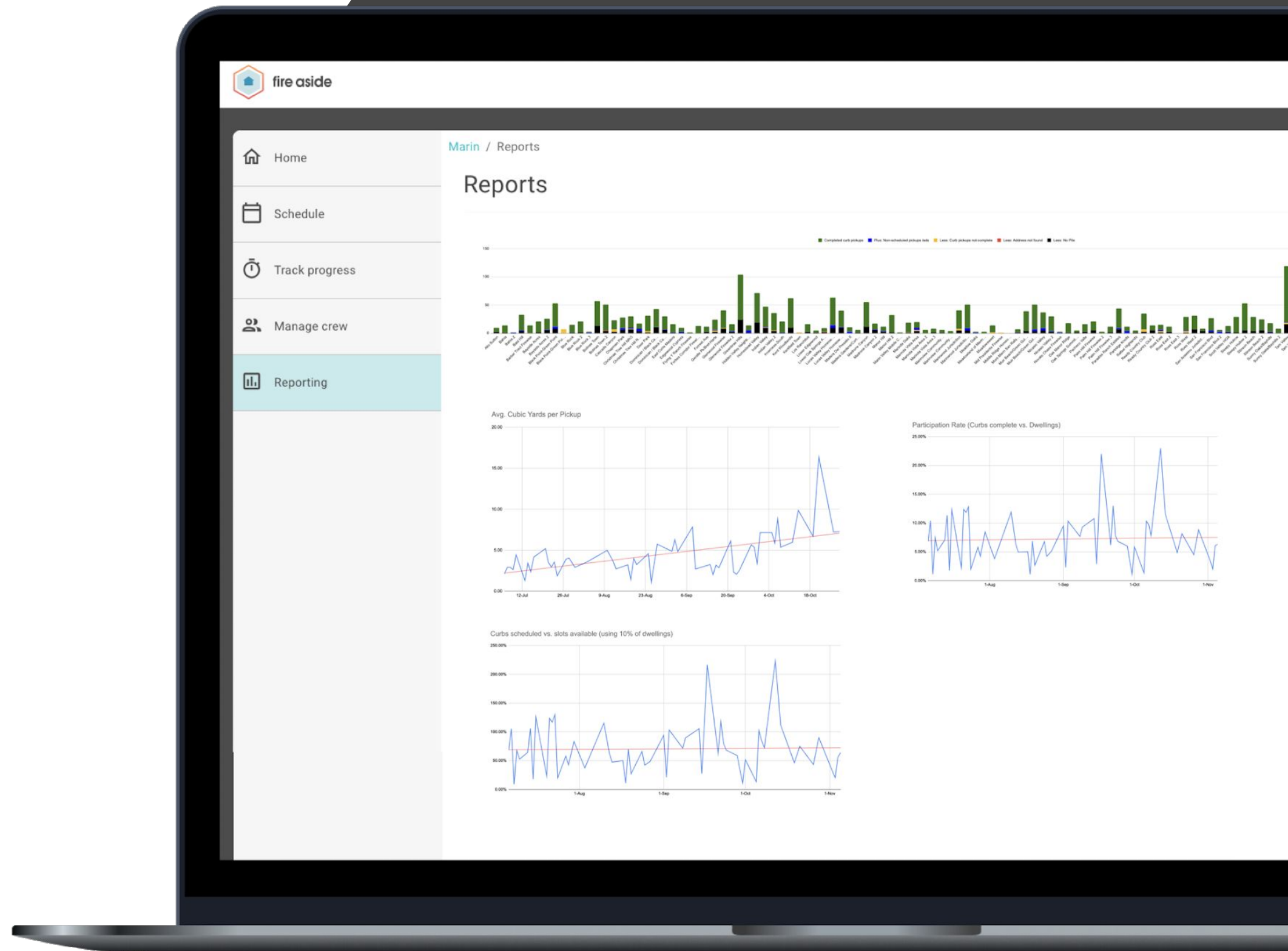


PROGRAM REPORTING

Tracking event data allowed the team to tune and optimize during the season.

Key Reporting Features:

- Reporting interface provided data on each event for feedback to the organizers and community.
- Analysis of trends helped improved messaging and program updates throughout the season.
- Insights by neighborhood will improve future program planning as it relates to anticipated participation levels, volume and even cancellations.

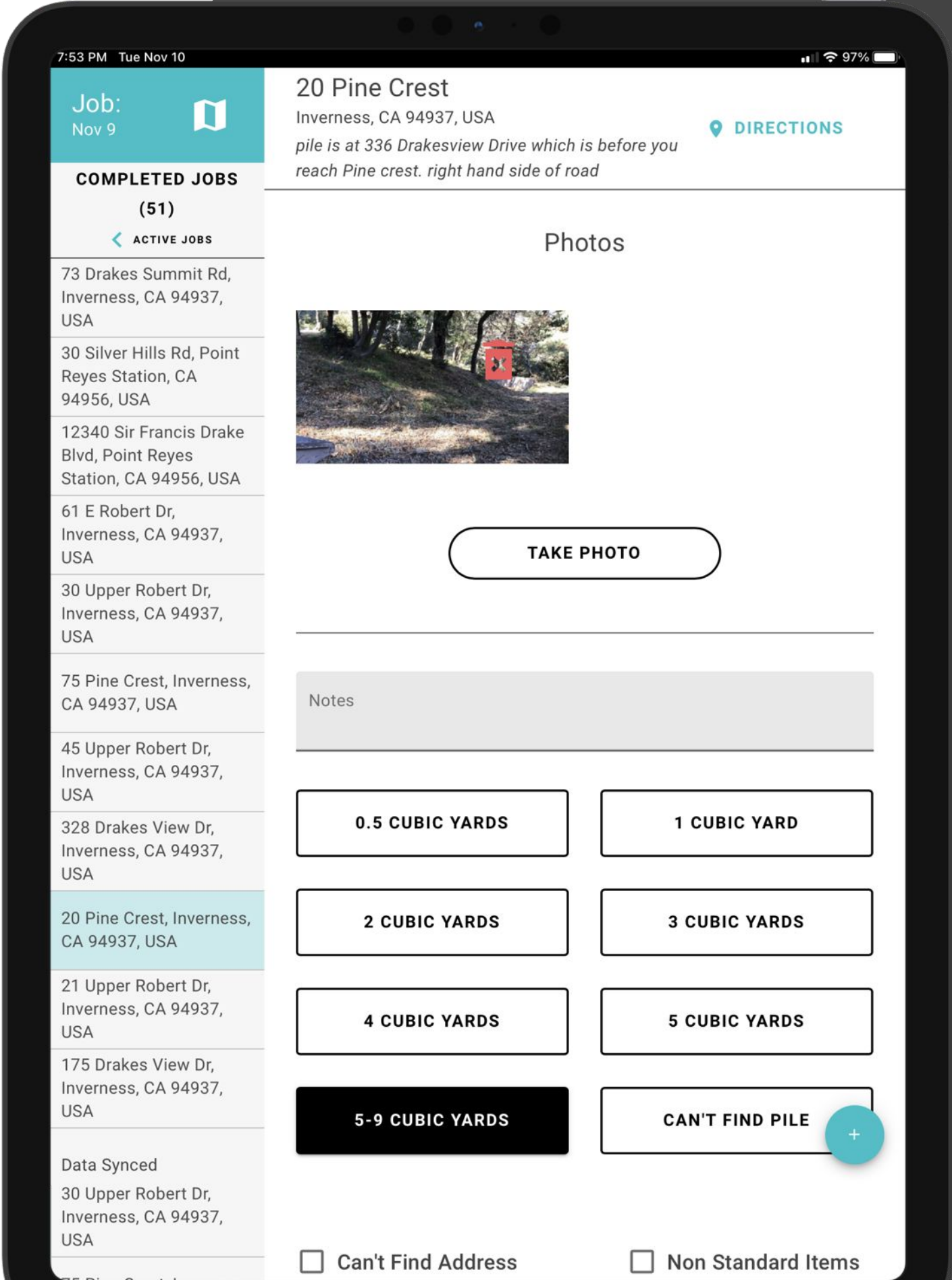


CREW/FIELD APPLICATION

iPad application designed to be used by multiple field crews and provide the following capabilities

Key Crew Features:

- Optimal routing of all the curb pick ups for the day.
- Enable pictures to be taken of each pile.
- Capture data on size of pile.
- Allow Program Administrators to share notes about specific events and addresses.
- Include edge cases such as reservation but no pile, non-compliant materials, & ad hoc pick up (no reservation but crew noticed pile).



SUPPORTING RESIDENTS

Some of the year's best automations came through the delivery of the Chipper Day Marin registration website, email confirmations and reminders, and satisfaction surveys.

Key Registration Features:

- Create a common landing page for the county (chipperday.com/marin) allowing residents to register for upcoming events.
- Residents are able to enter their address and register for an upcoming event. If an event is full then a registration is placed on the waitlist.
- Automated email to confirm registration, reminder sent before event (with ability to cancel) and post event survey.

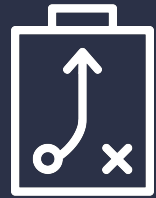


CONTRACTOR SELECTION & TRAINING

Two trusted partners with exceptional track records join the 2020 program.

FIRESafe MARIN had been working with World Tree Co. and The Tree Man for several years. Due to the short time between program approval and chipping season, FSM selected these two contractors for the program based on their previous performance and reliability.

Furthermore, there was a shortage of available chipper contractors due to the fact that mid-summer is the high point for seasonal vegetation management work.



PLANNING

An initial meeting was held between FSM staff and the chipping contractors. This meeting discussed crew size and capacity, areas of service, need to start with a pilot, pricing, length of contract, scheduling, and other general planning concepts.



LOGISTICS

The next meeting covered logistical issues such as overall schedule, routing, crew assignments, communications, dump fees, billing and payment. There was also discussion about how to handle oversize piles, missed pickups, last minute cancellations, and service complaints.



SOFTWARE TRAINING

Each crew was issued a computer tablet. Each member received training on how to utilize the program including route mapping, pile size documentation, photographing each pickup, and calculation of chipped material. Fire Aside and FSM staff did ride alongs to measure effectiveness of training and to correct programming errors.

"Thanks to the chipping crew for removing extra amount of material and even cleaning up small debris after chipping!"

- Mill Valley Resident



MWPA APPROVES 2ND FUNDING REQUEST

Global pandemic + dry conditions creates the opportunity to do more in the extended wildfire season.

Heightened concerns about wildfire combined with mobility limitations imposed by the Covid-19 pandemic allowed many residents and property owners to devote extra time and effort removing flammable vegetation.

As a result, FSM requested additional funding of \$230,000 from the MWPA's unallocated funds to continue the chipper program through December 1, 2020. This request correlated with NOAA's projection of dry winter weather patterns into December 2020.



FIRE Safe
MARIN

FEWER VEHICLES MEANS LESS IMPACT ON OUR ENVIRONMENT

Curbside pickup turns out to be a huge win for our local environment, as well as our health and general well-being.

In the absence of a curbside chipping program, homeowners have no choice other than to hire a landscape contractor to clear and remove vegetation or utilize a private vehicle to take material for disposal. In either case, material is loaded into a truck and taken to disposal site, often taking multiple trips. A typical landscaper's pickup truck with extended sides for height can hold approximately 5 cubic yards of material. To remove the approximately 15,000 cubic yards collected, several thousand pickup trips would have been required to dispose of the vegetation. Our trucks required only 180 trips to the disposal site.



**1 chipper
truck = 17+
pickup trucks**



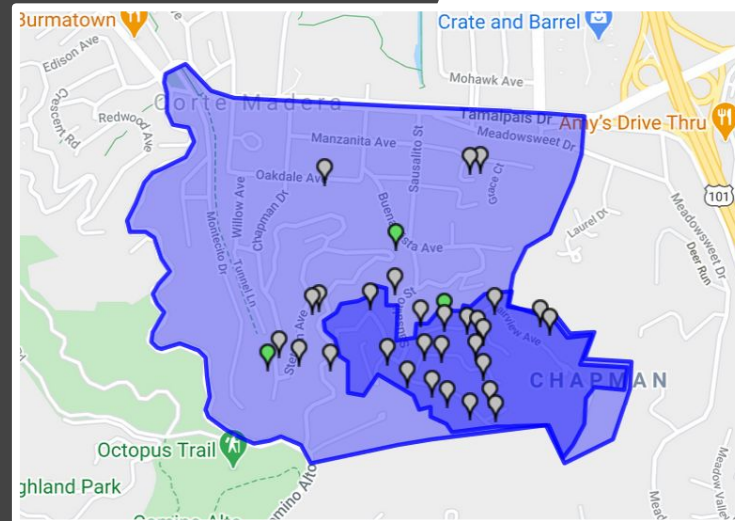
Routing large chipping trucks saved over **3,000+** landscape pickup trucks making dump runs, reducing greenhouse gas emissions.



ENGAGING THE COMMUNITY

Firewise Site Outreach Creates the Demand for Reservations

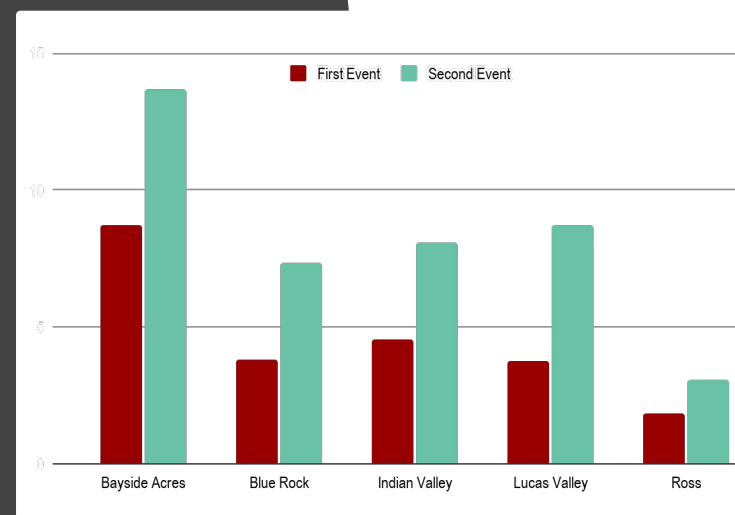
The darker purple shaded part of the map is the active Firewise site of Hidden Valley NRG (HVNRG). It is within the lighter shaded neighborhood of Chapman Park. The housing density is uniform throughout the map. The green and grey pins indicate pile pick up locations. The increased number of pins within HVNRG illustrate how an active firewise community creates the demand for reservations which arguably also can be seen to spill outside HVNRG borders.



Follow Up Chipper Event Creates Higher Participation Rates

The week after a chipper event, FSM contacted the Firewise site to let them know how many reservations were made and how many cubic yards were removed from their site. Three general themes from these conversations are how to better promote the next chipper event, how to reach more neighbors, and always if FSM can increase the allowed pile size. Sites that were provided additional event days were chosen because they had significant community engagement as shown by registration demand, waitlist numbers, and cubic yardage removed from their first event.

The Town of Ross is a good example of a smaller town that is better able to engage their community resulting in greater participation in the chipper program.



Second event impact

(Comparing First Event vs. Second Event)

Leveraging Existing Infrastructure

The advantage of leveraging the Firewise site infrastructure is threefold. **First**, Firewise has existing email addresses for many of their residents and can directly contact them about their chipper event. **Second**, residents are already engaged about the threat of wildfire and the benefits of creating defensible space and actively participate. **Third**, Firewise sites have dedicated volunteers who promote the upcoming program to friends and neighbors and amplify advertising efforts. In short, Firewise residents are committed to wildfire risk mitigation efforts.

Towns, Cities and Special Districts often don't have contact lists for their citizens and cannot effectively promote the program outside of a newsletter. They also have other pressing matters demanding their attention- this year being especially difficult due to the pandemic. In the larger agencies, citizens can be more disconnected from their community and may not feel the social/neighborly pressure to reduce their fire risk.

West Marin is unique. For the most part, there is no history of publicly supported chipper or other fuel reduction programs. The properties are large, the area rural, and the fuel accumulation substantial. The residents are acutely aware of the need for fuel reduction due to the Vision Fire and the recent Woodward Fire. Word of the chipper program spread quickly through these tight knit communities largely through word of mouth.



GETTING THE WORD ON THE STREET

CHIPPER TRUCK MAGNETS

Both chipper trucks did their daily chipper routes with the eye catching 24"x24" magnetic signs on both sides of their trucks



Follow up emails

FSM follows up with Firewise sites reminding them to resend chipper event reminders to their residents--especially if the chipper event reservations are lacking. Regularly, Firewise volunteers take it upon themselves to reach out and ask how many registrations they have and if they should promote their event further.



Bald Hill

CHIPPER Event on Nov. 19th

Guidelines:

- Pre-registration is required: Residents can register at: <https://www.chipperday.com/marin>
- Signup is on a first come first served basis. When we have reached our capacity, any additional registrants will be placed on a wait list. Residents on the waitlist will not receive a pickup unless they receive a confirmation email due to a cancellation.
- Residents need to bring their one pile to their curb for the chipper pick up by 8 am the day we have scheduled for your site. Pickup could be delayed for 1-2 days due to the volume the chippers are processing.
- Your pile is limited to 10 feet x 4 feet x 4 feet in size. If a pile is larger than 10x4x4,

Chipper guidelines:

FSM provides a "Chipper Guidelines" newsletter template for both Firewise sites and agencies that can be modified for the chipper event location and date. These guidelines can then be distributed as an attachment in an email to the Firewise residents, put in a town newsletter, and posted on a community board or other public posting area. The door hanger version allows firewise volunteers to print and leave them at residents' doorsteps.

West Marin:

The Pt. Reyes radio station, KWMR, is the information hub of West Marin. KWMR invited FSM to do a live PSA on the upcoming Inverness and Pt. Reyes November chipper events.



Margaret Bernarding

San Geronimo Valley · Sep 26

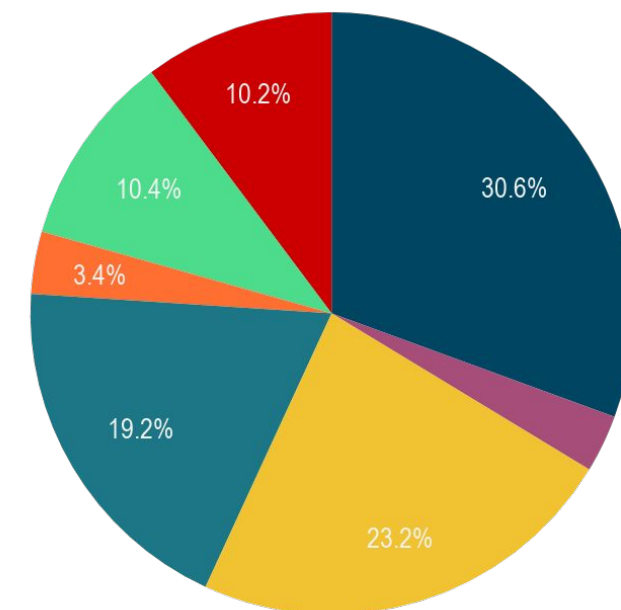
Another free chipper day in the San Geronimo Valley. Apparently, the September (fire prevention) free chipper day in the Valley was such a success, that they have allotted the Valley another day, on October 12th. You must go online to find out the details and you MUST make a reservation because they can only do so much in one day. Go to firesafemarin.org/chipper.

Social media (Next Door)

FSM's reservation portal serves as a promotional tool. It invites people to input their address to determine if and when they have a chipper event and lists the guidelines of the chipper program. It also provides an instructional video on "Making a Chipper Pile." Once registered for an event, the site will send out an alert of future chipper events--even in subsequent years.

Wildfire Hazard Reduction Project

Funded By MWPA



SURVEY INSIGHT

How did you hear about the chipping program?

- Firewise Site Communication
- Noticed Neighbors putting materials on curb
- Local Town email or Notification
- Neighbors Mentioned
- Other
- FIRE Safe MARIN Website
- Social Media (Nextdoor, etc)



2020 CHIPPER PROGRAM OPERATIONS

Operations Requiring Flexibility

There are lots of moving parts - literally and figuratively - in chipper operations. Unforeseen obstacles arise daily including road closures, wildfires, heavy smoke conditions, missed piles, unregistered piles, and oversized piles; but with a dedicated program administrator and stellar chipper crews willing to do what needs to be done, issues are dealt with efficiently and professionally.

"We really appreciated the ease and the great care taken by the people taking our trimmings. They were quick, considerate and left the street cleaner than it was before. Thanks!!!" -San Rafael Resident

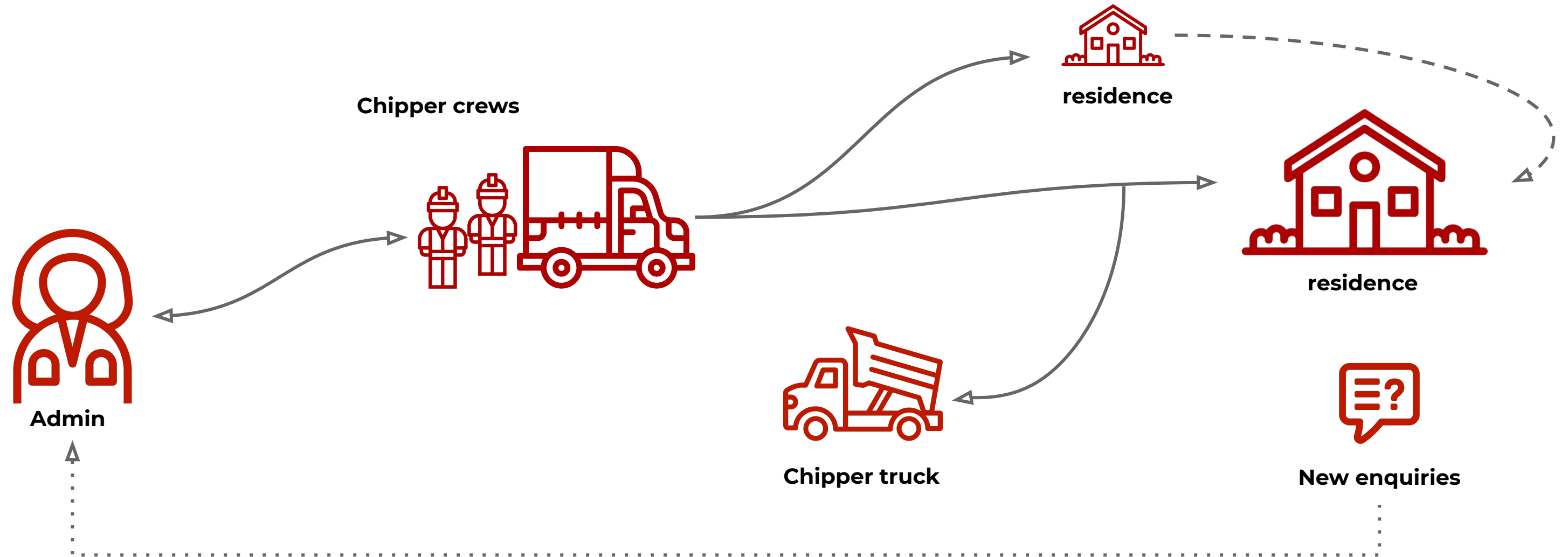
Chipper events vary by location. The wide streets and smaller lot sizes such as those found in areas of Novato, San Rafael, and Greenbrae make for an efficient quick route.

West Marin, on the other hand, with its narrow streets and large lots mean slower travel over greater distances between houses and the disposal site as well as larger piles. Therefore the administrator needs to monitor the upcoming reservations and crew progress continually. If reservations are nearly full, the administrator weighs the need to request additional crew(s) to finish up a route on a Friday. If the reservations are light, the administrator follows up with agencies about fuel removal projects that eliminate contractor down time and address local hazards.

Customer follow up and satisfaction is taken extremely seriously because the chipper program is a reflection of FIRESafe MARIN and the taxpayer supported MWPA.



CHIPPING AWAY DAILY



1. Admin. checks in with the crews via text or phone call to confirm day's chipper route and to answer any questions.

2. The two crews set off on their separate routes or they begin on opposite ends of the same route.

3. The administrator spends time responding to a steady stream of emails, phone calls, and a few texts regarding resident and agency chipper questions, requests, and issues throughout the day.

4. The administrator remains in contact with the crews throughout the chipping day to address crew questions and customer service matters.

5. Crews unload the chips as needed. If they can, crews broadcast chips on site. For the five month program, approximately 180 trips to the disposal site were made.



MANAGING A DIVERSE RANGE OF CONTENT

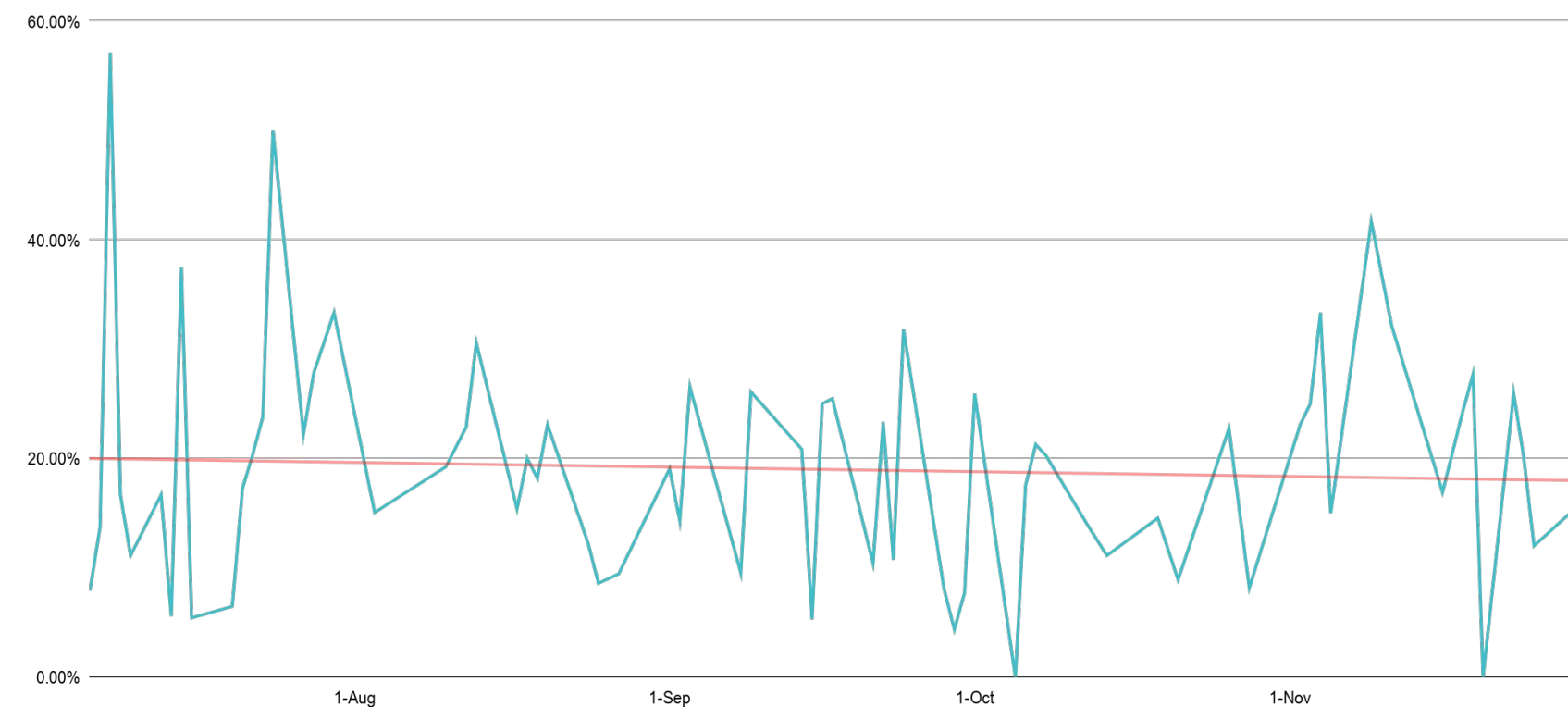
Piles were located on the curb, in front yards, and hillsides. They ranged from 0.5 to 50+ cubic yards.



IMPROVING 'NON-STANDARD' ITEMS

While the trend improved over time 20% of the pick ups still had non-standard items. This could range from residents mixing bamboo in the pile, inclusion of building material, garbage, or other non-vegetation material. Where possible the crews took as much as they could and left the non-standard material.

Curbs with Non-standard Items



Lumber and building material were not accepted



Bagged vegetation can't be put safely into the chipper



Bamboo and Poison Oak mixed into the pile



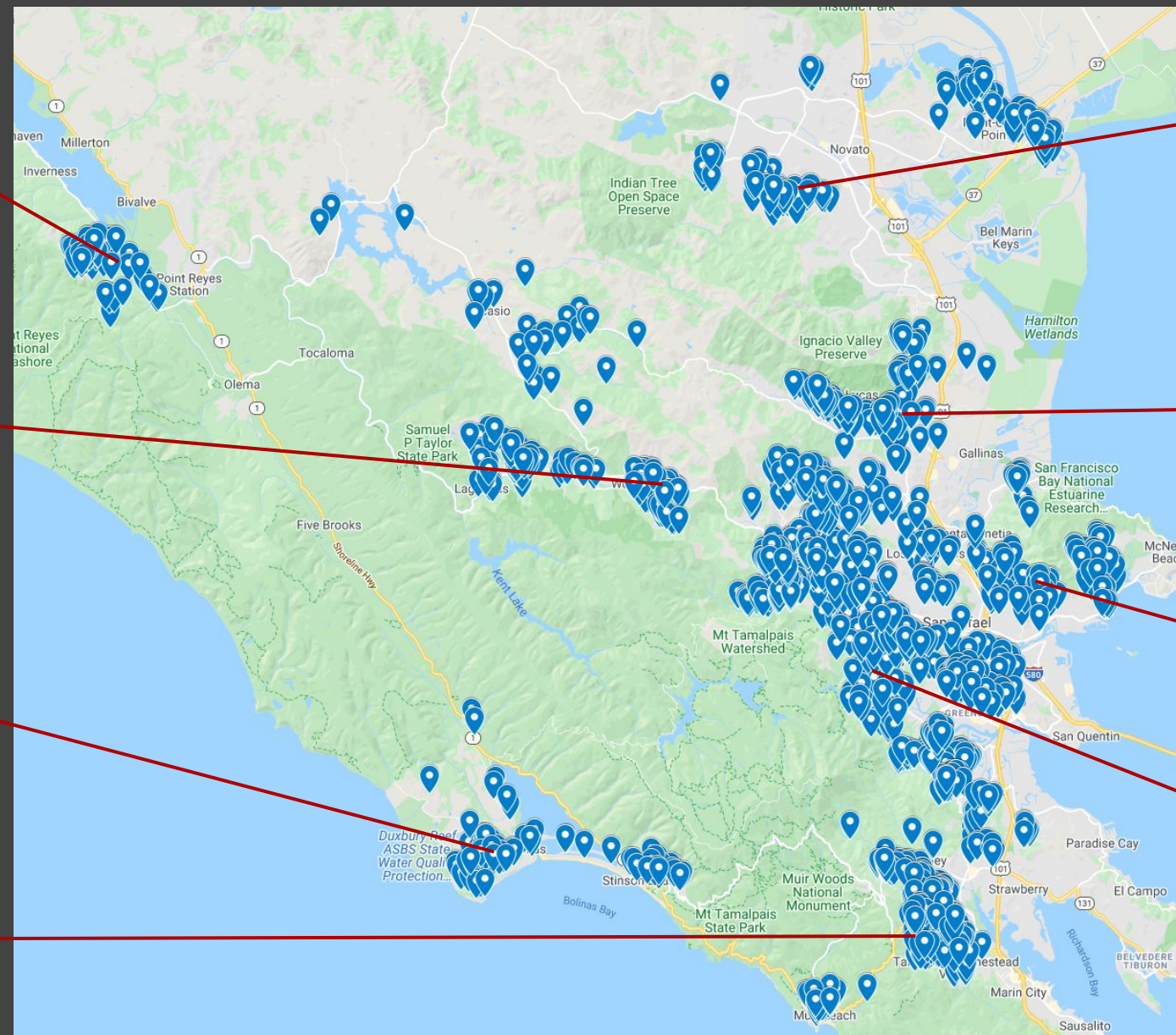
WHAT THE PUBLIC HAD TO SAY...

"Great program, especially the reservation system. We are now much safer from fires because of this program (and the property looks better too!) The workers showed up on time, were courteous and wore masks."

"Please, please, please, do it once a month. I have to do all the work myself as a single mom and can't afford to hire someone so it's a lot of work. I have much more that I could have cut and hauled to the chipper pile. It's a wonderful program, thank you!"

"Grateful for the opportunity to remove brush and have it go away at no cost. Motivated us to deal with overgrowth. Only suggestion for improvement would be more often. Thanks."

"Thank you!!!! We love this service and it reminds us to take action to remove brush and gives us an incentive to do so in a timely manner."



"Very easy because they came to us. we don't have a good way to transport all the limbs we cut it was nice that the chipper truck came by our house. It was very easy...we'll definitely take advantage in the future."

"Because of the chipping offer, we started to remove some of the juniper on our side yard. Every time the chipping service is offered, we've taken out more of the juniper."

"Terrific opportunity that prompted us to clear vegetation."

"Chipper Day is a huge help for us. We have over ¼ acre of hillside to keep cleared. We are long time Senior residents in Madrone (Baltimore) Canyon and appreciate all the help you provide."

Distribution of 2020 Chipper Day Curb Pick ups



89% RATED THE PROGRAM 5 OUT 5

There may even be false-negatives in the data.

The vast majority of participants were enthusiastic about the program. Of the small percentage that gave it a low score about ⅓ left a positive comment causing us to believe they selected this rating in error. As an example this resident from San Rafael scored it 1 out of 5 and left this feedback:

"So grateful you do this for residents. Truly appreciate it."

Of the remaining negative feedback it roughly split evenly across 3 points:

1. Found the pile size limits too small

"Great program, in rural areas such as Point Reyes a bigger vegetation amount would help."

2. Some variation of believing their pile was missed*

"They failed to pick up my pile. I had 10 pieces 8' long with no foliage so potentially they didn't see it."

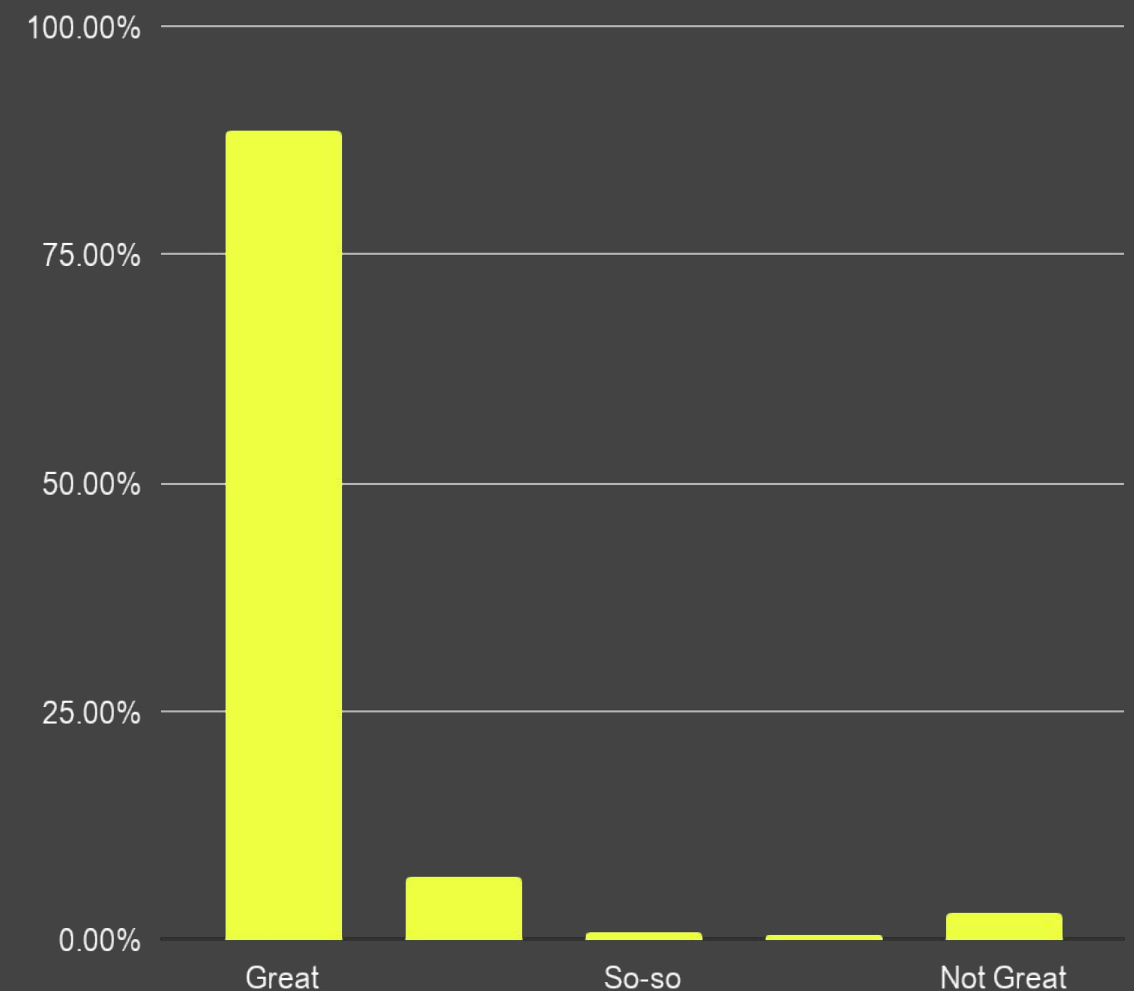
3. Didn't get access or found out about it too late

"I can understand if I was too late to get into the first group. I'm on a waiting list so will there be another pick up?"

*The survey was sent out on the first day of an event- meaning many were picked up later but they thought they were missed. We adjusted messaging and this helped reduce this issue.

SURVEY INSIGHT

"How would you rate your overall experience with the free curb chipping program?"



n=919 We had a very high response rate to the post event survey with positive comments and some good suggestions to improve the program next season.



LOCAL AGENCY “JOBS”

Keeping busy

On days when a crew had finished their routes early they were directed to local pre-determined projects. In anticipation of potential crew down time, cities, towns, and fire departments identified “neighborhood” vegetation mitigation projects that needed immediate attention and had relevant permits, permissions, and CEQA requirements in place before work began. Both fire departments and agencies chose highly visible projects with a history of citizen complaints and requests for mitigation.

FSM crews were able to supply tree climbers, bucket trucks, mini skid steers, different sized saws, pole saws, and broom pullers, and had the required skills and equipment to handle the jobs. Project jobs included: tree removal, evacuation route clearance, completing jobs begun by Americorps and Tam Fire crews, horizontal and vertical clearance of essential fire roads and public streets, fuel breaks around schools, public parks, housing developments, and non-profit organizations, and removal of Italian cypress and juniper from key locations.

Over the course of the chipper program 35 local agency jobs were completed and over 600 chipped cubic yards of fuel was removed.



Deer Park School, Fairfax: thinning, broom removal



Deer trail Ln, Mill Valley: Tam Crew burn piles removal



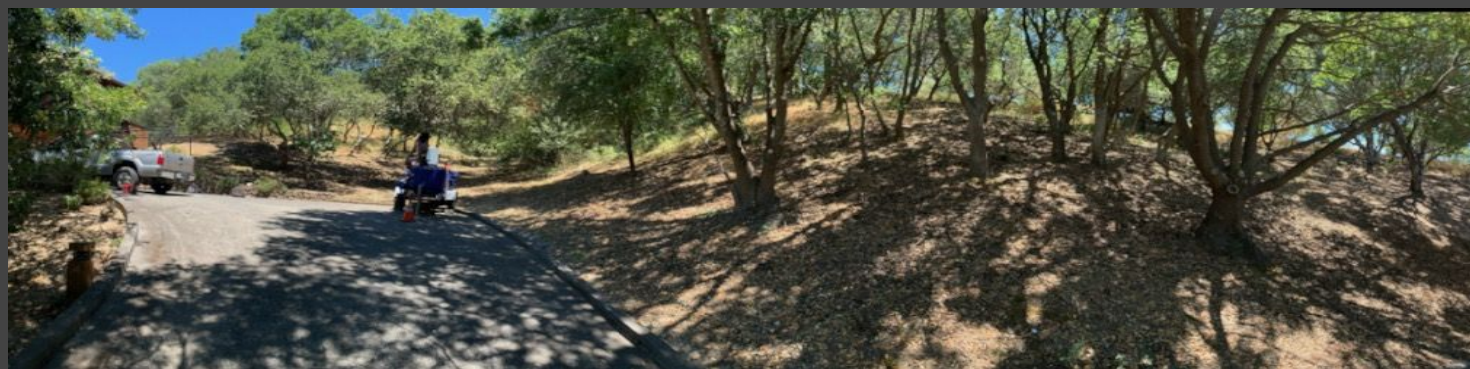
San Rafael: Removal of standing SOD and piles created by Americorps



Novato: removal of ~30 piles created by Americorps



Kentfield: broom removal



Benson Circle, Mill Valley: Shaded fuel break.





Difficult access is enabled with the long arm of the bucket truck



Mini skid steers can speed vegetation removal by utilizing a winch or grapple arm

JOBS MEAN SPECIAL SKILLS & TOOLS



Different sized saw are needed for different jobs



Blowers are used to clean up after every pile is chipped



4.5 ton excavator with 40 inch masticating head



A certified arborist can climb trees to safely take a tree down



Pole saw is essential for evacuation route clearance and tree limbing



Excavator to help load chipper



Excavators and skid steers can be fitted with masticators and other attachments for specialty jobs

"I got up there today and looked at it and it's outstanding. Thank you very much for the use of your crews, we deeply appreciate it"

- Mill Valley Fire Department

"Big difference! Thank you so much for all the great work"

- Marin County Fire Department, Point Reyes Fire Station



FIRE & SMOKE

Responding to nature

In August, a dry lightning storm started the Woodward Fire in Inverness and brought the reality of wildfire threat to residents across Marin.

FIRESafe MARIN's immediate response was to divert the chipper crews from their regularly scheduled routes to help clear the evacuation routes of the threatened area and to remove chipper piles already waiting for them in anticipation of the FSM scheduled events for 8/26 and 8/31. Additional crews were sent to remove the piles that the residents were continuing to build in a last ditch effort to create more defensible space. The crews also created fuel breaks around water tanks and power sources and assisted residents in creating defensible space around their homes. Over 100 chipped cubic yards went to the disposal site, half that again, was chipped in place.

The number of reservations immediately went up in the subsequently scheduled chipper events. Pile sizes increased as well. Despite the invigorated interest in the chipper program, the resulting smoke and decrease in air quality conversely resulted in numerous reservations being cancelled in other areas. FIRESafe MARIN received numerous requests to reschedule chipper events until after the smoke had cleared.

"During the Woodward Fire, the presence and assistance of the fine folks doing the chipping as well as the folks handling communications and updates via email made a harrowing experience more manageable.

That this service exists at all reinforces my belief that our tax dollars are being used wisely,

and I applaud the county and all folks involved in making this happen."

– Pt. Reyes Station Resident



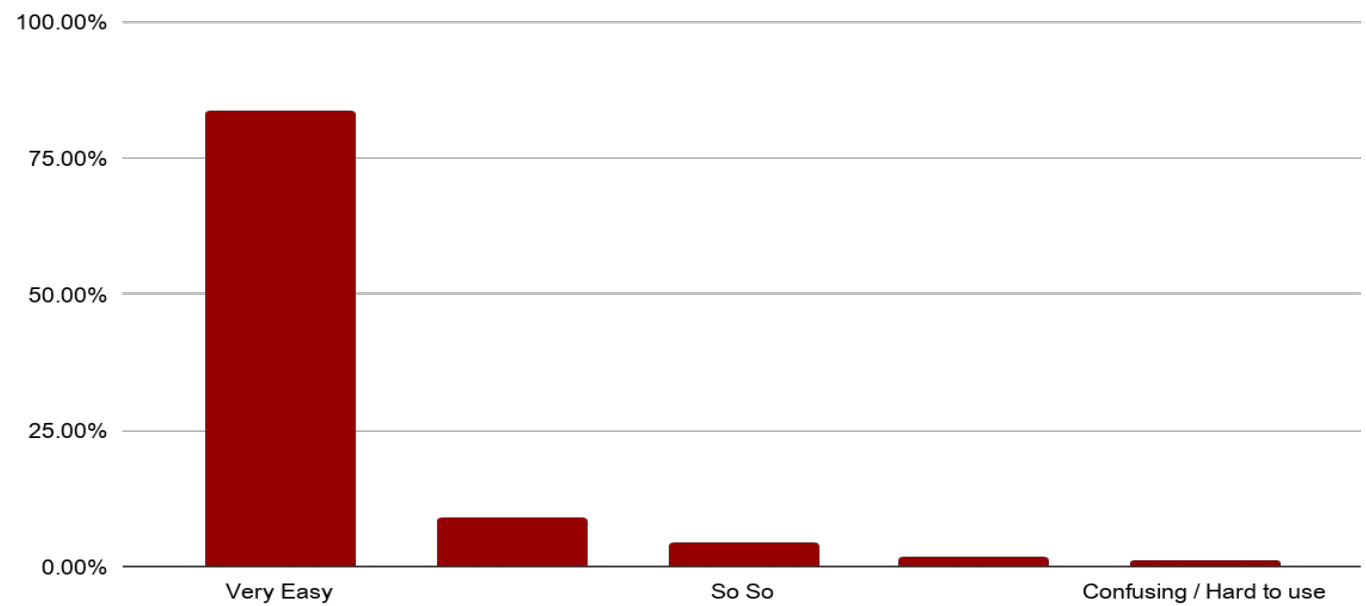
SOFTWARE UPDATES

Modifications & improvements based on feedback & system performance data

With only 19 days to build & deploy, there was continued iteration to improve crew experience and add in administrative capabilities as the program evolved. The resident experience was the initial focus and remained stable throughout.

SURVEY INSIGHT

"How easy was it to use the online system?"



Administration

Introduction of jobs (vs. curb pick ups) created need to track this activity differently as well as limit residents from registering in these spots (jobs are for agency only).

Creation and uploading of new maps for additional job events.

Updates requested of the reporting service included a need to track activity by Zone (West Marin, Central Marin, Southern Marin, Novato, San Rafael) which required an updated data model.



Crew

Usage during low or no cell network caused problems for crew (unable to refresh map) as well as sync of completed jobs. Improvements included storing all map data on the local device and increased handling of "sync"

Identified need to add in capability to track when the crews went to the dump as well as how much chipped volume they were taking.



Residents

Improvements to cancellation workflow (initial design meant residents needed their system generated 10 digit ID, which no one kept) in order to cancel.

Introduced survey email sent 24 hours after event is completed.

Ongoing troubleshooting with addresses (known problem in Google Maps that some Marin addresses appear in other communities, especially in San Geronimo Valley).

Removed the initial requirement that prevented new registrations on the Saturday night of the week before an event.



BUDGET

The curbside chipper program represents an excellent return on investment for tax payer dollars. 86% of participating residents stated that the free chipping program is what caused them to remove the vegetation.

The value of a free chipper day exceeded the Measure C tax payment for most residents. The program raised awareness of the need for homeowners to create defensible space. MWPA agencies utilized the program for important local fuel reduction projects. The efficiency of curbside pick ups reduced carbon emissions. 60% of the pick ups were in high and very high fire hazard severity zones.

"Good program--it is reassuring to see our tax money put to wise use. With many citizens (neighbors) performing the work our tax dollars were magnified; more bang for the buck than simply hiring private contractors. Many are now invested in the program and may look forward to further improvements in making. Keep up the good work. Another chipper day in spring/early summer 2021 would be helpful."

- Kentfield Resident

For every \$10,000 spent on this program:

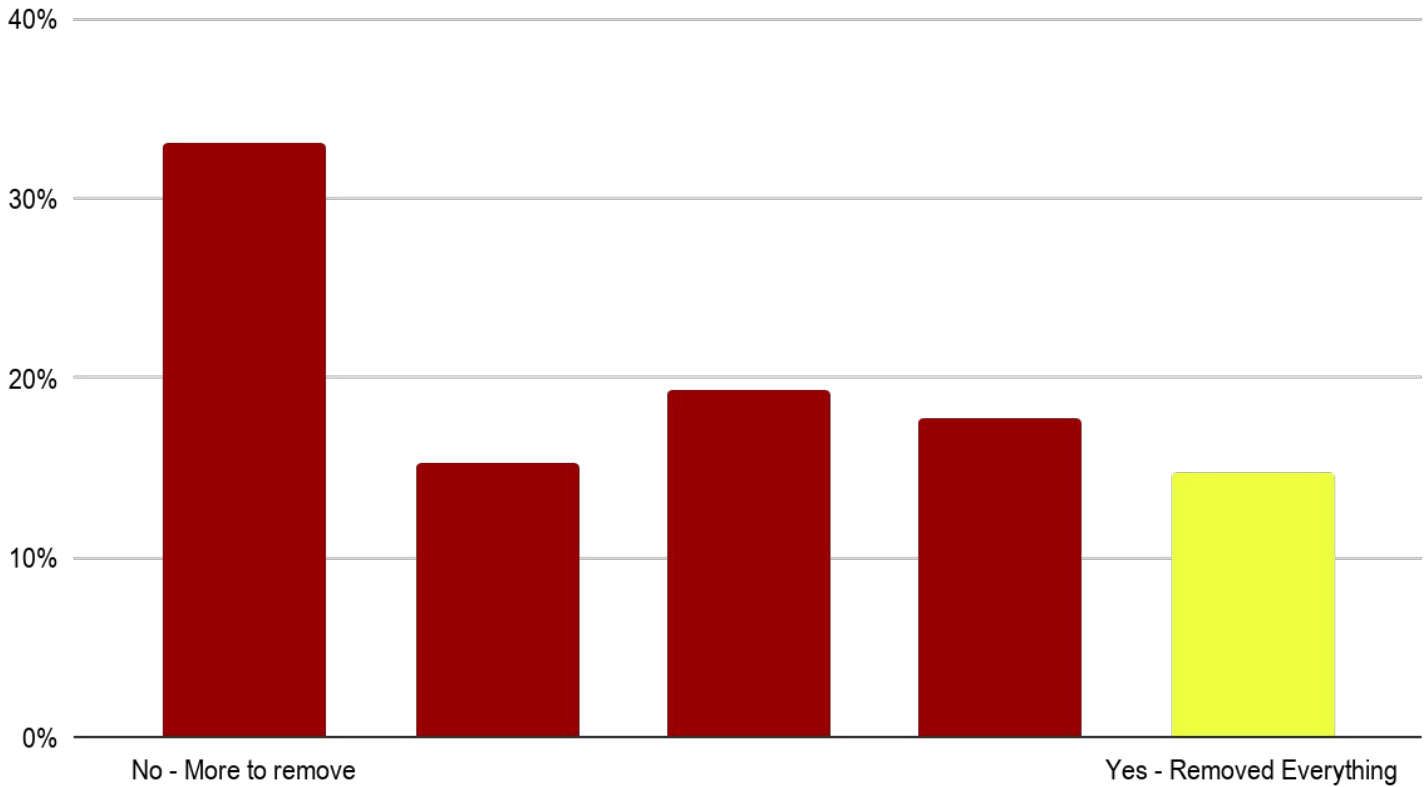
- An incremental 193.5 cubic yards of fuel was removed by residents.
- An estimated 1,700 miles of trips to dumps by smaller vehicles were eliminated.
- A critical community job was completed.

Chipper contractors	\$584,579
Marin Resource Recovery	\$28,258
Administration	\$44,009
TOTAL	\$656,846



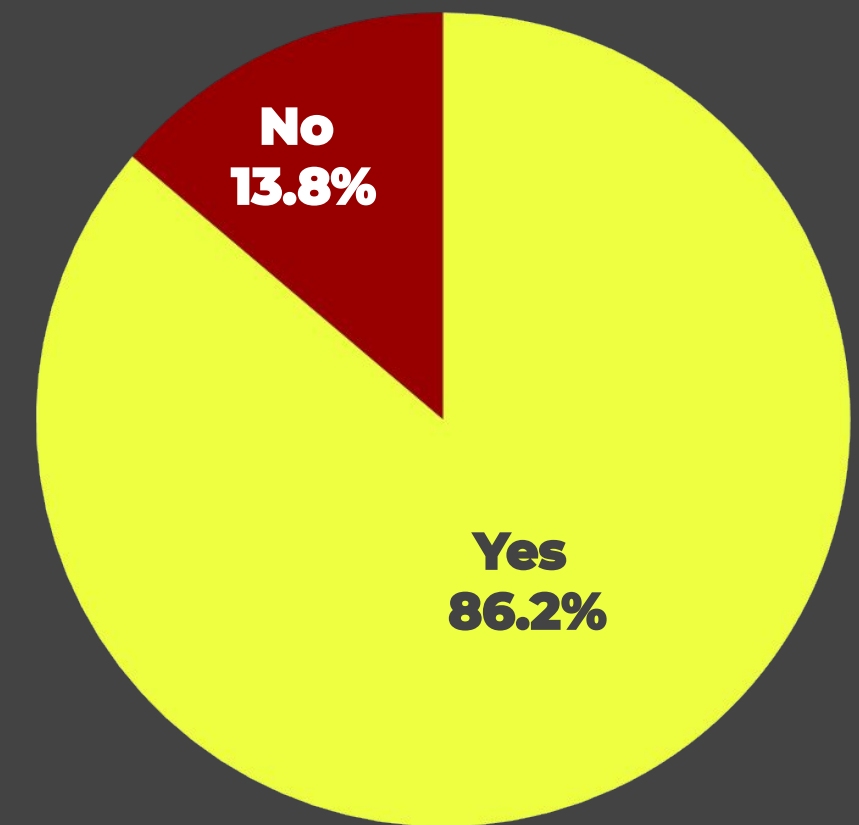
MOTIVATING FIRE SAFETY

86% indicated the free chipping program is what caused them to remove the vegetation... but, only 15% removed all the vegetation they wanted to.



SURVEY INSIGHT

“Did the chipping program cause you to remove the vegetation?”



“Simply cannot thank you enough. I tackled more brush clearing and clean up than I would have because you made the disposal so easy. Really brilliant.”

- Fairfax Resident



INCREASING PARTICIPATION

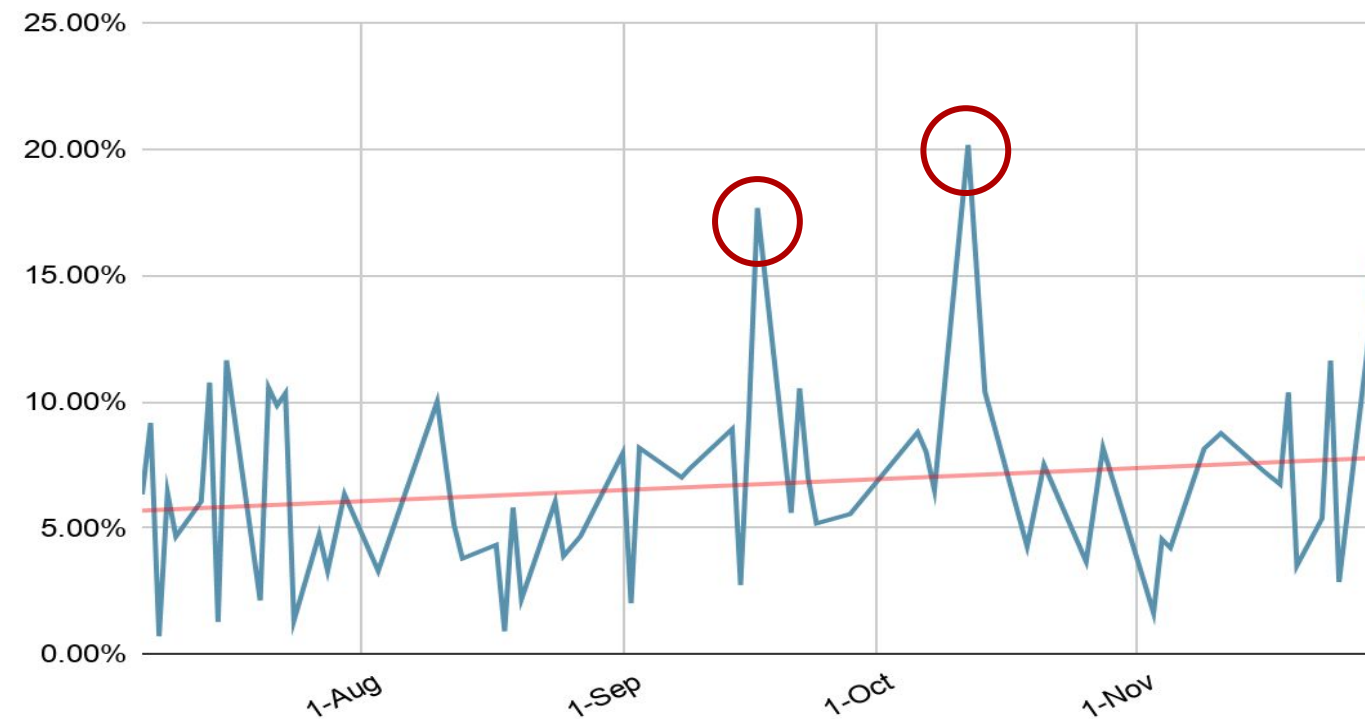
Additional time and improved messaging increased participation rates throughout the season.

"I hope it continues... it's such an improvement to have the chipper stop at our property. We don't have a vehicle to bring the debris to a distant location"

- Novato Resident

Participation Rate

Completed pick ups per total residences in an event area

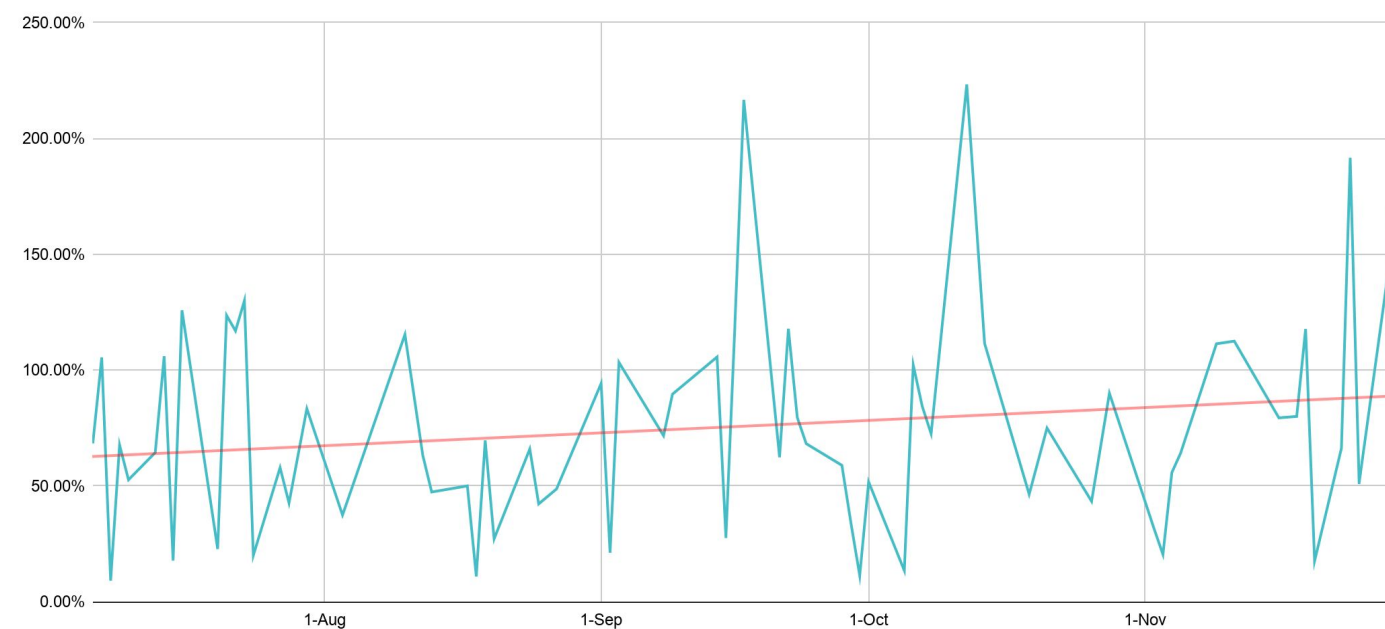


Initial volatility was due to limited lead time to promote the events and overlap with other non MWPA Chipper events.

The **2** largest events with highest participation were the Woodacre events. There was volatility during periods with active smoke as some residents didn't go outside during the preceding weekend.

Curbs Scheduled vs. Slots Available

Using 10% of dwellings



Each event had available slots equal to 10% of residences in the event area.

While there was volatility by community we grew from 60% of available slots reserved to over 90% by end of the season.



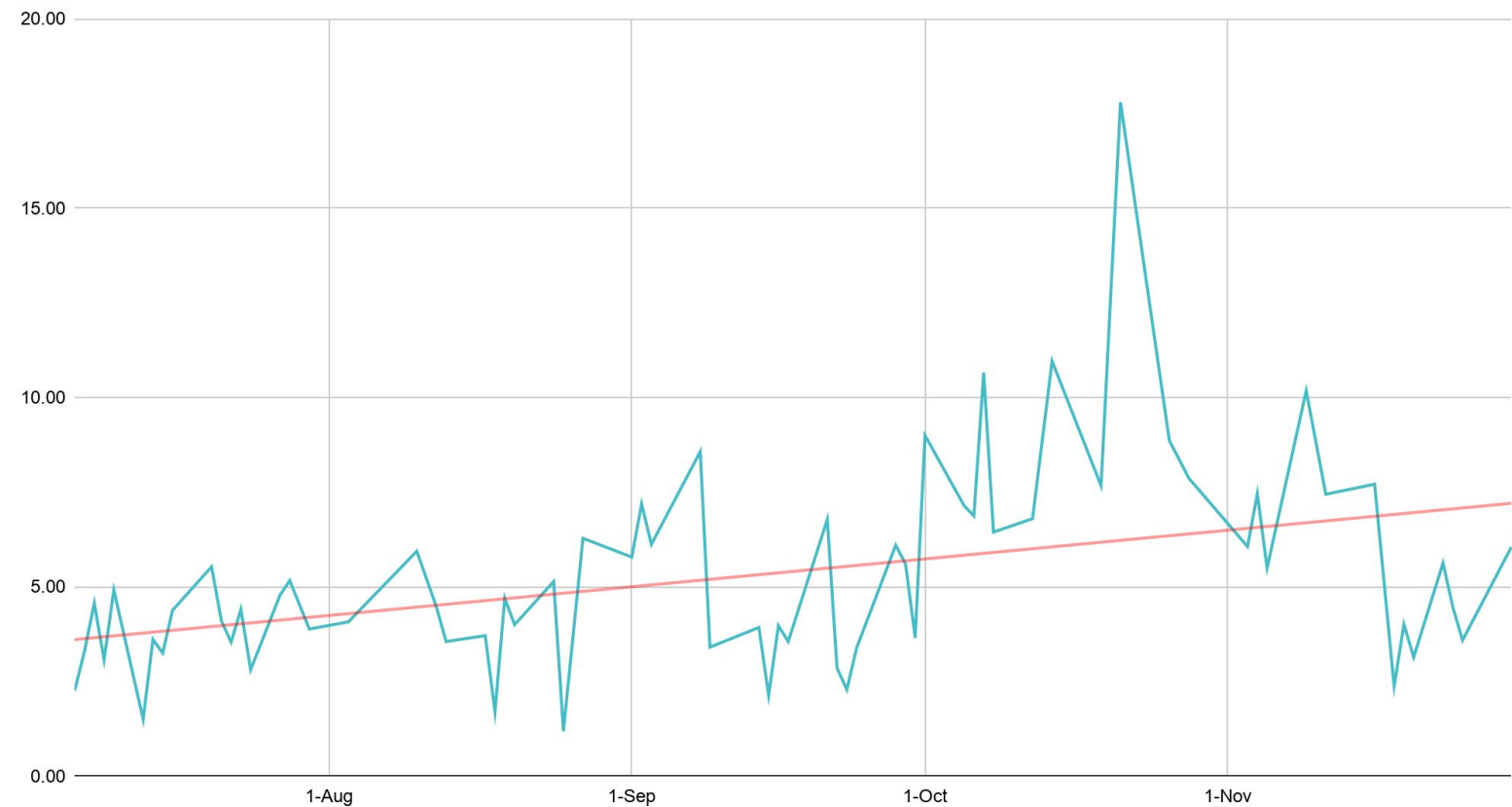
INCREASING VOLUME REMOVED

Improved messaging, time to prepare and (unofficial) relaxing of the limits on pile size let us increase the volume removed over time.

*"Please allow bigger piles.
Please have more slots for
registration. Many thanks for a
great program"*

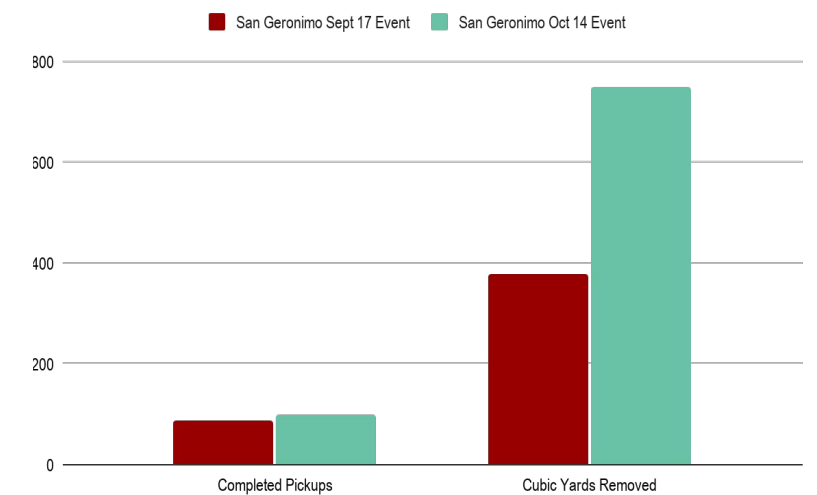
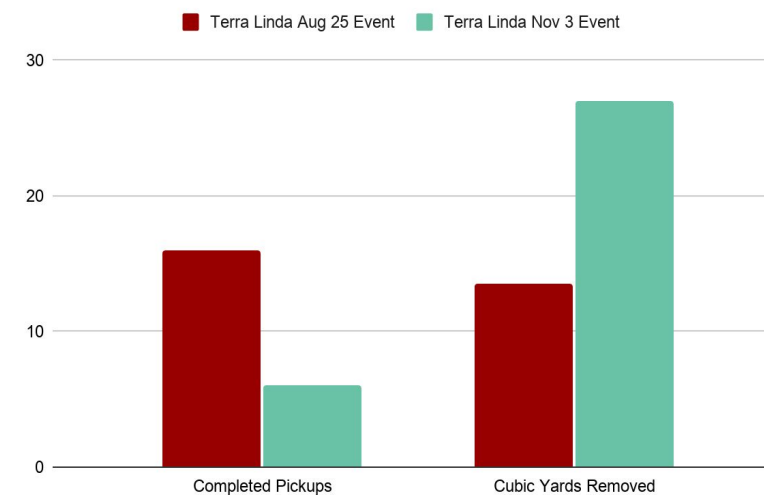
- San Anselmo Resident

Average Volume per Pick up



Volume Increases at Repeat Events

Even when the number of participants was lower



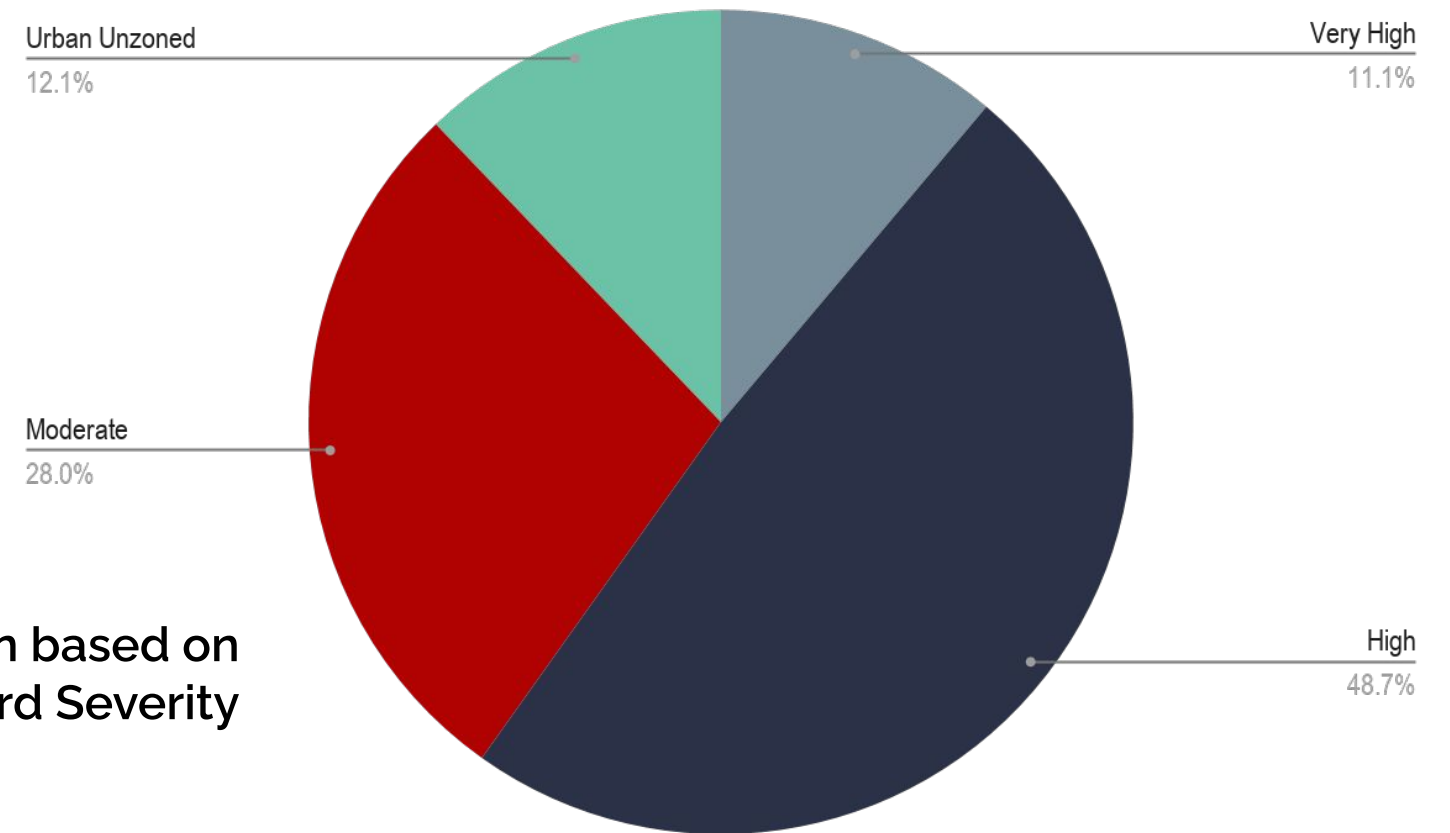
FOCUS ON HIGH IMPACT AREAS

While serving the full community we focused efforts on the higher risk areas.

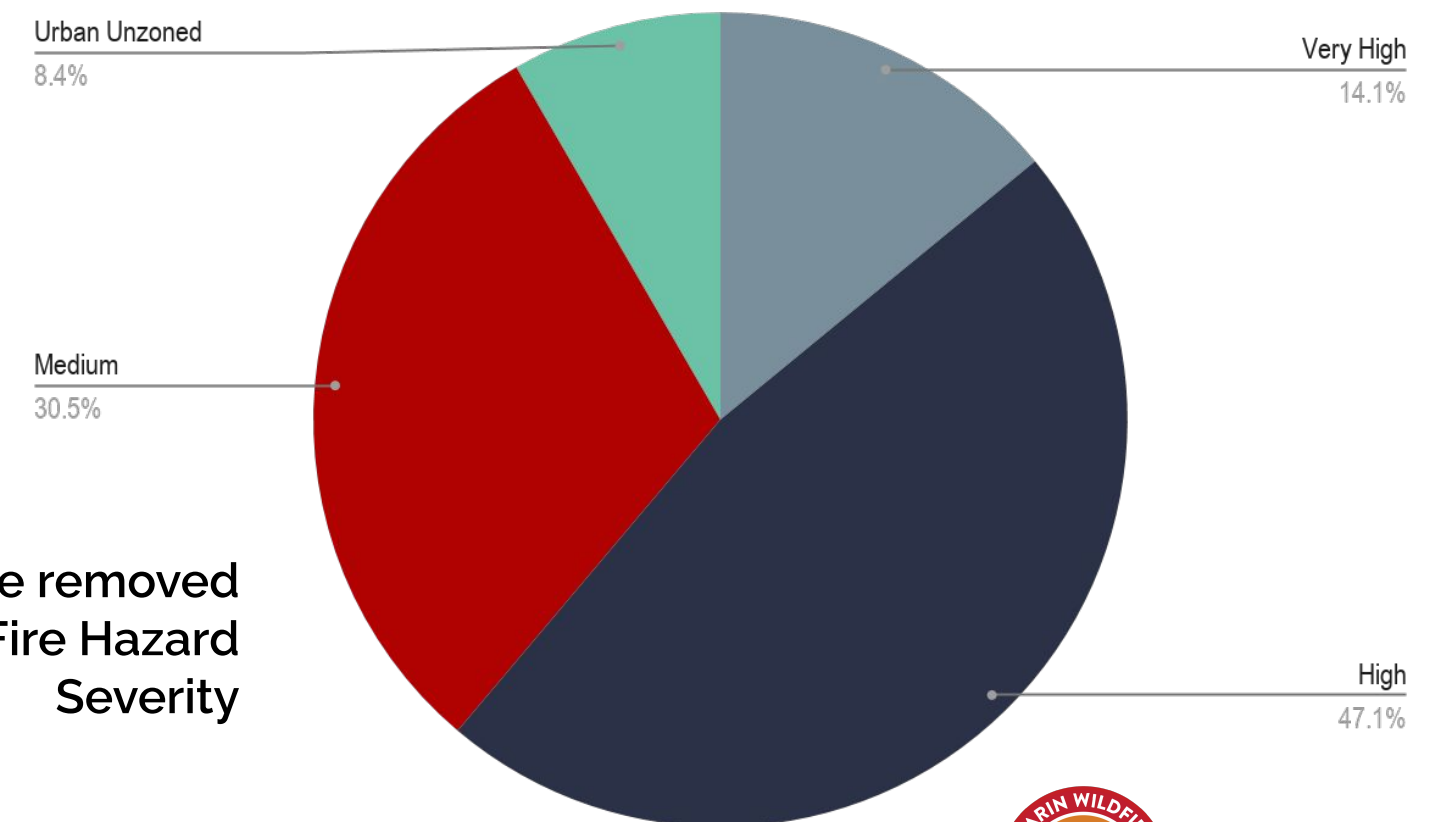
"Thank you. Senior on fixed income plus home is on wildland interface - backyard fence is China Camp State Park - huge concerns over defensible space."

- San Rafael Resident

Participation based on
Fire Hazard Severity



Volume removed
based on Fire Hazard
Severity



FIRE Safe M A R I N

WHAT NOW?

FIRESafe MARIN is working with Fire Department representatives from each of the five MWPA zones to develop a proposal for a Countywide chipper program. The next chipper program will need to start in early spring 2021. The proposal will be submitted through the MWPA Operations Committee and the MWPA Board should anticipate a mid-year funding request.



2021 CHIPPER PROGRAM GOALS

FIRESafe MARIN recommends adoption of the following goals for the 2021 Chipper Program.

1. Provide Countywide coordinated curbside chipper pick up for each Marin residence
2. Coordinate curbside pick ups with Defensible Space Inspection program whenever feasible
3. Select multiple chipper contractors through competitive bid process
4. Review and update existing program management software and data collection
5. Offer local agencies the opportunity to utilize the contractors for local “jobs” with community-wide benefit





Thank You





In partnership and support with:

Bolinas Fire District

City of Larkspur

City of Mill Valley

City of San Rafael

County of Marin

Inverness Public Utility District

Kentfield Fire Protection District

Marinwood Community Services District

Muir Beach Community Services District

Novato Fire Protection District

Sleepy Hollow Fire Protection District

Southern Marin Fire Protection District

Stinson Beach Fire Protection District

Town of Corte Madera

Town of Fairfax

Town of Ross

Town of San Anselmo