



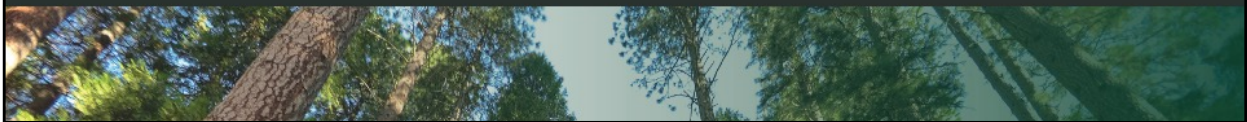
When the storm hits: are you ready?

WHEN THE STORM HITS, ARE YOU READY?



Severe weather impacts a city's tree population

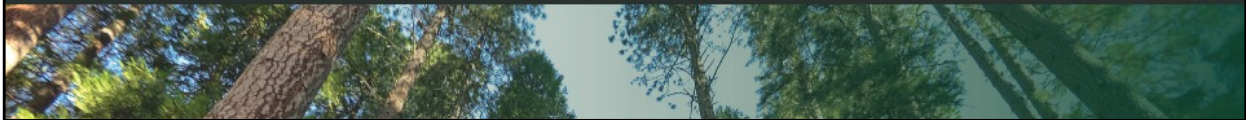
- Is your community prepared?



When a storm hits are you ready? Storm events involving violent weather like tornadoes, severe thunderstorms, microbursts and hurricanes should be expected to impact the city's tree population. When a storm event occurs in your area, is your community prepared to respond efficiently and effectively? Does your community have a Tree Risk Management Plan that includes an Urban Forestry Emergency Storm Response Plan (ESRP)?

AFTER THE STORM

- Downed trees & power lines
- Blocked roadways
- Impeded emergency vehicles
- Road closures
- Debris and Chaos

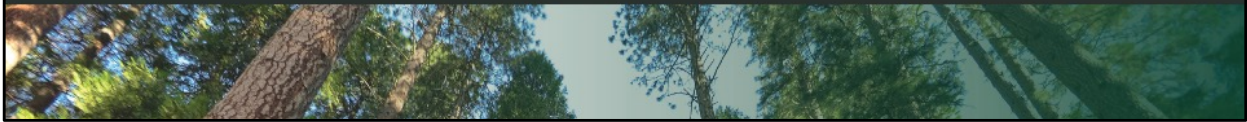


We have all most likely been involved in storm events and have experienced the results. A likely scene after a storm event involves downed trees and power lines blocking the roadways and impeding emergency vehicles in route to injured citizens and damaged property.

There are road closures that are blocked by debris and downed trees, Emergency Service response is slowed and delayed, Debris is everywhere and there is plenty of it, as well as Chaos. Lots of chaos

TREES AS ASSETS

Managed like infrastructure to our communities



Although trees provide many benefits, they can also pose as liabilities. Trees are not only infrastructure assets to our communities that improve air quality, provide shade and cooling and provide storm water benefits but they are also infrastructure assets that must be managed; They are an infrastructure asset in your communities just like bridges, streets and other infrastructure assets. They must be managed.

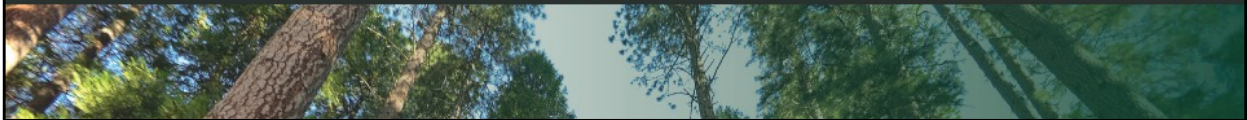
PREPARE, RESPONSE, RECOVER, MITIGATE – REPEAT!



Emergency Management
circle of management



Planning allows you
to manage and
protect the urban
forest asset



In this presentation, I hope to help you prepare to plan to be ready for when the storm hits.

The overall idea is to Plan for the storms and plan to work your way to managed chaos quickly and then move to sustained clean up while managing and protecting the urban forest asset for your community.

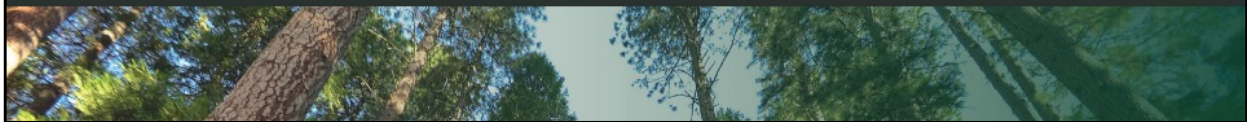
Model your response after the Emergency Management Circle of management....

Prepare, Respond, Recover, mitigate – Repeat!

URBAN FOREST RECOVERY

3 Cornerstones

- Tree Assessments
- Standing Contracts
- Debris Staging Sites



So how do you help your community to be prepared for when the storm hits and to manage your city's urban forestry asset. Doing these three cornerstone activities will prepare you and your city for reduced debris and improved operational efficiencies and also build the foundation for a more comprehensive Tree Risk Management Plan. These are the beginning cornerstones. It is a great place to start.

3 Cornerstones

1) Tree Assessments – Tree Assessments will result in Tree removals and Prunes to mitigate risk and establish timelines to reevaluate your city trees. You will establish routine tree evaluations on a schedule going forward.

At a minimum, your city will plan for annual Level 1 inspections for areas identified as high risk and also Level 1 inspections after any storm event minor or major. So you will continue to Plan, Prepare, Monitor and repeat... remember this is similar to the Emergency management circle of management The Tree Assessments and the subsequent mitigations you perform (removals and prunes) are key to the Tree Risk Management Plan and to reducing the impact to your infrastructure and the amount of debris generated.

2) Standing contracts -Contracts executed to identify who will manage all of the

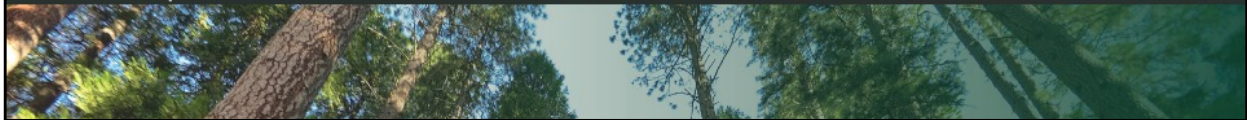
debris, dangerous trees and limbs

3)Debris Staging Sites – Sites established and prepared to utilize for debris collection and processing

TREE RISK ASSESSMENT

Develop for your city

- Major corridors and emergency routes to public services
- Find qualified company with TRAQ/ISA staff
- Conduct Level 1 Assessment
 - Inventory
 - Mitigation plans
 - Locate 'at-risk' trees
 - Removals/prunes
 - Inspection schedule

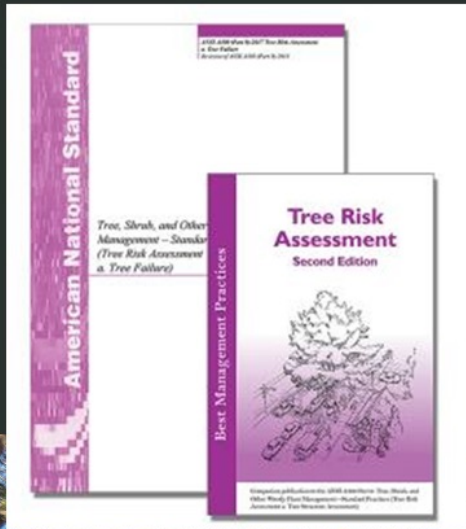


The first cornerstone.. The Tree Risk Assessment. What is it all about and how do you start one and the process in your community. You know your city. You know your major corridors and emergency routes to police, fire and local hospitals. If you aren't sure... your county Engineering office and/or City Engineer Office will most likely have these routes identified already for you. Most roadways are categorized as interstate, principal arterial, minor arterial, Collectors and local. These may vary in different geographical areas around the country.

Map out these routes and identify the routes to be evaluated.

Contract with a TRAQ Certified arborist or Company with ISA qualified staff to conduct a Level 1 Assessment of these routes that are at the highest risk for potential damage and road blockage due to the road category and the amount of tree canopy

LEVEL 1, 2 AND 3 ASSESSMENTS



- Level 1- Limited Visual assessment – Walk by to identify obvious defects
- Level 2 - Basic assessment – Completely around a tree for all visible areas of the tree
- Level 3 – Advanced assessment – comprehensive tree structure evaluation

Let's talk briefly about assessment levels and what they mean. They are conducted by Tree Risk Assessor Qualified (TRAQ) professionals or at a minimum an ISA Certified Arborist. The International Society of Arboriculture is the certifying body of both credentials.

Level 1 assessments include a walk by to identify obvious defects and obvious removals. A Level 1 Limited Visual assessment is where Arborists evaluate designated areas either from vehicles or from walking down paths, streets, or sidewalks to identify high and extreme risk trees. These assessments are intended to cover large areas very quickly with small amounts of details being recorded for each tree. Level 1 assessments can also be used to identify areas or certain trees that may need to have Level 2 or Level 3 assessments conducted as well.

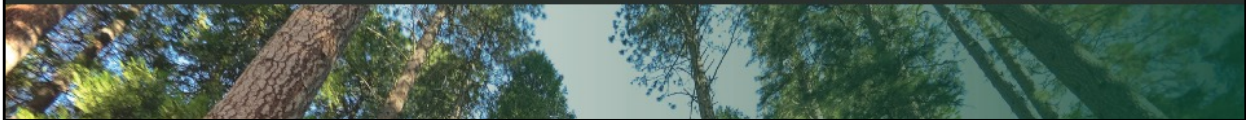
During a Level 2 Basic assessment, Arborists walk completely around a tree and look for defects in all visible areas of a tree, including the surrounding area. These assessments include the use of a rubber mallet for "sounding" the tree and probes that can be used to evaluate open cavities. During an inventory, or as part of a tree risk assessment project, the Arborist can determine whether some aspect of tree structure or health indicates that a

more comprehensive tree structure evaluation (Level 3 Advanced assessment) is needed to more thoroughly evaluate tree condition and risk of failure.

TREE RISK ASSESSMENT

Develop for your city

- Major corridors and emergency routes to public services
- Find qualified company with TRAQ/ISA staff
- **Conduct Level 1 Assessment**
 - **Inventory**
 - **Mitigation plans**
 - **Locate 'at-risk' trees**
 - **Removals/prunes**
 - **Inspection schedule**



Remember the routes identified will receive a Level 1 assessments that includes a walk by to identify obvious defects and obvious removals. I believe it is important to be sure to use qualified and certified assessors and to have them be separate from a tree removal or pruning company that would do the work. Just to be sure you are doing your due diligence in separating the evaluations/assessments from tree removal and pruning.

Identify and inventory by address and GPS location the trees that need to be removed and any obvious tree limb removals. A Level 1 assessment might lead to a Level 2 on some trees and that is to be expected. The point is to get a good inventory and idea of the tree resource needs and a plan to mitigate these identified at risk trees for removal and high risk tree pruning needs.

Contract for the removals and prunes to be completed. Removal and prunes can be bid separately. A Tree removal company that meets City/county guidelines for insurance, etc. is acceptable. For Tree pruning it is imperative that these be done by a company with ISA certified arborists. The point is to improve the tree canopy and to limit risk associated with poor and incorrect pruning that can damage the tree resource further and make trees even more at risk for failure.

Now that is done... now what? Would if the storm doesn't come immediately! You

continue to Plan, Prepare, Monitor and repeat. Following the EM Circle of Management. Inspection schedules are vital to continue the circle of management.

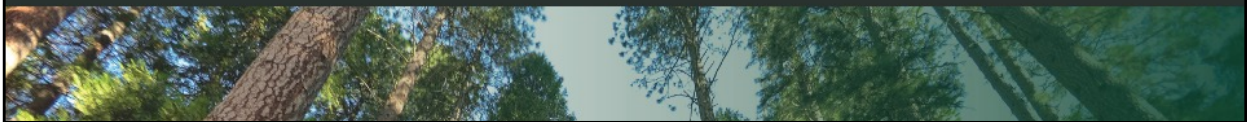
TREE RISK ASSESSMENT

Inspection Schedules

- Monitor and Inspect
- Identified Routes and Inspection schedules
- Storms require inspections on all routes after an event



Hazard Categories	Color Codes	Timing of Inspections	Suggested Inspection Method	Comments
Very High	Red	Annual	Walk-by/ Individual Tree Inspections	
High	Orange	1-2 years	Walk-by/ Individual Tree Inspections	
Moderate	Yellow	3-5 years	Walk-by/ Individual Tree Inspections	Consider conducting a drive-by/windshield survey on an "off-year" when individual tree inspections are not scheduled.
Low	Green	5-7 years	Walk-by/ Individual Tree Inspections or Drive-by/ Windshield Surveys	
All Rated Zones	NA	After Severe Storms	Drive-by/ Windshield Surveys	If potentially hazardous trees are detected, follow-up with individual tree inspections



The primary goal of the inspection schedule is to monitor and inspect the tree resource at scheduled times. Annual inspections at a Level 1 at a minimum on identified very high or high risk routes and after any storm event minor or major for all areas.

There are often smaller storms that come through. A tree that is injured in a storm or a tree that is "at risk" must be inspected post storm to prevent future damage and possible injury to people, places and property. Like an engineer inspects bridges, intersection signals, etc after a storm event, a certified arborist should inspect the community's trees after a storm event.

Trees should be included in the post storm infrastructure inspection process.

The Tree Risk Assessment cornerstone is vital to a successful Tree Risk Management Program. You might have more questions about this cornerstone activity. There are additional resources available for developing a Comprehensive Tree Risk Management Plan from the US Forest Service and from a publication entitled Urban Tree Risk Management: A Community Guide to Program Design and Implementation

STANDING CONTRACTS



To help speed things up, get pre-established contracts for:

- Tree Removal
- Tree Pruning
- Debris removal

Standing Contracts – The Second Cornerstone activity

Often after a storm event large debris removal companies are already hard at work. The city bid process even with emergency bid procedures takes up valuable time. So by having pre established Tree Removal contracts, Tree Pruning contracts (remember certified arborists!) and debris Removal contracts will speed up your process to normal operations.

STANDING CONTRACTS

Contract items to consider:

- Term of contract (annual or more)
- Qualifications of contractor
- Equipment
- Personnel
- Customer references
- Risks
- Financial health
- Certifications
- Safety



Tree Removal and Pruning Contracts and some Items to consider are listed here

An Annual contract with the option to renew for as many years as your city will allow
Qualifications of the Contractor:

How many years have they been engaged in this type of service under the present company/trade name? You want to be sure you are utilizing an experienced and qualified contractor

Have them List major equipment available for this project.

You will want All bidders to have in their possession now, or at least available to them by formal agreement at the time of bidding, any trucks, chippers, stump grinders, hand tools, aerial lifts, and other supplies or equipment necessary to perform the work as outlined in these specifications. **You don't want them scrambling for equipment when you need them.**

Have them provide a List of personnel that will be assigned this project and their qualifications.

Provide the names of all customers, for the last two years, you have provided similar work to. Not just ones that might be satisfied with their work but all customers.

Ask them if they Have ever failed to complete a project and/or defaulted on a contract? If so, specify why, when, where and with whom.

Make Note that Bidding on this contract shall be limited to individuals, partnerships, and corporations actively engaged in the field of arboriculture. Bidders shall derive a majority of their income from arboriculture work and shall demonstrate competence, experience, and financial capability to carry out the terms of this contract.

Contractor shall have an ISA Certified Arborist as the principal crew leader/trimmer or as the supervisor in his employment.

Contractor shall attest that he/she has an ongoing safety and training program for tree crew personnel. Such proof shall consist of a written statement to this effect. It is preferable for the contractor to submit a written copy of their previous 12-month training safety program.

You are looking for qualified contractors that are doing this type of work. **After a storm event there seems to be a LOT of contractors doing tree work. Do your homework and have a standing contract with an established qualified tree removal and tree pruning company.**

DEBRIS MANAGEMENT

Contract items to consider:

- RFP instead of low bid
- References (at least 3)
- Qualifications / Experience
- Proof of insurance
- Service Plan
- Cost Plan

DESCRIPTION	COST PER TON and COST PER CUBIC YARD
PRICE PER TON/CY FOR TREES/LIMBS	\$
PRICE PER TON/CY FOR CONSTRUCTION DEBRIS	\$

RFP EVALUATION:

Each submittal will be evaluated to determine the ability of each offeror to provide the required services. The following weighted criteria will be used to evaluate proposals:

Criteria	Weight
A. Experience/Qualifications	40%
B. References	10%
C. Service Plan	20%
D. Cost Proposal	30%

Each of the above criteria (A – D) will be given a rating, of 1 through 100, by each member of the Evaluation Committee. The ratings are as follows:

RATING	
1 – 10	Very Poor
11 – 20	Poor
21 – 30	Fair
31 – 40	Below Average
41 – 50	Average
51 – 60	Above Average
61 – 70	Good
71 – 80	Very Good
81 – 90	Excellent
91 – 100	Superior

After the review and rating of proposal(s) by the evaluation committee, individual scores will be averaged and ranked. Offerors will be ranked in descending order of numerical predominance.

Here are a few Contract Items to consider for a Debris management standing contract.

First consider doing a RFP instead of low bid and Rank contractors based off of responses... so not just evaluated based on price.

Have them Provide at least three (3) references for which the firm has provided similar services. Include entity name, address, telephone number, fax number and contact person who may be contacted for verification. Talk to the references

Have them provide details as to their experience on large scale debris removal.

Service Plan

Have them Provide a written narrative, which demonstrates the method, or manner in which the offeror proposes to satisfy the requirements of the scope of services.

How will they stage equipment prior to a major known event.

How will they communicate with possibly no cell phones.

How will they refuel.

How will they measure debris by Ton or CY. Yard. Will they have moveable

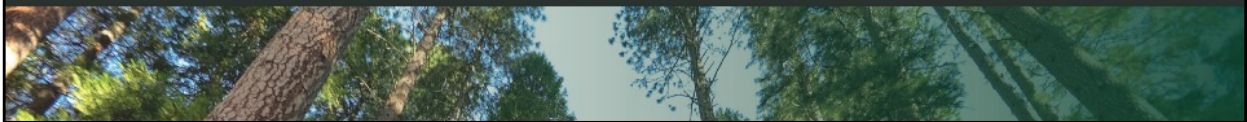
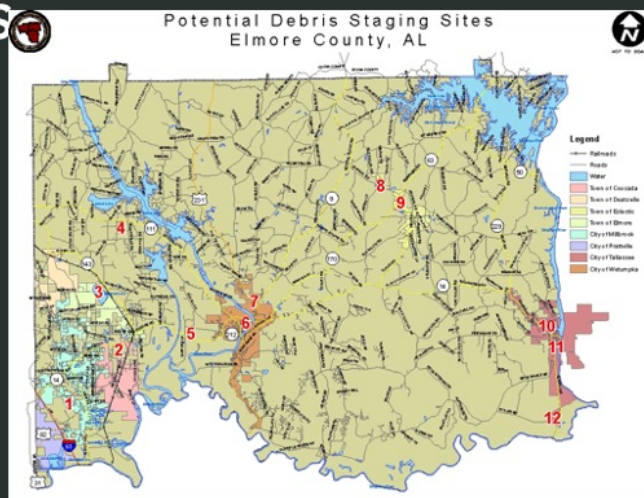
scales available and or will they have documentation methods for CY yards. These will most likely be FEMA reimbursable expenses and an experience debris removal contractor will be a valuable partner to any community.

Consider Multi-Year contracts

Cost Proposal

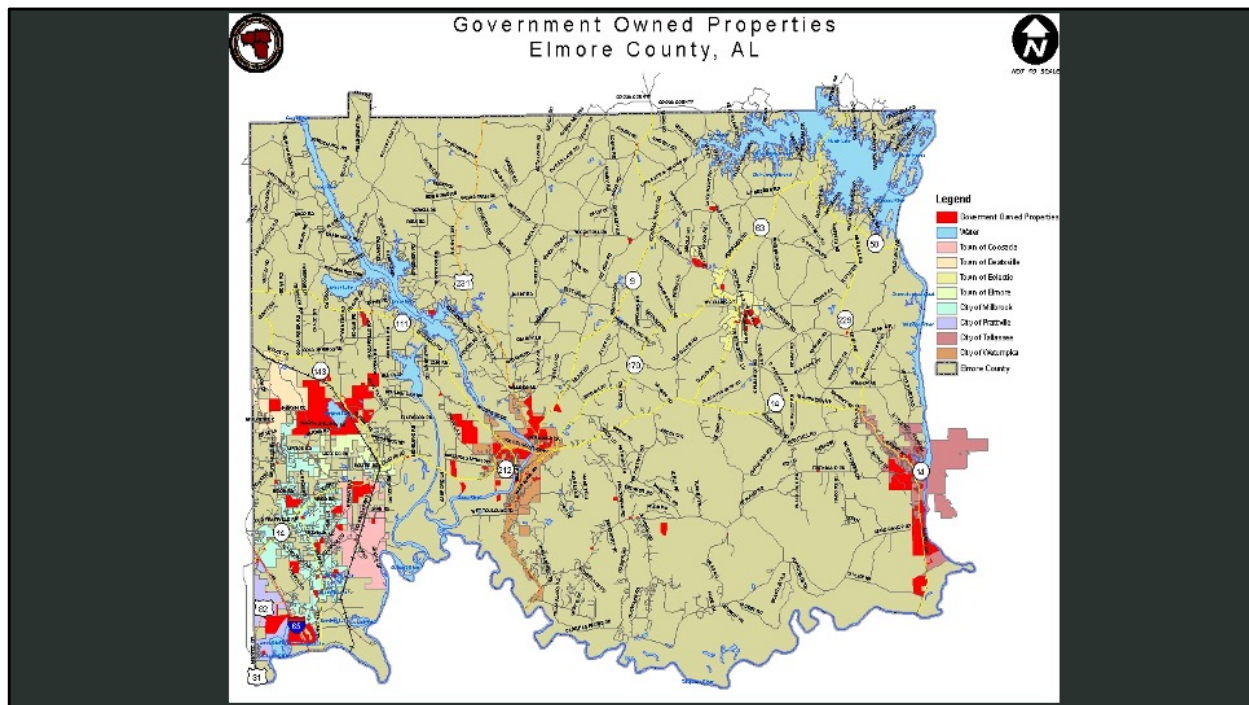
Debris contracts can include construction debris like concrete and metal etc. in addition to vegetative debris. Separate out each on the Request for Proposal and pricing

DEBRIS STAGING SITES

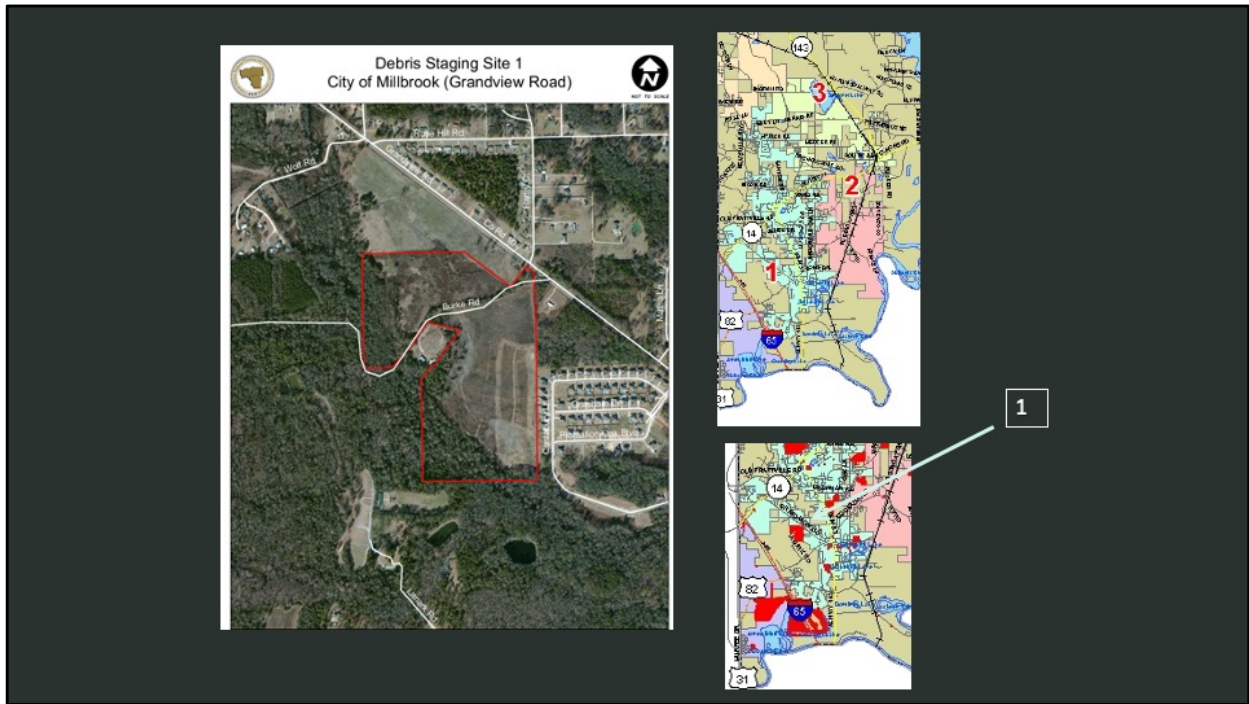


The Third and final cornerstone is to Identify Debris Staging Sites.

Often times the siting of staging areas for debris management is the first dialogue between Emergency Managers and Urban Forestry professionals. Once you begin this dialogue the opportunities for collaboration and the development of a Tree Risk Management Plan become more apparent. The benefit to both professions and the general public often become clear as this part of the overall plan is developed.



In this example: All of the properties in red are local, county, state or school board owned found from the previous attribute table. The possible debris staging sites are then linked to the most populated areas as well as the areas with the most canopy. In this example Over 12 sites were identified as viable throughout the county.

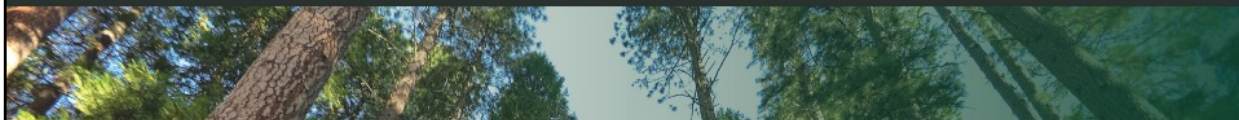


This shows number 1 blown up with an aerial overlay.

This is an example within the City of Millbrook Alabama. This site is currently owned by the school board for a future school. It is open pasture primarily with access to a state highway. It could easily be fenced to prevent unauthorized usage as well as enough room to separate vegetation and construction debris if needed. The group decided on this parcel as a suitable staging site.

CONCLUSION AND TAKEAWAYS

- The 3 Cornerstone activities will prepare you for reduced debris and improved operations
- Tree Assessments are key to the development of a Tree Risk Management Plan
 - Plan, Prepare, Monitor and Repeat: Emergency Management Circle of Management
 - Annual tree Inspection schedules are key
- Use standing contracts
- Plan debris Staging Sites



We are to the conclusion of my quick presentation. The takeaways are shown here on this slide. Doing the three cornerstone activities of Tree Assessments, standing contracts and debris staging sites will prepare you and your city for reduced debris and improved operational efficiencies.

The Tree Assessments - will help you build the foundation for a more comprehensive Tree Risk Management Plan that includes an emergency storm response plan.

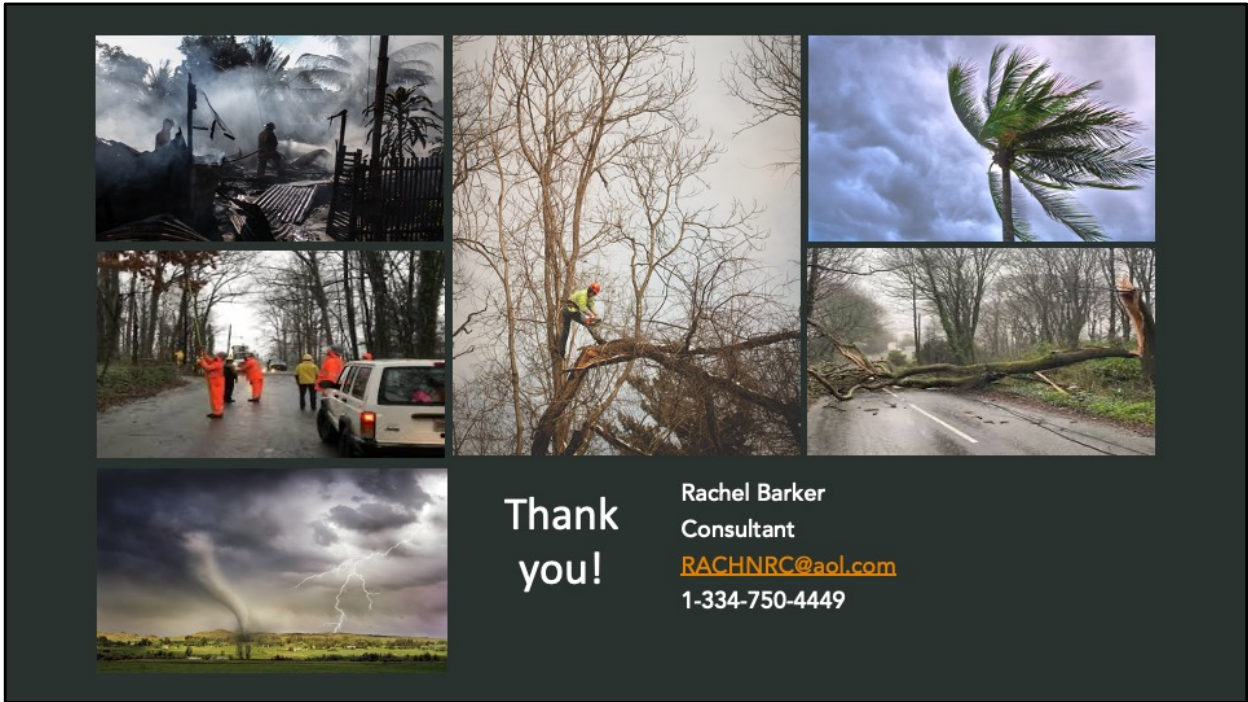
Plan, Prepare, Monitor and repeat- Model the EM Circle of Management.

Remember this includes annual tree inspections at a Level 1 at a minimum and after any storm event minor or major.

Standing contracts -Contracts executed to identify who will move all of the debris, dangerous trees and limbs

Debris Staging Sites – Sites established and prepared to utilize for debris

You are now well on your way to being prepared for When the Storm Strikes. Yes.. I think you will be ready!



Thank
you!

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Thank you for having me today. I am happy to answer any questions you might have. Always feel free to contact me through me email or cell phone displayed here. Again... thank you having me and letting me share some of my experiences.