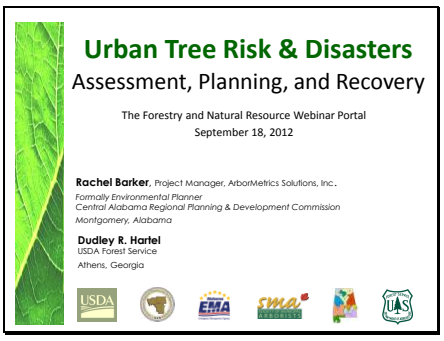
Slide 1



Welcome to the webinar "Urban Tree Risk & Disasters – Assessment, Planning and Recovery".

Hi, I am Rachel Barker and I am a Project Manager with ArborMetrics Solutions, Inc.– formally with Central Alabama Regional Planning & Development Commission in Montgomery Alabama.

Presenting with me today is Dudley Hartel – USDA Forest Service in Athens Georgia (Center Manager of Urban Forestry South).

This project is a partnership among CARPDC, Alabama Emergency Management Agency (AEMA), Society of Municipal Arborists (SMA) and Alabama Association of Regional Commissions (AARC) with USDA Forest Service providing technical oversight on behalf of NUCFAC.

A project recommended for funding by the National Urban and Community Forestry Advisor Council (NUCFAC).

"***This project was funded in whole or in part by the U. S. Forest Service's Urban and Community Forestry Challenge Cost Share Grant Program, as recommended by the National Urban and Community Forestry Advisory Council"***

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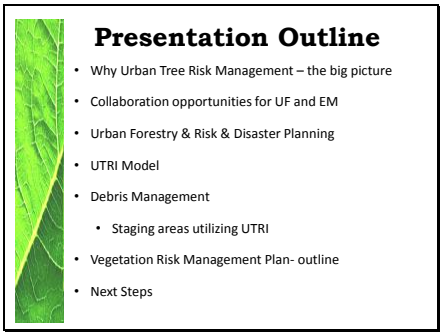


In this presentation we will discuss…

- Why Urban Tree Risk Management – The big picture – Why Urban Tree Risk Management and why do we need it.
- Next, Collaboration opportunities and Strategies for both the professional Urban Forester and the Emergency Manager. How can they help each other to reach common goals.
- We will then discuss the connection between Urban Forestry and Risk and Disaster Planning.
- Next is a overview of the GIS tool - the Urban Tree Risk Index known as the UTRI model and how it is used in the Vegetation Risk Management Plan. The details of how to build the model are available on **www.UrbanForestrySouth.org (search for "webinar UTRI")**
- We will then show how debris management plans can utilize the model and maps to designate debris staging areas for use after an event.
- Next, The Vegetation Risk Management Plan and the outline of items to be included. – Note: another webinar will be conducted on the details of how to develop and build the UTRI model and the body and template of a Vegetation Risk Management Plan

- We will finish with the next steps of how the Vegetation Risk Management Plan and UTRI can be integrated into other vital plans and updated in conjunction with them.

Slide 3

Why Urban Tree Risk Management…. I would like for you to ask yourself if you are an urban forester or a city manager or even if help communities manage and plan their natural resources… have you taken steps to reduce or perhaps even eliminate your communities' urban tree vulnerability in the next big disaster? Why do we need to manage trees for risk? Do urban foresters and Emergency managers work together in your community? Why do we need to manage trees for risk?

Slide 4

The fact of the matter is….Urban Forestry meets Emergency Management time and time again.

Although each profession is not totally aware of the other and the role each plays.

The two professions use a different language when referring to the same thing …

The Urban Foresters "Trees" are referred to by Emergency Managers as:

- "potential debris" if a standing tree or
- "debris" if a tree is on the ground.

The Urban Foresters "Trees" are "vegetation" to the Emergency Manager and are not managed the same by the Emergency Manager as they are by the Urban Forester.

There is a need to build relationships and partnerships with the two professions. They meet time and time again…. In all seasons… at all hours… in all kinds of different situations Trees and Vegetation are their common link.

Trees impede 911 and emergency response. They often damage critical structures and impede access to critical infrastructure facilities.

Slide 5

Trees and the debris accumulated from their destruction is the major cost to emergency management. How can these professions work together to reduce the amount of debris after an event which in turn will decrease the emergency management costs and reduce the impact of major storms on the urban forest.

Slide 6

The answer is for Urban Forester and Local Emergency Managers to get connected.
This is a great way to jump start a fledgling UF program or enhance an existing program by building in Urban Tree Risk Management.

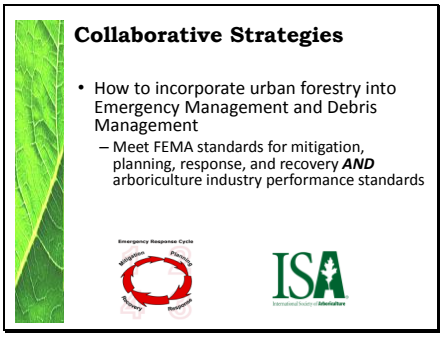
An Urban Forester has much to offer an Emergency Manager.

A well managed urban forest can:

- reduce injury/claims
- limit damage to critical infrastructure
- reduce clean up costs
- improve overall UF management response (eliminate the "putting out fires" mode)

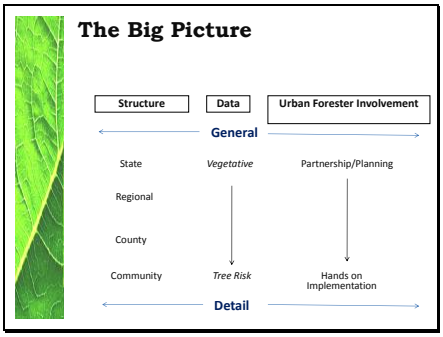
By developing Urban Tree Risk Management Plans Urban Foresters can bring their profession to the Emergency Managers table to help them meet a need (safety and reduced cost of clean up) while improving the overall health of the urban forest and building the Urban Forestry program's worth.

Slide 7



We will now look at collaborative strategies and opportunities to incorporate urban forestry into emergency management and debris management while meeting the industry standards of both professions.

Slide 8



As we began to look at how an urban forester and emergency manager might collaborate we wanted to show exactly where the two might have opportunities to interact in relation to the involvement of an urban forester, or like minded professional, in the care of a communities urban forest. An urban forester is likely to be involved on the state level and regional in a partnership and utilized more likely in the planning phases of how to manage and developing the plan where as the Community level is more likely to be utilized with hands on implementation and overseeing the plan. From a more general role to a more detailed role.

The Vegetative Management Plan and the GIS model (UTRI – Urban Tree Risk Index) ,discussed in this presentation, utilizes the concept of the general overall look at a region… A look at the overall Vegetation vs. the more detailed as utilized in a community Tree risk management plan. The involvement of the urban forester or like minded professional will be similar… from the general partnership/planning involvement to the more hands on the more detailed the plans is … like the tree risk management plan.

An urban forester is likely to be involved on the state level and regional in a partnership and utilized more likely in the planning phases of how to manage and developing the plan

where as the Community level is more likely to be utilized with hands on implementation and overseeing the plan.

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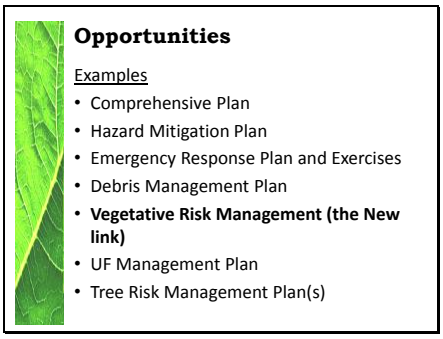
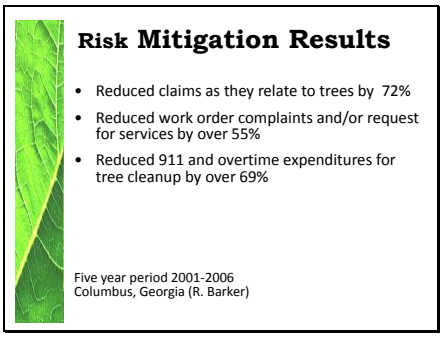


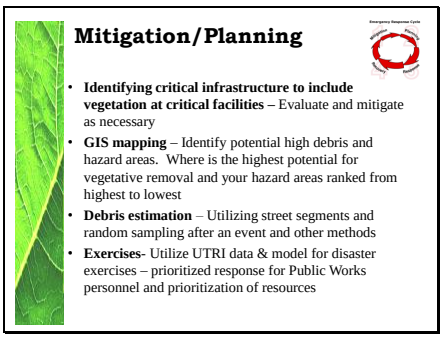
These are some of the plans that are often developed and are shown here on the same scale from a general down to detail. There are plenty of opportunities for collaboration with Urban Foresters and Emergency Managers in all of these with the Vegetative Risk Management Plan being the new link. The link that the two professions can work hand in hand developing.

Slide 10



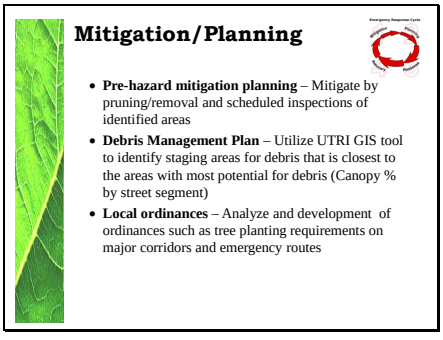
Here are some measured results from an aggressive tree risk management program in Columbus, Georgia (from Rachel Barker). We show these to demonstrate the measured success a tree risk management plan can have for a community.

Slide 11



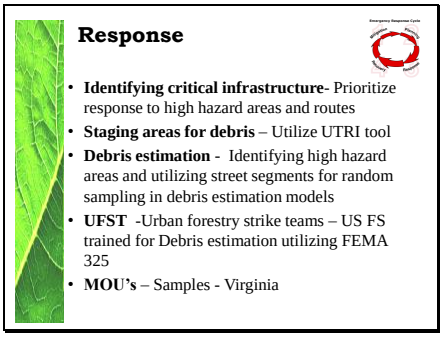
The Emergency Management cycle consists of Mitigation/Planning, Recovery and Response. We have identified several areas where the Urban Forestry profession can collaborate with Emergency Managers. Let's look at them one by one.

Slide 12



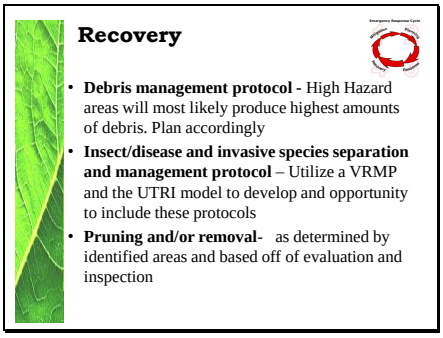
Here are a few more under mitigation/planning:

Slide 13



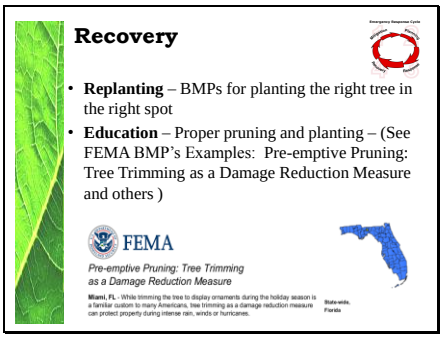
Under the Response category we have identified five areas to include:

Slide 14



Under the Recovery aspect of Emergency Management we have identified five areas:

Slide 15



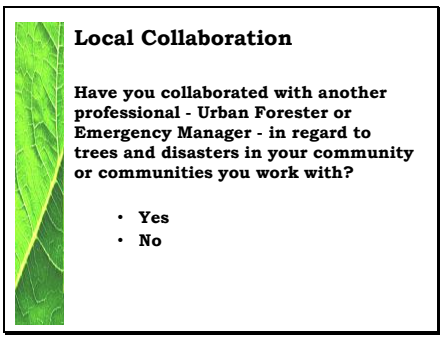
Replanting:

Education:

Slide 16

We have talked about Urban Foresters and other like minded professionals. You might be asking where to find these people. The Society of Municipal Arborists, one of our partners on this project, has a comprehensive list of Who Works With & Manages Community Trees on their website at www.urban-forestry.com. There you will find a link to their BMP series… Green Communities are $mart Communities. Each BMP has an associated links sheet with links to resources available to you.

Slide 17



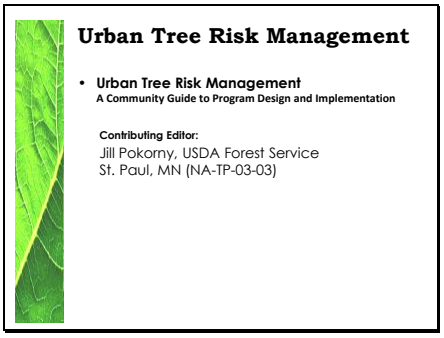
Webinar participation…

Have you collaborated with another professional – Urban Forester or Emergency Manager – in regard to trees and disasters in your community or communities you work with? Please answer yes or no.

Response to the results:

Now, Dudley will lead us in the next sections on Urban Forestry & Risk & Disaster Planning and the UTRI model. Dudley?

Slide 18

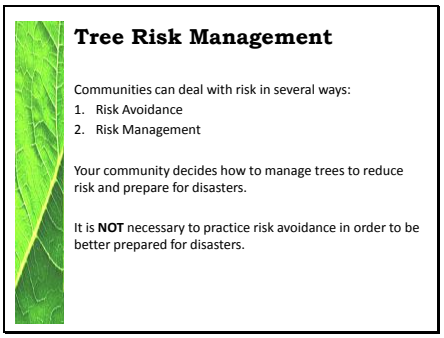


A comprehensive urban tree risk management program can be implemented based on:
Urban Tree Risk Management
A Community Guide to Program Design and Implementation (Pokorny, 2003)

In this part of the presentation I will very briefly cover the major steps outlined in chapter 2 of the manual:
Community Tree Risk Management: Program Planning and Design

Urban tree risk management is a logical and necessary starting point for disaster preparedness.

Slide 19



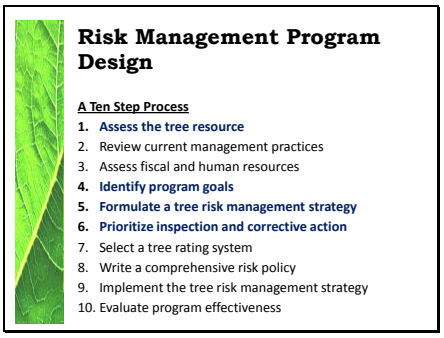
Communities have choices in dealing with risk of all types.

Cities that choose:

- risk avoidance and eliminate all risks in the area of interest;
- others will manage [tree] risk so that benefits of the trees can be retained at some acceptable level (of risk).

It is NOT necessary to practice risk avoidance in order to be better prepared for disasters.

Slide 20



[from Pokorny] The 10 steps to tree risk management; a detailed outline for developing a comprehensive risk management program.

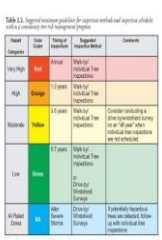
The Urban Tree Risk Index (UTRI) that we discuss later in the presentation is a modification of this approach to provide important vegetation and debris information necessary to a local disaster plan.

Steps 1, 4, 5, 6 implement the UTRI model for urban tree risk management to support local EM.

[1] Use NLCD or other canopy data to determine spatial extent of the tree resource (potential risk & debris)
[4] Disaster preparedness goals to reduce/eliminate interruptions, facilitate response, and reduce & plan for debris
[5] UTRI locates areas of "most probable" risk for disaster/tree related problems, and
[6] Depends on site inspections based on the UTRI prioritization

Slide 21

Inspection Guidelines and Schedule



The results of an urban tree risk management program would include risk zone classification and prioritization.

In the UTRI model, specific street segments are identified (and ranked) based on the critical disaster response components:

- Critical facilities
- Public access (emergency response)
- Presence of people
- Trees near the ROW (right-of-way) or facility

Slide 22

Tree Risk Plan: Support

- Urban forest management
- Other municipal staff (roads, parks, sidewalks, electric)
- Local Emergency Management
- Elected officials
- Residents

Implementation of an urban tree risk management program can benefit more than the urban forest manager.

The EM link.

Slide 23

Urban Tree Risk Management

How many of you, regardless of profession (planner, emergency manager, urban forester, arborist, municipal staff), are directly involved with a tree risk management program in your community?

a) Not at all
b) It has been discussed
c) We have started a tree risk management program
d) This is a totally new concept for me

Webinar participation…

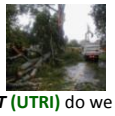
Now that I have very briefly defined urban tree risk management that is the basis for the GIS model…
How many of you, regardless of profession (planner, emergency manager, urban forester, arborist), are directly involved with a tree risk management program in your community?

- Not at all
- It has been discussed
- We have started a tree risk management program
- This is a totally new concept for me

Slide 24

What Next?

Now we know the ***WHY*** **(The Need)** and the ***WHO*** ***(Collaboration)***



HOW **(VRMP)**and ***WHAT*** **(UTRI)** do we need to do:

- Reduce the impact of storms on the urban forest
- Lessen personal injuries and property damage
- Decrease emergency management costs

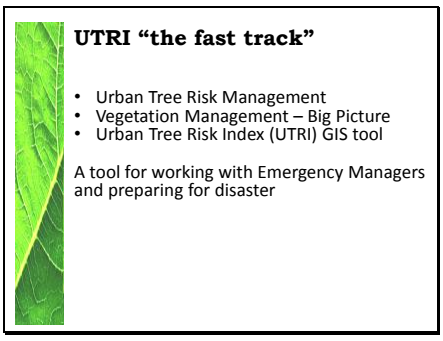
We have looked at the **WHY** – The need for Tree risk management and the association between urban foresters and emergency managers. The **WHO** – The collaboration strategies and opportunities for the two professions to work together. Now lets look at the **HOW** – The Vegetation Risk Management Plan – the plan to link the two together. And the **WHAT** – the Urban Tree Risk Index (UTRI) the GIS tool that helps to develop the VRMP.

The goal of the VRMP is to:

- Reduce the impact of storms on the urban forest
- Lessen personal injuries and property damage and,
- Decrease emergency management costs

First let's look at the tool – the Urban Tree Risk Index or the UTRI tool

Slide 25



A fast track approach to getting UF into the EM arena.

A "big picture" approach to urban tree risk management that can quickly and effectively support emergency management.

Slide 26

A risk management plan does not a have to be based on a detailed tree assessment [Pokorny]; the "big picture" is OK. This is the UTRI approach for initial work for disaster planning.

Disaster related UF and EM objectives should be identified.

Guiding principles:

- Increase public safety
- Reduce disaster related interruptions & problems
- Promote tree health & sustainability

Tree risk zones:

- Trees
- Roads & streets
- Occupancy
  people
  places or sites (buildings)

Risk zones are based on the principal component of transportation as it affects public safety and response. Street segments (i.e. from intersection to intersection) are the primary component of analysis; but the tree canopy resolution (e.g. 30 meters) determines the detail of the final UTRI rating map.

The tree canopy layer substitutes initially as the "trigger" for areas of potential risk (related to vegetation).

These characteristics are ranked and then summed (a GIS process) to create rating for each street segment.

The "No target, No risk" concept applies for disaster planning. Targets in the disaster context are narrowly defined.
In addition, streets and facilities with little or no tree canopy are rated as "low risk" in the UTRI model.

Disaster-related outcomes from a well designed and implemented tree risk management plan, or from the UTRI "fast track".

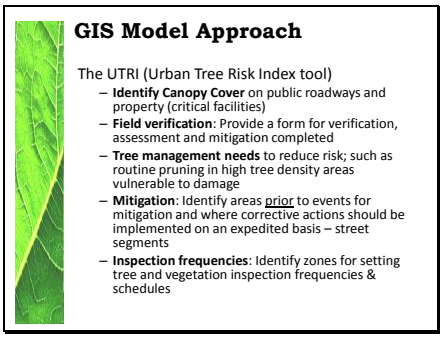
Outcome based measurements & evaluation:

- Increased public safety
- Improved tree health

- Indicators (for measurement):
- Decline in number of high-risk trees over time

- Reduction in number of trees needing hazard pruning
- Reduction in number of "interruptions" during a disaster
- Reduction in storm damage (debris)

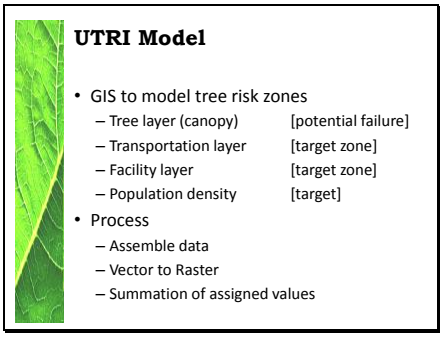
Slide 27



How the UTRI GIS model is implemented:

- The model assessment (via GIS layers) locates the areas of "concern" (potential risk)
- Specific site level inspections identify needs
- Principal management actions are tree pruning and removal
- Mitigation is prioritized based on UTRI rating
- The street segments with UTRI rating also establish the reinspection frequency and scheduling

Slide 28



GIS models work with layers, and we assembled readily available data from local, regional, state & national sources.

The UTRI model does not use a tree risk rating system like that needed for a comprehensive risk management program. However, the GIS layers functions as surrogates for rating street segments as "potential" areas of concern, inspection, and subsequent mitigation.

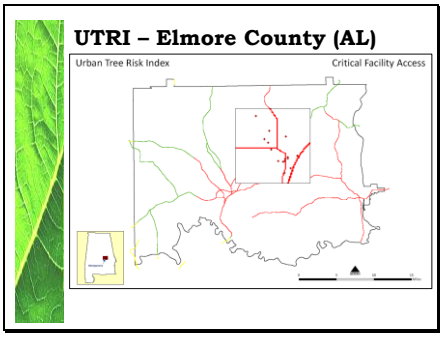
The transportation layer (since our analysis is primarily response oriented) and the facility layers establish the "target zones" when trees are present.
Population density is a surrogate for (target) occupancy; that is, the higher the population density the more frequently people (as pedestrians, vehicle operators, or in some type of gathering –think park, school) will be in proximity to the trees (before, during and after a disaster).

For any area, you use data available; as the scale becomes more "local" the data should become more detailed and have a finer resolution; and also should be more current:

- canopy
- block tree counts
- individual trees (locations)

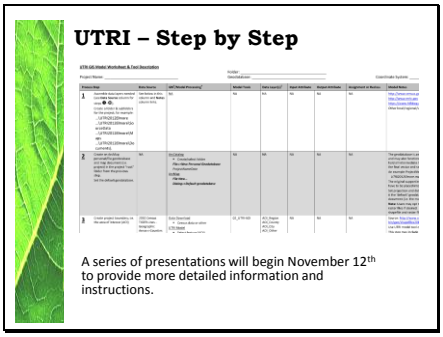
The process is the summation of individual layers into a composite rating (for each street segment). Simple!

Slide 29



The facility access layer with the downtown Wetumpka area as an example detail.

Slide 30



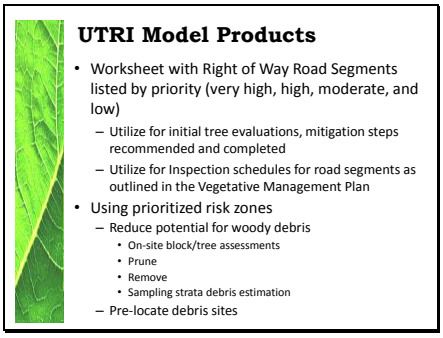
The Step-by-Step UTRI Model.

The UTRI model is documented in the final NUCFAC report and will be discussed in a series of presentations…

At the Society of Municipal Arborists workshop – November 12-13 (Sacramento)
And a series of webinars

- UTRI – Getting Started & Data and data preparation - November 20th
- UTRI – Risk zones, assessments, and mitigation - November 23rd

Slide 31

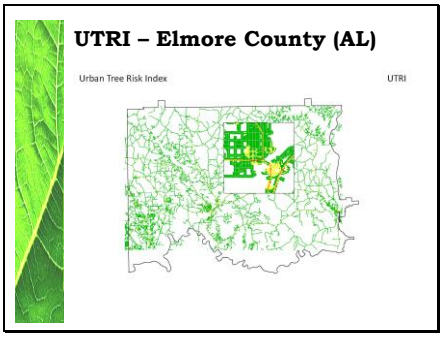


From the UTRI Model and Vegetation Risk Management Plan.

The primary "products" from this GIS model include:

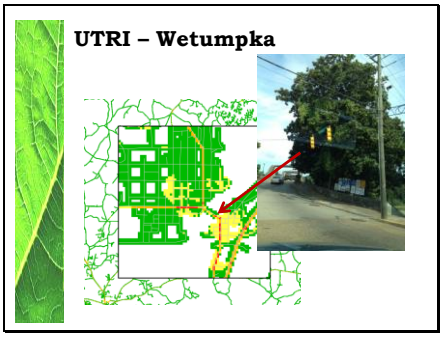
- A map for visual verification and analysis…
- A worksheet that guides mitigation work…
- The street segment GIS layer with UTRI rating(s)
  Scheduling for inspection, mitigation
  Debris sampling strata
  Debris staging sites (pre-storm)

Slide 32



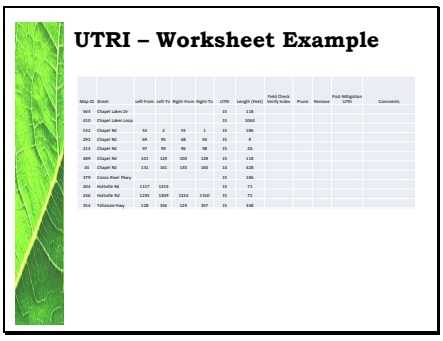
The final UTRI rating layer with the downtown Wetumpka area as an example detail.

Slide 33



The downtown Wetumpka area with site verification photo on the south end of the bridge.

Slide 34

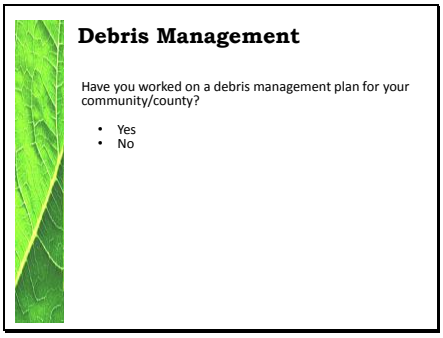


An example field worksheet that is used to verify UTRI, and identify need for mitigation that could include:

- Detailed assessments
- Pruning
- Removal

Rachel will discuss debris management now.

Slide 35



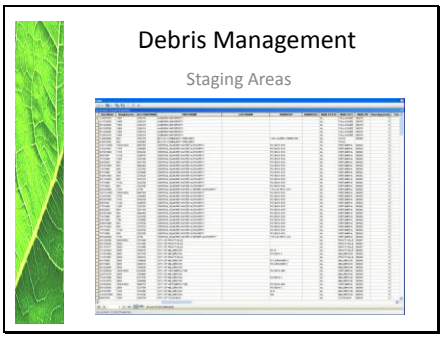
Webinar participation…

Before I begin the discussion of the UTRI connection with debris management…

Have you worked on a debris management plan for your community/county?

- Yes
- No

Slide 36

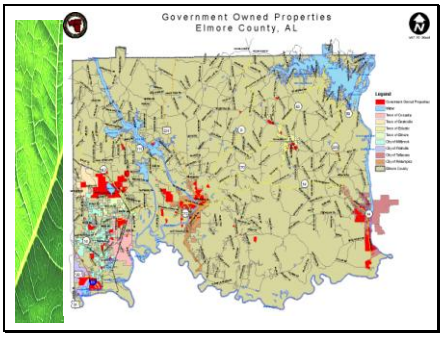


These results lead us into the discussion of debris management and staging areas

One of the highlights of utilizing the URTI and its components (such as a parcel file) is developing a portion of a debris management plan to identify potential staging areas. Staging areas that might vary in size.

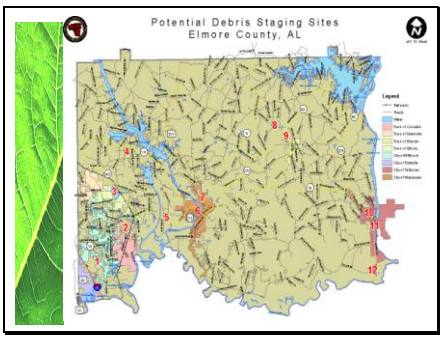
This slide shows an attribute table utilizing a parcel file used to find property locations within the county that belonged to local, county, state or school boards. These were then identified in red on the next slide.

Slide 37



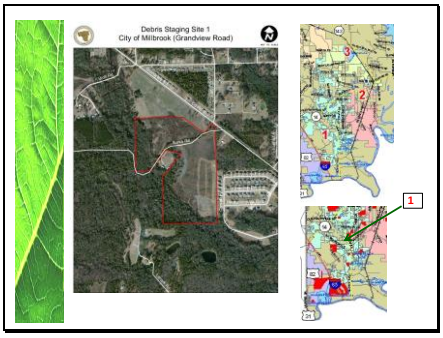
All of the properties in red are local, county, state or school board owned. The debris staging sites are then linked to the most populated areas as well as the areas with the most canopy. Over 12 sites were identified as viable throughout the county.

Slide 38



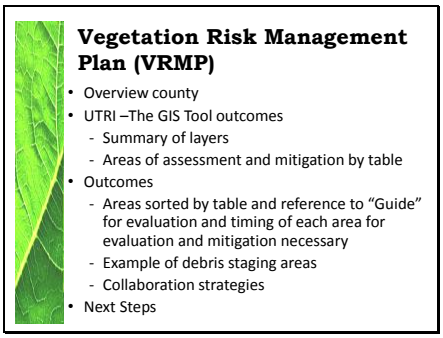
This slide shows the 12 most viable debris staging sites that can then be related to population density, tree canopy, road access, or the UTRI index by street segment.

Slide 39



This is an example within the City of Millbrook. This site is currently owned by the school board for a future school. It is open pasture primarily with access to a state highway.

Slide 40



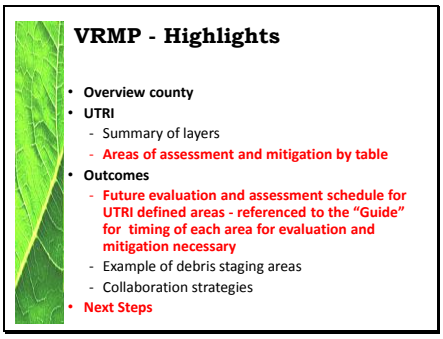
I want to take a minute to share the overall outline of a VRMP. There will be future webinar on December 12th strictly for the development of a VRMP but we want to address the components here:

- First is the Overview of the County
  - This wording can often be gleaned from the counties hazard mitigation plan. Items included can be: Population, Growth over 10 years, future growth
  - potential, Prior events (thunderstorm and hurricane events for example)
  - Often you will find the need for the VRMP citied in the counties hazard mitigation plan
- Next is the UTRI and the outcomes of that tool to include:
  - The summary of the layers – the picture as well as the summary that describes the areas that are in need of assessment and the mitigation that might be necessary, if any, identified from that assessment. This is in a table form.
- The outcomes are listed in the next section:
  - The areas are sorted in a table form and referenced to the Urban Tree Risk Management Guide for evaluation timing.
  - Debris staging areas are identified
  - And additional collaboration strategies identified for the Emergency manager and Urban Forester to work toward:
    These could include in recovery – Educational tools on Planting the Right Tree

in the Right Place for example.

- Next steps identified in the last topic.
  - This often includes the timing of the update of the VRMP.

Slide 41



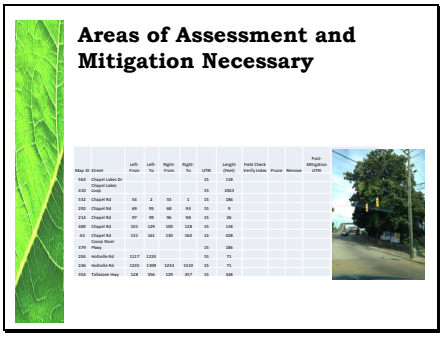
I want to highlight three important areas in the VRMP:

- The Areas of Assessment and mitigation by table
- Future Evaluation and assessment schedule for the areas identified by the UTRI

AND

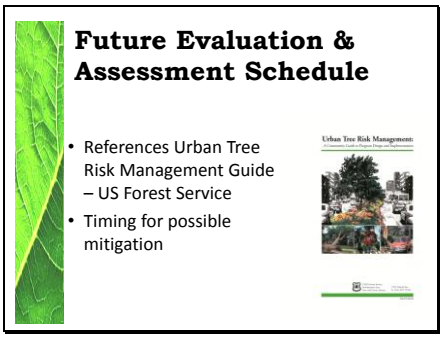
- Next Steps

Slide 42



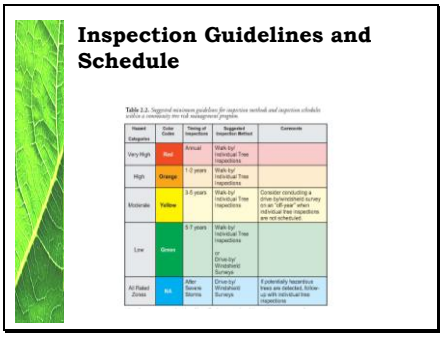
Here again is the worksheet from the UTRI. The VRMP will have these areas designated by table. This table is used for field verification and to show the necessary mitigation, if any, required. This might be prune, remove or no action. This is included in the VRMP.

Slide 43



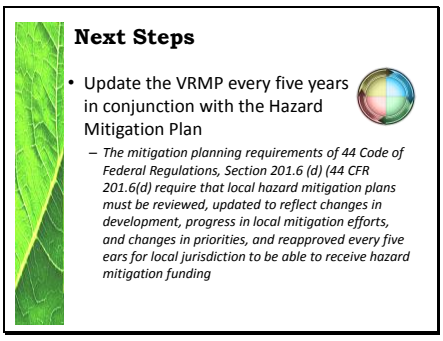
The next section in outcomes I want to highlight is the future evaluation and assessment schedule. This schedule goes hand in hand with the "guide for Urban Tree Risk Assessment" cited earlier. Trees are living and growing organisms… and The VRMP gives the Emergency Manager and Urban Forestry professional a schedule to revisit the areas identified in the UTRI for evaluation and assessment.

Slide 44



So the areas identified by the UTRI model that are very high are inspected yearly with any developments or requirements for mitigation noted and acted upon. Areas identified as High every 1-2 years, Moderate 3-5 years and low every 5-7 years. You will note that all, at a minimum, get a drive by windshield survey after a severe storm event. You will most likely find trees in need of removal or pruning during the scheduled inspections. So you can see the VRMP is a living and dynamic plan that can change as it is needed. You have identified your most prone areas as it relates to Emergency Management and trees. A beginning to a more detailed community based tree risk management plan.

Slide 45



The last to highlight are next steps and in particular, the timing of updating the VRMP.

It fits nicely into the hazard mitigation plan update required every five years. As populations change, critical infrastructure and the tree canopy changes, the VRMP gives a basis to manage the vegetation as it relates to Emergency Management. Collaboration ideas will continue to change and needs identified for Urban Foresters and Emergency Managers to work together to help Emergency Managers meet a need (safety and reduced cost of clean-up) while improving the overall health of the urban forest and building an Urban Forestry program's worth.

The two, the hazard mitigation plan and the VRMP, are a nice fit to work hand in hand.

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We want to thank you for participating in this webinar.

Here are some future dates for presentations on this project and associated material over the next several months.
We want to make special note of a 3 hour workshop planned to be conducted in Sacramento CA at the 48th Annual SMA Conference and Trade Show.
This workshop will cover detailed steps and examples for using the UTRI model and how to develop a VRMP.
You can register on line at www.urban-forestery.com

Please join us at any of these events.

This will be posted on www.UrbanForestrySouth.org.
Do a "search site" for 'webinar UTRI' (no quotes) to locate this presentation and other related material.

We look forward to seeing you.

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Please feel free to contact either of us at the contact information provided here.
Again, thank you for your participation.