Denton County
Community Wildfire Protection Plan
(CWPP)

In accordance with Title I of the Healthy Forest Restoration Act of 2003

This Community Wildfire Protection Plan was prepared by Denton County Texas, and reviewed and approved by the Texas A&M Forest Service.

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Acknowledgements
This plan was developed at the direction of the Director of Denton County Emergency Service (DCES), Chief Joseph Gonzalez, and with the support of County Judge Mary Horn and the Denton County Commissioners' Court. A tremendous amount of guidance and assistance in the development of the plan was provided by Luke Kanclerz and Nick Harrison of the Texas A&M Forest Service (TFS).

The compilation of much of the assessment data and production of geographical information, which makes up the majority of this document, was accomplished with the expert assistance of the Denton County Technology Service (TS) Department. Geographical Information Systems (GIS) Manager, Rachel Crowe, developed an innovative phone application to assist in the collection of the assessment data and oversaw the development of the GIS products used during this project. GIS Analyst, Sarah Hayden, worked tirelessly to develop and produce the maps found in this plan that help to better communicate our findings. And TS Training Support Manager, Tina Wolf, provided invaluable support in formatting this document.

Members of the CWPP working group have taken leadership roles in supporting the development of this plan. Fire Chiefs John Glover, Chad Thiessen, Fred Calhoun, and Gilbert Caldwell, and Rangers Justin Berndt, John Mathney, Kenneth Myers, and Dylan Mayfield have lead the way in planning firefighter training and fuel reduction projects on public lands managed by the US Army Corps of Engineers. In addition, Flower Mound Fire Chief, Eric Greaser, and Emergency Management Specialist, Brandon Barth, and TFS Task Force Coordinator, Russell Behlings, were instrumental in completing our first fuel reduction project at the Roanoke Hills subdivision.

Denton County Sheriff's Office (DCSO) Captain, Doug Lee, has coordinated and supported the sharing of information about areas identified as having a high and extreme risk with first responders through the DCSO dispatch system. And County Agent/Horticulturist, Janet Laminack, has developed a list of fire resistive plants that will grow well in Denton County.

Most important to the success of this project has been the participation of firefighters from across the county and the DCES deputy fire marshals. Two-hundred-eighty-one (282) "on the ground" assessments were completed by these professionals and the fire departments that supported them which included: Argyle, Aubrey, Flower Mound, Highland Village, Justin, Krum, Lake Cities, Lewisville, Little Elm, Oak Point, Pilot Point, Ponder, Prosper, Roanoke, Sanger, and The Colony.

Ultimately, this plan is about protecting the lives and property of our citizens and firefighters. The future success of this plan is dependent upon their continued support and participation.

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Abbreviations used in this document

CWPP-Community Wildfire Protection Plan
DCES-Denton County Emergency Services
GIS-Geographical Information Systems
IAFC-International Association of Fire Chiefs'
TIFMAS-Texas Intrastate Fire Mutual Aid
System TFS-Texas A&M Forest Service
TxWRAP-Texas Wildfire Risk Assessment Portal
USACE-US Army Corps of Engineers
WUI-Wildland Urban Interface

Introduction

Community Wildfire Protection Plans (CWPPs) are a proven strategy for reducing the risk of catastrophic wildfires, and are authorized under the provisions outlined in Title I of the Healthy Forest Restoration Act of 2003. Through collaboration within the community, plans to prioritize fuel reduction and treat structural ignitability are developed and adopted. As a result of this work, much of the information gathered can be used to improve our ability to respond to wildfires. This plan will address strategies that were approved by the Denton County CWPP Working Group to better prepare our county and citizens for wildfires.

Like most counties in Texas, Denton County has experienced wildfires throughout its history. According to the Texas Fire Information Reporting System, and based on data from 2004-2013, Denton County averages 1,442 fires per year. Of these fires, 28% were classified as "Natural Vegetation Fire." This class included "grass, brush, or wildland" type fires. In addition, 26% were classified as "outside fires" which included "rubbish, trash, and waste" fires. These outdoor fires are frequently the cause of wildfires. This means that 54% of fires in our county expose us to the risk of, or result in, a wildfire.

Over the past several years a number of catastrophic wildfires have occurred in the state, including the Possum Kingdom and Bastrop Complex fires. Nineteen outbreaks (also dubbed firestorms) have been reported in Texas since 2005. Cumulatively, these outbreaks resulted in the deaths of 24 people, the destruction of 1,770 structures and the burning of more than 3.7 million acres of land. "Texas is in a period of enhanced drought susceptibility due to global ocean temperature patterns and has been since at least the year 2000," according to the state climatologist's report, "The 2011 Texas Drought." Some climate models suggest this pattern could continue for a decade or more.[1]

Against this historic backdrop, a wildfire near Trophy Club, Texas occurred that threatened a residential subdivision on March 11, 2014. Just 19 days later, on March 30, 2014, a second wildfire occurred between Copper Canyon, Corinth, and Highland Village, Texas. Denton County Director of Emergency Services, Chief Joseph Gonzalez, directed his staff to develop a plan to address the risk of wildfire in the county. Texas A&M Forest Service (TFS) staff members were consulted in this endeavor and they strongly encouraged the county to develop a plan using the TFS CWPP Guide. During this time, Denton County was also updating its Hazard Mitigation Action Plan (HazMAP), and Chief Gonzalez decided that the CWPP would be used as an annex of the HazMAP to address the risk of wildfire.

Community Background

According to the 2014 US Census Bureau estimate , Denton County has a population of 753,363. The county seat is the City of Denton. The county encompasses a total area of 953 square miles, of which 879 square miles is land and 74 square miles is water. Denton County is located in the

[1] "2011 Texas Wildfires Common Denominators of Home Destruction," page 8, published by the Texas Forest Service

northern part of the Dallas-Fort Worth metropolitan area, approximately 35 miles south of the Oklahoma border. The three U.S. Army Corps of Engineers public access lakes in the county are:

- Part of Lake Ray Roberts on the north boarder
- Lake Lewisville in the southeast quadrant of the county
- Part of Lake Grapevine on the south boarder

While much of the county has experienced urban development, the areas west of Interstate 35 and 35W, and north of State Highway 380, remain rural in nature. Oil production, ranching, and farming have been major activities in this region for over eighty years.

Denton County's landscape is dominated by the Cross Timbers and Texas Blackland Prairies ecoregions. Sub-ecoregions include the Northern Blackland Prairie, Grand Prairie, and Eastern Cross Timbers. With the occurrence of sub-ecoregions, Denton County wildfire behavior varies across the land with different vegetation of tall grasses, timber/leaf litter, and agricultural land. Recognizing Denton County's biodiversity aids in determining best practices for wildland fire fuels management and landscape design. For a map and further descriptions of the Denton County sub-ecoregions[2] see Appendix B.

Collaboration

To have an effective CWPP, support from the community and a multitude of agencies that have responsibilities within our county was needed. A CWPP Working Group was developed to:

- ✓ Provide expert knowledge and input into how the plan was developed
- ✓ Act as liaisons between involved agencies and community groups
- ✓ Review, refine, and approve the plan
- ✓ Advocate for a successful plan

Representatives of local fire departments and municipalities included:

- Brandon Barth, Emergency Management Specialist, Flower Mound Fire Department
- Gilbert Caldwell, Deputy Fire Chief, Roanoke Fire Department
- Travis Calendine, Assistant Emergency Management Coordinator, for Lake Cities, Little Elm, and The Colony
- Fred Calhoun, Assistant Fire Chief, Flower Mound Fire Department
- David Lobbes, Fire Captain, Lake Cities Fire Department
- Curt Odneal, Battalion Chief, Flower Mound Fire Department
- Mike Penaluna, Emergency Management Coordinator, City of Denton Fire Department
- Charlie Williams, Fire Chief, Ponder Fire Department
- Brandon Woodward, Fire Captain, Lewisville Fire Department; Coordinator of the Elm Fork Fire Module

Representatives of Denton County departments and resources included:

- Rachel Crowe, Manager, Geographical Information Services
- Marc Dodd, Deputy Fire Marshal (CWPP Coordinator), Emergency Services

[2] U.S. Forest Service, http://www.fs.fed.us/rm/ecoregions/

- Janet Laminack, County Agent-Texas AgriLife
- Doug Lee, Captain, Sheriff's Office
- Mike Riley, Administrative Foreman, County Road & Bridge West
- Mike Simmons, Administrative Foreman, County Road & Bridge East
- Chad Thiessen, Coordinator, Denton County Wildfire Task Force; Deputy Chief/Fire Marshal, Lake Cities Fire Department

Representatives of regional resources and state agencies included:

- Melanie Devine, Senior Emergency Preparedness Specialist, North Central Texas Council of Government
- John Glover, North Branch Coordinator, Texas Intrastate Fire Mutual Aid System; Fire Chief, Highland Village, Texas
- Nick Harrison, State Firewise Coordinator, Texas A&M Forest Service
- Dr. Bruce Hunter, Director, Center for Spatial Analysis and Mapping, University of North Texas
- Luke Kanclerz, Wildland Urban Interface Specialist, Texas A&M Forest Service
- Jennifer Kemp, Lieutenant, Texas Parks & Wildlife

Representatives of federal agencies included:

- Justin Berndt, Lead Ranger, US Army Corps of Engineer
- John Mathney, Park Ranger, US Army Corps of Engineer
- Dylan Mayfield, Park Ranger, US Army Corps of Engineer
- Steve Ray, District Conservationist, US Department of Agriculture

The working group initially met on September 12, 2014 to discuss the concepts of the CWPP, what work was being done, the work that was planned to complete the CWPP, and how each member could contribute to the success of the CWPP. Over the following weeks and months, members of this group worked hard to complete various parts of this project and further develop plans for future advancement of the CWPP. On July 30th, 2015 they unanimously approved this plan.

A public meeting was held on July 24, 2014 to discuss the Denton County HazMAP and CWPP. The CWPP was also discussed as a published agenda item during Denton County Commissioners' Court meeting on March 10, 2015. Reaching out to our residents through public education programs helps to develop awareness and knowledge about the wildfire risk in Denton County. Through such efforts we expect to foster citizen participation which will be key to the future success of this plan. A copy of the proclamation from Denton County Commissioners' Court, urging citizens to participate in the development of the CWPP, can be found in Appendix A.

Risk Assessments

In order to determine which areas of the county to focus our efforts on, an assessment of the wildfire risk throughout the entire county was needed. TFS made available access to the Texas Wildfire Risk Assessment Portal (TxWRAP) to help us understand where possible areas of concern exist. TxWRAP uses satellite imaging to create a number of products or map layers. We

chose to use the Wildland Urban Interface (WUI) product as a starting point for our risk assessments.

Wildfires become especially dangerous when wildland vegetation begins to intermix with houses. This vegetation acts as fuel to spread wildfires to structures. The area where wildland vegetation, humans, and buildings come together is referred to as the Wildland Urban Interface (WUI). Under certain conditions, wildfires can rapidly spread beyond the control of firefighters. When this occurs in the WUI the results can be catastrophic. The TxWRAP WUI layer depicts housing density in the interface, and thereby identifies locations where more people are at risk and a community may lose multiple structures during a wildfire. This layer uses a scale of values ranging from “1,” which equals less than one (1) house per forty (40) acres, to “7,” which equals greater than three (3) houses per acre. In order to have a manageable area to assess, we chose to use the “6” (1 house per 2 acres to 3 houses per acre) and “7” values.

It had been a number of years since the available TxWRAP information was collected. During this time much of the county had experienced significant urbanization, or “built” development. It was decided that each WUI area that had a TxWRAP value between “6” and “7” should be assessed by inspectors on the ground to determine current conditions, or “ground truth.” To help facilitate this, Denton County Geographical Information Systems (GIS) overlaid the TxWRAP data onto a Denton County map and then divided the areas up by zones based on neighborhoods.

With the responsibilities that fire departments have, it was inherently necessary for them to be involved in the assessment process. Their "buy in" and participation in the development and execution of this plan will determine its success and impact in each fire district. With this in mind, the zones were divided and numbered by fire districts. See Appendix C for a map of the TxWRAP 6 and 7 valued areas and a map showing the fire districts with the 254 zones originally created by Denton County GIS.

To solicit fire department participation, a presentation about the CWPP was given to the Denton County Fire Chiefs’ Association. Wildfire risk assessment training, which met the continuing education requirements for wildland firefighters, was offered to the fire departments at no cost. On August 28th and 29th, 2014 the training was conducted by Luke Kanclerz, TFS WUI Specialist, at the Denton County Emergency Services (DCES) office. The assessment process focused essentially on evaluating the potential for a large scale fire in a neighborhood and issues that could affect the fire departments’ ability to respond to such a fire. Sixty (60) persons received the training including fifty-four (54) firefighters from Denton County representing 16 fire departments. At the end of the training, each fire department received its fire district map showing the neighborhood zones created by Denton County GIS. The fire departments were requested to assess these neighborhoods, and any other areas that they identified as at-risk, and to provide copies of their score sheets for the development of the CWPP.

In order to further facilitate the assessments, Denton County GIS created a free cell phone application (app) for the firefighters to use. The app provided a live map showing the user’s location, fire district boundaries, WUI zones, US Army Corps of Engineer boundaries, and streets. The user could use the app to conduct the assessment and upload the information directly to a

Denton County server. This app proved to be very effective in making the assessment process efficient and user friendly.

To further support this effort, a webpage was created on the Denton County website (http://dentoncounty.com/Departments/Emergency-Services/Emergency-Services/Community-Wildfire-Protection-Plan.aspx) that provided an explanation of the risk assessment process, directions for the use of the phone application, a updated score sheet, a narrative form field template, and additional information about the CWPP.

It is important to understand that, while the assessment process was designed to be objective, a certain amount of subjectivity was required on the part of the assessor. For example, there may have been some individual properties in a zone that were at low risk, but overall the neighborhood had an extreme risk score. Conversely, the overall score for the neighborhood may have been low, but some homes were at high risk. The assessments are a "snap-shot" of an entire neighborhood on a particular day. This process has been very helpful in identifying potential areas where a catastrophic loss of life and property could occur. However, property owners should not assume that the risk score for their zone reflects the potential risk of their individual property. Citizens should use the information in this plan and the "Ready, Set, Go" or "Firewise" programs to evaluate their property and reduce the risk they find. Local fire departments and Denton County Emergency Services can help citizens understand their risk and methods of mitigation.

When disparate differences were found in a significate portion of a particular area, the assessors were encourage to provide information to Denton County GIS so the neighborhood could be geographically divided into separate coherent zones. The assessors were then asked to provide score sheets based on the new division of the neighborhood. See Appendix D for an example of a risk assessment score sheet.

Initially, 254 individual neighborhoods (or zones) were identified using the TxWRAP information. Assessors added 28 more for a total of 282 zones. Our assessors found:

- 42 (15%) at low risk
- 142 (50%) at moderate risk
- 66 (23%) at high risk
- 32 (11%) at extreme risk

Of the areas originally identified using the TxWRAP WUI layer, 65% were found to be of low to moderate risk and were mostly in urban, or developed areas. 35% however, were found to be at high or extreme risk. A table summarizing the risk level for each fire district can be found in Appendix E. Maps for each fire district showing the areas assessed and their scores can be found in Appendix F.

The CWPP working group recommend that zones be reassessed if significant mitigation work has been done in a neighborhood, the fire department determines there is a need for a reassessment, or during the next HazMAP update.

Mitigation Concepts

There are two basic concepts that are used to reduce the impact of fire in the wildland urban interface (WUI): fuel reduction and reducing structure ignitability (a.k.a. structure hardening).

Reducing fuels (e.g. weeds, brush, and other vegetation) to slow or halt the spread of the fire to homes and other buildings is referred to as creating “defendable space.” This strategy does not require the removal of all vegetation, but rather the trimming and separation of plants, and the use of fire resistant landscaping in order to reduce the size and intensity of a fire and/or interrupt its path to a structure. Under normal weather conditions, these buffer zones are very effective in reducing the ability of a wildfire to involve a structure.

The two methods used to reduce fuel levels while creating defendable space are ‘”prescribed burning” and “mechanical reduction.” Prescribed burning is a very efficient and ecologically sound method. For millennia, fires naturally occurred and would burn uncontrolled until meeting natural barriers such as a river or lake, or until they were extinguished by rain or snow. These fires would eliminate invasive species and smaller plants that were draining water and nutrients from larger and healthier native vegetation. They also returned some nutrients to the soil and were critical for maintaining a healthy eco-system. Because of its ecological benefits, prescribed burning is currently used by Texas Parks and Wildlife in the parks around Lake Ray Roberts. It is also used by the Lewisville Lake Environmental Learning Area located below the dam on the south side of Lake Lewisville. Additional prescribed burns have been planned and will be discussed below. Private property owners should understand that using this method is illegal in most parts of the county and can result in severe criminal charges and civil liability. Prescribed burns should only be conducted when legal to do so, and under the control of a qualified “burn boss.” For additional information about prescribed burning, visit the North Central Texas Prescribed Burn Association website at http://www.nctpba.org/ . A worksheet to help in planning a prescribed burn can be found in Appendix L of this document.

Mechanical fuel reduction is the use of saws, loppers, chippers, and other tools to remove vegetation from an area to create defendable space. In most cases, this is the preferred method for private property owners. Additional information about these methods can be found in the “Ready, Set, Go” information available through local fire departments, DCES, and TFS.

Structural ignitibility can be greatly influenced by the type of building materials used, the maintenance around the building, and the storage of combustible adjacent to it. During weather-driven fires, embers or brands (pieces of burning wood) are often blown across defendable spaces and ignite combustibles where they land. The concept of hardening structures reduces the potential for embers or brands to ignite the structure principally through the use of fire resistive construction products, such as brick veneer siding and composition roofs. Part of hardening a structure includes the use of noncombustible screening to prevent embers or brands from entering void spaces typically found in attics, under pier and beam foundations, under stairs, and under decks. It is also critical to remove combustibles within thirty 30 feet of the structures, such as leaf litter, firewood, recreational vehicles, etc.

While no one can guarantee the outcome of a wildfire, property owners can significantly lower the risk to their property simply by creating defendable space, screening off void spaces, and moving combustibles away from their home.

Action Plan

This section of the plan will discuss the strategies that local governments within Denton County can use to lower the chances of a catastrophic fire within their communities. While many of the actions below are general in nature, we recommend that mitigation efforts should be prioritized to focus on the extreme risk zones and then the high risk zones that were identified during the assessment process. For a map of the high and extreme risk areas, see Appendix J.

It is important to understand that studies of past wildfires clearly demonstrate there are simple and inexpensive measures residents can take to prepare for wildfire and increase the chances of home survivability.[3] Local government, however, cannot effectively mitigate existing private properties. It remains the responsibility of the individual home and business owners to take steps to protect their property.

- **Developing Awareness**

  To turn the mitigation concepts into tangible actions, it is essential that we develop awareness of the risk of wildfire in the community. In order to do so, the following steps are recommended:

  - ❑ The publication and distribution of this document to public officials including: Denton County Commissioners' Court, city and town councils, fire chiefs, the sheriff, police chiefs, and emergency management coordinators.

  - ❑ Fire departments that did not participate in the assessment process will be notified of the risks found in their districts.

  - ❑ The wildfire risk map developed from completed assessments will be available to the public online through a map located on the Denton County's website.

  - ❑ The Denton County Emergency Services' webpage will be updated with information for citizens about the CWPP and a link to the wildfire risk map.

  - ❑ A press release will be issued discussing the CWPP.

  - ❑ A program of public education, as discussed below, will further foster awareness of wildfire risk in our communities and mitigation measures to reduce risk.

[3] "2011 Texas Wildfires Common Denominators of Home Destruction," page 3, published by the Texas Forest Service

- **Local Government Regulation**
  Many of the issues that have been identified as determining if a community will survive a wildfire are best addressed during planning and construction of the community. Generally, if these issues are factored in during the design of a development, a significant improvement in public safety can be accomplished, often involving no additional cost.

  - ❑ Local Mayors will receive information encouraging them to consider the adoption of development rules for the wildland urban interface and adoption of the International Wildland-Urban Interface Code. A copy of the letter sent to the mayors is in Appendix G.

  - ❑ In municipalities that do not regulate outdoor burning, the mayor will receive information encouraging the adoption of such an ordinance.

- **Public Education**
  The vast majority of mitigation work needs to be done on private property where local government has no authority to require corrective actions. Public education is our principal tool to encourage citizens to mitigate their properties.

  - ❑ Through this document, and a presentation during a Denton County Fire Chiefs' Association meeting, fire departments within Denton County will be encouraged to augment their public education program with the International Association Fire Chiefs (IAFC) "Ready, Set, Go!" program. IAFC provides program materials at no cost and ensure a consistent and comprehensive message for citizens. Departments are also strongly encouraged to develop an education program that prioritizes focus on the extreme risk, and then high risk, areas of their fire districts.

  - ❑ Texas AgriLife County Agent Janet Laminack edited a list of fire resistant plants that will grow in Denton County. This list will be available through her office, on the update CWPP webpage, and Appendix H of this document.

  - ❑ A program for the Texas AgriLife Master Gardener and Master Naturalist groups will be given by DCES to develop awareness and understanding of the concepts described in the "Ready, Set, Go!" public education program. The Master Gardener and Master Naturalist groups will be encouraged to incorporate these concepts and materials into their interactions with the public.

  - ❑ The Landscape Project Manager for Denton County, Fred Burrell Jr., with the assistance of Texas AgriLife County Agent, Janet Laminack, and the Denton County Master Gardeners group, plan to install a fire resistant landscape at the DCES office located at 9060 Teasley Lane Denton, Texas. This landscaping will serve as a public demonstration of examples of "*FireWise"* landscaping concepts and incorporate fire resistant plants that will grow well in Denton County. In addition, signage will be installed to help the public better understand the landscaping, and to identify plants that they may choose to incorporate on their own properties to improve the defendable space around their homes and businesses.

- ❑ The *Firewise Communities USA* program is designed to help groups such as homeowner associations that want to improve their neighborhood's resistance to wildfire. Such groups will be encouraged to work with the TFS Firewise coordinator.

- **Fuel reduction projects and training for firefighters**
  The assessment process has raised the awareness of many of our fire departments about specific areas of risk in their communities. As a result they have planned live fire training for firefighters in the county, which will also serve as fuel reduction projects. Limited to working on public properties, the US Army Corps of Engineers (USACE) has collaborated in this planning. Maps of planned project areas can be found in Annex I.

  - ❑ Roanoke Hills: This project is located in the Town of Flower Mound on USACE property. The Flower Mound Fire Department, TFS, and USACE worked together to mechanically reduce fuels (vegetation) to improve the defendable space in the area. This demonstration project was meant to be an example of how defendable space can be created by mechanical means (using saws, loppers, chippers, etc.).

  - ❑ Cleveland Gibbs: This 15 acre project is located in the City of North Lake, on USACE property, and in the Roanoke Fire Department's district. This will be a live fire training project for county firefighters and will result in the mitigation of the fuels within the prescribed area.

  - ❑ Queens Point: This 200 acre project is located in the City of Hickory Creek's extra territorial jurisdiction, on USACE property, and in the Lake Cities Fire Department's district. This will be a live fire training project for county firefighters and will result in the mitigation of the fuels within the prescribed area.

  - ❑ Additional prescribed burn and mechanical reduction training projects may be identified in the future. These projects should prioritize fuel reduction in extreme and high risk areas.

- **Improving Response**
  Denton County has had an organized Wildland Task Force for many years, and many of the fire departments in the county participate in the Texas Intrastate Fire Mutual Aid System (TIFMAS). However, the biggest wildfire threat to our communities occurs when fire is driven by extreme weather and is beyond the control of firefighters.

  - ❑ Based on the completed assessments, Denton County GIS will develop a map layer showing high and extreme risk areas. This layer will be an update for all mobile computer terminals (MCTs) used in fire apparatus and patrol vehicles dispatched by Denton County Sheriff's Office. The layer will be available to any jurisdiction in Denton County that has its own public safety dispatch. On days in which a red flag warning has been issued for Denton County, all MCT users will receive a message from the Denton County Sheriff's dispatch to turn on their wildfire risk layer. This is meant to help firefighters and law enforcement recognize when they are responding to a high or extreme risk area. The intention is to prompt first responders to consider additional resources that may be needed,

and to consider if evacuation should be their primary objective. For a map of the high and extreme risk areas, see Appendix J.

- ❑ To facilitate evacuations, a file for the identified extreme and high risk areas covered by Denton County's mass notification system (CodeRED) will be maintained by Denton County Emergency Services.

- ❑ Denton County Emergency Services and Denton County Sheriff's Office will review and update the evacuation annex of our emergency operation plan.

- ❑ Fire departments are encouraged to develop tactical response plans (a.k.a. pre-fire plans or pre-attack plans) for high and extreme risk areas. A general checklist of some factors to consider for such plans is located in Appendix K.

Conclusion

While this document reflects a tremendous amount of completed work, the implementation of the plan will determine its effectiveness. As risks in some areas are reduced, new risks may be found in other areas. More effective strategies may also be identified as communities become more engaged. Fostering citizen awareness and knowledge, which leads to action, is key to this plan's having meaningful impact. Effort over the long term is required to ensure an ongoing decrease of the risk of loss of life and property.

Appendix A

Proclamation

PROCLAMATION

WHEREAS, Denton County has experienced growth and development in areas that were once rural coupled with the regular occurrence of wildfires; and

WHEREAS, it is in these areas where developments meet vegetation or the Wildland Urban Interface that the greatest risk to public safety and property from wildfire exists; and

WHEREAS, the best defense is preparedness and public education concerning the dangers that wildfire poses to the residents and natural resources of Denton County; and

WHEREAS, a Community Wildfire Protection Plan (CWPP) is authorized under the provisions outlined in Title I of the Healthy Forest Restoration Act of 2003; and

WHEREAS, a CWPP is a written document, mutually agreed upon by local, state, and federal representatives and stakeholders that identifies how a community will reduce its risks from wildland fire; and

WHEREAS, a CWPP addresses structural ignitability, prioritizes hazardous fuel reduction efforts on public and private lands, and is developed collaboratively; and

WHEREAS, the development of a CWPP gives a community an opportunity to influence the manner in which hazardous fuels are reduced on Federal lands in proximity to communities; and

WHEREAS, communities with a CWPP offer the best solution for communities at risk from wildfire to mitigate said risks.

NOW, THEREFORE, BE IT RESOLVED, that the Commissioners Court of Denton County hereby urges all citizens of this county and this community to participate in the development of a countywide Community Wildfire Protection Plan in accordance with the Healthy Forest Restoration Act

DONE IN OPEN COURT, this 10th day of March, 2015, upon motion made by Judge Horn and seconded by Comm. Marchant, and 5 members of the court being present and voting.

Mary Horn

MARY HORN, COUNTY JUDGE

HUGH COLEMAN, COMMISSIONER
PRECINCT 1

RON MARCHANT, COMMISSIONER
PRECINCT 2

BOBBIE J. MITCHELL, COMMISSIONER
PRECINCT 3

ANDY EADS, COMMISSIONER
PRECINCT 4

ATTEST:
JULI LUKE, County Clerk and Ex Officio
Clerk of the Commissioners Court of Denton County

BY: _____

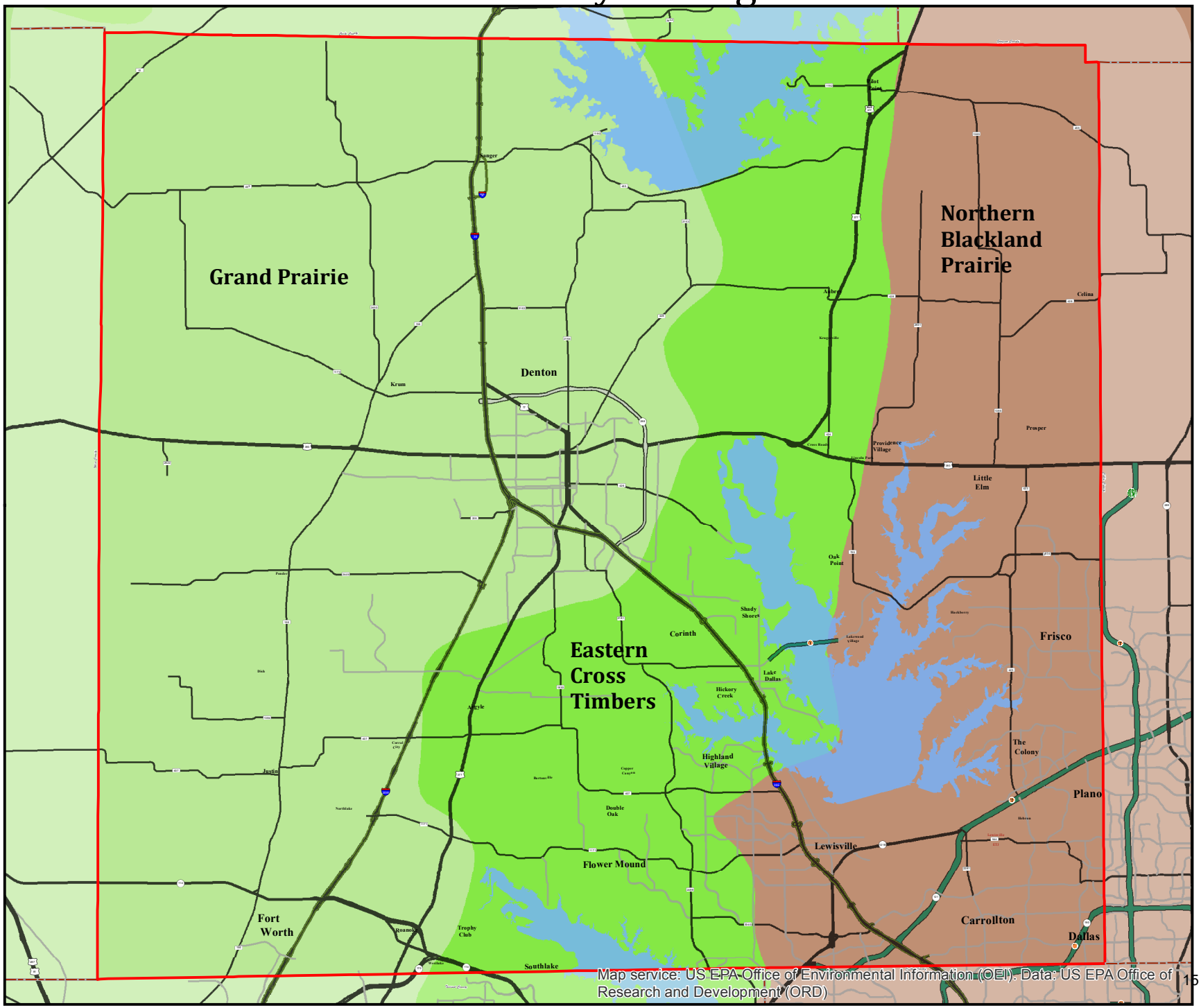
COMMISSIONER'S COURT OF DENTON COUNTY TEXAS

Appendix B

Ecoregions

The information in this appendix is from the USDA Forest Service website:
http://www.fs.fed.us/rm/ecoregions/

Denton County Ecoregions



Map service: US EPA Office of Environmental Information (OEI). Data: US EPA Office of Research and Development (ORD)

Denton County Ecoregions

Blackland Prairie

Elevation
Elevation ranges from 300 feet in the southern portion to 800 feet above sea level in the north.

Precipitation
Average rainfall is approximately 35 inches in the western counties to 45 inches in the eastern counties.

Topography
Topography ranges from gently rolling hills to level land. Forested areas are typically restricted to drainages and waterways.

Soils
The region is underlain by Upper Cretaceous marine chalks, limestone, and shale which give rise to the development of the characteristic black, heavy clay soils; along major rivers and tributaries a slightly more sandy soil.

Vegetation Description
The Blackland Prairie is a true prairie grassland community which is dominated by a diverse assortment of perennial and annual grasses. The soil is considered some of the richest soil in the world. Live oaks are the trees that dominate a large part of this eco-region. The northern and central portions of this area are predominately comprised of post oak, blackjack oak, American elm, winged elm, cedar elm, sugarberry, green ash, osage-orange, honey mesquite, and eastern red cedar. In addition to the species listed for the northern and central areas, the southern area is comprised of live oak and Ashe juniper. Pecan, black walnut, black willow, American sycamore, honey locust and bur oak are commonly found in bottomland woodlands throughout this region.

Impacts of Fire
Prior to human settlement, fire and grazing by bison were probably the two most important factors in the overall maintenance of the Blacklands area. Native Americans most likely influenced the area greatly through burning the landscape. Fires were typically very large and would burn until conditions or landforms would contain them. For the most part fires in this eco-region no longer greatly impact vegetation. As grazing land increased over the years and with the addition of urban sprawl, fire no longer is a major factor in the maintenance of the Blackland prairies. However, lack of wildfire has had an effect. Due to fire suppression and cattle grazing, honey mesquite, Ashe juniper, eastern red cedar and other fire intolerant species of woody vegetation are rapidly spreading throughout this region.

Historical Information
The east-central portion of the blackland prairie was once part of a vast tallgrass prairie made up of big bluestem, little bluestem, switchgrass and sideoats and other flora. Early settlers were drawn to this region by the productive soils, gentle topography, and luxuriant native grasslands.

Grand Prairie

Elevation
Elevation ranges from slightly under 350 feet in the east to over 1,500 feet above sea level in the west.

Precipitation
Average annual rainfall is approximately 20 to 30 inches.

Topography
The Grand Prairie and Plains consist of both wide lowlands, which resemble the landscape of the Blackland Region, and limestone mesa uplands. The topography is considered hilly, rolling and well-drained.

Soils
Beneath the Grand Prairie and Plains is limestone rock layers interbedded with clays with neutral to slightly acidic soils. The limestone outcrops and mesas of this eco-region consist of thin soils which support shallow-rooted trees such as Ashe juniper. The Grand Prairie has shallow, well-drained, dark clay soils.

Vegetation Description
The vegetation of this eco-region ranges from tallgrass in the prairie in the east, to shorter grasses in the prairies in the west. Before the days of fire suppression, certain agricultural practices and development, the uplands of this region were dominated by little bluestem, big bluestem, Indian grass, and tall dropseed. Forested areas were mostly limited to draws or drainage areas, stream banks and river valleys. Today, invasive woody vegetation, such as honey mesquite and Ashe juniper, is rapidly spreading throughout the upland areas of this region. The bottomlands have pecan, black walnut, cottonwood, black willow, American sycamore and bur oak tree species. A substantial amount of the Grand Prairie and Plains has been converted to cropland or improved pasture; however, this region still supports one of the largest areas of native grass in Texas.

Impacts of Fire

Before European settlement, large fires would frequently burn throughout this eco-region. These fires would suppress most woody vegetation and encouraged native grasses and forbs. As a result of continuous fire suppression, certain agricultural practices, and development, woody vegetation is commonly found throughout this once true grassland community.

Historical Information
Since the Grand Prairie and Plains eco-region was farmed less than the Blackland Prairies, more native grasses and forbs exist there today.

Other
The primary uses for land in this eco-region are farming, ranching and hunting.

Eastern Cross Timbers

Elevation
Elevation ranges from 400 feet above sea level in the Trinity River basin to over 1700 feet in the west.

Precipitation
Tarrant County in the east receives approximately 32 inches of rainfall per year while Wichita County in the northwest averages 27 inches per year.

Topography
Streamside areas contain bottomland forests of such species as pecan, bur oak, American and slippery elm, ashes, cottonwood, sugarberry and black willow.

Soils
The Eastern Cross Timbers soils have sandy to loam soils that are alkaline to neutral. This dramatically affects what plants grow in each area. The sandy acidic soils of the Eastern Cross Timbers are in sharp contrast to the heavy fertile soils of the Blacklands and Grand Prairie and Plains.

Vegetation Description
In north central Texas, the Eastern Cross Timbers vegetative sub-region is a narrow strip of timbered country extending from eastern Cooke County on the Red River south to western Hill County and includes portions of Denton, Tarrant, Johnson, and Hill Counties. Today, few large tracts of undisturbed woodlands remain in the Eastern Cross Timbers which is perhaps the most fragmented vegetative region in Texas.

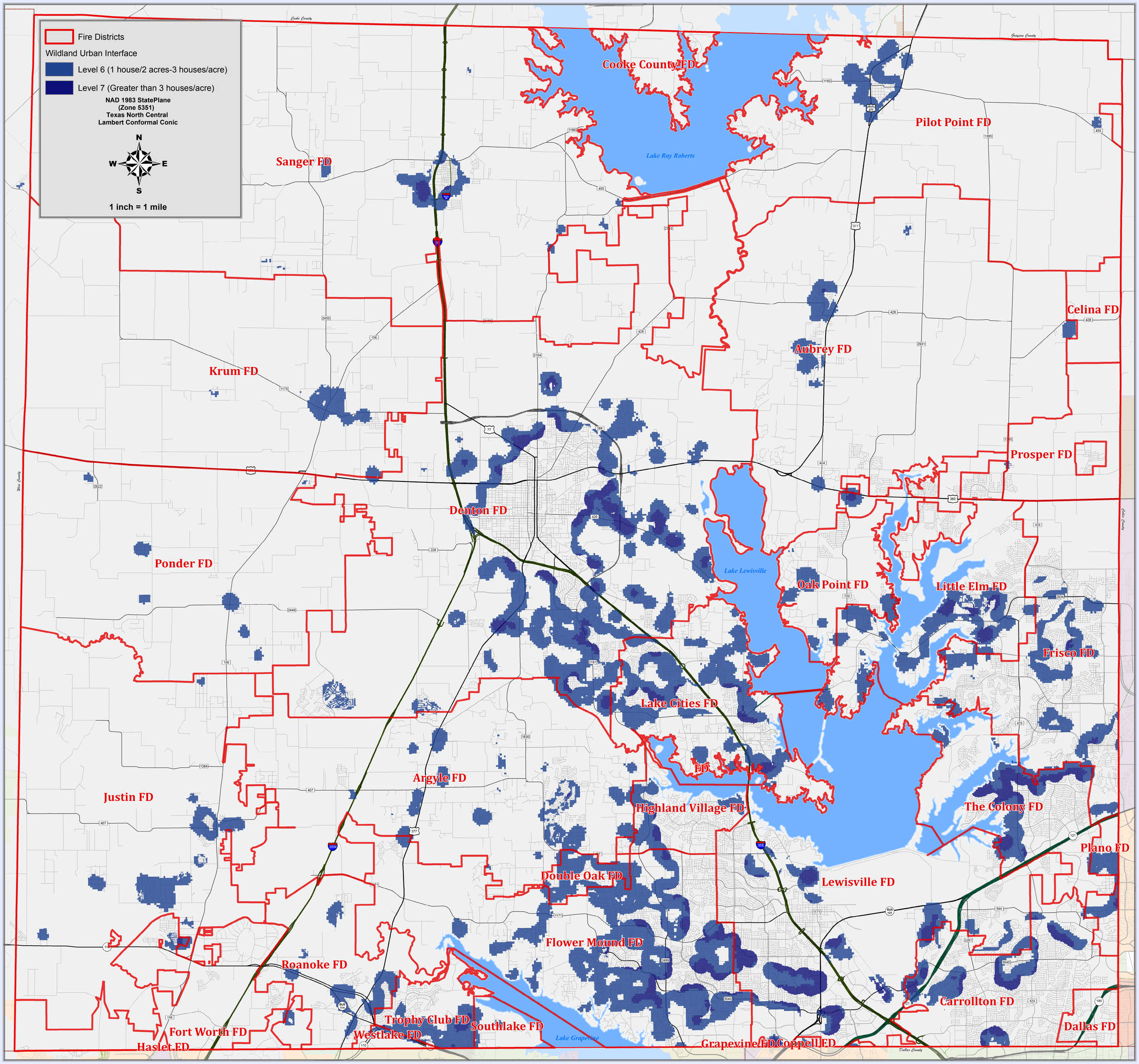
Impacts of Fire
Fire has a major impact on the vegetation, especially in the prairie areas. Traditionally these were fire dominated regions and periodic fires kept much of the trees and woody vegetation out of prairie. As fire has been eliminated from much of this area, it has been invaded with woody vegetation and is no longer a prairie. In the Eastern Cross Timbers, sporadic fires created a patchwork of woodlands and meadows. Within the wooded areas, fire often kept the understory clear and open.

Historical Information
From Irving, Washington, 1886. A Tour of the Prairies. John B. Alden, New York: " The Cross Timber is about forty miles in breadth and stretches over a rough country of rolling hills, covered with scattered tracts of post-oak and black-jack; with some intervening valleys, which at proper seasons, would afford good pasturage. It is very much cut up by deep ravines, which in the rainy seasons, are the beds of temporary streams, tributary to the main rivers, and these are called "branches". The whole tract may present a pleasant aspect in the fresh time of the year, when the ground is covered with herbage; when the trees are in their green leaf, and the glens are enlivened by running streams. I shall not easily forget the mortal toil and vexations of the flesh and spirit that we underwent occasionally, in our wanderings through the Cross Timber. It was like struggling through forests of cast iron." pp. 78-79. * Courtesy of The Ancient Cross Timbers Consortium, http://www.uark.edu/misc/xtimber/.

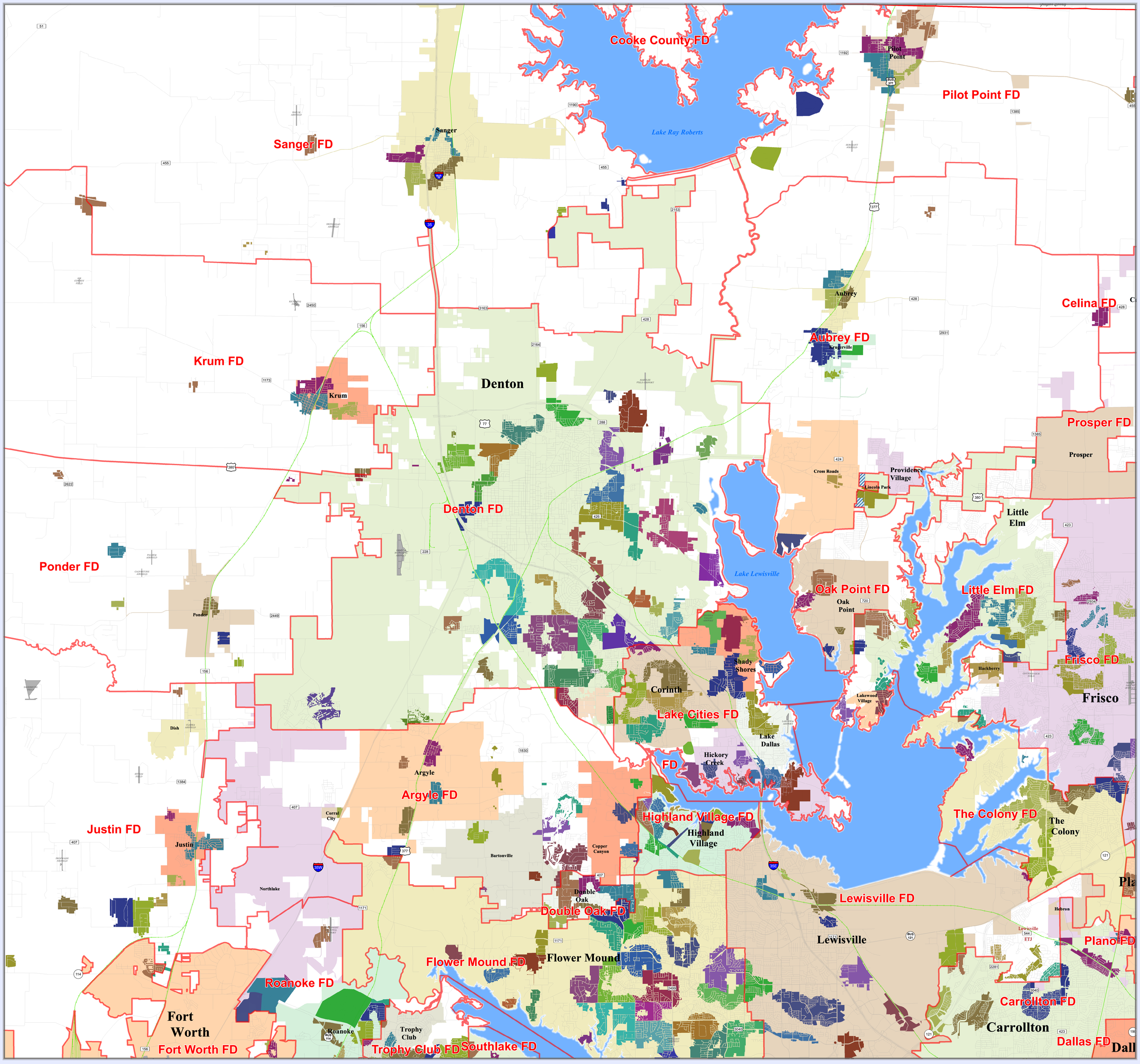
Appendix C

TxWRAP and County Zone Map

TxWRAP - Wildland Urban Interface



County Fire Departments Zone Map



Appendix D

Risk Assessment Score Sheet

Denton County
Wildfire Risk Assessment
Score Sheet

Date: _____

Fire District: _____ GIS Zone #: _____ Assessor's Name: _____

Latitude:_____N Longitude:-_____W (*GPS Point at entrance in decimal degrees)
Example: 33.230675 N -97.132765 W

Risk

1. Outdoor burning

a. Municipal ordinance prohibiting outdoor burning	0	
b. Outdoor burning regulations provided through registration program, website, pub ed, etc.	10	
c. Outdoor burning unregulated	15	

2. Characteristics of predominant vegetation within 300 ft. of subdivision/community

a. Light (grasses, forbs, saw grasses)	10	
b. Medium (light brush and small trees)	15	
c. Heavy (dense brush, timber, and hardwoods)	20	

3. Defensible space

a. >100 ft. of vegetation treatment from the structure(s)	0	
b. 71 ft. to 100 ft. of vegetation treatment from the structure(s)	3	
c. 30ft. to 70 ft. of vegetation treatment from the structure(s)	10	
d. < 30 ft. of vegetation treatment from the structure(s)	20	

4. Average lot size

a. ≥ 10 acres	0	
b. > 1 < 10 acres	3	
c. ≤ 1 acre	5	

5. Roof

a. Fire resistive (composition, metal, tile, slate, etc.)	0	
b. Fire resistive with leaf litter/debris in valleys and gutters	10	
c. Combustible materials (wood shakes, shingles, synthetic membrane, etc.)	15	

6. Building construction

a. Fire resistive siding, eaves, stairs, deck, fence, and screened vents	0	
b. Fire resistive siding; combustible stairs, decks, & vents screened, noncombustible fence	3	
c. Combustible siding with screened vents, stairs, decks, and noncombustible fence	5	
d. Fire resistive siding with unscreened vents, stairs, decks, and combustible fence	15	
e. Combustible siding with unscreened vents, stairs, decks, and combustible fence	20	

Response

7. Organized response resources

a. Fire station ≤ 5 mi. from community and county wildland taskforce available	0	
b. Fire station ≤ 5 mi. from community	3	
c. Fire station > 5 mi. from community and county wildland taskforce available	5	
b. Fire station > 5 mi. from community	7	

8. Placement of gas and electric utilities

a. Both underground	0	
b. One underground, one aboveground	3	
c. Both aboveground	5	

9. Ingress and egress

a. Two or more roads in/out	0	
b. Dense vegetation surrounds exit points	5	
c. One road in/out	7	

Fire District:

_____ GIS Zone #: _____

10. Road width

a. > 20 ft.	0
c. ≤ 20 ft.	7

11. Road construction

a. Surfaced (concrete, asphalt, etc.) road, grade < 5%	0
b. Surfaced (concrete, asphalt, etc.) road, grade > 5%	2
c. Non Surfaced (gravel, rock, etc.) road, grade < 5%	3
d. Non Surfaced (gravel, rock, etc.) road, grade > 5%	5
e. Other than all-season	7

12. Dead-end turnarounds

a. < 300 ft. with turnaround	0
b. ≥ 300 ft. with turnaround	3
c. < 300 ft. with no turnaround	5
d. ≥ 300 ft. with no turnaround	7

13. Street signs and home addressing

a Present (noncombustible & reflective)	0
b. Partially present	5
c. Few to none present	7

14. Available fire protection water supply

a. Pressurized water source availability - hydrants < 1000 ft. apart and discharge > 2 1/2 inches	0
b. Pressurized water source availability - hydrants ≥ 1000 ft. apart and/or discharge ≤ 2 1/2 inches	2
c. Fire department has portable tanks and annual training in water shuttle operations	3
c. Non-pressurized water source availability > swimming pool size	7
d. Non-pressurized water source availability ≤ swimming pool size	10
e. Water unavailable	15

Totals for subdivision or community *(total of all points)* →

Hazard Assessment	Total Points
Low	< 30
Moderate	31 – 60
High	61 – 90
Extreme	> 90

If the score is High or Extreme, provide any of the below known information and complete a narrative.

Number of: Structures abutting interface _____ Homes in the neighborhood _____ Businesses in the neighborhood _____

Neighborhood Organization: ❑ HOA ❑ Crime Watch ❑ Other_____

Does interface include publicly owned lands ❑ Yes ❑ No If yes, land is managed by: ❑ US Army Corps of Engineers

❑ Texas Parks & Wildlife ❑ Municipality of_____ ❑ Other_____

Additional consideration (e.g. historic structures, economic impact, environmental impact, etc.):

_____

_____

Note: Please include photographic examples of fuels, structures, and other identified issues.

Please return a copy of this completed form to:
Marc Dodd
cwpp@dentoncounty.com
Fax 940-349-5169
9060 Teasley Ln. Denton, TX 76210
Desk 940-349-2845
Cell 940-465-4886

Appendix E

Summary of Risk by Fire District

Sumary of Risk by Fire Districts

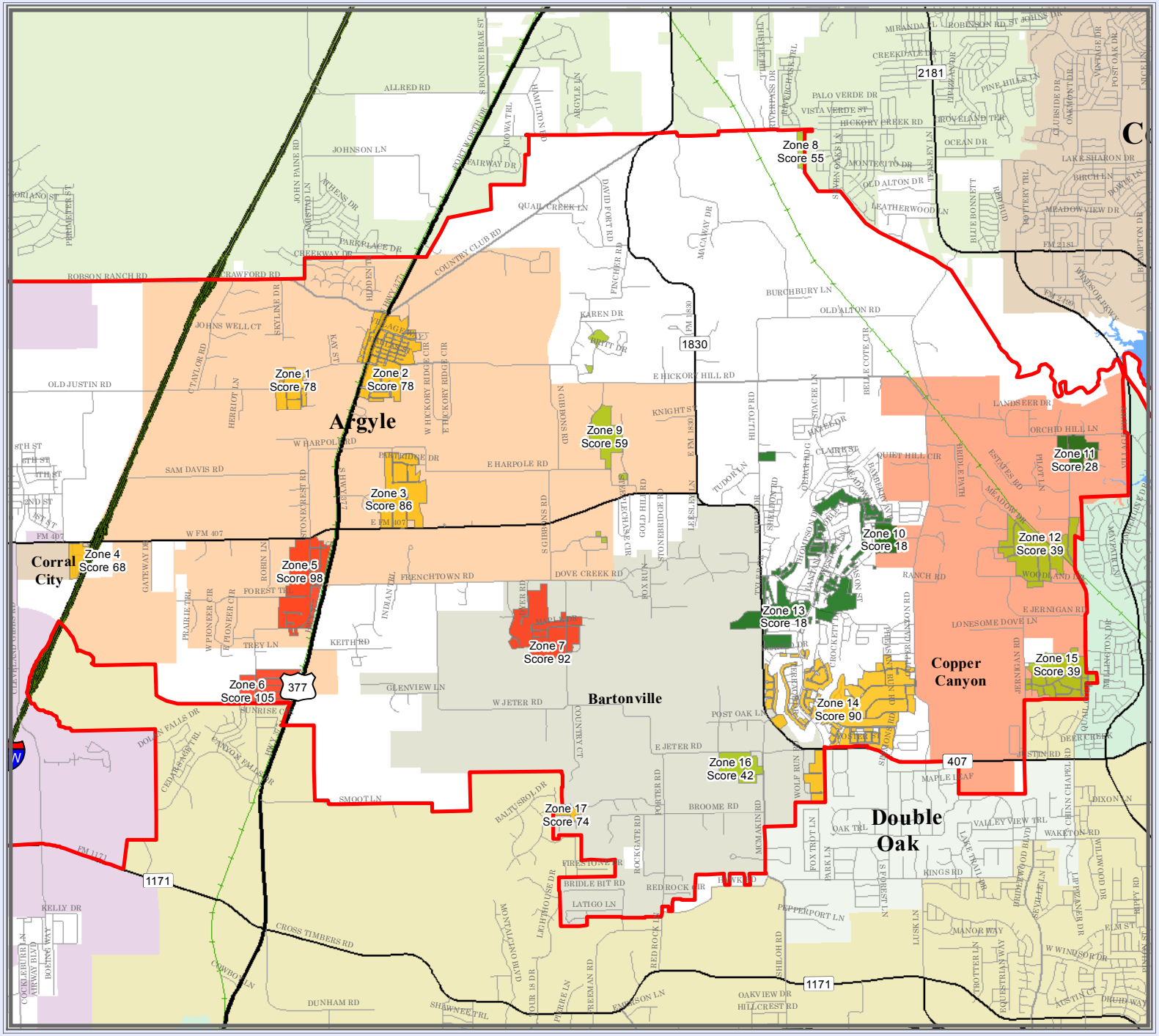
Fire Department	Low	Moderate	High	Extreme	No. Zones	Map on Page
Argyle	3	5	6	3	17	30
Aubrey	0	6	5	1	12	31-32
Carrollton	0	7	0	0	7	33
Celina					0	-
Coppell					0	-
Dallas					0	-
Denton	2	30	8	5	45	34-38
Double Oak	0	4	1	0	5	39
Flower Mound	0	24	7	3	34	40
Fort Worth	1	1	0	0	2	41
Frisco	12	0	2	0	14	42
Grapevine					0	-
Haslet					0	-
Highland Village	0	10	4	3	17	43
Justin	3	1	6	0	10	44
Krum	1	2	2	0	5	45
Lake Cities	1	11	4	5	21	46
Lewisville	9	4	4	0	17	47
Little Elm	4	8	1	2	15	48
Oak Point	0	0	1	5	6	49
Pilot Point	0	4	3	0	7	50
Plano	0	2	0	0	2	51
Ponder	0	2	5	0	7	52
Prosper					0	-
Roanoke	1	8	2	1	12	53
Sanger	0	1	4	3	8	54-55
Southlake	0	1	1	1	3	56
The Colony	0	7	0	0	7	57
Trophy Club	3	4	0	0	7	58
Westlake	2	0	0	0	2	59
Total	42	142	66	32	282	

Appendix F

Fire District Maps Showing Zones and Risk Scores

DENTON COUNTY

Argyle Fire District



Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 1.1 miles

August 03, 2015

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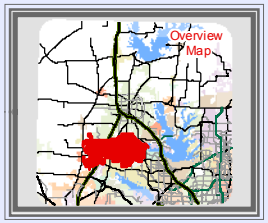
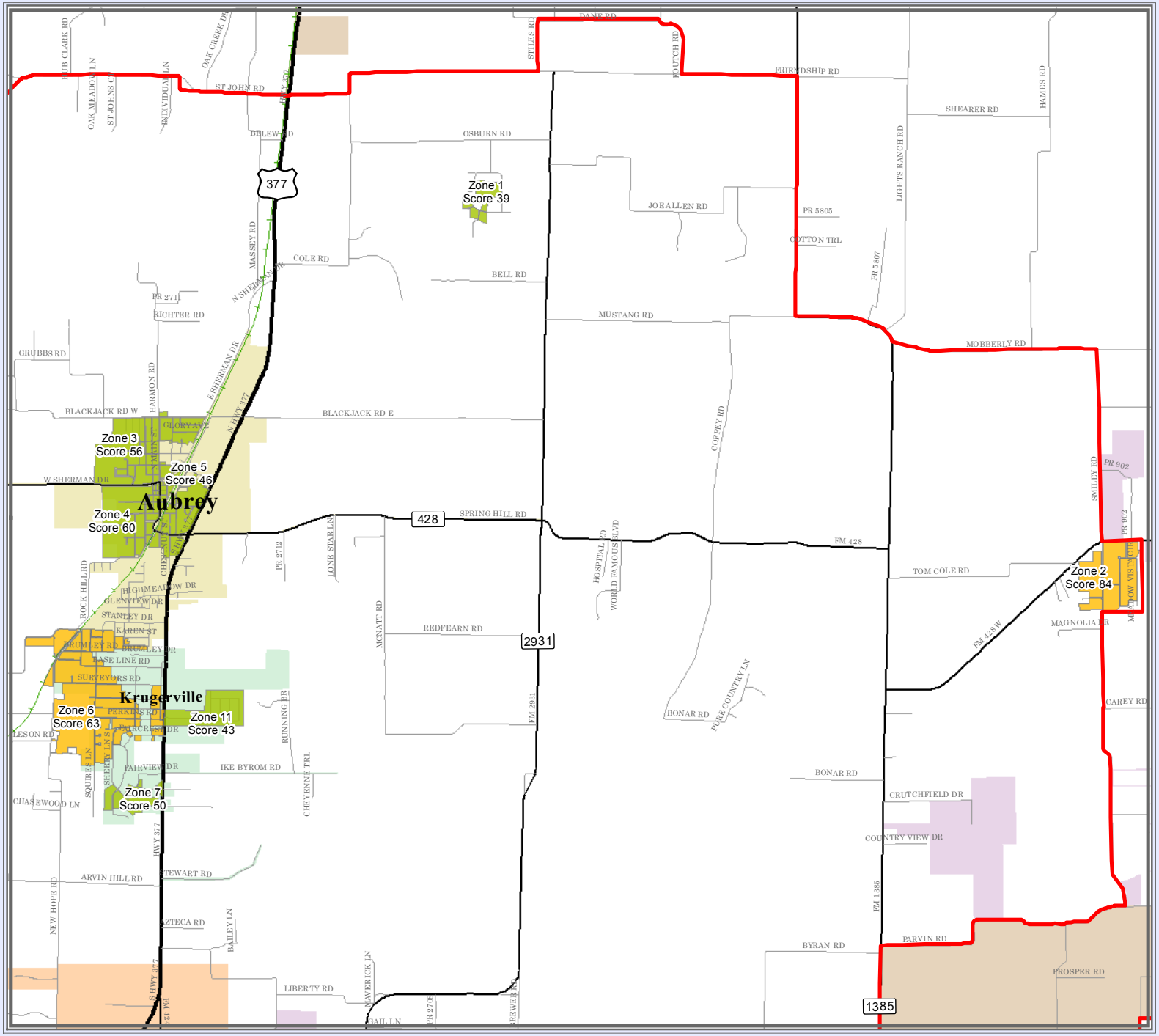
E-MAIL: gis@dentoncounty.com



DENTON COUNTY

Aubrey Fire District - Central



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Fire Districts

Wilfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

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Overview Map

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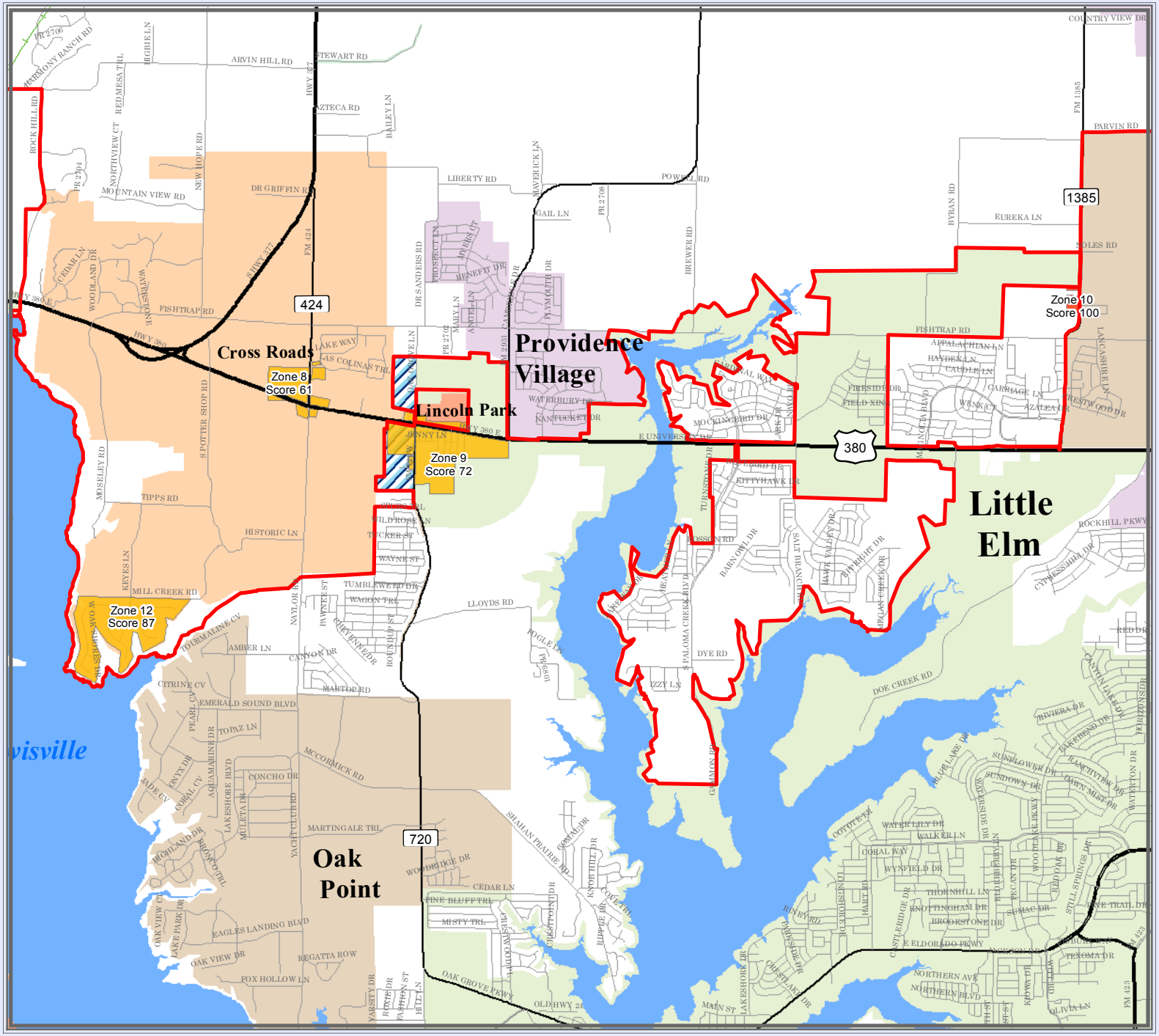
Aubrey Fire District - South



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Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 1 miles

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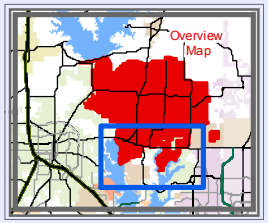

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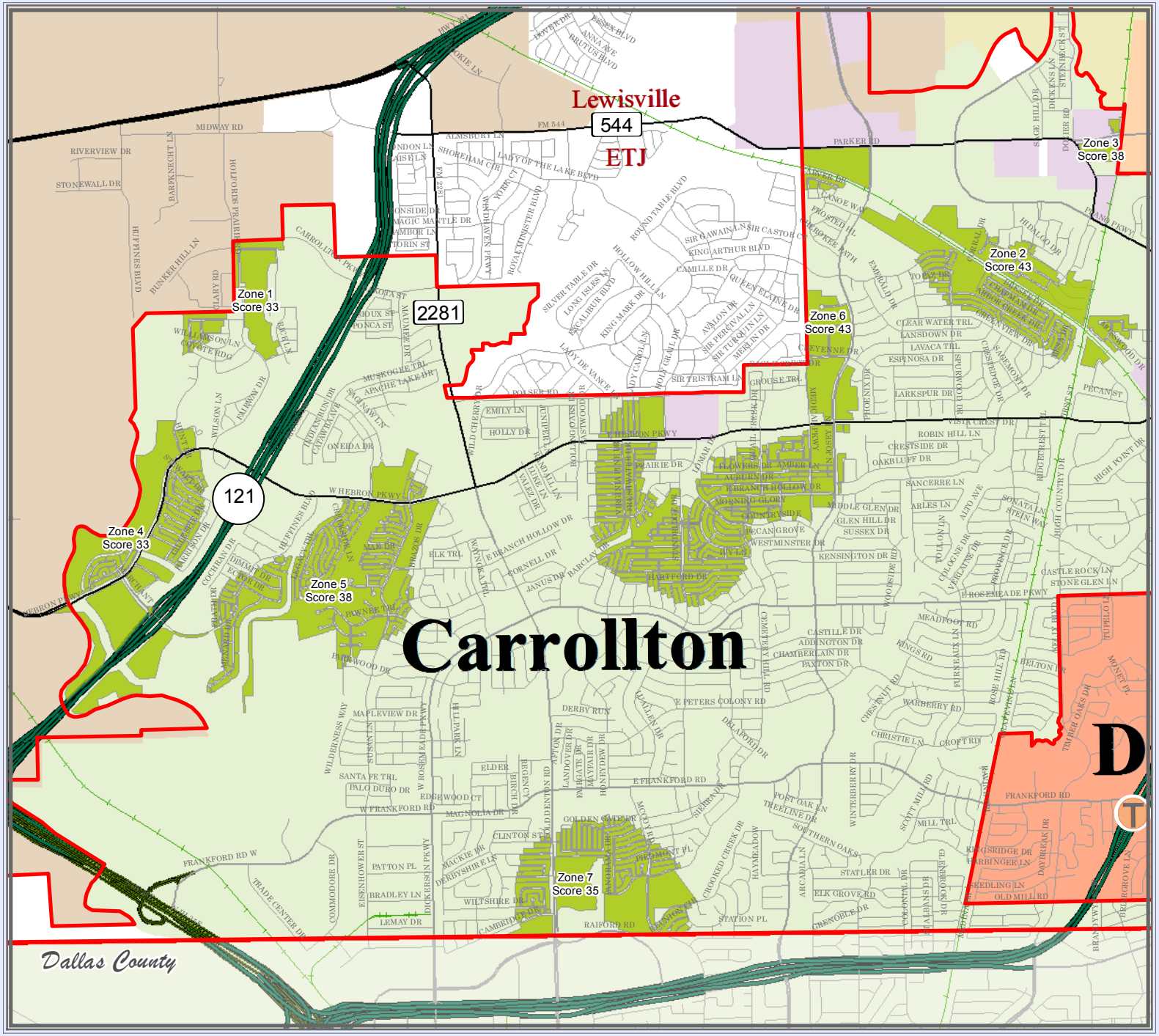
Carrollton Fire District



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Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.7 miles

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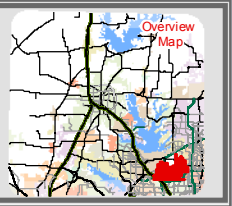

DEPARTMENT OF TECHNOLOGY SERVICES

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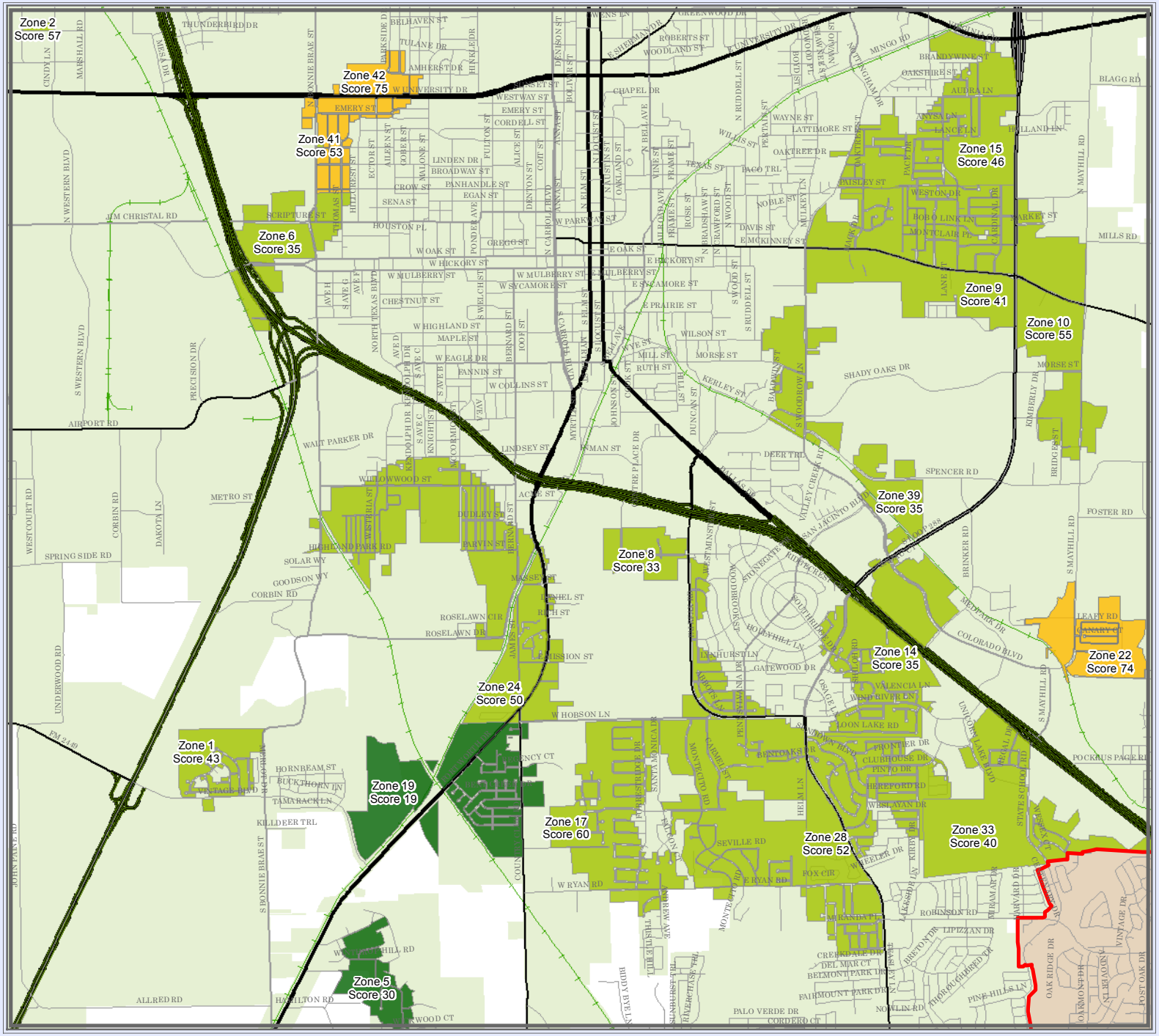
DENTON COUNTY

DENTON COUNTY

Denton Fire District - Central



DENTON COUNTY, TEXAS 1846

Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.8 miles

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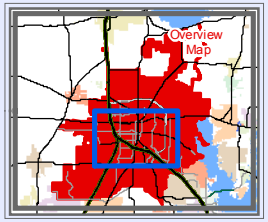

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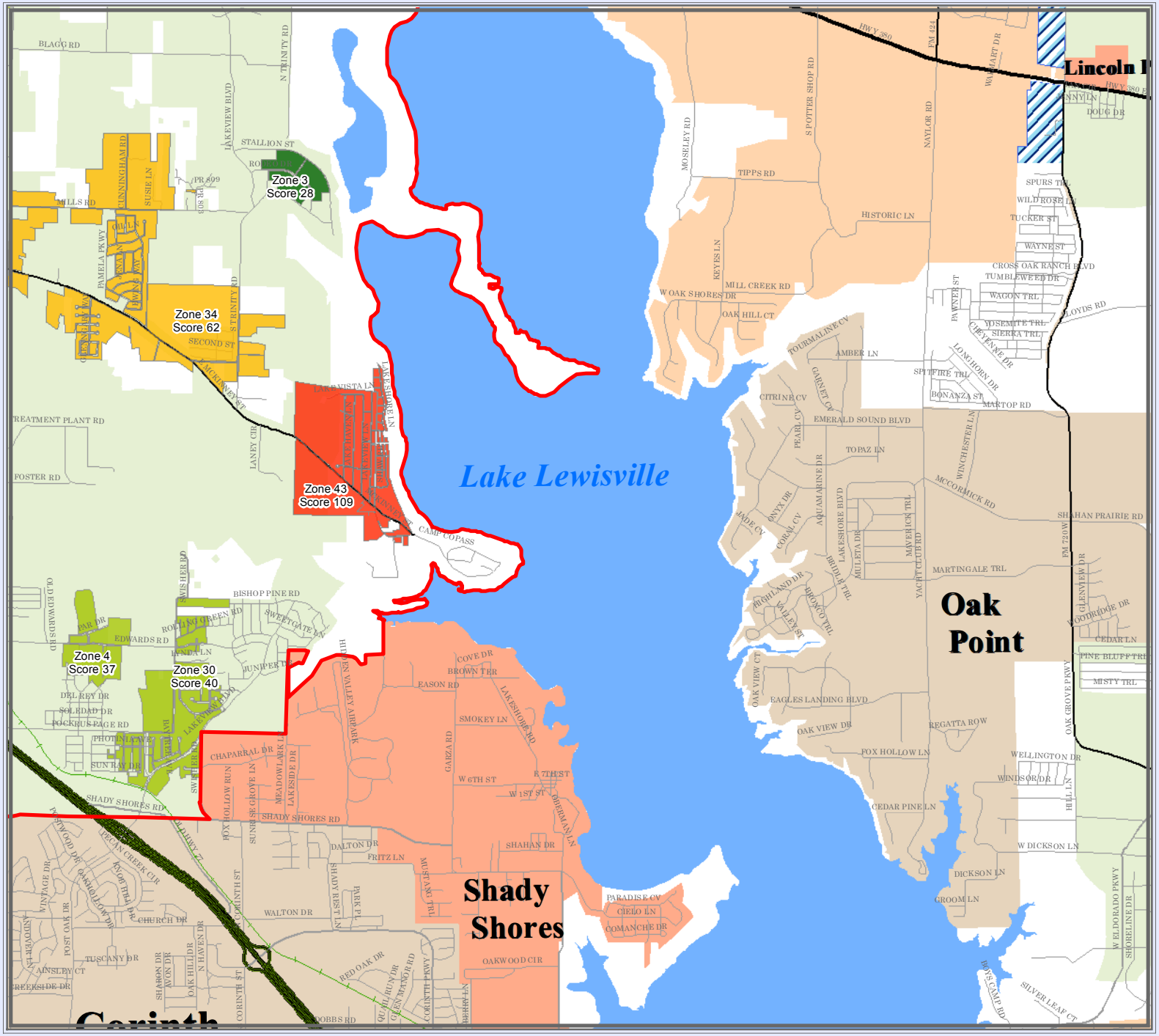
DENTON COUNTY

DENTON COUNTY

Denton Fire District - East



DENTON COUNTY, TEXAS 1846

Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N W E S

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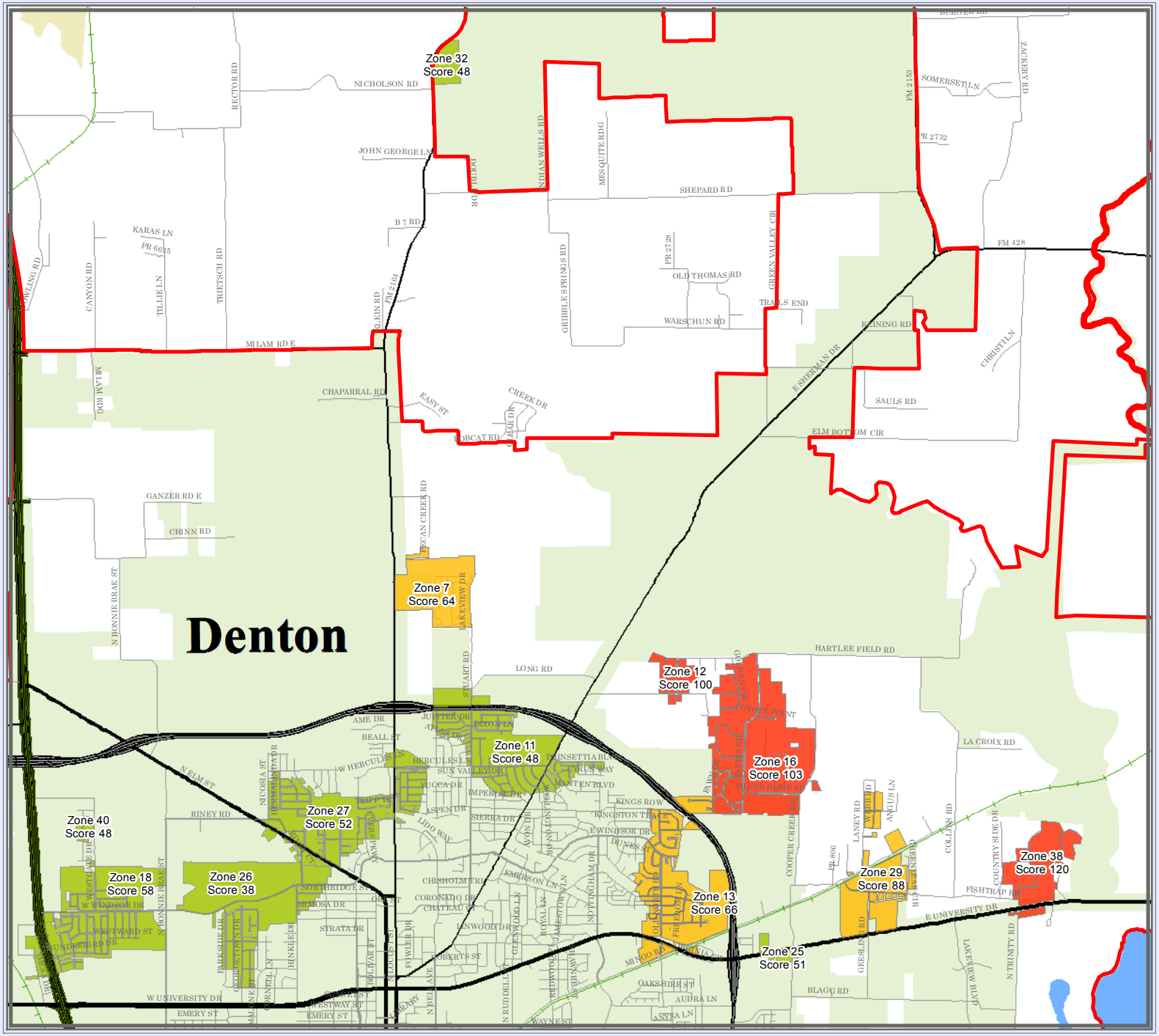
DENTON COUNTY

Denton Fire District - North



DENTON COUNTY, TEXAS 1846

Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N W E S

1 inch = 1 miles

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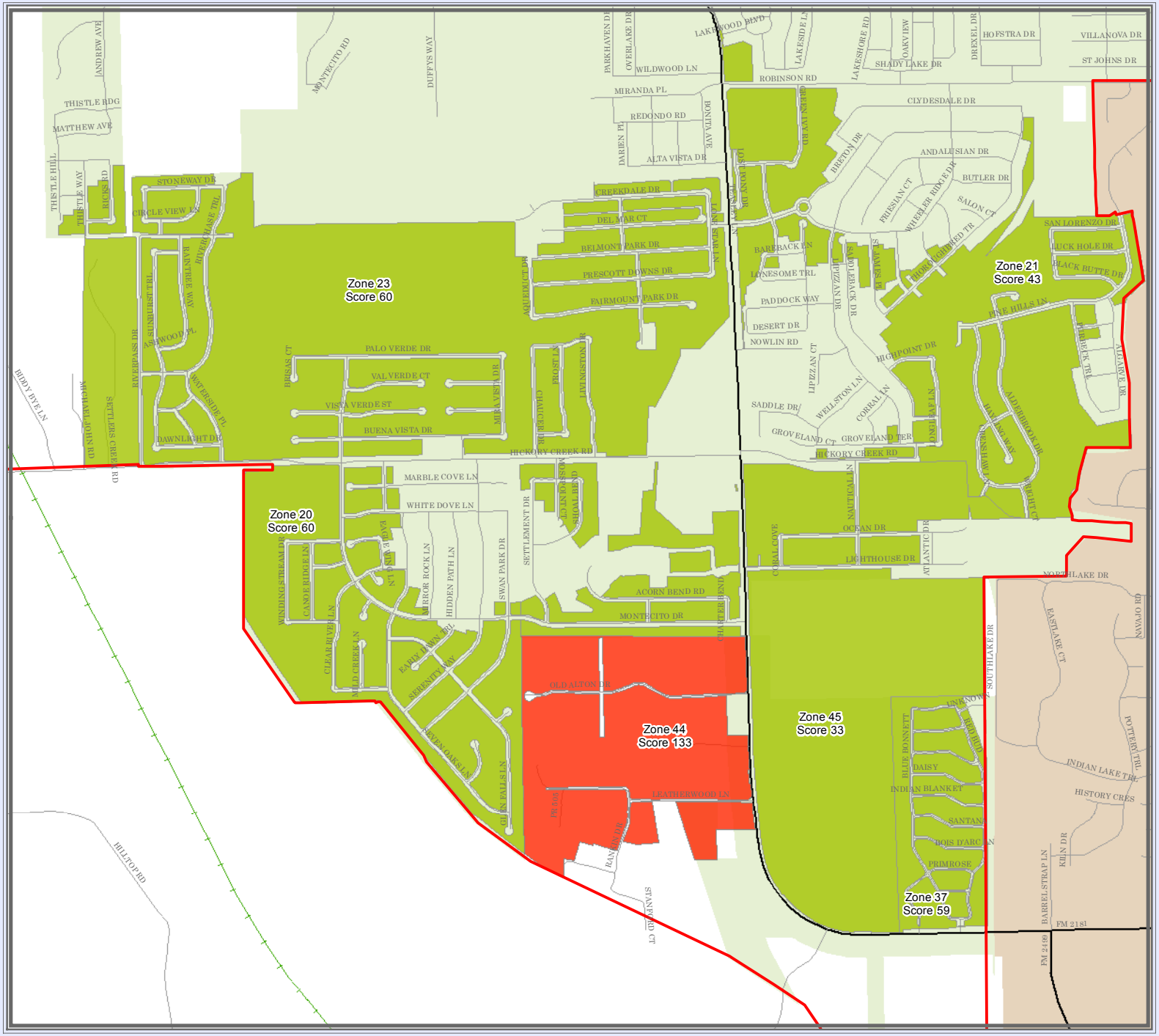
DENTON COUNTY

Denton Fire District - South



Mary Horn- County Judge
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Ron Marchant- Commissioner Precinct 2
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Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- 0 - 30
- 31 - 60
- 61 - 90
- 91 - 150

N
W E
S

1 inch = 0.3 miles

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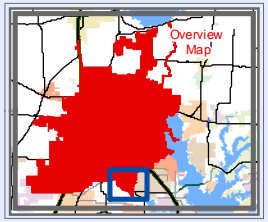

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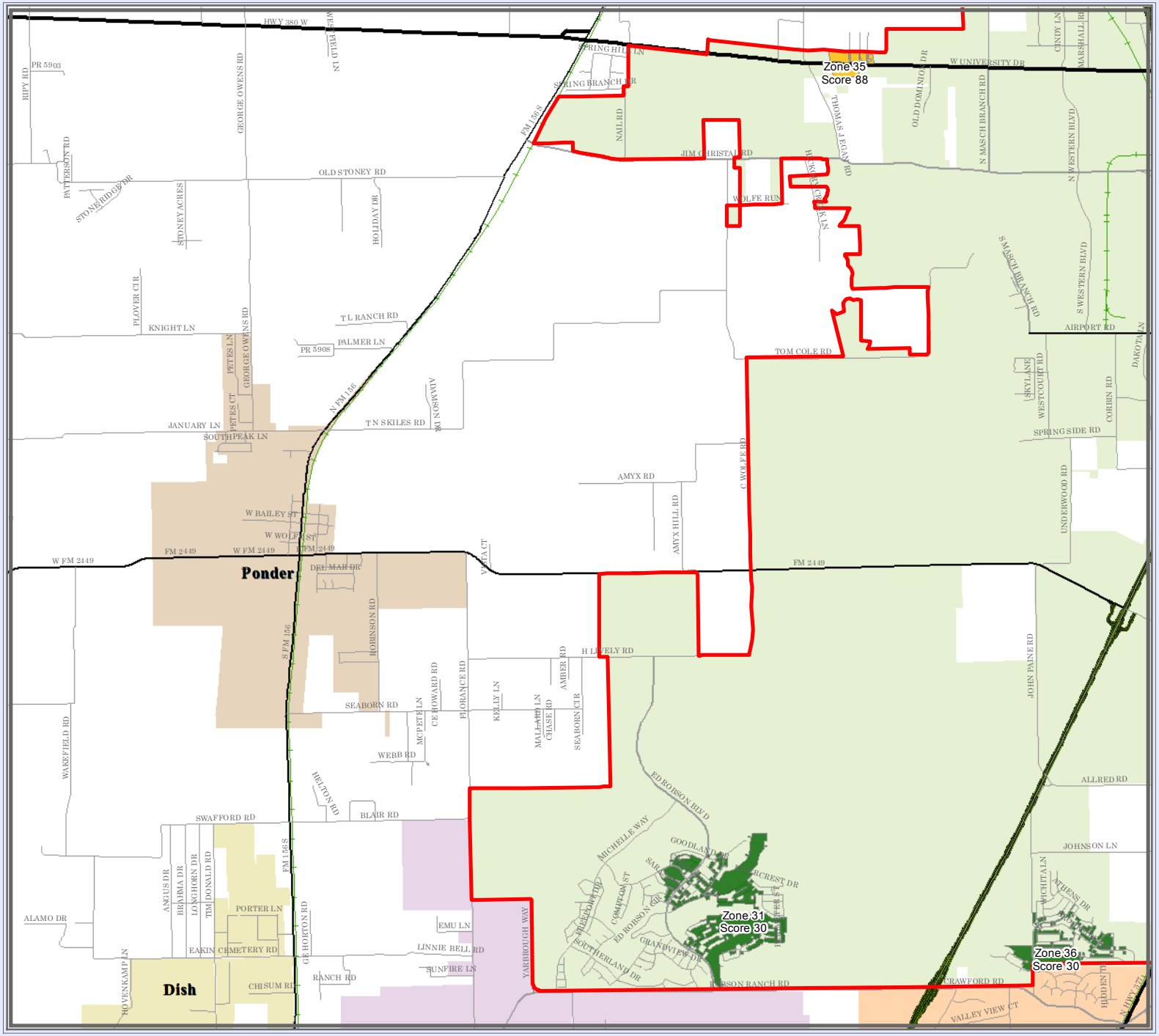
DENTON COUNTY

Denton Fire District - West



DENTON COUNTY, TEXAS 1846

Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- 0 - 30
- 31 - 60
- 61 - 90
- 91 - 150

N
W E
S

1 inch = 1.1 miles

August 03, 2015

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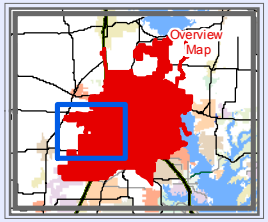


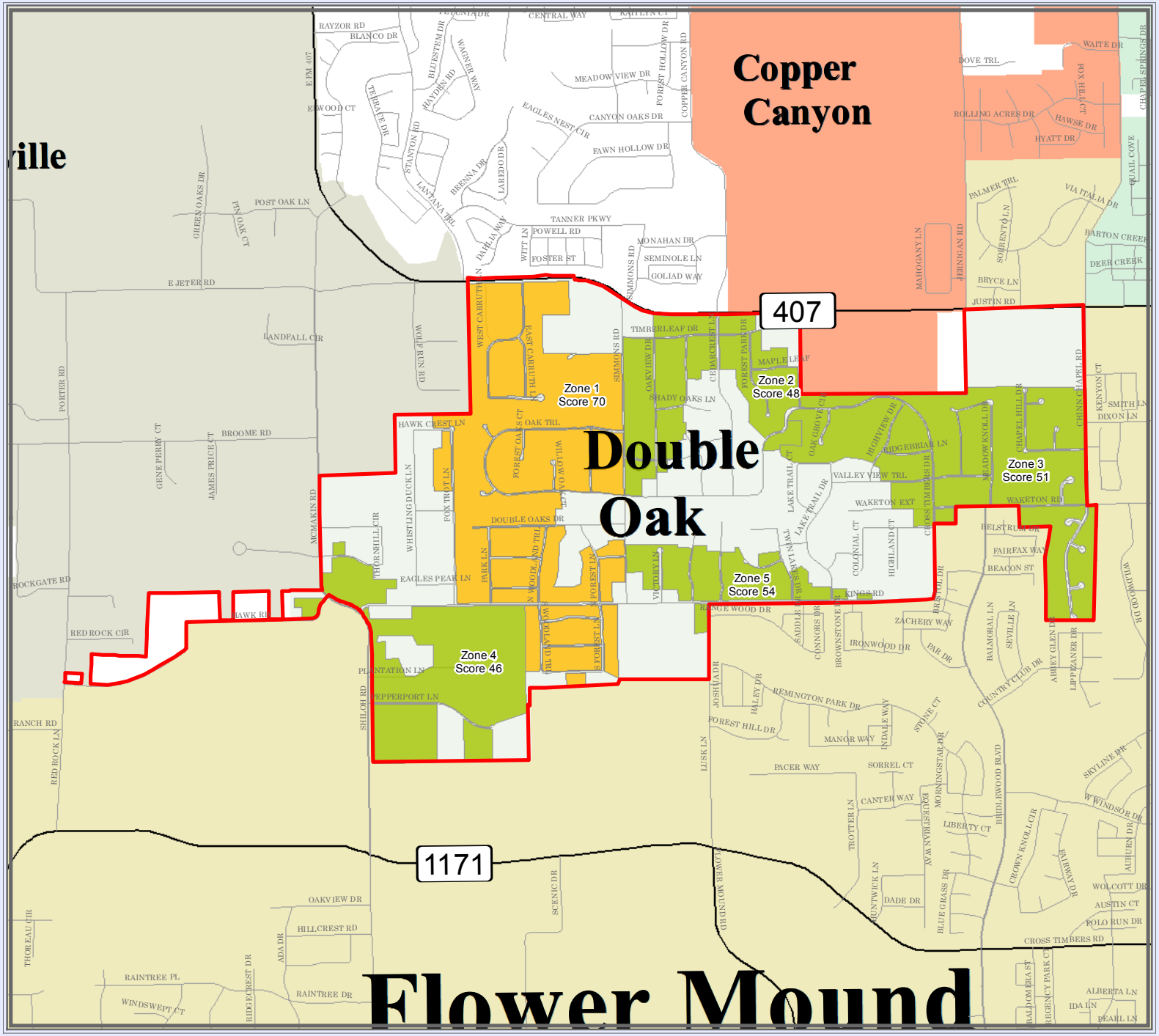
DEPARTMENT OF TECHNOLOGY SERVICES

DTS

DENTON COUNTY

DENTON COUNTY

Double Oak Fire District



Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.5 miles

August 03, 2015

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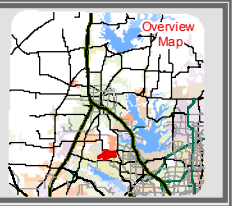
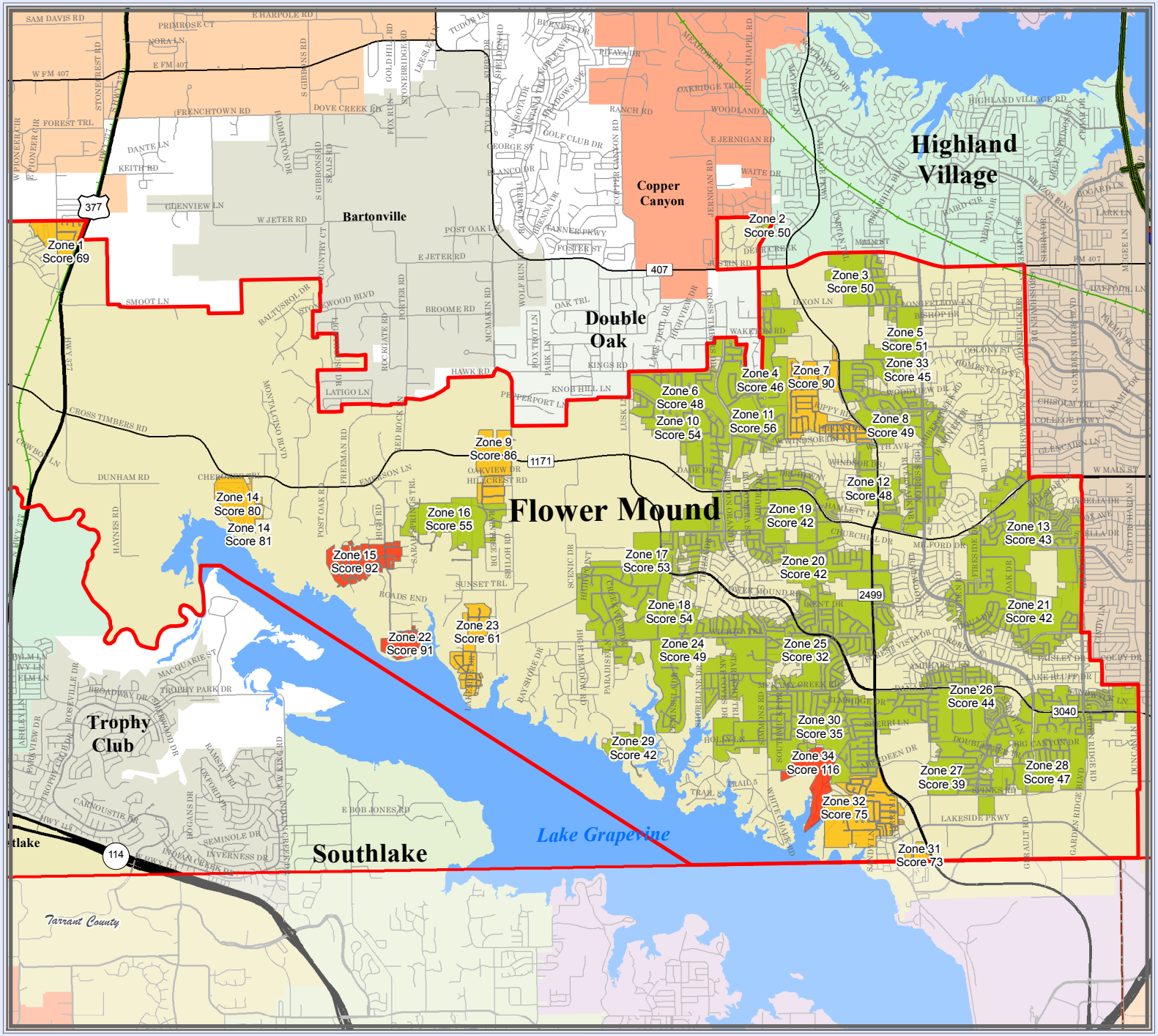


DEPARTMENT OF TECHNOLOGY SERVICES
DTS
DENTON COUNTY

DENTON COUNTY

Flower Mound Fire District



DENTON COUNTY, TEXAS 1846

Mary Horn- County Judge
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Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

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- High (61-90)
- Extreme (>90)

N W E S

1 inch = 1.3 miles
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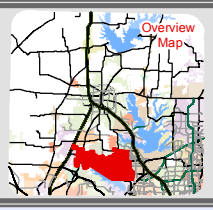


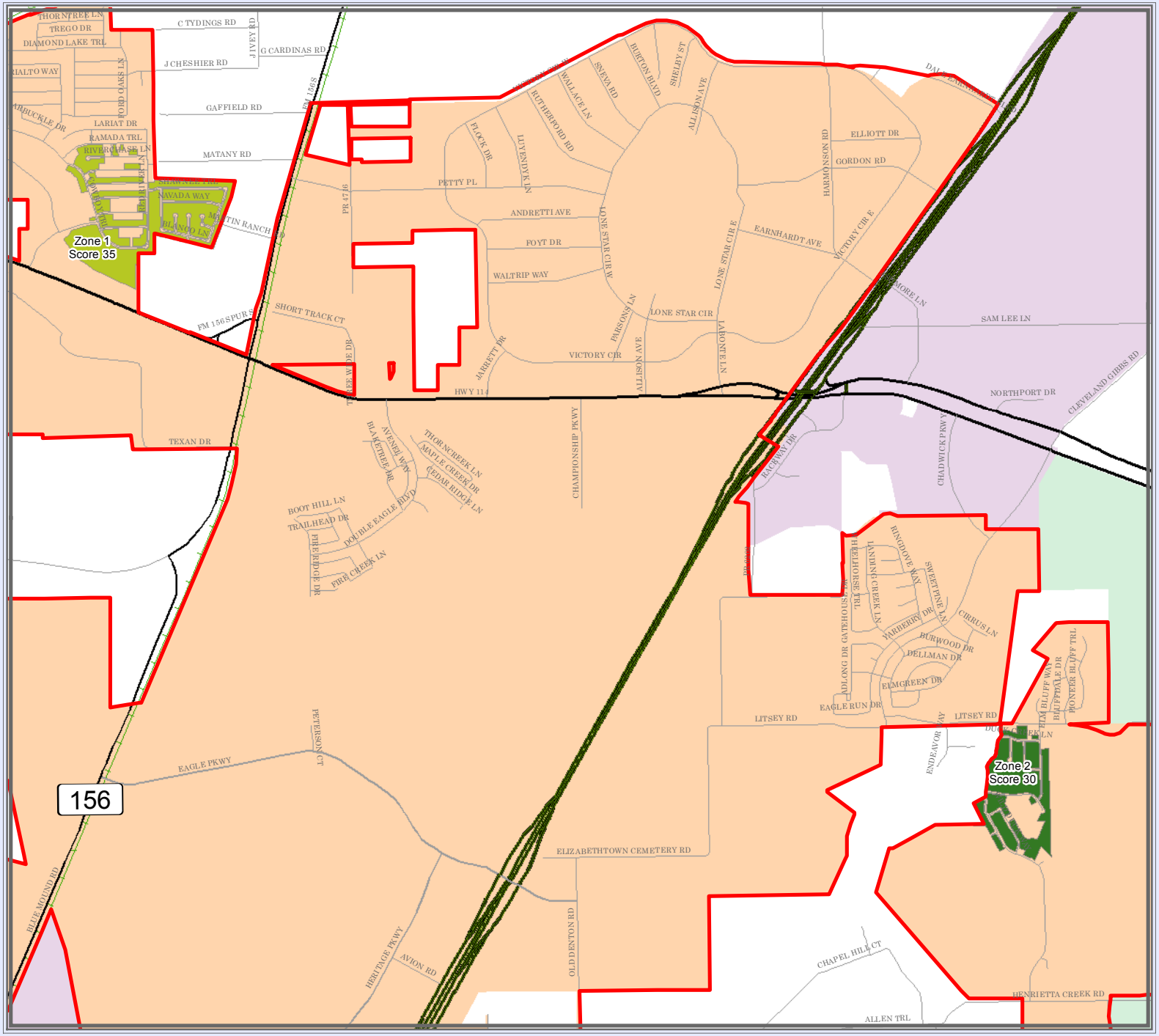
DEPARTMENT OF TECHNOLOGY SERVICES

DTS

DENTON COUNTY

DENTON COUNTY

Fort Worth Fire District



DENTON COUNTY, TEXAS 1846

Mary Horn- County Judge
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Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.5 miles

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Overview Map

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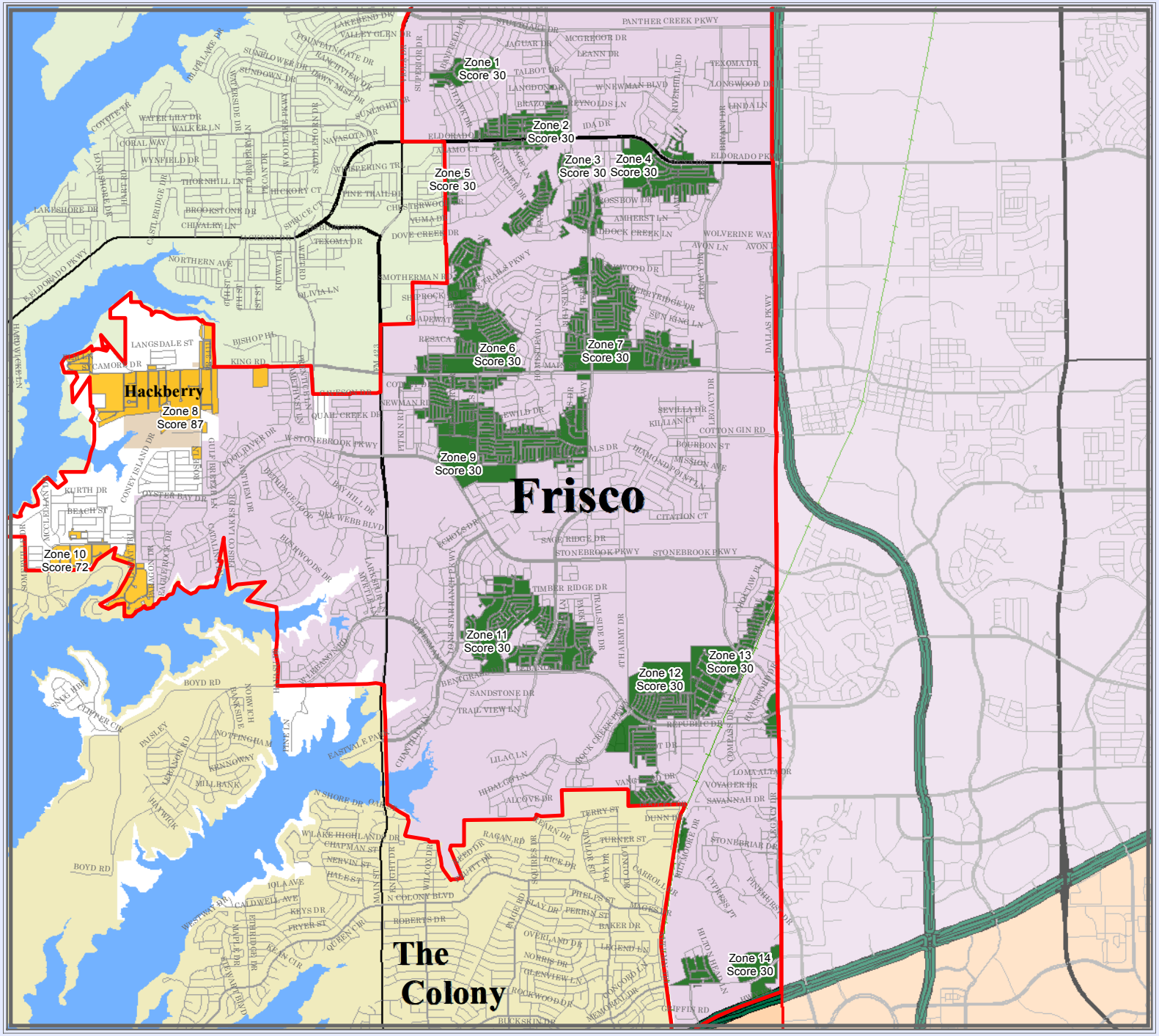
DENTON COUNTY

DENTON COUNTY

Frisco Fire District



DENTON COUNTY, TEXAS 1846

Mary Horn- County Judge
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Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N W E S

1 inch = 1 miles

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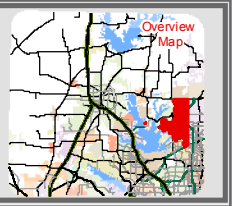


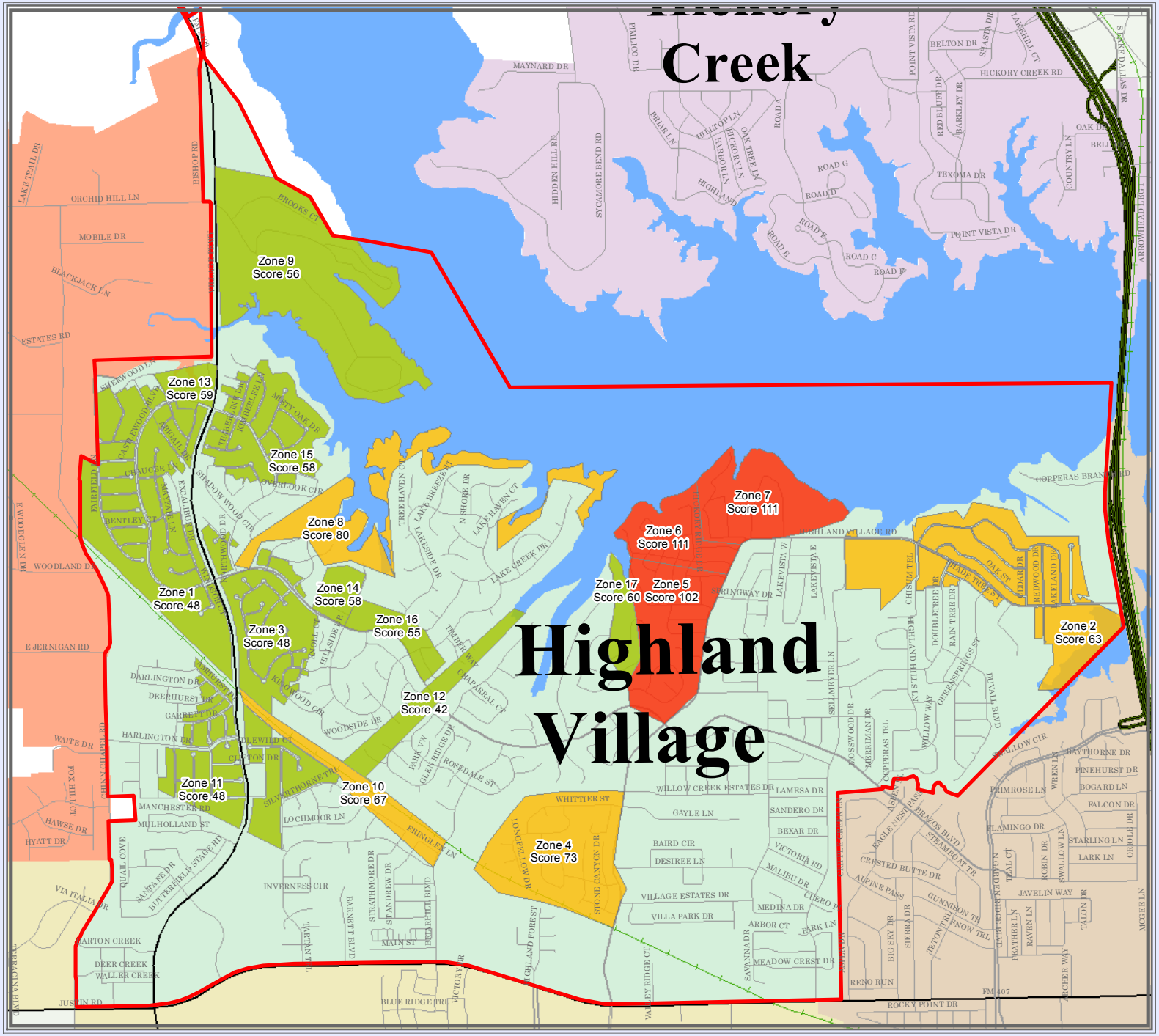
DEPARTMENT OF TECHNOLOGY SERVICES

DTS

DENTON COUNTY

DENTON COUNTY

Highland Village Fire District



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Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N W E S

1 inch = 0.5 miles

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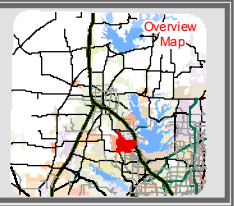


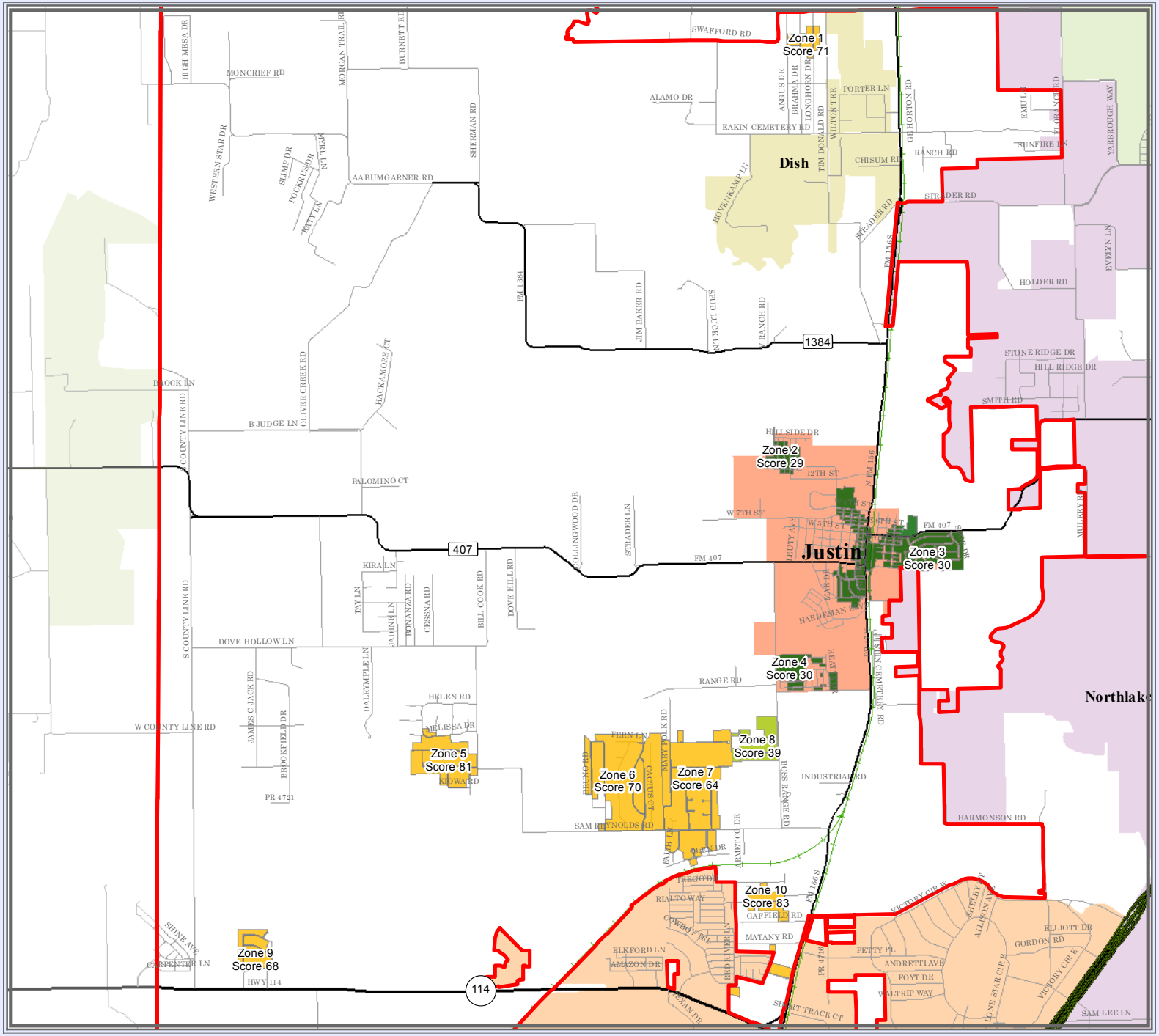
DEPARTMENT OF TECHNOLOGY SERVICES

DTS

DENTON COUNTY

DENTON COUNTY

Justin Fire District



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Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 1.2 miles
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Overview Map

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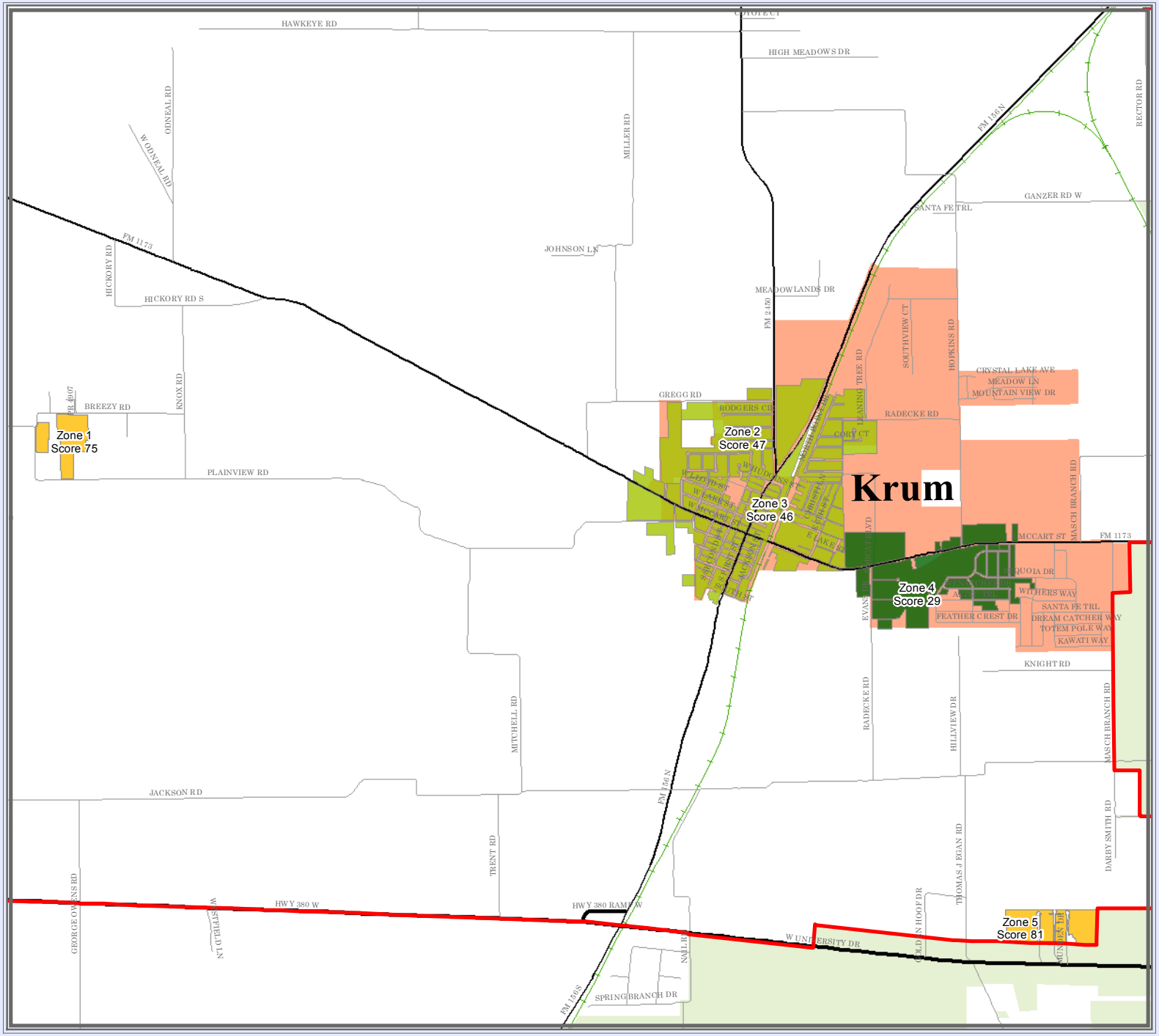
DENTON COUNTY

DENTON COUNTY

Krum Fire District



Mary Horn- County Judge
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Fire Districts

Wildfire Risk Score

- Low (<30)
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- Extreme (>90)

N
W E
S

1 inch = 0.7 miles

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Overview Map

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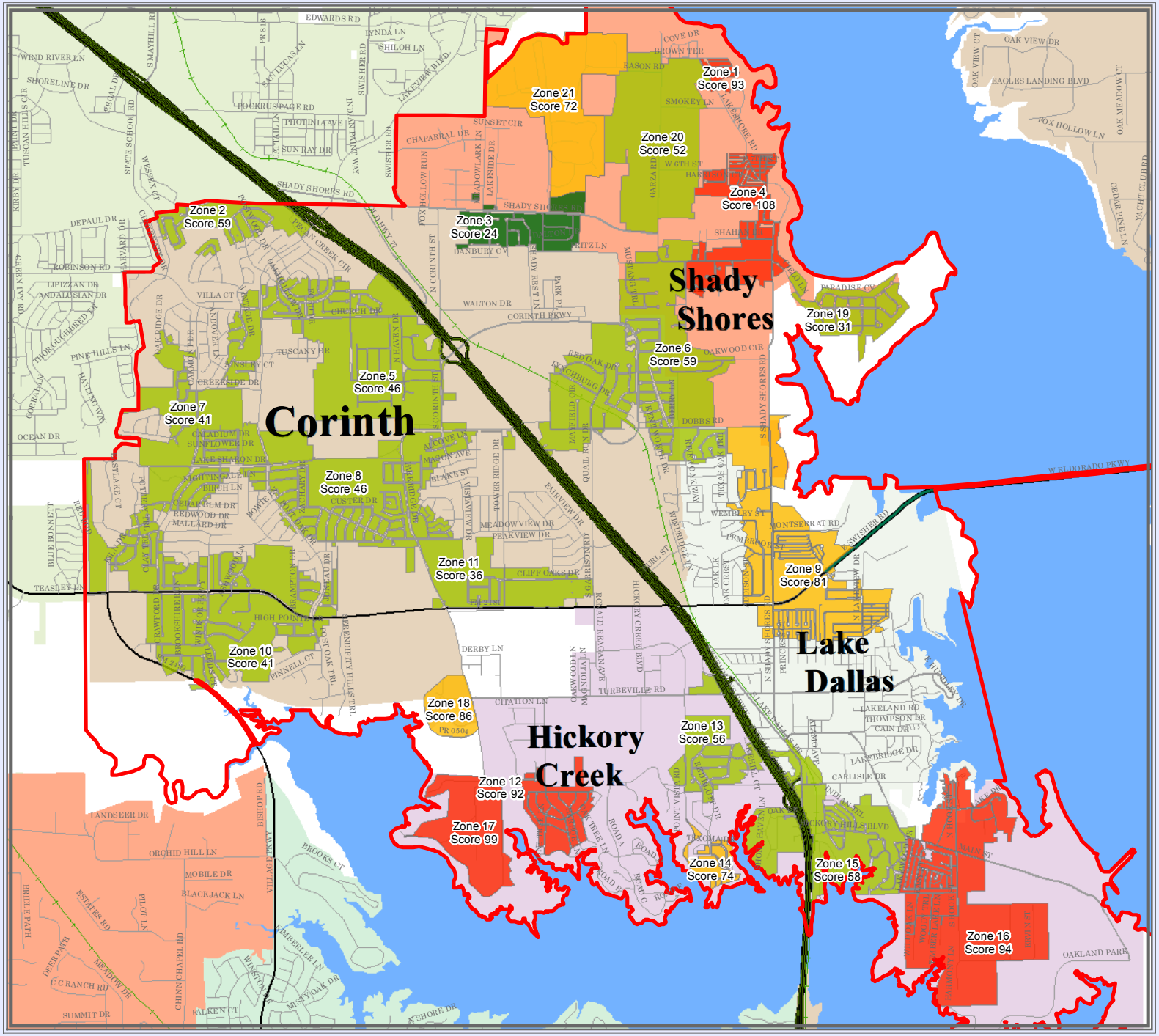
DENTON COUNTY

DENTON COUNTY

Lake Cities Fire District



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Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.8 miles

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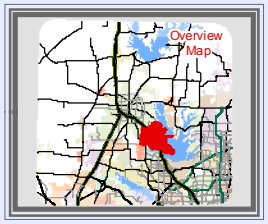
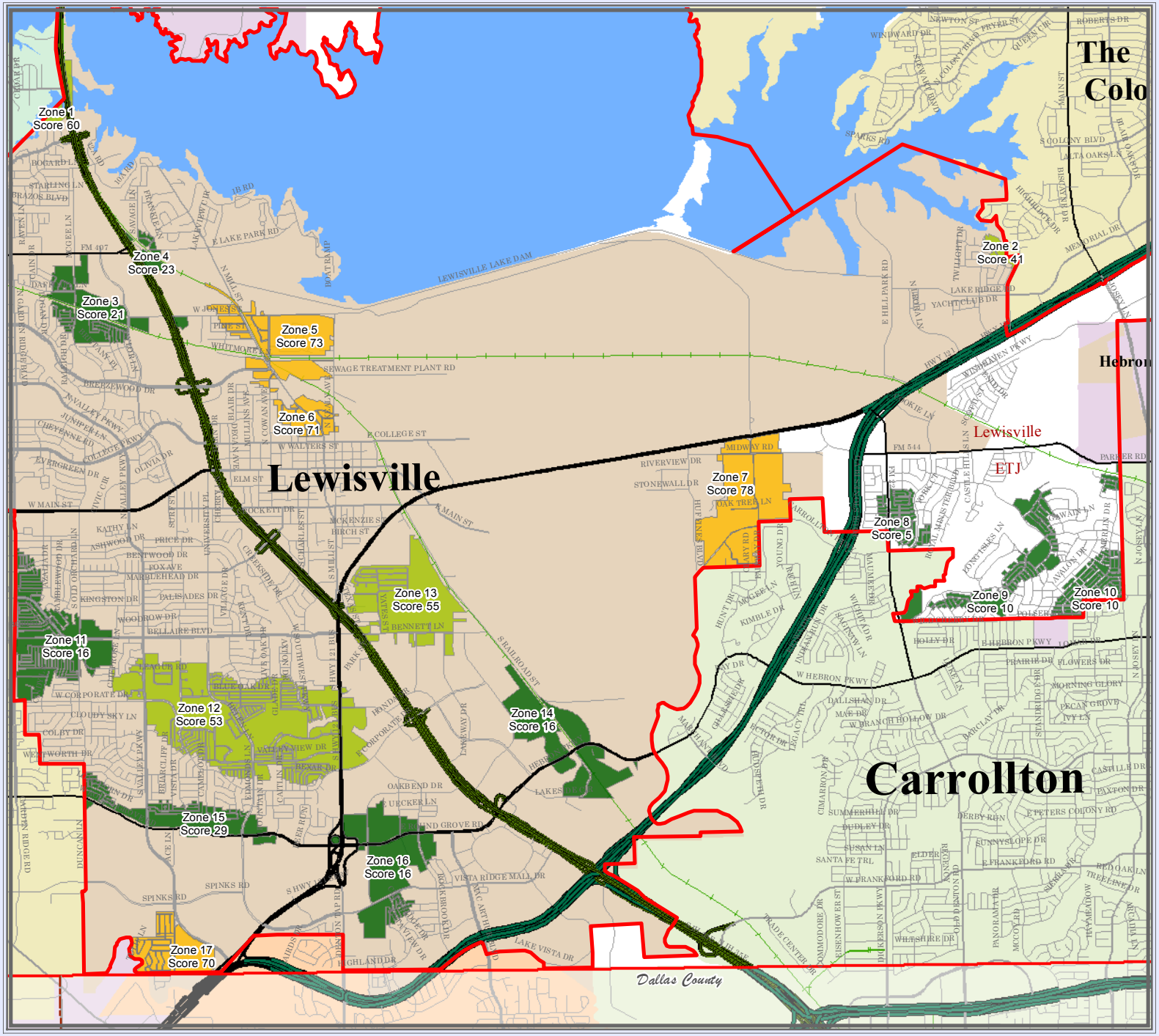


DENTON COUNTY

Lewisville Fire District


Zone 1
Score 60
Zone 2
Score 41
Zone 3
Score 21
Zone 4
Score 23
Zone 5
Score 73
Zone 6
Score 71
Zone 7
Score 78
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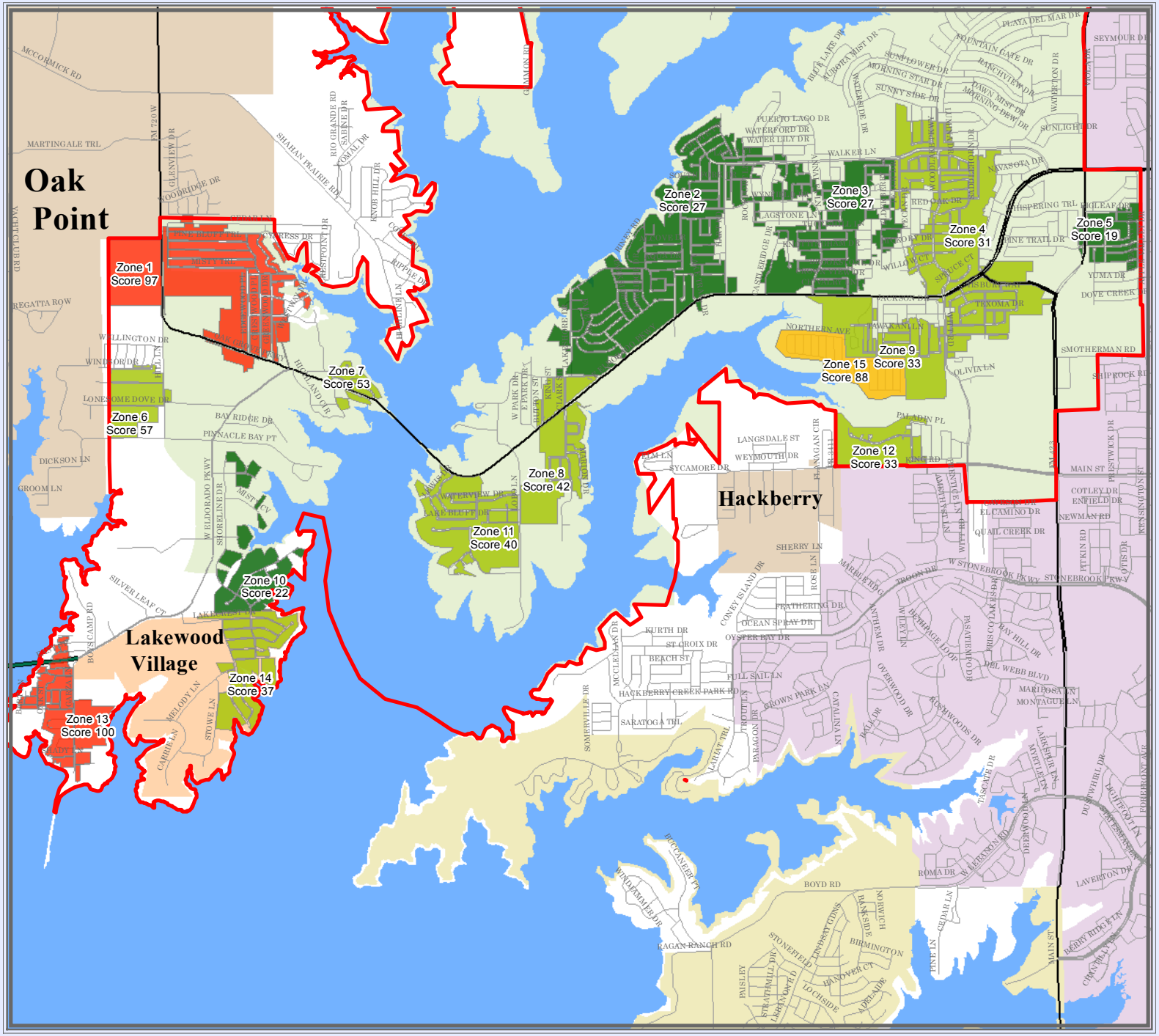
Score 5
Zone 9
Score 10
Zone 10
Score 10
Zone 11
Score 16
Zone 12
Score 53
Zone 13
Score 55
Zone 14
Score 16
Zone 15
Score 29
Zone 16
Score 16
Zone 17
Score 70
Lewisville
Lewisville ETJ
Carrollton
The Colo
Hebron
Dallas County
LEWISVILLE LAKE DAM
SEWAGE TREATMENT PLANT RD
W HEBRON PKWY
E HEBRON PKWY
FM 544
SPINKS RD
S MAIN ST
W MAIN ST
E COLLEGE ST
W COLLEGE ST
S RAILROAD ST
MIDWAY RD
PARKER RD
MEMORIAL DR
S COLONY BLVD
E PETERS COLONY RD
E FRANKFORD RD
W FRANKFORD RD
VISTA RIDGE MALL DR
LAKE VISTA DR
TRADE CENTER DR
WINDWARD DR
NEWTON ST
ROBERTS DR
SPARKS RD
LAKE RIDGE RD
YACHT CLUB DR
WINDHAVEN PKWY
OKIE LN
RIVERVIEW DR
STONEWALL DR
OAK TREE LN
HUFFINES BLVD
CANARY DR
JONES ST
MAUMELLE DR
WICHITA DR
SACKNOW LN
INDIANWOOD DR
KIMBLE DR
HUNT DR
MCGEE LN
HOLLY DR
PRAIRIE DR
FLOWERS DR
MORNING GLORY
PECAN GROVE
IVY LN
DALLSHAN DR
MAE DR
W BRANCH HOLLOW DR
PARCLAY DR
STANDRIDGE DR
CASTILE DR
PAXTON DR
DERBY RIDGE
SUMMERHILL DR
DUDLEY DR
SUSAN LN
SANTA FE TRL
SUNNYSLOPE DR
ELDER
GREENBRIER
OLD CLIFTON RD
WHITSHIRE DR
PANORAMA TRL
MCCOY LN
RED OAK LN
TREELINE DR
ARGYLE LN
DICKERSON PKWY
KEISENHOWER ST
COMMODORE DR
CIMARRON DR
RUSSELL DR
LEGACY TRL
ROSEWOOD DR
LAKESIDE DR
LAKEWAY DR
HERBERT DR
E CORPORATE DR
W CORPORATE DR
HONDO DR
OAKBEND DR
E UECKER LN
GRAND GROVE RD
HIGHLAND DR
HIGHBROOK DR
ARC ARTHUR RD
S HWY 121
BENNETT LN
MCKENZIE ST
HIRCH ST
ROCKETT DR
ELM ST
W WALTERS ST
W JONES ST
WHITMORE
PIKE ST
N COWAN AVE
N MILL ST
S MILL ST
CREEKSIDE DR
VALLEY VIEW DR
REXAR DR
BLUE OAK DR
LEAGUE RD
BELLAIRE BLVD
WOODROW DR
PALISADES DR
KINGSTON DR
MARBLEHEAD DR
FOX AVE
BENTWOOD DR
PRICE DR
ASHWOOD DR
KATHY LN
OLWIN DR
EVERGREEN DR
CHEYENNE RD
JUNIPER LN
N VALLEY PKWY
BREEZEWOOD DR
TANK RD
FM 407
E LAKE PARK RD
W LAKE PARK RD
BOGARD LN
STARLING LN
BRAZOS BLVD
RAVEN LN
MCGEE LN
SAVAGE LN
FRANKLIN
LAKEVIEW DR
BOAT RAMP
HIGHLOCK DR
BISSONNET DR
ALTA OAKS LN
BLAIR OAKS DR
MAIN ST
ROSEN LN
N TEXAS
CEDAR DR
CLAIR DR
CHAIN DR
DARE LN
CLOUDY SKY LN
COLBY DR
WEST WORTH DR
SOUTHERN DR
SOUTHERN RIDGE RD
DUNNIGAN
ACE LN
BRANCLIFF DR
VISTA DR
CAMELOT DR
CAPLIN LN
BLENHEIM
EDGE
PARK RUN
SOUTHWESTERN
ANTIOCH DR
PARK
S HWY 121 BYP
N HWY 121 BYP
E HILL PARK RD
N HILL PARK RD
TWILIGHT DR
MAYNARD
CAMBRIDGE DR
OLD CHURCH LN
CHERRY
UNIVERSITY DR
SUR ST
VILLAGE DR
RENTON
CASTLE HILLS
ROYAL MANOR
YORK CT
JONES ISLAND
JONES ISLAND LN
HAWAII LN
AVALON DR
CAMELIA LN
POLSER
CARROLLTON
CANARY DR
CANARY CIR
CANARY TRL
CANARY WAY
CANARY CT
CANARY PL
CANARY LN

DENTON COUNTY

Little Elm Fire District



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Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.8 miles

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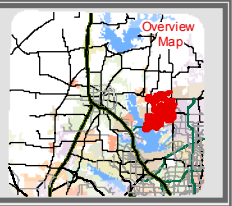


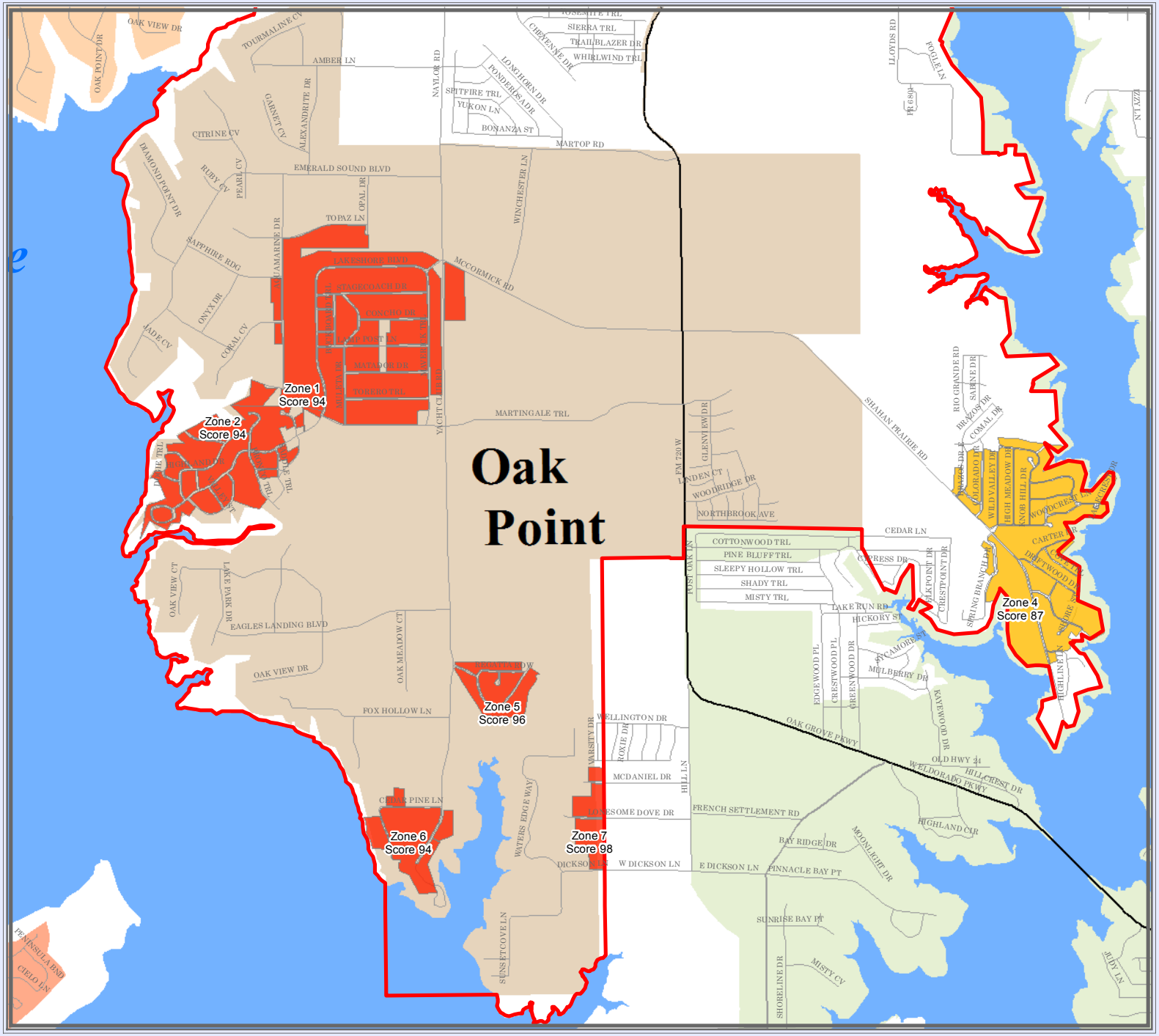
DEPARTMENT OF TECHNOLOGY SERVICES

DTS

DENTON COUNTY

DENTON COUNTY

Oak Point Fire District



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Fire Districts

Wildfire Risk Score

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N
W E
S

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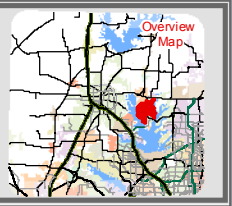


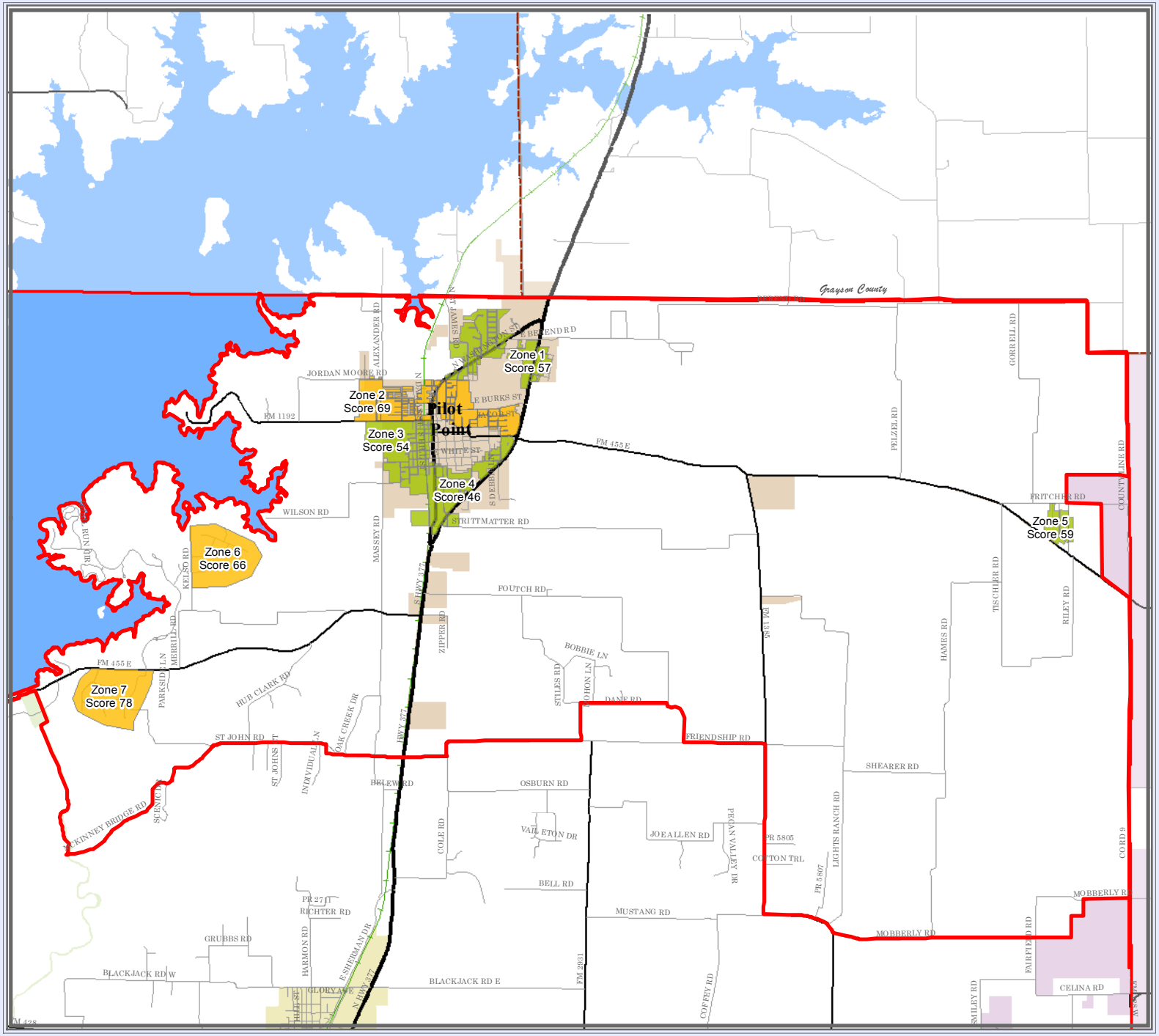
DEPARTMENT OF TECHNOLOGY SERVICES

DTS

DENTON COUNTY

DENTON COUNTY

Pilot Point Fire District



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Fire Districts

Wildfire Risk Score

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N
W E
S

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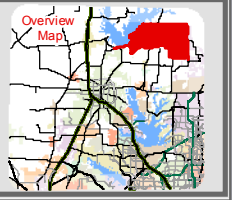


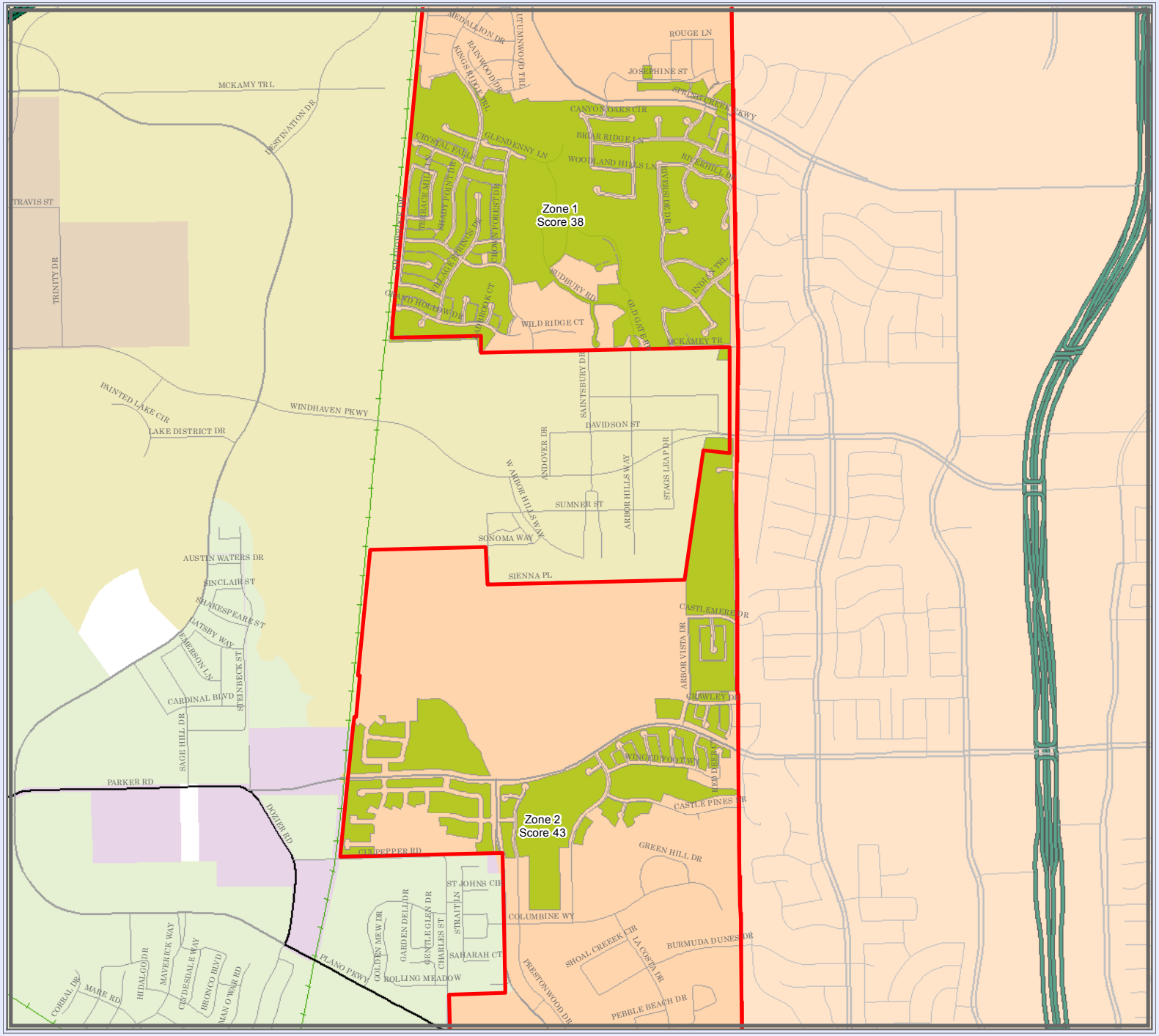
DEPARTMENT OF TECHNOLOGY SERVICES

DTS

DENTON COUNTY

DENTON COUNTY

Plano Fire District



DENTON COUNTY, TEXAS 1846

Mary Horn- County Judge
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Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
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N
W E
S

1 inch = 0.4 miles

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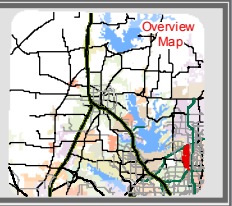


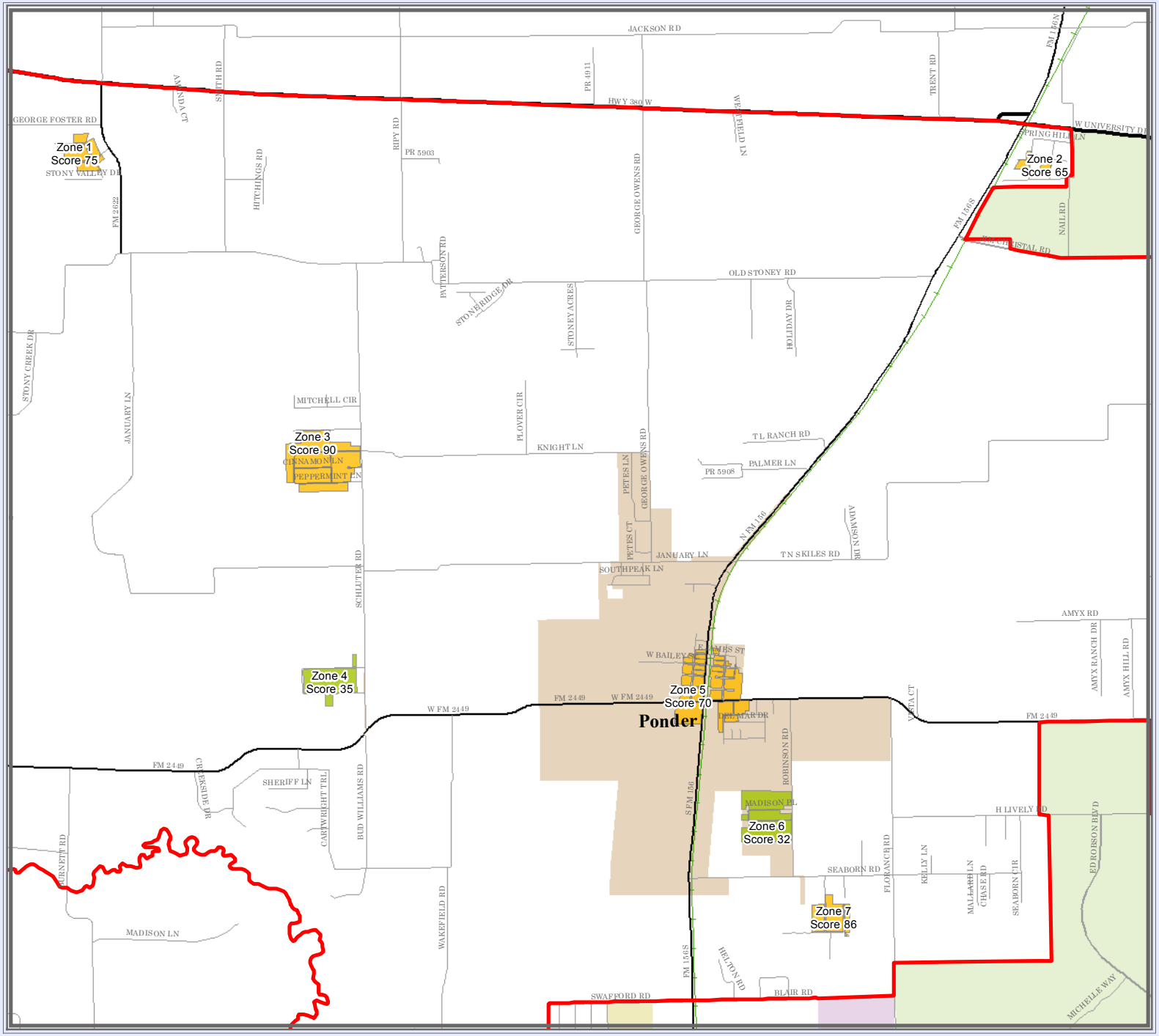
DEPARTMENT OF TECHNOLOGY SERVICES

DTS

DENTON COUNTY

DENTON COUNTY

Ponder Fire District



DENTON COUNTY, TEXAS 1846

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Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.9 miles

August 03, 2015

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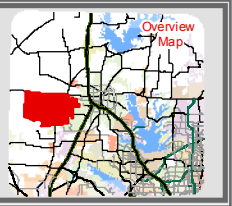

DEPARTMENT OF TECHNOLOGY SERVICES

DTS

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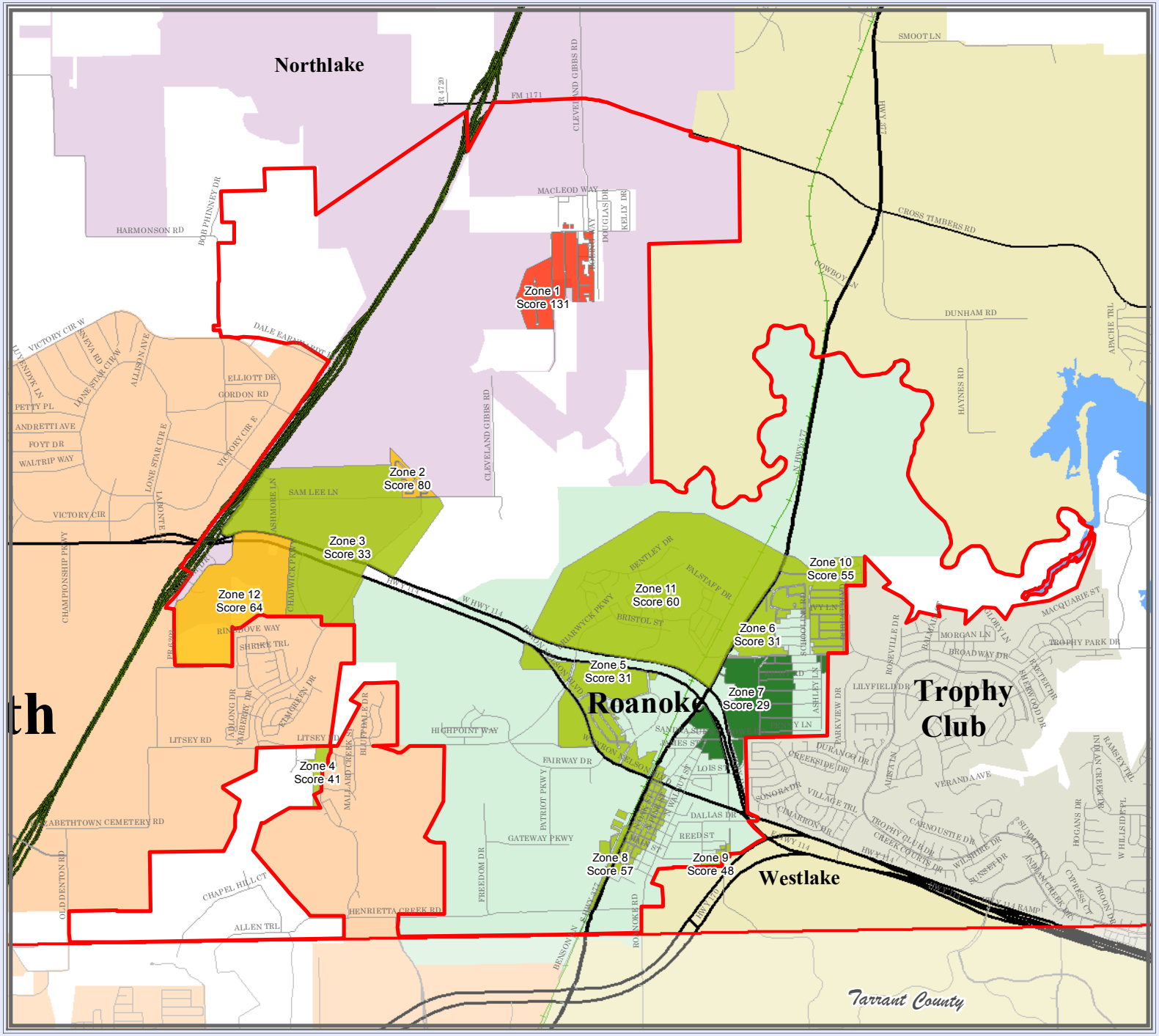
DENTON COUNTY

Roanoke Fire District



Mary Horn- County Judge
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Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

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W E
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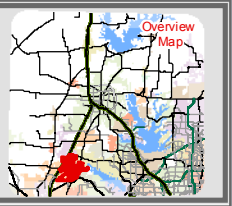

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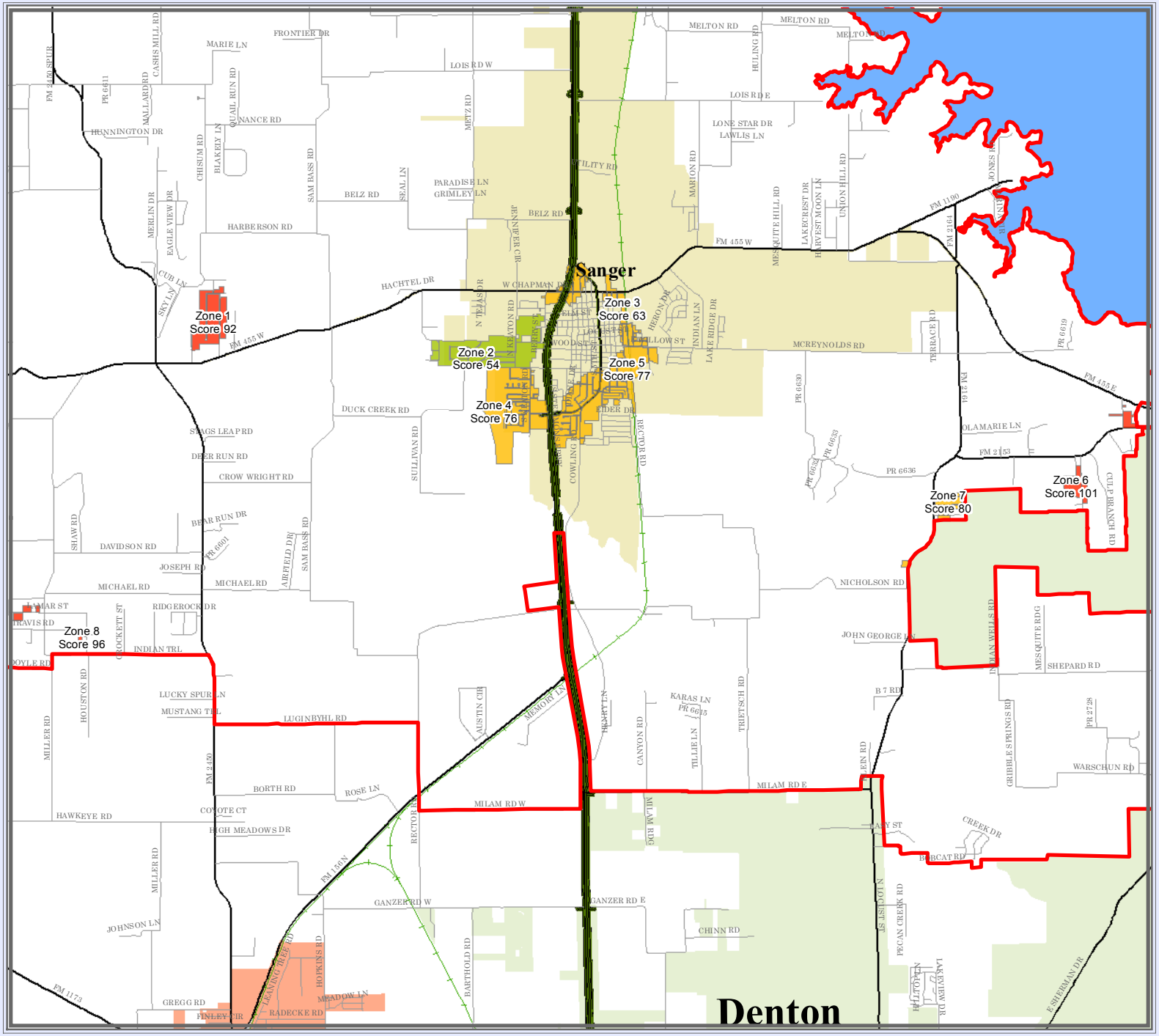
Sanger Fire District - Central



Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
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- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 1.3 miles

August 03, 2015

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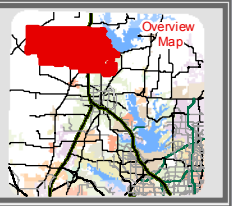

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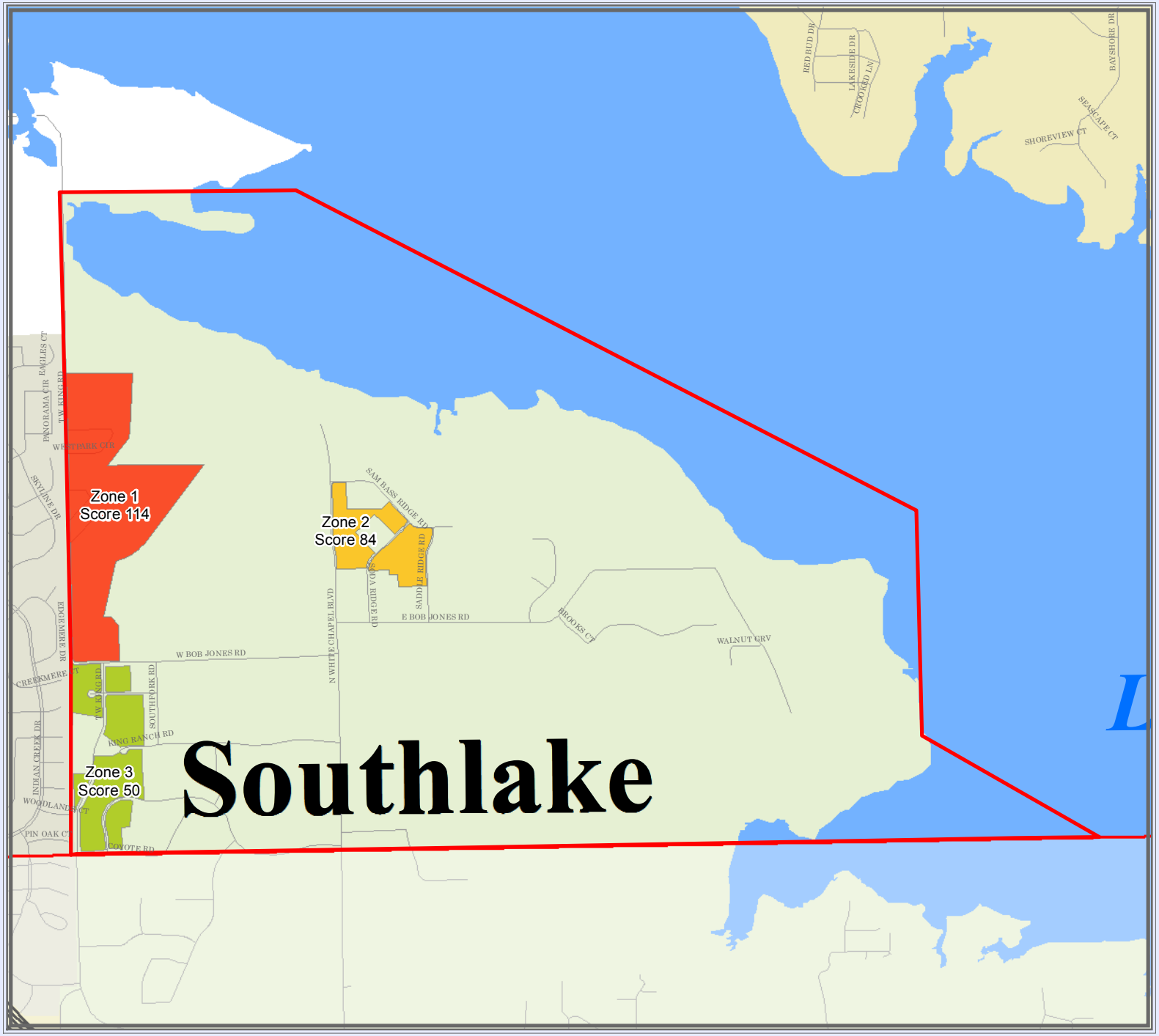
DENTON COUNTY

Southlake Fire District



Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.3 miles

August 03, 2015

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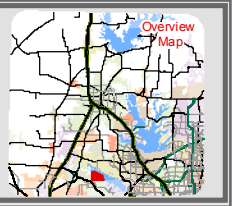

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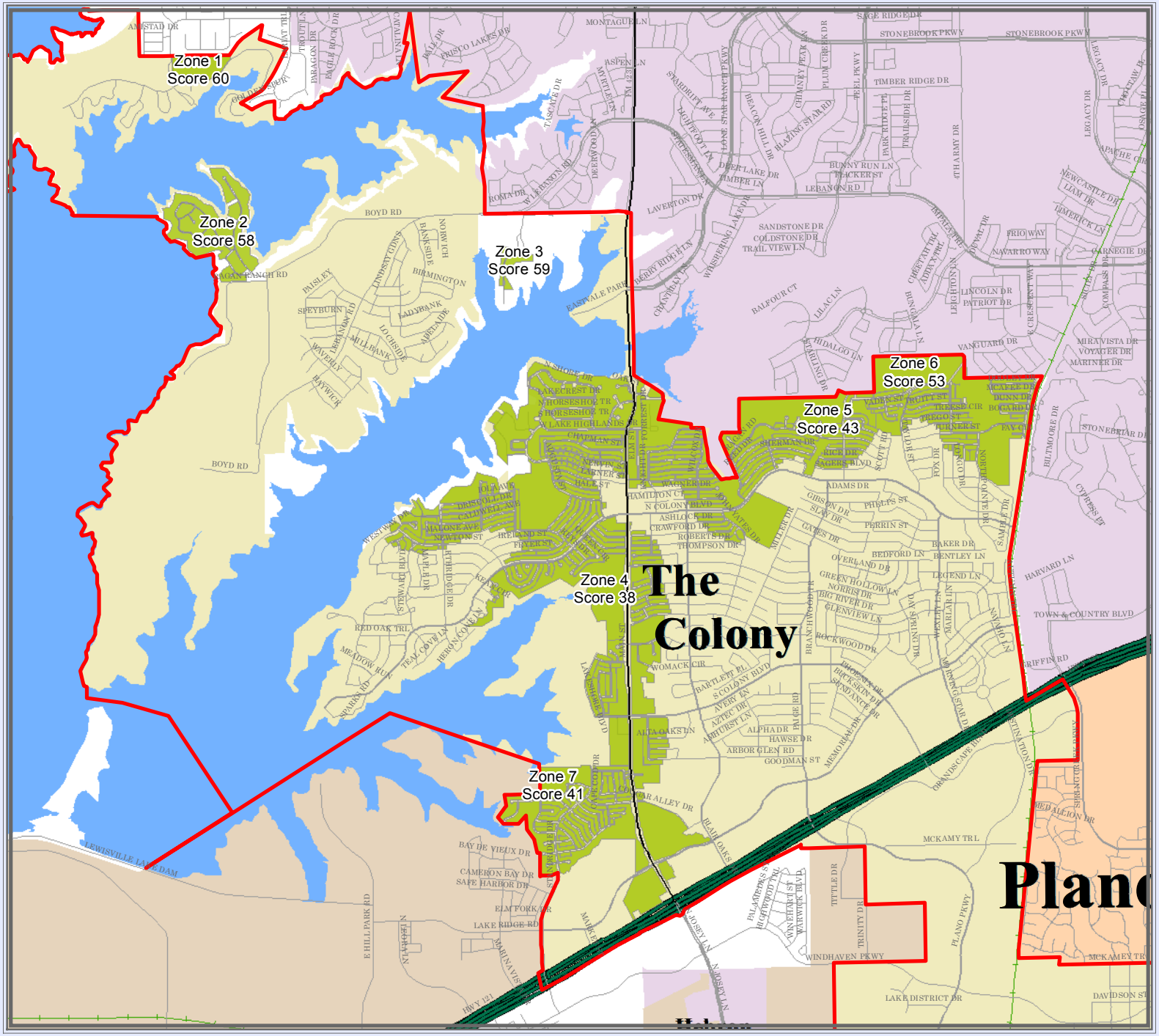
DENTON COUNTY

The Colony Fire District



DENTON COUNTY, TEXAS 1846

Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
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- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.8 miles

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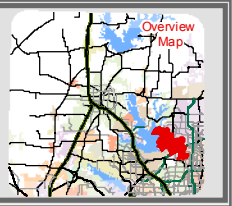

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DENTON COUNTY

DENTON COUNTY

Trophy Club Fire District

Mary Horn- County Judge
Hugh Coleman- Commissioner Precinct 1
Ron Marchant- Commissioner Precinct 2
Bobbie J. Mitchell- Commissioner Precinct 3
Andy Eads- Commissioner Precinct 4

Fire Districts

Wildfire Risk Score

- Low (<30)
- Moderate (31-60)
- High (61-90)
- Extreme (>90)

N
W E
S

1 inch = 0.4 miles

August 03, 2015

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Overview Map

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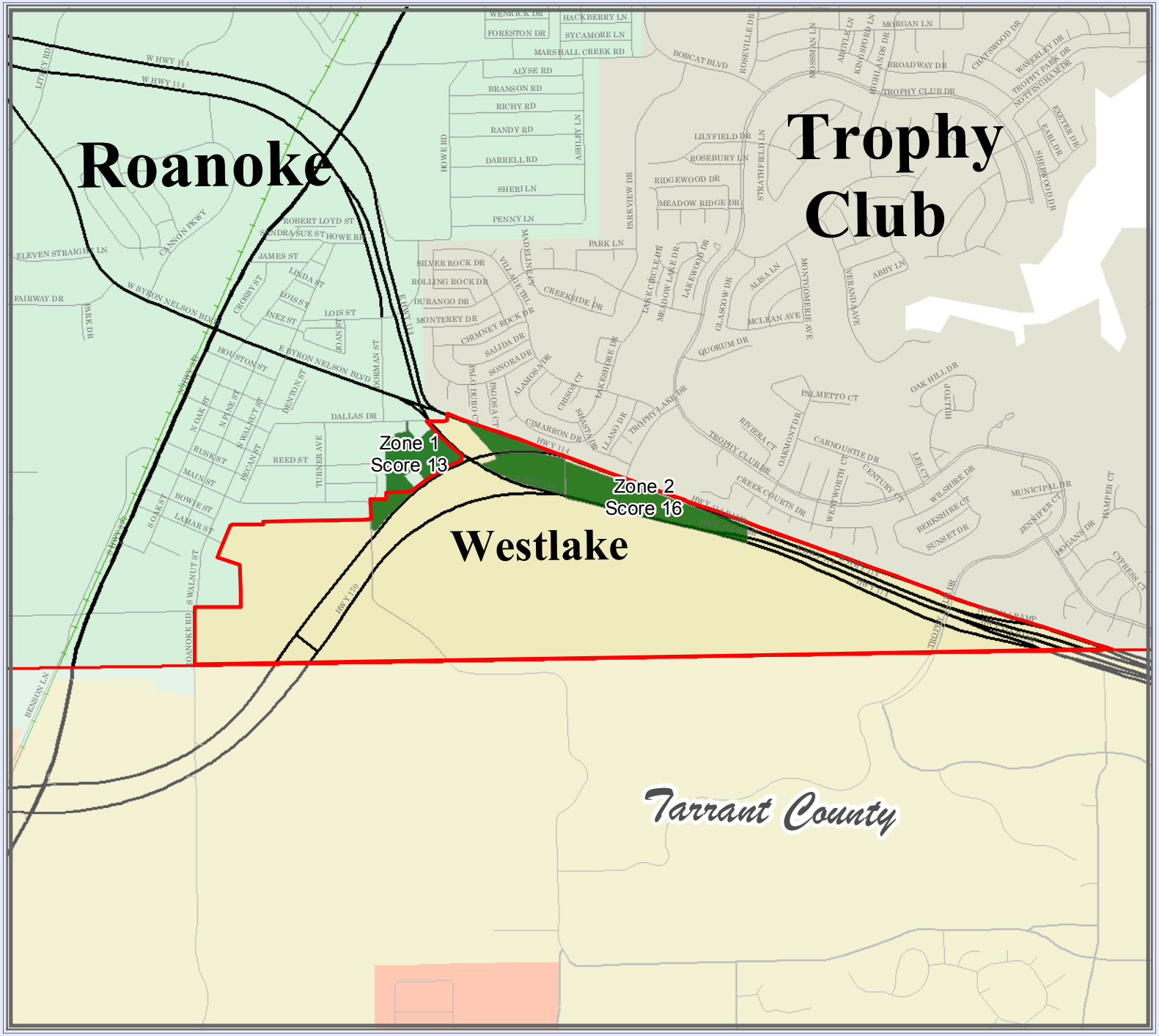
Westlake Fire District



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Fire Districts

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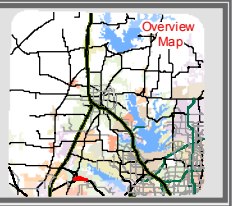

DEPARTMENT OF TECHNOLOGY SERVICES

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DENTON COUNTY

Appendix G

Letter to Mayors

DENTON COUNTY
DEPARTMENT OF EMERGENCY SERVICES
Fire Marshal ▪ Homeland Security ▪ Emergency Management

Joseph "Jody" Gonzalez
Chief / Director

9060 Teasley Lane ▪ Denton, Texas 76210 ▪ (940) 349-2840 ▪ FAX (940) 349-2841

Community Partners,

Denton County is developing a Community Wildfire Protection Plan. This plan addresses the potential risk of wildfire rapidly spreading into neighborhoods and putting homes, business, and lives at risk. Part of the plan is to identify strategies that can be used by communities to mitigate these risks. I would like to point out some tools that your community may want to consider using in addressing the risk of such catastrophic fires.

Many of the issues that have been identified as determining if a community will survive a wildfire are best addressed during development and construction. Generally, if these issues are factored in during the design of a development, a significant improvement in public safety can be accomplished, often involving no additional cost.

Firewise is a program of the National Fire Protection Association. In their document "Safer From The Start, A Guide to Firewise-Friendly Developments," information about how developers, builders, designers, residents, and community associations can work together to develop safer neighborhoods is discusses. This document can be found at:
http://www.firewise.org/~/media/Firewise/Files/Pdfs/Booklets%20and%20Brochures/BookletSaferFromtheStart.pdf

You may also want to consider the adoption of the International Urban-Wildland Interface Code™ which establishes minimum regulations for land use and the built environment. This code is fully compatible with all the International Codes™. As stated in its introduction, "This code is founded on principles intended to mitigate the hazard from fires through the development of provisions that adequately protect public health, safety and welfare; provisions that do not unnecessarily increase construction costs; provisions that do not restrict the use of new materials, products or methods of construction; and provisions that do not give preferential treatment to particular types or classes of materials, products or methods of construction.'

More and more of our citizens choose to live in the "wildland urban interface." I think most of us appreciate the beauty of these areas and understand their draw. Unfortunately, most of our citizens are unaware of the potential danger of a fire starting on their neighbors' property that could rapidly make escape from, or survival in, their own home impossible. We are encouraging fire departments throughout the county to adopted the free "Ready, Set, Go" public education program from the International Association of Fire Chiefs'. This program will help citizen prepare their property and families should a wildfire occur in their community. An example of the "Ready, Set, Go" booklet can be viewed at:
http://texasforestservice.tamu.edu/uploadedFiles/FRP/New_-_Mitigation/Protect_Your_Home/Ready%20Set%20Go.pdf

I appreciate your thoughtful consideration of these tools to improve public safety in your community. If I, or my staff, can assist you in any way please do not hesitate to call upon us.

Appendix H

Fire Resistive Plant List

Fire Resistant Plant List for Denton County

Groundcover

Ajuga Carpet Bugleweed
Dianthus species Dianthus, Garden carnation, or Pinks
Phlox subulata Creeping phlox
Lamium species Dead nettle
Pachysandra terminalis Japanese pachysandra
Sedum sp Sedum, stonecrop
Sempervivum species Hens and chicks
Thymus praecox Creeping thyme
Veronica species Speedwell

Perennials

Achillea species Yarrow
Allium schoenoprasum Chives
*Armeria maritima*Sea thrift
Aquilegia speciesColumbine
Asclepias tuberosa Butterflyweed
Carex species Sedges
Coreopsis species Coreopsis or Tickseed
Echinacea purpurea Conefl ower
Engelmannia peristenia Englemann daisy
Delphinium varieties Delphinium
Gaillardia varieties Blanket flower
Heuchera sanguinea Coralbells
Hemerocallis species Daylily
Hosta species Hosta lily
Kniphofia uvaria Red-hot poker
Iris hybrids Iris, tall bearded
Lantana horrida Lantana
Lavandula species Lavender
Linum perenne Flax, blue
Oenothera species Evening primrose
Papaver orientale Oriental poppy
Penstemon sp. Penstemon
Perovskia atriplicifolia Russian sage
Ratibida columnifera Prairie coneflower or Mexican hat
Rudbeckia hirta Black eyed Susan
Stachys byzantine Lamb’s ear
Salvia species Salvia or Sage
Scutellaria Skullcap
Tecoma stans Yellowbells, Esperanza
Yucca species Yucca

Fire Resistant Plant List for Denton County

Shrubs
Anisacanthus quadrifidus var. wrightii Flame acanthus
Agave species
Callicarpa americana American beautyberry
Cotoneaster apiculatus Cranberry cotoneaster
Caryopteris x clandonensis Blue-mist spirea
Cornus drummondii Roughleaf dogwood
Dalea frutescens Black dalea
Lagerstroemia Crape myrtle
Mahonia aquifolium Oregon grapeholly
Philadelphus texensis Texas Mock-Orange
Punica granatum Pomegranate
Rhus species Sumac
Rosa species Rose
Salix species Willow
Spirea species Spirea
Symphoricarpos orbiculatus Coralberry
Viburnum species Viburnum

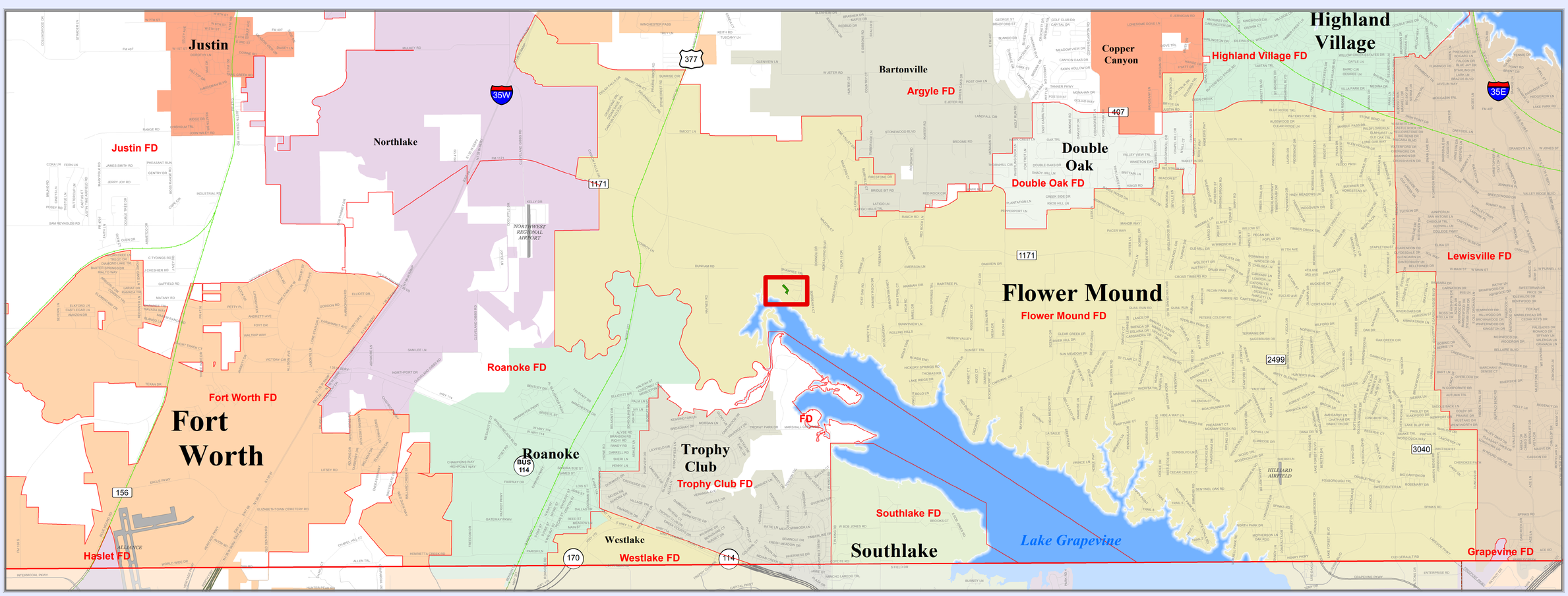
Trees
Catalpa speciosa Western catalpa
Celtis occidentalis Common hackberry
Cercis Canadensis Eastern redbud
Carya illinoinensis Pecan
Carya texana Hickory
Chilopsis linearis Desert Willow
Cotinus obovatus American smoketree
Fraxinus texensis Texas ash
Juglans nigra or *microcarpa* Walnut, black or Texas
Prunus mexicana Mexican plum
Sapindus drummondii Western soapberry
Sophora secundiflora Texas mountain laurel
Quercus sp. Oaks
Ungnadia speciosa Mexican buckeye

Appendix I

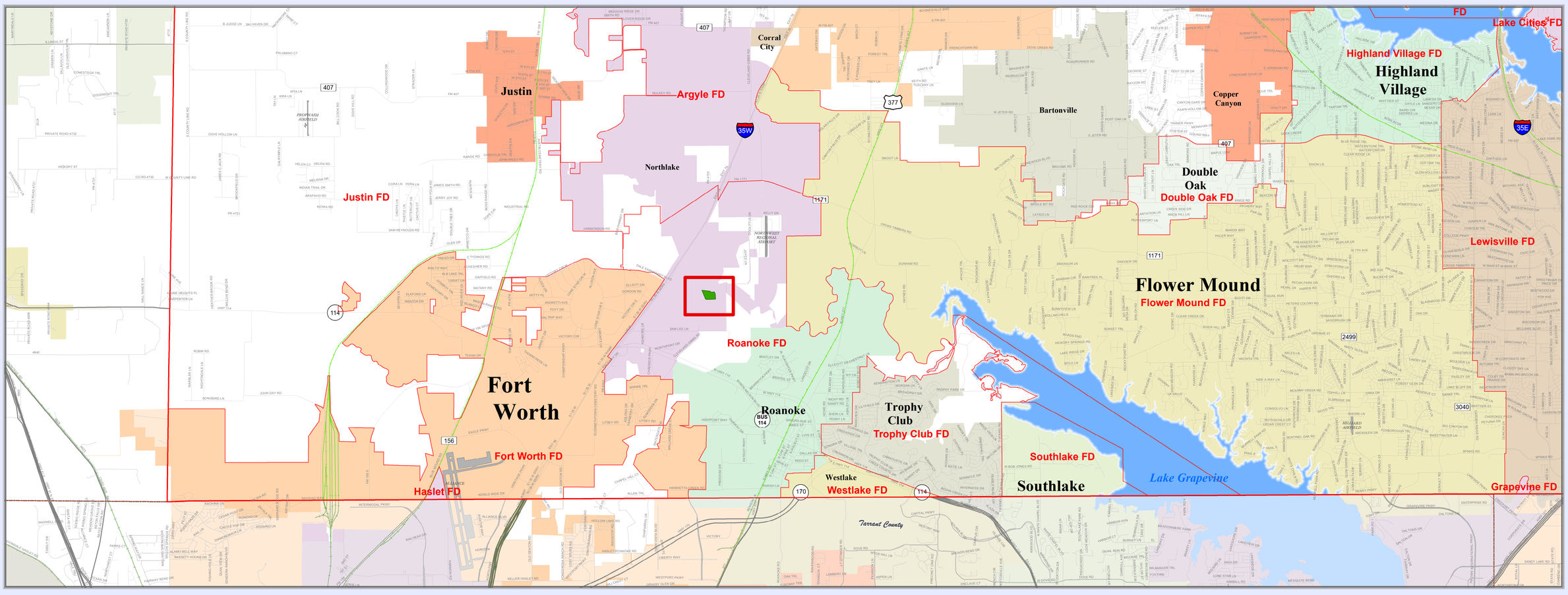
Maps of Training and Fuel Reduction Projects

Roanoke Hills Subdivision

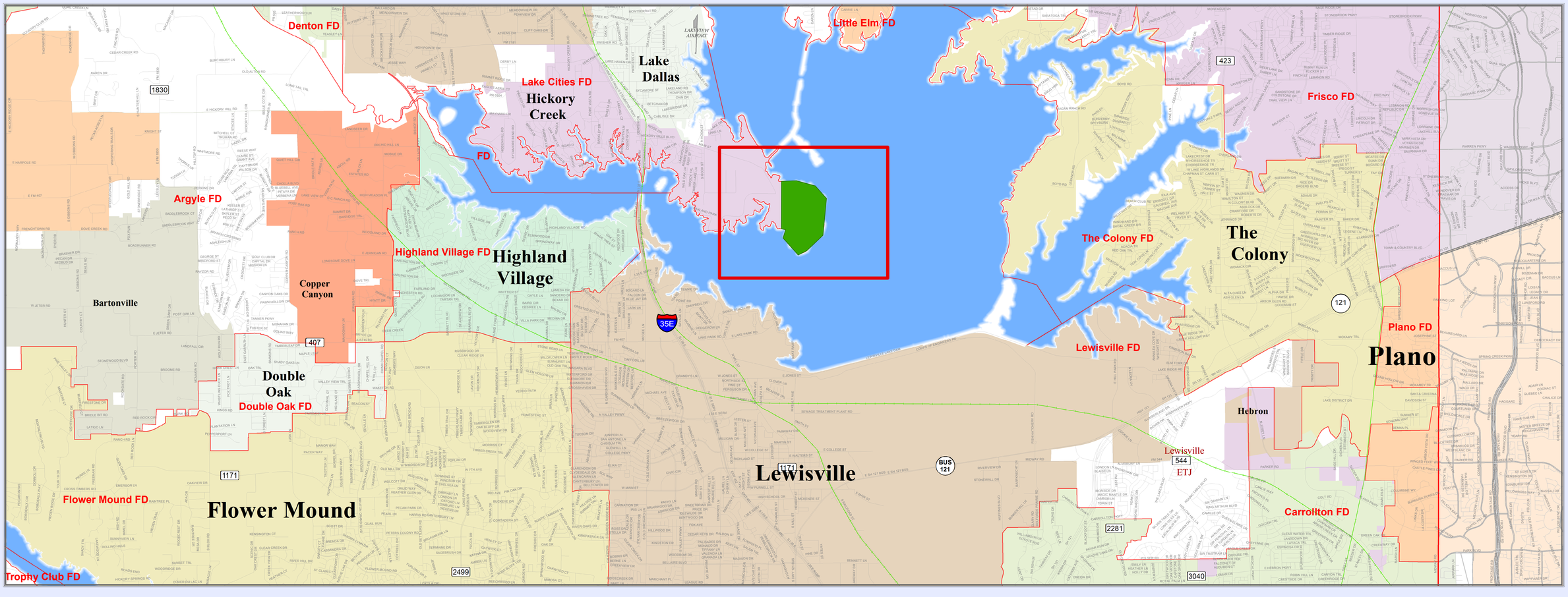
Fuel Reduction Project Area



Cleveland Gibbs & 114
Fuel Reduction Project Area



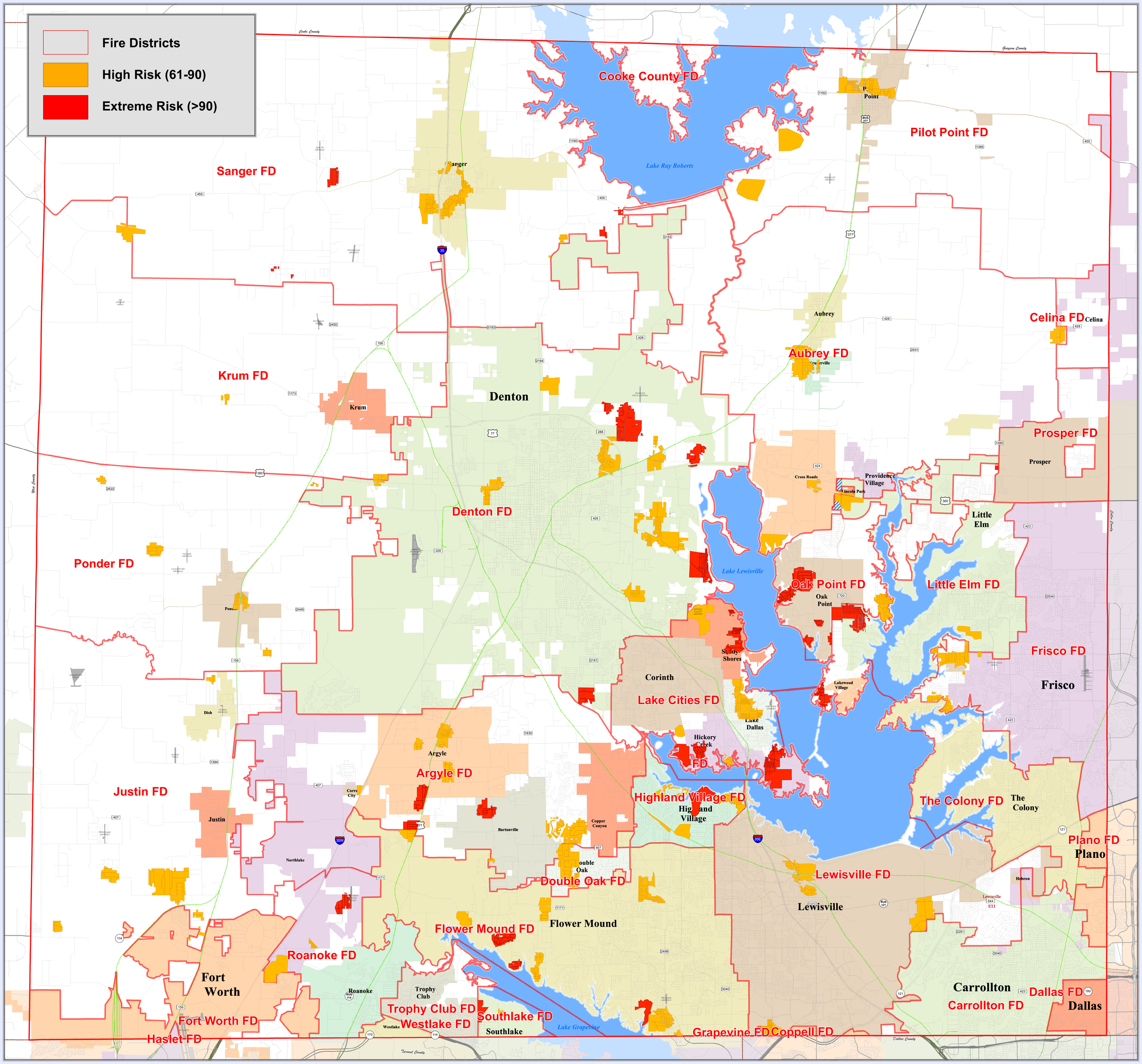
Queens Point
Fuel Reduction Project Area



Appendix J

Map of High and Extreme Risk Areas

High & Extreme Wildfire Risk Zones



Appendix K

Tactical Response Guide Check List

Tactical Response Guide Check List
for High or Extreme Wildfire Risk Areas

Note: This is meant to be a starting point for planning with an emphasis on weather controlled fires that may require evacuation as the initial objective.

Evacuation Planning:

- ❑ Estimated number of households/or population_____
- ❑ Issues with egress and ingress_____
- ❑ Evacuation routes_____
- ❑ Shelter location_____
- ❑ Target groups (nursing homes/disable/daycares/schools/etc.)_____

  _____
- ❑ Mass Notification System_____
- ❑ Resources needed to evacuate neighborhood
  - o Fire_____
  - o Law Enforcement_____

Prioritizing Objectives After Evacuation

- ❑ Hazardous Materials Sites_____
- ❑ Critical Infrastructure
  - o Transportation_____
  - o Utilities_____
  - o Buildings_____
- ❑ Economically significate locations_____
- ❑ Historic/Cultural Sites_____

Tactical Response Guide Check List
for High or Extreme Wildfire Risk Areas

Note: This is meant to be a starting point for planning with an emphasis on weather controlled fires that may require evacuation as the initial objective.

Response Considerations:

- ❑ Aboveground utilities_____
- ❑ Significant geographical features_____
- ❑ Fuel types_____
- ❑ Areas of Refuge_____
- ❑ Water supply type and location_____
- ❑ Firefighting resources and ETA_____
- ❑ Staging Area(s)_____
- ❑ Landing zone for EMS helicopter_____
- ❑ Other Considerations_____

_____

_____

_____

_____

Appendix L

Prescribed Burning Planning Worksheet

Prescribed Burning Planning Worksheet

This form is only a starting point to help when planning, developing, and coordinating a hazardous fuels reduction project to protect homes, property, and or values at risk from wildland fire.

Consideration	Potential Action Needed	Action Completed
Local Jurisdiction Tree Ordinances	Exclusion in Ordinance for Hazard Mitigation/Public Safety	
Public or Private Property	Memorandum of Understanding (MOU) or Liability Release needed	
Project Type	Shaded Fuel Break, Fire Break, Defensible Space, Prescribed Fire	
Culturally Significant Location	State Historic Preservation Office Contacted	
Endangered/Threatened Species Present	Contact Wildlife Biologist from TFS or TPWD	
Erosion/Water Quality Concerns	Contact TFS WUI Specialist/Forester	
Forest Health/Pest Concerns (Oak Wilt)	Contact TFS WUI Specialist/Forester	
Equipment Needs	Personal Protective Equipment (PPE), Chainsaws, Loppers, Pruning Hand tools, Leaf Blowers, Wood Chipper	
Personal Completing Work	Fire Department, Home Owner Association, City/County Staff, Volunteer/Civic Group	
Debris Removal	Pile on site, Broadcast on site, Remove off-site	
Continued Maintenance Plan	Who is responsible, how often	
Public Education Opportunity	Press Release, Media invite	
Project Documentation	Before/After photo points, Acreage, Length, Width, Cost Tracking	