

## Summary of Site visit on January 9, 2024 – Grey Forest, Portions of Helotes and Lee Creeks

Prepared by Lee Marlowe, Sustainable Landscape Ecologist, San Antonio River Authority

A site visit was conducted in Grey Forest on January 9, 2024, along public portions of Helotes and Lee Creeks. Natural resources management of these areas has occurred over multiple years to include removal of problematic non-native plants such as Privet, Heavenly bamboo, Giant Reed, Golden Bamboo, Chinese Tallow, and others. Additionally, native plants have been installed as seed and live plants within these areas to increase native species biodiversity, improve water quality and support landscape resiliency in the watershed.

Significant improvements to the local ecology were observed because of the natural resource management that has occurred over the past approximate 10-12 years. The vegetation cover was observed to currently consist of mostly diverse, native plant communities offering numerous ecological benefits along these creeks which is a significant change from past observations in the same areas. In the past, these areas consisted of dense non-native cover over large areas offering few ecological benefits. While some non-native plants still exist, they represent a much smaller amount of cover.

A summary table of plants observed during the site visit was prepared and includes 68 native species and 11 non-native species. This list was prepared from observations on January 9, 2024, and does not represent all the species present along Helotes and Lee Creeks. Recommended tasks for continued natural resource management were identified during the site visit and are summarized below.

- Continued removal of problematic non-native plants is recommended. Species of main concern include Giant Reed (*Arundo donax*), Privet (*Ligustrum species*), Primrose jasmine (*Jasminum mesnyi*), Largeleaf lantana (*Lantana camara*), Heavenly bamboo (*Nandina domestica*), Chinese tallow (*Triadica sebifera*), Brazilian vervain (*Verbena brasiliensis*), and Bigleaf periwinkle (*Vinca major*). All but one of these species are identified in the Texas Invasives Database which can be found online at [www.texasinvasives.org](http://www.texasinvasives.org). These species are known to spread readily within natural areas in our region and reduce native species biodiversity.
- Areas of erosion were observed with most appearing to be manageable through installation and establishment of deep-rooted native plants for stabilization. Eastern gamagrass (*Tripsacum dactyloides*) is a good choice and has been planted for this purpose in some locations where it has established and is doing well. Other species that may be appropriate for specific erosion sites include Buttonbush (*Cephalanthus occidentalis*), Virginia Wildrye (*Elymus virginicus*), Bushy bluestem (*Andropogon glomeratus*), Inland Sea Oats (*Chasmanthium latifolium*), Switchgrass (*Panicum virgatum*), and other native species. Monitoring of eroding areas is also recommended to determine changes through time, identify locations that require corrective measures to address erosion, and, if implemented, the effectiveness of any treatments.
- Some locations within public land along the creeks were observed to have been recently mowed very low to the ground. Mowing very low to the ground within the buffer area adjacent to creeks and other water bodies is not recommended as this can reduce bank stability and impact water quality. It is recommended to leave vegetated buffers immediately adjacent to water bodies to include dense cover by herbaceous and woody materials, if possible, for greatest stability and water quality benefits such as filtering of pollutants, energy dissipation, and slowing flows. Flood conveyance is an important consideration in determining the types and amount of vegetative

cover that is appropriate for specific locations. If areas must be mowed or cut it is recommended that a minimum height of 6 inches be left if possible.

- One location was observed where native plants were cut or removed and replaced with what appeared to be non-native annual grass cover. Non-native annual grass cover typically does not provide long term soil stabilization, and it is recommended that native perennial cover alone or in combination with native annual species be used where possible for vegetation management efforts.

**Park Management Plan  
Grey Forest Community Board  
October 20, 2016**

**Landowner: City of Grey Forest**

**Legal Description:** CB 5744 BLK 2 P-100 CB 5744 P-102 thru P-112 (27.378 AC) & BLK 13 LOT N35.14FT

**Source:** Bexar CAD- Map of Property ID 353617, Exhibit A from Special Warranty Deed dated January 18, 2016

**Vision Statement**

The property is to remain intact as a wildlife sanctuary and a green space for educational and recreational use by citizens of Grey Forest, Texas. As such, Grey Forest City Park property shall be managed to promote and restore native wildlife habitat and diversity, in addition to providing educational and recreational opportunities.

**Land Description**

**Topography/Aspect** - See Figure 1 and 2 attached

**Sources:**

Figure 1: Downloaded 10/7/2016, Aerial City of San Antonio 2014 Floodplain Data:

FEMA FIRM Panel 210 Map No. 48029C0210G, Map Revised Sept. 29, 2010

Figure 2: Downloaded 10/7/2016, USGS Helotes, TX 1992, 29098-E6-TF-024

**Hydrology**- A jurisdictional waters of the U.S delineation shall be performed onsite and submitted to the US Army Corp of Engineers for review and concurrence regarding the extent of jurisdictional waters found on the park property.

In addition, please see Figure 1 for the 100-year floodplain information, Figure 2 for Helotes and Lee Creek locations and Figure 3 for the National Wetlands Inventory

**Sources:** Figure 3: Downloaded 10/7/2016, US Fish & Wildlife Service: National Wetland Inventory, Helotes, TX 1994

**Soils**- See Figure 4

**Sources:** Downloaded 10/7/2016-USDA - Natural Resource Conservation Service (NRCS)

**Threatened or Endangered Resources** – A threatened and endangered species habitat assessment shall be performed onsite and submitted to the Texas Parks and Wildlife Department and US Fish and Wildlife Service for review and concurrence regarding any potential state or federally listed threatened or endangered species habitat found on the park property. See also Figures 5A, 5B and 6- Grey Forest is located in the Edwards Aquifer Contributing Zone and Karst Zone 3.

**Sources:** Figures 5A and 5B: Downloaded 10/7/2016, Karst Zone data: US Fish & Wildlife Service:

<http://www.fws.gov/southwest/es/austintexas/>. Bexar County karst zones (revision of 1994 Karst Zones);

Including minor revision Dec 2006 Figure 6: Downloaded 10/7/2016, Recharge/Contributing Zone Data: TCEQ

<https://www.tceq.texas.gov/gis/download-tceq-gis-data>. Texas Commission on Environmental Quality (TCEQ)

Publication\_Date: 09/01/2005 Title: Edwards Aquifer Protection Program, Chapter 213 Rules - Recharge Zone, Transition Zone, Contributing Zone, and Contributing Zone within the Transition Zone.

Geospatial\_Data\_Presentation\_Form: vector digital data Publication\_Information: Publication\_Place: Austin, Texas  
Publisher: TCEQ

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**Grey Forest Community Board**  
October 20, 2016

**Plant Communities** – Per “*The Vegetation Types of Texas, including Cropland*” by the Texas Parks and Wildlife Department, Wildlife Division, 1984, Grey Forest is found in the Edwards Plateau Ecological Area (Gould) and mapped as Live Oak-Ashe Juniper Woods (*Quercus virginiana- Juniperus ashei*). “Woods” are defined as Woody plants mostly 9 to 30 feet tall with closed crowns or nearly so (71 to 100 percent canopy cover); midstory usually lacking.

Live Oak- Ashe Juniper Woods includes the following commonly associated plants: Texas oak, shin oak, cedar elm, evergreen sumac, escarpment cherry, saw greenbriar, mesquite, poison oak, twistleaf yucca, elbowbush, cedar sedge, little bluestem, neally grama, Texas grama, meadow dropseed, texas wintergrass, curly mesquite, pellitory, noseburn, spreading sida, wood sorrel, and mat euphorbia.

Distribution: Chiefly on shallow limestone soils on the hills and escarpment of the Edwards Plateau.

Also, please see Figure 7 for the current TPWD vegetation analysis tool- the Ecological Mapping System of Texas.

Source: Figure 7- Downloaded 10/7/2016, ESMT Data: TPWD Ecological Mapping Systems of Texas: April 2014

**Fauna**- Section Under Construction

(Mammal, bird, herp, and fish species seen on property, particularly less common species that may be helped by management practices)

**Exotic Species**- Please see the attached “Preliminary report on our Creek Assessment” dated 4/18/16 for data regarding the exotic and invasive plant species documented by the Balcones Invaders on the park property and their frequency of occurrence.

**Cultural Resources**- Code requires state agencies and political subdivisions of the state — including cities, counties, river authorities, municipal utility districts, and school districts — to notify the Texas Historical Commission (THC) of ground-disturbing activity on public land. The law also established the designation of State Antiquities Landmark, which may be applied to historic buildings as well as archeological sites. The Antiquities Code (Texas Natural Resource Code, Title 9, Chapter 191) and accompanying Rules of Practice and Procedure (Texas Administrative Code, Title 13, Chapter 26) can be found under Statutes, Regulations, and Rules. Examples of projects that require review under the Antiquities Code of Texas include:

- Construction of reservoirs by river authorities and water districts
- Construction of recreational parks or the expansion of existing facilities by city governments
- Energy exploration by private companies on public land
- Construction of water and wastewater lines and treatment plants

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October 20, 2016

- Rehabilitation or demolition of a building owned by a political subdivision of the state that is listed in the National Register of Historic Places, individually or as part of a historic district, or that has other state or local designations.

Historic structures- a reconnaissance-level field survey of the park property shall be conducted to evaluate historic-age structures for their significance and eligibility to the National Register of Historic Places (NRHP). The report shall include a summary of potential constraints for future development projects conducted by the City that will require coordination with SHPO.

Archaeology- a review of the THC Atlas revealed that there are no sites recorded within the park boundaries. The threshold, as a municipality, to trigger a Texas Antiquities Code compliance survey is disturbing (grubbing and earth moving) over 5 acres. A compliance survey is not required at this time; however, should future plans involve the disturbance of 5 acres then a survey would be required at that time.

### **Management Plan**

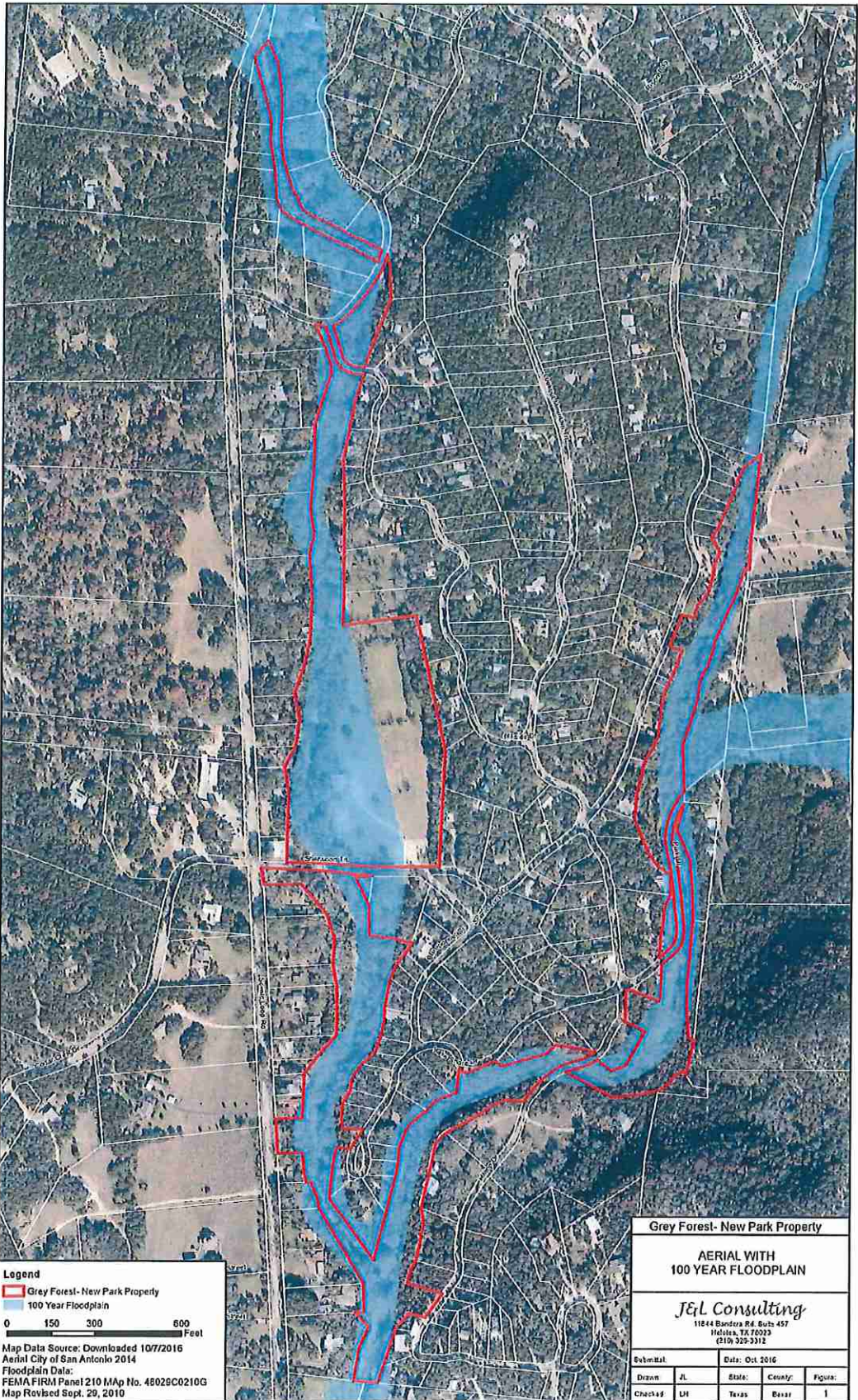
**Goals** – 1. Restore a stable, native stream system that prevents property loss from erosion and increases the beneficial uses of our waterways by humans and the natural world, 2. Promote and restore native wildlife habitat and diversity, 3. Develop vegetation management practices for the short and long term control of exotic invasive species.

**Objectives** 1. Control exotic invasive species to restore the native wildlife habitat.

**Objectives Justification** According to historical and current vegetation mapping tools (TPWD), exotic invasive species that have escaped from our backyards into the creek are significantly impacting the local flora and fauna.

### **Management Practices PRIORITY**

1. Modify Austin Watershed Protection Grow Zone Restoration Plan form (attached). This will be used to track work efforts.
2. Mechanical girdling and/or removal (no herbicide) of ligusturm, Tree of Heaven, and Vitex to test effectiveness of deer to browse sprouts and kill tree.
3. Mechanical manipulation (weed eater) of *Vinca sps.* to test kill effectiveness.
4. Cut stump method (using Rodeo) to address *Arundo donax* in creeks and clear 10 foot swath of the bamboo thicket near Hillside bridge (coordinate phased thicket removal with adjacent neighbors).
5. Develop appropriate reasonable and feasible vegetation management practices for the short and long term control of exotic invasive species based on failure/success of Management Practices 2-4 above and level of volunteer support.



**Legend**  
 Grey Forest - New Park Property  
 100 Year Floodplain

0 150 300 600 Feet

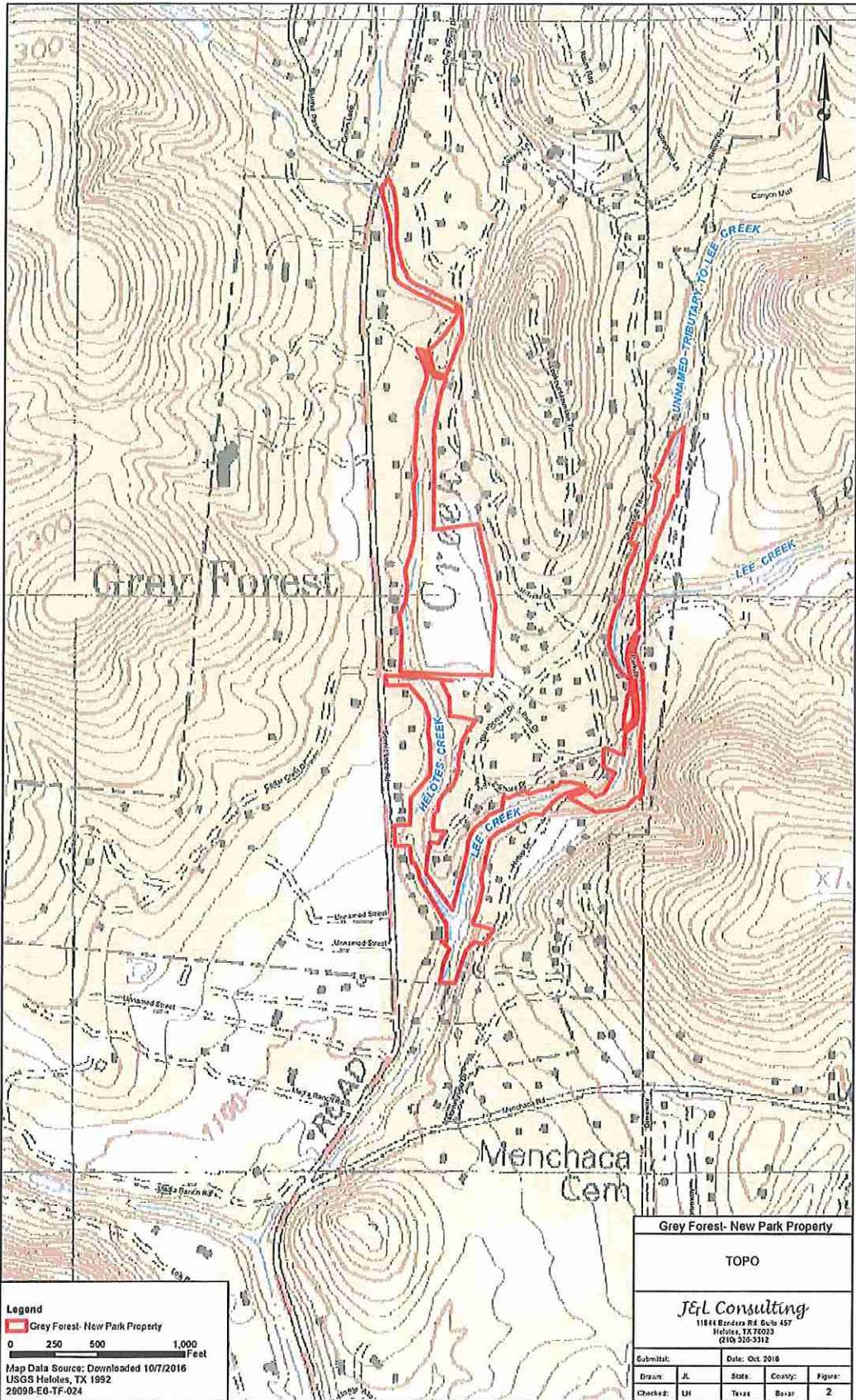
Map Data Source: Downloaded 10/7/2016  
 Aerial City of San Antonio 2014  
 Floodplain Data:  
 FEMA FIRM Panel 210 Map No. 46025C0210G  
 Map Revised Sept. 29, 2010

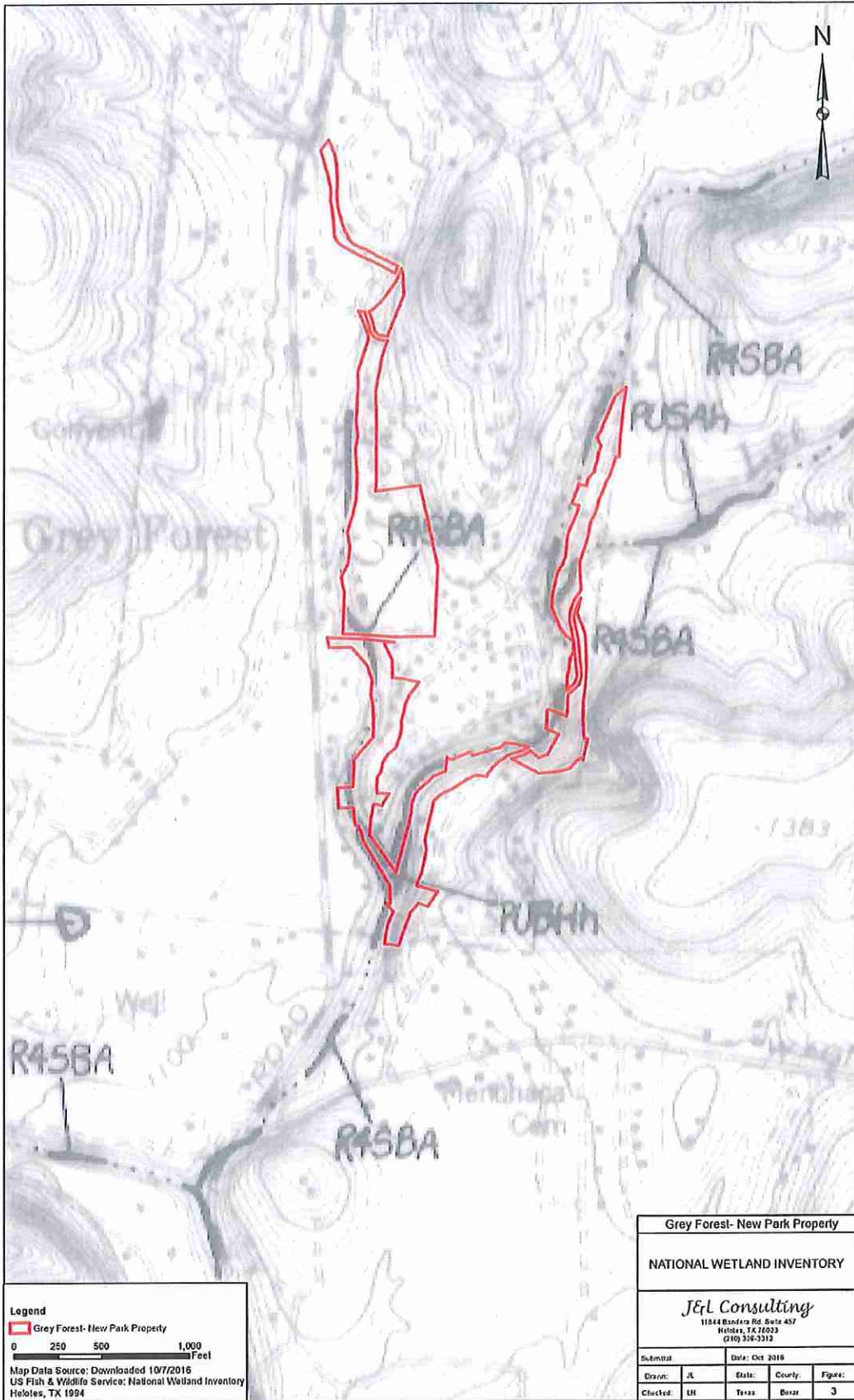
**Grey Forest - New Park Property**

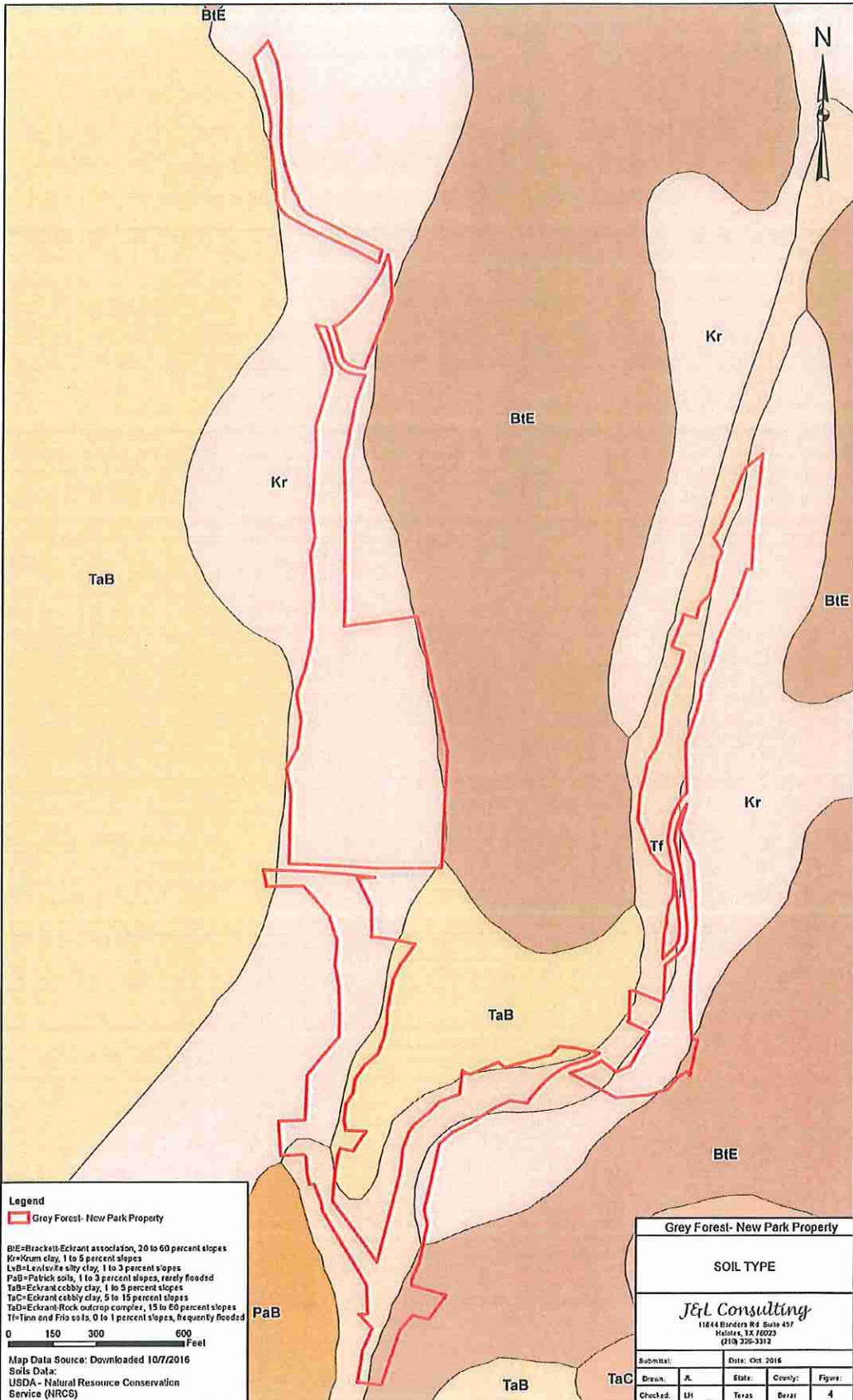
**AERIAL WITH  
 100 YEAR FLOODPLAIN**

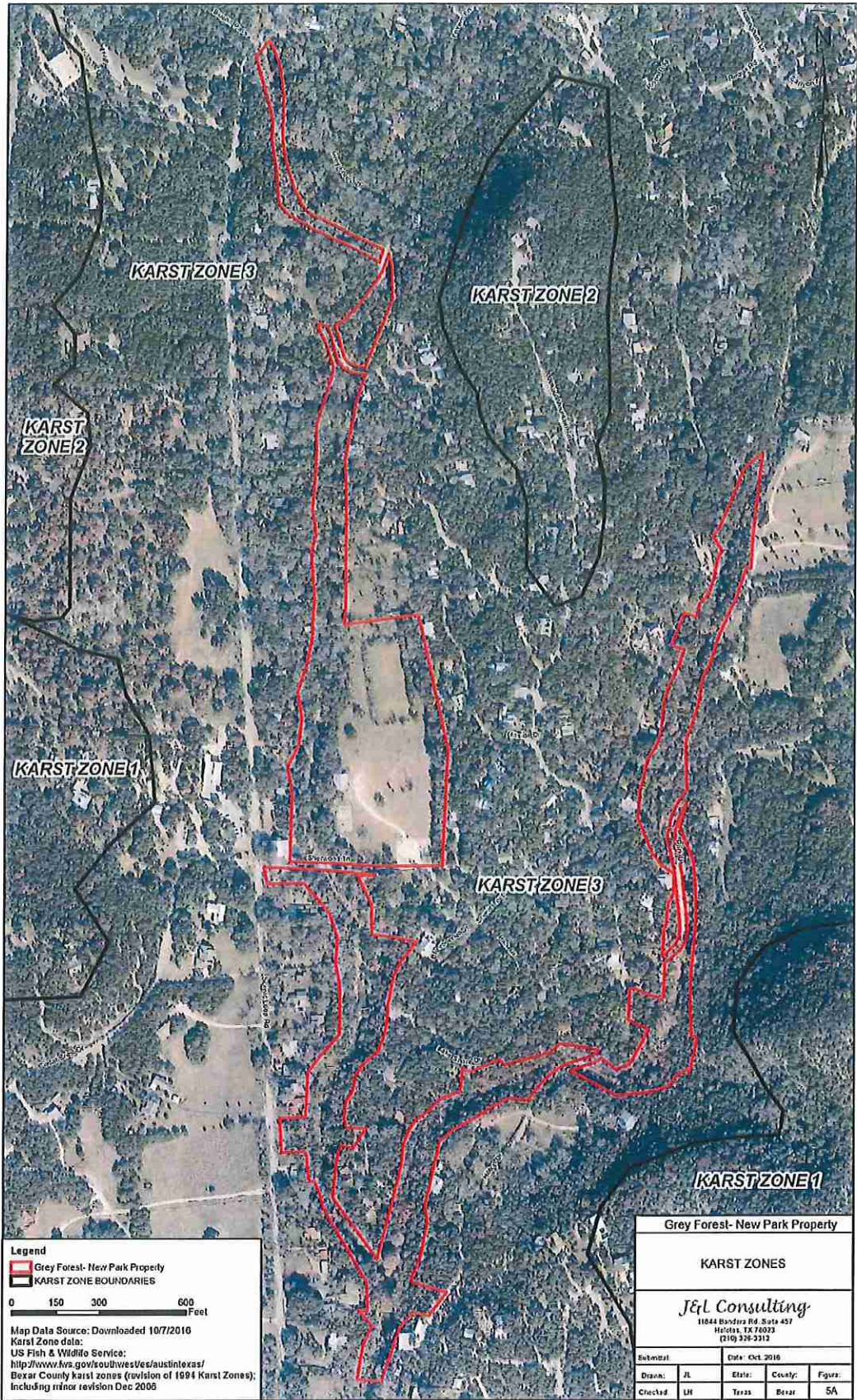
*J&L Consulting*  
 11844 Bandera Rd, Suite 457  
 Helotes, TX 78023  
 (210) 325-3312

Submitted:	Date: Oct 2016		
Drawn: JL	State: Texas	County: Bexar	Figure: 1
Checked: LH			









**Legend**

- Grey Forest - New Park Property
- KARST ZONE BOUNDARIES

0    150    300    600  
Feet

Map Data Source: Downloaded 10/7/2010  
 Karst Zone data:  
 US Fish & Wildlife Service:  
<http://www.fws.gov/owbives/us/austinteras/>  
 Boxer County karst zones (revision of 1994 Karst Zones),  
 including minor revision Dec 2005

Grey Forest - New Park Property

**KARST ZONES**

*J&L Consulting*  
 11644 Bandera Rd. Suite 431  
 Helotes, TX 78023  
 (210) 328-3312

Submitted:	Date: Oct. 2016		
Drawn: JL	State: Texas	County: Bexar	Figure: 5A
Checked: LH			



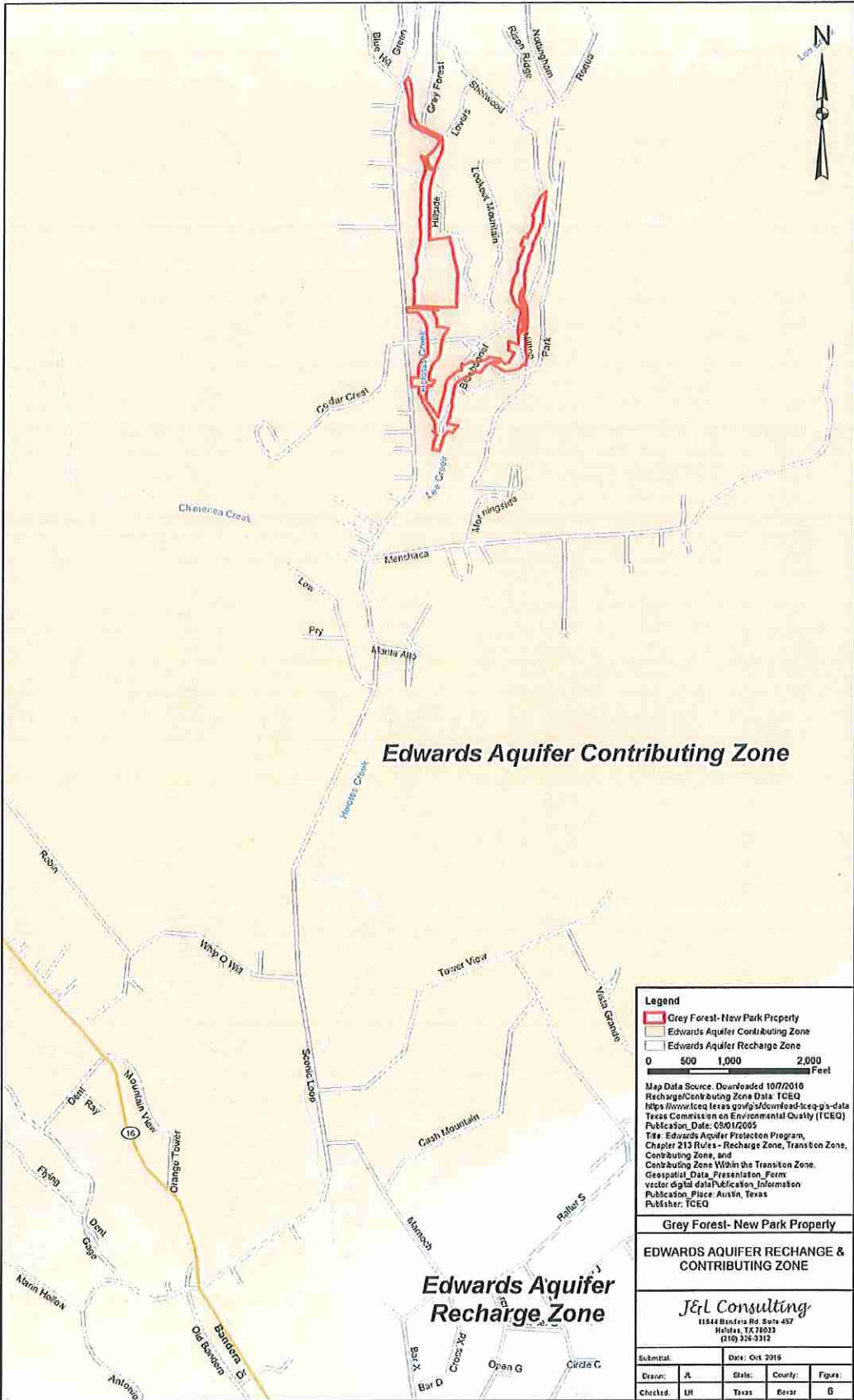
**Legend**

- Grey Forest - New Park Property
- Karst Zone Boundary

0 500 1,000 2,000 Feet

Map Data Source: Downloaded 10/7/2016  
 Karst Zone data:  
 US Fish & Wildlife Service:  
<http://www.fws.gov/southwest/fws/sustintexas/>  
 Bexar County karst zones (revision of 1994 Karst Zones);  
 Including minor revision Dec 2006

Grey Forest - New Park Property			
KARST ZONES			
<i>J&amp;L Consulting</i>			
11644 Bradford Rd. Suite 452 Helotes, TX 78023 (210) 326-3312			
Submitted:	Date: Oct 2016		
Drawn: J.L.	State: Texas	County: Bexar	Figure: 5B
Checked: JH			



**Edwards Aquifer Contributing Zone**

**Edwards Aquifer Recharge Zone**

**Legend**

- █ Grey Forest-New Park Property
- █ Edwards Aquifer Contributing Zone
- █ Edwards Aquifer Recharge Zone

0 500 1,000 2,000 Feet

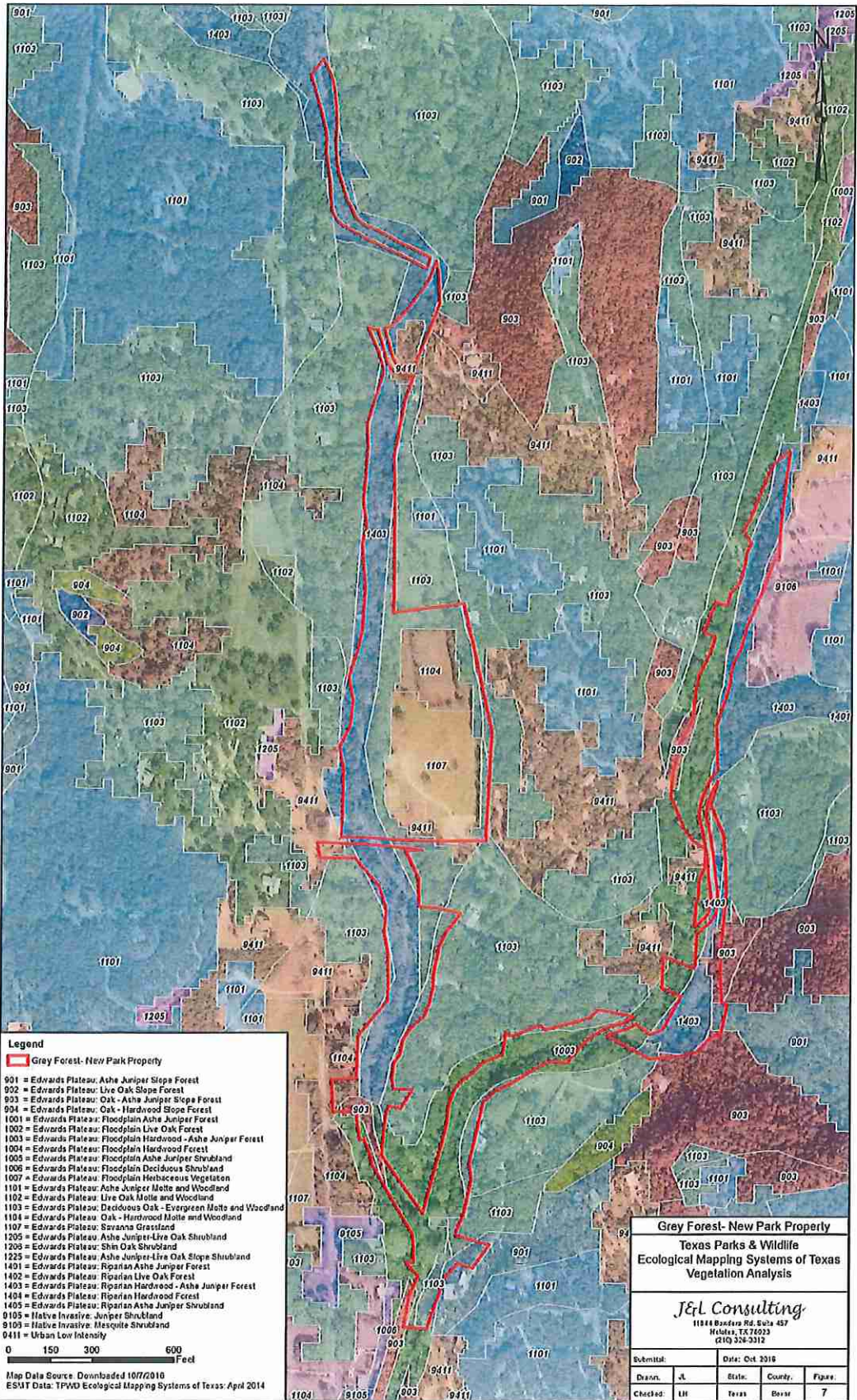
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 Recharge/Contributing Zone Data: TCEQ  
<https://www.tceq.texas.gov/sg/download-icq-qs-data>  
 Texas Commission on Environmental Quality (TCEQ)  
 Publication Date: 09/01/2005  
 Title: Edwards Aquifer Protection Program, Chapter 213 Rules - Recharge Zone, Transition Zone, Contributing Zone, and Contributing Zone Within the Transition Zone.  
 Geospatial Data Presentation Form  
 vector digital data  
 Publication Place: Austin, Texas  
 Publisher: TCEQ

**Grey Forest- New Park Property**

**EDWARDS AQUIFER RECHARGE & CONTRIBUTING ZONE**

*J&L Consulting*  
 11544 Bandera Rd. Suite 457  
 Helotes, TX 78023  
 (210) 326-3312

Submitted:	Date: Oct 2018		
Drawn: JL	State: Texas	County: Bexar	Figure: G
Checked: LH			



**Legend**

Gray Forest - New Park Property

- 901 = Edwards Plateau: Ashe Juniper Slope Forest
- 902 = Edwards Plateau: Live Oak Slope Forest
- 903 = Edwards Plateau: Oak - Ashe Juniper Slope Forest
- 904 = Edwards Plateau: Oak - Hardwood Slope Forest
- 001 = Edwards Plateau: Floodplain Ashe Juniper Forest
- 002 = Edwards Plateau: Floodplain Live Oak Forest
- 003 = Edwards Plateau: Floodplain Hardwood - Ashe Juniper Forest
- 004 = Edwards Plateau: Floodplain Hardwood Forest
- 005 = Edwards Plateau: Floodplain Ashe Juniper Shrubland
- 006 = Edwards Plateau: Floodplain Deciduous Shrubland
- 007 = Edwards Plateau: Floodplain Herbaceous Vegetation
- 1101 = Edwards Plateau: Ashe Juniper Mottle and Woodland
- 1102 = Edwards Plateau: Live Oak Mottle and Woodland
- 1103 = Edwards Plateau: Deciduous Oak - Evergreen Mottle and Woodland
- 1104 = Edwards Plateau: Oak - Hardwood Mottle and Woodland
- 1107 = Edwards Plateau: Savanna Grassland
- 1205 = Edwards Plateau: Ashe Juniper-Live Oak Shrubland
- 1209 = Edwards Plateau: Shin Oak Shrubland
- 1225 = Edwards Plateau: Ashe Juniper-Live Oak Slope Shrubland
- 1401 = Edwards Plateau: Riparian Ashe Juniper Forest
- 1402 = Edwards Plateau: Riparian Live Oak Forest
- 1403 = Edwards Plateau: Riparian Hardwood - Ashe Juniper Forest
- 1404 = Edwards Plateau: Riparian Hardwood Forest
- 1405 = Edwards Plateau: Riparian Ashe Juniper Shrubland
- 9105 = Native Invasive: Juniper Shrubland
- 9106 = Native Invasive: Mesquite Shrubland
- 9411 = Urban Low Intensity

0 150 300 600 Feet

Map Data Source: Downloaded 10/7/2016  
 ESMT Data: TPWD Ecological Mapping Systems of Texas: April 2014

**Grey Forest - New Park Property**

Texas Parks & Wildlife  
 Ecological Mapping Systems of Texas  
 Vegetation Analysis

*J&L Consulting*  
 11844 Buckner Rd. Suite 437  
 Helotes, TX 78023  
 (210) 326-3312

Submitted:	Date:	Oct 2016
Drawn:	JL	State: County: Figure:
Checked:	LH	Texas Bove 7

Preliminary report on our Creek Assessment:

We have almost completed the assessment you requested. Our preliminary assessment suggests that your community is facing a substantial challenge. Similar to areas such as Olmos Basin, there are infestations of what are now known as major invasives, e.g. bamboo, ligustrum, and others. As you know, there are many contributing factors.

FINDINGS IN A NUTSHELL:

- Clusters of native trees such as live oak, cedar elm, and sycamore are being strangled and killed by English Ivy
- Decades old clusters of ligustrum and chinaberry trees have taken over native trees and shrubs. In Madla Natural Area, we have been thrilled to see the regrowth of many natives in areas where we removed large clusters of ligustrum.
- Numerous contiguous patches of bamboo
- Nandina plants taller than any we have seen, including the ones at Rancho Diana
- Arundo donax patches whose growth exceeds the boundaries of normal control methods.
- Large patches of vinca major and minor and Japanese honeysuckle that are impeding the growth/regrowth of such native species as strangler daisy, native ruellia, and others.
- Aquatic parrot feather milfoil in the creek
- Expansive tree of heaven patches (300,000 seeds from a mature tree per year)
- Huge quantities of cut brush thrown over homeowners' fences into the creek, causing debris dams AND providing fertile cover for invasives

## RECOMMENDATIONS:

The Invasive Plant Management Program needs to look at all possible strategies for exotic species eradication, which include:

- Manual removal, which includes hand pulling, cutting, chopping and wrenching
- Mechanical removal, which includes hand tools, chain saws, or other similar equipment
- Mechanical removal with cut-stem herbicide application
- Mechanical girdling with herbicide application
- Prescribed burns in select areas
- Solarization
- Prescribed grazing by cattle, sheep, goats, or horses
- Combination of Control methods
- Promotion of all efforts through public education, especially of local landowners and governmental groups

The Balcones Invaders use herbicide for cut-stem and girdling applications only. We do not use herbicide for foliar sprays, basal bark sprays, stem-injection or broadcast applications, as these techniques typically involve the use of large quantities of herbicide and/or could result in greater human exposure.

Eradication of invasive plants in the concentrations which exist in your area will not be successful without some use of herbicides. In addition to our eight years of experience working in this area (including working with Texas Parks and Wildlife Department in Government Canyon, the City of San Antonio in their natural areas and linear creek greenways, etc.), the scientific literature supports the methods we have used. Control of invasive plant infestations requires long term effort with frequent revisitation of treated sites and retreatment. It is especially beneficial and successful if local landowners are part of the process.

The Nueces River Project under the leadership of Skye Jones-Lewey is a model of the cooperative efforts of local landowners, relevant government agencies and volunteers (Oppenheimer, 2012).

The Balcones Invaders during a 3½ year time period (June 2011 to November 2014) contributed 1512 volunteer hours to eradicate 16,306 invasive plants (primarily ligustrum, chinaberry, and arundo donax) along an 8-mile stretch of the City of San Antonio Leon Creek Greenway and used less than two gallons of herbicide concentrate.

We have thoroughly enjoyed working with the City of Grey Forest and its residents over the last seven years in Madla Park and would very much like to see the fruits of our labors realized in future endeavors. If the volunteers of the Balcones Invaders are to be part of this Plant Management Program, we would expect to be able to use the methods and materials that are most effective based on our own experience as supported by the relevant science.

It will also be important to enforce the Rules and Regulations in Grey Forest regarding throwing residential brush into the creek. Invasive plants love to hide and grow in this kind of brush pile. A Grey Forest campaign such as "WE LOVE OUR CREEK" or "RESTORE OUR CREEK CAMPAIGN" could facilitate this.

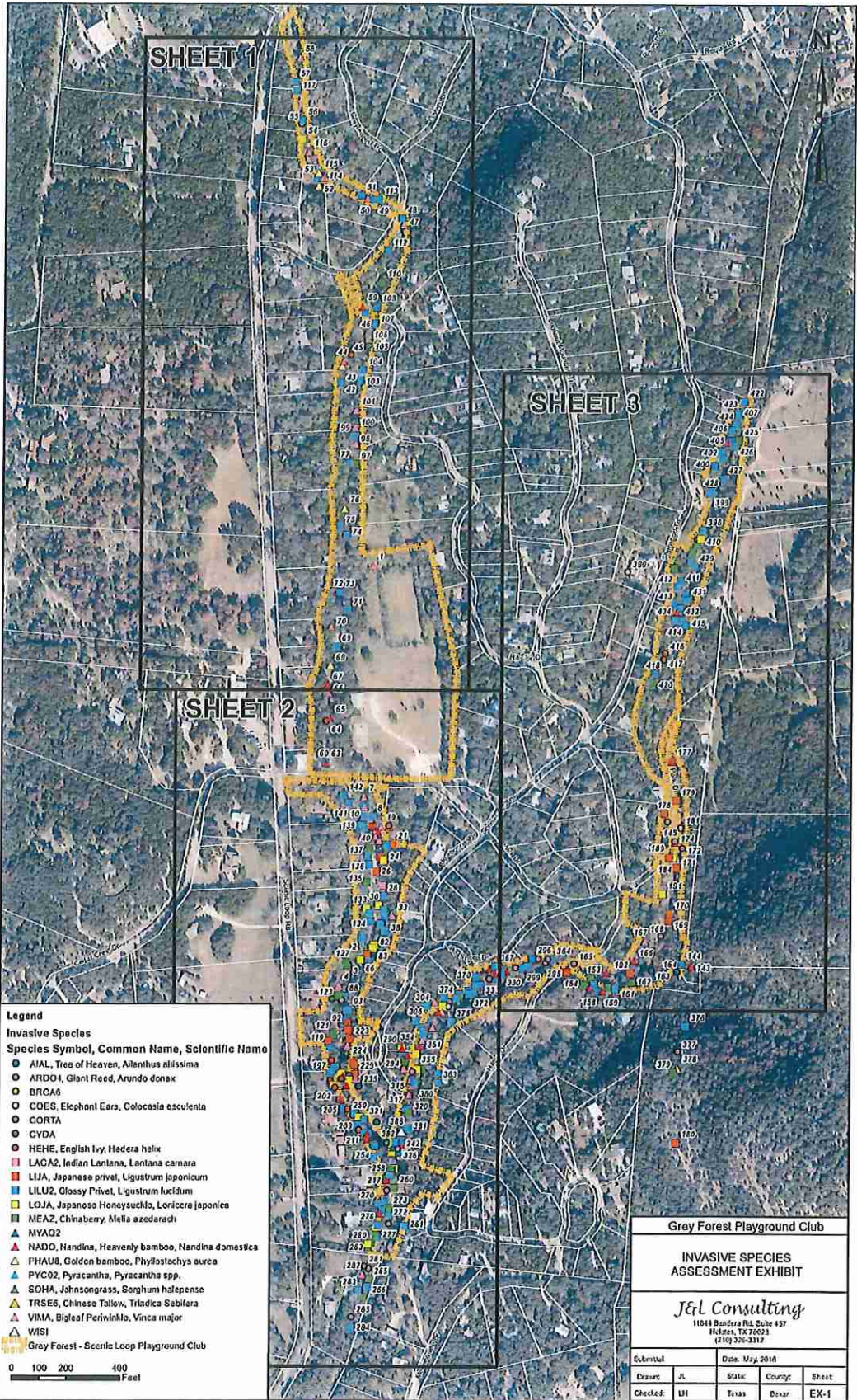
This area in Grey Forest is potentially one of the few remaining natural domains in Bexar County and a community treasure. Accessible mulched pathways winding along scenic portions of the riparian areas would be both an aesthetic and economic benefit to the citizens.

Based on our experience in the Madla Natural Area, we can envision the return of native plants and their associated insects, birds, mammals, etc. once the invasives are removed.

A successful long term management plan will be long term and MUST include both MONEY and local VOLUNTEER SUPPORT.

*Killing Cane: Learning From Large-Scale Conservation on the Nueces River*

*by J. Daniel Oppenheimer, National Wetlands Newsletter, Volume 34, Issue 1, Page 24, January-February 2012*



**Legend**

**Invasive Species**

**Species Symbol, Common Name, Scientific Name**

- AIAL, Tree of Heaven, *Ailanthus altissima*
- ARDO1, Giant Reed, *Arundo donax*
- BRCA6
- COES, Elephant Ears, *Colocasia esculenta*
- CORTA
- CYDA
- HEHE, English Ivy, *Hedera helix*
- LACA2, Indian Lantana, *Lantana camara*
- LIJA, Japanese privet, *Ligustrum japonicum*
- LILU2, Glossy Privet, *Ligustrum lucidum*
- LOJA, Japanese Honey suckle, *Lonicera japonica*
- MEA2, Chinaberry, *Melia azadirach*
- ▲ MVAO2
- ▲ NADO, Nandina, Heavenly bamboo, *Nandina domestica*
- ▲ PHAU8, Golden bamboo, *Phyllostachys aurea*
- ▲ PYCO2, Pyracantha, *Pyracantha* spp.
- ▲ SOHA, Johnsongrass, *Sorghum halepense*
- ▲ TRSE6, Chinese Tallow, *Triadica sebifera*
- ▲ VIMA, Bigleaf Periwinkle, *Vinca major*
- ▲ WISI
- Gray Forest - Scenic Loop Playground Club

0 100 200 400 Feet

Gray Forest Playground Club

**INVASIVE SPECIES ASSESSMENT EXHIBIT**

*J&L Consulting*  
 11044 Bandera Rd. Suite 137  
 Houston, TX 77023  
 (281) 216-3312

External	Date: May 2016		
Drawn: JL	State: Texas	County: DeWitt	Sheet: EX-1
Checked: LJI	Texas	DeWitt	EX-1