The Butler Trail at Lady Bird Lake
Urban Forestry and Natural Area Management Guidelines

The Trail Foundation

Lady Bird Lake & Butler Trail
Urban Forest & Natural Areas

Deep Eddy · Austin High · Downtown Austin · City Hall · CESAR CHAVEZ · CANTERBURY · Longhorn Dam · Colorado River

Lady Bird Lake · Zilker Park · BARTON SPRINGS · Auditorium Shores · Long Center · Former Holly Power Plant · Fiesta Gardens

Eanes Creek · MO-PAC · Barton Creek · Barton Springs · LAMAR · Bouldin Creek · East Bouldin Creek · RIVERSIDE · CONGRESS · 51st · Blunn Creek · Festival Beach · Lady Bird Lake · SEGOVIA · LAKE SHORE · RIVERSIDE · Guerrero Colorado River Park · PLEASANT VALLEY

Johnson Creek · Shoal Creek · Waller Creek

6TH · 5TH

February 2014

0 — 2,000'

— Study Area Boundary
Sources: COA, USDA
Prepared for The Trail Foundation by Siglo Group

Elevation

Deep Eddy • Austin High • CESAR CHAVEZ • Lady Bird Lake • Zilker Park • City Hall • CONGRESS • Auditorium Shores • MO-PAC • LAMAR • S 1ST • RIVERSIDE • I-35 • CANTERBURY • Longhorn Dam • Fiesta Gardens • Festival Beach • Lady Bird Lake • LAKE SHORE • PLEASANT VALLEY

0 — 1000 ft

Elevation (ft above msl)

395–400	415–420	440–450
400–405	420–425	450–460
405–410	425–430*	460–470
410–415	430–440	470–480
*(low land & shallow water)		480–489

Floodplain

Deep Eddy • Austin High • CESAR CHAVEZ • Lady Bird Lake • Zilker Park • City Hall • CONGRESS • Auditorium Shores • MO-PAC • LAMAR • S 1ST • RIVERSIDE • I-35 • CANTERBURY • Longhorn Dam • Fiesta Gardens • Festival Beach • Lady Bird Lake • LAKE SHORE • PLEASANT VALLEY

0 — 1000 ft

Floodplain (% of study area)

100 yr (63%)	
500 yr (34%)	

1860

1935

1968

1975

1940 Aerial Imagery

Deep Eddy

CONGRESS

Barton Springs

1969 Aerial Imagery

Deep Eddy

Longhorn Dam

Barton Springs

CONGRESS

I-35

0   1000

GETTING INTO THE WEEDS: FIELD DATA AND ANALYSIS

- Inventoried over 6,000 trees.
- Recorded over 1,200 invasive species occurrences.
- Observed over 280 erosion and/or soil disturbance occurrences.
- Performed a tree risk assessment.
- Performed a plant survey.
- Compiled records of over 450 wildlife species potentially in site.
- Recorded significant features and restoration opportunities throughout the site.

PLANT COMMUNITIES

Bill Carr inventoried 366 plant species (255 native).

Shoreline Woodland & Floodplain Terrace Woodland (60 acres)

Lawn (140 acres)

Plant Communities: Woodlands and Lawns
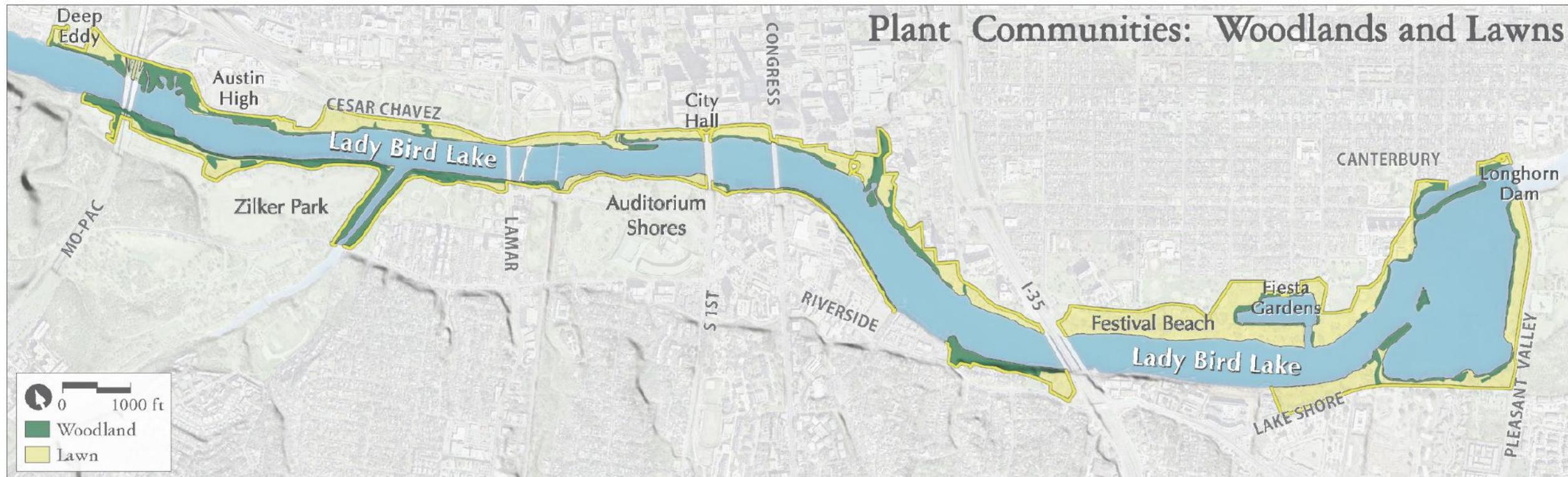
Canopy Cover and Trail Shade

Legend:
- Study area boundary
- Trail without Shade
- Canopy
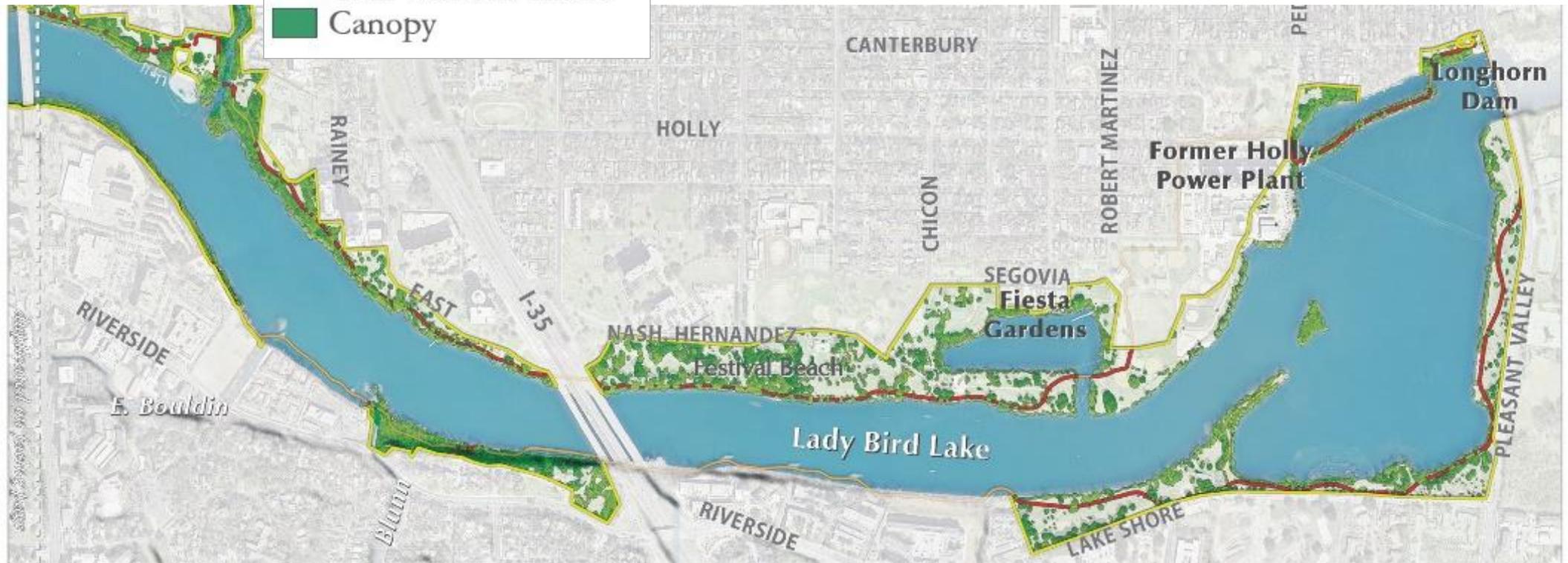
MEASURING THE URBAN FOREST

Trees/acre	34
Average diameter	16"
Protected tree count	1696
Heritage Tree count	772
Trees/100' of shoreline	5.4
Canopy cover	49%
Shaded trail	48%
Trees/acre in woodland	80
Trees/acre non-woodland	14

Tree Health Assessment by Don Gardner

- 115 trees with maintenance needs that PARD has addressed or evaluated.
- 7 oak groves east of I-35 in need of structural pruning.
- Generally better maintenance on the trail as compared to past.
- Recommend annual tree evaluations along the trail.
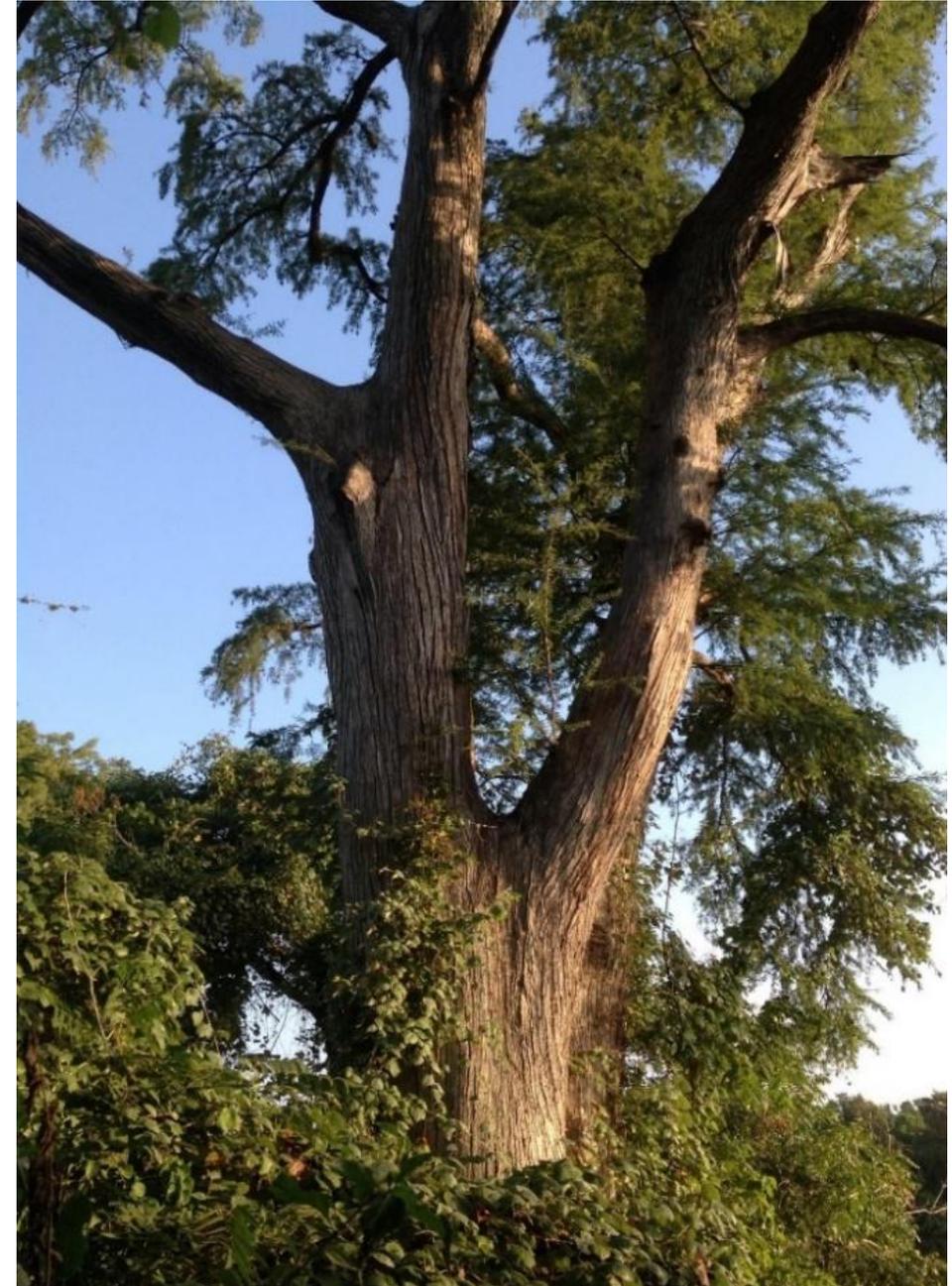
Natural Area Management Guidelines

ALIGNMENT OF RECOMMENDATIONS

- Natural area management recognizes that we have a role to play.
- An adaptive management approach following best practices.
- Project aligned with Imagine Austin, Austin's Urban Forest Plan, Community Climate Plan, Invasive Species Management Plan, and Watershed Master Plan.

PROJECT GOALS

- Restore and Enhance Plant Communities
- Repair and Improve Ecological Function
- Enhance Resiliency
- Enhance the User Experience
- Facilitate Stewardship

MITIGATING INVASIVE SPECIES

An invasive species is one that did not evolve within the native ecosystem, and whose presence is likely to cause economic and/or ecological harm – 31 species identified as invasive in the study area.

Invasive species management removes and discourages invasives while creating healthy native plant communities.

Critical Issues:
1) Adaptive Management
2) Ongoing Documentation
3) Planning for the End Game.

Catclaw Vine
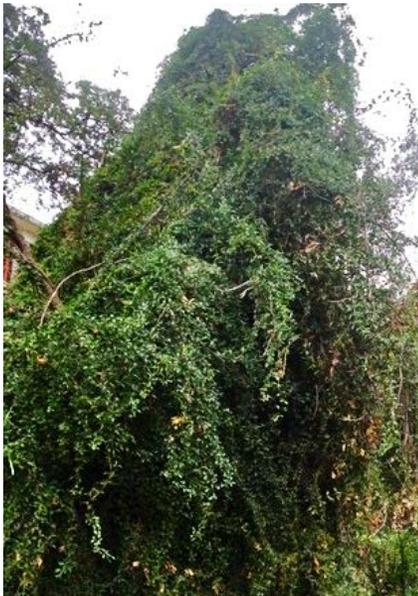
Giant Reed

Chinese Tallow
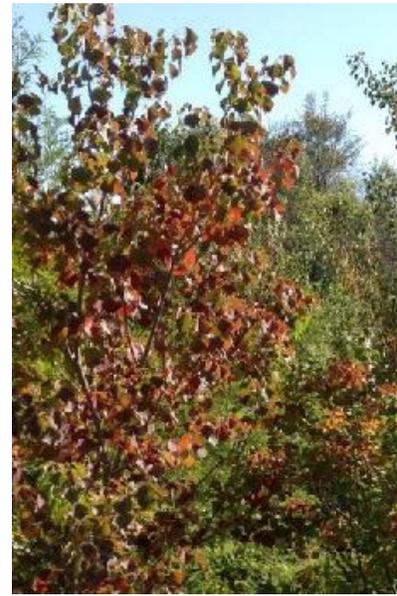
Johnson Grass

MITIGATING EROSION AND SOIL DISTURBANCE

Guide and formalize human use and manage stormwater.

Critical Issues:
1) Implement Austin green infrastructure practices.
2) Address acute stormwater issues.
3) Continual management to enhance and guide the user experience.

Trampling Waterside   Gully Erosion

Sheet Erosion   Erosion of Trail

Brushing

Formalize Use

Trail Stabilization

Green Infrastructure

Design concept cross section for Vegetated Swale #2

Vegetated Swale

Gravel path functioning as a level spreader
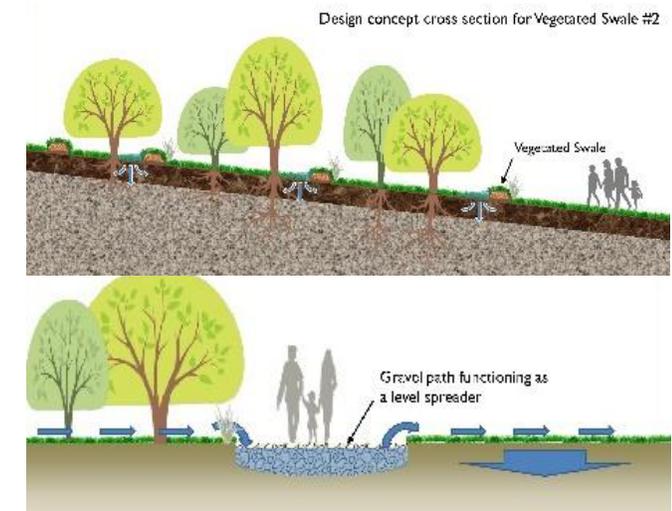
From Pease Park COA WPD Plan

ECOLOGICAL RESTORATION

Improving natural processes in a landscape where they may not exist, are impaired, or can be enhanced.

Restoration Actions:
1) Woodland Enhancement (60 acres)
2) Woodland Expansion (80 acres)
3) Savanna Restoration (up to 12 acres)
4) Aquatic Plantings (23 sites)

Supporting Information: Planting List, Planting Protocols, Soil Preparation, Irrigation, Ongoing-Adaptive Management.

Restoration Areas
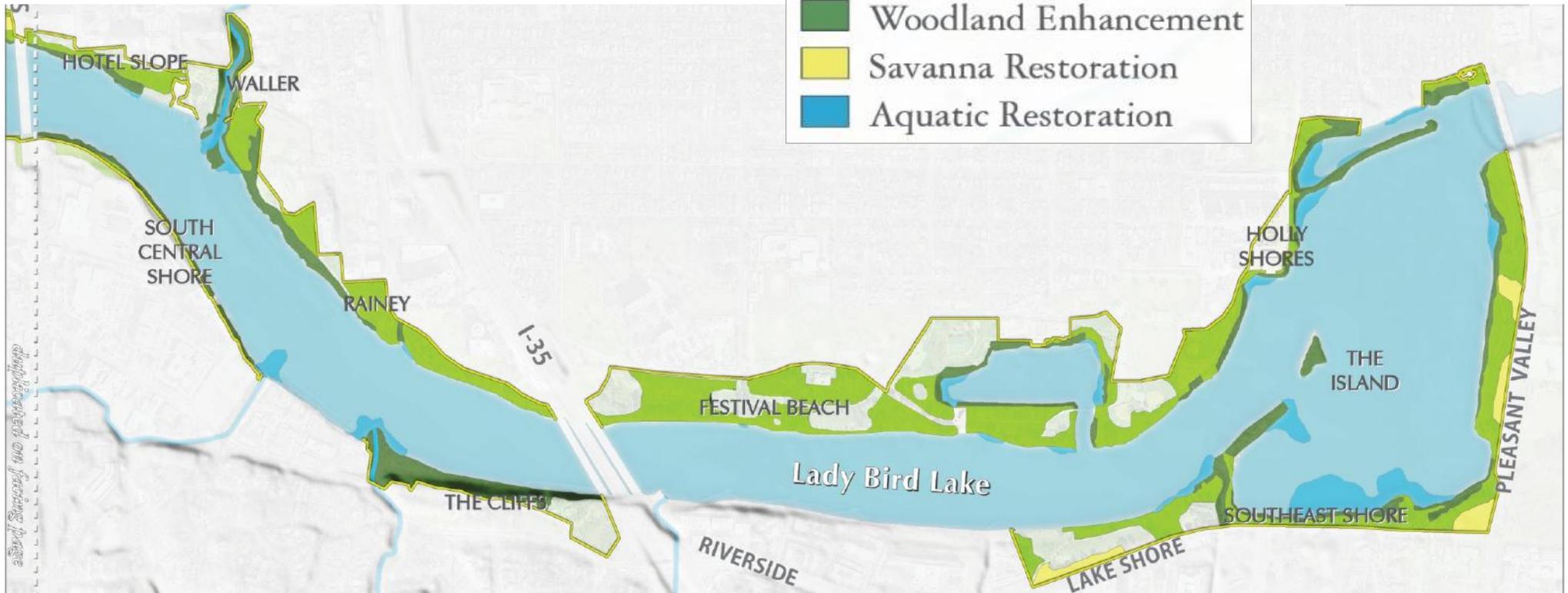
Restoration Type
- Woodland Expansion
- Woodland Enhancement
- Savanna Restoration
- Aquatic Restoration

GROW ZONE EXPANSION

Possibility to expand the partnership between PARD and WPD to enhance the riparian area in as much as 140 acres of the study area as compared to the current 13 acres—challenge of coordination.

Grow Zones

Expanded Grow Zones

Mowed   First Year Growth   5 to 10 Years

Management Units
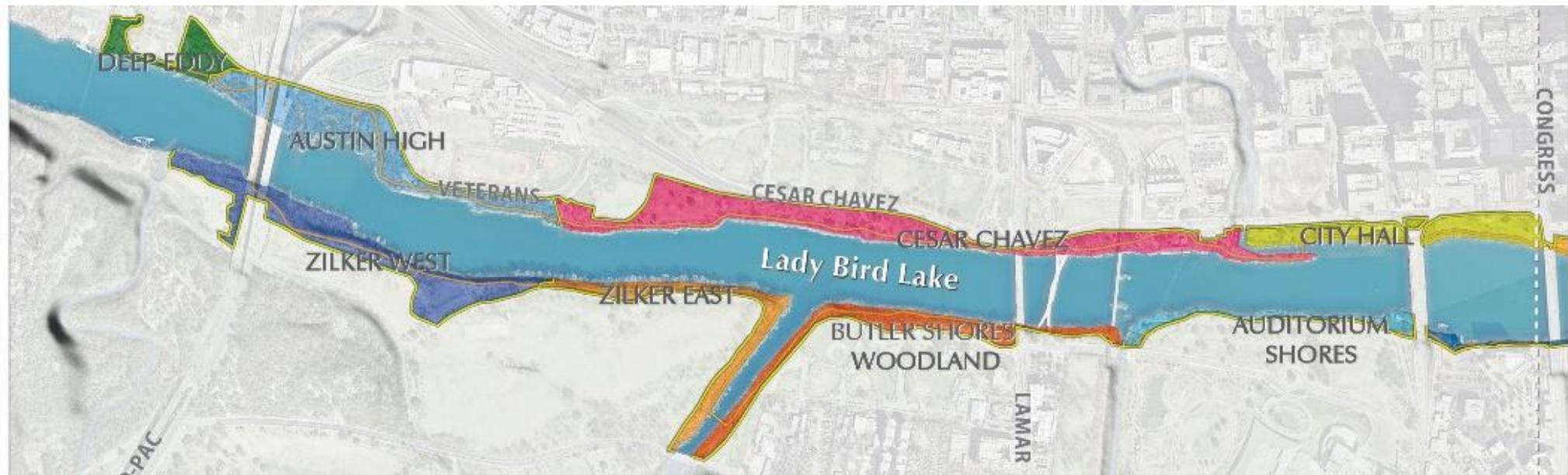
Austin High Management Unit, 12.2 acres

Unit area	12.2 acres
Trees/acre	75
Trees/100' of shoreline	7.5
Canopy cover	71%
Shaded trail	71%

Threats and Recommended Restoration for Austin High

Restoration Type
- Woodland Expansion
- Woodland Enhancement
- Savanna Restoration
- Aquatic Restoration

Threat Type
- Invasive Species
- Soil Disturbance
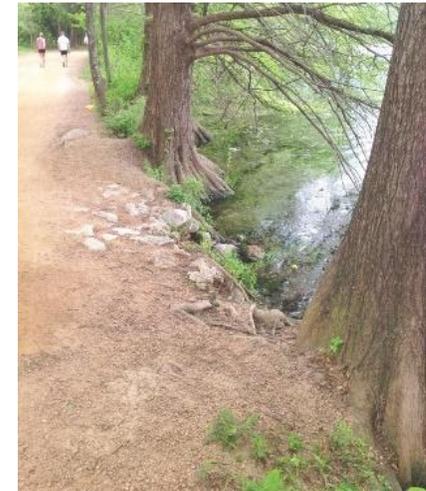
Land Management Tasks (Select High Priority)

- Formalize the two major informal trails and restore others.
- Remove catclaw vine patches before they become a major issue in the area.
- Stabilize Trail and eliminate crushed granite deposition off-trail.
- Move edge of Trail inland.
- Plant riparian edge.

Southeast Shore Management Unit, 30.7 acres

0 — 300 ft

Longhorn Dam

FESTIVAL BEACH

HOLLY SHORES

PLEASANT VALLEY

SOUTHEAST SHORE

LAKESHORE
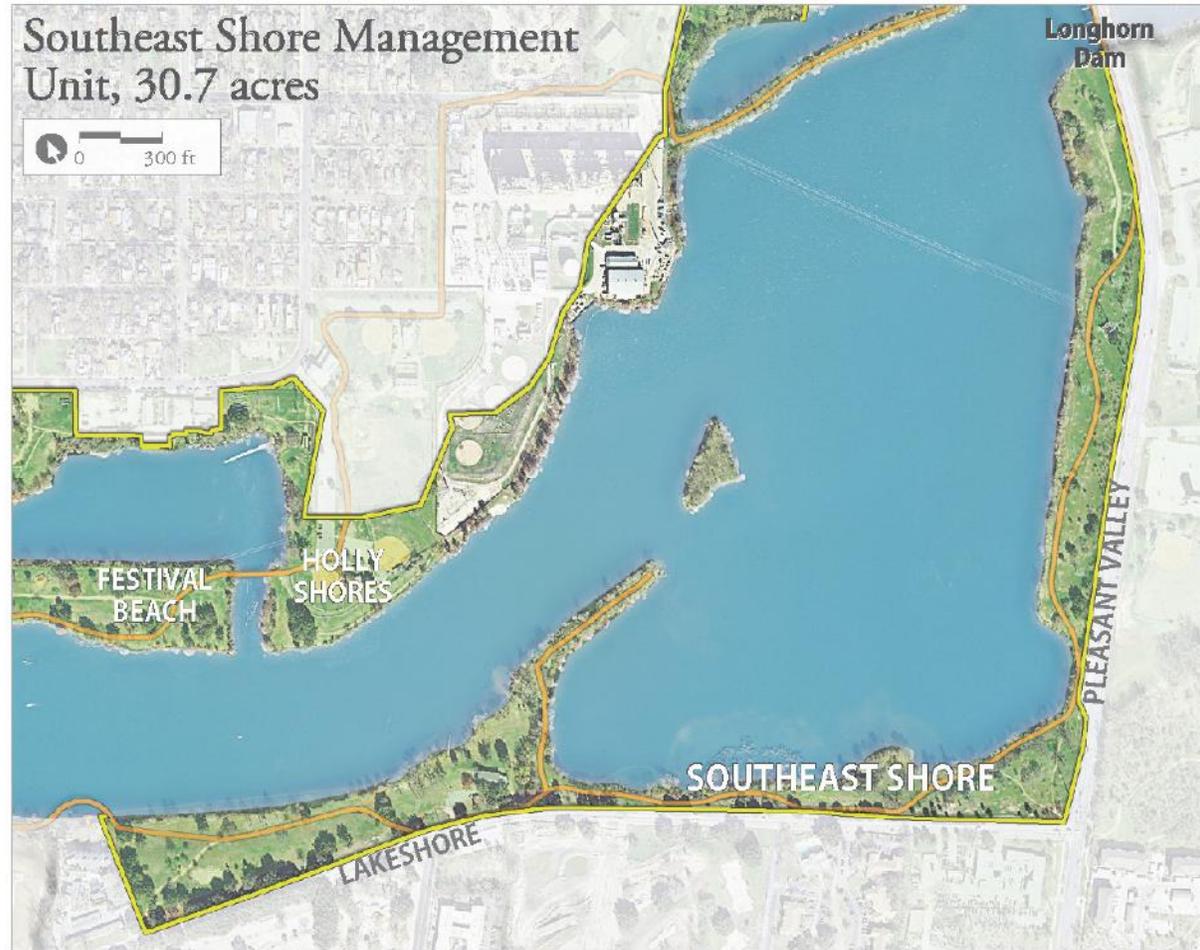
Unit area	30.7 acres
Trees/acre	14
Trees/100' of shoreline	3.5
Canopy cover	35%
Shaded trail	21%

Threats and Recommended Restoration for Southeast Shore

Select Land Management Tasks (Select High Priority)

- Expand Floodplain Terrace Woodland.

- Continue removal of giant reed along shoreline.

- Stabilize gully erosion using green infrastructure and/or armoring.

ELEMENTS OF IMPLEMENTATION

- PRIORITIZED SCHEDULING PER MANAGEMENT UNIT
- SHARED DOCUMENTATION
- REGULAR MONITORING

Four Year Area Work Schedule

Fall 2015 to Summer 2016
Entire Site Tasks
Deep Eddy Primary Treatment
Austin Primary Treatment
City Hall Primary Treatment
Waller Creek- Discrete Task
Rainey Primary Treatment
Holly Shores Primary Treatment
Southeast Shores Primary Treatment
Cliffs Treatment—Discrete Task
Southcentral Shore Primary Treatment

Fall 2017 to Summer 2018
Entire Site Tasks
Deep Eddy Secondary Treatment
Austin High Secondary Treatment
City Hall Secondary Treatment
Rainey Secondary Treatment
Holly Shores Secondary Treatment
Southeast Shore Secondary Treatment
Southcentral Shore Secondary Treatment

Fall 2016 to Summer 2017
Entire Site Tasks
Cesar Chavez Primary Treatment
Hotel Slope Primary Treatment
Waller Creek- Discrete Tasks
Festival Beach Primary Treatment
Cliffs- Discrete Tasks
Auditorium Shores—Discrete Tasks
PARD Woodland Primary Treatment
Zilker East Primary Treatment
Zilker West Primary Treatment

Fall 2018 to Summer 2019
Entire Site Tasks
Cesar Chavez Secondary Treatment
Hotel Slope Secondary Treatment
Waller Creek- Discrete Tasks
Festival Beach Secondary Treatment
Cliffs Secondary Treatment
PARD Woodland Secondary Treatment
Zilker East Secondary Treatment
Zilker West Secondary Treatment
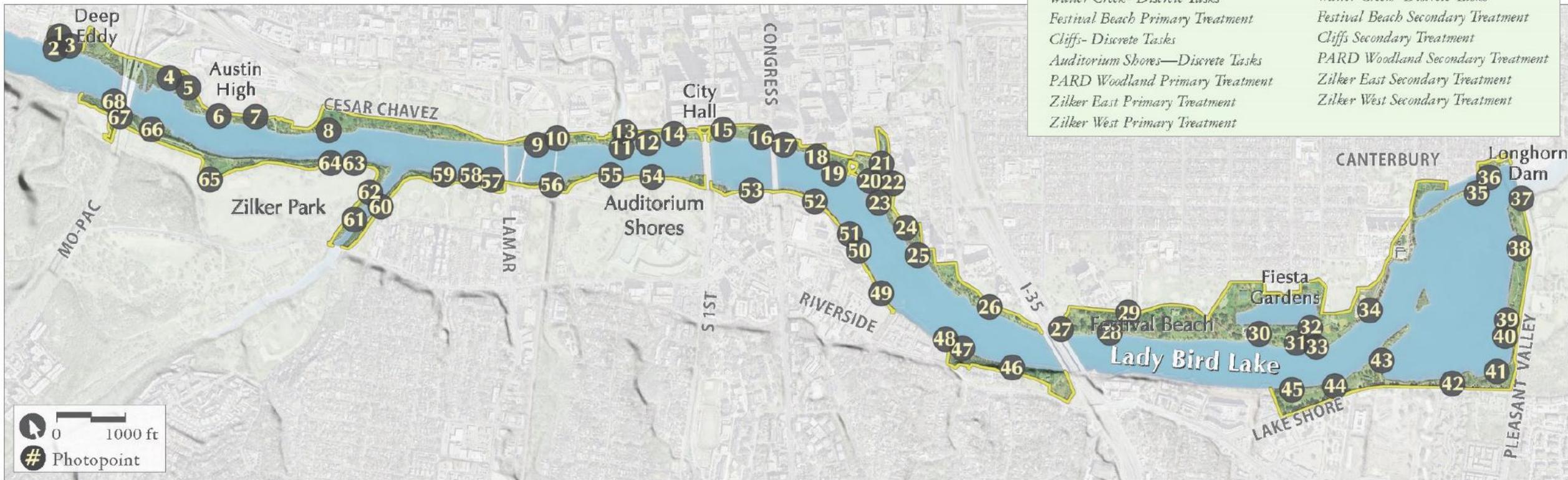
ELEMENTS OF IMPLEMENTATION

Select Metrics—Measuring Success

- Reduce the highest priority invasive species populations by 80% area in 3 years.
- Plant 4,000 container trees in the next 4 years.
- Plant 8,000 tree seedlings in the next 4 years.
- Increase canopy cover to 70% in 20 years (currently 49%).
- Increase species observations for major taxa by 20% in 10 years.
- Increase shade over trail to 80% over 15 years (currently at 48%).

YEAR 1

YEAR 5

YEAR 40

CONCLUSION & KEY FINDINGS

- The site is irreplaceable.

- The site needs strategic action addressing the entire study area.

- Traditional land management has resulted in large expanses of underutilized lawn.

- There is great potential for enhancing the ecological function and user experience.

- Investments recommended here are small in comparison to the overall value of the site.

- The recommendations are aligned with city policy and best management practices.

- The recommendations build on the legacy set by Lady Bird Johnson, Ann and Roy Butler, and others.

Thank you.

For Full Report:

http://siglogroup.com/example-publications/