

San Antonio Workshop on
*Managing Wet Weather with Green
Infrastructure*

**Tree Preservation, Landscape
and Park/Open Space Code
Requirements**

City of San Antonio
Planning and Development Services
February 17 – 18, 2009

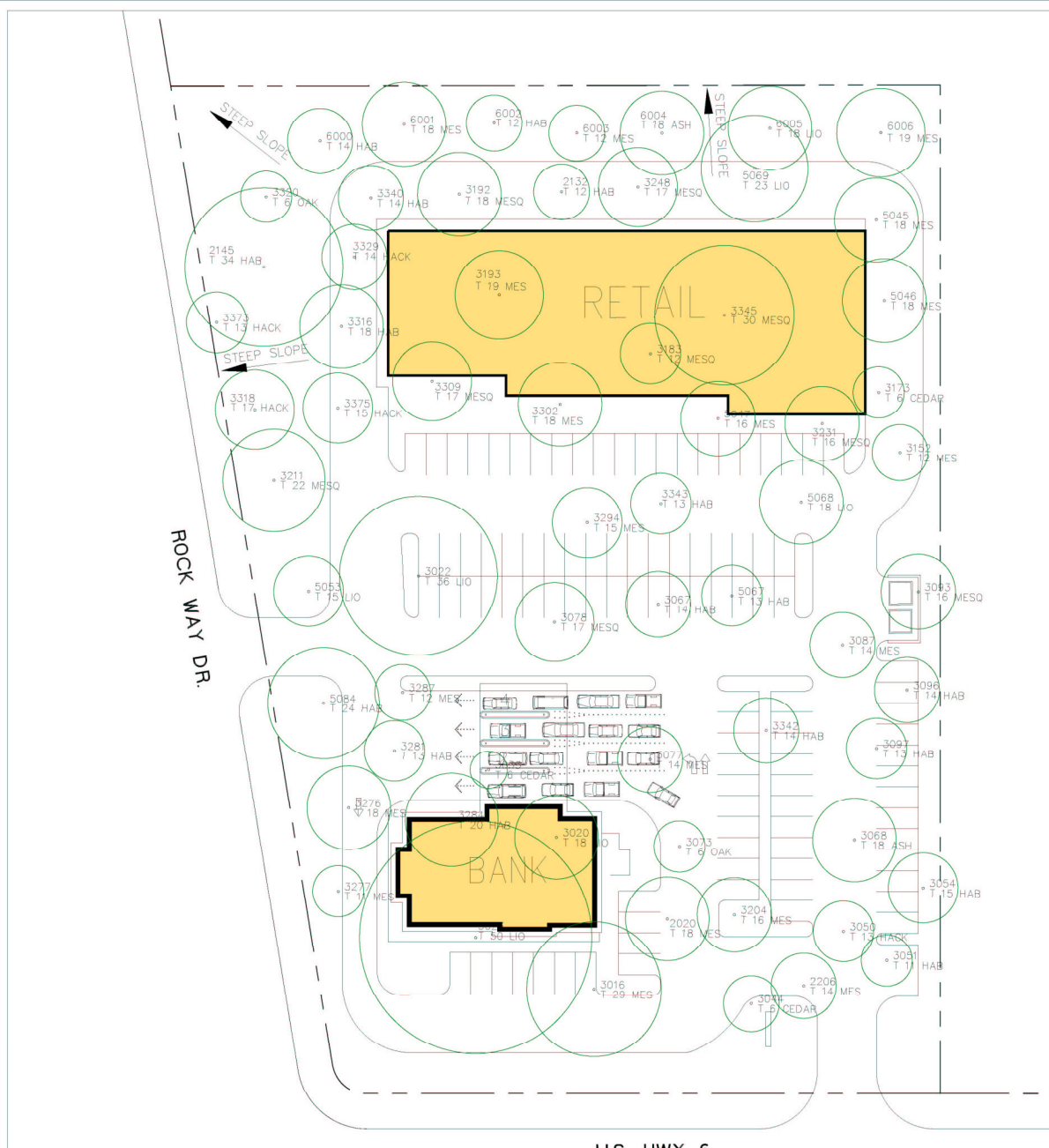
Tree Preservation

- Two categories of protected trees:
 - Heritage
 - Significant
- 3 ways to inventory trees
 - Ground survey
 - Tree canopy without understory vegetation preservation is the same as ground survey
 - Tree canopy with understory vegetation or Tree Stand Delineation is incentivized

Standards

Protected Tree Designations		
Common Name	Significant	Heritage
All except the Tree Species listed below	6"	24"
Mesquite, Huisache, Ash* Juniper*, Hackberry*	10"	24"
Small Tree Species* - Condalia, Crabapple, Texas Persimmon, Possum Haw, Texas Redbud, Texas Mountain Laurel	5"	12"

* = Only the largest trunk is measured and that is the value used for calculations 6



TREELIST

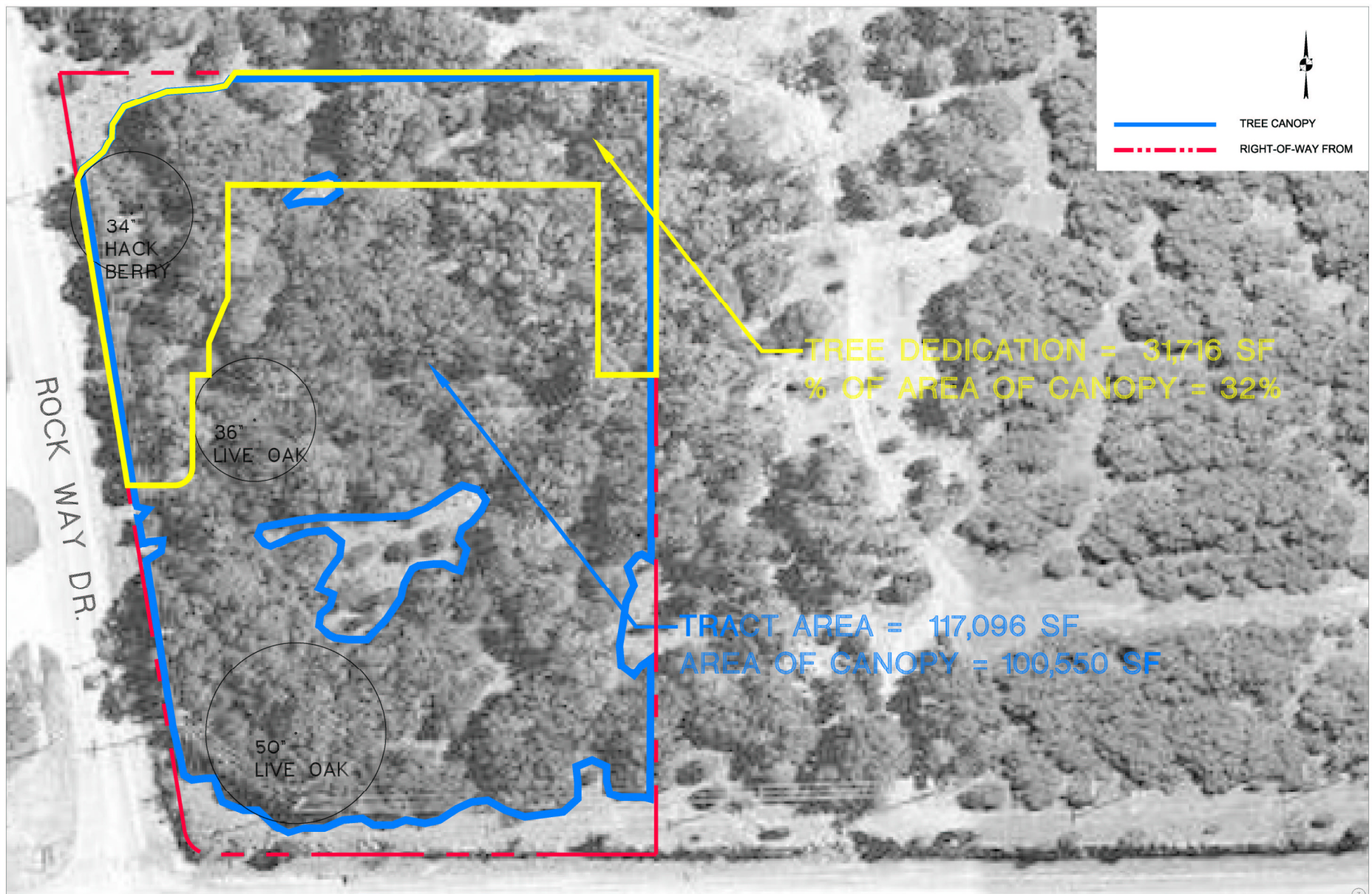
2020	18" MESQUITE
2132	12" HACKBERRY
2145	34" HACKBERRY
2206	14" MESQUITE
3016	29" MESQUITE
3020	18" LIVE OAK
3022	50" LIVE OAK
3023	36" LIVE OAK
3033	6" CEDAR
3044	6" CEDAR
3050	13" HACKBERRY
3051	11" HACKBERRY
3054	15" HACKBERRY
3067	14" HACKBERRY
3068	18" ASH
3073	6" OAK
3077	14" MESQUITE
3087	14" MESQUITE
3093	16" MESQUITE
3096	14" HACKBERRY
3097	13" HACKBERRY
3152	12" MESQUITE
3173	6" CEDAR
3183	12" MESQUITE
3192	18" MESQUITE
3193	19" MESQUITE
3204	16" MESQUITE
3211	22" MESQUITE
3231	16" MESQUITE
3248	17" MESQUITE
3276	18" MESQUITE
3277	11" MESQUITE
3284	20" HACKBERRY
3287	12" MESQUITE
3291	11" MESQUITE
3294	15" MESQUITE
3302	18" MESQUITE
3309	17" MESQUITE
3316	18" HACKBERRY
3318	17" HACKBERRY
3320	6" OAK
3329	14" HACKBERRY
3340	14" HACKBERRY
3342	14" HACKBERRY
3343	13" HACKBERRY
3345	30" MESQUITE
3373	13" HACK
3375	15" HACKBERRY
5045	18" MESQUITE
5046	18" MESQUITE
5047	16" MESQUITE
5048	18" MESQUITE
5053	15" LIVE OAK
5068	18" LIVE OAK
5069	23" LIVE OAK
6004	24" HACKBERRY
6000	14" HACKBERRY
6001	18" MESQUITE
6002	12" HACKBERRY
6003	12" MESQUITE
6004	18" ASH
6005	18" LIVE OAK
6006	19" MESQUITE
TOTAL	1046 INCHES


DATE: 01/13/2004
 TIME: 10:00 AM
 DRAWN BY: BURY+PARTNERS
 CHECKED BY: BURY+PARTNERS
 PROJECT NO.: 04-001

U.S. HWY 6

PRELIMINARY SITE PLAN
2004 DEVELOPMENT
PROCESS ISSUES

DRAWN BY:
Bury+Partners
 ENGINEERING SOLUTIONS
 3000 Sun Prairie Avenue, Suite 100
 Sun Prairie, WI 53591
 Tel: 608-785-0000 Fax: 608-785-0002
 Bury+Partners-PA, Inc. ©Copyright 2004




 TREE CANOPY
 RIGHT-OF-WAY FROM

TREE DEDICATION = 31,716 SF
 % OF AREA OF CANOPY = 32%

TRACT AREA = 117,096 SF
 AREA OF CANOPY = 100,550 SF

ROCK WAY DR.

U.S. HWY 6

DATE: 01/15/2004
 TIME: 10:15:00 AM
 USER: J. BURTON

TREE CANOPY AREA	2004 DEVELOPMENT PROCESS ISSUES	DRAWN BY:  Bury+Partners ENGINEERING SOLUTIONS <small>3000 San Pedro Avenue, Suite 100 San Antonio, TX 78204 Tel: (210) 349-8888 Fax: (210) 349-0122 Bury+Partners-01, Inc. ©Copyright 2004</small>
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Tree Preservation

- Significant Preservation Requirements:
 - 40% of diameter inches of protected trees on commercial sites
 - 35% of diameter inches of protected trees for residential sites
 - 80% for floodplains
- Heritage Preservation Requirements – 100% for the above
- Mitigation is allowed and preservation can be reduced to 10% with mitigation

Tree Preservation

- There are incentives to preserve clusters or contiguous tree canopy:
 - Tree survey: use of cluster of 3 or more trees receive 105% credit
 - Tree stand delineation which requires contiguous canopy of 20,000 sq ft or more with understory, allows 5% reduction in preservation with no Heritage tree survey

Landscape

- Requires 70 points (pts) for commercial sites
 - Mandatory 25% parking lot shading for 20 pts
 - Parking lot screening 25 pts
 - Use of existing understory vegetation can add 15 pts to each of the above
 - Up to 40 pts for tree preservation
 - Street trees 25 pts

Landscape Buffer

Required for:

- Commercial abutting single family residential areas
- Side yard of sites located on major intersections

Conventional Development

- Tree and landscape areas are raised above grade and isolated in curbed islands
- These curbs are used to direct stormwater quickly, either off site or to a detention area:
 - stormwater is unable to infiltrate into the soil
 - peak flooding can be increased
 - long term reserves of soil moisture is reduced
 - Reduced soil moisture increases dependency on external irrigation

Park/Open Space Requirements

- Required for residential projects
- These areas can be used with limits:
 - Floodplain
 - Detention basins
- Enhancements such as trails, ball parks, etc. receive additional credit

Maximizing the Use of Green Infrastructure

- Tree Save and Landscape Areas can provide for stormwater management
- Residential open space areas can be used to:
 - preserve natural drainageways
 - connect commercial tree save/landscape areas to provide additional areas for stormwater management
 - provide for pedestrian and bike access

Existing Preservation Area with Understory with Curbs



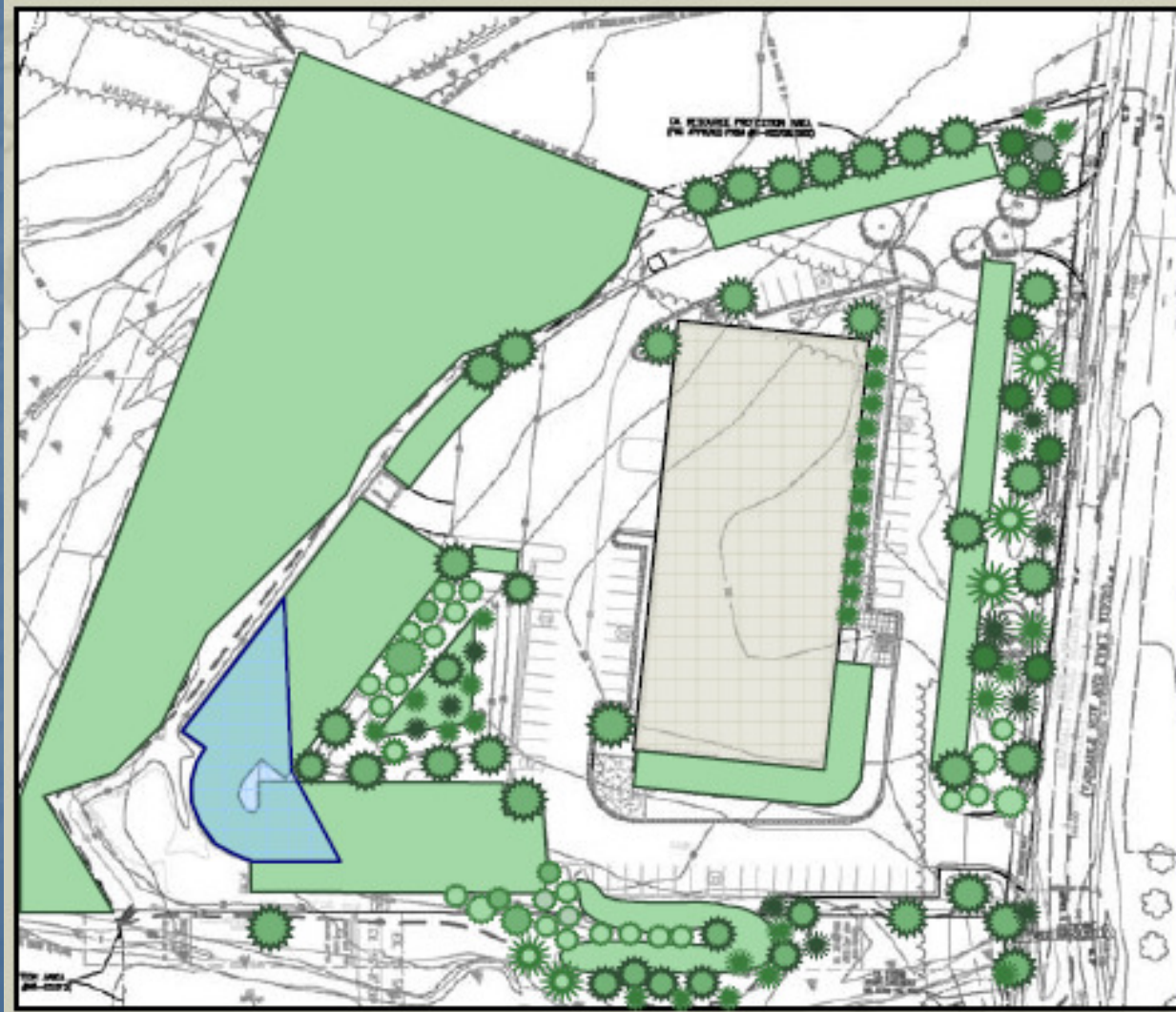
New Landscape Area used for retention



Bioswale from Parking Lot



Numerous methods for detention/infiltration
combine stormwater with tree and



Summary

- Insure that Tree Preservation, Landscape and Park/Opens Space Requirements enable and incentivize use for stormwater management