# General Improvements

**GREENS, TEES, BUNKERS**
All greens, tees, & bunkers will be constructed using state of the art technology in the locations indicated on the plan. Greens will be built to USGA specifications, tees will be sandcapped for drainage and compaction resistance, and underdrains and liners will be installed in bunkers to maintain sand quality and promote excellent drainage.

**IRRIGATION SYSTEM**
A new state-of-the-art automated irrigation system will be installed in all areas of play. The system will include all new main distribution lines, lateral lines, valves, sprinkler heads, a computerized control system ,and a new pump station that will allow the entire course to be watered in eight hours. The new pumps will be set up to draw from a new irrigation reservoir which will be filled from the nearby existing well. The reservoir will allow for emergency water storage of several days in the event the well system needs servicing. The reservoir will also collect and recycle stormwater runoff from a large portion of the site, which will reduce the need for groundwater use.

**DRAINAGE SYSTEM**
Drainage will be improved throughout the course, particularly in the flatter southern portion of the site with a new system of underground pipes, inlets, and swales. The unusual elevation changes of the site will be put to better use to enhance surface water movement away from playing areas. Approximately 2/3 of the site will be drained to the new irrigation reservoir which will help to recycle storm water and reduce groundwater usage. During intense storms, excess runoff into the irrigation lake will overflow into a constructed stream-like bioswale that will filter the runoff and improve water quality before it enters Slaughter Pen Bayou and Brays Bayou. Improved drainage will get play back on the course faster after a rain event and will increase the number of playable days throughout the year.

**CART PATHS & BRIDGES**
New concrete cart paths will be installed throughout the course, with improved routing to less intrusive but convenient locations. All existing bridges will be replaced with new prefabricated steel clearspan bridges.

**SUSTAINABILITY**
Sustainability will be incorporated into the restoration project in a number of ways. A highly efficient new irrigation system will help to conserve water and will reuse runoff from a large part of the site. The minimal amount of water necessary to maintain turf health will be applied via a state of the art control system linked with an on-site weather station to monitor site moisture requirements. Significant out-of-play areas will be converted to native grasses which will not be irrigated after initial establishment. Invasive species will be removed from forested areas, and native trees and shrubs will be installed in selected areas within the property to enhance habitat and site ecology. Stream banks will be stabilized and planted with native vegetation which will improve water quality and habitat. The new clubhouse and other site buildings will have the following sustainable attributes.

Clubhouse:
- Energy efficient a/c system to be used with programmable t-stats and controls
- LED lighting to reduce heating and energy use
- Maximize building insulation at all exterior walls and roof
- All exposed major glass areas in complete shade
- Maximize use of local materials such as wood, masonry, windows, carpet
- Maximum use of green space provided by the golf course adjacent to the Clubhouse
- Rain water reclaimed and put back into the property with minimum runoff

Maintenance:
- Steel building is recyclable
- Installation of a bio remediation system to clean and reclaim storm water and equipment wash-off water
- Natural ventilation where possible with minimum a/c only in office areas
- Storm water runoff from the maintenance site diverted to the irrigation lake for use on the golf course
- Minimize paved areas with use of all-weather unsealed areas for appropriate areas

**HISTORIC FEATURES**
The course has evolved and morphed through multiple feature styles in its 107 year-plus history. The current routing is essentially the same as it was in the 1915 survey. Most of the current layout features (green shapes, tees, bunkers) were created in a pre-1935 renovation - many of these features are either still fully intact or have period remnants that are still visible. The goal of this restoration is to preserve, enhance, or create as many of the historic features as possible while keeping the course playable and enjoyable by the greatest number of players. Every effort will be made to reproduce a course which evokes the early 20th century "Golden Age" of golf architecture - with limited evidence of heavy earthmoving equipment, long flowing natural lines, with some limited use of foreground bunkering and cross bunkering that were evident in the early days of this course. In addition, signage and graphic displays on the course and in the clubhouse will help to educate users about the unique history of the Gus Wortham course.

# Improvements per Hole

**HOLE 1**
**1.1** Tee complex - shift cart path to right side, consolidate and shift tee to right, opening better traffic flow in clubhouse area.
**1.2** Clear invasive species and undergrowth from ravines at tee and green. Plant with improved native and ornamental ground covers and shrubs at ravines near tee and clubhouse.
**1.3** Prune trees on left blocking view of fairway and restored cross bunker.
**1.4** Create new forward tee.
**1.5** Restore cross bunker on left to steer play to right and reestablish historic ambience on first hole.
**1.6** Cart path - move to right side of fairway. Remove from approach area - cross ravine to right with new clear span or timber bridge.
**1.7** Improve fencing on right - possibly with black vinyl chain link or steel picket.
**1.8** Restore but relocate old right side fairway bunker for definition and tightening of wide fairway on short par four.
**1.9** Add native vegetative screen to control views of strip center across Wayside through fairway.
**1.10** Enhance existing fairway undulation for drainage, aesthetics and challenge on short par four.
**1.11** Install drainage to keep approach swale dry, playable and mowable.
**1.12** Front right bunker restored. Extreme right bunker shape restored but maintained as grass bunker.
**1.13** Back right bunker from pre-1935 renovation deepened and restored to original form.
**1.14** Green surface and fill pad remain in vintage pre-1935 form. Recover back left and right corners.
**1.15** Add closely mowed chipping and containment area below back of green. Cart path moved away from green (see Hole 2).
**1.16** Interpretive plaque describing original hole configuration and indicating angle of original No. 2 playing into current No. 1 green.

**HOLE 2**
**2.1** Restore primary tees next to Wayside Dr. - remove existing pines and add screening/ protective trees on right along fence.
**2.2** Add new middle tee.
**2.3** Rearrange cart paths for tee complex.
**2.4** Add new forward tee close to creek bank near bridge.
**2.5** Improve existing tees on left - clear trees and thin brush, level and expand tees.
**2.6** Bank stablization along Slaughter Pen Bayou.
**2.7** New bridge over Slaughter Pen Bayou.
**2.8** Right fairway bunker cut into slope in landing area to help direct play away from road - suggestive of 1915 cross-bunker.
**2.9** Widen fairway per early aerial photos.
**2.10** Improve Wayside fence - make sure where exact property line is - recover land if possible. Possibly add berm and/ or vegetative screen.
**2.11** Eliminate modern mounds and arborvitae.
**2.12** Add cluster of native trees on right at 2nd landing area to help direct shots away from road.
**2.13** No historic elements left today on this green to preserve or enhance. Build new green at old green location favoring shot coming in from left.
**2.14** New cart path with slight "meanders" along fence line.

**HOLE 3**
**3.1** Shift cart path right of tees.
**3.2** Reshape tee into "boomerang" shape with No. 12 tee - relocate oaks from in front of tee.
**3.3** Add forward tee just short of service road.
**3.4** Restore fairway width to early limits.
**3.5** Eliminate modern berms and arborvitae in landing area.
**3.6** Restore staggered fairway bunkering from 1935 era in positions for modern game.
**3.7** Add native trees on right along fence at second landing area.
**3.8** Eliminate modern berm short right of green for better visibility of greenside bunker.
**3.9** Preserve internal green contours.
**3.10** Restore green complex - restore bunkers from pre-1935 renovation and expand putting surface to fill pad limits.
**3.11** Improve Wayside fence - make sure where exact property line is - recover land if possible. Possibly add berm and/ or vegetative screen.

**HOLE 4**
**4.1** Replace old teeing area in enlarged form near corner of Wayside and Lawndale. Vegetative and/ or fence screening required along street. Aims tee shots away from street.
**4.2** Replace short right fairway cross bunker - steers play away from Lawndale.
**4.3** Widen fairway to early era width.
**4.4** Regrade original (ca. 1915) drainage ditch to restore proper flow & function. Defines left edge of fairway.
**4.5** Possible replacement of early cross bunker location, but in form that goes with classic styling of other bunkers on course. Challenges longer hitters, but out of range of most players on tee shot.
**4.6** Reconfigure cart path down right side and around back of green along edge of woods. Fairway shifts to left somewhat.
**4.7** Restore green to quasi- 1944 configuration, opening up one side of green to play as long par four - length does not meet current USGA guidelines for par five. Chipping swales around right side of green and behind.

**HOLE 5**
**5.1** Add new back tee on slope to right of exist. tees. Clear vegetation as necessary.
**5.2** Realign cart path to left of new tees.
**5.3** Eliminate left tee, expand & relocate main tee to the right.
**5.4** Clear trash trees and undergrowth to open views and air circulation.
**5.5** Add new forward tee on natural ridge.
**5.6** Eliminate arborvitae.
**5.7** Move cart path out of play area left of green.
**5.8** Restore right edge of green & right side bunkers with ledge-like pin setting above restored right bunkers. Expand green to 1935 size and shape with strong left to right slope.
**5.9** Restore two of 1935 era bunkers left of green.

**HOLE 6**
**6.1** Reconfigure cart path for better tee access.
**6.2** Reconfigure & expand tees for restored green position / yardage.
**6.3** Add new forward tee.
**6.4** Relocate small trees planted along right edge at top of creek bank to other portions of site. Keep sweeping view to green and bayou open.
**6.5** Elevate the left edge of the fairway inside of the treeline so as to impede pulled golf shots from rolling beyond and into the 17th fairway.
**6.6** Restore early cross bunker in low area near front of current green.
**6.7** Restore 1935 green position and greenside bunkers. Elevate green above creek bank. Relocate utilities as necessary.

**HOLE 7**
**7.1** Refurbish rest shelter.
**7.2** Reshape primary tee.
**7.3** Expand lower tee.
**7.4** Add new forward tee.
**7.5** Create low grassy / wetland area in place of berm to offset added fairway elevation in flood plain.
**7.6** Elevate fairway 2-3 ft. above existing grade to reduce flood frequency.
**7.7** Widen and shift fairway to left - remove trees in left portion of fairway.
**7.8** Cart path - turn to left past middle tee - run along creek edge at left to new bridge location.
**7.9** New bridge left of fairway in trees.
**7.10** Restore stacked right side green bunkers - sets up green beautifully and also helps contain slices from reaching No.8 tee.
**7.11** Place grass hollow in location of early left side green bunker.
**7.12** Install low netting, trees and shrubs to provide safety barrier from poor tee shots on hole nine.

**HOLE 8**
**8.1** Enlarge teeing area splitting into two major portions with cart path in between for optimal access.
**8.2** Add new forward tee.
**8.3** Enlarge and rebuild lake and retaining wall.
**8.4** Replicate existing green further back at maximum length possible.

**HOLE 9**
**9.1** Level and resurface all tees.
**9.2** Enlarge/rebuild forward tee at original par 3 tee location.
**9.3** Realign cart path at tees, and shift to right at fairway. Remove existing fence.
**9.4** Restore existing right bunker and additional cross bunker that no longer exists to 1935 form. Will tend to make long hitters aim farther left or lay up with iron off tee, potentially reducing number of shots hit toward clubhouse and parking area.
**9.5** Preserve grass hollow on left - was part of early chain of cross bunkers.
**9.6** Rebuild left side bunker to adequate depth.
**9.7** Take green to original fill pad limits - reestablish internal contours relating to surrounding features.


# Improvements per Hole (cont.)

**HOLE 10**
**10.1** Enlarge and slightly lengthen existing tees, expanding to right - clear out trees and brush as necessary.
**10.2** Widen opening in trees as in early aerial photos, clean up ravine as per item 1.2
**10.3** Create new forward tee forward and left of existing forward tee.
**10.4** Realign cart path farther right beyond regular tees and farther right of green.
**10.5** Restore 1935 green complex. Essentially the same as today, with green expanding to limits of fill pad, and bunker shape and depth reclaimed, narrowing entrance to shortest of the par threes.
**10.6** Restore grass depression behind green - previously wrap-around bunker in 1915 which was left in place in later years as grass bunker. Helps contain overshots from reaching No. 11 tee.
**10.7** Prune & thin canopy of live oaks at back left of green.

**HOLE 11**
**11.1** Add far back championship tee.
**11.2** Shift tees and cart path to right approx. 20 feet, clearing trees and vegetation as necessary. Break in tees to accomodate topography where ravine cuts in. Extend back tee and expand all tees.
**11.3** New bridge angled more to right to align with path farther right climbing hill.
**11.4** Clear and thin underbrush left of fairway allowing fairway to shift left slightly. Open view of terrain and creek to left.
**11.5** Restore high right approach bunker.
**11.6** Restore green to fill pad limits, especially back right behind bunker.
**11.7** Deepen and remove high front bunker lips for visibility from landing area.
**11.8** Remove water oak behind green that hampers turf at back of putting surface.

**HOLE 12**
**12.1** Rebuild No.12/3 tee in boomerang shape as described in item 3.2 for hole 3
**12.2** Add new forward tee.
**12.3** New cart path alignment and turn-around.
**12.4** Create grass hollow along left side to accentuate topography and add challenge to short par four.
**12.5** Clear tree line back on left side - also thin out trash trees and underbrush in ravine on left opening views to bayou.
**12.6** Reroute cart path to left and behind green. Gets away from incoming shots off of 13 tee and gives players a good view down into the ravine and creek to left.
**12.7** Semi-restoration / enhancement of original cross bunker/ chocolate drop mounds/ ridge in front of green.
**12.8** Green has changed frequently over the years - no real strong point to restore from any era. Create new green concept with raised plateau surface falling off into deep fairway areas surrounding green on all sides. Cross bunker and mounds partially hide green from right side of fairway, rewarding tee shot down left with opening to green or possibly tee shot that reaches the green. Misses will be funneled away from green to chipping areas 4 to 6 feet or more below green as natural grade falls away toward 18 fairway.

**HOLE 13**
**13.1** Reshape and realign existing tee.
**13.2** Realign cart path at tee and shift left into edge of trees. Clear and thin trees on left to accomodate new path route.
**13.3** Add new forward tees.
**13.4** Restore fairway width.
**13.5** Restore right fairway bunker within existing shape remaining on ground.
**13.6** Shift cart path to left before green bunker where it turns toward No. 14 tee.
**13.7** Add native tree cluster to protect green from No. 3 tee.
**13.8** Restore entire green complex - enlarge green and bunkers to existing fill pad shapes.

**HOLE 14**
**14.1** Restore primary tee complex - lower into two tier configuration and realign with fairway.
**14.2** Add new forward tee past existing service road.
**14.3** Relocate powerlines & pole or bury underground.
**14.4** Cart path shifts to left of fairway past forward tee.
**14.5** Restore early era fairway width, especially on left.
**14.6** Eliminate modern mounds left and right, and eliminate arborvitae.
**14.7** Semi - restoration of 1915 right fairway cross bunker with placement in modern tee shot landing area.
**14.8** New approach bunker on left sets up serpentine fairway and helps steer play away from 17 tee.
**14.9** Restore 1935 green complex, recovering back of putting surface and restoring bunkers to original size and effect.
**14.10** Preserve internal green contours.

**HOLE 15**
**15.1** Rest shelter right of proposed tees with cart access to and from tee.
**15.2** Shift primary tees to right - expand and extend.
**15.3** New forward tees past service road.
**15.4** Add cluster of native trees to protect 16 green from 15 tee.
**15.5** Eliminate modern pond right of fairway. Fill and create "chocolate drop" mounds for fairway interest and addition of "period" feature.
**15.6** Preserve existing mound in left fairway landing area.
**15.7** Shift fairway to right beyond new mounding.
**15.8** Eliminate fairway mound past former pond.
**15.9** Enhance shape of existing large mound past landing area on right.
**15.10** Restore central fairway bunker which was the only portion of original 1915 cross bunker left in place in pre-1935 renovation.
**15.11** Eliminate cart path loop between tree and green.
**15.12** Restore left approach bunker at green.
**15.13** Preserve existing green contours.
**15.14** Restore 1935 green limits to fill pad edges.
**15.15** Rebuild right green-side bunker.

**HOLE 16**
**16.1** Rebuild tees in place.
**16.2** Add new forward tee.
**16.3** Remove invasive species in woods.
**16.4** Shift cart path farther right. Provide parking area for green access behind enhanced old mound from former bunker location, short of danger zone off of 17 tee. Also provide signage directing player's attention to danger from shots from 17 tee. Eliminate cart path between 16 green and 17 tee.
**16.5** Restore modified cross bunker array in approach area.
**16.6** Add mounding right of green to obstruct sliced shots from otherwise bounding onto 17 tees.
**16.7** Restore 1935 green limits to fill pad shape and bunker at left to former shape and depth.
**16.8** Preserve internal green contours.

**HOLE 17**
**17.1** Lengthen and reconfigure tees, eliminating cart path between 16 green and 17 tee.
**17.2** Add new forward tees.
**17.3** Clear and thin vegetation left of fairway for view of new irrigation lake.
**17.4** Shift cart path farther right from tees to first landing area.
**17.5** Clear underbrush & invasive species in woods on right.
**17.6** Enhance existing drainage swales and fairway undulation.
**17.7** Widen fairway to 1935 limits on right.
**17.8** Eliminate modern mounds in fairway left and right.
**17.9** Construct new irrigation reservoir in ravine to left of fairway. Possibly a two-level lake to fit elevation change in ravine. Retain and/or plant some specimen trees around perimeter. Fill line to upper lake from water source, with irrigation pump station drawing from bottom lake.
**17.10** Widen fairway to left along entire hole. Brings slope to water into play and gives room to move away from No. 6 fairway.
**17.11** Shift right edge of fairway left. Split cart path and add native trees giving more separation from hole 6.
**17.12** Restore right side green bunker as two separate stacked bunkers.
**17.13** Shift cart path slightly to right at green.
**17.14** Restore two left greenside bunkers.
**17.15** Restore green to 1944 limits.

**HOLE 18**
**18.1** Extend back tee slightly.
**18.2** Reshape and clean up tees and slopes around cart path near tees.
**18.3** Preserve existing white tee location (original tee from pre-1935).
**18.4** Add new tee at base of slope of current regular tee.
**18.5** Create new stream / bioswale feature for overflow of excess storm water from irrigation lakes and mitigation of lake construction.
**18.6** Enlarge and reshape forward tee.
**18.7** Add extreme forward tee near bridge on left.
**18.8** Stabilize banks along Slaughter Pen Bayou.
**18.9** New cart bridge.
**18.10** Restore right side of fairway on tee side of creek - original design had creek bisecting fairway.
**18.11** New pedestrian bridge.
**18.12** Eliminate central cart path - shift left along bayou and into trees around back of green. Build timber boardwalk cart path in this area with high side flush with grade, and ravine side supported with pilings - great views into wooded ravine from path as golfers finish round.
**18.13** Clear invasive understory vegetation left and right.
**18.14** Clear trees on right - restore sight line to clubhouse from tee and fairway as in early photo.
**18.15** Add new central fairway bunker at 290 - 300 yard from back tee. Requires long hitters to consider line when aiming tee shot to widened fairway and makes preferred left side to come into green opening more difficult to reach. Also sets up climb to green beautifully - adds memorability and aesthetics to finishing hole.
**18.16** Restore bunkering from pre-1935 renovation.
**18.17** Restore green surface limits - recover pinable areas.
**18.18** Restore existing chipping green to rectangular shape and form of historic 18th putting green (ca. 1915), which could be cupped & used as 18th green on special occasions.
**18.19** Preserve internal green contours.

**ENTRANCE**
**E.1** Add deceleration lane on Wayside / S. 69th St. approaching entrance.
**E.2** Improved landscaped signage at entrance.
**E.3** Regrade / rebuild entrance road for less steep vertical transition from Wayside.
**E.4** Alternate / service entrance from Capitol St.
**E.5** Reroute entrance road through wooded ravine for better entry sequence and to free up space for short game practice area.

**CLUB HOUSE AREA**
**CH.1** New 9,000+ SF club house / community building.
**CH.2** Cart staging area.
**CH.3** Practice putting green.
**CH.4** New parking lot - 150 cars ±
**CH.5** New First Tee facility / cart storage building.

**PRACTICE GROUNDS**
**P.1** New short game practice facility.
**P.2** Reconstruct wider, lighted practice tee (approx. 30 slots).
**P.3** Cart parking
**P.4** Sculpted target greens at various yardages. Orient range more east / west away from No. 9 tee.
**P.5** Demolish existing cart barn - relocate as shown.
**P.6** Relocate jogging path and clear trees to free up space for extended practice range.
**P.7** Protective netting around back & right side of range.

PROPOSED CARD OF THE COURSE

| HOLE | PAR | CHAMP | BACK | MIDDLE | LADIES |
|---|---|---|---|---|---|
| 1 | 4 | 343 | 333 | 320 | 310 |
| 2 | 5 | 490 | 465 | 433 | 398 |
| 3 | 5 | 516 | 500 | 486 | 439 |
| 4 | 4 | 462 | 434 | 414 | 391 |
| 5 | 3 | 200 | 184 | 173 | 118 |
| 6 | 4 | 442 | 417 | 401 | 354 |
| 7 | 4 | 386 | 376 | 355 | 313 |
| 8 | 3 | 137 | 124 | 114 | 94 |
| 9 | 4 | 327 | 307 | 275 | 174 |
| OUT | 36 | 3,303 | 3,140 | 2,971 | 2,591 |
| 10 | 3 | 135 | 123 | 103 | 74 |
| 11 | 4 | 448 | 415 | 370 | 310 |
| 12 | 4 | 295 | 279 | 259 | 233 |
| 13 | 4 | 327 | 312 | 281 | 256 |
| 14 | 4 | 391 | 377 | 359 | 321 |
| 15 | 4 | 375 | 353 | 318 | 293 |
| 16 | 3 | 235 | 217 | 202 | 169 |
| 17 | 5 | 503 | 482 | 454 | 423 |
| 18 | 4 | 375 | 348 | 312 | 277 |
| IN | 35 | 3,084 | 2,906 | 2,658 | 2,356 |
| TOTAL | 71 | 6,387 | 6,046 | 5,629 | 4,947 |

SCALE IN YARDS
0 50 100

Project Team:

ROBERT W. McKINNEY AIA ARCHITECT
HILL & FRANK ARCHITECTS
EHRA
HERITAGE LINKS
Finger Dye Spann, Inc. Golf Course Architects

the RESTORATION

December 8, 2015

# REVISED MASTER PLAN

# *Gus Wortham Park Golf Course*