



**SPORTS FIELD**  
MANAGEMENT ASSOCIATION

# Fixing Florida's Largest Sports Field System- A Cinderella Story

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**WELCOME**

**FIXING**

**FLORIDA'S**

**LARGEST SPORT**

**FIELD SYSTEM**

**GREG BROWN, PARKS AND ATHLETICS MANAGER**



# **PRESENTATION OVERVIEW**

- **Hillsborough County Overview**
- **The Characters**
- **League Overview**
- **League Highlights**
- **Sports Field System Overview**
- **The Contracts**
- **Improving The Fields**
- **Major Projects**
- **The Care Plan**
- **A look at the changes**
- **Where we are now**
- **4 Autonomous Mower trials**
- **A Look at the future**

# HCPRD OVERVIEW

**1,200 Sq miles**

**172 parks**

**253 Sports Fields (Football, Baseball, Softball, Soccer, Cricket and Lacrosse) (233 in Bermuda)**

**53 Recreation Centers**

**113 Playgrounds**

**10 Fitness Zones**

**Hundreds of hard courts**

**268 Fields Under Bermudagrass Care (Largest in Florida)**

**Largest Sports Field System in Florida**

**50 Athletic Orgs**

**40,000 Youth a night on fields**

**150 Million in Park Impact fee- Next 10 years**

**\$3 Million for 37 Additional Pickle ball Courts this year**

**23 Synthetic Turf Fields**

**Park Services completes about 8,000 work orders a year**

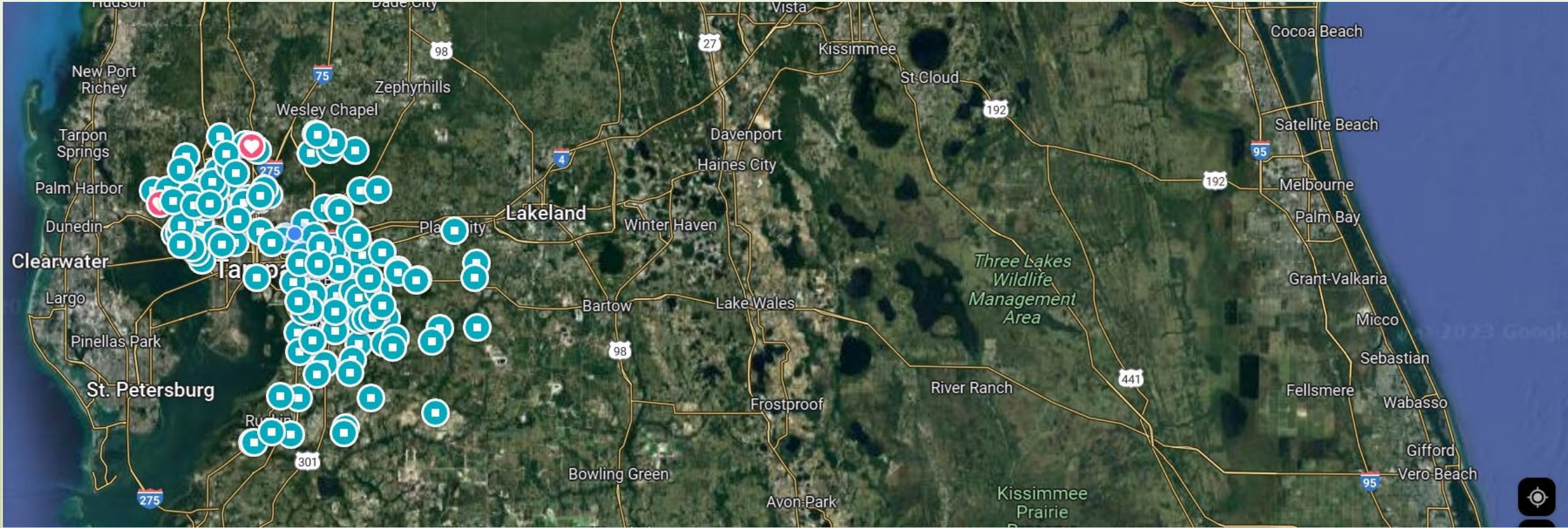
**44 Million dollar budget – Plus capital**

**368 FTE**

# HCPRD OVERVIEW

## Capital Projects – Last 5 years

- 12 Synthetic Fields
- 5 splashpads- 5 more on the way
- Several New Parks
- 100 new batting cages
- **Sodded with Bermuda over 220 sports fields**
- New 85 Acre \$22 million Sportsplex – Phase 1
- Multiple LED Sports Park Conversions
- 12 Fitness Zones going in
- 100 ongoing projects
-



# WHY CINDERELLA ?

An abusive stepmother and two stepdaughters are invited to a royal ball, leaving behind their daughter and sister whom they call Cinderella. Her fairy godmother appears and grants Cinderella's wish to go to the ball, magically providing a coach, servants, a dress, and perfectly fitted glass slippers

# THE CHARACTERS





# THE HILLSBOROUGH STORY

## The Characters

The Leagues

The Fields

The standard of care

Hillsborough Admin

The Staff

# THE HILLSBOROUGH STORY

**...In the beginning**

## **The Characters**

**The Leagues – HI Cost Low Cost , 2013- Keys to the castle**

**The Fields – Haves and Have not**

**Standard of care – Low – Common ground mower, ants, min irr**

**Hillsborough Admin- Lower support and financing**

**The Staff – 2 staff to handle fires and compliance**

**Revenue – \$16,000 a year**

# THE HILLSBOROUGH STORY

**In 2018 ...**

## **The County**

- **Mid Year – “we have 1.5 million”**
- **Formed the Central Division**
- **Began to build up Athletics**
- **Wrote, bid, and awarded contracts**
- **Began technology trials**
- **Been with County 5 years**

# LEAGUE OVERVIEW

Football
Bealsville Eagles
Brandon Bears
Brandon Broncos
Brandon Cowboys
Seffner Seahawks
Dover Patriots
East Bay Buccaneers
FishHawk Spartans
Keystone Bills
Lutz Chiefs
New Tampa Wildcats
Bay Area Jaguars
Pinecrest Pilots
Progress Village Panthers
Riverview Raiders
Turkey Creek Trojans
Valrico Rams
Westchase Colts
Carrollwood Packers
Tampa Bay Cardinals

18



# LEAGUE OVERVIEW

Baseball
Antioch Little League
Bloomington Youth Baseball Association
Citrus Park Youth Sports Association
East Bay Youth Athletics
Mango Youth Baseball & Softball
FishHawk Youth Baseball
Forest Hills Youth Baseball
Keystone Little League
Lutz Baseball
North Tampa Athletics Association --- 2 locations
North Brandon Youth Baseball
Progress Village Little League
South Brandon Sports
Town and Country Baseball
Pinecrest Little League

15



# LEAGUE OVERVIEW

Soccer
West Florida Flames
Florida Hawks Futbol Club
Tampa Bay United
Players Club of Tampa Bay
Rural Youth Soccer Association
FC Tampa Rangers
Futbol Club of Tampa - Town & Country Competitive Soccer
Tampa Dynamo FC

8



# LEAGUE OVERVIEW

<b>Softball</b>
Brandon Velocity
Miss Tampa Bay Softball
Lutz Softball
<b>Lacrosse</b>
FishHawk Coyotes Lacrosse
<b>Cricket</b>
Tampa Cricket League
Tampa Premier League
International Cricket Association of Tampa

3



1



3



# RENTAL SITE OVERVIEW

RENTAL SITES - SPORTS COMPLEXES
Antioch
Dover
Northlakes
Progress Village
Rubin Padgett
Thonotosassa
Timberlan
Town and Country
William Owens Pass
West Park
Skyway Park
Thatcher Park
Springhead Park
Mort Park
Alexander Park

Southshore Sportsplex





# USE OVERVIEW

- 233 fields (under care) 253 total
  - 50 league partners
  - 4,000 volunteer coaches
- 40,000 youth a night on fields
  - 100 travel teams nightly

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## **253 FIELDS TOTAL**

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111 Baseball Fields (59 Softball Fields )

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53 Soccer Fields

---

30 Football Fields

---

30 Multipurpose Fields

---

5 Cricket Fields

---

3 Lacrosse Fields

---

21 Synthetic turf fields

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# PREMIER COMPETITION SITES

SouthShore



Skyway



2

# PREMIER COMPETITION SITES






# Improving The Fields

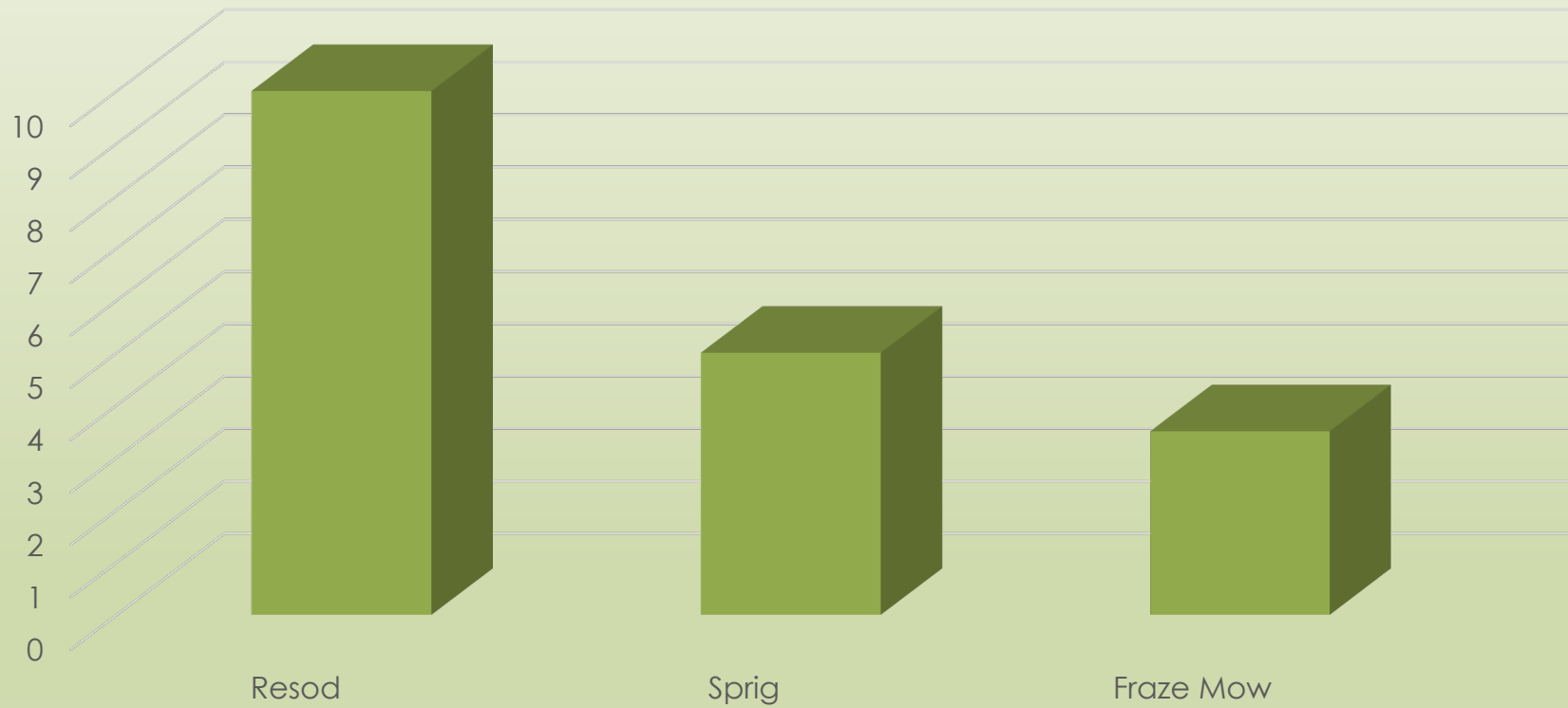
# THE CONTRACTS

- Sod Conversion (now includes 2 levels of clay, and contract mowing )
- Irrigation – Now includes Soil Scout
- Chemical and Cultural Practices
- Field Use Agreement

# Award Results – \$10M Delta

Company 1	Company 2	WORLD SPORTS TURF AND MARKETING LLC Quote 231707
		
		5,000.00
30,008,235.45	19,064,721.50	9,281,942.00
		9,286,942.00
02/22/2019 13:57	02/15/2019 11:07	02/21/2019 23:35
No	No	Yes

# Comparative Cost Options







- Grass Cultivars
  - Density / Wear Tolerance
  - Quick Recovery
- Overseed v. Pigment
  - Transition Problems
  - Shorter Dormancy

## Best Practices – Grass

# Renovation Methodology



# Spray



# Irrigation Heads



# Spader



# Sod Installation





**SHIMBERG SPORTS  
PARK**







11/2019



1985

Imagery Date: 11/26/2019 28°00'49.20" N 82°33'18.27" W elev 0 ft eye

Good

# Challenges and Changes

- Irrigation Depth (age of fields / unknown utilities)
- Open field time
- Lips / Regrading ballfields (clay)
- Sod Repair
- Playing Immediately
- Mowing Immediately
- Planning changes
- Communication
- Covid 19

# Radice Complex

## Legend

- 5 Grounds Staff
- 1 Building/Structure Maintenance Staff
- 3 Reel Mowers
- Common Ground
- Mechanical Application Equipment
- 40 Acres Bermuda



Ed Radice Sports Complex



# The Care Plan

# THE CARE PLAN

Chemical and cultural



Mowing ,inspection,  
oversight



Sod and Clay renovation



Irrigation renovation



Clay maintenance



Irrigation maintenance



# Updated Contracts

Sod Conversion (now includes 2 levels of clay, multiple repair size prices, and contract mowing )

Irrigation – Now includes Soil Scout

Chemical and Cultural Practices improved – More performance spec less a la carte

# The Equipment

# Best Practices - Mowing

3/4 to 1 inch



1 inch +



2 inch +











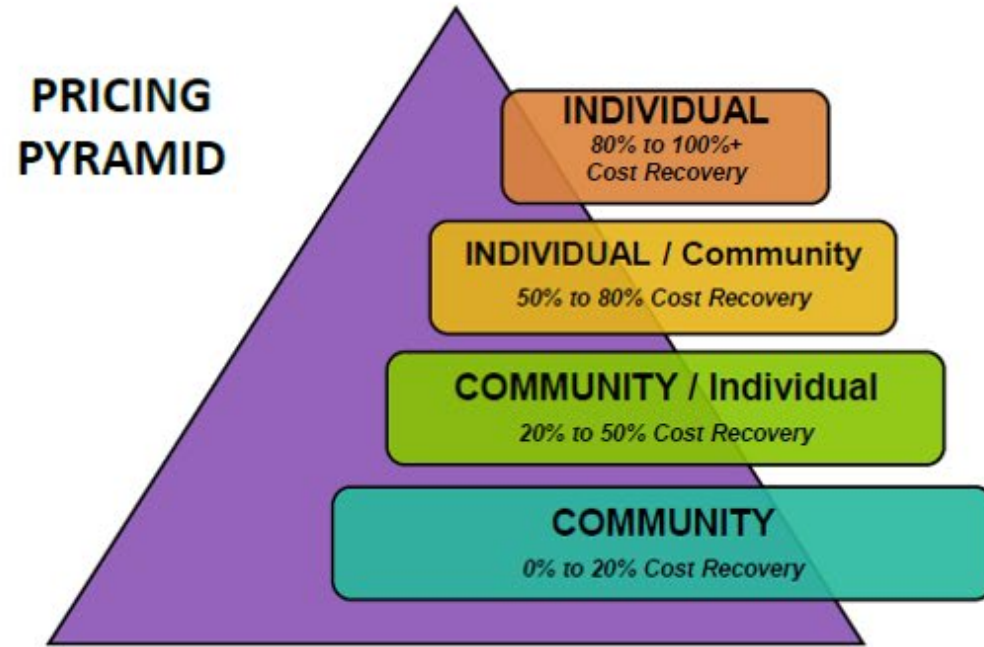
# League Issues, Changes, Impacts



**HILLSBOROUGH COUNTY**

# Cost Recovery Model

The model below demonstrates the pricing pyramid used in Hillsborough County's Parks Master Plan to recommend the County's targets for cost recovery by user type.



# *Implementation*

SFA has delivered a set of recommendations and insights for implementation of the new Field Use Agreement. While not all recommendations can be outlined in this presentation, some key points include:

- The FUA should be structured as a one-year agreement with two (2) one-year auto renewals; both parties should maintain the right to terminate the agreement.
- The scholarship program should be initiated and awarded prior to the initiation of the new FUA.
- If a P3 model is offered at one location, this option should be considered at all viable locations.
- We will be asking for 3 votes from the Parks Advisory Board; Cost recovery percentage under the new FUA ,New FUA structure, and P3

Parks Name	Address	League Name	2018 Median Household Income	Percent of County Median Income	Percentage of Cost Recovery
Oscar Cooler Sports Complex	766 W. Lutz Lake Fern Rd., Lutz, FL 33548	Lutz Cal Ripken Lutz Chiefs TBYFL Football FC Rangers Soccer Lutz Softball	\$ 79,484	135%	35%
Rodney Colson Sports Complex	770 Gerard Ave., Seffner, FL 33584	Tampa Premier League Cricket	\$ 71,365	121%	35%
Skyway Sports Complex	3901 George Road, Tampa, FL 33634	TBYFL Football Skyway Little Pony	\$ 79,659	135%	35%
Summerfield Sports Complex	11942 Big Bend Rd., Riverview, FL 33579	Tampa Dynamo FC Soccer	\$ 72,388	123%	35%
Timberlan Park	4905 W. Timberlan Street, Tampa, FL 33624	Carrollwood Saints TBYFL Football	\$ 81,908	139%	35%
Vance Vogel Sports Complex	13012 Bullfrog Creek Road, Gibsonton, FL 33534	East Bay Youth Sports Baseball East Bay Youth Sports Softball East Bay Bucs Football	\$ 75,546	128%	35%
Westchase Community Center	9791 Westchase Dr., Tampa FL 33626	Westchase Soccer Association	\$ 89,014	151%	35%
<b>23% Cost Recovery</b>					
Antioch Sports Complex	8510 Franklin Rd., Plant City, FL 33565	Antioch Little League	\$ 60,667	103%	23%
Dover Community Center and Sports Complex	2820 S. Gallagher Rd., Dover, FL 33527	Bullet Travel Baseball	\$ 61,632	104%	23%
E.L. Bing Sports Complex and Airport	7358 Taylor Rd., Seffner, FL 33584	Seffner Seahawks Football	\$ 60,473	102%	23%
Evans Park Community Center and Sports Complex	1104 N. Kingsway Rd., Seffner, FL 33584	Tampa Premier League Cricket	\$ 61,075	104%	23%
JC Handy Sports Complex	3104 S. Kings Ave., Brandon, FL 33511	Brandon Broncos Football West Florida Flames Soccer	\$ 61,917	105%	23%



Parks Name	Address	League Name	2018 Median Household Income	Percent of County Median Income	Percentage of Cost Recovery			
<b>35% Cost Recovery</b>								
Bloomingdale Sports Complex	2215 Bloomingdale Ave, Valrico, FL 33596	Bloomingdale Cal Ripken Bloomingdale Youth Sports Softball	\$ 93,917	159%	35%			
Cross Creek Park	19025 Basset Creek Dr., Tampa, FL 33647	New Tampa Wildcats Football	\$ 90,580	154%	35%			
Eber Sports Complex	18050 Kinnan Street, Tampa, FL 33647	North Tampa Athletics Cal Ripken	\$ 98,461	167%	35%			
Ed Radice Sports Complex	14720 Ed Radice Dr. Tampa, FL 33626	Keystone Little League Keystone Softball Westchase Colts Football Tampa By United Soccer Adult County Softball	\$ 109,715	186%	35%			
Fishhawk Sports Complex	16112 Fishhawk Blvd., Lithia, FL 33547	FishHawk FBC Wolves Baseball FishHawk FYB Recreation Baseball Wolfpack Football FishHawk Florida Hawks Futbol Club Miss Tampa Bay Recreation Softball Lady Bandits Competitive Softball FishHawk Coyotes Lacrosse	\$ 112,845	191%	35%			
Keystone Community Center and Sports Complex	17928 Gunn Hwy, Odessa, FL 33556	Tampa Thunder Travel Rental Keystone Bills TBYFL Football	\$ 106,303	180%	35%			
New Tampa Sports Complex - Turner-Bartels Middle School	9020 Imperial Oak Boulevard, Tampa, FL 33647	North Tampa Athletics Cal Ripken	\$ 82,468	140%	35%			
Northdale Sports Complex	5354 Northdale Blvd., Tampa, FL 33624	Northdale Titans TBYFL Football	\$ 103,400	175%	35%			
Northlakes Community Center and Sports Complex	2640 N. Lakeview Drive, Tampa, FL 33618	Northwest Lacrosse Travel Ball Rental	\$ 79,434	135%	35%			

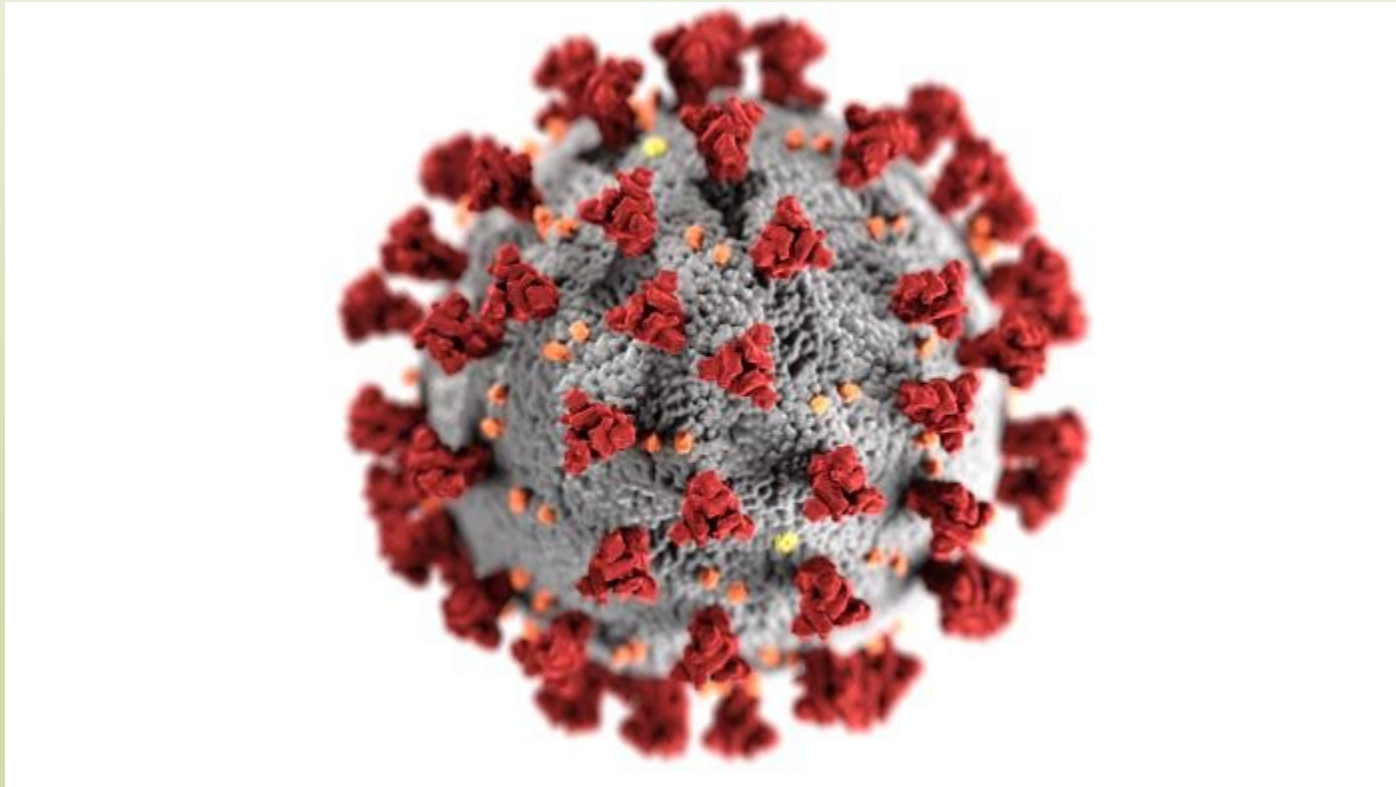
# YSO Impact Examples

The table below shows the variance between the fees currently paid and the fees that would be required to reach specified cost recovery targets.

Organization	Savings Under County Contract					
	0% Cost Recovery	20% Cost Recovery	40% Cost Recovery	60% Cost Recovery	80% Cost Recovery	100% Cost Recovery
Forest Hills Pony	\$48,000	\$31,000	\$14,000	(\$3,000)	(\$20,000)	(\$37,000)
Keystone Little League	\$34,757	\$13,557	(\$7,643)	(\$28,843)	(\$50,043)	(\$71,243)
Tampa Bay United	\$177,000	\$146,200	\$115,400	\$84,600	\$53,800	\$23,000
FishHawk	\$123,656	\$62,656	\$1,656	(\$59,344)	(\$120,344)	(\$181,344)
West Florida Flames	\$242,630	\$203,030	\$163,430	\$123,830	\$84,230	\$44,630

# THE FUA OUTCOME

# THE FUA OUTCOME



# Embracing Technology



# outdoorlink®



Control-Link® Control System

Cost per  
Cell Based  
Leagues (use history)  
Assign an de-assign users  
Set use times  
Manual on  
Post Storms  
Camera

As well – Restrooms and courts

# Onbase Automatic League Compliance System

First of its kind

Award winning

Free with trade



# Soil Moisture Sensors

## Hydra Scout

A small, robust, wireless buried sensor that was specifically designed to transmit from up to two metres below ground.

The Hydra Scout measures and transmits raw data to the network hourly for up to 20 years, including:

- Capacitive Moisture
- Temperature
- Electric Conductivity

Proprietary calculus is used to convert raw measurement data to Moisture content, Temperature and Salinity at the Soil Scout Hub Monitoring Service.



## Base Station

Receives the signals from Scouts via a Receiving Antenna and uploads data to the Soil Scout Hub server using a cellular modem.

Typically pole or building mounted, it can provide up to 1,000m range for sensors [1].

The antenna type is chosen according to the specific needs of the site. Each Base Station can handle more than 1,000 Scouts.

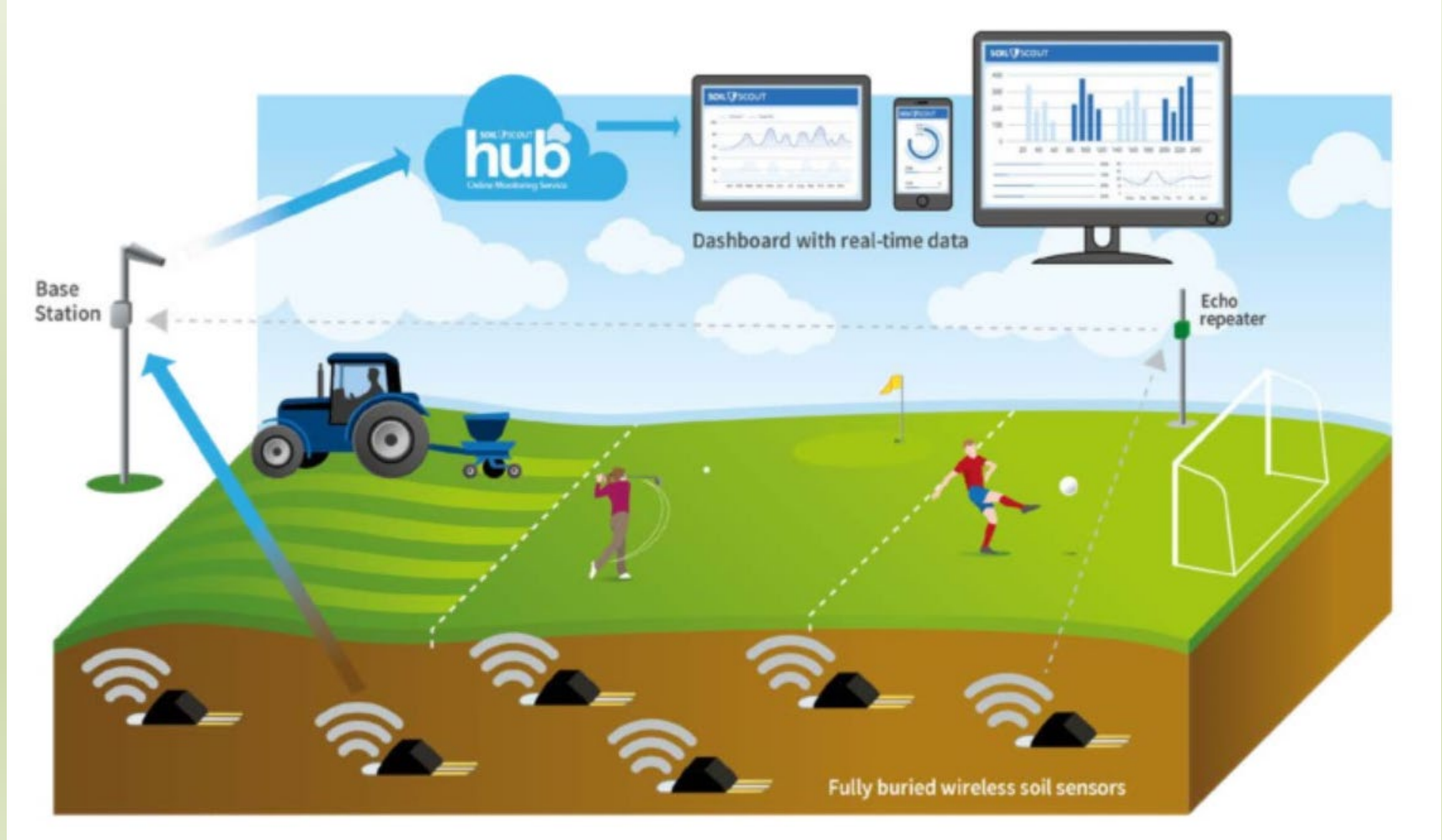


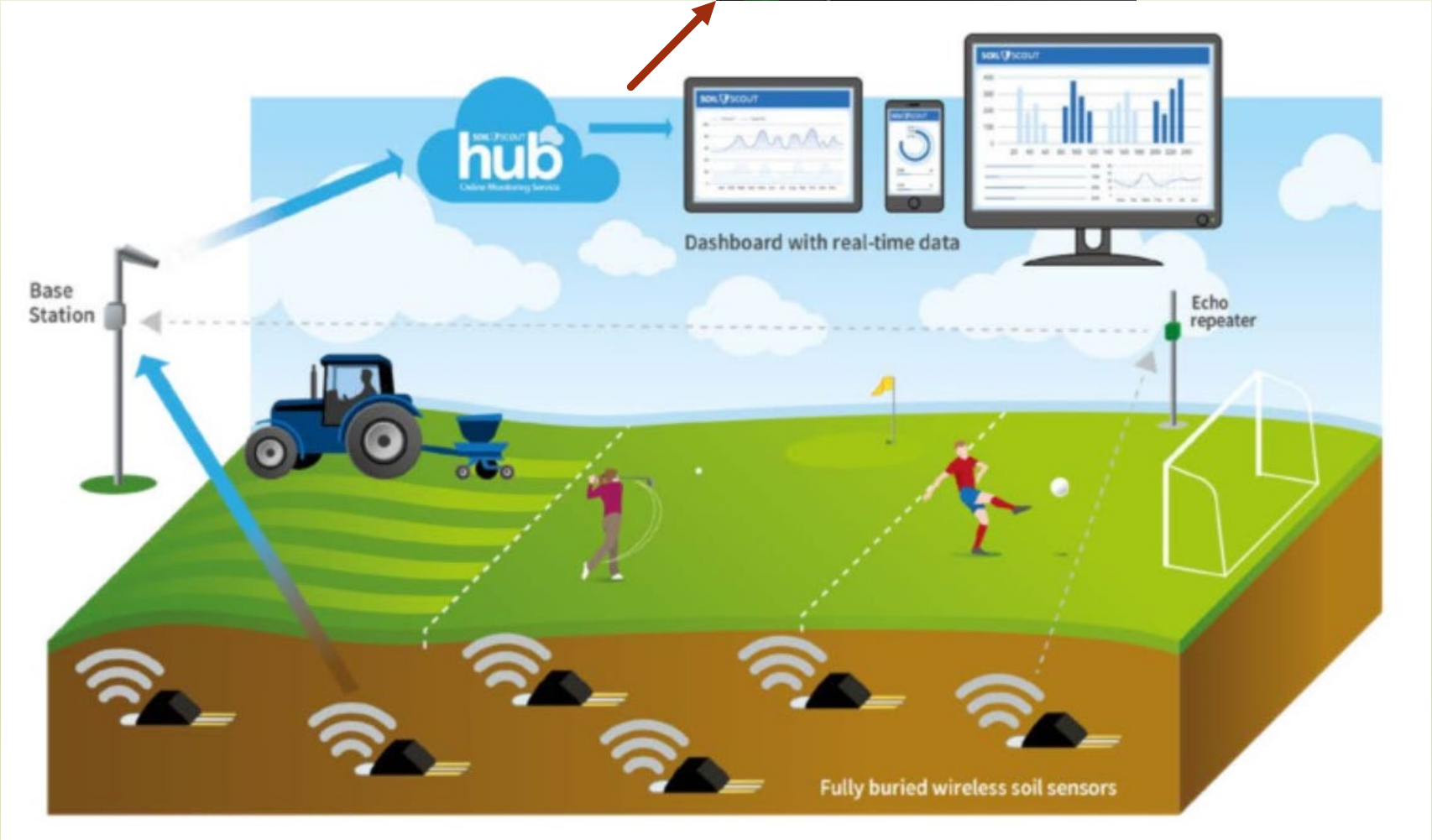
## Echo Repeater

When direct transmission to the Base Station is not possible because of distance or topographical barriers, one or more solar powered Echo Repeaters can be used to forward the signal. Range over 5km line of sight.

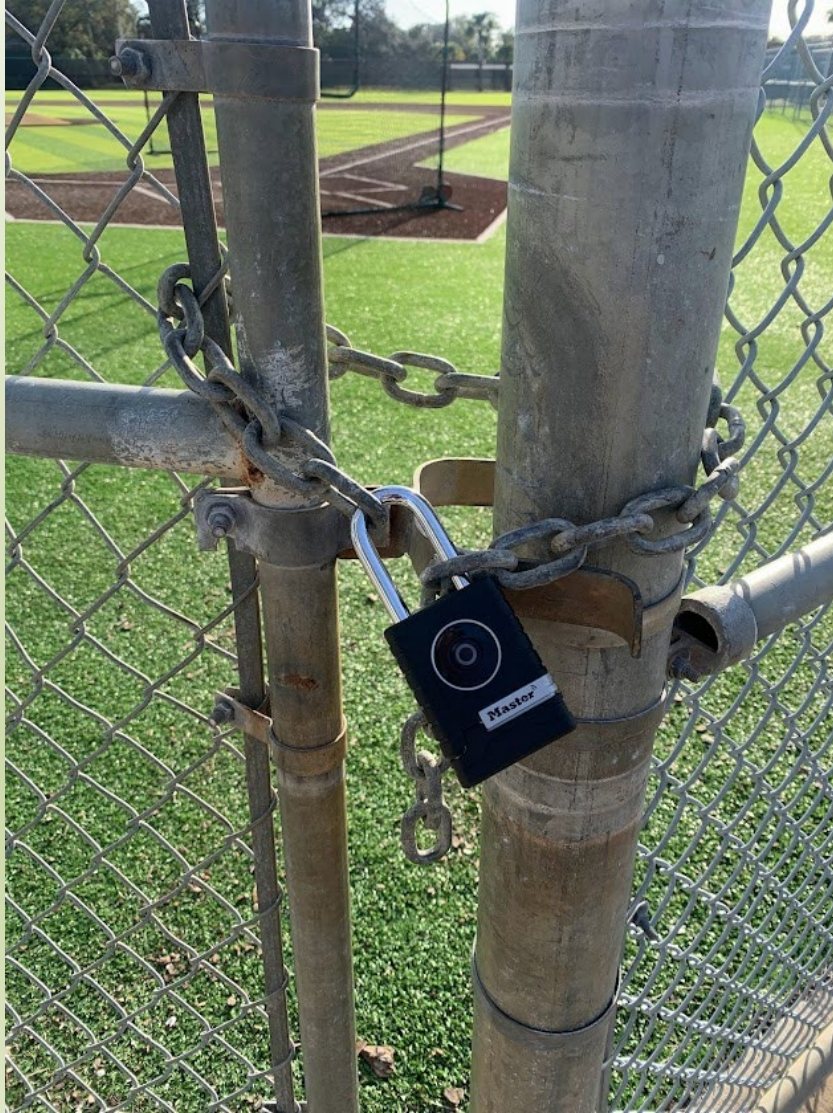


- 20 Year in soil wireless sensor
- 100 percent solar to the cloud
- Low cost monitoring
- No 3g/ 5G cards etc
- Portable
- Reliable
- API – for IQ shut OFF/ ON



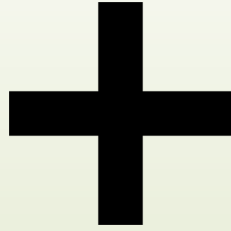


# BLUETOOTH LOCKS

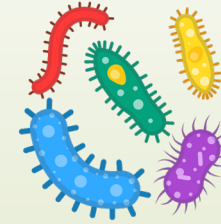
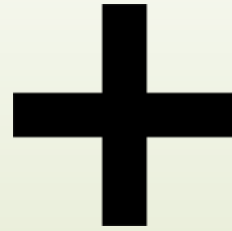




Activated Sewage Sludge  
Bio Active Effluent  
Municipal Feculence



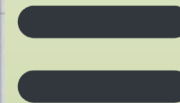
Yard Waste



Active Microbes



Ridiculous machine out of a James Bond movie



Black Gold



- **No Sodding - 6 weeks time**
- **Excludes (but not kills sting nematodes)**
- **1/4 material can be swept into thatch or**
- **Helps break down thatch**
- **Retains water**
- **Nutrients**



# Major Projects

Field Improvements (Sod, Irr.  
Clay, Technology)

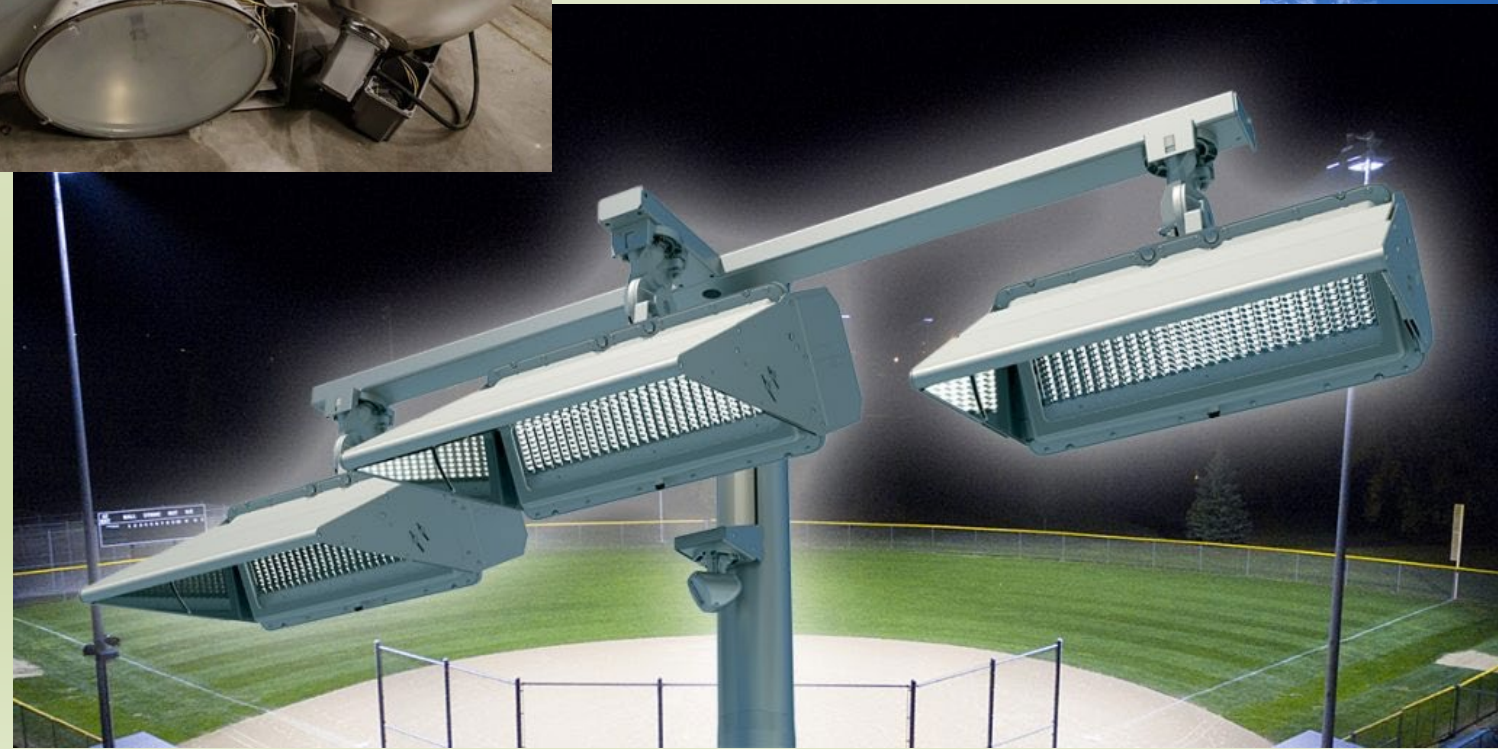
Synthetic Turf – From 10 to 22

Halide to LED conversion

Technology Upgrades



# 2020-? LED LIGHT PROJECT



# 2021/2022 SYN TURF PROJECT



# 2021/2022 SYN TURF PROJECT





**HILLSBOROUGH COUNTY PARKS**

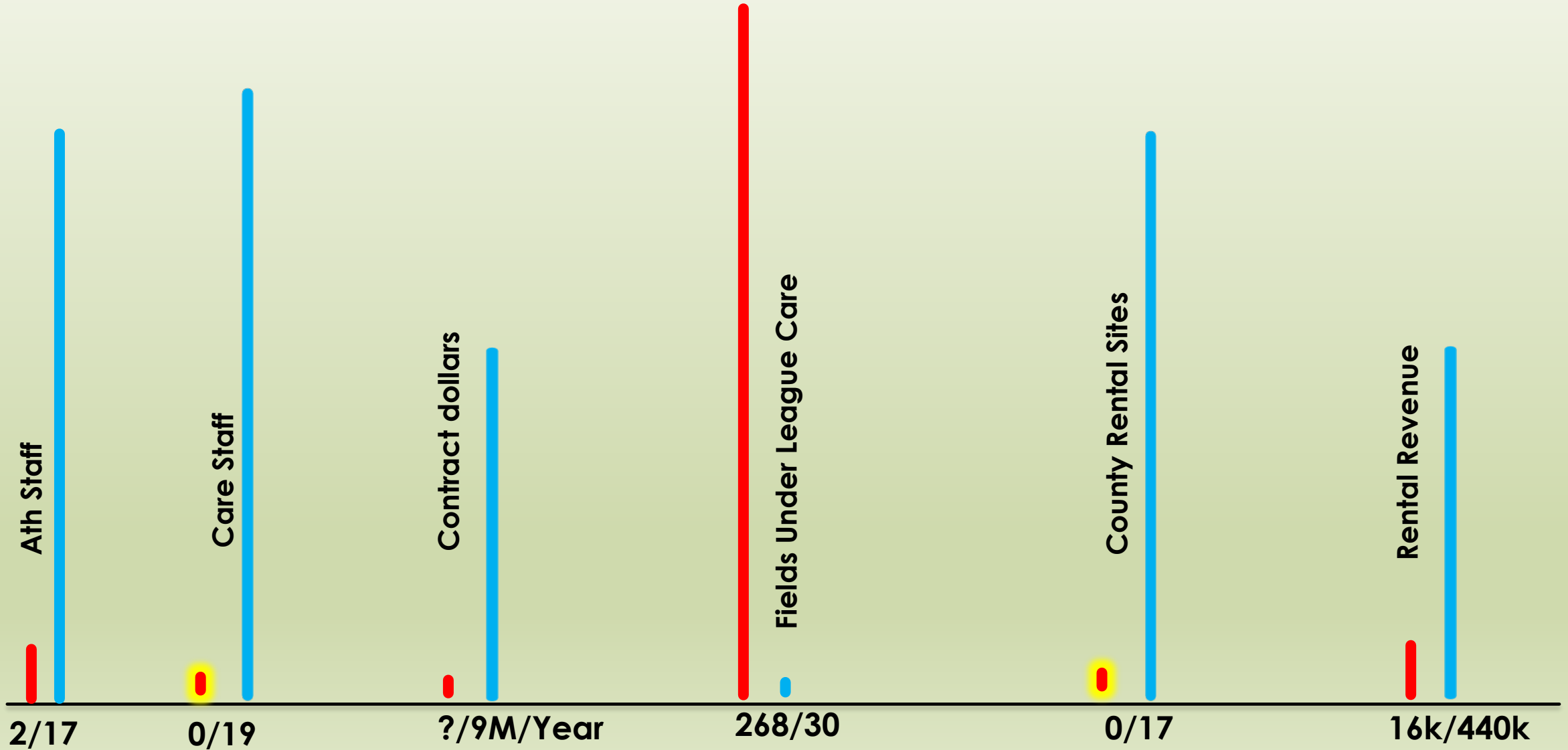


**Synthetic Fields in Hillsborough**

- SYNTHETIC FIELD IN USE (13)
- SYNTHETIC FIELD UNDER CONSTRUCTION (7)
- FUNDED FUTURE SYNTHETIC FIELD (3)

**Hillsborough County Florida**  
 600 F. Kennedy Blvd., Tampa, FL 33602  
 813-455-3400  
 www.hillsboroughcounty.org

# THE CHANGES



# Lessons Learned

# 2023/2024 APRON PROJECT



# APRON PROJECT





# APRON PROJECT



# APRON PROJECT





# Autonomous mowers/ machines





Scythe



Husqvarna



**X 3**

Husqvarna - Ceora



Kress Mega

**X 3**





Some or all of the following

- Guide wire
- Bounce and redirect
  - Radio signal
- GPS assisted navigation



Continuous Mow  
.6 acres each

### Real Time Kinematics (RTK)



Continuous Mow 9 acres each

- Inertial measurement unit (IMU)
- HDR Cameras
- GNSS- Global Navigation Satellite System
- Ultra Sonic Sensors



One time Mow



9 Acres

Keith Waller Park



Keith Waller Park

Dover Patriots

Sydney Dover Rd

Sydney Dover Rd

Dover Ranch Rd  
12/2020

Imagery



# Costs



## Test one – 3x Husqvarna

Two times Current  
Contractual Cost – To lease

## Test two – 2x Husqvarna Ceora Plus- 9 Acres at Waller

**Proposal:** JSM Services, Inc. proposes to sell two Ceora 546 and all necessary accessories to County Parks and Recreation for Keith Waller Soccer Complex. The Ceora 546 comes with a 3-year warranty on parts and needs the cutting height calibration performed annually at \$600. Annual service visits are performed at \$75 per hour.

Ceora 546, drive unit	\$19,999.99 x 2	\$39,999.98
Ceora Razor 43M, cutting deck	\$ 7,999.99 x 2	\$15,999.98
Charging Station	\$ 1,699.99 x 2	\$ 3,399.98
Wheel brush kit	\$ 1,499.99 x 2	\$ 2,999.98
Support Plate	\$ 429.99 x 2	\$ 859.98
Reference Station	\$ 899.99	\$ 899.99
HSS Blades, 300 count	\$ 999.99	\$ 999.99
Cutting disc, (3)	\$ 377.97 x 2	\$ 755.94
Total		\$65,915.82

+ 5k Install = \$71k

Current Contractual Cost =  
\$65,800 - \$75,200 (70/80 cuts)



# Near InfraRed Drone Camera



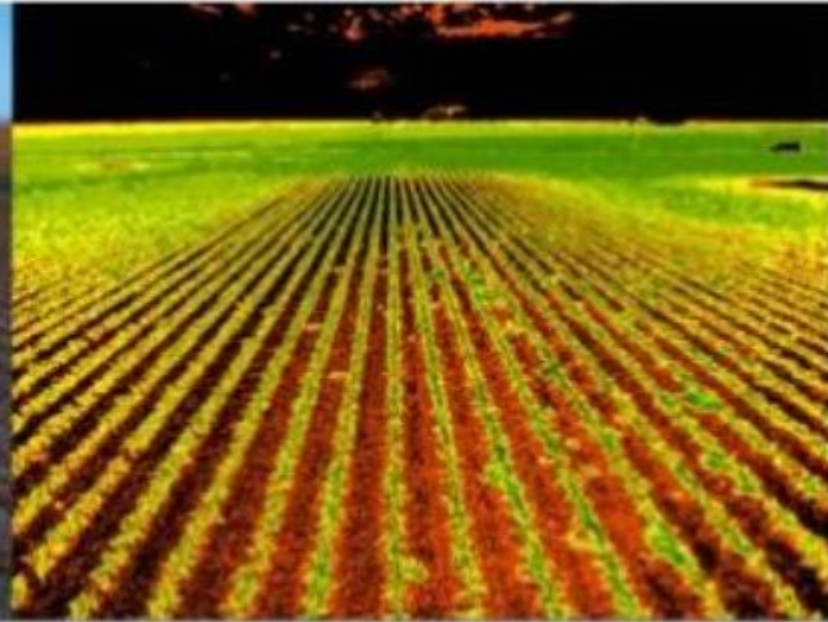
# Color, NIR, and NDVI Imagery



RGB Image

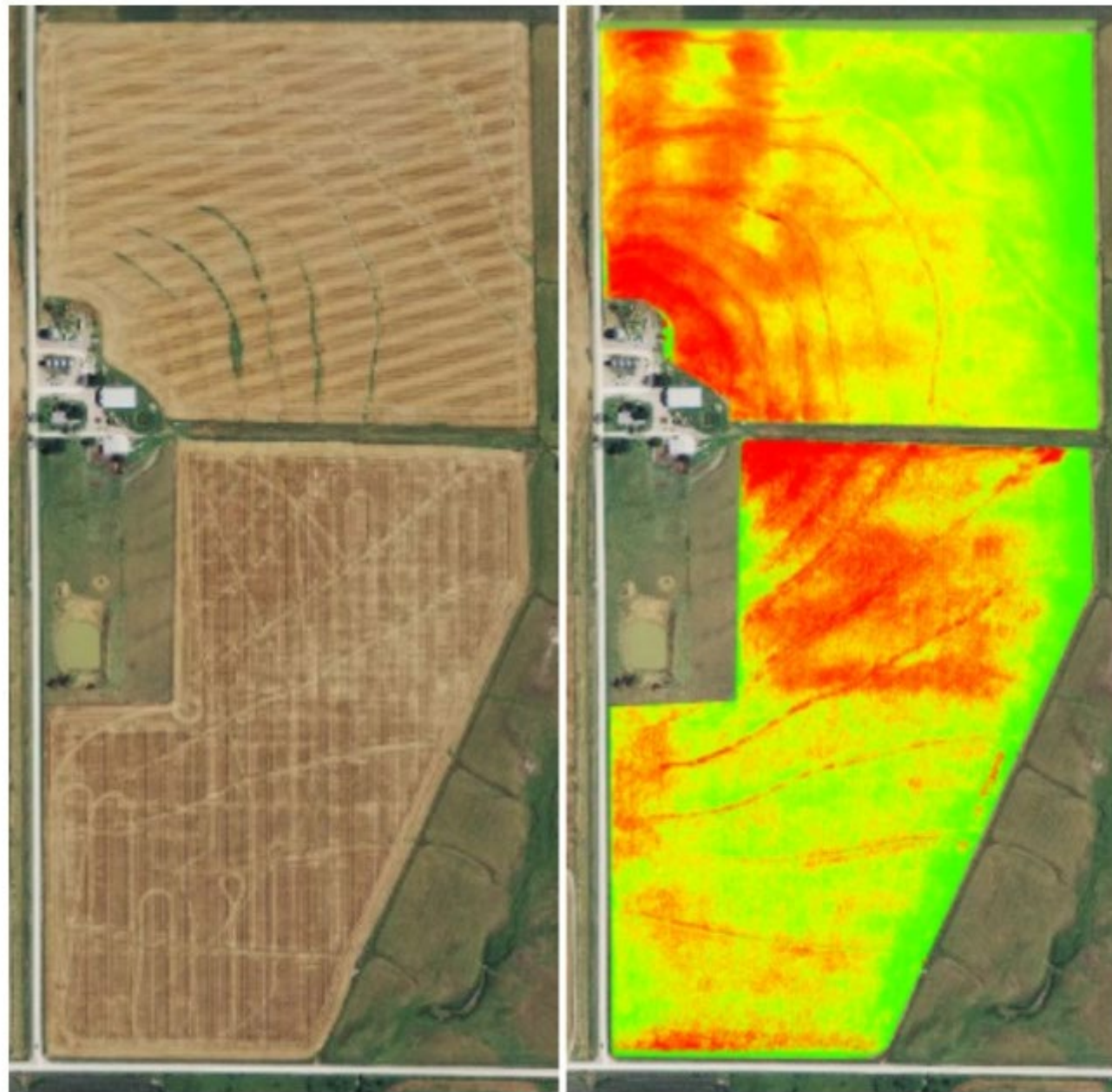


NIR Image



NDVI Image

Normalized Difference Vegetative Index (NDVI) is a commonly provided index that assesses crop vigor based on a mathematical interpretation of color and near infrared data



(left image) Shows a field captured with a normal RGB camera. (right image) Shows the same field with the NDVI algorithm applied to it, captured with an NIR camera.

9 Acres

Ed Rad



Ed Radice Softball Complex

Image © 2023 Maxar Technologies



## Considerations on Autonomous Mowers

- Type of system (RTK, Camera, Roaming Other)
- Frequency of mowing
- Safety Features
- Site based or trailer based
- Fenced site, non fenced site multiple fences (hard ball)
- Common ground or sports facility
- Mowing window
- Cost
- Lease or buy
- Gas or electric
- Maintenance (at least a monthly if not more)
- And many more
- Winter ? Move them?
- Irrigation run time
- Production and Buy in



**Where we are now**

- Currently meeting with leagues to go over the New FUA
- Finishing out our in house mowing and inspection crew and equipment
- 6 percent done adding Flow sensors
- Apron Project
- Bidding Autonomous Mowing out
- Adding Spectator Shade and Upgrading on site facilities
- Continuing to invest in Synthetic Turf

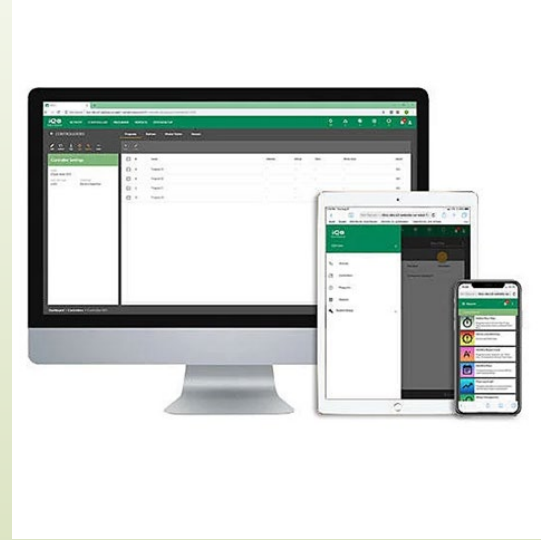


# **A Look To the Future**





Continually improving turf varieties



Continually improving remote access/control/ cameras

# GAME OVER

Press   
to try again

