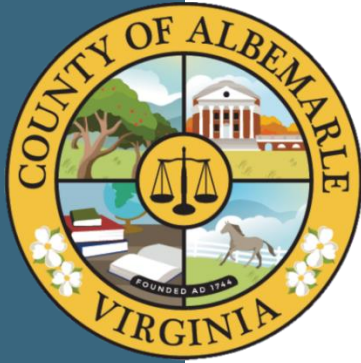


# ATHLETIC FIELDS WORK SESSION

23 MARCH 2022 - BOS Work Session Meeting



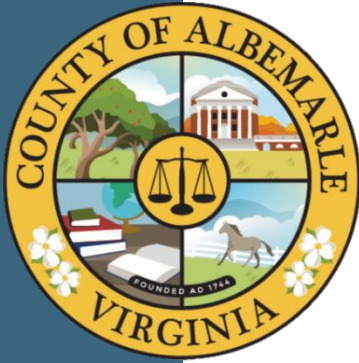
# Work Session Objective

- Develop common understanding on recreational athletic fields needs and use
- Discuss strategies to meet the need, including the current CIP request.
- Review the formerly funded Darden Towe (DT) synthetic turf and lights project
- Present information from engineering consultant final report
- Respond to and clarify questions/concerns from BOS
- Develop any next steps



# Agenda

- ❖ **Parks and Recreation athletic fields**
  - Background
  - Needs Study
  - Current Inventory
  - ACPS Experience
- ❖ **Review the formerly funded Darden Towe synthetic turf and lights CIP**
  - History of project
  - Project scope
  - Propose Biscuit Run Park development
- ❖ **Pre-design study summary**
- ❖ **Current state**
- ❖ **BOS Discussion/Questions**
- ❖ **Next Steps**



# Parks & Recreation Background

## Partnerships

**P & R has Partnered with area youth and adult sports organizations for over 40 years**

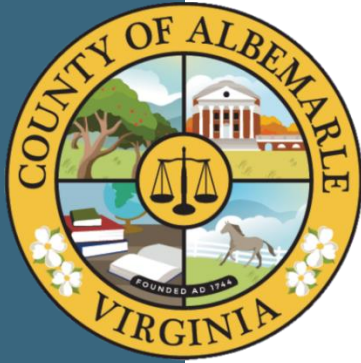
- 32 organizations offering 10 different sports
- Registration numbers over 8,000

## County Field Inventory

- 43 rectangular fields
- P & R reserves 30 fields at Elementary & Middle Schools for community use (HS fields reserved thru School Division)
- 23 of the 43 fields receive a higher level of turf maintenance

## P & R Partnership Benefits

- Administration is handled by league organizers
- Significant budget savings on personnel and related operational costs



# Parks & Recreation Background

## Recreational Field Needs/Request History

### 2004 Parks & Rec Needs Assessment document

- Need for additional fields

### 2009 Synthetic Turf Field installed Monticello High School

### 2010 Synthetic Turf Field installed Albemarle and WAHS

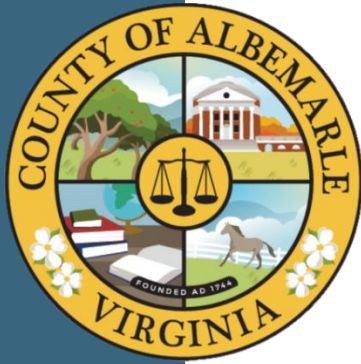
### 2015 Parks & Rec requested funding for Synthetic Turf Fields & Lighting

### 2018 Parks & Rec Needs Assessment

- Ranked Darden Towe Synthetic Fields & Lights as 2nd highest need
- Albemarle County has a 99-acre deficiency in Sports Complexes

### 2019 BOS Approved Quality of Life Project for Synthetic Turf Fields and Lighting at Darden Towe Park

- Charlottesville City Council approved the project and their share, approximate 30%

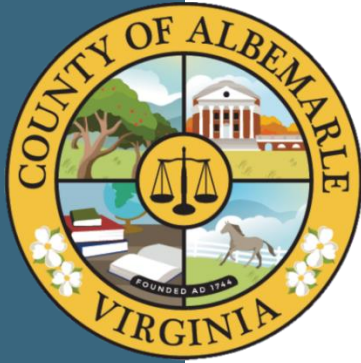


# Darden Towe Project Timeline

## Priority Projects Requested FY19

RECOMMENDED PRIORITY PROJECTS			
Asset	Project Type	Brief Description	Estimated Total Project Cost
System wide	New	Greenway/Trail Development	\$2,500,000
Darden Towe	Major Upgrade	Athletic Field Improvements	\$3,000,000
Western Park	Major Upgrade	Implementation of Master Plan	\$4,000,000
River Access	New	River access improvement; Rio Mills; South Fork Rivanna Reservoir; Buck Island	\$2,500,000
<b>TOTAL</b>			<b>\$12,000,000</b>

\* Page 97, 2018 Parks and Recreation Needs Assessment



# Darden Towe Project Timeline

## County/City Agreement and Funding & Lighting History

### **1986 Agreement:**

- The City and County agreed that night lighting would not be included in any of the three development stages for any competitive sport facility.

### **Agreement amended in 2007 and carried over to 2017 Agreement:**

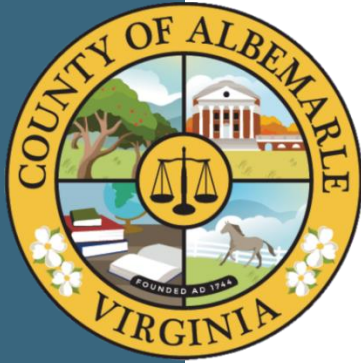
- In recognition of the history and intent of not having lighted facilities in the park, no lighting of competitive sport or other recreational facilities in the park will occur without the mutual agreement of the City and the County.

### **Funding Split operating and CIP expenditures:**

- 70% County & 30% City (approximate)

### **Authority:**

- County serves as the fiscal agent
- DT Committee comprised of 2 BOS and 2 City Councilors that provides direction to City and County P&R Directors as requested.



# Recreational Athletic Fields

## Rectangular Field Inventory

### Albemarle County Public Fields

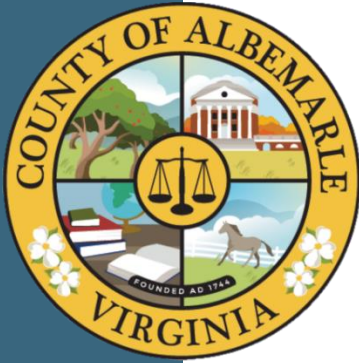
- 43 natural grass fields (Park and School)
  - ✓ 23 high quality game fields
  - ✓ 20 practice fields located at elementary schools not regulation size
- 3 synthetic fields (County High Schools)

### Local Fields in the Area

Location	Natural Grass
SOCA	5
MONU	4
Tandem	2
PVCC	2

Location	Synthetic Turf
St Anne's	2
UVA	5
Charlottesville	1
Blue Ridge	1
Indoor SOCA	1





# Recreational Athletic Fields

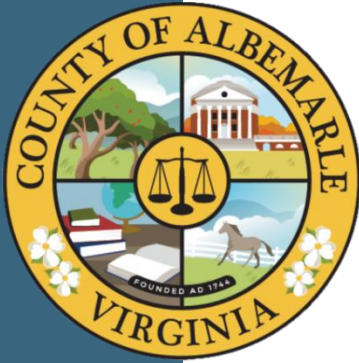
## Current Natural Turf Maintenance

**Sept-Oct** (optimal growing time) and also during active play.

- **Core aerate** - each field 2 directions
- **Overseed** - mix of tall fescue varieties (recommended for athletic fields, that receive a high level of traffic)
- **Fertilize** - slow-release starter fertilizer (in compliance with the safer chemical policy)
- **Top Dress with topsoil** - center of fields & goals as needed

## **April-November**

- **Irrigation** – All fields are adjusted throughout season to water fields at recommended rates and to not influence/impact scheduled play
- **Mowing** – all fields 2x week



# Recreational Athletic Fields

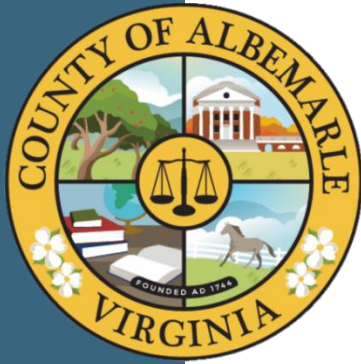
## Field Deficiency & Usage

### Current Field Deficiency

- 6-8 additional rectangular fields (based on current usage and maintenance standards)

### Volume of Use

- Fields used 7 days a week, February – November
- Fields are used 31+ hours a week
  - Mon- Fri 3-4hrs a day or 15-20hrs weekly
  - Sat & Sun 8hrs a day or 16hrs weekends



# Darden Towe Field Conditions

## Field Condition

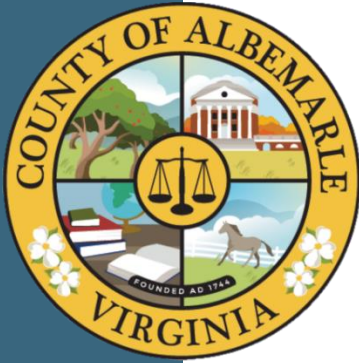
April 2021



June 2021







# Darden Towe Field Conditions

## Limitations

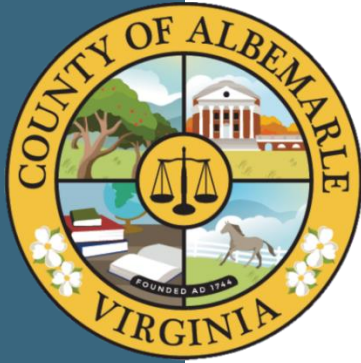
### Best Management Practices Inhibitors

- Field Usage: “grass grows by the inch.. and is killed by the foot”
- Difficult to limit field use (for a year) for renovations due to the high level of use and deficiency of rectangular athletic fields
- Fields need time to rest and heal

### Industry Standard of Best Management Field Use (if implemented)

- 24 hours per week per field
- 960 hours per year per field
- If implemented an additional 3-4 fields would be needed





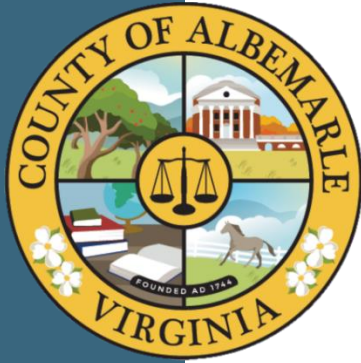
# Darden Towe Field Conditions

## Total Field Renovation

### Potential Field Improvement

- Removal of existing turf, tilling of existing soil, rolling, laser grading, rolling again, install and root in new sod
- Depending upon the time of year, this process can take from several weeks to several months to complete and all fields would need to rest for a full year
- Typical costs \$180,000 to \$300,000 per field depending upon conditions
- Typical costs for all 4 fields \$720,000 to \$1,200,000

Recommend an additional FTE with a high level of experience and knowledge in Turf Grass Management with their primary responsibility and focus in maintaining the athletic fields at an Improved level that meets customers desires. **Estimated ongoing budget impact at Towe Park for 4 fields \$70,000**

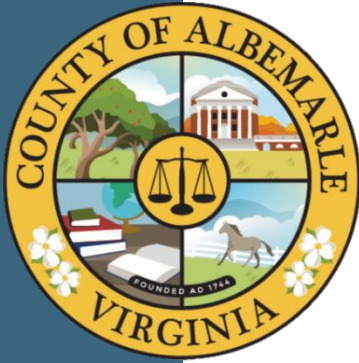


# ACPS Highschool Turf Field

## AHS Athletic Director Perspective

Athletic Director, Deb Tyson (Albemarle High School)





# ACPS Highschool Turf Field

## AHS Athletic Director Perspective

### Synthetic Turf Field installed at ACPS stadiums

- 2009 at MHS
- 2010 at AHS & WAHS

Synthetic Turf Fields are the **NORM** as opposed to **EXCEPTION**

### Athletic use

- Practice/play 6 days a week (no Sundays); fall, winter, spring & summer
- Host @ 300 games on stadium each fall & spring
- 14 teams/425 student-athletes that compete/practice on turf

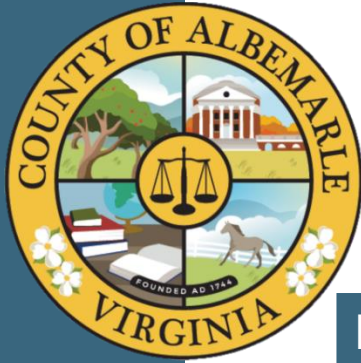
### Sample comments from:

**Coach:** *“increases player development allowing players to train and prepare at full speed w/o a distraction of uneven playing surface and risky foot placement.”*

**Parent:** *“gives me confidence in knowing there’s no wet fields and last-minute schedule changes”*

**Athlete:** *“it’s a game changer.”*



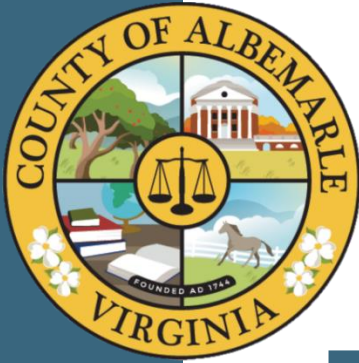


# ACPS Highschool Turf Field

## AHS Athletic Director Perspective

Before	After
<p><b>STADIUM GRASS - LIMITED GAME USE</b> Varsity games only; JV played/practiced on grass practice fields.</p>	<p>Open to all sports/all levels/all seasons - All sports can host games on stadium turf and benefit from turf, lights, pa &amp; scoreboard.</p>
<p>Showed concerning wear High traffic/impact areas were “beat up”</p>	<p>Plays/looks the same everyday Increased our practice space for <b>ALL TEAMS.</b></p>
<p><b>NO “OUTSIDE” GROUP USE</b> - delegated to our overused grass practice fields.</p>	<p><b>AVAILABLE &amp; OPEN TO ALL</b> 7 days week adult/youth/community groups</p>
<p><b>POSTPONED/CANCELLED GAMES</b> inclement weather would impact 20-25% games.</p>	<p>Rarely cancelled/postponed Only in the event of lightening or extreme cold/heat conditions.</p>
<p><b>HIGH MAINTENANCE</b> for HIGH USE</p>	



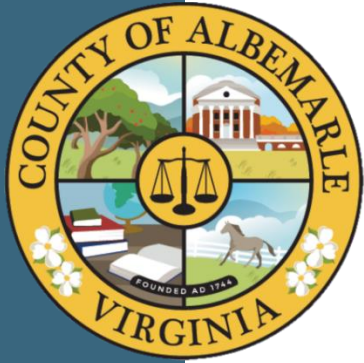


# ACPS Highschool Turf Field

## AHS Athletic Director Perspective

Natural Grass Fields	Synthetic Turf
Requires approximately <b>1,284</b> hours of maintenance per year <b>For 33 weeks of the year</b>	Requires approximately <b>245</b> hours of maintenance <b>For 33 weeks of the year</b>
Includes:	Includes:
<b>Mowing</b> (3) times a week	<b>Inspection</b> (1) time a week
<b>Painting</b> (1) time a week	<b>Field Sweeping</b> (1) time a week
<b>Covering and Uncovering</b> (2) times a year throughout the winter months	<b>Field Grooming</b> (4) times a year

*Per ACPS (Building Services) - 2022*

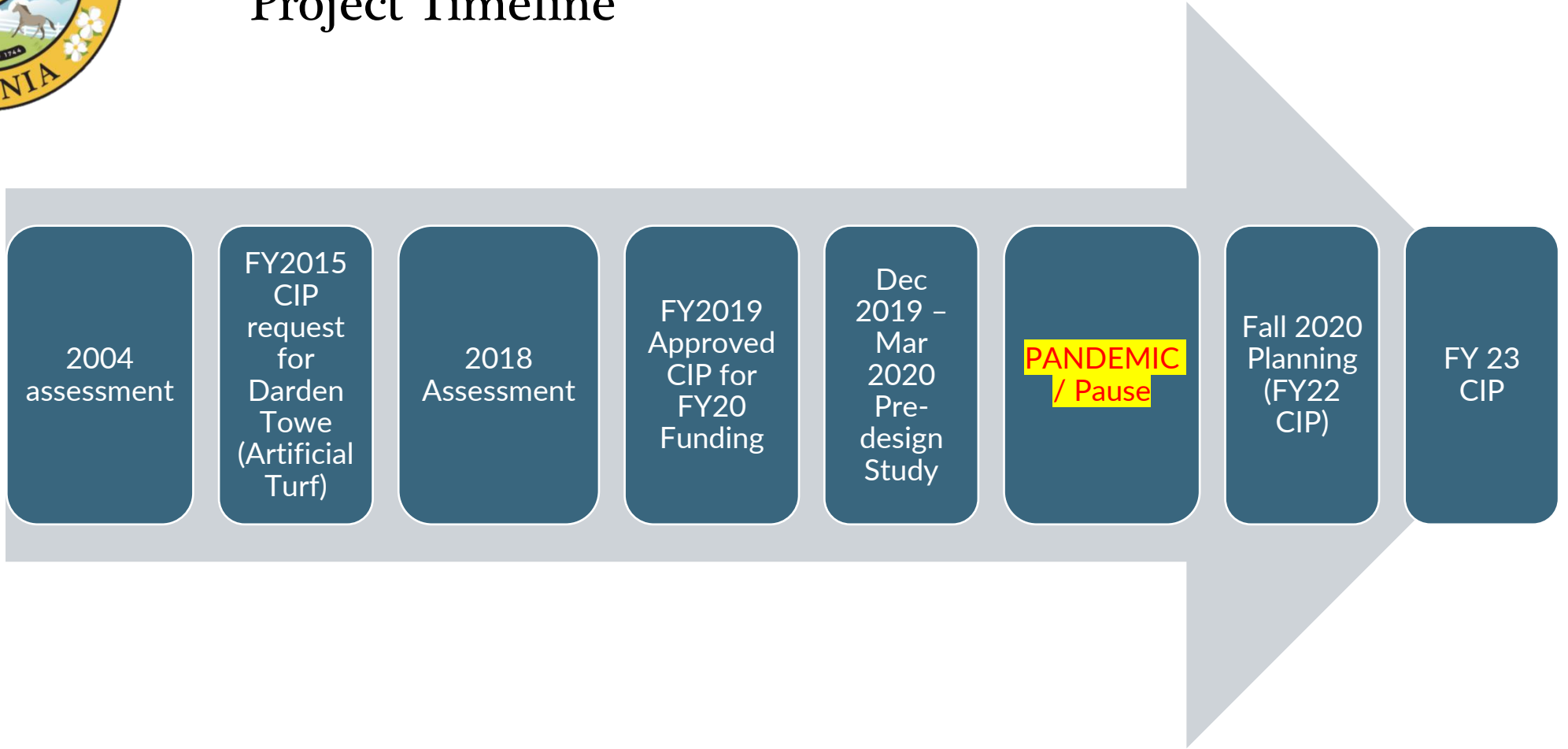


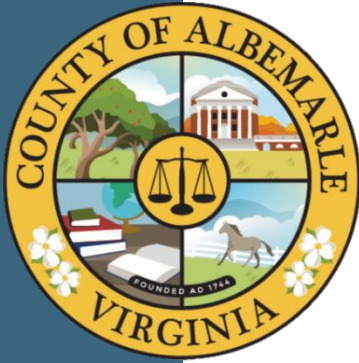
# Pause for Questions



# Darden Towe Field Improvements

## Project Timeline



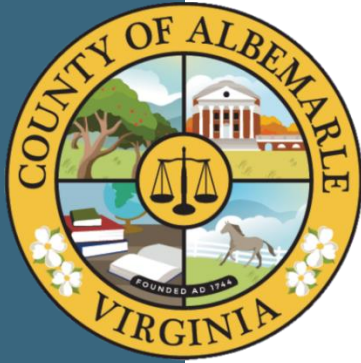


# Darden Towe Field Improvements

## Prioritized Facilities and Amenities

<b>Facility/Amenity</b>	<b>Priority</b>
Walking, Hiking and Biking Trails	<b>High</b>
Youth Athletic Fields - Diamond and Multi-Purpose	
Open Space/Conservation Parks	
Small Neighborhood Parks	
Large Community Parks	
Aquatic Facilities	
Off-Leash Dog Parks	
River Access/Boat Launches	
Pavilions and Picnic Shelters	
Indoor Recreation Spaces	
Playgrounds	
Athletic Fields for Adults	
Outdoor Tennis Courts	
Facilities/Amenities for Special Needs	
Gymnastic Facilities	<b>Low</b>
Competitive Swimming Facilities	
Pickleball Courts	
Outdoor Basketball Courts	
Disc Golf	
Indoor Soccer Facilities	
Outdoor Sand Volleyball Courts	
Skateparks	

\* Page 52, 2018 Parks and Recreation Needs Assessment

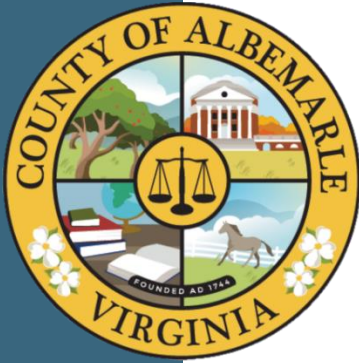


# Darden Towe Field Improvements

## Project Timeline

- 2017 - Project recommended to/by Darden Towe Committee and Approved for FY 21 by County/City
- Project initiated in Summer of 2019 with assumption of using Cooperative Contract (Field Turf) with MUSCO (Lighting Provider sub to Field Turf)
- Fall 2019– Contract use verification (Purchasing) and Proposal from Field Turf/MUSCO (evaluation of alternative infill options during design process)
- Proposal enabled project scope to be executed in full and within budget per CIP assumptions
- December 4, 2019 “Matters from the BOS” discussion/Direction





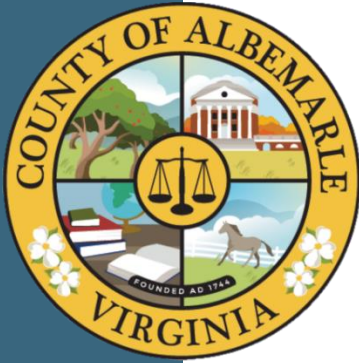
# Darden Towe Field Improvements

## Project Timeline – Cont.



- KHA Pre-Design Study – January – March 2020
- March 2020 – Local Emergency suspended project
- FY 21 CIP Budget – Funded only critical Projects
- FY 22 CIP Budget CIP Advisory Committee considered 23 projects to recommend for funding. The Darden Towe project was not on the list of recommended projects and was not included in the adopted FY22 budget
- FY 23 CIP Budget – Biscuit Run Park, including 4 grass athletic fields highest priority for County for overall recreational needs





# Biscuit Run Park CIP

## Current funded/FY23 recommendation

### Phase 1a funded project \$2.1 Mill (Funded, construction start FY23 - spring)

- Park Entrance off Rt 20
- Parking with 75 spaces
- Restrooms
- Trail Head & Kiosk
- Open/Green Space
- 5+ Miles of Multi-Use Trails

### Phase 1b request \$8.1 Mill (FY23 Proposed)

- 4 natural grass fields, additional parking/infrastructure/hiking trails/connector trail
- Design FY23
- Construction Start in FY24

### Future CIP request

- 2-4 additional fields, based upon field surveys during the design process

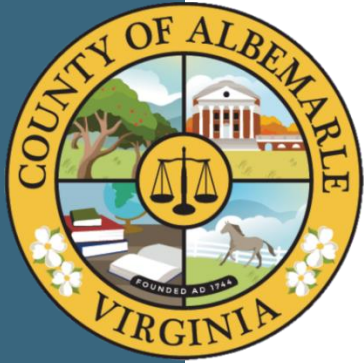


# Biscuit Run Park

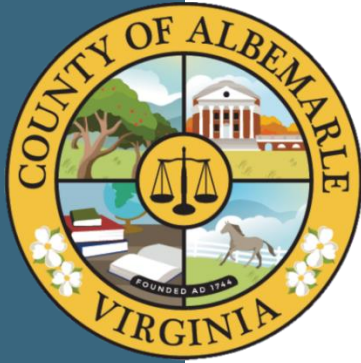
Phase 1b







# Pause for Questions



# Pre-Design Study Summary

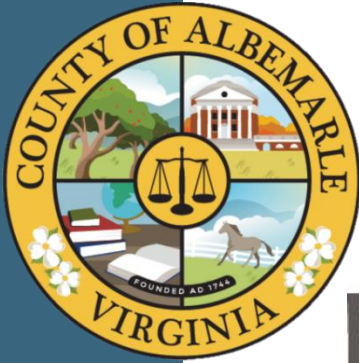
## Synthetic Turf Field Budget Considerations

### Capital Cost Variables

- Project size
- Project phasing
- Site development variables
  - Demolition
  - Grading and site drainage
- Design section elements
  - Drainage
  - Shock pad
- Infill selection
- Other
  - Fencing
  - Lighting

### Replacement Cost Considerations

Cost increases since 2020



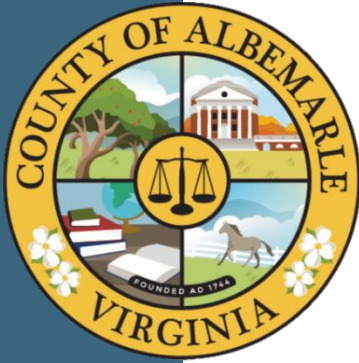
# Pre-Design Study Summary

Consultant Introduction

## Kimley»»Horn

Jason Kanak - 25 years of Experience in Sports





# Pre-Design Study Summary

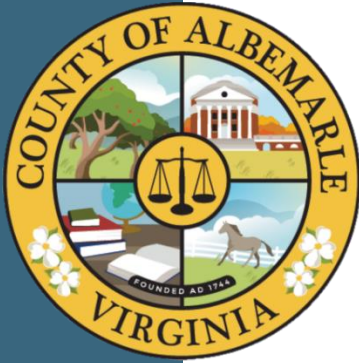
## Synthetic Turf Field Overview

### **Increased Playability = Increased Revenue Potential**

- Less down time due to weather conditions
- Less down time due to maintenance activities
- Extended hours of play with lighting





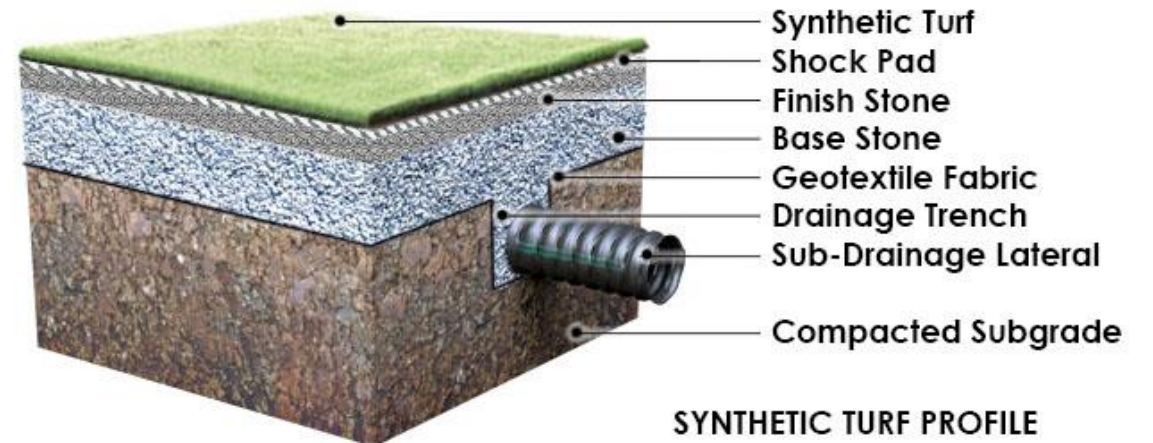
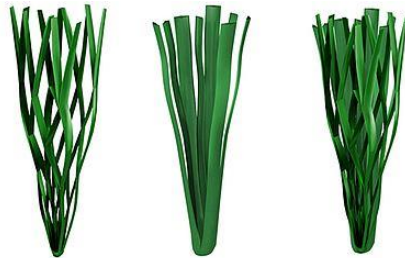


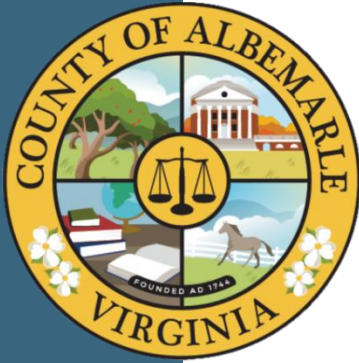
# Pre-Design Study Summary

## Synthetic Turf Field Overview

### Basic Elements of Synthetic Turf System:

- Base - foundation
- Stone layer – stormwater management
- Synthetic Turf – all weather surface
  - fiber options
  - Infill options



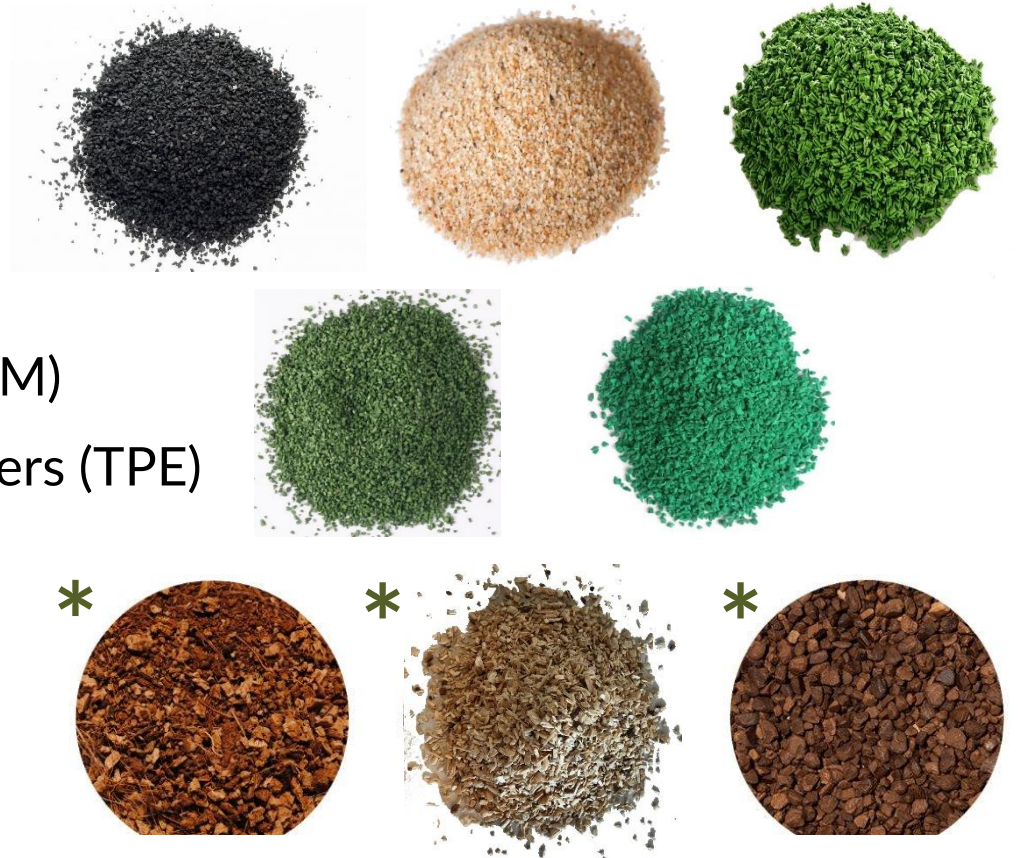


# Pre-Design Study Summary

## Synthetic Turf Field Infill Options

### Infill Options:

- Crumb rubber
- Sand
- Coated rubber
- Synthetic Rubber (EPDM)
- Thermoplastic Elastomers (TPE)
- Organics\*
  - Coconut Husks
  - BrockFILL
  - Cork





# Pre-Design Study Summary

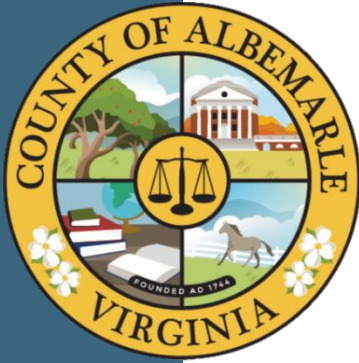
## Player Health & Safety

### Safety Issues:

- Head injuries - Gmax
- Lower body injuries – traction, abrasion, rotation resistance
- Heat gain and surface temperature – alternate infills

### Risk Management:

- Proper Maintenance – SportsLabs report 90% not maintained properly
- Accurate maintenance records – hours of play, infill depths, corrections made
- Field Testing Protocol – when to test, who is responsible



# Pre-Design Study Summary

## Life Cycle & Long-Term Maintenance

### Factors Influencing Life-cycle Expectations:

- Up-front design decisions
- Maintenance
- Programming and use intensity

### Long-term Maintenance Costs:

- Comparable to natural grass maintenance –  
County spends approximately \$7,500 per field at Darden Towe (4 fields 30,000 annually)
- Specific maintenance equipment cost

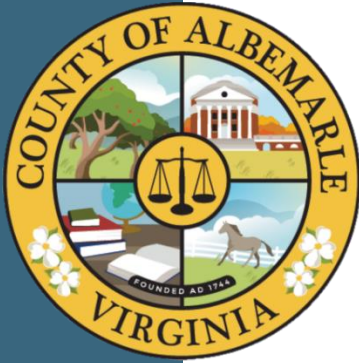
### Warranties:

- 3<sup>rd</sup> party, fully guaranteed



Synthetic Turf Field Groomer

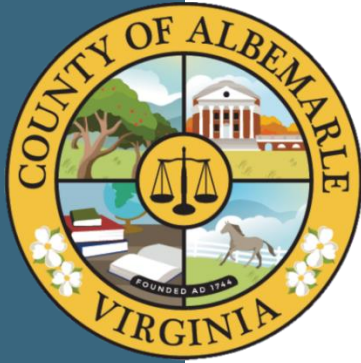




# Pre-Design Study Summary

## Environmental Impacts & Mitigation Strategies

Primary Issues:	Mitigation Strategy
Heavy metals and material content	Infill selection
Disposal of replaced materials	Re-Match facility
Heat gain	Infill selection
Infill migration	Infill selection
	Fencing – Controlling Pedestrian Traffic
Proximity to surface water (Rivanna)	Field drainage – provides filtration through stone layers
	Perimeter drainage control – filters in area drains

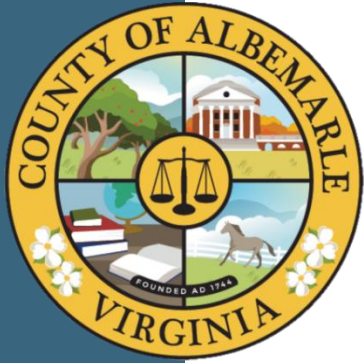


# Pre-Design Study Summary

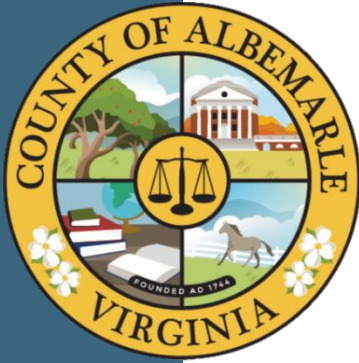
## Environmental Impacts & Mitigation Strategies

### **Recycling and Disposal of Synthetic Turf Components:**

- Re-Match – the only company in the world to recycle 99% of the synthetic turf system. Facility planned to be opening in Pennsylvania soon.
- Artificial Grass Recyclers – Focus on re-use
- Shaw Sports Turf – NXTPlay shock pad “Cradle to Cradle”

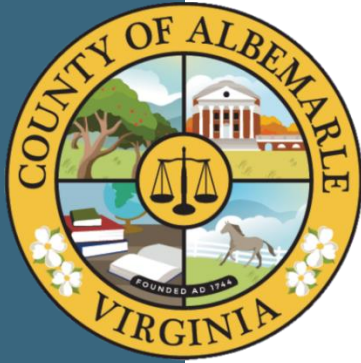


# Pause for Questions



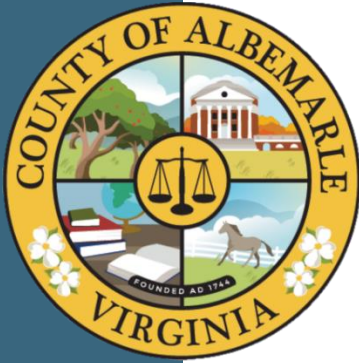
# Post-Study Developments

- Additional environmental concerns
  - Plastics
  - Light Pollution
- Increasingly standardized manufacturer selection
- Best Practice turf selections and estimated costs



# Environmental Concerns - Plastics

- Per- and polyfluoroalkyl substances (PFAS) are a large class of synthetic fluorine-containing chemicals used as an additive
- Over time PFAS leaches from products, and can move in water and air
- Recent studies indicate some PFAS may have adverse impacts on human and animal health
- Industries shifting away from 'non-essential' use of PFAS-containing products
- EPA issued PFAS Strategic Roadmap



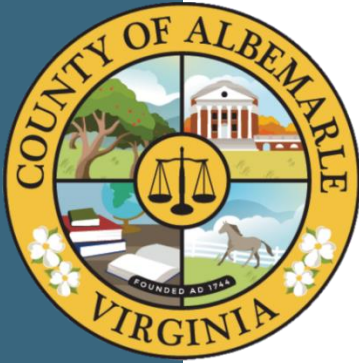
# Environmental Concerns – Light Pollution

## Albemarle County Lighting Ordinance

- Stringent designer / contractor / supplier qualifications
- Zero light emission at the horizontal plane

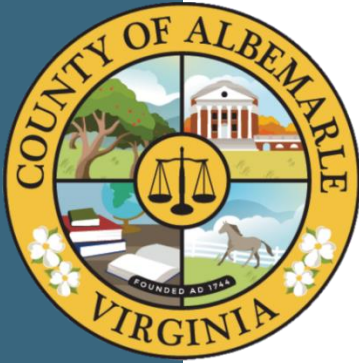


*Field Complex Harrisonburg*



# Environmental Concerns – Light Pollution

- Environmental impacts of LED lighting in the blue spectrum
  - May impact flora / fauna
  - Circadian Clocks of plants and animals
  - Animal migratory patterns
- Recommended < 3,000 kelvin for appropriate color spectrum – not available for some applications
- 4,000 kelvin minimum standard for player safety

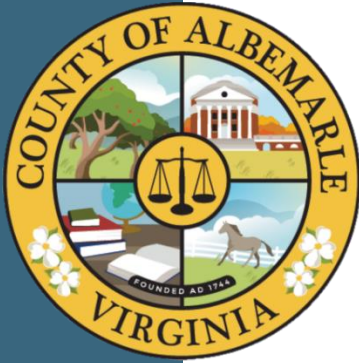


# Post-Study Developments

- BrockFILL prevalent product selection for infill and shock pads
  - No PFAS in any products
  - Cradle-To-Cradle certified
  - USDA certified biobased product
  - Cost-effective
  - Significant reduction in field heat (20-40 degrees)
- Shaw brand 100% recyclable turf system







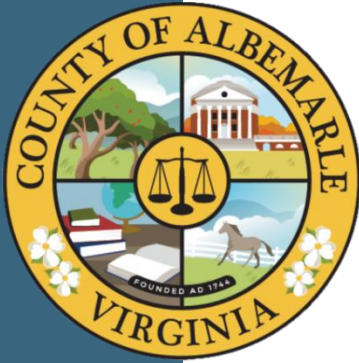
# Darden Towe Fields

Best Practice Turf Selections and Cost (estimates)



Collegiate School  
Richmond, VA

Turf Fields Updated Estimate	
Item	Engineer's Estimate 2022
Engineering	\$400,000
Site Work (Base)	\$1,366,200
<b>Turf / Infill (BrockFill)</b>	<b>\$1,639,440</b>
Lighting	\$895,000
Other	\$771,038
<b>Total - 4 Turf Fields</b>	<b>\$5,071,678</b>



# Work Session

## BOS Questions and Next Steps

1. **Play/Utilization strategy (Community Needs)**
2. **Environmental/Safety**
  - Infill – Environmental, Heat and Play
  - Pad – Safety and Warranty
  - Turf Carpet – Fiber cut and Install
  - Lighting – Dark Sky Requirements
3. **Costs – Capital and Recurring**