

## **Board of Park Commissioners** Athletic Field Maintenance Informational Presentation

Date: 06/11/2025

Presented by: Travis Miller

# Introduction

- Goal is to increase sustainability and get ahead of the curve by lowering inputs
- We can do this by finding areas where we achieve the most benefit for least cost



# Road Map of Presentation

- Organic Management
- Increased Cultural Practices
- Reduced Pesticide Use
- Softball Field Rehab
- Robotic Mowing

# Let's go over some basic definitions

- Organic Management: Management of turfgrass using OMRI rated fertilizers, increased cultivation practices, and reduced pesticide uses
- OMRI rating: Organic Materials Review Institute reviews the product to determine it qualifies for organic production
- Cultivation practices: Mechanical and chemical manipulation of the soil to enhance turf health including fertilization, aeration and topdressing
- Turf: Biological grass used for athletic field (not astro or sports turf)
- Nitrogen is the primary nutrient needed to grow strong and healthy turf with fertilization





# What are some pros and cons?

- Pros:
  - Reduced pesticide use
  - Reduced pollution from the production of synthetic fertilizer
- Cons:
  - Increased fertilizer cost (4x cost of conventional fertilizer)
  - Increased labor for application of products and cultural practices



# Where should we implement this management

- Areas that provide highest monetary compensation for usage
- Areas that are low use with low stress
- Areas that have strong established turf stands





Let's compare field conditions at Park



Week 1



Week 3



Week 5



Week 7



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# Why are we increasing cultural practices?

- The first method of controlling pests should be healthy turf
  - Healthy turf is better equipped to fight off stressors
- The biggest stressors on athletic fields is soil compaction from play



# What practices are we implementing?

- Increase in conventional sports turfgrass management practices including:
  - Topdressing with sand and organic matter
  - Core and solid tine aeration
  - Frequent smaller slow-release fertilizer applications
  - Increase overseeding with high performing cultivars of turf
- All of these practices work to reduce compaction and increase turf health





# What challenges do we face?

- Labor intensive: need more man hours to complete work
  - Working in specific areas of fields rather than whole area increases number of fields
  - Freeing up seasonal labor by implementing robot mower program
- Acquisition of new equipment
  - Researching cost effective methods and using equipment for multiple applications





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- **Reduced Pesticide Use**
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# Why and How do we reduce our pesticide usage?

- Any reduction in our chemical footprint is beneficial to users and staff alike
- Our approach:
  1. Targeting specific areas of fields to apply
  2. Using a product using decreased risk AI (i.e. formulations without 2-4D)
  3. Increasing our cultural practices to increase healthy turf



# Some first-year results

- 45% reduction in overall pesticide usage
- Looking to decrease this even further in subsequent years with continued management practices

	2023	2024
Total amount of Pesticide Active Ingredient Used	102.17	55.89



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# Why do we need to remediate softball diamonds

- Improper grade leading to poor drainage and frequent rainouts
- Break down of infield material
  - Uneven ball roll
  - Uneven running surface
  - Uneven pitching and hitting surface
- Looking to provide a more consistent and safer product for user groups



# What are the costs associated with this project

- Complete excavation and finishing of project by contractor: \$48,000
- Completed project with labor from the city: \$34,000





# What have we seen with Goodman Softball 1

- Superior drainage leading to quicker recovery from rainfall this spring
- Surface requires less maintenance than a traditional two part top dressed field



# What's next?

- Completing renovation of diamonds 1-4 at Elver park between this fall and next spring



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# What are some of the benefits of robotic mowing?

- Electrification of park assets
- Dramatically reduced labor and mower maintenance costs
- On the fly adjustments to height, pattern and mowing areas



# What are some ideal sites?

- Fenced in areas
- Areas with little to small divots and holes to get stuck in
- Areas with different height requirements
- Small enough to be mowed on a regular basis (<9 acres)
- Goodman Pool and Warner Fields both fit the criteria



# Some of the benefits in action

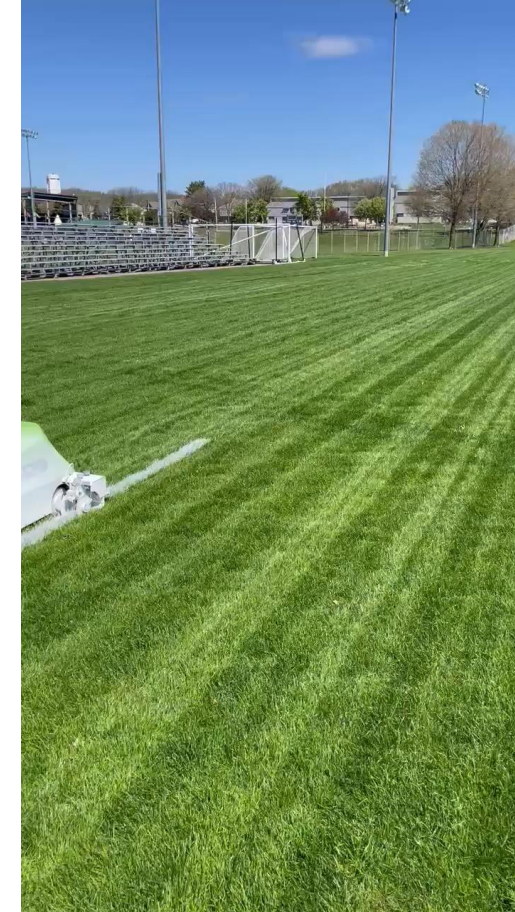
- Labor reduction
  - Frees up 12 hours minimum of labor from mowing to complete
  - 12 hours for 30 weeks at \$50 an hour labor rate is \$18,000 in savings just from labor – mower purchase is \$13,800 not including conventional mower maintenance





# What comes next?

- Ideally as technology becomes better, and mowers increase in size, trim and large area mowing could be completed robotically
- Things like robotic field marker would also greatly reduce labor from painting foul lines and soccer fields
  - Conventional marking and soccer fields takes 2 people 2 hours, with robot 1 person 24 minutes,
  - Between Soccer, Football and Softball, over \$22,000 in labor savings



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