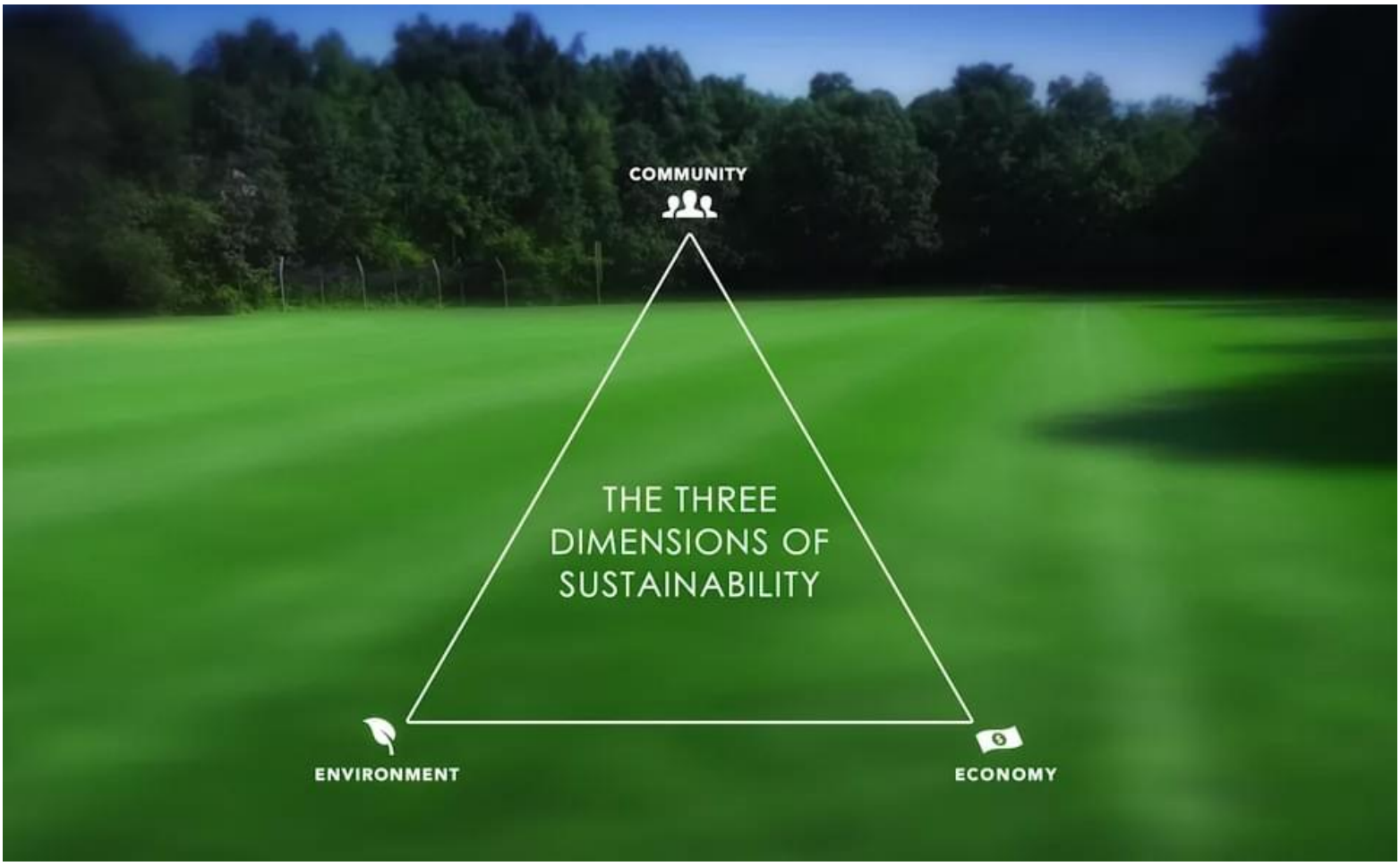
TOM IRWIN **ADVISORS**

Town of Colchester
127 Norwich Avenue , Colchester,, CT
November 2022



ADVISOR
RECOMMENDATIONS BRIEF

OVERVIEW

Your facility is essential to the health and well-being of your community. Tom Irwin Advisors can help improve and maintain your green spaces in an economical and sustainable fashion.

Our team of expert advisors will work closely with your turf managers and groundskeepers to achieve your desired vision while remaining true to your values and your community's expectations.

Project Name	Athletic Field Master Plan - Feasibility Study	**Date**	11/01/2022
Project Site	Colchester Recreation Complex		
Project Code	TCAFMPFS-22		
Contact Name	Tiffany Quinn		

PROJECT ANALYSIS

The purpose of the Parks and Recreation department is to seek the development of a broad variety of recreation programs, park facilities and services to meet the total needs and demands of the residents of the community.

Tiffany and her team are committed to providing all of the community and user groups with high quality safe athletic fields at the Recreation Complex.

CLIENT NEED ASSESSMENT

PHASE 1

Phase 1: Existing Conditions Evaluation

Following a site visit with Tiffany Quinn Recreation Director and Rich Calarco, we discussed the current conditions of all of the athletic fields within the complex.

It was clear during the site walk that all of the fields had challenging natural turf surfaces that were suffering from weed contamination, surface planarity issues and a varying turf composition.

Of a particular worry was the condition of the baseball and softball infields in which many had been roto-tilled and then seemingly just left.

Tiffany was able to give me insight that the DPW currently maintain the fields and complex.

Tiffany also let me know that an irrigation proposal had been accepted and this would irrigate the entire complex.

At the end of the field/site walk, Ian was able to explain to Tiffany that he felt the most appropriate way forward would be to carry out a feasibility study to understand how an Athletic Field Master Plan would be advantageous.

The following fields are to be included in the study:

Little League Field (Lighted)
Majors/JV Baseball Field (Lighted)
T-Ball Field
Little League/ Adult Softball Field (Lighted)
Multipurpose Field (Partially Lighted
Softball/ Adult Softball Field
Rectangular Field
Rectangular Field (Lighted)

SOLUTIONS	SERVICES
Feasibility Study	% Bare Area
	Ball Bounce
	Backstop and Boundary Fence Requirements
	Ball Roll

Compaction
% Desirable Grass Species
Height and Quality of Cut
% Poa Annua
Planarity
Root Depth
Rootzone Medium Depth
Rotational Traction
Surface Hardness
Thatch Depth

PHASE 2

Phase 2 Feasibility Evaluation

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The following areas are to be included in this phase of the study:

Equipment Evaluation
Soil Investigation
Usage Analysis

Labor Analysis
Concept Vision and Values Interviews
Athletic Field Drainage Evaluation

SOLUTIONS	SERVICES
Feasibility Study	Soil Profile Test Pit
	Complete Nutrition Tests
	Complete Physical Soil Tests
	Infilitration Rate Test
	Athletic Field Gradients Evaluation
	Equipment Type and Model Numbers
	Equipment Age and Condition
	Equipment Hours of Use (where applicable)
	Equipment Maintenace and Repair Records
	Equipment Life Expectancy
	Equipment Replacement Cost
	Equipment Replacement Strategies and Planning
	Field Management Policies(Usage)
	Design Capacity(Usage)
	Current Capacity(Usage)
	Collect and Input Field Data
	Collect and Input Labor Data
	Calculate Labor
	Backstop and Boundary Fence Requirements
	Draw Interview Conclusions
	Drainage / Gravel Layer Test

	Physical Soil Evaluation
	Stakeholder Interview

PHASE 3

Phase 3 - Solutions

Reports would be compiled for the following:

Athletic Field Usage Analysis
Equipment Report
Athletic Field Drainage
Soil Investigation
Performance Quality Standards

An overall Solutions Report.

SOLUTIONS	SERVICES
Feasibility Study	Compile Athletic Field Usage Analysis Report
	Compile Equipment Report
	Compile Athletic Field Drainage Evaluation Report
	Compile Digital Report Card
	Compile Soil Investigation Report

TOTAL INVESTMENT

Phase 1	Feasibility Study	$7,716.80
	Phase 1 Subtotal	**$7,716.80**
Phase 2	Feasibility Study	$24,573.60
	Phase 2 Subtotal	**$24,573.60**
Phase 3	Feasibility Study	$7,420.00
	Phase 3 Subtotal	**$7,420.00**
	Project's Total (inclusive of all expenses)	**$39,710.40**

OUR TEAM

Tom Irwin Advisors is a team of professionals with a broad range of expertise. We've consulted on sports fields globally for FIFA and other international governing bodies. We've lectured at universities and other academic settings. We've helped develop both industry standards and professional standards used around the world. We've renovated and constructed sports fields for every level of the game. And we've spent decades conscientiously managing turf because recreational green spaces are the lifeblood of our communities.

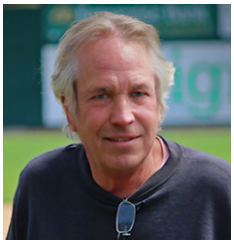
We would be honored to assist and guide you through your green space project. If you have questions or concerns about the recommendations in this brief, please contact us. We're eager to help you achieve your vision. Contact Ian Lacy at **781-999-4320** or **ianlacy@tomirwinadvisors.com**

Ian Lacy Lead Project Advisor

Ian possesses a wealth of experience that touches on nearly every facet of professional turf management. He has been a university lecturer. He was the head of professional services for the Institute of Groundsmanship, the largest non-profit organization seeking to improve standards and promote the work of grounds professionals. While there, he was instrumental in developing Performance Quality Standards. On behalf of FIFA, the International Football Association Board, he has consulted on field standards and conditions all over the world. **Read bio**

Kevin Dufour Sustainability Advisor

Kevin brings a multidisciplinary approach to sustainability initiatives, environmental management, and regulatory affairs. He has spent 31 years as an environmental scientist, 25 years as an attorney at law, and his consultancy advises clients on LEED, Green Globes, and Sustainable Sites certifications. He is a regular reviewer and commenter on new sustainability standards such as the International Green Construction Code and SITES. **Read bio**



Jack Schmidgall Design and Construction Advisor

Jack has more than 40 years of experience in the industry. He is a founding member of the New England Sports Turf Managers Association, and has won national awards including the Sports Turf Manager Association's Baseball Field of the Year (1992), Softball Field of the Year (1993), and National Groundskeeper of the Year. He has managed performance turf at every level from town fields, to professional stadiums, to Olympic-level facilities. **Read bio**

Scott Vose Technical Advisor

Scott has over 13 years of experience in the industry. Previously he worked as an assistant superintendent at Connecticut National Golf Club. He holds a bachelor's degree in Turfgrass and Soil science from the University of Connecticut. He understands the importance of collecting data and evaluating trends critical to sustained success. He spent over 7 years working with his former professors from UCONN at their Plant Science Research Farm. He worked closely with the faculty overseeing the maintenance of all their turfgrass research plots. "If you see something that works, you need to understand why." **Read bio**

FEASIBILITY STUDY

Why a Feasibility Study is important:

Wisely planned and well executed projects leave a lasting impression on your community and provide quality green spaces for generations to come.

Recreational green spaces are unique assets which require specialized knowledge and expertise to design, build, and manage. Whether your vision includes new construction, a field rebuild, or a facilities master plan, a Feasibility Study is a crucial first step in helping you achieve that vision. The work we do together will help ensure a sustainable legacy your community can be proud of.

How Tom Irwin Advisors will help:

First, our team collaborates with you to define what a successful project looks like to your organization. Next, we use a wide range of methods and scientific tools to evaluate the feasibility and sustainability of your project vision. Then, we research the potential challenges and roadblocks you may face and provide creative solutions to propel the project forward.

What we do for you during a Feasibility Study:

Our unique expertise in the following areas will help guide your decision and determine if the project is economically and environmentally sustainable for your community:

- Green Space Design and Construction
- Specification Development
- On-site Project Advocacy
- Quality Assurance
- Agronomy
- Environmental Science
- Athletic Field Management
- Environmental Law and Regulations

Based on your needs, we perform elements of the following services to determine the feasibility of your project:

- Your Concept, Vision, and Values Assessment
- Performance Quality Standards Assessment
- Athletic Field Usage Analysis
- Athletic Field Drainage Evaluation
- Irrigation Inspection and Audit
- Soil Investigation
- Equipment Evaluation
- Field Management and Maintenance Plan
- Labor Needs Analysis
- Environmental Sustainability Study

Once our research is complete, we will provide you with your **Feasibility Study Report:**

This report presents our expert opinion regarding the challenges, advantages, and overall feasibility of your project.

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You can ensure that your vision and values are fulfilled and your project is done right. Do this early in the planning process by contacting Ian Lacy at **781-999-4320** or ianlacy@tomirwinadvisors.com

EQUIPMENT EVALUATION

Why an Equipment Evaluation is important:

Well-maintained athletic fields and green spaces provide an ideal place for your community to creatememorable experiences. In order to maximize the enjoyment of these spaces, it is necessary to have an efficient maintenance operation with the right equipment and tools.

Every facility has a unique set of maintenance needs that require specialized equipment. Proper equipment saves time and resources, and is important to the safety and well-being of your staff.

How Tom Irwin Advisors will help:

Our team tours your facility so we can discuss your short and long term maintenance goals and the available equipment you have to achieve them.

By collaborating with you and your maintenance team, our Advisors gain a deeper understanding of the effectiveness of your tools and equipment. We then offer solutions to improve your maintenance capabilities and forecast the future equipment needs of your facility.

What we do for you during an Equipment Evaluation:

After discussions with your team, we assess your current fleet of equipment, recording the following:

- Type of equipment
- Age, condition, and model numbers
- Hours of use where applicable
- Maintenance and repair records
- Immediate equipment needs

Next, we perform an equipment audit for your facility, which may include the following:

- Type and size of areas to maintain
- Operational efficiency and effectiveness
- Frequency of use
- Fuel costs
- Insurance costs
- Total maintenance costs
- Life expectancy
- Current replacement protocol
- Environmental considerations

After our thorough evaluation, you receive your **Equipment Evaluation Report:**

This report provides you with a comprehensive review of the state of your current fleet and a plan for the future equipment needs of your facility.

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To ensure you have the right tools to maintain your community's green spaces, contact Ian Lacy at **781-999-4320** or ianlacy@tomirwinadvisors.com

PERFORMANCE QUALITY STANDARDS (CORE PQS)

Why Performance Quality Standards are important:

Maintaining your Athletic Fields to a Performance Quality Standard is essential to providing consistently safe and playable surfaces for your athletes. By meeting these standards you are providing a sustainable asset to your community.

A Core PQS uses objective data to identify the strengths and weaknesses of an Athletic Field. This data can be used to evaluate your current field conditions, justify maintenance decisions, and allocate budget resources.

How Tom Irwin Advisors will help:

Our team will use specialized scientific instruments to perform a set of tests on your Athletic Field. This process will yield up to 133 data points that will help you understand your field's **playability**, **presentation**, and **structure**.

These test results will identify opportunities for you to improve your field and meet Performance Quality Standards.

We offer Core PQS assessments on athletic surfaces used for Football, Soccer, Baseball, Softball, Lacrosse, Field Hockey, Rugby, Track and Field, and Tennis.

What we do for you during a Core PQS Assessment:

We perform up to 12 sport-specific tests that measure:

- Moisture
- G-Max
- Thatch Depth
- Root Depth
- Rotational Traction
- Planarity
- % Vegetative Cover
- % Weed Cover
- Surface Debris
- Infiltration
- Rootzone Medium Depth

Upon completion of testing, the following personalized reports are provided:

Digital Report Card – Details our findings and test results, which accurately identify your field's strengths and weaknesses.

Result Tracking – Tracks the progress of your maintenance program over time and provides a definitive record of your field's state of play.

Summary Report – Summarizes our findings and suggests the next steps necessary to provide outstanding playing conditions.

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SPECIFICATIONS:

Playability – How your Athletic Field performs

- **Soil Moisture** – The field's Volumetric Water Content which illustrates moisture distribution and uniformity.
- **Surface Hardness** – The ability of the field to absorb impact (G-Max) and mitigate injury/concussion.
- **Rotational Traction** – Tertiary strength illustrates root strength, durability, and the ability to withstand play.
- **Planarity** – The evenness of the field over a representative area to promote field safety and reduce water collection points.
- **% Vegetative Cover** – The amount of total vegetative ground cover as opposed to bare areas.

Presentation – The visual impact of your Athletic Field

- **Surface Debris** – The presence of detrimental debris which impacts safety and aesthetics.
- **% Weed Cover** – The presence of weed pressure which can decrease field durability and traction.

Structure – The physical properties of your Athletic Field

- **Infiltration** – The rate at which water penetrates the surface of the Athletic Field at key locations.
- **Root Depth** – The extent of root development which impacts plant health and turf stability.
- **Thatch Depth** – The organic matter layer that influences playing conditions.
- **Rootzone Medium Depth** – The depth and consistency of the topsoil which impacts water holding capacity and root mass development.

To assess the current performance of your field and set a course for improvement, contact Ian Lacy at **781-999-4320** or ianlacy@tomirwinadvisors.com

ATHLETIC FIELD USAGE ANALYSIS

Why an Athletic Field Usage Analysis is important:

The very best athletic fields are achieved by properly managing the amount of play and the maintenance necessary to support it.

By performing an Athletic Field Usage Analysis, you will be able to accurately identify the amount of play your fields can support and the management practices needed to sustain them. This allows for more efficient scheduling, increased field availability, and better performing fields for your community.

How Tom Irwin Advisors will help:

Our team collaborates with you to understand how your field was constructed, how it is maintained, and the impact of usage upon it.

The data we collect is entered into our proprietary Usage Calculator, which then generates a Usage Value. After we have calculated your current Usage Value, our team can adjust certain criteria to pinpoint how specific factors are impacting your fields' usage capacity. We then help you identify the changes necessary to sustain your desired amount of play.

What we do for you during an Athletic Field Usage Analysis:

Our Athletic Field Usage Analysis measures more than just hours of play. We incorporate the following factors which are critical to maximizing your field's usage capacity:

- **Design Elements –** Field design including construction, field size, drainage, irrigation, grass types, and gradients.
- **Growing Conditions –** Elements such as temperature, solar radiation, moisture, water deficit, and soil types.
- **Time and Intensity of Play –** The duration of games and practices, number and age of athletes, and sport-specific impacts.
- **Maintenance Program –** The type and frequency of field maintenance including mowing, cultural practices, nutritional inputs, and control inputs.
- **Field Management Policies –** Field use policies, administrative policies, and scheduling of activities.

Once we have collected the information above, we determine your field's:

- **Design Capacity** – The Design Capacity value represents the potential usage capacity of your field.
- **Current Capacity –** The Current Capacity value quantifies how much play your field can sustain under current usage demands and management practices.

At the end of the process you will receive your **Athletic Field Usage Analysis Report:**

This presents our findings and provides recommendations that help you optimize your field management practices and support your community's recreational needs.

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Achieve the optimal balance of play and performance on your field by contacting Ian Lacy at **781-999-4320** or ianlacy@tomirwinadvisors.com

ATHLETIC FIELD DRAINAGE EVALUATION

Why an Athletic Field Drainage Evaluation is important:

A well-drained athletic field maximizes the safety and performance of your athletes and allows for consistent scheduling of games, practices, and events.

Poorly drained athletic fields are difficult to manage, jeopardize athlete safety, and can result in costly rescheduling and community disappointment. An Athletic Field Drainage Evaluation uncovers the factors that have been contributing to your field's poor drainage and provides solutions to bring your Athletic Fields back to health.

How Tom Irwin Advisors will help:

Our team will perform a targeted scientific investigation into the underlying causes of your drainage challenges. We will determine why your Athletic Field is often saturated through a combination of testing and examination.

What we do for you during an Athletic Field Drainage Evaluation:

We use a wide range of specialized scientific tools and methods to evaluate your Athletic Field according to established performance standards.

- **Drainage System Surface Inspection** – Initial walk through and review of your drainage system's visual characteristics.
- **Drainage System Design Assessment** – Review of the system' s plans, "as builts", and specifications. Whatever the system, we inspect the available elements.
- **Infiltration Rate Test** – Measure the rate at which water penetrates the surface of the field at multiple locations.
- **Physical Soil Evaluation** – Laboratory analysis determining the characteristics of your soils and their ability to move air and water efficiently.
- **Surface Hardness and Compaction Test** – Measure conditions that impact conductivity, permeability, and infiltration of the rootzone at multiple field locations.
- **Sub-Base Material Examination** – Laboratory and on-site compaction and permeability tests.
- **Drainage / Gravel Layer Test** – Identify lower profile sphericity, angularity, porosity, and contamination.
- **Athletic Field Gradients Evaluation** – We use a laser level to validate if the current grades are capable of moving water across the surface.
- **Discharge Pipe Inspection** – If a blockage in a drain collection and outlet pipe is suspected, we test flow rate and volume.
- **Drainage Camera Inspection** – Where applicable, we use a high definition video camera to inspect the main drain lines and a multi-directional radio detector to locate damage or obstructions.

At the conclusion of the process, you will receive your **Drainage Evaluation Report:**

This details our findings and test results, and provides the solutions that will improve your field's drainage and create outstanding playing conditions for your athletes and community.

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Improve your field's drainage capabilities by contacting Ian Lacy at **781-999-4320** or ianlacy@tomirwinadvisors.com

LABOR CALCULATOR
FOR SPORTS TURF MANAGERS

Manage your workforce capacity and put your team in a position to succeed.

No longer does a turf manager have to guess at the amount of staff necessary to complete a day, week, or season's worth of tasks. With the Tom Irwin Advisors Labor Calculator for Sports Turf Managers, you can determine the precise labor force needed for any operation over any period of time. Properly allocating your staff using empirical data will help you more accurately manage your expectations and increase the efficiency of your operation

Our calculations are fully customized to the properties you manage and can account for all your athletic fields and outdoor greenspaces. We input information such as the length of your crew's standard workweek and standard weeks per year to account for variables like vacation time. We adjust the default time spent on various tasks and the frequency of each task according to the information you provide us. We also account for varied skill levels within your crew and the impact of training new staff. Since your team's time is not all spent directly on tasks, we can modify the calculations by including a percentage of time for travel, administrative duties, job preparation, and job setup/cleanup.

The information we generate with this calculator will help you plan for seasonal labor demands and staffing needs both in-season and off-season. It can also help manage employee time off. As a living document, it can be adjusted as your circumstances change. Because the Labor Calculator identifies all your tasks and quantifies the time and labor needed to accomplish them, it serves as a valuable tool to help your organization manage the most important asset in achieving your goals - human resources.

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To learn more about the Labor Calculator for Sports Turf Managers, contact Ian Lacy at **781-999-4320**
or visit **tomirwinadvisors.com**