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DATE: August 16, 2023

TO: Recreation, Music and Parks Commission

FROM: Drew Halter, Director of Parks and Recreation  
Josh Minshall, Senior Civil Engineer, Public Works & Utilities  
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SUBJECT: Lucchesi Park's All-Weather Multi-Use, Synthetic Turf Field Replacement Project - Review, Discuss, and Provide Recommendation on Options for Replacement

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## **RECOMMENDATION**

Staff is requesting that the Recreation, Music and Parks Commission, review, discuss, provide input and a recommendation on the replacement options being considered for the Lucchesi Park multi-use synthetic turf field.

## **BACKGROUND**

Lucchesi Park consists of nearly 30 acres, located between North McDowell Boulevard and Maria Drive to the West and East, and the Petaluma Valley Hospital and Novak Drive to the North and South. Lucchesi is designated as a Community Park in the City's current General Plan with features and uses intended to serve a citywide population. The diverse range of recreational facilities and amenities make Lucchesi Park the largest, most active Community Park among Petaluma's 47 dedicated park sites. The recreational uses, community facilities, passive park land, athletic fields and sports courts include but are not limited to; three children's playgrounds, three lighted tennis courts and four dedicated pickleball courts, three regulation sized little league baseball fields, a lighted synthetic multi-use turf field lined for soccer and lacrosse, public restrooms, handball courts, a pond, a Community Center, a Senior Center, the Miracle League ballfield and facilities, and several group picnic areas designed for large, small, and individual groups.

Lucchesi Park is home to the City's first all-weather, synthetic turf field which was installed in the Fall of 2000, following a community led initiative to expand athletic field offerings to accommodate both year-round play as well keep pace with growing local sports participation rates. During the initial construction, significant site grading and drainage work was performed to account for the expansive native clay soils found throughout Petaluma, as well as to prevent standing water from accumulating on the field during significant wet weather events. The multi-use field is approximately 86,400 square feet, with field lines designed to accommodate both men's and women's soccer and lacrosse, however the field is frequently used for drop in and organized ultimate frisbee, youth sports camps, youth baseball and softball tryouts and clinics as

well as evening pick-up games for adults. Lucchesi's soccer field dimensions measure 120 yards long and 80 yards wide, making the field 15-20 yards wider than a regulation sized soccer field and offers teams a unique playing space that more competitive teams in particular seek out.

In 2010, Lucchesi Park's multi-use synthetic turf field reached the end of its ten-year serviceable life and was replaced with new material and infill. Since 2010, the Lucchesi's multi-use synthetic turf field remains one of the most popular athletic fields within city limits for both programmed and drop-in play due in large part to its all-season availability, multi-use functionality, and field lights. Today, the all-weather, synthetic turf field at Lucchesi has gone beyond its expected ten-year serviceable life and is in need of replacement.

There are a few options to consider for replacement materials at Lucchesi Park's current multi-use synthetic turf field. Options include replacing the existing field and rubber infill material with a new synthetic all weather system and alternate infill, or transitioning the existing field back into a natural grass playing field through a re-design process and new construction. A third option would be to consider exploring the feasibility of installing a hybrid stitched in system (or SIS field) which has received some notoriety recently after being featured in several professional soccer stadiums during the 2022 World Cup in Qatar.

Installing a SIS field would require a new design of the existing site, significant excavation of material, and new construction of a sand based natural grass playing field. Next, specialized equipment would be used to stitch in synthetic field fibers into the natural grass root system at roughly one fiber per square inch of natural material. The synthetic fibers would make up roughly 5% of the overall turf components when fully constructed. While intriguing to consider, research indicates there are less than ten SIS fields currently installed throughout the United States and none found in municipalities or made available for public use. The installation costs exceed that of a comparable synthetic turf field while the routine maintenance cost exceeds that of a comparable natural grass field and the maintenance requirements include contracting with specialized equipment providers to perform routine activities as well as annual performance maintenance activities such as resetting sod elevations to insure proper synthetic fiber height. SIS fields require more irrigation than a typical sod playing field as well as fertilizers to maintain consistency and prevent degradation. There are several unknown costs of installing and maintaining SIS fields as well as uncertainty around long-term viability. For these reasons, staff is not recommending a hybrid SIS field be considered as a viable option for the Lucchesi turf replacement project at this time.

Another option to consider for the field replacement is to transition the site to a natural grass playing field. This involves excavating the existing field and redesigning and replacing it with a new natural turf field. The City of Petaluma maintains approximately 175 acres of natural grass turf throughout the City's 47 parks. Within the park system there are nearly twenty sites with active, natural grass playing surface making it the most common form of ballfields available for community use. Natural grass playing fields throughout Petaluma largely consist of native soils which can be a challenge due to their expansive clay properties which are prone to heaving and cracking during shifts in temperature and moisture content. Natural grass playing fields require consistent watering, routine mowing, and regular turf maintenance activities which include aerating and fertilized to sustain quality playing fields. Maintaining active natural grass playing fields at the level to accommodate competitive play has been a challenge with current park maintenance staffing levels.

Another option for replacing the existing synthetic turf field at Lucchesi includes removing the existing material and infill and replacing it with a new all-weather, synthetic turf system and alternate infill. This option would provide year-round play, sustain park maintenance resources, and provide a consistent playing surface for multi-use activities. While there have been advances in manufacturing materials and alternative infill options since the Lucchesi Turf field was last replaced in 2010, there remains valid questions and concerns from community members regarding the benefits, drawbacks, and costs of providing synthetic all-weather turf fields for public use as an alternative to natural grass playing more commonly available. Some of the concerns shared by community members relate to the long term environmental and health impacts of the chemical compounds used in the manufacturing and production of a synthetic turf all-weather field. While there are far more synthetic turf products available today than there were in 2010, virtually all of the synthetic turf fibers are produced using polyethylene, one of the most widely used plastics found in household products and commodities. More recently however, concerns have been raised regarding a group of long-lasting chemical compounds known as polyfluoroalkyl substances or PFAS, which are widely used to aid manufacturing equipment during the production of many different consumer, commercial, and industrial products. There are thousands of PFAS chemicals that can be found persistence throughout the environment, and many leading research agencies are committed to additional research to better understand how to efficiently measure PFAS, determine long term impacts to our health and environment, as well as how to manage and dispose of certain chemicals throughout the manufacturing process [US Environmental Protection Agency - PFAS](#). One significant change to the manufacturing products used in all-weather synthetic turf fields since 2010, is the number of alternative infill materials available. While the majority of synthetic turf athletic fields are installed today using recycled rubber infill (i.e. crumb rubber), many communities are installing alternative infill options that provide a biodegradable product while offering comparable compaction rates and playability. Some of these options include renewable cork, coconut fiber, rice husks, walnut shells, and grounded olive pits. The City of Petaluma is currently in the process of constructing its first all-weather synthetic turf baseball field at the Petaluma Community Sports Fields and have selected a cork infill for the project as an alternative to crumb rubber.

Staff are committed to incorporating leading industry research as well as any/all regulatory requirements as it relates to both the manufacturing materials used to produce synthetic turf material as well as any alternative products that may be in design and development. Staff will base any and all recommendations on products that exceed the highest standards set for quality, safety, and recyclability.

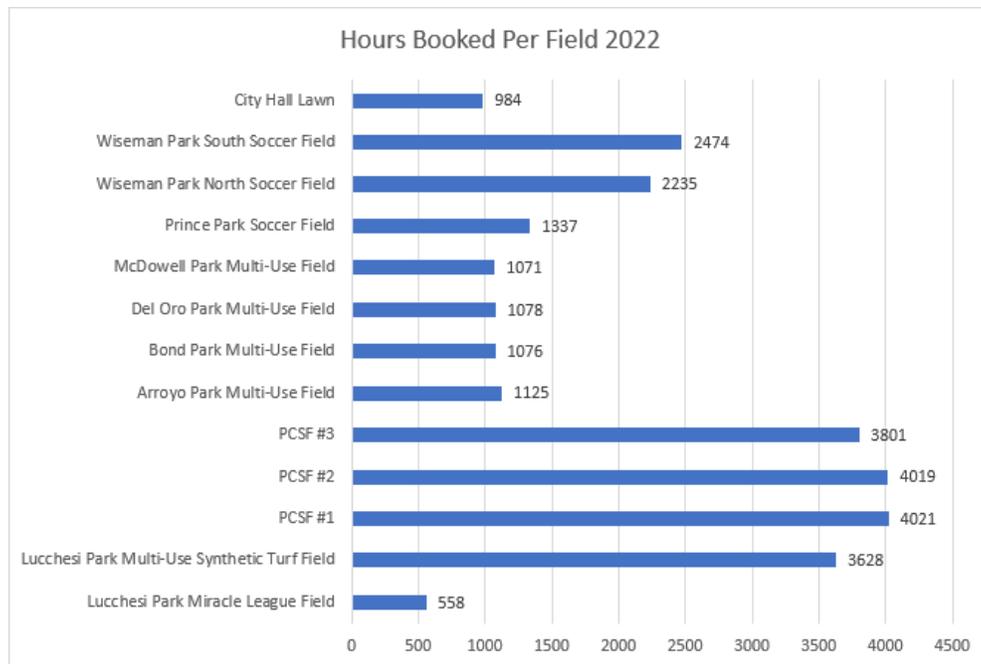
## **DISCUSSION**

When evaluating field replacement options and materials, staff considered five central selection criteria to help prioritize options that would deliver a high-quality playing experience for Petaluma residents, players, and their families. These central themes include; safety, equity, use, the environment, and maintenance. In addition to establishing evaluation criteria, it was equally important to solicit feedback from the community and user groups that are most impacted by changes to field conditions to ensure the result aligns with community needs and values.

When evaluating safety criteria, it is important to consider the challenges of maintaining natural grass playing fields in Petaluma, where expansive native clay soils often lead to cracks within

natural grass turf leading to inconsistent playing surfaces and frequent irrigation breaks. Uneven surfaces result in more frequent injuries to players. Surface compaction is another important consideration when evaluating the safety of both natural grass and synthetic turf field options as head injuries are a serious concern to a player’s safety. A shock pad system can be installed in combination with a synthetic turf field to provide increased compaction rates when compared to natural grass playing fields. Proper field equipment and footwear also plays an important role in player safety and determining appropriate options for synthetic turf fields.

When evaluating playing equity, it is important to consider the balance between available hours for organized play and those times made available for drop in or unorganized activity. In general, natural grass playing fields are used for one-third total time of a comparable synthetic turf field due to wear and tear, weather related impacts, and to prevent field degradation. The addition of field lights also expands the available hours of play on synthetic turf fields. Petaluma has a shortage of playing fields to accommodate existing resident youth leagues which requires prioritizing among each youth organization to equitably distribute preferred practice time slots and locations on sought after fields. Lucchesi Park’s multi-use field represents one of four all weather turf fields in Petaluma and represent roughly 3,628 hours of programmed use in 2022, and 1,200 more programable hours than the most active natural grass playing field.



When evaluating both short- and long-term maintenance impacts of installing natural grass and synthetic turf playing fields, it is important to consider the current level of park maintenance staffing available to support a turf maintenance program. Following the 2008 financial recession, Park Maintenance staffing operations were reduced by approximately 50%, while additional park acreage at Mannion Knolls, Denman Reach, and the Petaluma Community Sports Fields were added. Park staffing remains roughly 30% below 2006 staffing levels and the City has long relied on volunteers from local youth athletic organizations to coordinate routine field maintenance activities throughout the course of their respective seasons to help close this gap. Maintenance activities differ depending on the sport, however for soccer and lacrosse this could include

stripping, providing replacement goals and netting, assisting with infill material, and fencing. For baseball and softball, this includes a more active role in day-to-day maintenance of infields, irrigation, sod repairs, minor construction, and mowing in some cases in order to provide a higher level of service for youth participants. In lieu of charging resident youth organizations hourly rental fees for use of athletic fields, the City has an adopted fee schedule which includes a flat, per registered player fee that is intended to reflect the organizations contributions and investment of volunteer hours towards field maintenance activities on natural grass ballfields. More information on field revenues can be found in the financial impacts section of this staff report.

## **OUTREACH**

A considerable effort was made to engage stakeholders, user groups, and the broader community to encourage engagement and feedback to help determine what elements were most important when considering options for replacing the Lucchesi turf field. Community engagement activities included:

- A project webpage with in-depth project information and a place for community members to subscribe to receive project updates
- A community-wide online survey
- An evening tabling event, April 28, 2023, at Lucchesi Field
- Printed materials and large signs at Lucchesi Field and Petaluma Community Sports encouraging community members to visit the project website and take the survey
- Messaging about the project in the citywide Community Update email and social media channels (including social posts boosted with advertising dollars)
- Outreach to key stakeholders and local user groups
- Paid Advertising highlighting the Survey and Community Meeting in the Argus Courier
- Dedicated email to stakeholders and subscribers
- Presentation to the Recreation, Music, and Parks Commission in May, of 2023

Outreach was focused on educating the community about the proposed project and encouraging community members to share their input via the survey and public comment opportunities at the Recreation, Music, & Parks Commission meeting.

## **Survey Responses and Summary of Findings**

The City received 506 total responses to the community survey (494 English, 12 Spanish). The input shared is a valuable part of the evaluation process and the feedback will be used currently and in the future. Below is a summary of several key findings, however a full list of questions and responses is available as an attachment to this report.

Who took the survey?

55.9% of English survey respondents identified themselves as parents of players, while 22.1% identified as players themselves. We saw a good representation of all ages, with the majority (40.1% English) of players identified as between ages 12-18, 24.7% ages 8-11, and 20.6% age 19 and over. Nearly 70% of English respondents participate in field sports through a club or organization. In the Spanish version, 91.7% respondents identified as parents of players, 8.3% players. 50% identified players as between ages 12-18, 41.7% ages 8-11, and 8.3% age 19 and over.

### What we learned:

Responses we're very closely aligned between the English and Spanish respondents. Both the English and Spanish survey data showed respondent's most important factor when deciding where to play is all-season access. 60.8% of English respondents (58.3% Spanish) said they prefer synthetic turf compared to 23.4% (16.7% Spanish) who stated they preferred natural grass. 78.5% of English respondents (83.3% Spanish) let us know they would like to use the field all year long.

### Main themes:

- All-year access is important to the majority of respondents
- Synthetic turf is preferred by the majority of survey respondents
- Good representation of all-age groups in responses – shows this is a multi-generational park

For a full list of survey questions and responses, please see the corresponding attachment to this report.

## **COUNCIL GOALS ALIGNMENT**

### A Safe Community

Item #93: Create and promote multi-cultural and multi-generational recreation and wellness programs that support community connection, physical well-being, and opportunities for play. Focus on public health in planning processes – including air quality, walkability, and childcare incorporated into larger developments, including revisiting zoning around sensitive receptors (e.g., schools, health care facilities.)

### Environmental Legacy

Item #42: Find ways for City operations to reduce greenhouse gas emissions, conserve water, decrease waste, minimize the use of fossil fuels, and investigate and pursue options for carbon sequestration.

Item #63: Reimagine maintenance practices for managing City parks and open spaces.

Workplan Item 70: Continue to focus on water conservation and urban recycled water expansion.

### Economy that Prospers

Item #116: Maximize the use of current parks and recreation infrastructure and other City-owned facilities and properties for the hosting of recreational, sports, cultural, and entertainment events that attract visitors to Petaluma.

## **FINANCIAL IMPACTS**

Staff is recommending that the overall scope of all-weather synthetic turf field replacement include additional investments to address known drainage issues as well as the installation of a new shock pad, not included in prior installations. The additional shock pad would improve both player safety and the longevity of the field as well as improve drainage. Once installed the shock pad is expected to provide twenty years of serviceable life, ten years beyond that of the turf materials. These additional improvements result in a total project budget of \$1,678,000. The

funding sources identified for this project include \$1,296,000 appropriated from the Turf Replacement General Reserve fund, which includes revenues collected through rental fees, along with \$382,000 of funding provided by the Sonoma County Measure M – Parks For All tax initiative.

#### Park Permit Revenues – Athletic Fields and Special Events

As part of the analysis on options for field replacement, staff was asked to provide additional information regarding revenues collected from park use permit fees for both athletic fields as well as general park use special event permits. For discussion purposes, 2022 was used as a benchmark year as the years prior showed inconsistent use due in large part to impacts and restrictions from the COVID-19 pandemic.

Total revenues collected from hourly rental fees from the city's four synthetic multi-use synthetic turf fields in 2022 include \$88,460.00 or approximately, \$22,000 per field per year. All revenues collected from hourly synthetic turf field rentals are included in a Turf Replacement reserve fund established following the city's first synthetic turf installation in the early 2000's as a means of offsetting the capital costs of turf replacements.

Total revenues collected from hourly rental fees of natural grass ballfields collected in 2022, totaled \$2,376. From which, over 80% of the fees collected originate from permits for field uses at Wiseman and Prince Parks. It is important to note that the majority of available hours for programmed use on natural grass fields are allocated among resident youth leagues leaving little unreserved time available for non-resident youth or adult organized play. While the per-player registration fee was waived during the past several years as a result of the COVID-19 pandemic, in 2022 registration records indicate approximately 2,800 youth participating on public ballfields disbursed across eight youth organizations. Applying the approved fee schedule (between \$9-11 dollars per player), the city would receive an additional \$28,758 dollars.

The city collects a park use fee for special events where private parties seek exclusive use of public space (i.e., birthday parties, graduation ceremonies, BBQ's, etc.) In 2022, total permit fees collected for special event permits issued for public park space totaled \$36,926.00. The most popular park for rent included the large picnic area at McNear followed by Lucchesi Park, then Walnut Park, and Leghorns Park. In total, five of the forty-seven parks made close to 80% of the special event revenues.

#### ATTACHMENTS

1. Community Survey Results – Lucchesi Turf Replacement Project 2023
2. Synthetic Turf and Natural Grass Comparison Installation and Maintenance