



Date: March 24, 2016

To: Patrick H. West, City Manager *PLW*

From: *CB* Craig Beck, Director of Public Works  
Stephen Scott, Interim Director of Parks, Recreation and Marine *SS*

For: Mayor and Members of the City Council

Subject: **Status of Previously Approved Soccer Field Turf Conversion Projects**

On November 17, 2015, the City Council requested the City Manager to direct the Parks, Recreation and Marine Department, in coordination with the Public Works Department, to provide an update on the current cost estimates for previously approved soccer field turf conversion projects at three parks – Admiral Kidd, El Dorado and Seaside. In addition, the City Council requested details on what other appropriate park uses could be developed at El Dorado Park in lieu of an artificial turf project, and report on when it would be feasible to bid on any such in lieu projects. This memo provides staff response to the City Council's requests.

### **Soccer Field Turf Conversion Project History**

The City Council approved \$2.32 million in Fiscal Year 2014 (FY 14), and an additional \$1.27 million in FY 15 one-time funding for synthetic turf installation (Turf Project) at three parks - Admiral Kidd, El Dorado West, and Seaside.

Synthetic turf is commonly used in playgrounds, soccer fields and running tracks, making up the majority of fields installed each year at schools, universities and professional league stadiums. Replacing natural grass turf with synthetic turf on soccer fields provides several benefits, including:

- Reduced water use, helping to meet the State's water reduction mandate
- Better management of storm water runoff through subsurface drainage systems
- A more durable, consistent and safe playing surface that addresses field safety
- Increased playable hours, without the need to close fields for sod replacement or following rain events
- Reduced maintenance costs and provide a longer lifespan than natural grass fields

In addition, synthetic turf retains the City's ability to provide soccer fields amidst drought conditions. Currently, when the City takes down a soccer field for repair, the field needs to be watered several times a day for six to eight weeks. Given the drought conditions, the City will not be able to do this moving forward, and grass fields will not get the water necessary for proper refurbishment. This may result in more grass fields being unavailable for play due to safety and field conditions - having available synthetic turf fields can offset this impact.

The installation of synthetic turf requires "infill material" to be placed in between the tuft strands (blades of turf), above the carpet mat, providing support for the tufts. The infill material is spread onto the laid "carpet" and groomed into place, allowing for the artificial "grass" to protrude as it would do in the case of a natural lawn.

The most common infill material for synthetic fields is crumb rubber, which is made from recycled tire. However, some concern has been raised recently regarding its impact on player health. Accordingly, staff evaluated alternative infill materials with the goal of identifying a suitable material to be used for all synthetic turf conversions across the City. The evaluation considered factors such as water use, safety, playable hours, material availability, field temperature, as well as installation and maintenance costs. In June 2015, staff recommended to the Parks and Recreation Commission that coated crumb rubber be used for the following reasons:

- Minimal water is used for cooling and cleaning, helping to meet the State's water reduction mandate;
- Subsurface drainage system manages water runoff;
- Playable hours on a durable, safe playing surface are maximized to meet the demand for use;
- Seven to ten year lifespan for turf infill will reduce maintenance costs by not needing to close fields for sod replacement;
- Available in colors other than black, such as green or tan, reducing the field temperature by 5 to 10 percent; and
- Compared to the current crumb rubber standard, coated crumb rubber is the lowest cost alternative.

The staff report presented to the Parks and Recreation Commission, which includes information on additional alternatives of synthetic turf infill, is included as Attachment 1.

The Commission voted to recommend to the City Manager the use of an organic infill material, instead of coated crumb rubber. Based on what is known about organic infill installation, maintenance, and replacement frequency, staff anticipated an increase to the cost of each of the three Turf Projects. The actual cost of organic infill material and its financial impact on the Turf Project budgets can only be determined once a project is put out to bid, and bids return with the contractor's unit price for the material.

Following the Parks and Recreation Commission's action, and City Manager direction, the plans and specifications for synthetic Turf Projects were changed to reflect organic infill material. On January 13, 2016, bids were opened for the Drake/Chavez Greenbelt project, which includes a synthetic turf field in the design. The organic infill material selected in this project will become the City's standard material and will be used in the plans and specifications for the Admiral Kidd and Seaside Turf Projects, which are scheduled to be bid in April 2016.

## Soccer Field Turf Conversion Project Budget and Status Updates

Approximately \$3.59 million in one-time funding was previously approved by the City Council for turf conversion projects at Admiral Kidd, El Dorado West and Seaside Parks. An additional \$250,000 in grant funds was provided for the field at Seaside Park, bringing the total to \$3.84 million from all funds sources. The following table summarizes budget vs. estimated costs (costs are based on an engineer's estimate based on organic infill turf field bid prices received in February 2016).

Park Location	Project Budget*	Project Cost**	Balance
Admiral Kidd (1.4 acres)	\$1,540,000	(\$2,321,938)	(\$781,938)
Seaside (0.4 acres)	\$850,000	(\$838,659)	\$11,341
El Dorado West (1.9 acres)	\$1,450,000	(\$3,082,062)	(\$1,632,062)
Total	\$3,840,000	(\$6,242,659)	(\$2,402,659)

\* Represents FY 14, FY 15 and grant funds.

\*\* Estimated costs, final costs will be determined through the bidding process.

Plans and specifications for Admiral Kidd and Seaside are anticipated to be completed in April 2016. At that time, staff will go out to bid and bid openings are expected in May 2016. Once a contractor is selected for each of these projects, the Turf Project's plans, specifications, and construction contracts will be submitted to the City Council for final approval. The design for the El Dorado West improvements are further behind and pending direction for completion.

### Alternatives for El Dorado Park

Alternatives to a synthetic turf soccer field at El Dorado Park include compact sport spaces (also known as "arena soccer"), or renovating the turf on the existing soccer field. However, these options were not a part of the original scope based on the previous City Council actions to fund synthetic turf soccer fields. Subsequent direction was to use organic infill materials for synthetic turf soccer fields in lieu of crumb rubber products. The November 17, 2015 City Council action directed staff to explore these options.

#### Arena Soccer

Arena soccer spaces are essentially small-scale soccer fields, some of which are enclosed. An example in San Diego County measures 180 feet by 80 feet. This option requires additional research to determine the feasibility, cost and long-term maintenance, as well as the ability to place such a field in El Dorado Park amidst existing land use and park designation restrictions. El Dorado Park is subject to open space and recreational land use constraints in perpetuity from previous grant agreements with the Federal Land and Water Agency. These restrictions limit new enclosed buildings, as they are inconsistent with the

open space and recreational land use. The City Attorney and the Federal Land and Water Agency will need to be consulted to determine if this option is permissible.

Based on initial research, staff estimates costs for a 180 feet by 80 feet open air arena soccer space in El Dorado Park will range from \$350,000 and \$650,000. Further design development is required to provide a better estimate of costs.

### Turf Renovation

Turf grass maintenance programs range from basic cultural care such as mowing, to top-notch treatments such as those used in major league professional sport venues. These treatments, such as topdressing, vertical mowing, and over seeding, are utilized to keep the turf grass system operating at peak performance. Renovating the turf on the existing soccer field is possible, but comes with additional maintenance and rehabilitation costs not currently budgeted in the Department of Parks, Recreation and Marine. It would also require limiting field availability.

The recommended renovation and maintenance program would include an estimated one-time renovation cost of \$143,000 and an annual maintenance cost of \$24,500 for a premium level of care for the field, and would significantly reduce playable hours from the current 2,730 playable hours available today. This maintenance includes aeration and top dressing quarterly, and monthly fertilizing.

The dimension of the current soccer field at El Dorado West is roughly 45,000 square feet (300 x 150) of playing surface, which includes a mix of common Bermuda grass and Kikuyu grass. Reconstruction would be for 84,000 square feet (375 x 225) to account for fencing and seating areas inside the fence. In order to reconstruct the field to meet a higher level of quality, the following would be required:

<b>Renovation</b>	<b>Details</b>	<b>Est. Cost</b>
Irrigation Improvements	Adequate field water coverage	\$80,000
Sodding	Use higher quality sod	\$45,000
Drill & Fill Soil Amendment	2 years conversion to sand base	\$18,000
<b>TOTAL</b>		<b>\$143,000*</b>

\* Total does not include additional four-day required watering to maintain field to premium level. This field, which is watered by reclaimed water, would require special provisions for the necessary watering, which would need to be secured from the Long Beach Water Department.

The recommended maintenance program is designed to protect the turf during play and allow recovery in and out of play times. Recovery times (no use) should be planned every three months for a minimum of two weeks.

### Timeline for Alternatives at El Dorado

Depending on the desired alternative, funding would need to be identified and secured for design, construction, and project overhead costs. The following table outlines the timeline for designing, bidding, and awarding a capital improvement project.

Task	Duration (weeks)
Consultant Procurement/Initial Scoping	4
Design Development/Environmental Review	16
Construction Drawings/Plan Check/Permits	16
Preparation of Specifications	4
Bid Posting/Opening	4
Selection of Lowest Bidder	2
Council Award of Contract/Approval of Plans & Specs	3
Construction	20
TOTAL	69

### Conclusions and Next Steps

Summarized below are the recommended next steps:

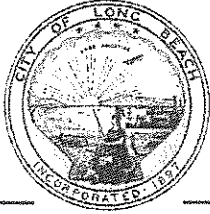
- Admiral Kidd Park: Complete design utilizing cork/sand infill and bid the project. Allocate difference between project budget and actual costs, and move forward with construction.
- Seaside Park: Complete design utilizing cork/sand infill and bid the project. Allocate difference between project budget and actual costs, and move forward with construction.
- El Dorado Park: Move forward with preliminary design of an arena soccer field to allow for more accurate estimated costs. With an updated estimate, compare arena soccer field costs to full-size synthetic turf field alternative. Identify any funding gaps and move forward as appropriate.

For additional information, please contact Stephen Scott, Interim Director of Parks, Recreation and Marine, at (562) 570-3170, or Craig Beck, Director of Public Works, at (562) 570-6771.

#### ATTACHMENTS:

1. PARKS AND RECREATION COMMISSION STAFF REPORT (06-15-15)
2. ARTIFICIAL TURF INFILL PROPERTIES
3. PRELIMINARY ANALYSIS OF BID RESULT FOR DRAKE/CHAVEZ SOCCER FIELDS AND GREENBELT PROJECT
4. COMPARISON OF CAPITAL AND MAINTENANCE COSTS ASSOCIATED WITH ARTIFICIAL TURF INFILL MATERIALS IN THE BIDS OF THE DRAKE/CHAVEZ SOCCER FIELDS AND GREENBELT PROJECT
5. SYNTHETIC TURF SYSTEMS OPTIONS SUMMARY

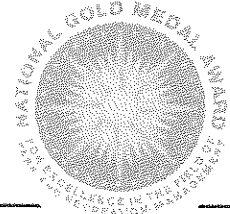
CC: CHARLES PARKIN, CITY ATTORNEY  
LAURA L. DOUD, CITY AUDITOR  
TOM MODICA, ASSISTANT CITY MANAGER  
ARTURO SANCHEZ, DEPUTY CITY MANAGER  
REBECCA JIMENEZ, ASSISTANT TO THE CITY MANAGER  
DEPARTMENT HEADS  
MEREDITH REYNOLDS, PARKS, RECREATION AND MARINE  
TIMOTHY RALSTON, PUBLIC WORKS



## Attachment 1

# CITY OF LONG BEACH

DEPARTMENT OF PARKS, RECREATION & MARINE



2760 N. Studebaker Road, Long Beach, CA 90815-1697  
(562) 570-3100 • FAX (562) 570-3109  
www.LBParks.org

selected  
**best in the nation**

June 15, 2015

### MEMBERS OF THE PARKS AND RECREATION COMMISSION

City of Long Beach  
California

### RECOMMENDATION:

Recommend to the City Manager the use of coated crumb rubber as the standard infill material for all future synthetic field projects in City of Long Beach Parks. (Citywide)

### DISCUSSION

As part of the Fiscal Year 14 (FY14) Budget, the City Council approved \$2.32 million, and as part of Fiscal Year 15 (FY15) Budget, the City Council approved \$1.27 million in one-time funding for turf conversion projects (Turf Project) and identified soccer fields at three park locations for synthetic turf installation. The three parks identified were Admiral Kidd Park, located at 2125 Santa Fe Avenue, El Dorado Park West, located at Studebaker Road immediately south of the Parks, Recreation and Marine Administration building at 2760 Studebaker Road and Seaside Park, located at Chestnut Avenue and W. 14<sup>th</sup> Street. Community meetings were held on January 26 and February 23, 2015 to provide an overview of the City's synthetic turf projects and solicit community feedback.

A consultant was retained by the Department of Public Works to provide information on the various synthetic turf materials available in the market (Attachment 1). Synthetic turf is commonly used in playgrounds, soccer fields and running tracks, making up the majority of fields installed each year at schools, universities, and professional league stadiums. Replacing natural grass turf with synthetic turf on athletic fields has several benefits. Synthetic turf can:

- Reduce water use, helping to meet the State's water reduction mandate;
- Manage stormwater runoff through subsurface drainage systems;
- Provide a durable, consistent, and safe playing surface that addresses field safety issues and meets the demand for use;

*"We create community and enhance the quality of life through people, places, programs and partnerships"*

## MEMBERS OF THE PARKS AND RECREATION COMMISSION

June 15, 2015

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- Increase playable hours, without the need to close fields for sod replacement or following rain events; and
- Lower maintenance costs and provide a longer lifespan than grass fields.

The most common infill material for synthetic turf fields is crumb rubber, which is made of recycled tire material, and some concern has been raised regarding its impact on player health. The consultant was asked to provide information on turf infill alternatives to address concerns related to health effects of turf infill material. Alternative turf infill materials were identified and information such as reduction in water use, safety, playable hours, material availability, field temperature and installation and maintenance costs were reviewed to determine a suitable material that could be used to standardize all turf conversions across the City (Attachment 2). These alternatives also generally meet the intent of State Senate Bill 47, which would have prohibited a public or private school or local government from installing a field or playground surface made from synthetic turf until January 1, 2018, unless specified conditions were met. However, SB 47 will not be voted on in this year's legislative session.

Based on the turf infill alternatives identified, the use of coated crumb rubber was selected by the Department of Parks, Recreation and Marine (Department) as an infill material superior to crumb rubber, due to its ability to coat the material and further protect against potential health impacts. Coated crumb rubber, which has an acrylic coating applied to the exterior of each granulate, that encapsulates the rubber particles to mitigate any potential health impacts, was selected as best achieving the benefits of turf infill material for the following reasons:

- Minimal water is used for cooling and cleaning, helping to meet the State's water reduction mandate;
- Subsurface drainage system manages water runoff;
- Playable hours on a durable, safe playing surface are maximized to meet the demand for use;
- Seven to 10-year lifespan for turf infill will reduce maintenance costs by not needing to close fields for sod replacement;
- Available in colors other than black, such as green or tan, reducing the field temperature by five to ten percent; and
- Compared to the current crumb rubber standard, coated crumb rubber is the lowest cost alternative.

Additionally, the conversion of grass fields to synthetic turf fields ensures the City can provide athletic fields amidst drought conditions. Currently, when the City takes down an athletic field for repair, the field needs to be watered several times a day for six to eight weeks. Given the drought conditions, the City will not be able to do this moving forward, thus grass fields will not get the water necessary for field refurbishment. This will result in more grass fields being unavailable for play due to safety and field conditions: having available synthetic turf fields can offset this impact.

MEMBERS OF THE PARKS AND RECREATION COMMISSION

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The average annual maintenance cost of a 72,660 square-foot natural grass soccer field is approximately \$11,000, which does not include field repair or replacement costs or the cost for the 900,000 to 1,200,000 gallons of water needed annually for upkeep. The average annual maintenance cost of a 72,660 synthetic turf field is approximately \$9,000, which does not include repair or replacement costs or the water needed for a cooling system. Should the City elect to include a cooling system, this would require up to ten percent of the water used on a grass field, or approximately 90,000 to 120,000 gallons a year. Therefore, every converted field would save \$2,000 annually on maintenance costs plus the cost savings associated with less water use.

Long Beach Municipal Code Section 2.54.005 B states that the Parks and Recreation Commission (Commission) shall recommend to the City Manager plans for development, beautification and maintenance of public park and recreational areas, including parks, recreation centers, playgrounds, beaches, parkways, and the City cemetery. It is therefore appropriate for the Commission to make a recommendation to the City Manager supporting the Department's recommendation to use coated crumb rubber as the standard turf infill material for turf conversions for athletic fields across the City.

Should the Commission support the recommendation to use coated crumb rubber as the standard turf infill material for turf conversions for athletic fields, construction plans will be finalized and put out to competitive bid. Once a contractor is selected, the Turf Project's plans, specifications, and construction contract will be submitted to the City Council for approval as part of the standard contract and purchasing approval procedure.

This matter was reviewed by Deputy City Attorney Kendra L. Carney on June 10, 2015.

FISCAL IMPACT

Synthetic turf fields can provide financial savings through reduced water use, reduced maintenance and longer field lifespans, thus saving long-term infrastructure investments. The City Council approved \$3.5 million in one-time funding for the Turf Project in FY14 and FY15. Maintenance of synthetic turf fields will be budgeted each year as a part of existing field maintenance operations.

SUGGESTED ACTION:

Approve recommendation.



MEMBERS OF THE PARKS AND RECREATION COMMISSION

June 15, 2015

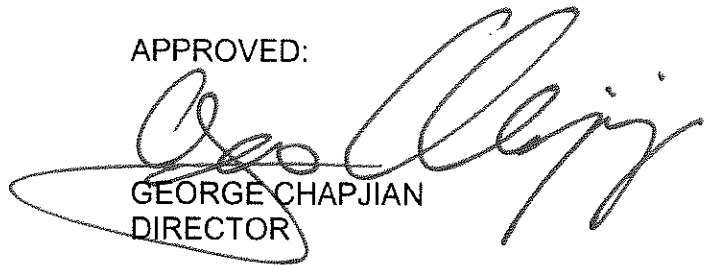
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Respectfully Submitted,



STEPHEN P. SCOTT  
MANAGER  
BUSINESS OPERATIONS BUREAU

APPROVED:



GEORGE CHAPJIAN  
DIRECTOR



HURLEY OWENS  
ACTING MANAGER  
MAINTENANCE & DEVELOPMENT BUREAU



GLADYS KAISER  
MANAGER  
RECREATION SERVICES BUREAU

GC:HO:GK:SS:MR

Attachments: Attachment 1: D.A. Hogan & Associates, Inc. Memo  
Attachment 2: Turf Infill Alternatives

Artificial Turf Infill Properties

Infill Type	Pros	Cons
Coated Crumb Rubber	<ul style="list-style-type: none"> <li>• Low maintenance</li> <li>• Good drainage</li> <li>• Maintains resiliency</li> <li>• Manufacturers Warranties</li> <li>• No resilient pad requirement</li> </ul>	<ul style="list-style-type: none"> <li>• High cost</li> <li>• Same chemical make-up as SBR Rubber</li> <li>• Limited analysis as turf infill</li> <li>• Limited availability</li> </ul>
Coconut Fiber Matrix (organic)	<ul style="list-style-type: none"> <li>• Natural Material/Renewable</li> <li>• Superior heat properties</li> <li>• Good resiliency</li> </ul>	<ul style="list-style-type: none"> <li>• Higher first cost relative to coated crumb rubber and Cork/Sand</li> <li>• Requires irrigation system to maintain material integrity</li> <li>• Potential for weed and mold growth</li> <li>• Limited Availability</li> <li>• Higher maintenance requirements and costs relative to Cork/Sand</li> </ul>
Cork/Sand (organic)	<ul style="list-style-type: none"> <li>• Natural Material/Renewable</li> <li>• Superior heat properties</li> <li>• Does not require irrigation or hydration to maintain material integrity</li> <li>• Good resiliency</li> <li>• Less first cost vs. coconut</li> <li>• Lower maintenance requirements and costs relative to Coconut</li> </ul>	<ul style="list-style-type: none"> <li>• Higher first cost relative to coated crumb rubber</li> <li>• Potential for weed and mold growth</li> <li>• Limited Availability</li> </ul>

City of Long Beach - Department of Public Works  
 Preliminary Analysis of Bid Result for Drake/Chavez Soccer Fields and Greenbelt Project

Item	Description	Bid Amount	Minimum Amount	Recommended Amount	Comments
1	Subtotal Base Bid (Lines 1 to 64)	\$ 2,036,170.68	\$ -	\$ -	
2	Mobilization (Line 65)	\$ 100,000.00	\$ -	\$ -	
3	Base Bid (Lines 1 to 65) + Additive A (Lines 66 to 67):	\$ 2,474,478.18	\$ 2,474,478.18	\$ 2,474,478.18	
4	ADDITIVE BID A ITEMS 66 to 67	\$ 338,307.50	\$ -	\$ -	Cork/Sand Infill (In Base Bid)
5	ALTERNATE BID B - ITEMS 68 to 70	\$ 623,828.00	\$ -	\$ -	Coconut Fiber Matrix Infill
6	ADD-3: Install Prefabricated Restroom	\$ 218,582.00	\$ -	\$ 218,582.00	
7	ADD-4a: Cable installation for lights	\$ 93,120.00	\$ -	\$ 93,120.00	
8	ADD-4b: Install Pedestrian Lighting	\$ 288,171.00	\$ -	\$ 288,171.00	
9	ADD-5: Install Concrete Basketball Court	\$ 68,808.00	\$ -	\$ 68,808.00	
10	ALT-6: 8' Tubular Fence (880 LF) around Primary	\$ 224,456.00	\$ -	\$ 224,456.00	
11	ADD-7: Electrical Conduits and Pull Rope	\$ 18,461.00	\$ -	\$ 18,461.00	
12	ADD-8a: Second Synthetic Turf Sports Field	\$ 397,370.40	\$ -	\$ -	Cork/Sand Infill
13	ADD-8b: Soccer Goal (8'x24'x7'6") for second	\$ 4,934.00	\$ -	\$ 4,934.00	
14	ADD-8c: Provide synthetic field maintenance	\$ 17,147.00	\$ -	\$ -	
15	ALTERNATE BID I - ITEMS 80 to 82	\$ 441,304.40	\$ -	\$ -	Coconut Fiber Matrix Infill
16	ADD-10: Install EV Charge Station Conduit	\$ 15,434.00	\$ -	\$ -	
17	ADD-11 Provide Construction Office	\$ 16,898.00	\$ -	\$ 16,898.00	
18	<b>Total</b>	\$ 7,377,470.16	\$ 2,474,478.18	\$ 3,407,908.18	<b>Needs = \$ 933,430.00</b>
19	Grand Total of all Line Items (Lines 1 to 84 from Bid Form)	\$ 4,521,700.98			Low Total (Missing 4a and 4b)
20	Difference	\$ 2,855,769.18			High Amount
21	Check	\$ 2,474,478.18			Correct Difference
22	Difference	\$ 381,291.00			Should be Zero

## Attachment 4

City of Long Beach - Department of Public Work  
 Comparison of Capital and Maintenance Costs Associated with Artificial Turf Infill Materials in the Bids of the  
 Drake/Chavez Soccer Fields and Greenbelt Project

Item	Description	Unit Price	Item Total	Comments
66	ADD-1a: Install synthetic turf w/carpet, cork/sand infill, and shock and drainage underlayment (48,150 SF)	\$ 7.22	\$ 347,402.25	Baseline (100%)
67	ADD-1b: Provide synthetic field maintenance for the duration of the field warranty for cork/sand infill (8 yrs.)	\$ 16,112.13	\$ 16,112.13	Baseline (100%)
<b>Subtotal - Option A1</b>			<b>\$ 363,514.38</b>	<b>\$7.55/SF Baseline</b>
68	ALT-2a: Install synthetic turf w/carpet, coconut fiber matrix infill, and shock and drainage underlayment (48,150 SF)	\$ 10.54	\$ 507,501.00	168% of Baseline Cost
69	ALT-2b: Install irrigation system for coconut fiber matrix infill system. Include larger electrical panel and conduit & cable as required for irrigation system.	\$ 75,758.88	\$ 75,758.88	Cost included in Item 68's comparison with Baseline Cost
70	ALT-2c: Provide synthetic field maintenance for the duration of the field warranty for coconut fiber matrix infill (8 yrs.)	\$ 105,698.88	\$ 105,698.88	656% of Baseline Cost
<b>Subtotal - Option B1</b>			<b>\$ 688,958.76</b>	<b>\$14.31/SF 190%</b>
77	ADD-8a: Second Synthetic Turf Sports Field (includes subgrade preparation; subgrade liner; subsurface panel drain system; perimeter drain; drainage connection; permeable base stone; geotextile fabric. Install synthetic turf to include carpet and <u>cork/sand infill</u> . Either Install Option 1- Shock and Drainage Tile Underlayment or Option 2- Shock and Drainage Pad Underlayment (26,160 SF)	\$ 12.48	\$ 326,378.70	Baseline (100%)
78	ADD-8b: Soccer Goal (8'x24'x7'6") for second soccer field	n/a	n/a	Not included in comparison of infill costs
79	ADD-8c: Provide synthetic field maintenance for the duration of the field warranty for <u>cork/sand infill</u> (8 yrs.) for second soccer field.	\$ 16,899.63	\$ 16,899.63	Baseline (100%)
<b>Subtotal - Option A2</b>			<b>\$ 343,278.33</b>	<b>\$13.12/SF Baseline</b>
80	ALT-9a: Second Synthetic Turf Sports Field (includes subgrade preparation; subgrade liner; subsurface panel drain system; perimeter drain; drainage connection; permeable base stone; geotextile fabric. Install synthetic turf to include carpet and <u>coconut fiber matrix infill</u> . Either Install Option 1- Shock and Drainage Tile Underlayment or Install Option 2- Shock and Drainage Pad Underlayment	\$ 13.25	\$ 346,620.00	122% of Baseline Cost
81	ALT-9b: Install irrigation system for <u>coconut fiber matrix infill</u> system. Include increased meter size; field irrigation kit; upsize pump; larger electrical panel and conduit & cable as required for irrigation system	\$ 72,531.75	\$ 72,531.75	Cost included in Item 80's comparison with Baseline Cost
82	ALT-9c: Provide synthetic field maintenance for the duration of the field warranty for <u>coconut fiber matrix infill</u> (8 yrs.) for second soccer field	\$ 54,235.25	\$ 54,235.25	321% of Baseline Cost
<b>Subtotal - Option B2</b>			<b>\$ 473,387.00</b>	<b>\$18.10/SF 138%</b>

# City of Long Beach

## Synthetic Turf System Options

Company	AstroTurf	FieldTurf/Tarket	Hellas	Shaw	SprinTurf	A-Turf	Domo	Prograss	UBU
Vendor	AstroTurf	FieldTurf	Hellas Construction	Shaw	SprinTurf	A-Turf	West Pac Sports Systems	Prograss	UBU
Manufacturer	Synthetic Turf Resources	FieldTurf / Tarket	Spears Industries	Shaw	ITS/Nexcel	Controlled Products	Varies	Nexcel	Turfstore
Installer	Independent 3rd Party Contractor	FieldTurf	Hellas and Independent 3rd Party Contractor	Shaw	SprinTurf	Independent 3rd Party Contractor	Independent 3rd Party Contractor	Independent 3rd Party Contractor	Independent 3rd Party Contractor
Local Representation	Yes	Yes	Yes	Yes	Yes	Unknown	Mission Viejo	Unknown	Central California Coast
Company Background	AstroTurf is located in Dalton, Georgia. Parallel company to Synthetic Turf Resources which provides coating services to many other companies in the carpet industry. Well financed and stable in the market place. Fields constructed and used at professional, collegiate and high school venues throughout the US.	FieldTurf was the first of the new generation of resilient infilled turf products. They are an industry leaders with acceptance at the top levels of athletic completion including numerous professional and collegiate installations. Vertically integrated with control over fiber production, tufting and coating at own facilities and install with own crews. Fields constructed and used at professional, collegiate and high school venues throughout the US.	Hellas Construction management previously associated with other companies, including SRi Sports. In the competitive market since 2005, with primary offices in Texas and manufacturing of product in Georgia. Fields constructed and used at professional, collegiate and high school venues throughout the US.	Shaw Sports Fields, include previous product line of Sportex is a wholly owned subsidiary of Berkshire Hathaway. Manufacturing facilities in Dalton, Georgia. Independent research and fiber production capabilities. Fields constructed and used at professional, collegiate and high school venues throughout the US.	SprinTurf was the first all-rubber infill synthetic turf surface. They emphasize higher fiber weights and backing strengths with their product. Vertically integrated, as they produce their own fiber, with tufting and coating products in their own facilities and typically install with their own installation teams. Fields constructed and used at professional, collegiate and high school venues throughout the US.	Sister Company to Surface America A-Turf is independent turf vendor which is part of the ECORE Group (originally Dodge Corc Co.). Surface America is an established playground surfacing company. Fields constructed and used at professional, collegiate and high school venues throughout the US. Offering extended warranty.	Domo Sports & Laisure Grass is a unit of a larger company with 2,500 employees and \$850M Euro based in Belgium. Established European Vendor with installations for LA Unified and several Parks and Division 2 collegiate installations. Fiber manufactured in Belgium	10 year old company, with manufacturing facilities in Georgia.	UBU is 5 year old Company with management team experienced from other turf vendors. Extensive documentation materials. Fields constructed and used at professional, collegiate and high school venues throughout the US.
Approximate Annual Volume	150-200	1000+	150-200	150+	150+	50-100	50-100	50-100	50-100

Product	AstroTurf	FieldTurf/Tarket	Hellas	Shaw	SprinTurf	A-Turf	Domo	Prograss	UBU
Infill Materials	Typical infill is less than 10% sand, with remaining rubber. Typically using ambient rubber but will use cryogenic rubber.	Always sand and cryogenic rubber installed in layers in accordance with patent, sand on bottom with blended sand & rubber in the middle and 100% rubber on top. Parallel Tarket product with 100% sand on bottom and 100% rubber on top.	Typical infill is less than 10% sand, with remaining rubber. Typically using ambient rubber but will use cryogenic rubber. Strongly promoting organic infill	Typically infill is less than 10% sand, with remaining rubber. Typically using ambient rubber but will use cryogenic rubber.	Typically all rubber infill but will provide sand and rubber if desired.	Sand and rubber with 100% rubber on the bottom and blended sand and rubber on top, larger sand & rubber particle sizes are utilized, will also use all rubber	Typical infill is less than 10% sand, with remaining rubber. Typically using ambient rubber but will use cryogenic rubber.	Typical infill is less than 10% sand, with remaining rubber. Typically using ambient rubber but will use cryogenic rubber.	Typical infill is less than 10% sand, with remaining rubber. Typically using ambient rubber but will use cryogenic rubber.
Fiber Type	Long parallel slit film or Monofilament polyethylene & polypropylene blend. Proprietary blend with nylon rootzone/hatch. Tencate or own fiber.	Long parallel slit film or Monofilament manufactured by own resources	Long parallel slit film or Monofilament. Sometimes with combined fibers.	Long parallel slit film or Monofilament polyethylene & polypropylene blend manufactured by Tencate or self manufactured fibers. New product with PE thatch/rootzone.	Long parallel slit film or Monofilament. Sometimes with combined fibers and offer of root zone/hatch with PE fiber.	Long parallel slit film or Monofilament. Sometimes with combined fibers.	Long parallel slit film or Monofilament polyethylene / combined and manufactured by Domo	Long parallel slit film or Monofilament. Sometimes with combined fibers.	Long parallel slit film or Monofilament. Sometimes with combined fibers. Fiber from Polytex.
Pile Weight	Typical range from 38-52 oz/sy with single or multiple fibers	33 - 40 oz/sy	Typically over 40 oz/sy	Typically 41-51 oz/sy	40-50 oz/sy	40-48 oz/sy	40-48 oz/sy	40-48 oz/sy	40-48 oz/sy
Pile Height	Typically between 2" and 2.50"	Typically between 2" and 2.50"	Typically between 2" and 2.50"	Typically 2.00"-2.50"	Typically between 2" and 2.50"	Typically between 2" and 2.50"	Typically between 2" and 2.50"	Typically between 2" and 2.50"	Typically between 2" and 2.50"
Backing	Multi-layer backing material with polyurethane coating	Patented permeable backing with partial polyurethane coating	Multi-Layer backing material with polyurethane coating	Multi-Layer backing material with polyurethane coating	Patented triple layer backing material with urethane coating	Double backing with urethane coating	Double backing with urethane coating	Double backing with urethane coating	Double layer backing material with latex coating
Backing / Coating Weight	Typically +26 oz/sy	Typically +22 oz/sy	Typically 22 oz/sy	Typically 34 oz/sy	Typically 22 oz/sy	Typically +26 oz/sy	Typically +26 oz/sy	Typically +26 oz/sy	Typically +26 oz/sy
Total Weight	Typically over 70 oz/sy	Typically +57 oz/sy	Typically over 70 oz/sy	Typically 75 oz/sy	Typically over 80 oz/sy	Typically over 70 oz/sy	Typically over 70 oz/sy	Typically over 70 oz/sy	Typically over 70 oz/sy
Supplemental Pad	No restrictions	No restrictions. Typically installed without pad.	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions	No restrictions

Experience	AstroTurf	FieldTurf/Tarket	Hellas	Shaw	SprinTurf	A-Turf	Domo	Prograss	UBU
Football Experience	The surface has been widely accepted for football use with numerous installations. NFL Field	Market leader with multiple NFL and Division 1 NCAA football field installations	The surface has been widely accepted for football use with numerous installations. NFL Field	The surface has been widely accepted for football use with numerous installations.	The surface has been widely accepted for football use with numerous installations. NFL Practice Fields	The surface has been widely accepted for football use with numerous installations. NFL Field	Multiple field installations for LA School District	Multiple High School and Park installations with some University installations	The surface has been widely accepted for football use with numerous installations. Multiple NFL Fields
Soccer Experience	The surface has been widely accepted for soccer use with numerous installations.	Has FIFA 2 Star Installations. The surface has been widely accepted for soccer use with numerous installations.	The surface has been widely accepted for soccer use with numerous installations.	The surface has been widely accepted for soccer use with numerous installations.	The surface has been widely accepted for soccer use with numerous installations.	The surface has been widely accepted for soccer use with numerous installations.	The surface has been widely accepted for soccer use with numerous installations.	The surface has been widely accepted for soccer use with numerous installations.	The surface has been widely accepted for soccer use with numerous installations.
Regional Installations	Numerous throughout SOCAL Market, with greater than 10-50 fields	Numerous throughout SOCAL Market, with greater than 100 fields	Numerous throughout SOCAL Market, with greater than 10-15 fields	Numerous throughout SOCAL Market, with greater than 10-15 fields	Numerous throughout SOCAL Market, with greater than 25 fields	Numerous throughout SOCAL Market, with less than 10 fields	Numerous throughout SOCAL Market, with 5-10 fields	Numerous throughout SOCAL Market, with less than 5 fields	No fields in SOCAL Market