

Addison Circle Park Interactive Display Fountain

February 27, 2018



ADDISON

BACKGROUND

Staff made a presentation to Council on December 12, 2017 to discuss options for repairing Addison Circle Fountain. During this presentation several options were discussed.

OPTION 1 – \$225,000*
REMOVE THE
FOUNTAIN

OPTION 2A - \$350,000*
PATCH THE FOUNTAIN

OPTION 2B - \$475,000*
REPAIR AND
MODERNIZE THE
FOUNTAIN

OPTION 3 - \$675,000*
CROWD CONTROLLED
FOUNTAIN
“Water Gush”

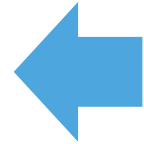


* Presented budget numbers were based on 2017 construction costs and did not include design fees, testing, sound equipment and life cycle costs.

Option 2B (repair and modernize) and Option 3 (crowd controlled technology) appeared to be preferred by council but staff was asked to look into the following:

- Research product and technology proposed in Option 3 to determine longevity and reliability of the product.
- Research manufacturers of products for Option 2B, determine if there are other innovative products available.
- Research installation options that could make Option 2B more conducive to future repairs.
- Research products and features of noteworthy architectural fountains.
- Look at options to increase interactive capabilities of Option 2B.
- Develop life cycle costs and cost benefit analysis for each option.

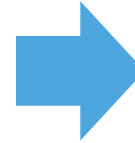
PRODUCT & TECHNOLOGY RESEARCH



WATER GUSH (OPTION 3)

COMPARED TO

FOUNTAIN IN A CAN (OPTION 2)



	WATER GUSH	FOUNTAIN IN A CAN
Water Quality		X
Light Quality		X
Material Durability		X
Programmable	X	X
Crowd Control Feature	X	
Marketplace Longevity*		X

*Water Gush Technology is less than 5-years old, most of the applications have occurred within the last 2 years. References were checked for this product were mostly favorable although installations have not exceeded the typical warranty period.



DRY-DECK FOUNTAINS

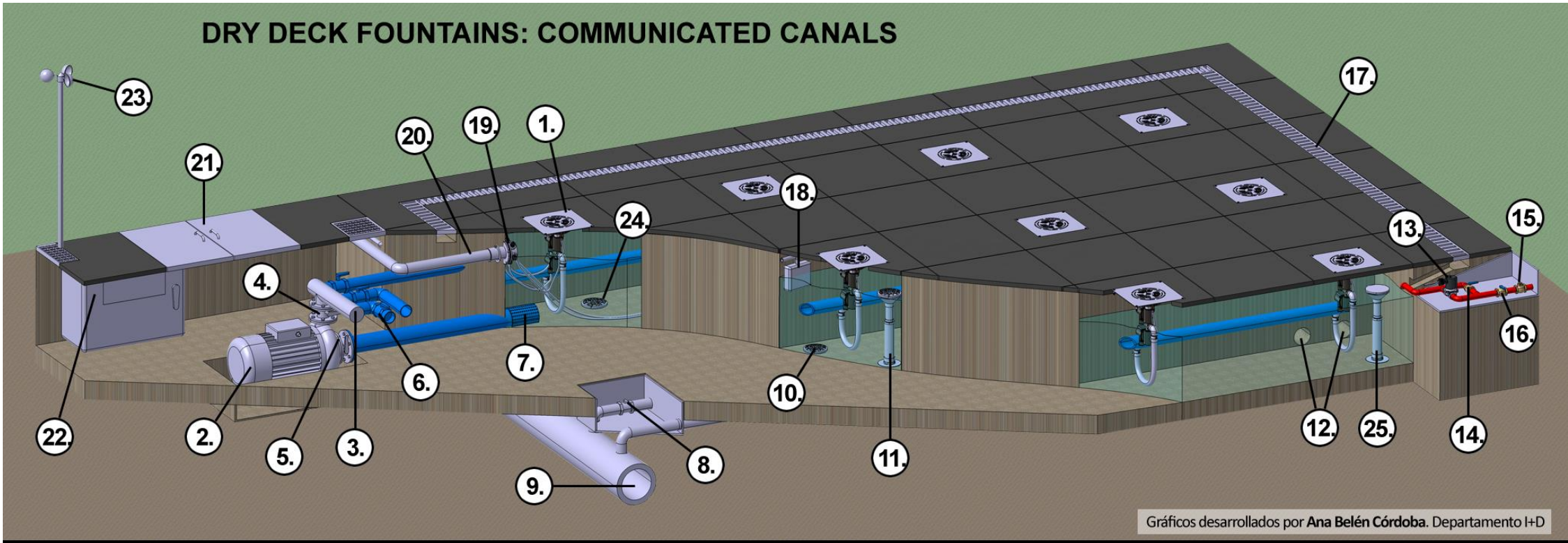
- Installation flush with paving.
- Numerous spray nozzle options.
- Optional lighting can be static or changing.
- Programed for changing water heights and light features.
- Can be choreographed with music.
- **Safe water height and velocity balanced with water “wow” factor, typically 6’-8’ tall.**



Several U.S. Companies manufacturer these types of products, two of which are located in Texas.

FOUNTAIN INSTALLATION OPTIONS

DRY DECK FOUNTAINS: COMMUNICATED CANALS



Gráficos desarrollados por Ana Belén Córdoba. Departamento I+D



- 1. WATERBOY PLUS WITH 2 SOLENOID VALVES
- 2. WATER PUMP
- 3. DISTRIBUTION MANIFOLD DISCHARGE PIPE
- 4. CONTROL VALVE OF THE SUPPLY FLOW
- 5. CONTROL VALVES OF THE SUCTION FLOW

- 6. CONTROL VALVES OF THE DISTRIBUTION MANIFOLDS
- 7. PUMP SUCTION FILTER
- 8. DRAIN VALVE
- 9. MAIN DRAIN MANIFOLD
- 10. OUTLET
- 11. OVERFLOW

- 12. COMMUNICATION PIPES BETWEEN CANALS
- 13. AUTOMATIC FILLING SOLENOID VALVE
- 14. MANUAL FILLING VALVE
- 15. RETENTION VALVE
- 16. MAIN OPENING AND CLOSING VALVE (WATER CONNECTION)

Autofill battery

- 17. PERIMETER CANAL WITH GRID
- 18. LEVEL PROBE
- 19. UNDERWATER JUNCTION BOXES
- 20. CABLE BUSHING
- 21. TECHNICAL GATEWAY

- 22. CONTROL PANEL
- 23. ANEMOMETER
- 24. SUCTION FILTER
- 25. FILTRATION IMPULSE

FAIR PARK

- 2009 renovation, to esplanade reflecting pool, inspired by Bellagio fountains.
- 272 spray nozzles reach up to 100' in height.
- 170+ white LED lights.
- Several shows choreographed with music.
- 700' long deep pool and basin.
- High velocity water, does not allow for physical interaction.



Photo courtesy GPSI

LOCAL NOTEWORTHY FOUNTAINS

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LEGACY WEST

- 131 spray nozzles up to 12' in height.
- 12 robotic spray nozzles, greater than 12' tall.
- 398 color changing LED lights.
- 3,500 SF of fountain area.
- 14 shows choreographed with music.



Photo courtesy OTL

{ Public Spaces are the new anchor tenant in retail – J. Wickham Zimmerman, CEO OTL Legacy West developer. }

SUNDANCE SQUARE

- 216 spray nozzles with white LED lights up to 12' in height.
- Color changing overhead plaza lights.
- 3,000 SF of fountain area.
- Splash pad use during limited times, 4 hours per day.
- 6' maximum height spray nozzles during splash pad hours.



Photo courtesy Yelp

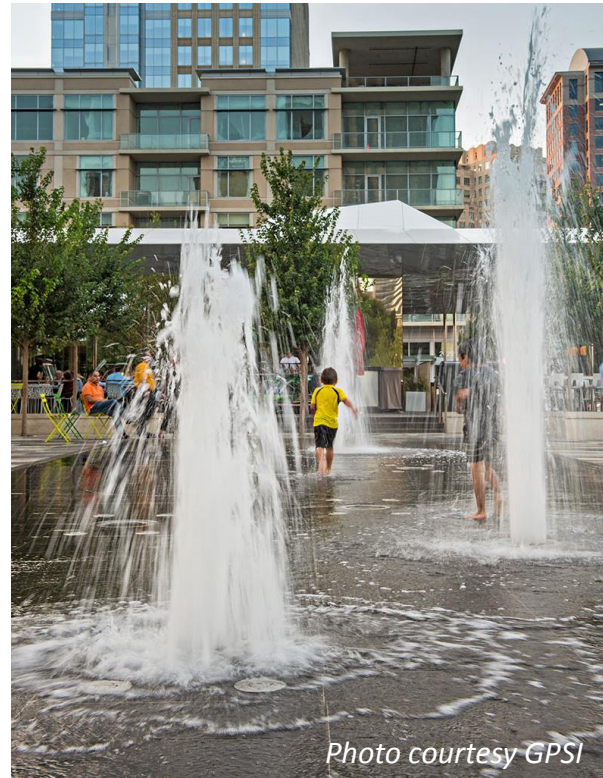
Fountain encourages people to linger in the plaza, of the 629 groups (1,991 people total) observed staying in the park longer than one minute, 43% stayed for more than 15 minutes, with a 21 minute average length of stay. The average stay for families with children playing in the fountain was 49 minutes. – Landscape Performance Series Case Study of Sundance Square.

LOCAL NOTEWORTHY FOUNTAINS

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Klyde Warren Park

- Several small plaza fountains with less than 20 spray nozzles in each fountain.
- Spray height up to 8' tall or less.
- White LED Lights.
- Designed for human interaction.



Klyde Warren Park encourages social interaction beyond its boundaries with 14,683 Facebook 'likes', 5,212 'tagged' Facebook photos at the park, 6,980 Twitter followers, and 959 Instagram followers, **all in the first six months** of opening. - Landscape Performance Series

LOCAL NOTEWORTHY FOUNTAINS

ADDISON

ADDISON CIRCLE

- 24 spray nozzles can reach 15' in height.
- 9 misting spray nozzles.
- 32 white lights.
- 1,800 SF of fountain area.
- 3 animated shows, not utilized.
- Filtration system does not meet pool code requirements for splash pad use.

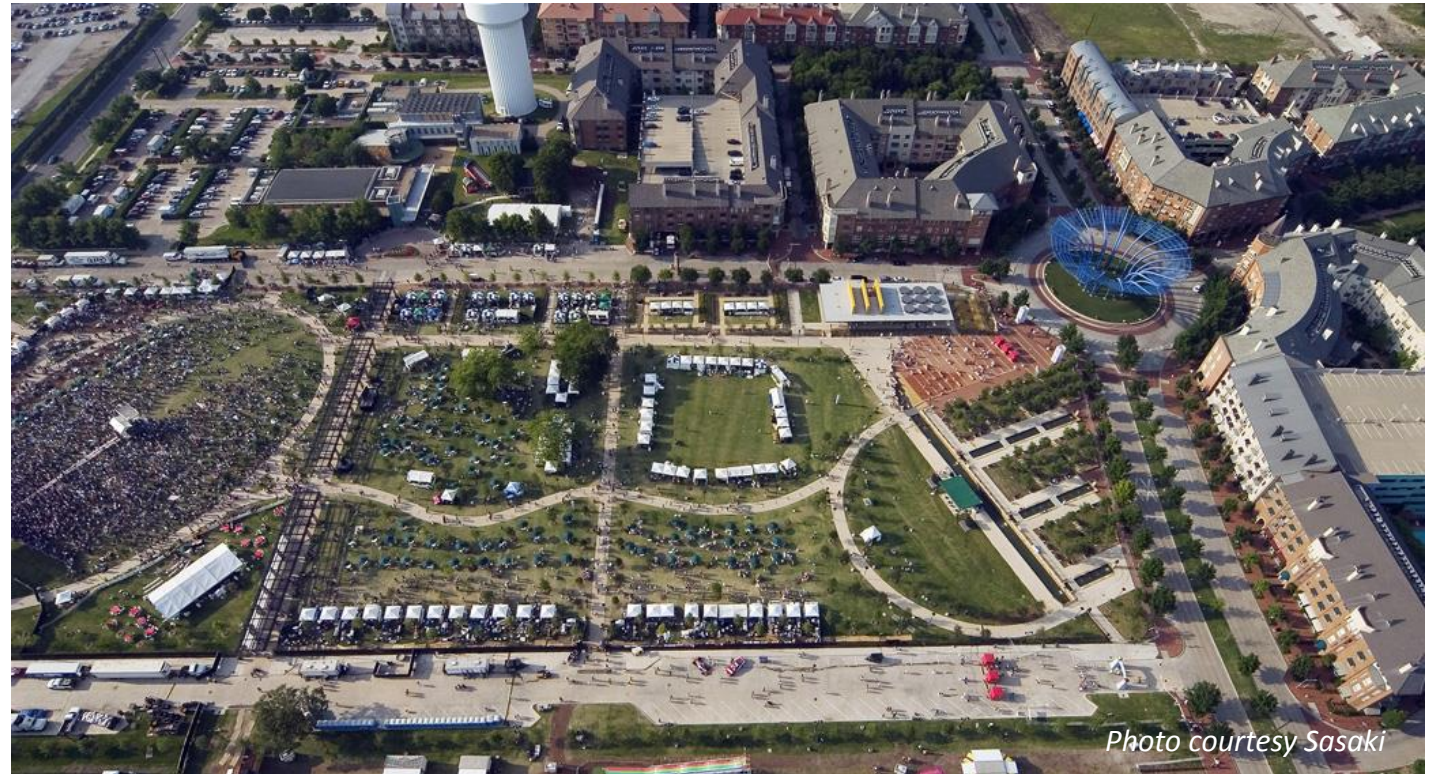
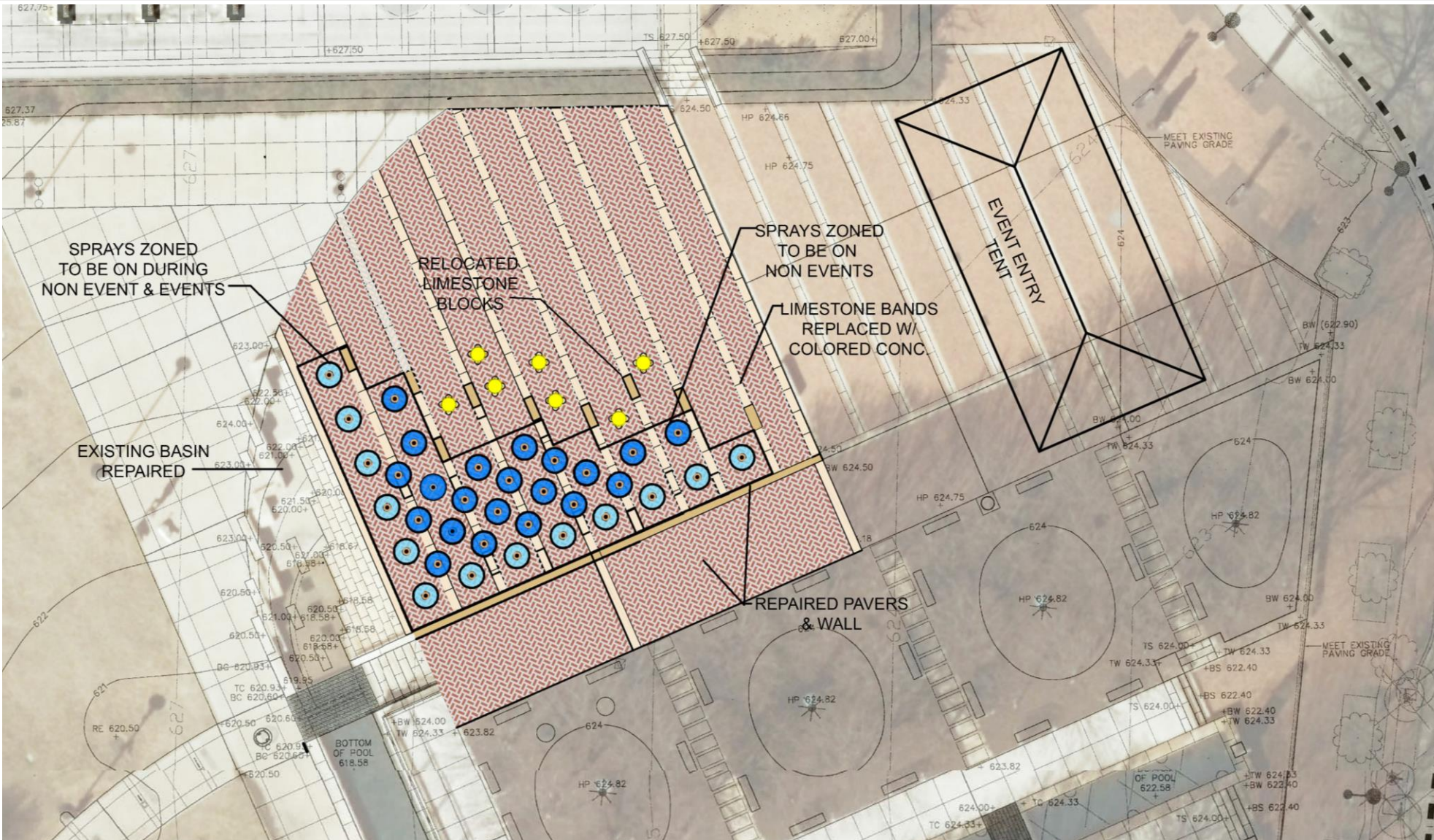


Photo courtesy Sasaki

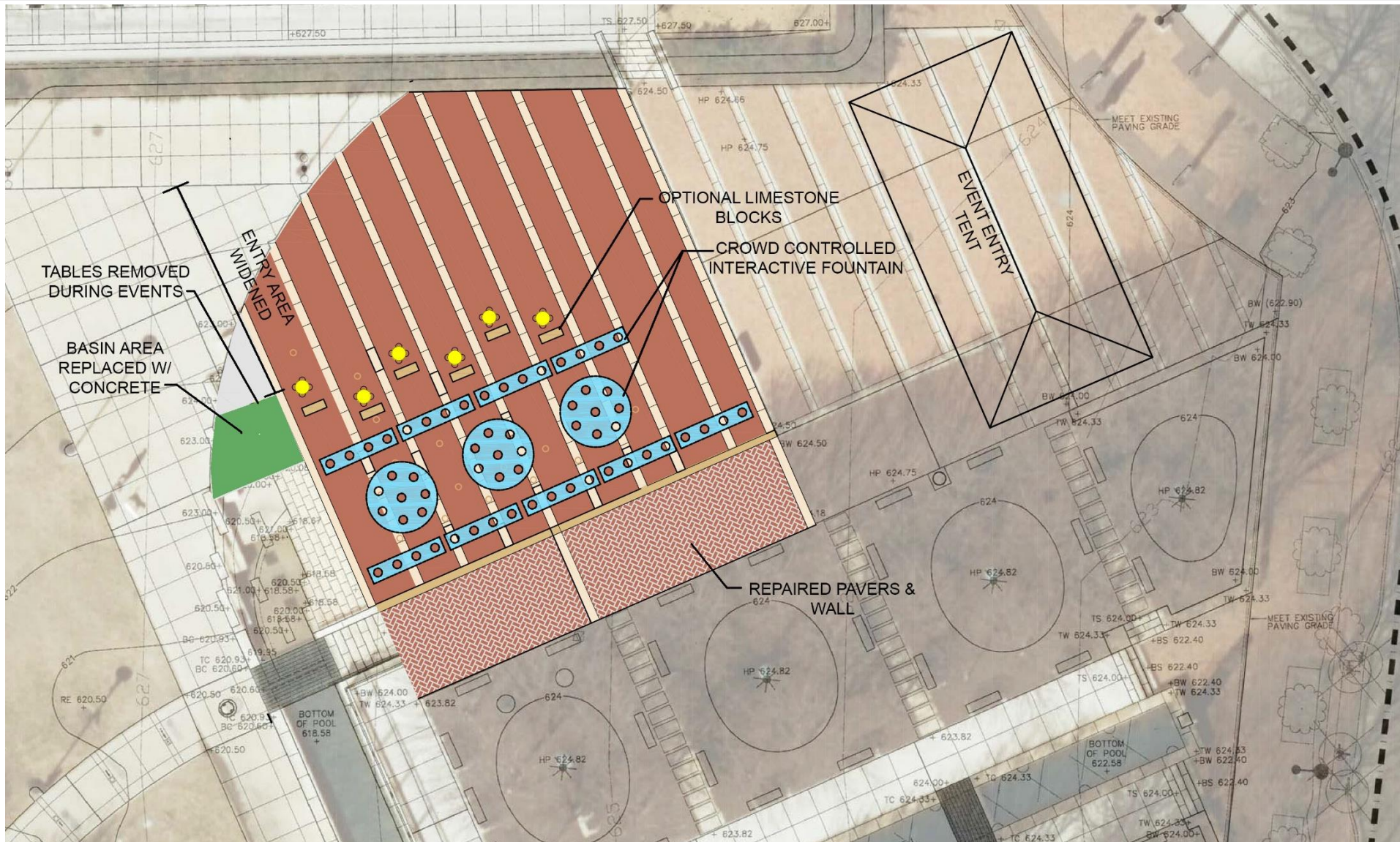
OPTION 2B – REPAIR AND MODERNIZE FOUNTAIN



- 34 spray nozzles.
- 6' – 8' tall spray height.
- 3 animated shows.
- 34 LED lights, color changing.
- Zoned to turn off sections

OPTION 3 – CROWD CONTROLLED FOUNTAIN

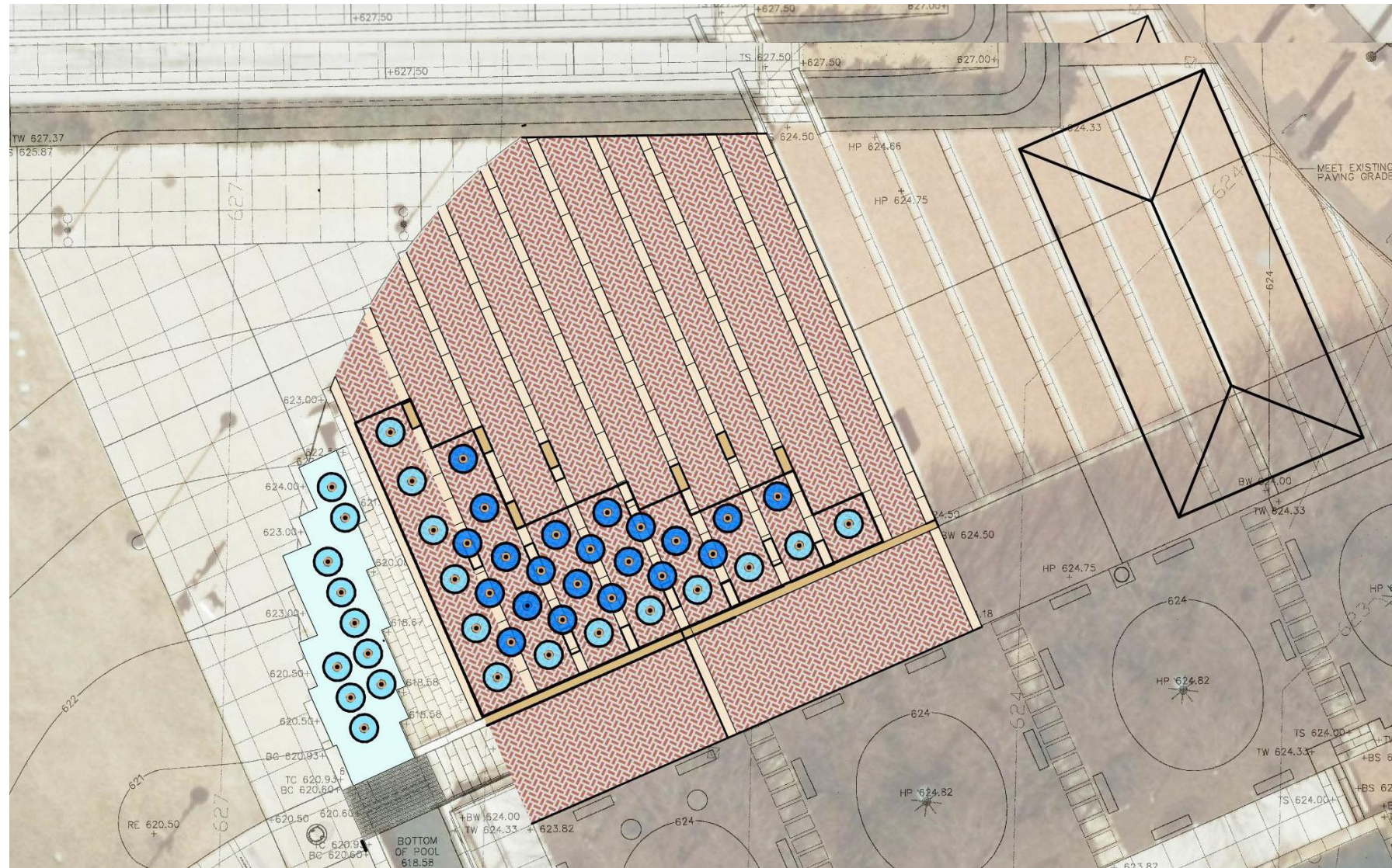
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- 60 spray nozzles.
- 6' – 8' tall spray height.
- 3 animated shows.
- 60 LED lights, color changing.
- Crowd control feature.

ENHANCEMENTS

ADDISON



Small Channel

- 10 sprays nozzles added to basin.
- 8-12' tall.
- Animated and choreographed with music.

Long Channel

- 30 sprays nozzles added to linear basin.
- 8-12' tall.
- Animated and choreographed with music.

CONSTRUCTION COST INFORMATION

	OPTION 2B REPAIR & MODERNIZE	OPTION 3 CROWD CONTROL TECHNOLOGY	ENHANCEMENT SMALL CHANNEL (10 Sprays)	ENHANCEMENT LONG CHANNEL (30 Sprays)	ENHANCEMENT FILTRATION – SPLASH PAD	ENHANCEMENT ADDITIONAL SHOWS
Construction Costs*	\$ 475,000.00	\$ 675,000.00	\$ 106,250.00	\$ 318,750.00	***\$ 56,826.00	\$ 3,600.00
Design Costs	\$ 57,000.00	\$ 81,000.00	\$ 12,750.00	\$ 38,250.00	\$ 6,819.00	
Testing	\$ 9,500.00	\$ 13,500.00	\$ 2,125.00	\$ 6,375.00		
Suspended Deck	\$ 57,000.00					
Total Construction Costs **	\$ 598,500.00	\$ 769,500.00	\$ 121,125.00	\$ 363,375.00	\$ 63,645.00	\$ 3,600.00

* Based on 2018 construction prices with a 10% contingency. Estimate assumes owner purchases and supplies fountain equipment to the contractor to reduce mark-up.

** Staff recommends increasing contingency by an additional 10% due to nature of construction.

*** Dependent upon construction of the suspended deck.

LIFE CYCLE COST INFORMATION

	OPTION 2B REPAIR & MODERNIZE	OPTION 3 CROWD CONTROL TECHNOLOGY	ENHANCEMENT SMALL CHANNEL	ENHANCEMENT LONG CHANNEL	ENHANCEMENT FILTRATION – SPLASH PAD	ENHANCEMENT ADDITIONAL SHOWS
25 Yr. Maintenance / Repair Costs	\$ 882,440.00	\$ 1,042,300.00	\$ 23,750.00	\$ 242,700.00	\$ 90,000.00	
Annual Maintenance / Repair Costs	*\$ 35,297.60	**\$ 41,692.00	*\$ 950.00	**\$ 9,708.00	***\$ 3,600.00	
Total Life Cycle Costs (Maintenance + Construction Costs)	\$ 1,594,362.00	\$ 1,946,326.00	\$ 133,284.00	\$ 637,297.00	\$ 158,255.00	\$ 3,600.00
Annual Life Cycle Costs	\$ 63,774.48	\$ 77,853.04	\$ 5,331.36	\$ 25,491.00	\$ 6,330.20	

* Cost is in-line with existing budget for current maintenance costs for Addison Circle Fountains.

** Cost exceeds current annual maintenance costs for Addison Circle Fountains.

*** Based on current chemical costs. Increased use of fountain will result in increased chemical costs.

BENEFITS OF FOUNTAINS IN PUBLIC SPACES

- Activates a space.
- Encourages people to linger.
- Encourages cross-pollination.
- Serves as a destination.
- Is a landmark or gathering space.
- Has a calming effect.
- Has a slight cooling effect.
- Can be programmed as a play element.
- People are drawn to water.

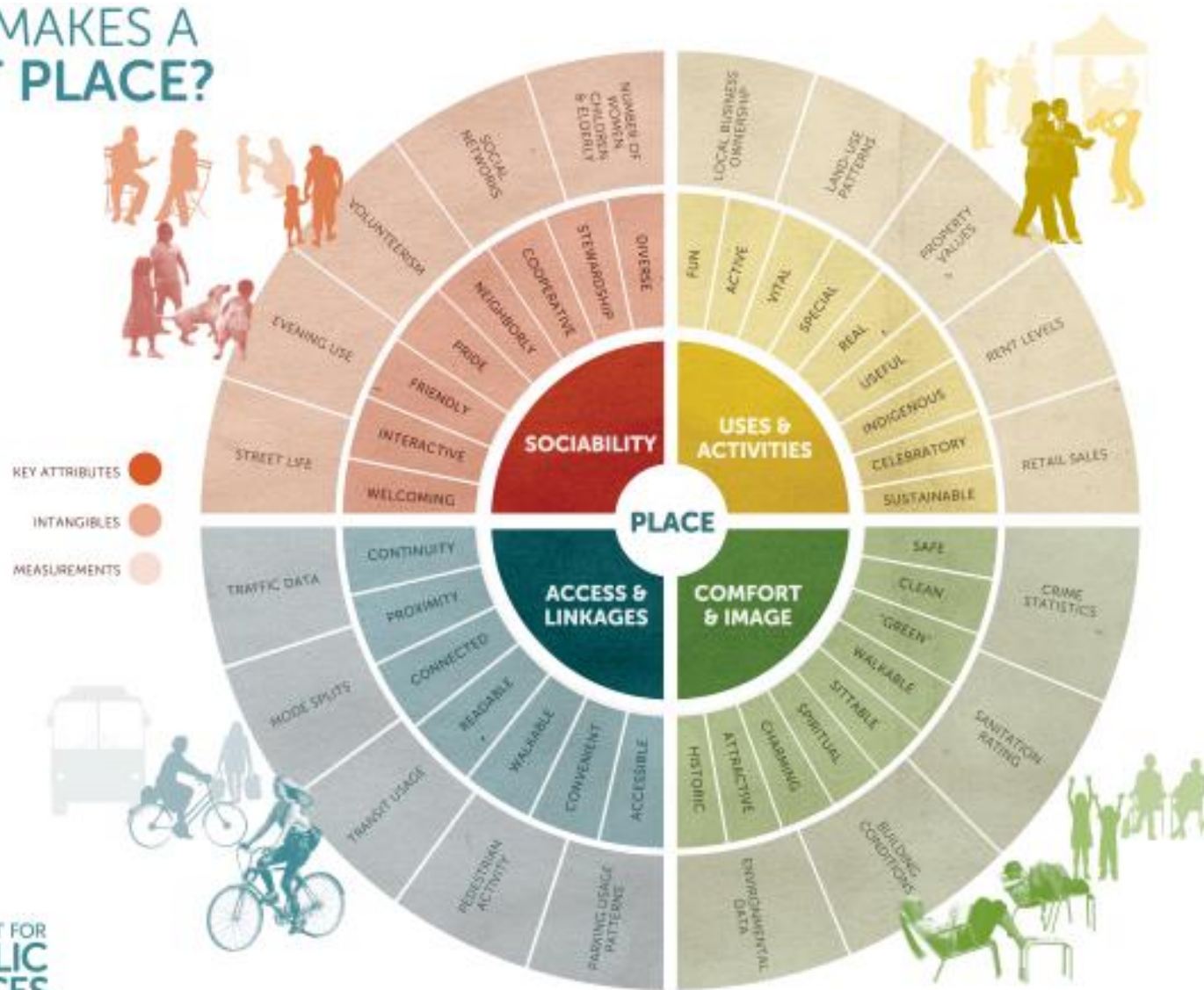


{ For every 1% increase in length of stay within a mixed-use development with public greenspace, sales increase by 1.3%. - MIT }

WHAT MAKES A GREAT PUBLIC SPACE

ADDISON

WHAT MAKES A GREAT PLACE?



Elements specific to a great park, plaza or square

- Connectivity
- Shade
- Opportunity for activity
- Flexible space
- Places to sit
- Places to people watch
- Art / Landmarks
- Food
- Gardens
- **Water**

- Council direction to staff regarding preferred option.

OPTION 2B - \$598,500
REPAIR AND
MODERNIZE THE
FOUNTAIN

OPTION 3 - \$769,500
CROWD CONTROLLED
FOUNTAIN
“Water Gush”

- Council direction to staff regarding enhancements.

ADD SMALL CHANNEL-
\$121,125

ADD LONG CHANNEL-
\$363,375

ADD SPLASH PAD
FILTRATION \$58,826

ADD ADDITIONAL
SHOWS \$3,600

Blue color coded boxes represent staff’s recommendations.

- Define a project budget.
- Hire consultant to prepare construction drawings.
- Bid the project and hire a general contractor.
- Complete construction of the project.