

Agenda Item 3

MEMORANDUM

TO: Historic Preservation Commission
FROM: John Southard, Historic Preservation Officer
DATE: November 10th, 2021
SUBJECT: Agenda Item 3 – Oidbađ Do’ag / Tempe Butte Trailhead, Revegetation, and Interpretive Element Conceptual Design Presentation



Dr. Peter Buseck contacted the Tempe Historic Preservation Office on February 24th, 2021 to discuss Oidbađ Do’ag / Tempe Butte. Dr. Buseck wished to assist the City in an effort to revegetate or otherwise improve the current state of Oidbađ Do’ag / Tempe Butte. Following a series of meetings and subsequent discussions with City representatives and SRP-MIC representatives Shane Anton and Jacob Butler, Dr. Buseck generously funded a City-supported trailhead, revegetation, and interpretive element conceptual design study undertaken by the landscape architecture and cultural teams at Logan Simpson. In collaboration with the donor, City staff, and the aforementioned SRP-MIC representatives, Logan Simpson completed and disseminated a conceptual design on September 10th, 2021. Said conceptual design, to be discussed by Dr. Buseck at the November 10th, 2021 Historic Preservation Commission meeting, is attached to this memo.

Attachment (September 10th, 2021 Logan Simpson final conceptual design)



LOGANSIMPSON

OIDBAD DO'AG TEMPE BUTTE TRAILHEAD

MASTER PLAN

SEPTEMBER 2021

OIDBAD DO'AG TEMPE BUTTE TRAILHEAD

Tempe's most recognizable landmark – Tempe Butte – is a popular destination for both locals and visitors to hike to the summit for a good workout and enjoy the panoramic views. The butte is sacred to the Salt River Pima-Maricopa Indian Community and other Indigenous people who once inhabited the area. The O'odham name for the butte, Oidbad do'ag, means "dead field mountains", a reference to the ancient agricultural fields at its base that were irrigated by water from the Salt River. In 2002, the butte was designated as a preserve because of its cultural and historical significance and the native flora and fauna that it supports.

This master plan presents a conceptual design for a new trailhead located on the west side of the butte. The design collaboration included City of Tempe's Historic Preservation Office, Representatives of the Four Southern Tribes, the Downtown Tempe Authority, and an anonymous donor whose vision and funding provided the catalyst for the effort.

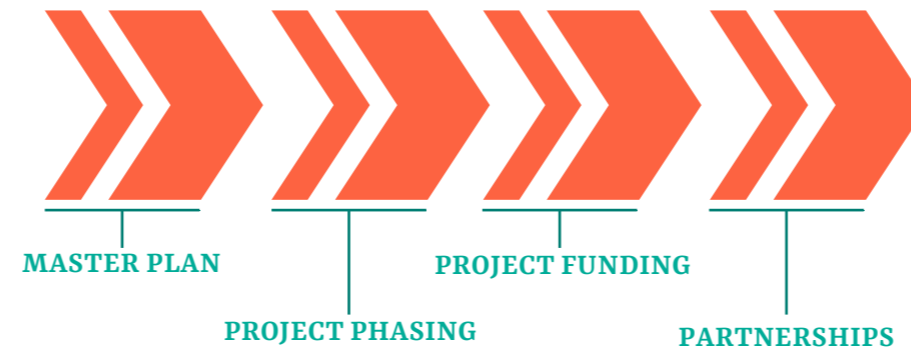
THE GOALS OF THE CONCEPTUAL DESIGN ARE:

- ❑ *Provide a well-defined, easily accessible pathway up the butte for pedestrians*
- ❑ *Create a gathering space with shade, seating, drinking water, and other amenities*
- ❑ *Allow for vehicular access by City of Tempe staff*
- ❑ *Interpret the cultural, historical, and environmental importance of the butte*
- ❑ *Create an Ethnobotany Garden showcasing native plants used by Indigenous people*
- ❑ *Revegetate areas where unauthorized, informal trails have negatively impacted vegetation*

The numerous images presented herein show how the goals have been translated into a vision for the trailhead's development. A few highlights include:

- ❑ *The primary entrance to the trailhead is east of Mill Avenue, at the Second Street alignment*
- ❑ *Native andesite stone is used throughout the trailhead as a thematic element*
- ❑ *A stone archway is flanked by vertical forms that are representative of calendar sticks*
- ❑ *A secondary trailhead entrance is accessed from Rio Salado Drive*
- ❑ *South of Rio Salado and east of the historic mill, an extensive area that is relatively level provides the setting for an Ethnobotany Garden*
- ❑ *Natural runoff from the butte is captured in terraces supporting agave plantings, an agricultural technique employed by Indigenous people*
- ❑ *ADA access is provided to the primary trailhead entrance and the Ethnobotany Garden*
- ❑ *A unique combination of ramps and steps provides access to the steeper portions of the trail for vehicles and pedestrians*
- ❑ *Trails will be constructed from permeable materials such as stabilized decomposed granite, wherever feasible*
- ❑ *A former railroad cut will be filled in and planted with native trees to provide shade for the trail*
- ❑ *Monument signage will identify the primary and secondary entrances*
- ❑ *Wayfinding and regulatory signage will support visitor's navigation through the trailhead. The interpretive signage will educate and highlight the preserve's historical, cultural, and natural resources*

OIDBAD DO'AG TEMPE BUTTE TRAILHEAD



MASTER PLAN

The goal of the master plan is to promote Tempe Butte Trailhead development through shared values and vision. The process included the formulation of goals and objectives, data collection, analysis of information, stakeholder collaboration, plan preparation, and preliminary cost estimation. The final plans translate the solution of goals and objectives and provides vision for additional buy-in and implementation.

PROJECT PHASING

The master plan provides flexibility allowing for numerous options for phasing as funding becomes available. A proposed phasing strategy that would implement the final build-out of the project is outlined at the conclusion of this master plan document.

PROJECT FUNDING

The project construction will require a capital investment comprised of various sources.

- ▣ *Federal and State Grant Funding*
- ▣ *Fundraising Campaigns through Public Events and Public Outreach*
- ▣ *Private Partnerships – Corporate and Individual Philanthropy*

The investment should evaluate the long-term cost of trailhead operation and maintenance through City General funds or finding creative ways with adjacent businesses or within the trailhead to generate yearly revenue.

PARTNERSHIPS

Maintaining project momentum with partnership support will be key to implementation. This may include local non-profit organizations (i.e., Nature Conservancy, Tempe Historical Society, Tempe Historic Preservation Foundation) that share the same interest in the project. Other partnership support includes:

- ▣ *Arizona State University*
- ▣ *Valley Metro/Light Rail*
- ▣ *Local Businesses*



OIDBAD DO'AG TEMPE BUTTE TRAILHEAD

OVERALL CONCEPTUAL PLAN

LEGEND

- 1 MAIN TRAILHEAD
- 2 SECONDARY TRAILHEAD
- 3 EXISTING UTILITY BOXES
- 4 NATURAL TRAIL (1/4" MINUS DECOMPOSED GRANITE)
- 5 EXISTING TRAIL (ASPHALT)
- 6 ETHNOBOTANY GARDEN
- 7 VEHICULAR ACCESS RAMP (CONCRETE)
- 8 HISTORIC RAILROAD TRACK
- 9 RAIL CUT INFILL
- 10 LANDSCAPE BUFFER
- 11 AGAVE TERRACES



OIDBAD DO'AG TEMPE BUTTE TRAILHEAD

OVERALL SIGNAGE PLAN

LEGEND

- M MONUMENT SIGNAGE
- W WAYFINDING SIGNAGE
- R REGULATORY SIGNAGE
- I INTERPRETIVE SIGNAGE

TOPICS COVERED BY INTERPRETIVE SIGNAGE WILL INCLUDE CULTURAL, HISTORICAL, AND ENVIRONMENTAL RESOURCES.



OIDBAD DO'AG TEMPE BUTTE TRAILHEAD

MAIN TRAILHEAD CONCEPT PLAN

LEGEND

- 1 TRAILHEAD MONUMENT SIGN
- 2 VEHICULAR ACCESS RAMP
- 3 VEHICULAR ACCESS TO UTILITY BOXES AND MAIN TRAIL
- 4 EXISTING UTILITY BOXES
- 5 STABILIZED DECOMPOSED GRANITE
- 6 CONCRETE
- 7 LANDSCAPE AREA
- 8 SHADE STRUCTURE
- 9 STONE RETAINING WALL
- 10 TRASH AND RECYCLING CONTAINERS
- 11 DRINKING FOUNTAIN
- 12 INTERPRETIVE SIGNAGE
- 13 GABION RETAINING WALL
- 14 STONE ARCH FLANKED BY CALENDAR STICKS
- 15 REGULATORY SIGNAGE
- 16 EXISTING WALL
- 17 ADA CIRCULATION PATH



NOT TO SCALE

N

MILL AVENUE

+0 FEET

+6 FEET



A STONE ARCH FLANKED BY CALENDAR STICKS AND FRAMED BY NATIVE VEGETATION WELCOMES HIKERS TO THE TRAILHEAD.



TRAILHEAD IDENTIFICATION
SIGNAGE AT MILL AVENUE
WILL BE MODELLED AFTER
THE STANDARD TEMPE PARKS
MONUMENT SIGNS



Park Regulations

STONE RETAINING WALLS AND RAISED PLANTER BEDS CREATE ADEQUATE SOIL DEPTH TO SUPPORT NATIVE SHADE TREES AND OTHER PLANTINGS. STABILIZED DG PROVIDES AN ADA-ACCESSIBLE GROUND TREATMENT.



A SHADE STRUCTURE AND TREES CREATE A COMFORTABLE SETTING AT THE TRAILHEAD ENTRANCE THAT WILL ALSO SERVE AS THE PRIMARY INTERPRETIVE NODE.



INTERPRETIVE SIGNAGE, RECYCLING AND TRASH CONTAINERS, AND A DRINKING FOUNTAIN ARE AMONG THE AMENITIES PROVIDED AT THE TRAILHEAD.

OIDBAD DO'AG TEMPE BUTTE TRAILHEAD

TRAILHEAD GATEWAY CONCEPT PLAN

LEGEND

- 1 STONE ARCH FLANKED BY CALENDAR STICKS
- 2 VEHICULAR ACCESS RAMP (CONCRETE)
- 3 NATURAL TRAIL (1/4" MINUS DECOMPOSED GRANITE)
- 4 EXISTING TRAIL (ASPHALT)
- 5 INTERPRETIVE SIGNAGE
- 6 WAYFINDING SIGNAGE





A VIEW FROM THE UPPER LEVEL
OF THE MAIN TRAILHEAD,
LOOKING WEST



**A COMBINATION RAMP/
STAIRCASE PROVIDES
VEHICULAR AND PEDESTRIAN
ACCESS FROM THE UPPER LEVEL
OF THE TRAILHEAD TO THE
MAIN TRAIL UP THE BUTTE**



A RAILROAD CAR PROVIDES
A UNIQUE BASE FOR
INTERPRETIVE SIGNAGE
EXPLAINING THE HISTORIC
RAILROAD TRACK THAT
FORMALLY SERVED THE HAYDEN
FLOUR MILL



A DECOMPOSED GRANITE
TRAIL SHADED BY TREES LOOPS
THROUGH AN AREA THAT WAS
FORMERLY A RAILROAD CUT



SERVICE VEHICLES MAY ACCESS THE TOP OF THE BUTTE VIA A UNIQUE RAMP/STAIRCASE FEATURE.



OIDBAD DO'AG TEMPE BUTTE TRAILHEAD

SECONDARY TRAILHEAD/ ETHNOBOTANY GARDEN CONCEPT PLAN

LEGEND

- 1 SECONDARY TRAILHEAD MONUMENT SIGN
- 2 LANDSCAPE BERM
- 3 RAISED LANDSCAPE PLANTER
- 4 EXISTING CONCRETE PAD
- 5 SEATING
- 6 NATURAL TRAIL (1/4" MINUS DECOMPOSED GRANITE)
- 7 EXISTING TRAIL (ASPHALT)
- 8 REGULATORY SIGNAGE
- 9 INTERPRETIVE SIGNAGE
- 10 WAYFINDING SIGNAGE
- 11 ADA CIRCULATION PATH
- 12 AGAVE TERRACES



KEY MAP



A SECONDARY TRAILHEAD IS
ACCESSED FROM RIO SALADO
PARKWAY.



THE TRAILHEAD AT RIO SALADO
PARKWAY LEADS VISITORS INTO
AN ETHNOBOTANY GARDEN



INTERPRETIVE SIGNAGE WITHIN THE ETHNOBOTANY GARDEN WILL EXPLAIN THE WAYS THAT NATIVE PLANTS HAVE BEEN USED FOR FOOD, MEDICINE, AND BUILDING MATERIALS.



THE ETHNOBOTANY GARDEN
FEATURES RAISED BEDS TO
SHOWCASE AN ASSORTMENT OF
NATIVE PLANTS.



**ROCK TERRACES CAPTURE
NATURAL RUNOFF TO NOURISH
AGAVES, A NATIVE PLANT
CULTIVATED BY INDIGENOUS
PEOPLE FOR FOOD AND FIBER**









A PORTION OF THE EXISTING CIRCULAR CONCRETE PAD WILL REMAIN, PROVIDING THE BASE FOR A SHADED SEATING AREA WITHIN THE ETHNOBOTANY GARDEN.

**OIDBAD DO'AG
TEMPE BUTTE
TRAILHEAD**

PLANT PALETTE

TREES

					
<i>Chilopsis linearis</i> Desert-willow	<i>Olneya tesota</i> Ironwood	<i>Parkinsonia florida</i> Blue Palo Verde	<i>Parkinsonia microphylla</i> Foothills Palo Verde	<i>Prosopis pubescens</i> Screwbean Mesquite	<i>Prosopis velutina</i> Velvet Mesquite

SHRUBS

						
<i>Ambrosia deltoidea</i> Triangleleaf Bursage	<i>Celtis pallida</i> Desert Hackberry	<i>Encelia farinosa</i> Brittlebush	<i>Larrea tridentata</i> Creosote Bush	<i>Lycium exsertum</i> Wolfberry	<i>Simmondsia chinensis</i> Jojoba	<i>Zizyphus obtusifolia</i> Graythorn

CACTI & SUCCULENTS

					
<i>Agave murpheyi</i> Hohokam Agave	<i>Carnegiea gigantea</i> Saguaro	<i>Cylindropuntia acanthocarpa</i> Buckhorn Cholla	<i>Dasyliirion wheeleri</i> Desert Spoon	<i>Echinocereus engelmannii</i> Hedgehog Cactus	<i>Ferocactus cylindraceus</i> Barrel Cactus
					
<i>Fouquieria splendens</i> Ocotillo	<i>Mammillaria grahamii</i> Fishhook Pincushion	<i>Nolina microcarpa</i> Beargrass	<i>Opuntia engelmannii</i> Prickly Pear	<i>Yucca baccata</i> Banana Yucca	<i>Yucca elata</i> Soaptree Yucca

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COST ESTIMATE

The estimated cost of installing the Tempe Butte Trailhead is between \$1,400,000 and \$1,600,000. As the conceptual design is further refined into construction documents, the project cost can be estimated with a greater level of detail and certainty.

PROJECT PHASING

An alternative to installing the Tempe Butte Trailhead in a single effort would be to break the overall project into phases. The economy of scale would decrease if the phased approach was utilized, but spreading the financial impact over a number of years may make the project more feasible to undertake.

A possible scenario utilizing three phases of construction is outlined on this page and the next.

PHASE 1

Install the trailhead gathering area adjacent to Mill Avenue at the Second Street alignment; construct the two ramps providing vehicular and pedestrian access up the butte; install the secondary trailhead entrance at Rio Salado Drive, to include the ADA-accessible trail up to the level area; and develop the agave terrace gardens on the lower slope of the butte, as a preview of the ethnobotany garden, which would be installed during Phase 2.

Mobilization, clearing & grubbing, earthwork, hard dig allowance, erosion control, soil import	\$165,000
Paving (concrete sidewalk, vehicular ramp, stabilized DG trail)	\$184,000
Retaining walls, gabion baskets	\$34,000
Shade structure	\$20,000
Site furnishings (trash & recycling containers, drinking fountain, dog station)	\$7,000
Site lighting (poles, bollards, tree uplights)	\$20,000
Signage (monument, regulatory, wayfinding, interpretive)	\$20,000
Rock mulch, angular rock, boulders	\$23,000
Plants	\$27,000
Irrigation system	\$12,000
Archaeological monitoring	\$9,000
Design and post-design services	\$133,400
Contractor coefficient (sales tax, bond liability, subcontractor)	\$119,100
Owner's allowance	\$52,100
ESTIMATE OF PROBABLE COST FOR PHASE 1	\$825,600

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PHASE 2

Install the ethnobotany garden, including raised beds and a tree-shaded seating area. Construct the trail connecting the ethnobotany garden to the main trailhead entrance at Mill Avenue.

Mobilization, clearing & grubbing, earthwork, hard dig allowance, erosion control, soil import	\$130,000
Paving (stabilized DG trail)	\$70,000
Retaining walls, gabion basket seating	\$33,000
Site furnishings (trash & recycling containers)	\$2,000
Site lighting (poles, bollards, tree uplights)	\$13,500
Signage (monument, regulatory, wayfinding, interpretive)	\$9,000
Rock mulch, angular rock, boulders	\$23,000
Plants	\$35,000
Irrigation system	\$15,000
Archaeological monitoring	\$9,000
Design and post-design services	\$8,300
Contractor coefficient (sales tax, bond liability, subcontractor)	\$78,200
Owner's allowance	\$33,900
ESTIMATE OF PROBABLE COST FOR PHASE 2	\$459,900

PHASE 3

Build upon the earlier work done at the Mill Avenue entrance to the Tempe Butte Trailhead by constructing the stone arch, flanked by vertical elements representative of calendar sticks, and gabion walls extending outward on both sides of the arch to serve as retaining walls. Fill in the old railroad cut and plant trees and other vegetation to enhance the area; revegetate the area upslope from the railroad cut that has been impacted by unauthorized/informal trails; install the railroad car interpretive feature on the intact historic railroad tracks.

Mobilization, clearing & grubbing, earthwork, hard dig allowance, erosion control, soil import	\$95,000
Paving (stabilized DG trail)	\$40,000
Stone arch, calendar sticks, gabion baskets	\$51,000
Railroad car interpretive feature	\$5,000
Rock mulch, angular rock, boulders	\$7,000
Plants	\$16,000
Irrigation system	\$7,000
Archaeological monitoring	\$9,000
Design and post-design services	\$8,300
Contractor coefficient (sales tax, bond liability, subcontractor)	\$53,100
Owner's allowance	\$23,000
ESTIMATE OF PROBABLE COST FOR PHASE 3	\$314,400

THANK YOU



LOGAN SIMPSON