

# **First Draft Contents for Arid Land Botanical Garden Master Plan**

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# **Feasibility Study: Arid Land Botanical Garden**

## Executive Summary

Arid Land Botanical Garden's primary objective is to provide a unique experience and environment among similar gardens in Arizona and the region. The secondary objective is to be an economic draw for the East Valley and Apache Junction in particular. Currently, there is one botanical garden in the greater Phoenix metro area (The Desert Botanical Garden), with one additional garden in Superior, AZ (Boyce Thompson Arboretum). Both are 28 miles from the proposed location of Arid Land Botanical Garden and neither has the serenity or views available in that location. Currently, almost  $\frac{1}{2}$  of the population in the Phoenix metro area resides east of Phoenix, with the largest populations in Chandler, Gilbert and Mesa.

Arid Land Botanical Garden intends to also promote the garden through social networking, internet marketing, local publications and events. This campaign will enable Arid Land Botanical Garden to realize substantial growth in admissions and memberships over the next five years so that it can achieve specific financial objectives:

- Increase potential client base from zero to thousands by increasing exposure in local and national/international markets
- Break even by the end of year one, and increase profitability each year in order to expand facilities, exhibits and programs

### **1. History of the Project**

Botanical gardens worldwide are well recognized for the roles that they play in science, conservation, public education and recreation, as well as in the sustainable management and utilization of plant genetic resources. Botanical gardens to act as botanical resources centers to help national and regional efforts not only to conserve threatened or economically useful plants but also to raise public understanding of the importance of environmental vital protection, the importance of plants for our daily lives and for the future of the planet.

Why is a botanical garden needed in Apache Junction and the East Valley?

It will provide a destination other than Phoenix/Scottsdale for tourists, a very close place for winter visitors to enjoy an outdoor activity and a culturally significant place for the residents of the East Valley to enjoy.

What evidence is there?

There are two other Botanical Gardens roughly 30 miles east and west of the proposed location for ALBG. One is the Desert Botanical Garden, the other is Boyce Thompson Arboretum. Both are very fine gardens, but the selection of plants and how they are displayed will make ALBG unique among them.

Where did the idea come from?

Having been a collector of xeric plants since childhood, and the lack of a "destination" in the East Valley, gave me the idea to combine the two into a unique place for people to enjoy, learn about and experience nature from all over the globe.

Who has shown interest?

Everyone I have spoken to about it, many individuals, local businesses, the local city government, my friends and colleagues in the Nursery and Landscaping industries.

## **2. Name of the Project**

Arid Land Botanical Garden

## **3. Mission Statement for the Project**

The mission of Arid Land Botanical Garden is to provide a place where people can enjoy and interact with nature, where the community at large can be educated about xeric plants and the environment in which they live, be a model for conservation and finally where endangered plant species can be propagated and returned to their natural habitats.

- Offer a diverse population of plants from all over the world, arranged by region so as to provide a more accurate representation of those environments
- Provide excellent education programs for all levels of interest (beginner to advanced), as well as state of the art propagation facilities
- Serve as an example of conservation to the surrounding communities by taking advantage of available "green" technologies both new and old (e.g. — solar power, rain water harvesting, etc)
- Add to the cultural distinction of Apache Junction and the East Valley

This mission will carry the principles of Arid Land Botanical Garden to the community in which it resides as well as the network of botanic gardens worldwide.

### ***Major Goals and Objectives***

Maintain and display living collections of native and non-native desert plants.

Document and clearly label the collections.

Display the collections in horticulturally attractive and in regionally accurate settings.

Pursue botanical and horticultural research programs.

Promote awareness and knowledge of plants and the importance of biodiversity and conservation in the local community.

Develop, support and promote the role of the Arid Land Botanical Garden as a focus for botanical and horticultural excellence.

Develop the landscape in and around ALBG to provide an attractive place for visitors.

Set up a landscape design consultancy to work with other public and private institutions providing technical advice, planning and native plants.

Grow native and non-native plants to replenish the collections, to sell to visitors and provide plants for the landscape design consultancy.

Interpret the collections by linking them to aspects of life in the community.

Provide training courses for the local community in horticulture, permaculture and organic gardening techniques, to improve their plant knowledge.

Develop staff skills at all levels by appropriate training.

Consult and involve all staff in planning ALBG and its work.

To ask for, listen to and act upon staff suggestions and ideas, at all levels.

Review policy and practice once a year and publish an Annual Report.

Hold workshops for staff on the International Agenda for Botanic Gardens in Conservation and the Global Strategy for Plant Conservation to ensure that they are aware of their provisions and how the ALBG can fulfill its role under them.

Follow an environmentally-friendly and responsible approach in planning the Garden.

Develop links with other institutions in Arizona with some shared aims.

Develop links with other gardens in the region and worldwide.

### **Aims and Objectives of the Collections**

- Establish living collections of plants according to aesthetic, scientific, educational and ethnobotanical considerations.
- Establish collections of threatened plants and to promote the ex situ conservation of rare and endangered plants.
- Plan, develop and maintain the gardens in an aesthetically pleasing manner in order to attract visitors to the Garden.
- Make available and promote the use of indigenous plant material in order to foster an appreciation of plants in the wild.
- Reproduce plantings typical of an ecosystem (e.g. riparian) to promote appreciation of natural ecosystems and biodiversity.
- Establish living collections of exotics to extend the period of interest of the Garden.
- Establish living collections of xeric plants representative of all arid regions.
- Ensure proper documentation (registration) of the collections for scientific validity

#### **4. Legal Status of the Garden**

The legal status of the garden is a LLC.

#### **5. Availability of Sites**

There are a few locations that are being considered at this time. One is on the Apache Trail and is just outside Apache Junction's city limits. The others are in Florence close to current and future residential development, as well as coming freeway construction. All the sites are currently zoned commercial.

## 6. Selection of Site

Brief Strength/Weakness/Opportunity/Threat analysis for each of the sites

### SWOT Analysis

#### Strengths

- Strong support and interest from local government, businesses and individuals.
- An attractive, scenic area of countryside accessible from Mesa, Gilbert, Chandler, Tempe, Gold Canyon, and San Tan Valley is available.
- The plan is to involve people, especially local businesses, in job creation schemes within the project and also help with the Garden itself (e.g. plant sales, farmers markets, etc). This can attract funding.
- Seeds of native and non-native plants are available to grow.
- The attractive initial area will make a good impression on visitors.
- Technical expertise exists in the region to construct the Botanical Garden.
- Winter visitors more than double the population in the area for 6 to 8 months of the year.

#### Opportunities

- There is low plant awareness in the general public — a chance to educate and show them something new.
- A chance to develop an attraction for visitors in an area with few attractions.
- A chance to use attractive planting, the Visitor Center, the natural beauty of Apache Junction to make a statement that has impact.
- Design garden so that maximum shade is produced during the summer to encourage additional visitors.
- The Garden's proposed position just off the Apache Trail is easily accessible from US 60 and from east Brown Rd/west Lost Dutchman Blvd from the 202.
- A museum, wedding chapel, restaurants, hiking trails, residential areas and other attractions are nearby — they will be positive for the Garden as it enhances the beauty of the area and provide exposure.
- Local people are positive about the project at the moment. A chance to use them as employees as well as volunteers as guides, assistant gardeners and for help with outreach.
- The Garden will be unique — there is no other Botanical Garden that is set up the same way in the region.
- The Garden can be a tourist attraction for out of state/foreign visitors.
- The Garden can host local farmers markets, art & crafts shows and plant sales throughout the year.

### Weaknesses

- Distance from Phoenix and Scottsdale, population centers (half hour drive or more).
- Low Season — summers are too hot for visitors.
- Damage — litter, fires, possible deliberate damage if unhappy with the Garden.
- Expensive to fence.
- Some available sites are zoned residential and could take a year or so to be re-zoned commercial.
- Local people do not enjoy walking much.
- It will take time to expand areas of interest — to offer something new.
- Some of the collections will be immature, therefore not so interesting for a few years.

### Threats

- Funding — sources may dry up.
- Being unable to re-zone the land could nix the Garden for that location.
- Competitors — e.g. the Desert Botanical Garden. Why should people visit us and not the DBG?
- Lower visitor numbers as other leisure attractions increase in the East Valley.
- Fire.

## **7. Description of Site**

There are multiple sites being considered. Sites are approximately 20 acres and are located east of Apache Junction and in Florence, both in Pinal County. The mean elevation of the sites is between 1,700 and 1,900 feet, sloping slightly to the south, southwest. 10 acres will be developed initially, which includes 3 acres set aside for parking. The remaining 7 acres will be set aside for expansion, new exhibits or additional parking.

## **8. Gardens Infrastructure**

The design of the Garden will include rainwater harvesting (for irrigation and a riparian exhibit) and solar power technologies to make the Garden as self-sufficient and "green" as possible.

Because of the Gardens proximity and access to the surrounding open desert/farm land. The entire parcel will be fenced in a way to keep foraging animals out which would damage the plant collection.

Depending on incentives and funding, will determine whether or not solar covered parking structures will be used initially. If not able to do initially, it will be a goal of the Garden to add it in the future.

Walking paths will be as flat and wide as possible to accommodate the elderly and disabled. The walk surfaces will be natural 1/4" minus crushed rock (flagstone or pavenstone in the entryways, around the bathrooms & greenhouses, library and in the Café area).

The Visitors Center will also house the gift shop, naturopathic/ethnobotanical center, art gallery, rock and mineral gallery, Café, staff offices and meeting room.

## **9. Likely cost and possible funding**

How much is the Garden likely to cost?

Establishment: Will be dependent on construction costs, am estimating about \$1.5 million total in start up costs. Ongoing maintenance and staffing: will be phased in, but will reach approximately \$40,000 per month by end of the first year.

How would the development of the garden be funded?

Crowd Funding: Will account for up to 60% of total initial funding in addition to bank funding and personal funds from ownership. Depending on the success of the crowdfunding efforts, investors will also be an option.

Will funding be available for recurrent costs and ongoing maintenance?

Gate admissions, memberships, facility rentals/plant/gift shop/Cafe sales will pay for payroll, recurring costs and maintenance.

## **10. Likely Stakeholders**

Who will want to be involved in the project?

Local and neighboring businesses, local and seasonal customers.



## **11. Likely visitors — number and type**

Who will the botanical garden be catering to?

Plant enthusiasts, tourists, winter visitors, students, and residents of the East Valley.

What are the likely visitor numbers?

From October through April, the average number of visitors per day will be in the 200 to 300 range.

September & May, the average number of visitors per day should be in the 100 to 200 range.

From June through August, the average number of visitors per day should be in the 50 to 100 range.

## **12. Management**

What will be the management structure of the garden?

Will be a typical structure for a LLC, per Arizona law. There will be an Office Manager/HR, Director of Horticulture and Collections, Director of Education and Visitor Services, and Director of Conservation and Science. Some of these positions will be phased in over the first few years of operations.

## **13. Staffing**

What is the necessary staff structure?

Staff will be needed for the Visitors Center (entrance, art gallery, rock and mineral display area, library, gift shop, grounds keeping and café). Volunteers will also be utilized in these and other areas.

Can its development be phased?

Staffing will be the first priority, additional management staff will be phased in over the first year of operation.

What is immediately essential?

Staffing for the Visitor Center, volunteers, Office management and staff, grounds keeping staff.

Are suitable people available?

Yes, experienced staff will not be hard to find. Specific training will be provided to both staff and volunteers alike.

What training and other development is needed?

Customer service training will be provided for all employees. Conservation and horticulturally specific training will be provided for the volunteer staff.

Is funding available for staff? Will it be ongoing?

Gate admissions, memberships, facility rentals/plant/gift shop/Cafe sales will pay for payroll, recurring costs and maintenance.

#### **14. Volunteer involvement**

A good portion of the staff would be on a volunteer basis. Volunteers would be used for guides, experts as well as for basic garden maintenance (clearing walkways, weed removal, restroom maintenance, etc). The volunteers would report to a Volunteer Coordinator. The main sources of the volunteer staff would be local residents and possibly students from Central AZ College.

#### **15. Planting Material**

Can suitable planting material be obtained before a nursery is constructed at the Botanical Garden?

Yes, there are a number of nurseries in Arizona and California that can provide the necessary planting materials.

What propagation material is available?

All trees, shrubs, cacti, succulents and other plants are available locally (first choice, or in California or Texas) or will come from Greg Simpson's personal collection.

Does it have a known origin?

Most will or do, but not all.

How definite is its identification — associated herbarium specimens?

Most identifications will need to be verified.

## **16. Fire**

The Garden will be exposed to open desert on two sides in the proposed locations and therefore would be exposed to wild fire should one start. There is also the possibility of a lightning strike starting a fire within the Garden's borders. In either case, the Gardens sprinkler system would be utilized to minimize any damage to the collections.

## **17. Weeds**

Weeds will be controlled through manual removal, chemicals will not be used.

## **18. Local influence**

The garden will be a local attraction. Other local businesses will benefit from the Garden because of additional traffic through the area. The Town of Apache Junction may also benefit from the additional traffic in terms of tax revenue, awareness, as well as businesses looking to relocate.

## **19. Commercial opportunities**

What commercial opportunities will exist at the garden?

There will be a naturopathic/ethnobotanical center on site separate from the garden, as well as an art gallery and rock/mineral display with items for sale. Food/drinks/plants/souvenirs/rentals as well as seasonal farmers markets, arts and crafts shows.

Concessions to private businesses or run by the Garden?

Concessions inside the Garden will be run by the Garden.

Is there a possibility to develop eco tourism?

With three unique botanic gardens in the region, I believe there will be that opportunity.

Is there business competition in the area?

There are many nurseries and souvenir shops in the area, but the overlap should be minimal.

## **20. Annexes (incl. site survey info.)**

List of habitats:

- African deserts, including specifically a south African habitat and riparian habitat
- Asian deserts
- Australian Outback, including a riparian habitat
- Mexican, including a Baja Mexico habitat
- North American deserts, including a riparian habitat

- A North American desert tree "walk", will include trees from the Mohave, Sonoran and Chihuahuan deserts
- South American deserts, including specifically a high elevation habitat
- A Fog Desert habitat (located within a shade/lathe house), with plants from the Atacama, Baja, Namib and Arabian coastal deserts

#### Preliminary list of plants by genus

- Trees: Acacia (Vachellia, Senegalia, etc), Bauhinia, Caesalpinia, Ceiba (Chorisia), Cercidium (Parkinsonia), Chilopsis, Condalia, Erythrina, Eucalyptus, Eysenhardtia, Faidherbia, Geoffroea, Lysiloma, Olneya, Pachycormus, Pithecellobium, Prosopis, Psorothamnus (Dalea), Sophora, Tecoma, Vauquelinia.
- Shrubs: Acacia, Boswellia, Bursera, Caesalpinia, Calliandra, Commiphora, Cassia, Eremophila, Hakea, Leucophyllum, Melaleuca, Tecoma.
- Cacti: Acanthocalycium, Acanthocereus, Ariocarpus, Armatocereus, Astrophytum, Austrocactus, Bergerocactus, Browningia, Carnegiea, Cephalocereus, Cephalocleistocactus, Cereus, Cleistocactus, Coleocephalocereus, Copiapoa, Corryocactus, Coryphantha, Denmoza, Discocactus, Disocactus, Echinocactus, Echinocereus, Echinopsis, Escontria, Espostoa, Espostoopsis, Eulychnia, Facheiroa, Ferocactus, Frailea, Geohintonia, Gymnocalycium, Haageocereus, Harrisia, Hattoria, Jasminocereus, Lasiocereus, Leptocereus, Leuchtenbergia, Lophophora, Mammillaria, Matucana, Melocactus, Micranthocereus, Myrtillocactus, Neobuxbaumia, Neoraimondia, Opuntia, Oreocereus, Oroya, Pachycereus, Parodia, Pediocactus, Pelecyphora, Peniocereus, Pereskia, Pereskiopsis, Pilosocereus, Polaskia, Praecereus, Pterocactus, Rauhocereus, Samaipaticereus, Stenocactus, Stenocereus, Stephanocereus, Stetsonia, Thelocactus, Trichocereus, Uebelmannia, Weberbauerocereus, Yungasocereus
- Succulents: Adenium, Agave, Alluaudia, Alluaudiopsis, Aloe, Beaucarnea, Bursera, Commiphora, Crassula, Dasylirion, Decaria, Didierea, Dracaena, Euphorbia, Fouquieria, Furcraea, Haworthia, Jatropha, Monadenium, Moringa, Nolina, Pachypodium, Portulaca, Yucca, Xanthorrhoea.
- Others: Cycas, Dioon, Encephalartos, Lepidozamia, Macrozamia, Zamia; Brahea, Butia, Dyspis, Phoenix, Sabal.

Establish a website describing the ALBG and eventually include a database of plants held in the collections.