



HEADWATERS<sup>TM</sup>  
AT THE COMAL

WHERE IT BEGINS.

# Headwaters at the Comal

Comal Springs is the heart and soul of New Braunfels.

That is why we are rejuvenating 16 acres at the headwaters of the springs where people can learn, have fun, and experience history and nature.

NBU is proud to partner with the community to create this environmental showcase.



## History of the site

Up to the 20<sup>th</sup> Century, New Braunfels relied on the Comal River for its water supply.

Fritz Klingemann offered to sell the property to the City in 1906.

Council purchased in 1907 and it became the site of the new waterworks.



Drilling the third well, December 1944. The water pressurization building is visible in the background.

# The Existing Site



Google earth

# The Existing Site



# The Challenges



# The Team

## **Lake | Flato**

National leader in the master planning and design of visitor centers.

## **Ten Eyck Landscape Architects**

Recognized leader in the field of sustainability for site design.

## **Biohabitats**

National leader in water master planning, rainwater harvesting & reuse, and black water treatment.

## **Ecosystem Design Group of the Lady Bird Johnson Wildflower Center**

Trained in optimizing the ecological, environmental and sociological function of landscapes.

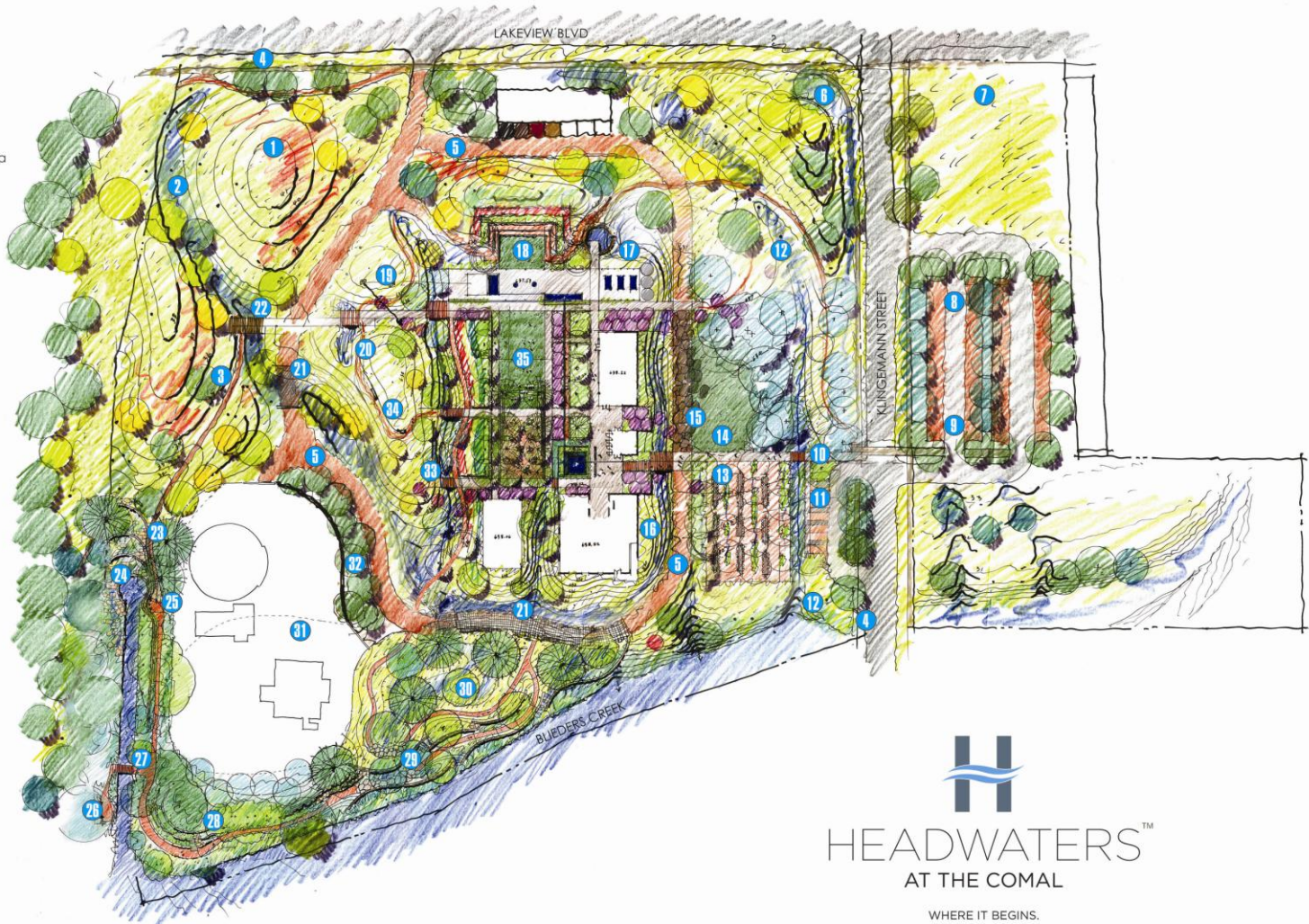
## **New Braunfels Area Community Foundation**

Partner in this project to provide the 501C3 resource for donors.

# The Vision

## legend

- 1 savanna/stormwater diversion berm
- 2 upper savanna bioswale
- 3 upper savanna nature trail
- 4 public sidewalk
- 5 primary loop path/firelane
- 6 monumental signage
- 7 prairie / overflow parking area
- 8 permeable parking garden
- 9 secondary accessible parking area
- 10 entry promenade
- 11 visitor drop-off & primary accessible parking area
- 12 lower woodland bioswale
- 13 picnic garden
- 14 native turf display garden
- 15 recycled concrete forecourt
- 16 rainwater cisterns
- 17 harvested water reflecting pool & overlook
- 18 terraced garden amphitheater
- 19 raptor perch
- 20 pedestrian bridge
- 21 low water crossing
- 22 savanna overlook at bioswale north
- 23 accessible Comal Springs loop trail
- 24 spring improvements
- 25 spring overlook
- 26 Comal Springs observation area
- 27 Comal Springs bridge
- 28 Blieders Creek overlook
- 29 terraced bank stabilization at Blieders Creek
- 30 water retention area & ephemeral wetland
- 31 well yard
- 32 security fence
- 33 savanna overlook at bioswale south
- 34 inner trail
- 35 inner courtyard (see enlargement)

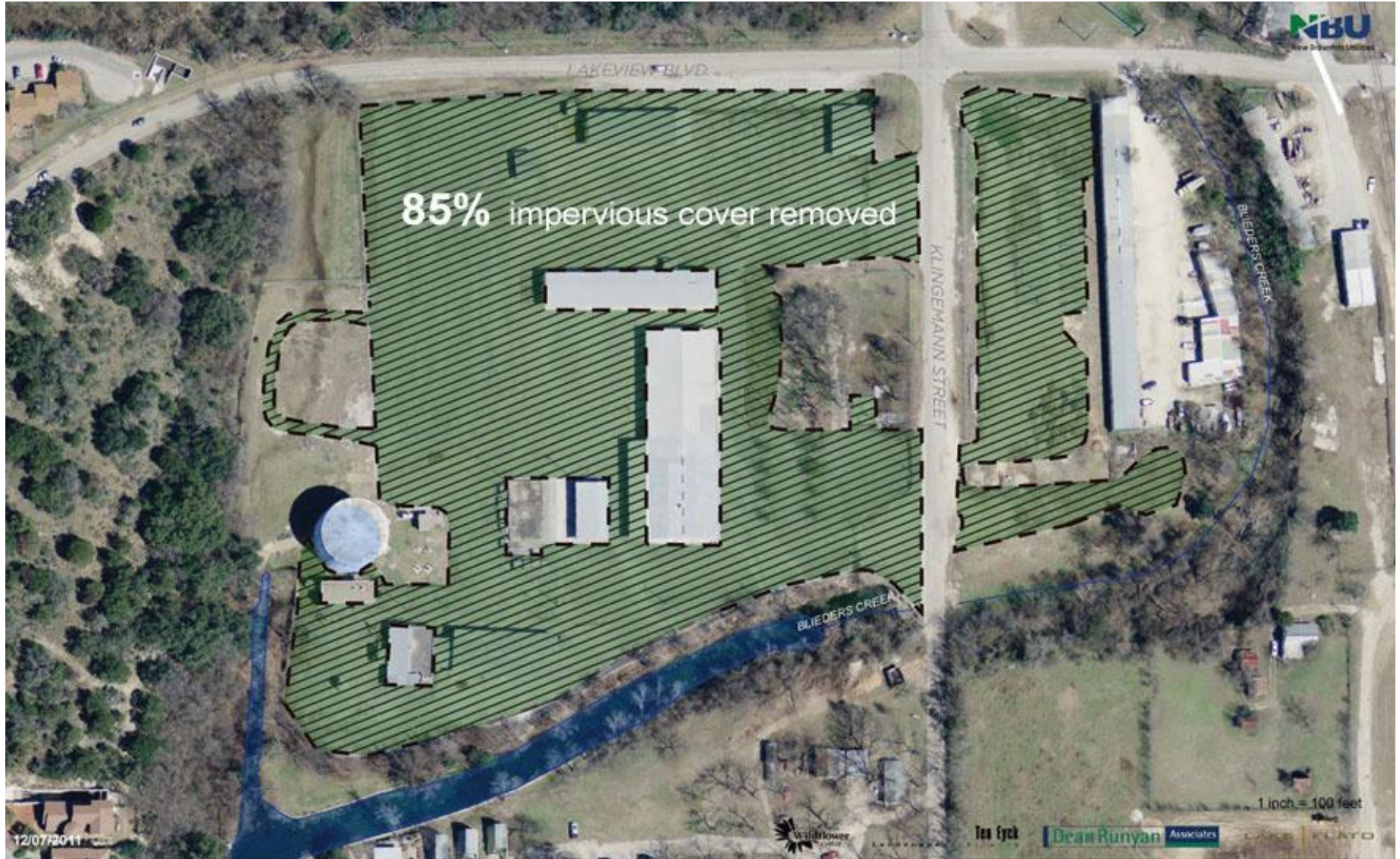


  
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# The Vision



# The Vision



## Pre-Restoration:

Annual Volume:	26 AC-FT
Annual Total Suspended Solids (TSS):	11,850 lbs.

## Post-Restoration:

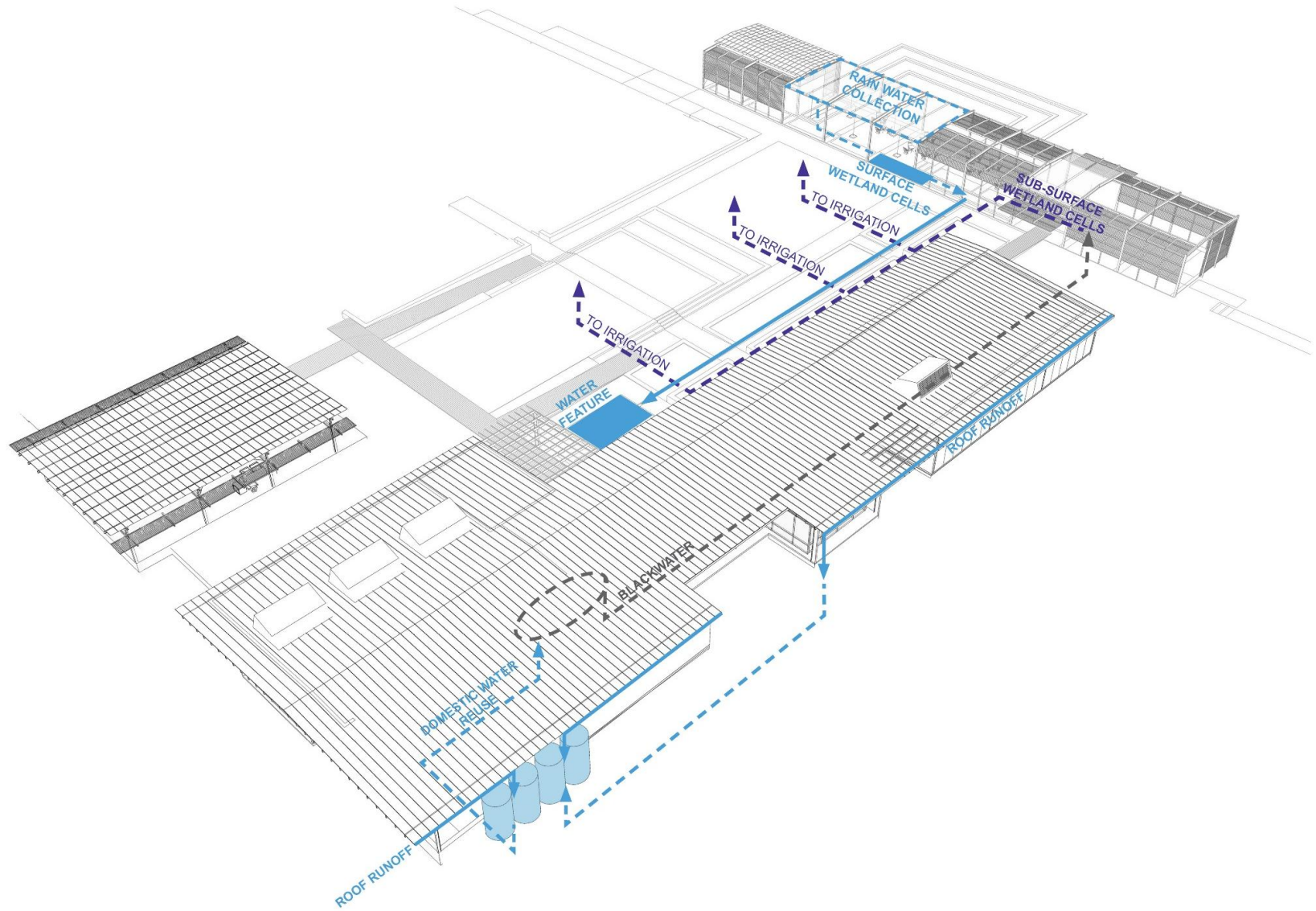
Annual Volume:	5.25 AC-FT
Annual TSS:	2,100 lbs.
Annual TSS with BMPs	<670 lbs.

# The Vision

- Native and drought tolerant plants
- Rainwater harvesting
- Permeable walkways and parking areas
- Smart building applications
- Use of natural ambient lighting



# The Vision



# The Vision



Entrance from Klingemann Avenue

# The Vision



Event Space

# The Vision



Main Breezeway



# The Vision



Breezeway to Building B

# The Vision



“Living Building”

# The Programming

- Property management
- Operations
- Events
- Education
- Partnerships
- Demonstration of environmental and water quality stewardship

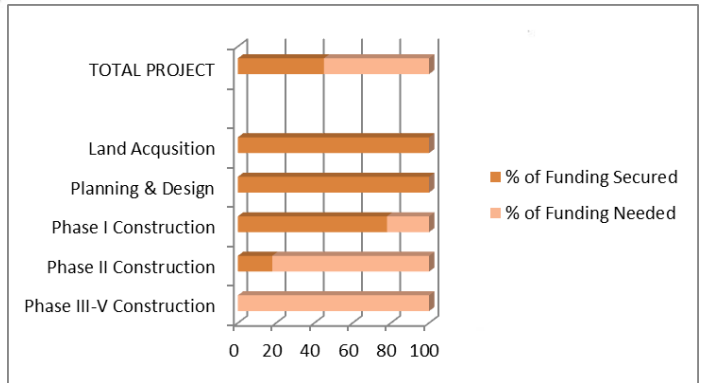
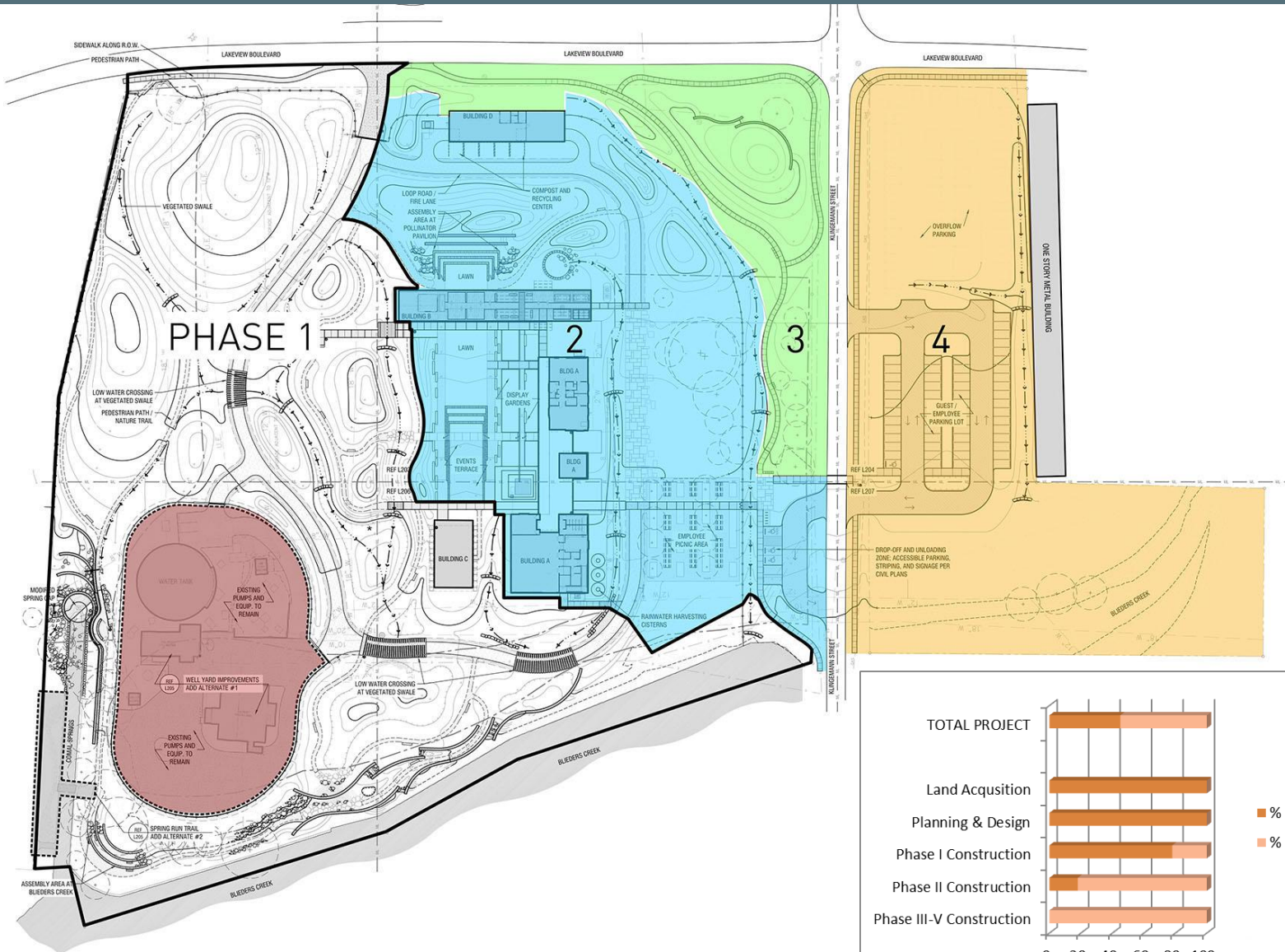
# The Funding

Phase	Description	Total Estimated Cost	NBU Fiscal Year
Land Acquisition	16 acres - NBU contribution Appraised value \$1.2 million	\$0	FY 11
Due Diligence, Planning & Design	Master plan development; project design; design development drawings; environmental assessments; archeological surveys; apply for USACE and USFWS permits	\$2 million	FY 11-15
Phase 1	Spring & landscape restoration; Run site utilities; Spring run observation areas; construct outdoor classroom	\$6 million (\$1.5 from other sources)	FY 2016 FY 2017
Phase 2	Building Construction	\$13.45 million (\$8.67 from other sources)	FY 18-20
Phase 3	Monument signage; way finding signs; additional trails, landscaping and parking	\$1.45 million (\$935,000 from other sources)	FY 21

Lifetime Project Cost: \$22.9 million

Reimbursable through grants and donations: \$11.5 million

# The Process





# The Process



# Spring Cap Removal







# Creek Bank Improvements



# The Benefits

- A Community Resource
- Ecological Restoration
- Commitment to Sustainability
- Environmental Tourism
- Storm Water Mitigation
- Water Quality Enhancement
- Protection of Comal Springs and River



## In Summary

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