

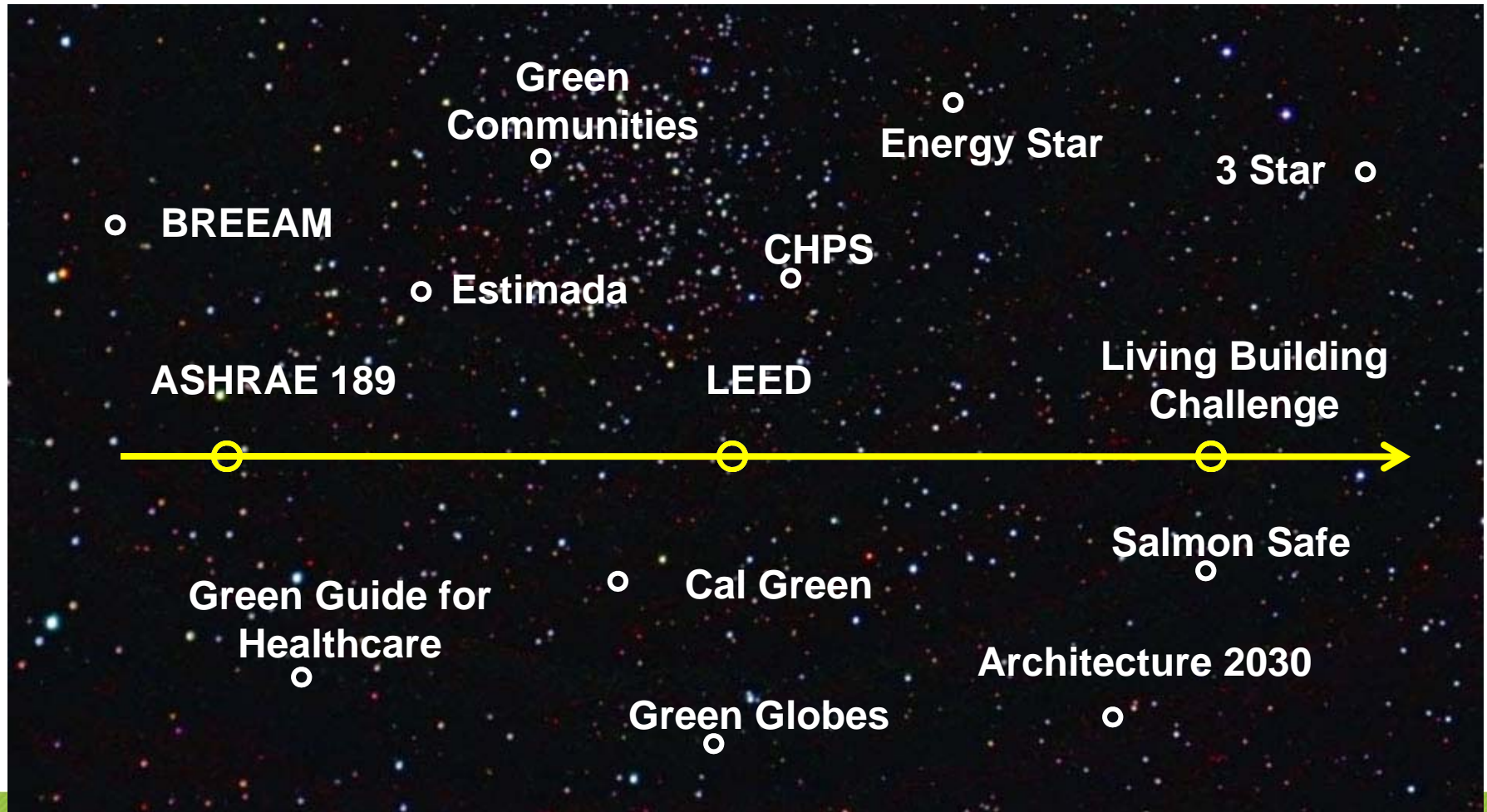








## Water and Green Building Certification



## Water and Green Building Certification



LEED



Living Building Challenge



# Water and Green Building Certification

## LEED 2009 for New Construction Scorecard

### SUSTAINABLE SITES

|   |        |   |   |
|---|--------|---|---|
| 0 | SSp1   | C | Construction Activity Pollution Prevention    |
| 1 | SSc5.1 | C | Site Development - Protect or Restore Habitat |
| 1 | SSc5.2 | D | Site Development - Maximize Open Space        |
| 1 | SSc6.1 | D | Stormwater Design - Quantity Control          |
| 1 | SSc6.2 | D | Stormwater Design - Quality Control           |
| 1 | SSc7.2 | D | Heat Island Effect - Roof                     |

### WATER EFFICIENCY

|   |        |   |   |
|---|--------|---|---|
| 0 | WEp1   | D | Water Use Reduction   |
| 2 | WEc1.1 | D | Water-Efficient Landscaping, 50% Reduction                      |
| 2 | WEc1.2 | D | Water-Efficient Landscaping, No Potable Water use or Irrigation |
| 2 | WEc2   | D | Innovative Wastewater Technologies                              |
| 2 | WEc3   | D | Water Use Reduction   |

## LEED V4 for New Construction Scorecard

### SUSTAINABLE SITES

|   |    |   |   |
|---|----|---|---|
| 0 | SS | C | Construction Activity Pollution Prevention    |
| 2 | SS | D | Site Development - Protect or Restore Habitat |
| 1 | SS | D | Open Space                                    |
| 3 | SS | D | Rainwater Management                          |
| 2 | SS | D | Heat Island Reduction                         |

### WATER EFFICIENCY

|    |    |   |                               |
|----|----|---|-------------------------------|
| 0  | WE | D | Outdoor Water Use Reduction   |
| 0  | WE | D | Indoor Water Use Reduction    |
| 0  | WE | D | Building-Level Water Metering |
| 0  | WE | D | Outdoor Water Use Reduction   |
| 6  | WE | D | Indoor Water Use Reduction    |
| 18 | WE | D | Cooling Tower Water Use       |
| 1  | WE | D | Water Metering                |



# Water and Green Building Certification

## **SSc6.1 - Stormwater Design - Quantity Control (up to 1 point)**

### **Intent:**

To limit disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from stormwater runoff and eliminating contaminants.

Requirements:

OPTION 1. Design Storms

CASE 1 (SITES WITH EXISTING IMPERVIOUSNESS 50% OR LESS):

PATH 1 (DISCHARGE RATE AND QUANTITY): Implement a stormwater management plan that prevents the post-development peak discharge rate and quantity from exceeding the pre-development peak discharge rate and quantity for the one- and two-year, 24 hour design storms. OR

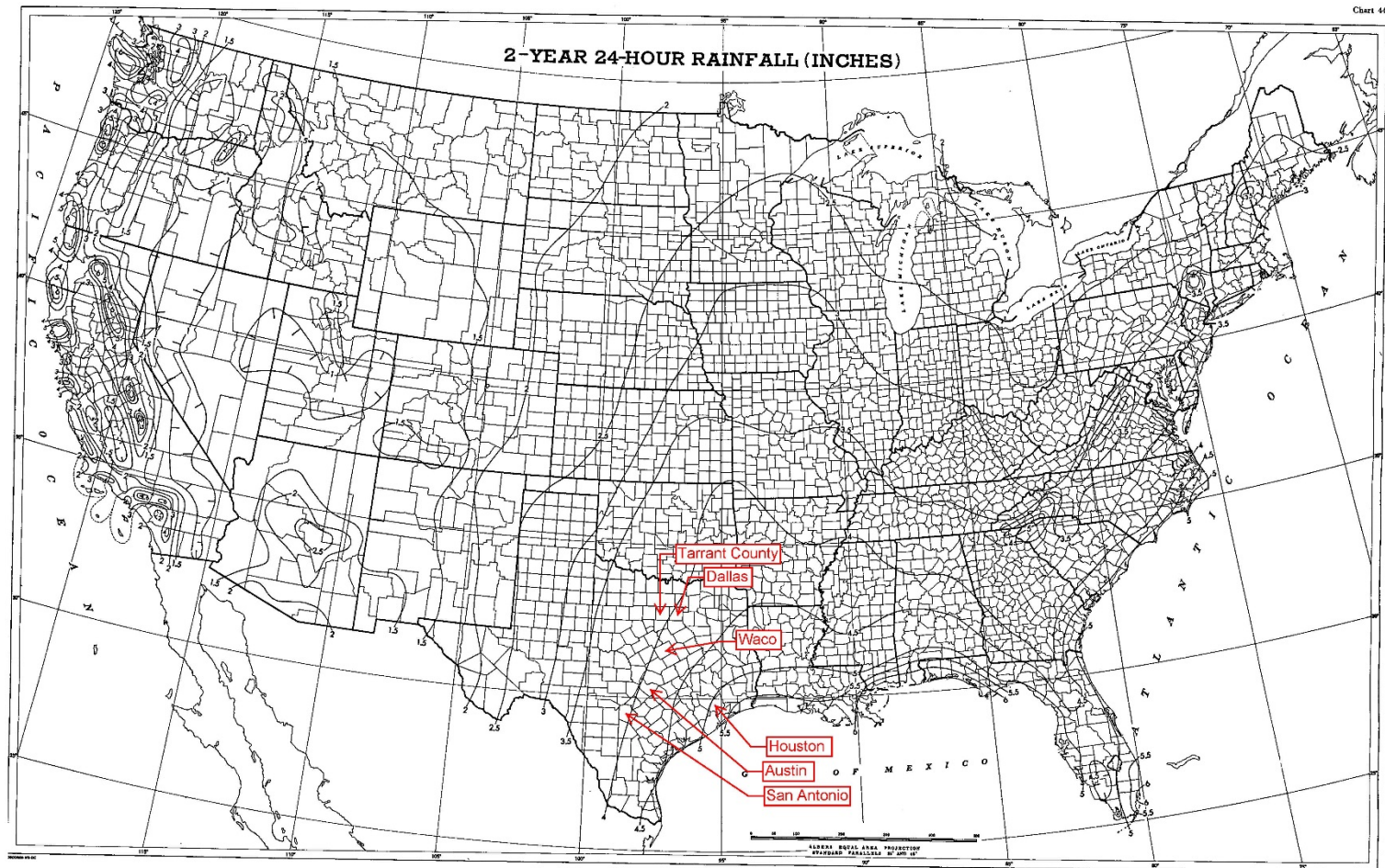
PATH 2 (STREAM CHANNEL PROTECTION): Implement a stormwater management plan that protects receiving stream channels from excessive erosion. The stormwater management plan must include a stream channel protection and quantity control strategies.

CASE 2 (SITES WITH EXISTING IMPERVIOUSNESS GREATER THAN 50%): Implement a stormwater management plan that results in a 25% decrease in the volume of stormwater runoff from the two-year, 24-hour design storm. OR





## Design Storms



# Water and Green Building Certification

## **SSc6.1 - Stormwater Design - Quantity Control & SS – Rainwater Management LEED v4**

### **Intent:**

To limit disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from stormwater runoff and eliminating contaminants.

### **Requirements:**

#### **OPTION 2. Percentile Rainfall Events**

CASE 1. (NonZero Lot Line Projects) In a manner best replicating natural site hydrology processes, manage onsite the runoff from the developed site for the 95th percentile of regional or local rainfall events using Low Impact Development (LID) and green infrastructure. Use daily rainfall data and the methodology in the United States Environmental Protection Agency's Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act to determine the 95th percentile amount.

OR

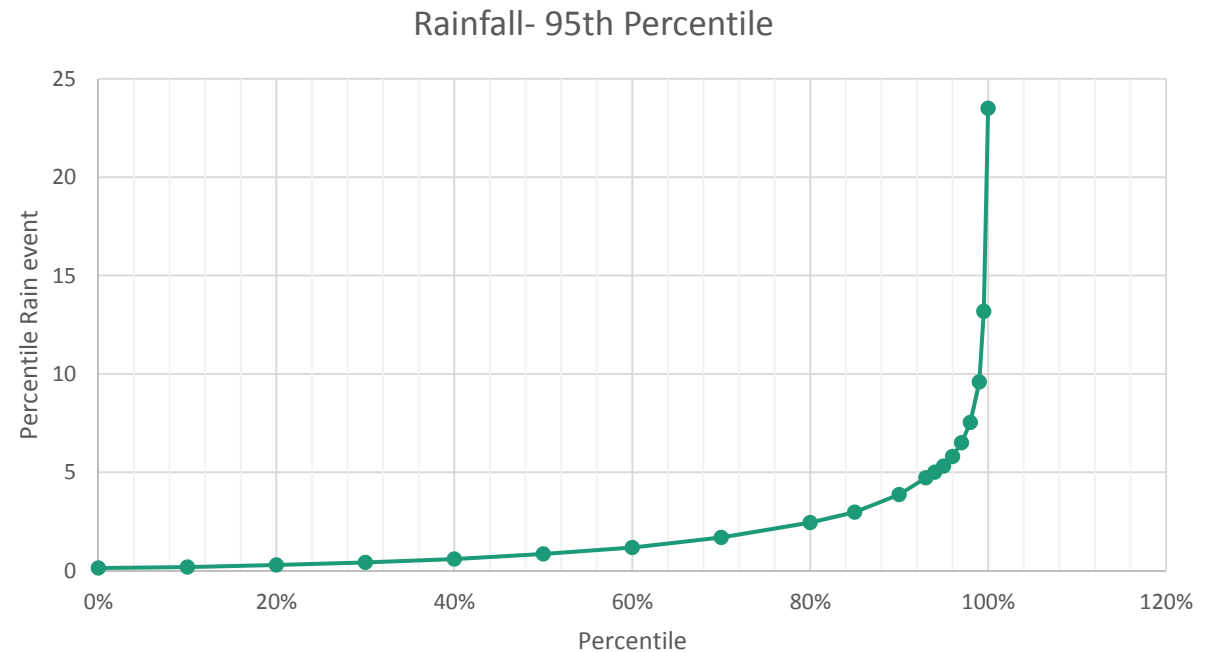
CASE 2: (Zero Lot Line Projects) For zero lot line projects located in urban areas with a minimum density of 1.5 FAR (13,800 square meters per hectare net), in a manner best replicating natural site hydrology processes, manage onsite the runoff from the developed site for the 85th percentile of regional or local rainfall events using LID and green infrastructure.





## Percentile events

| Percentile | Rainfall (inches) |
|------------|-------------------|
| 0%         | 0.13              |
| 10%        | 0.18              |
| 20%        | 0.28              |
| 30%        | 0.41              |
| 40%        | 0.58              |
| 50%        | 0.84              |
| 60%        | 1.17              |
| 70%        | 1.68              |
| 80%        | 2.44              |
| 85%        | 2.97              |
| 90%        | 3.86              |
| 93%        | 4.7134            |
| 94%        | 5                 |
| <b>95%</b> | <b>5.311</b>      |
| 96%        | 5.7972            |
| 97%        | 6.5               |
| 98%        | 7.532             |
| 99%        | 9.5863            |
| 99.50%     | 13.17525          |
| 100%       | 23.5              |



Percentiles taken on ALL historic data for Bush Intercontinental Airport



# Water and Green Building Certification

## **WEp1, WEc3 - Water Use Reduction (20% required, 30%-40%- up to 4 points)**

### **Intent:**

To increase water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

### **Requirements:**

Employ strategies that in aggregate use less water than the water use baseline calculated for the building (not including irrigation). Calculations are based on estimated occupant usage and must include only the following fixtures and fixture fittings (as applicable to the project scope): water closets, urinals, lavatory faucets, showers, kitchen sink faucets and pre-rinse spray valves.





# Water and Green Building Certification

## **LEED v4 WE – Indoor Water Use Reduction (20% required, 25%-50%- up to 6 points)**

### **Intent:**

To reduce indoor water consumption.

#### Requirements:

For relevant fixtures and fittings, as applicable to the project scope, reduce aggregate water consumption by 20% or more from the baseline.

All newly installed toilets, urinals, private lavatory faucets, and showerheads that are eligible for labeling must be **Water Sense labeled** (or local equivalent for projects outside the US).

Install **appliances, equipment, and processes** within the project scope that meet the prerequisites listed.

(Gallons per cycle no longer used in v4 calculations)



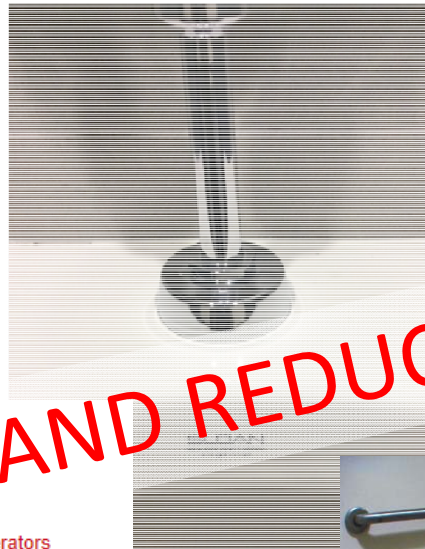
## Water and Green Building Certification



**Faucet Aerator Product Selection**

See also: [Check Valves](#) | [Flow Regulators](#)

**Traditional Faucet Aerators**



**Caché® Hidden Faucet Aerators**



**DEMAND REDUCTION**





# Water and Green Building Certification

## **WEc2 - Innovative Wastewater Technologies (up to 2 points)**

### **Intent:**

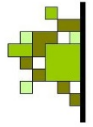
To reduce wastewater generation and potable water demand, while increasing the local aquifer recharge.

### Requirements:

**OPTION 1 (REDUCE WATER USE):** Reduce potable water use for building sewage conveyance by 50% through the use of water-conserving fixtures or non-potable water.

**OPTION 2 (TREAT WASTEWATER):** Treat 50% of wastewater on-site to tertiary standards. Treated water must be infiltrated or used on-site.





GreeNexus Consulting



# Water and Green Building Certification

## **Innovative Wastewater Technologies**

**LEED v4 – no equivalent credit**

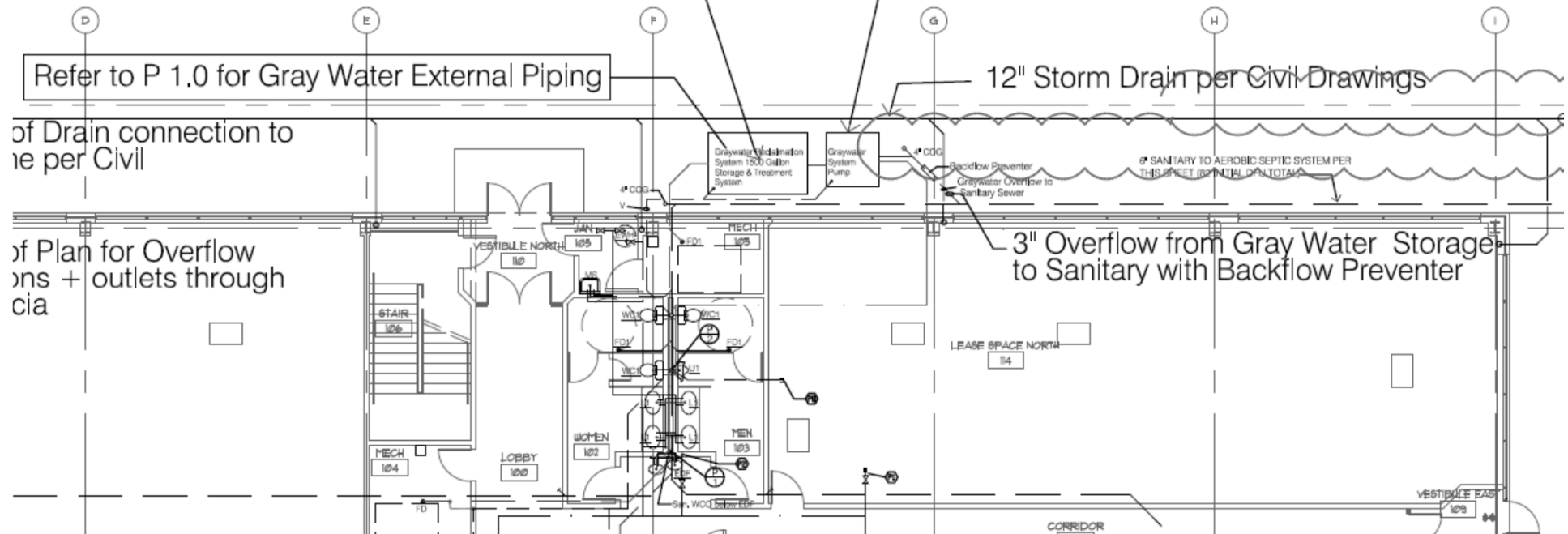




## Water and Green Building Certification

Location of 1500 Gallon Gray Water  
Underground Storage Tank  
with Filtration and Disinfection Systems  
Pump Serving Water Closets and Urinals  
Only; Note - Water Dyed Blue  
Refer to Sheet P1.0 for Location of Adjacent Buildings

Underground Mounted Irrigation  
Pump & Filters Serving Site  
Irrigation and roof sprinklers  
and Gray Water Makeup  
Plus intermediate Reservoir



# Water and Green Building Certification

## **WEc1.1 - Water-Efficient Landscaping, 50% Reduction (up to 2 points)**

### **WE – Outdoor Water Use Reduction (LEEDv4)**

#### **Intent:**

To limit or eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

#### Requirements:

##### OPTION 1 (REDUCE BY 50%) (2 pts):

Reduce potable water consumption for irrigation by 50% from a calculated mid-summer baseline case or using the month with the highest irrigation demand. Reductions must be attributed to any combination of the following items: plant species factor, irrigation efficiency, use of captured rainwater, use of recycled wastewater, and/or use of water treated and conveyed by a public agency specifically for non-potable uses.

LEED V4- 30% reduction prerequisite



## Water and Green Building Certification

### **WEc1.2 - Water-Efficient Landscaping, No Potable Water Use or Irrigation (up to 2 points)**

#### **Intent:**

To limit or eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

#### **Requirements:**

OPTION 2 (NO POTABLE WATER USE FOR IRRIGATION) (4 pts): Meet the requirements for Option 1  
AND

PATH 1 (NO POTABLE USE): Use only captured rainwater, recycled wastewater, recycled graywater or water treated and conveyed by a public agency specifically for nonpotable uses for irrigation

OR

PATH 2 (NO IRRIGATION): Install landscaping that does not require permanent irrigation systems. Temporary irrigation systems used for plant establishment are allowed only if removed within a period not to exceed 18 months of installation.





## Water and Green Building Certification

### **WEc1.2 - Water-Efficient Landscaping, No Potable Water Use or Irrigation (up to 2 points)**

#### **Intent:**

To limit or eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

#### **Requirements:**

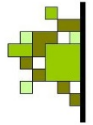
OPTION 2 (NO POTABLE WATER USE FOR IRRIGATION) (4 pts): Meet the requirements for Option 1  
AND

PATH 1 (NO POTABLE USE): Use only captured rainwater, recycled wastewater, recycled graywater or water treated and conveyed by a public agency specifically for nonpotable uses for irrigation

OR

PATH 2 (NO IRRIGATION): Install landscaping that does not require permanent irrigation systems. Temporary irrigation systems used for plant establishment are allowed only if removed within a period not to exceed 18 months of installation.



**WE Credit 1: Water Efficient Landscaping****Evapotranspiration Table**

|                 |      |
|-----------------|------|
| ET <sub>0</sub> | [in] |
| <b>July</b>     | 6.52 |

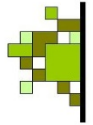
**Design Case Table**

| Landscape Type         | Area<br>[SF]  | Species<br>Factor<br>(k <sub>s</sub> ) | Density<br>Factor<br>(k <sub>d</sub> ) | Microclimate<br>Factor<br>(k <sub>mc</sub> ) | K <sub>L</sub> | ET <sub>L</sub> | IE                           | TPWA<br>[gal] |
|------------------------|---------------|--|--|--|----------------|-----------------|------------------------------|---------------|
| Trees                  | 11,688        | Avg ▼ 0.5                              | Avg ▼ 1.0                              | Avg ▼ 1.0                                    | 0.50           | 3.26            | Drip ▼ 0.900                 | 26,388        |
| Shrubs                 | 1,208         | Avg ▼ 0.5                              | Avg ▼ 1.0                              | Avg ▼ 1.0                                    | 0.50           | 3.26            | Drip ▼ 0.900                 | 2,727         |
| Groundcovers           |               | Avg ▼ 0.5                              | Higl ▼ 1.1                             | High ▼ 1.2                                   | 0.66           | 4.30            | Sprink ▼ 0.625               | 0             |
| Mixed                  |               | Avg ▼ 0.5                              | Avg ▼ 1.1                              | Avg ▼ 1.0                                    | 0.55           | 3.59            | Sprink ▼ 0.625               | 0             |
| Turfgrass-fields, berm | 7,311         | Low ▼ 0.6                              | Avg ▼ 1.0                              | Avg ▼ 1.0                                    | 0.60           | 3.91            | Drip ▼ 0.900                 | 19,808        |
| <b>Total</b>           | <b>20,207</b> |  |  |  |                |                 | Subtotal [gal]               | 48,923        |
|                        |               |  |  |  |                |                 | Controller Efficiency [CE]   | 0.70          |
|                        |               |  |  |  |                |                 | July Graywater Harvest [gal] | 0             |
|                        |               |  |  |  |                |                 | <b>Net GPWA [gal]</b>        | <b>34,246</b> |

**Baseline Case Table**

| Landscape Type                                | Area<br>[SF]  | Species<br>Factor<br>(k <sub>s</sub> ) | Density<br>Factor<br>(k <sub>d</sub> ) | Microclimate<br>Factor<br>(k <sub>mc</sub> ) | K <sub>L</sub> | ET <sub>L</sub> | IE                    | TPWA<br>[gal]  |
|---|---------------|--|--|--|----------------|-----------------|-----------------------|----------------|
| Trees   | 11,688        | Higl ▼ 0.9                             | Avg ▼ 1.0                              | Avg ▼ 1.0                                    | 0.9            | 5.87            | Sprink ▼ 0.625        | 68,399         |
| Shrubs  | 1,208         | Higl ▼ 0.7                             | Avg ▼ 1.0                              | Avg ▼ 1.0                                    | 0.7            | 4.56            | Sprink ▼ 0.625        | 5,498          |
| Groundcovers                                  | 0             | Higl ▼ 0.7                             | Higl ▼ 1.1                             | High ▼ 1.2                                   | 0.9            | 6.02            | Sprink ▼ 0.625        | 0              |
| Mixed   | 0             | Higl ▼ 0.9                             | Avg ▼ 1.1                              | Avg ▼ 1.0                                    | 1.0            | 6.45            | Sprink ▼ 0.625        | 0              |
| Turfgrass-fields, berm                        | 7,311         | Avg ▼ 0.7                              | Avg ▼ 1.0                              | Avg ▼ 1.0                                    | 0.7            | 4.56            | Sprink ▼ 0.625        | 33,277         |
| <b>Total</b>                                  | <b>20,207</b> |  |  |  |                |                 | <b>Net GPWA [gal]</b> | <b>107,174</b> |
| <b>Irrigation Potable Water Use Reduction</b> |               |  |  |  |                |                 |                       | <b>68.05%</b>  |





## STEP 1 Location and Area

Congratulations on choosing to design a locally appropriate water-efficient landscape! The WaterSense water budget tool will help you determine if your landscape meets EPA's criteria for efficient outdoor water use in your area.

In order to use the water budget tool, you will need to know some basic information about your landscape:

- The location and zip code
- The total area of applicable landscape
- Types of plants and the total coverage
- Methods of irrigation (if any)

Your landscape will receive a pass/fail based on local climate, plant selection, irrigation methods, and size of the landscape. Follow the instructions on screen to find out if your landscape meets the WaterSense criteria.

## STEP 2 Plants and Irrigation

## STEP 3 The Results

For what purpose is the tool being used?  
What are you landscaping?

LEED Project 

How many sites?

☐ Development of Multiple Landscapes ☒ Single Site

Is there an irrigation system?

☒ Yes ☐ No

Enter Zip Code

77401

Enter Landscaped Area  
for a Single Home or Site<sup>i</sup>

20207

Sq. Ft.

Enter Multi-Home/Development Landscaped Area Range<sup>i</sup>

to  Sq. Ft.

[NEXT STEP >](#)



## Water Budget Tool Report

**Amanda Tullos** | GreeNexus  
5116 Bissonnet #408 Bellaire, TX 77401

Your landscape is 62% below the baseline for this site

**Single Site or Development?**  
Single Site

**Landscape Water Allowance**  
61275 gal/month

**Landscape Area**  
20207.0 sq.ft

**Landscape Water Requirement**  
33552 gal/month

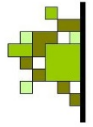
**Irrigation?**  
Yes

**Potential Peak Watering Savings**  
27723 gal/month

**Total Area of Turfgrass, Pools/Spas, and Water Features**  
7311 sq. ft

### Summary of Hydrozones

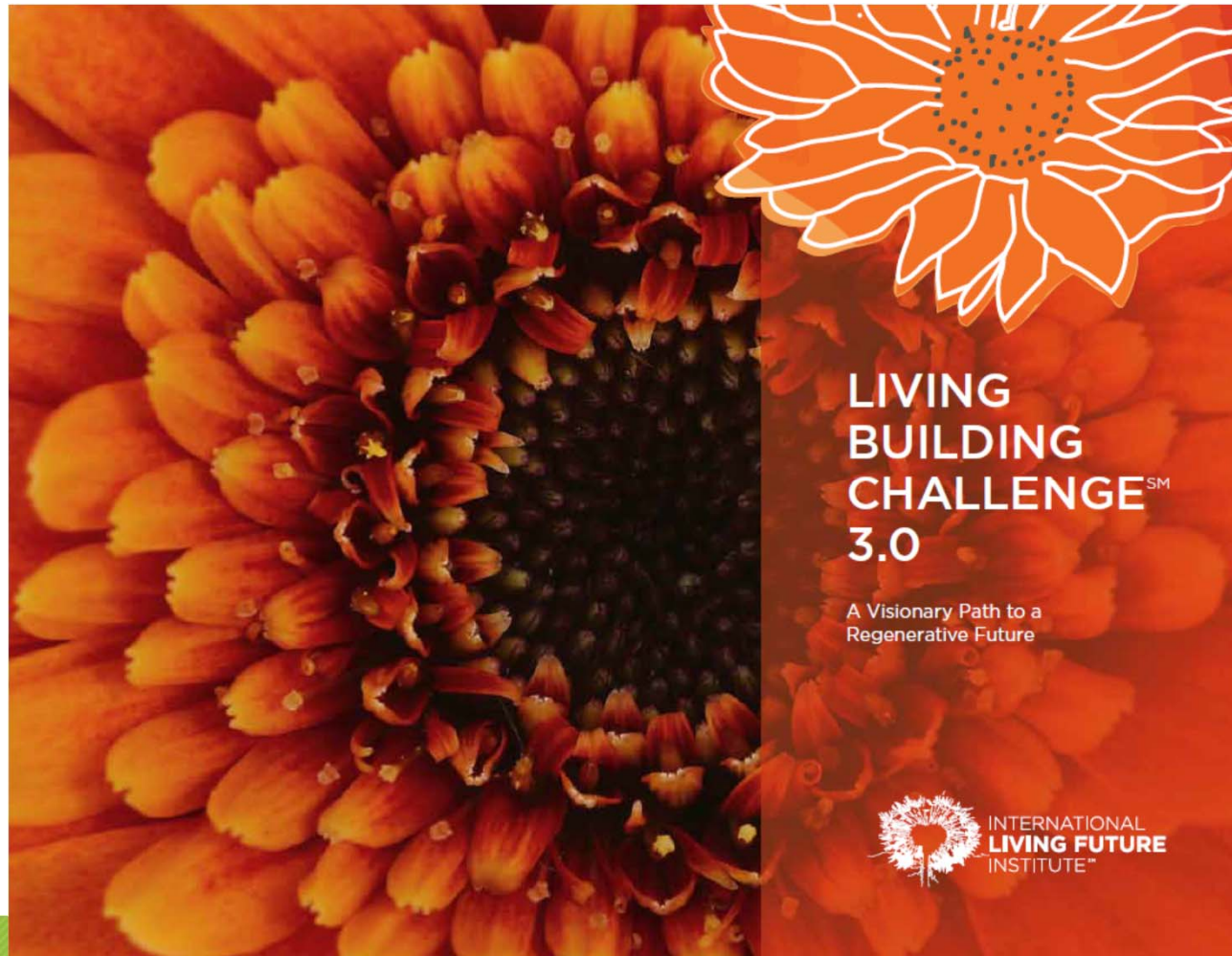
| Zone | Area (sq. ft.) | Plant Type / Landscape Feature | Water Demand | Irrigation Type | Required Water (gal/month) |
|------|----------------|--------------------------------|--------------|-----------------|----------------------------|
| 1    | 11688          | Trees                          | Low          | Drip (Standard) | 6322                       |
| 2    | 1208           | Shrubs                         | Low          | Drip (Standard) | 653                        |
| 3    | 7311           | Turfgrass                      | Medium       | Micro Spray     | 26577                      |



GreenNexus Consulting



## Water and Green Building Certification



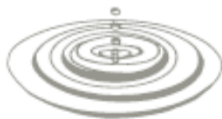
WATER





# WATER

CREATING DEVELOPMENTS THAT  
OPERATE WITHIN THE WATER BALANCE  
OF A GIVEN PLACE AND CLIMATE



SCALE JUMPING PERMITTED  
FOR **NET POSITIVE WATER**  
(IMPERATIVE 05)

## PETAL INTENT

The intent of the Water Petal is to realign how people use water and to redefine 'waste' in the built environment, so that water is respected as a precious resource.

Scarcity of potable water is quickly becoming a serious issue as many countries around the world face severe shortages and compromised water quality. Even regions that have avoided the majority of these problems to date due to a historical presence of abundant fresh water are at risk: the impacts of climate change, highly unsustainable water use patterns, and the continued drawdown of major aquifers portend significant problems ahead.

## IDEAL CONDITIONS AND CURRENT LIMITATIONS

The Living Building Challenge envisions a future whereby all developments are configured based on the carrying capacity of the site: harvesting sufficient water to meet the needs of a given population while respecting the natural hydrology of the land, the water needs of the ecosystem the site inhabits, and those of its neighbors. Indeed, water can be used and purified and then used again—and the cycle repeats.

Currently, such practices are often illegal due to health, land use and building code regulations (or because of the undemocratic ownership of water rights) that arose precisely because people were not properly safeguarding the quality of their water. Therefore, reaching the ideal for water use means challenging outdated attitudes and technology with decentralized site- or district-level solutions that are appropriately scaled, elegant and efficient.

## WATER

# NET POSITIVE WATER



Project water use and release must work in harmony with the natural water flows of the site and its surroundings. One hundred percent of the project's water needs must be supplied by captured precipitation or other natural closed loop water systems,<sup>12</sup> and/or by re-cycling used project water, and must be purified as needed without the use of chemicals.

All stormwater and water discharge, including grey and black water, must be treated onsite and managed either through re-use, a closed loop system, or infiltration. Excess stormwater can be released onto adjacent sites under certain conditions.

<sup>12</sup> Refer to the Water Petal Handbook for clarifications and exceptions, such as allowances for a municipal potable water use connection if required by local health regulations.





**Omega Institute, Rhinebeck, NY**  
**Living Certification - Living Building Challenge 1.3**  
*Photo: Farshid Assassi / Courtesy: BNIM Architects*



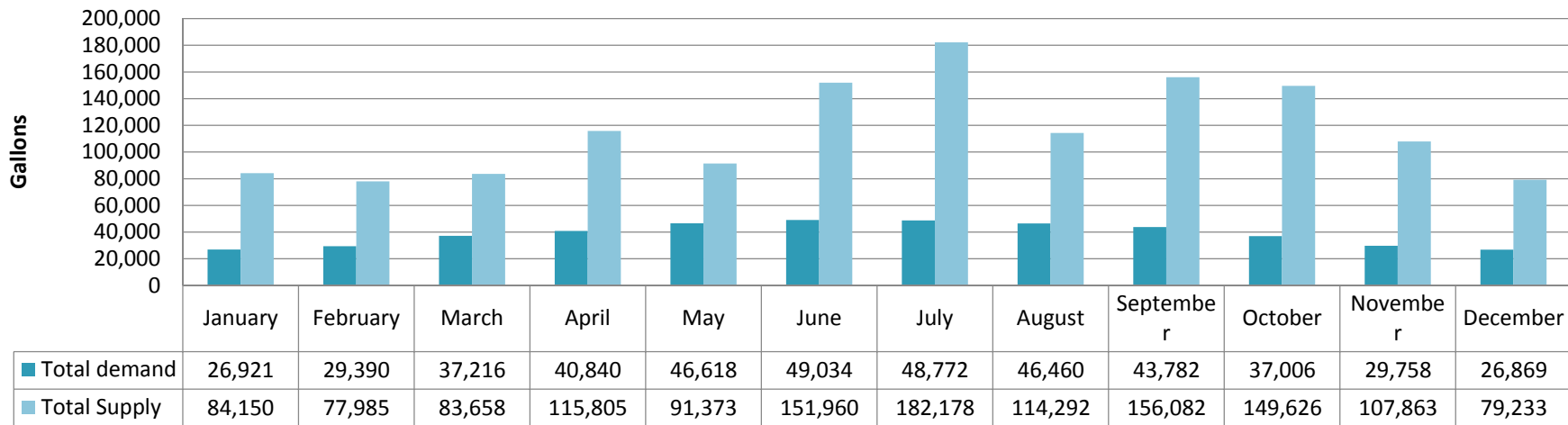
# Water Balancing

| MONTHLY WATER BALANCE            |                                  |                                    |        |         |         |         |         |         |         |         |         |        |           |           |
|----------------------------------|----------------------------------|------------------------------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|--------|-----------|-----------|
| 07.15.14                         |                                  |                                    |        |         |         |         |         |         |         |         |         |        |           |           |
| References                       | MONTHLY EVAPOTRANSPIRATION RATES |                                    |        |         |         |         |         |         |         |         |         |        |           |           |
|                                  |                                  | Jan                                | Feb    | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov    | Dec       | Total     |
|                                  | Houston                          | 2.36                               | 2.83   | 4.32    | 5.01    | 6.11    | 6.57    | 6.52    | 6.08    | 5.57    | 4.28    | 2.90   | 2.35      | 54.90     |
|                                  | MONTHLY RAINFALL DATA            |                                    |        |         |         |         |         |         |         |         |         |        |           |           |
|                                  |                                  | Jan                                | Feb    | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov    | Dec       | Total     |
|                                  | HOUSTON                          | 3.15                               | 2.92   | 3.13    | 4.34    | 3.42    | 5.71    | 6.85    | 4.29    | 5.87    | 5.62    | 4.04   | 2.96      | 52.30     |
| DEMAND                           |                                  | Jan                                | Feb    | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov    | Dec       | Total     |
|                                  |                                  | MONTHLY IRRIGATION USE (from WEc1) |        |         |         |         |         |         |         |         |         |        |           |           |
|                                  | Design                           | 12,396                             | 14,865 | 22,691  | 26,315  | 32,093  | 34,509  | 34,246  | 31,935  | 29,256  | 22,481  | 15,232 | 12,343    | 288,362   |
|                                  |                                  | MONTHLY FLUSH USE (from WEc3)      |        |         |         |         |         |         |         |         |         |        |           |           |
|                                  | Design                           | 14,525                             | 14,525 | 14,525  | 14,525  | 14,525  | 14,525  | 14,525  | 14,525  | 14,525  | 14,525  | 14,525 | 14,525    | 174,304   |
|                                  | TOTALS                           | 26,921                             | 29,390 | 37,216  | 40,840  | 46,618  | 49,034  | 48,772  | 46,460  | 43,782  | 37,006  | 29,758 | 26,869    | 462,666   |
| SUPPLY                           |                                  | Jan                                | Feb    | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov    | Dec       | Total     |
|                                  |                                  | MONTHLY ROOF CAPTURE POSSIBLE      |        |         |         |         |         |         |         |         |         |        |           |           |
|                                  | Design                           | 10,388                             | 9,620  | 10,327  | 14,333  | 11,288  | 18,839  | 22,604  | 14,144  | 19,352  | 18,548  | 13,343 | 9,775     | 172,560   |
|                                  |                                  | MONTHLY STORMWATER (SITE)          |        |         |         |         |         |         |         |         |         |        |           |           |
|                                  | Design                           | 72,966                             | 67,570 | 72,536  | 100,676 | 79,290  | 132,326 | 158,778 | 99,352  | 135,934 | 130,282 | 93,724 | 68,662    | 1,212,096 |
|                                  |                                  | MONTHLY GREYWATER (LAVATORIES)     |        |         |         |         |         |         |         |         |         |        |           |           |
|                                  | Design                           | 327                                | 327    | 327     | 327     | 327     | 327     | 327     | 327     | 327     | 327     | 327    | 327       | 3,925     |
|                                  |                                  | MONTHLY GREYWATER (CONDENSATE)     |        |         |         |         |         |         |         |         |         |        |           |           |
| Design                           | 469                              | 469                                | 469    | 469     | 469     | 469     | 469     | 469     | 469     | 469     | 469     | 469    | 5,625     |           |
| TOTALS                           | 84,150                           | 77,985                             | 83,658 | 115,805 | 91,373  | 151,960 | 182,178 | 114,292 | 156,082 | 149,626 | 107,863 | 79,233 | 1,394,206 |           |
| TOTAL MONTHLY SURPLUS OR DEFICIT |                                  |                                    |        |         |         |         |         |         |         |         |         |        |           |           |
| GRAND TOTAL                      | 57,229                           | 48,595                             | 46,442 | 74,964  | 44,755  | 102,926 | 133,406 | 67,832  | 112,301 | 112,620 | 78,105  | 52,365 | 931,540   |           |
| Percent met                      | 312.6%                           | 265.3%                             | 224.8% | 283.6%  | 196.0%  | 309.9%  | 373.5%  | 246.0%  | 356.5%  | 404.3%  | 362.5%  | 294.9% | 301.3%    |           |



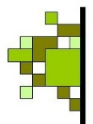
# Water Balancing

Monthly Water Use



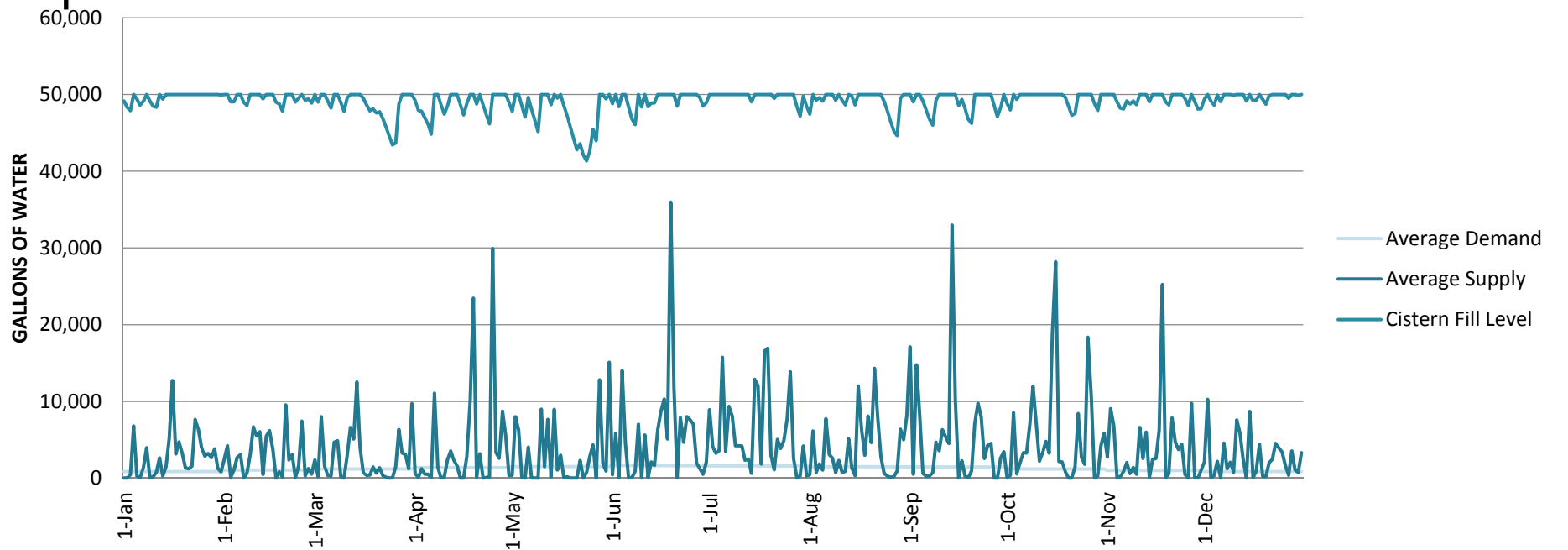
| TOTAL MONTHLY SURPLUS OR DEFICIT |        |        |        |        |        |         |         |        |         |         |        |        |         |
|----------------------------------|--------|--------|--------|--------|--------|---------|---------|--------|---------|---------|--------|--------|---------|
|                                  | Jan    | Feb    | Mar    | Apr    | May    | Jun     | Jul     | Aug    | Sep     | Oct     | Nov    | Dec    | Total   |
| GRAND TOTAL                      | 57,229 | 48,595 | 46,442 | 74,964 | 44,755 | 102,926 | 133,406 | 67,832 | 112,301 | 112,620 | 78,105 | 52,365 | 931,540 |
| Percent met                      | 312.6% | 265.3% | 224.8% | 283.6% | 196.0% | 309.9%  | 373.5%  | 246.0% | 356.5%  | 404.3%  | 362.5% | 294.9% | 301.3%  |



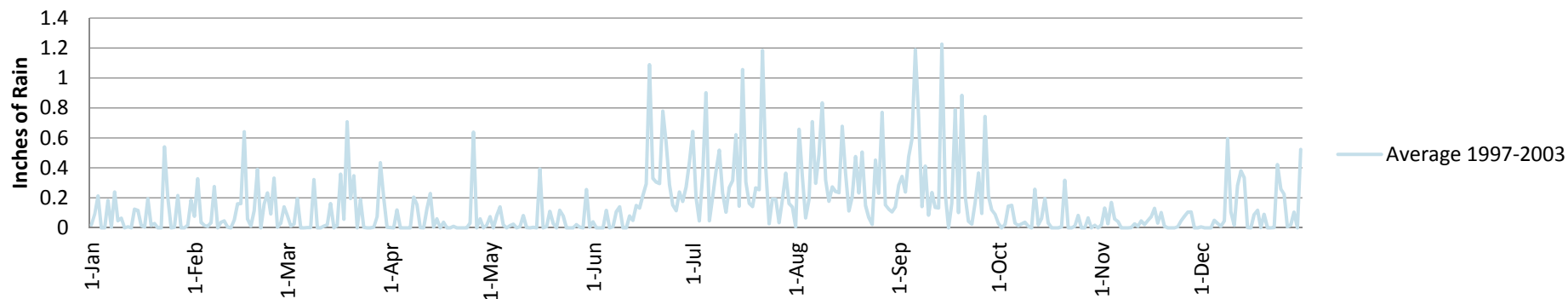


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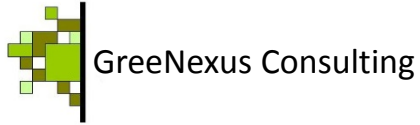
## Daily Demand vs. Supply



## Average Daily Rainfall 1997-2003







Thank you!

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