



H. AYUNTAMIENTO DE  
**HERMOSILLO**  
IMPLAN

# Introduction to the Green Infrastructure Manual

IMPLAN Hermosillo | 2022





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# Topics

## Introduction to Green Infrastructure in Hermosillo

- **Development route of Green Infrastructure (G.I.) in Hermosillo:**
  - How G.I. was established in Hermosillo's legal framework.
- **Green Infrastructure Manual:**
  - Definition & Applications.
  - Benefits and relevance of G.I. for a Sustainable Urban Metabolism.
- **Micro-Scale Green Infrastructure:**
  - Principles of G.I. design.
  - **Example of passive systems: Micro-basin gardens.**
    - Description.
    - Components.
  - **Example of active systems: Green roofs.**
    - Description.
    - Components.
- **The botanical catalog:**
  - Definition & Applications.
- **Examples of Green Infrastructure projects in Hermosillo:**
  - Intervention of the public space (pictures).
  - Candidate interventions for IURC exchange.
- **Questions & Answers.**

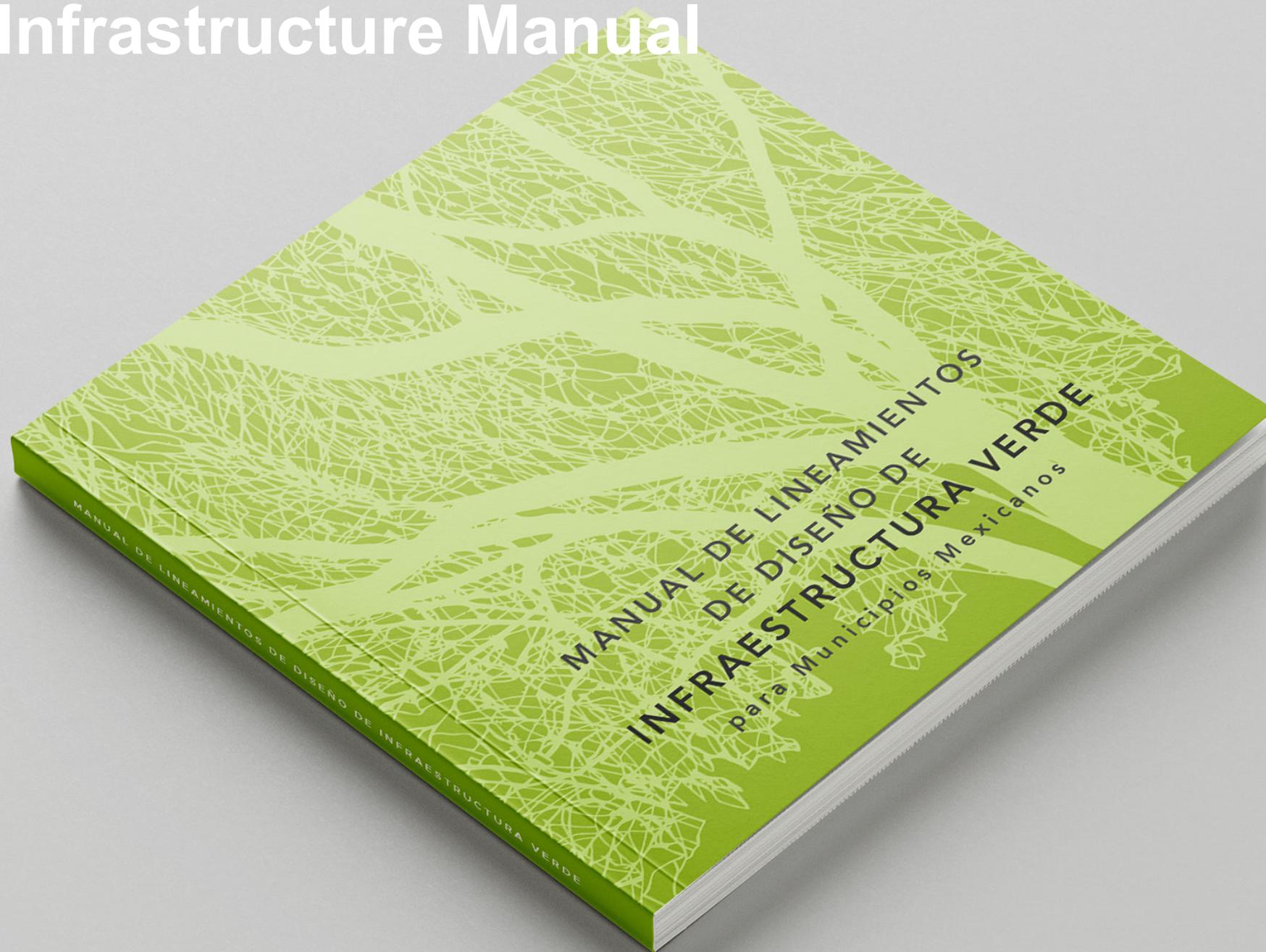


# What is Green Infrastructure and what is the Green Infrastructure Manual for?

Green infrastructure (GI) are those constructions of active and passive systems, which use living and natural systems to provide environmental services, such as containing, cleaning and filtering rainwater: Creating habitats for wildlife; provide shade, cool streets and buildings, among others.

The Green Infrastructure Manual is a guide for the design and decision making in the incorporation of GI in the public space. It provides guidelines for micro-scale GI design, the fundamentals of a macro-scale GI application methodology and general recommendations to implement it within the local legal and planning frameworks.

# Green Infrastructure Manual



## Gráfico ilustrativo

Figura 9. Gráfico ilustrativo de Jardín de Lluvia calle con estacionamiento en cordón

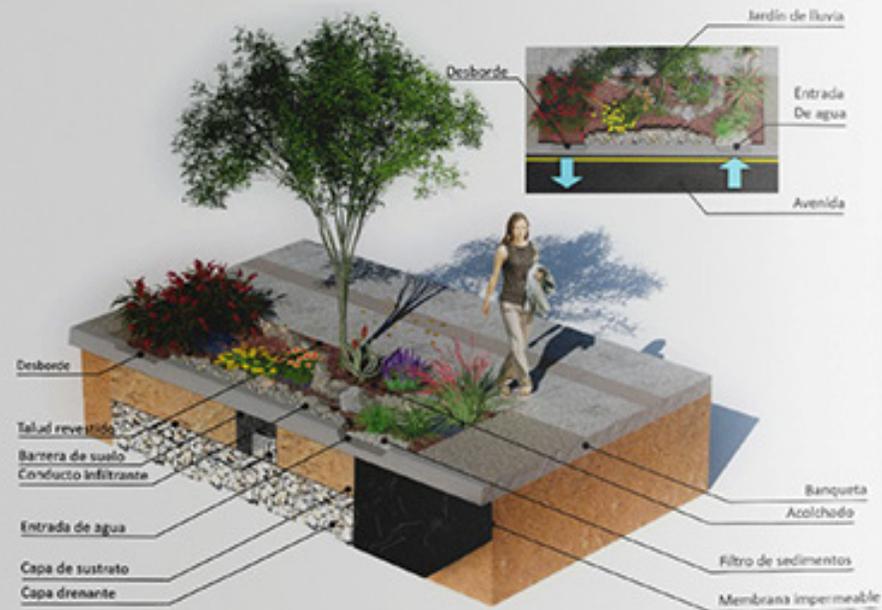
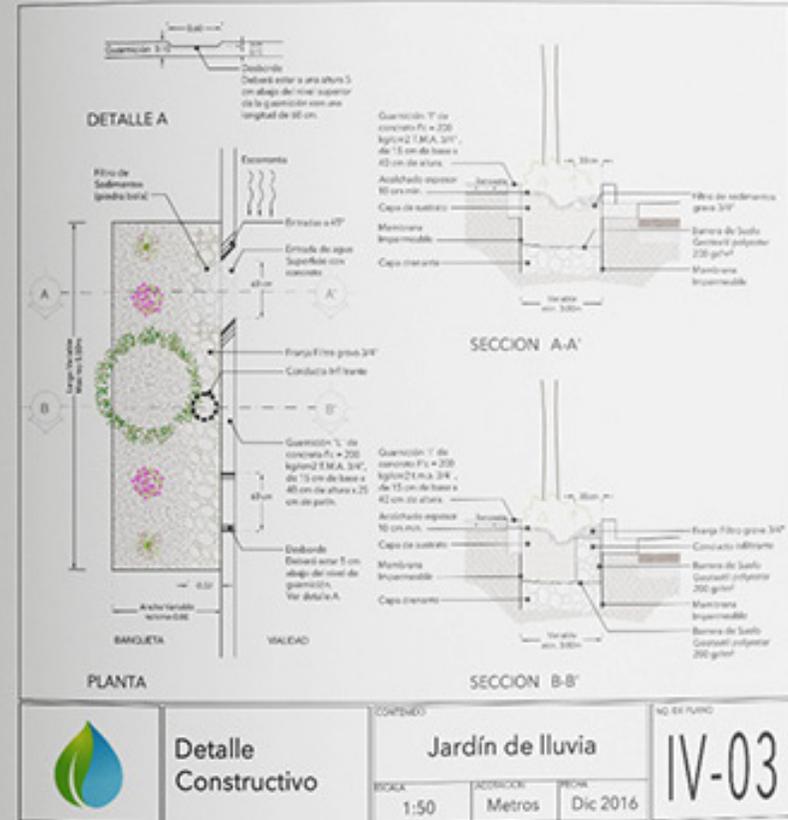


Figura 10. Detalles constructivos de Jardín de Lluvia



Detalle Constructivo

Jardín de Lluvia

ESCALA: 1:50

ACCIÓN: Metros

FECHA: Dic 2016

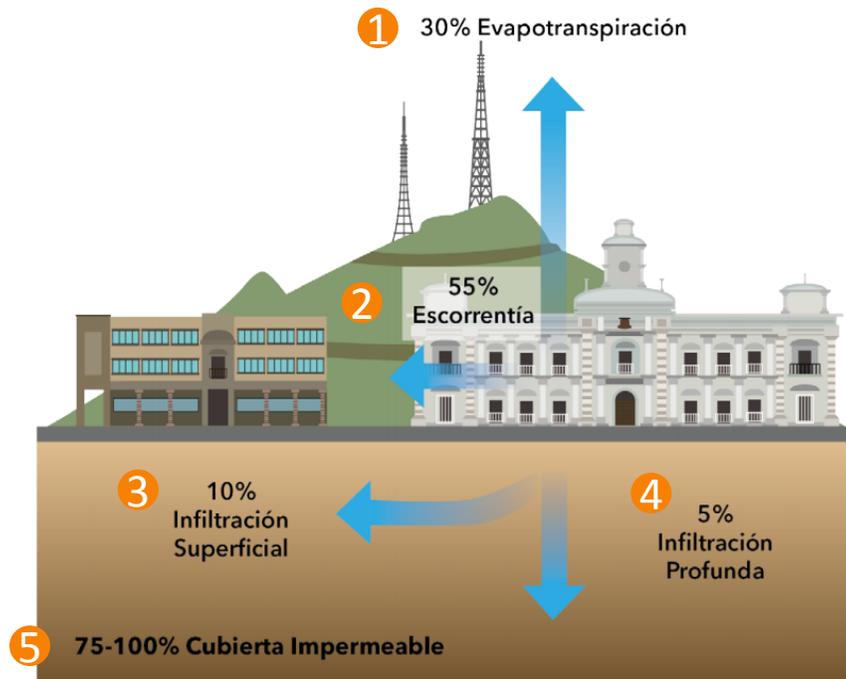
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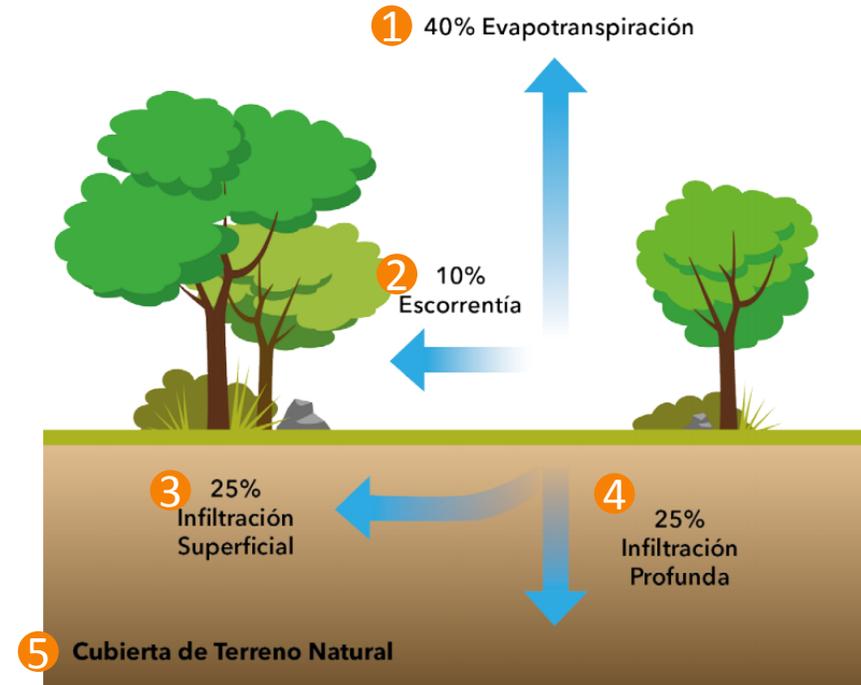
# What is the challenge of green infrastructure for a sustainable “urban metabolism”? (1/2)

## Grey Infrastructure



- ① 30 % Evapotranspiration
- ② 55% Runoff
- ③ 10 % Surface infiltration
- ④ 05% Deep infiltration
- ⑤ 75-100% Impermeable soil

## Green Infrastructure



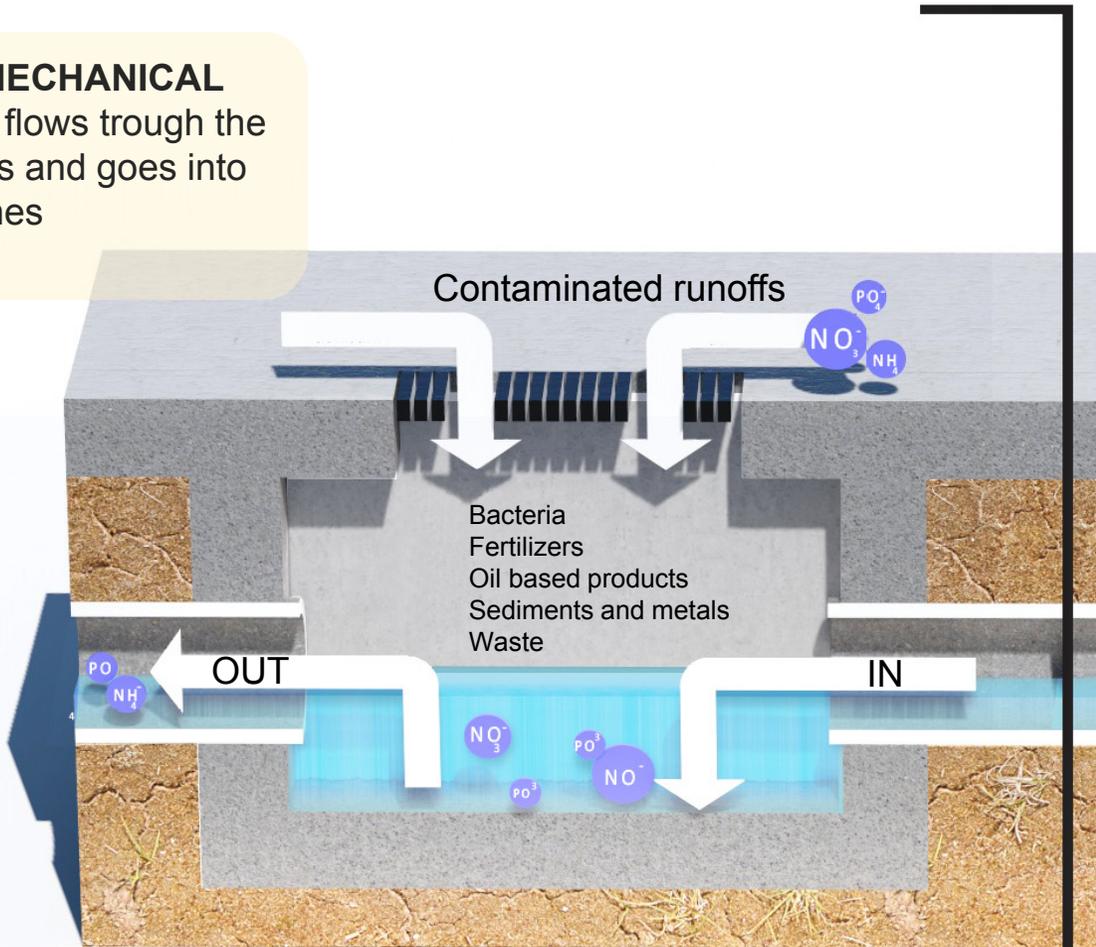
- ① 40 % Evapotranspiration
- ② 10% Runoff
- ③ 25 % Surface infiltration
- ④ 25% Deep infiltration
- ⑤ Permeable soil



# What is the challenge of green infrastructure for a sustainable “urban metabolism”? (2/2)

## IT'S MECHANICAL

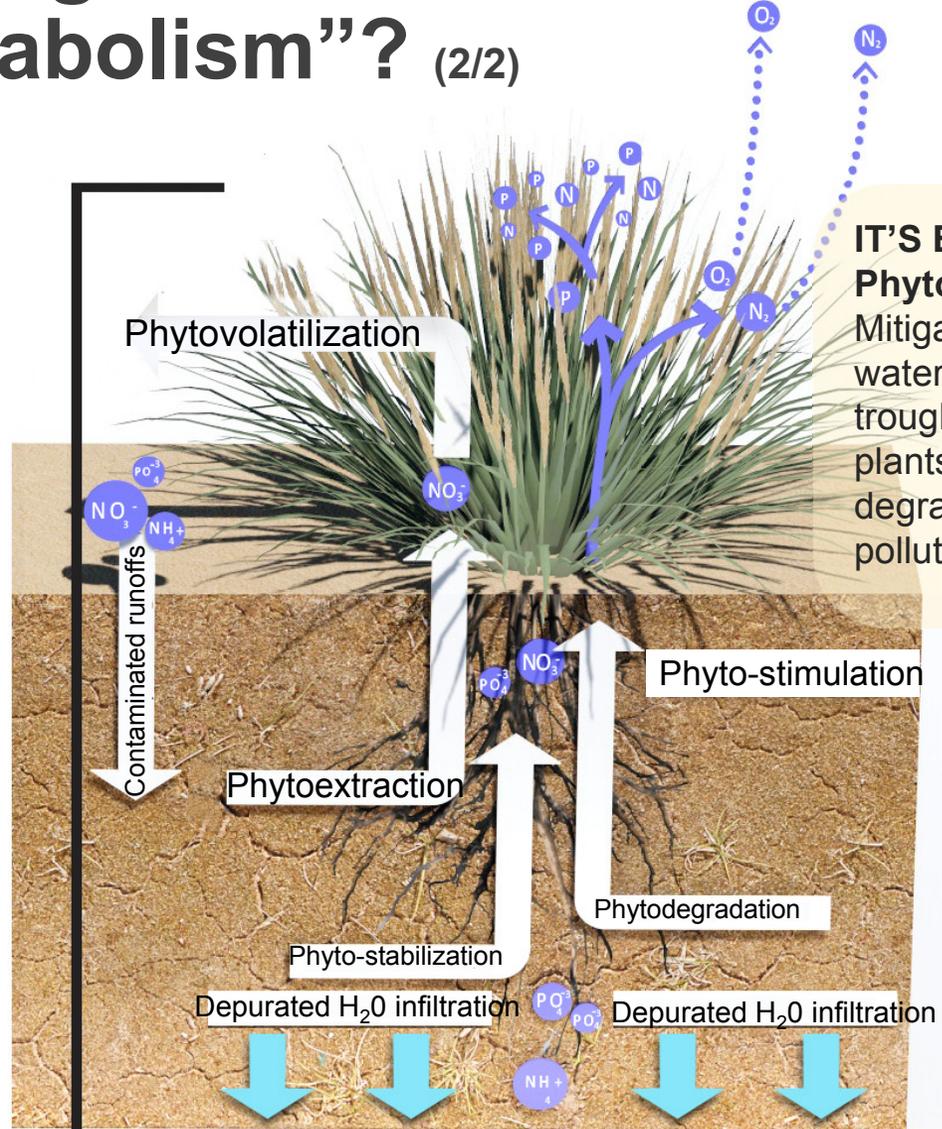
Water flows through the sewers and goes into pipelines



Grey Infrastructure

## IT'S BIOLOGICAL

**Phytoremediation**  
Mitigation of ground, water or air pollution, through the use of plants that absorb, degrade or eliminate polluting agents

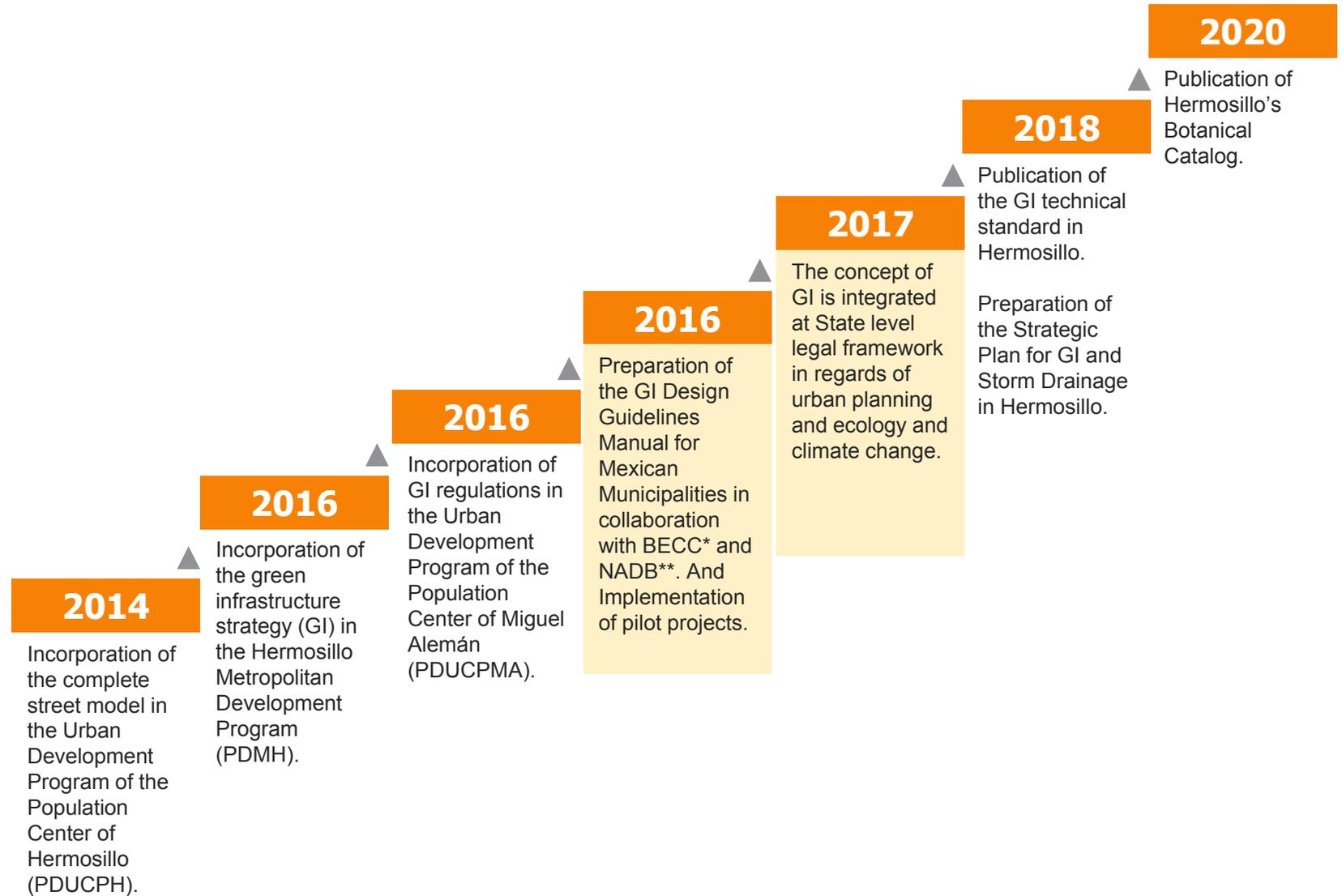


Green Infrastructure



# The development of green infrastructure in Hermosillo took off from the urban planning instruments

## Green Infrastructure Development Path



\* Border Environment Cooperation Commission

\*\* North America Development Bank



# The Green Infrastructure Manual features two main scopes of application

## Green Infrastructure

### Application Scopes

#### **Micro-scale scope:**

Developing GI technical design specifications according to the road categories, built environments and urbanization of the areas where it is incorporated.

#### **Macro-scale scope:**

Establishing the fundamentals for the development of a methodology to assist the design and planning at city scale through strategic planning, participatory management and adaptation to local ecosystem conditions.



- **Public and private roads:** flowerbeds, medians, roundabouts, ears, parking lots and permeable areas linked to the roads.
- **Green Areas:** Parks, public and private gardens, sports and equipment areas.
- **Residential environments and urbanization:** Gardens, green roofs, green walls, permeable areas.



- **Urban basins and sub-basins**
- **Intra-urban Hydrological Elements:** Rivers, streams, canals, embankments, conservation areas, biological corridors, protected natural areas, flood zones.



# The benefits attributed to Green Infrastructure are multiple and have a great positive impact

## Green Infrastructure

### Benefits

#### **Air**

- Reduced smog levels.
- Reduction of suspended particles in the air.

#### **Climate resilience**

- Flood control.
- Adaptation to droughts.
- Reduction of the “urban heat island” effect and reduction of energy demand.
- Coastal Resilience.
- Reduction of carbon emissions.

#### **Infrastructure**

- Cost reduction in infrastructure for water management.

#### **Society and Communities**

- Improvement of public health.
- Space for recreation.
- Greater comfort in public space.
- Increase in the surplus value of the land value.

#### **Water**

- Improvement of water quality.
- Improvement of the water supply system.

#### **Wildlife and habitat**

- Wildlife habitat, increase and refuge of biodiversity.
- Better conditions for the development of vegetation.
- Displacement of species by habitat connectivity.



# There are three groups of principles for the design of green infrastructure

## Green Infrastructure

### Design Principles

#### **Sustainable design, urban interventions adapted to the development of GI**

- Mimicry of natural processes for the management of water resources.
- Polyfunctionality of Green Infrastructure, including educational, productive, recreational and urban functions.
- Increasing and strengthening of environmental services.

#### **2. Integral design principles with a focus on permaculture**

- Creation of synergy between different types of intervention.
- Diversity of beneficial species.
- Recycling of natural resources.

#### **3. Design principles applied based on the Watershed Management Group**

- Rainwater management from the highest part of the basin to be intervened.
- Collect, spread, slow down and infiltrate rainwater.
- Creating systems with multiple interconnected GI techniques.
- Overflow prevention.



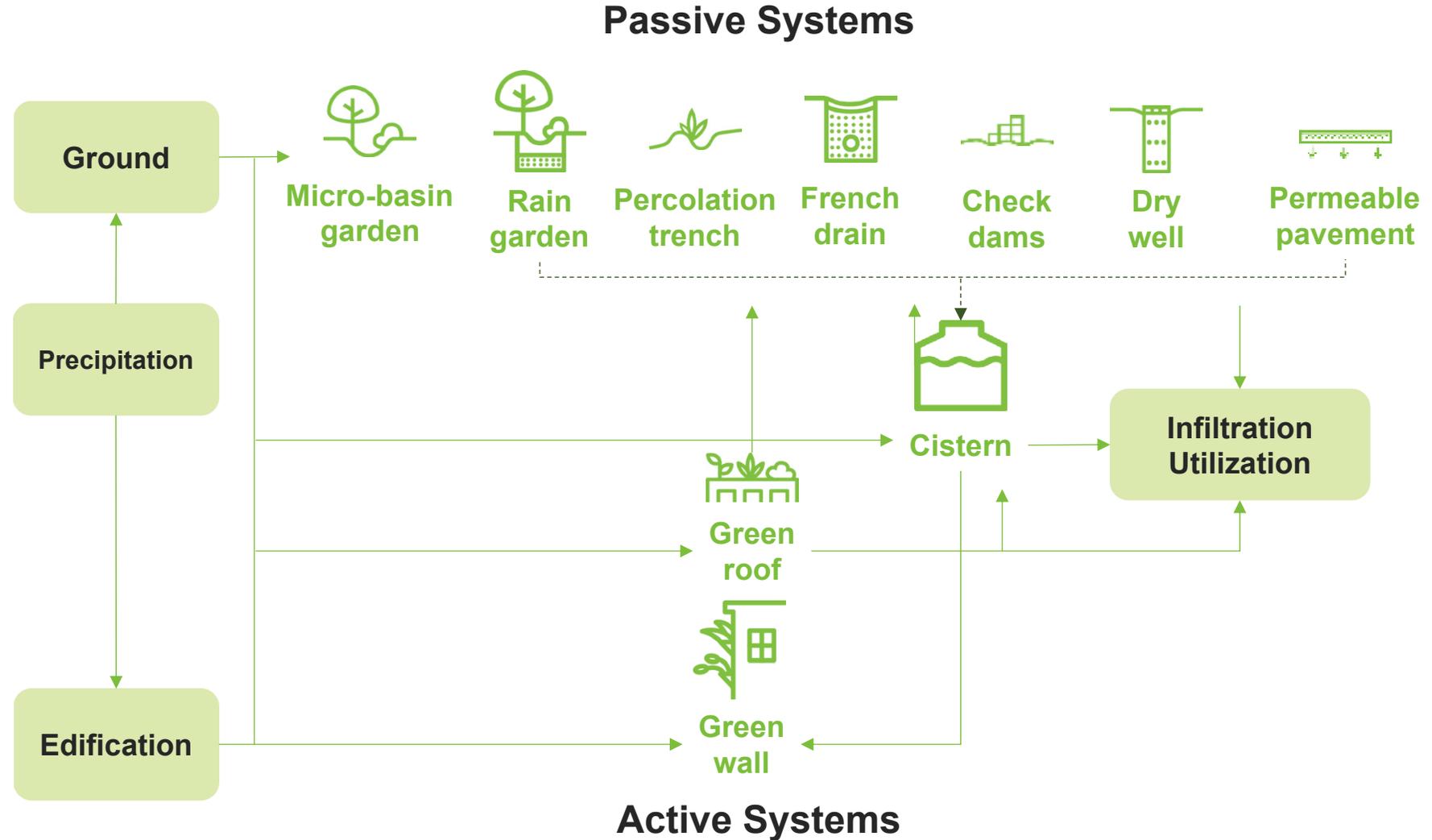
# GI techniques are classified accordingly to their purpose

## Green Infrastructure

### Micro-scale Techniques

**Passive Systems.** Require external inputs only for their maintenance (pruning, irrigation for a defined time, cleaning) once they have been installed or built.

**Active Systems.** Require external inputs for their maintenance and operation (energy, work, materials) after having been installed or built.



**Green Infrastructure**  
**Micro-Scale techniques** (1/2)  
Micro-basin gardens





# Micro-basins gardens are employed for the retention and infiltration of rainwater (1/2)

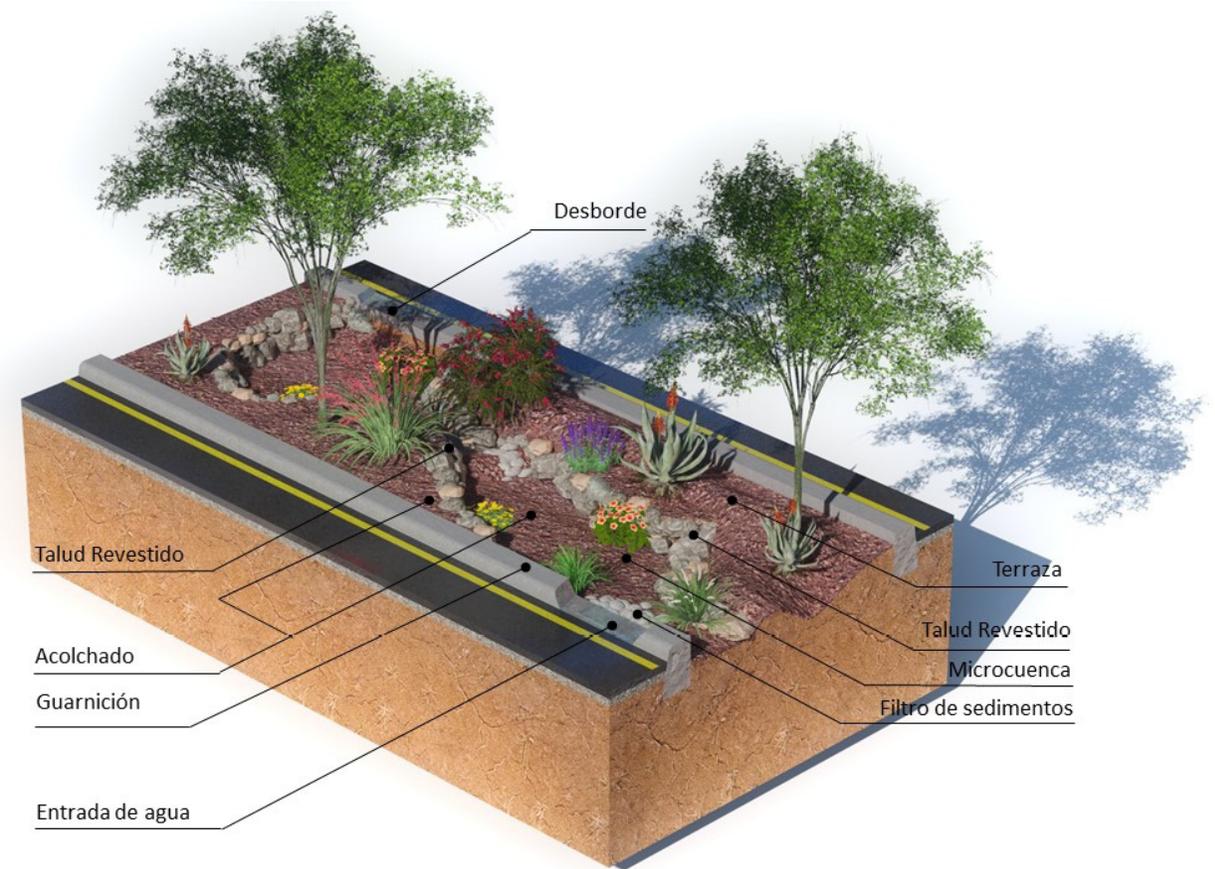
## GI Micro-Scale techniques

### Micro-basin gardens

Also known as infiltration basins, it is gardens with cavities formed in the ground so that they reach a lower level than the adjacent surfaces to capture rainwater.

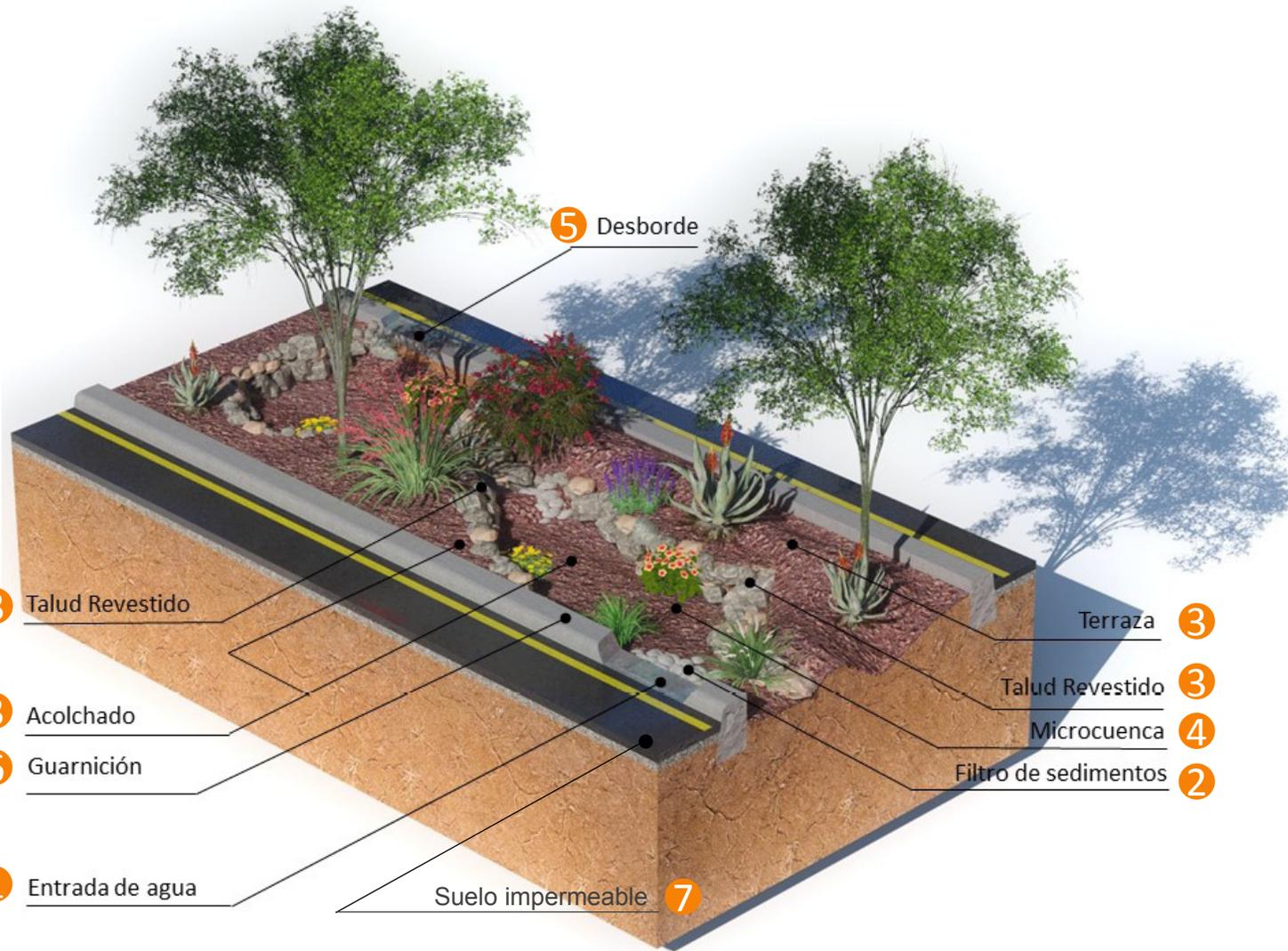
### Benefits

- Low cost, if included in new road works, its cost is comparable to that of building regular flowerbeds.
- Does not require specialized technical knowledge.
- Appropriate virtually for any permeable area.
- When adequately designed, a set of micro-basins can be employed for landscaping.
- They can be used to capture, harness and infiltrate greywater in domestic and productive spaces.





# Micro-basins gardens are employed for the retention and infiltration of rainwater (2/2)



## GI Micro-Scale techniques

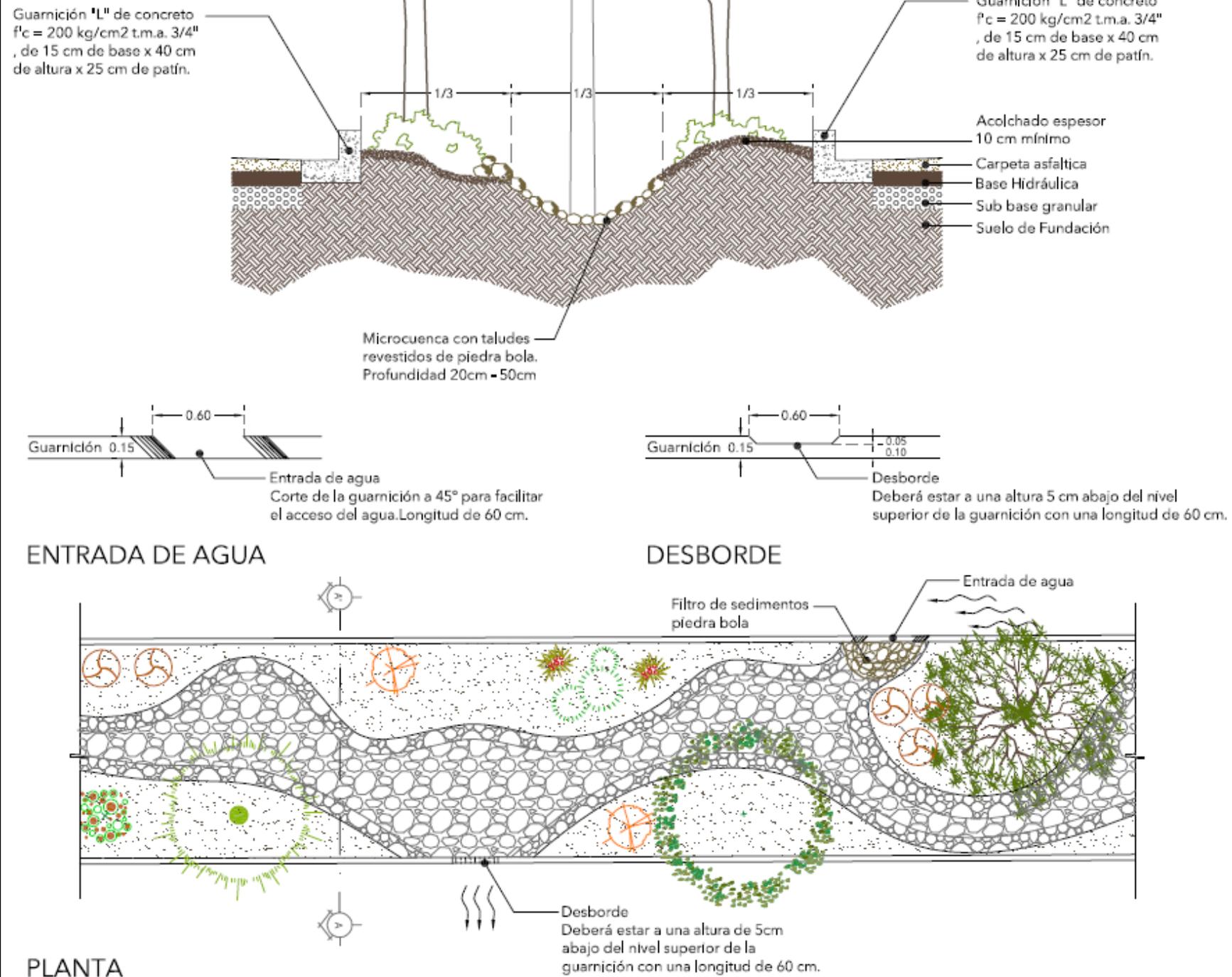
### Micro-basin gardens specifications

Component	Dimensions	Description
1. Water feed	40 cm in base.	Required.
2. Sediment filter	30 cm radius.	Required. Ensures long-term performance.
3. Bedding	05 cm, minimum.	Required. Reduces evaporation and improves plant conditions.
4. Micro-basin	10 cm, min. depth.	Required for water sequestration.
5. Overflow buffer	<b>Garnish cut:</b> 5 cm below the top level of garnish. <b>Border:</b> 10 cm below the level of the margin	Required if its design is lineal. Otherwise it is recommended for better rainwater flow control.
6. Side	10 cm (min.) height above the natural ground level.	Required on sidewalks to prevent accidents. Or in multi-basin systems.
7. Impermeable soil	Depends on the area.	If present, must be adapted to direct the rainwater into the basin.



# The GI Manual Includes the schematics examples for each type of intervention

**Micro-basin gardens**  
Constructive details



**Green Infrastructure**  
**Micro-Scale techniques** (2/2)

Green Roofs





# Green roofs consist of installations on roofs that allow the development of vegetation (1/2)

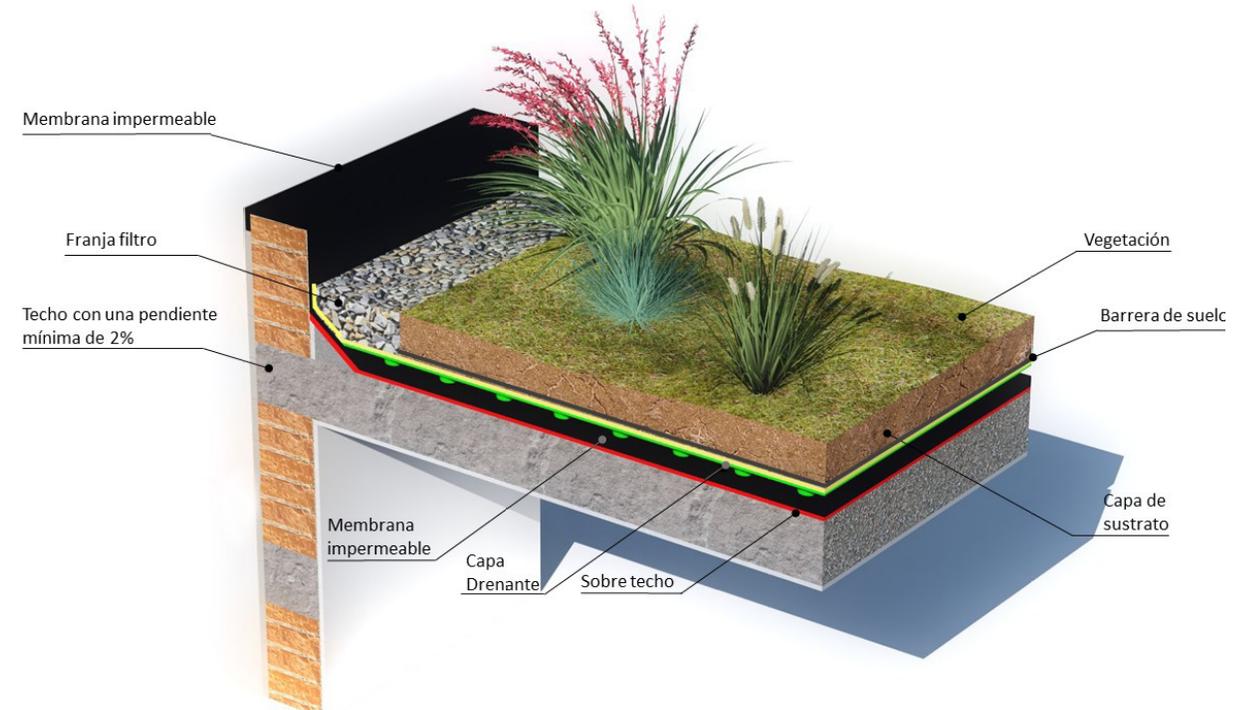
## GI Micro-Scale techniques

### Green roofs

It should be noted that a green roof is not simply a cover with pots. The green roof is made up of a series of layers to achieve its purpose, thereby avoiding damage to the building. The main layers include: vegetation, irrigation system, substrate layer, soil barrier, drainage (drainage layer), and waterproof membrane. They can be installed in new or existing buildings.

### Green roofs are classified into two types

- **Extensive.** Light green roofs, with a shallow substrate layer of maximum 20 centimeters.
- **Intensive.** Heavier green roofs with a substrate layer of at least 20 centimeters. They are commonly the type of Green Roofs used to house human activities.
- Both solutions can be combined into a single one.



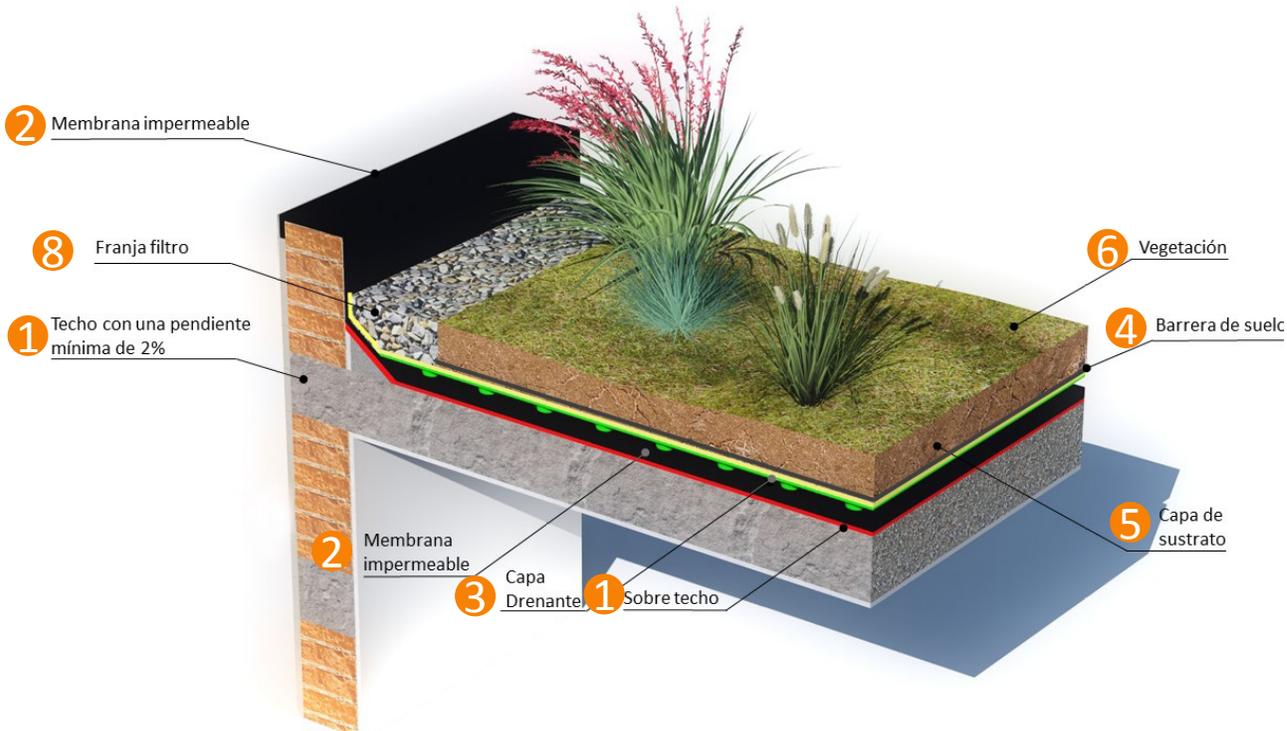
In arid weather, this option presents an opportunity to develop systems that do not require irrigation through the selection native vegetation



# Green roofs consist of installations on roofs that allow the development of vegetation (2/2)

## GI Micro-Scale techniques

### Green roofs specifications

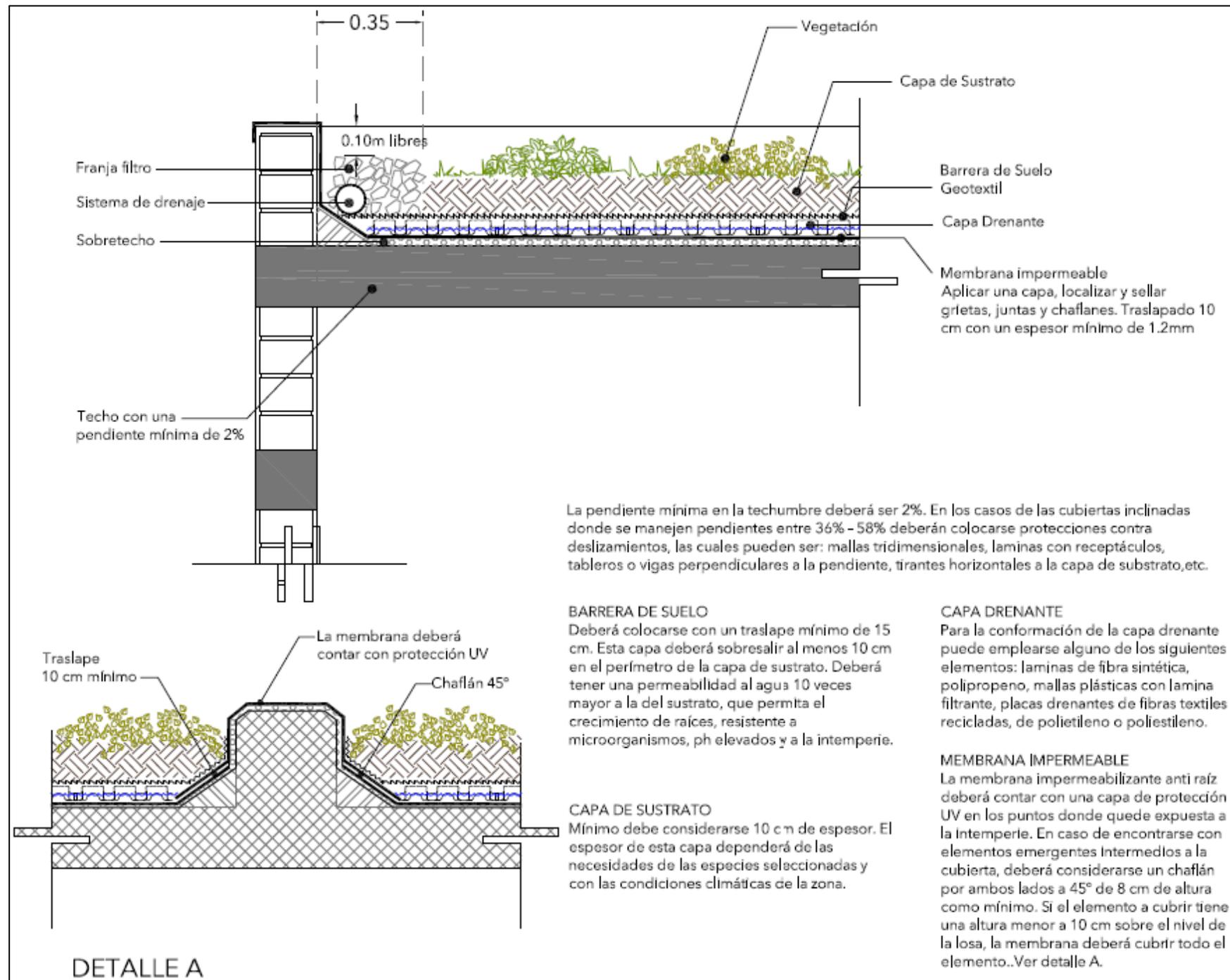


Component	Dimensions	Description
1. Roofing	Depends on the area.	A roof structure that supports the weight of the system (min. 78 kg/m <sup>2</sup> ) and a slope of min. 2% with a water evacuation system.
2. Waterproof membrane	Depends on the area.	Required for long-term performance.
3. Draining layer	25%, minimum porosity. 02 cm, minimum thickness.	Required to evacuate water and protect both vegetation & building.
4. Soil barrier	02 mm, minimum thickness.	Prevents clogging of the draining layer.
5. Substrate layer	10 cm, minimum thickness. 20 cm, maximum (extensive). 20 cm, minimum (intensive).	Required to retain water and nourish the vegetation.
6. Vegetation	Depends on the area.	Extensive: Creeping succulents (desert). Intensive: Can house shrubs and trees.
7. Drainage system	10 cm, minimum diameter.	Required to drain the water from the building
8. Filtering border	20 cm, minimum thickness.	Required to improve water draining.



# The GI Manual Includes the schematics examples for each type of intervention

**Green Roofs**  
Constructive details



# The Botanical Catalog Of Hermosillo





# The Technical standard of GI for Hermosillo contains the legal framework for the Botanical Catalog

**ARTICLE 26.** The vegetation to be used in any Green Infrastructure intervention should be of species with low water requirements and preferably native.



# Hermosillo's Botanical Catalog



# Hermosillo's Botanical Catalog

## Opuntia leptocaulis

**Nombre común:** Tasañillo, cibiri  
**Common Name:** Christmas cholla

Familia: Cactaceae  
Distribución: Sureste de Arizona (EE. UU.) y norte de México.  
Hábitat: Desiertos, llanuras, cañones.

### DATOS GENERALES



### MEDIDAS (DESARROLLADO)

ALTIMA	2.00 m
COPA Ø	2.00 m
TALLO Ø	0.05 - 0.08 m

### BIODIVERSIDAD

- Los segmentos del tallo son fácilmente dispersados por el ganado.
- Su distribución y abundancia aumentan por la actividad humana.

### USOS



**OBSERVACIONES**

- Su fruto es conocido entre los hispanoamericanos como tasañillo y garambulito.
- Se debe cuidar de podredumbre en la raíz.

### TABLA CROMÁTICA

Período	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	OTRO
Comida													
Hojas/ Espina													
Corteza													
Flores													
Frutos													
Semillas													

## Pachycereus pringlei

**Nombre común:** Cardón, sahuero  
**Common Name:** Elephant cactus

Familia: Cactaceae  
Distribución: Desierto de Sonora, Baja California y Baja California Sur.  
Hábitat: Colinas bajas, laderas y planicies.

### DATOS GENERALES



### MEDIDAS (DESARROLLADO)

ALTIMA	10.00 - 20.00 m
COPA Ø	5.00 m
TALLO Ø	0.60 m

### BIODIVERSIDAD

- Su fruto es alimento para mamíferos, aves y reptiles.
- Sus flores son polinizadas por mariposas.
- Sirve de refugio para pequeños mamíferos y para nidación de aves.

### USOS



**OBSERVACIONES**

- La base de su tronco alcanza más de 15 m de diámetro.
- Se le ha estimado una longevidad mayor a los 200 años y un peso de 10 toneladas, se cree es el cactus más grande del mundo. Su fruto es alimento de enjambres y de las semillas se prepara un pavo o bebida.

### TABLA CROMÁTICA

Período	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	OTRO
Comida													
Hojas/ Espina													
Corteza													
Flores													
Frutos													
Semillas													



# The Botanical Catalog, classifies vegetation based on its biological and ecological characteristics and strategies

## Botanical Catalog General characteristics

PALETA VEGETAL  
HERMOSILLO



**Guaiacum coulteri**  
**Nombre común:** Guayacán  
**Common name:** Pockwood

Familia: Zygophyllaceae  
Distribución: México a Sudamérica tropical.  
Hábitat: Valles, planicies, lomeríos y llanuras pedregosas.

DATOS GENERALES			
FORMA	HOJA	ASOLEAMIENTO	RIEGO
RAÍZ	TRONCO	MANTENIMIENTO	CRECIMIENTO

MEDIDAS (DESARROLLADO)		
ALTURA	COPIA Ø	TRONCO Ø
3.00 - 12.00 m	3.00 - 8.00 m	0.50 m

**USOS**

PASAÍSTICOS   
COMUNES

**OBSERVACIONES**

- Sus poblaciones se han reducido por la utilidad de su madera de alta densidad. Por ello fue muy demandada para construcción de barcos. Debido a su crecimiento lento, en zonas húmedas actualmente es difícil encontrar especímenes con diámetros de tronco (DAP) de >100 cm, talla que era común antes de 1960.

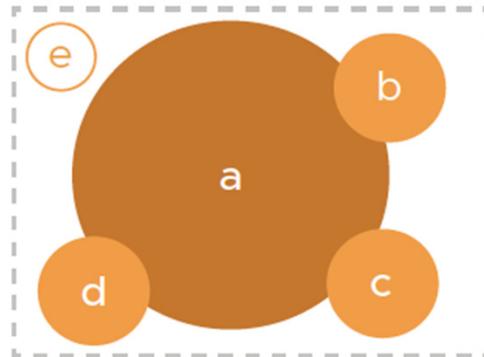
**BIODIVERSIDAD**

- Sus frutos son alimento de algunas especies como venados, jabalíes, tapres y pavos de monte.

**TABLA CROMÁTICA**

Periodo	INVIERNO			PRIMAVERA			VERANO			OTOÑO			
Comp.	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	%
Hojas													100%
Corteza													100%
Flores													100%
Frutos													100%
Semillas													100%

## 1 Species dossier



2 Species identity

3 General information

4 Uses

5 Dimensions

6 Observations

7 Biodiversity

8 Chromatic table

The botanical catalog classifies vegetation in 4 different categories:

Trees, Bushes, Succulents and Herbaceous plants.



## Forchhammeria watsonii

**Nombre común:** Jito, palo San Juan

**Common name:** Lollipop tree

**Familia:** Capparaceae

**Distribución:** Sonora, Sinaloa y Baja California Sur.

**Hábitat:** Planicies y valles, áreas moderadamente secas a secas.

### DATOS GENERALES

FORMA



HOJA



ASOLEAMIENTO



RIEGO



RAÍZ



TRONCO



MANTENIMIENTO



CRECIMIENTO



### MEDIDAS (DESARROLLADO)

ALTURA	COPA Ø	TRONCO Ø
7.00 m	6.00 m	0.30 - 1.00 m

### USOS



PAISAJÍSTICOS



COMUNES

### OBSERVACIONES

- En el folclore regional, se dice que: a su sombra se recomienda descansar, reflexionar y tomar sablas decisiones, mas si te duermes, los espíritus que moran en su copa te roban la razón.

### BIODIVERSIDAD

- Fuente de alimento para especies frugívoras, especialmente aves.
- Es aprovechado como especie nodriza por gran cantidad de organismos de flora y fauna, debido a que posee un denso follaje que brinda sombra la mayor parte del año.

### TABLA CROMÁTICA

Periodo Comp.	INVIERNO			PRIMAVERA			VERANO			OTOÑO			%
	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	
Hojas	[Green bar]												100%
	[Green bar]												75%
	[Green bar]												50%
	[Green bar]												25%
Corteza	[Grey bar]												100%
	[Grey bar]												75%
	[Grey bar]												50%
	[Grey bar]												25%
Flores	[White bar]												100%
	[White bar]												75%
	[Yellow bar]			[White bar]									25%
	[White bar]												100%
Frutos	[White bar]												100%
	[White bar]												75%
	[Red bar]				[White bar]								50%
	[White bar]												25%
Semillas	[White bar]												100%
	[Brown bar]						[White bar]						50%



## Caesalpinia pulcherrima

**Nombre común:** Tabachín de la sierra

**Common name:** Red bird of paradise

Familia: Fabaceae

Distribución: Originaria de Mesoamérica y del Caribe.

Hábitat: En clima cálido, semicálido y templado desde el nivel del mar hasta los 2000 msnm.

### DATOS GENERALES

FORMA



HOJA



ASOLEAMIENTO



RIEGO



RAÍZ



TRONCO



MANTENIMIENTO



CRECIMIENTO



### MEDIDAS (DESARROLLADO)

ALTURA	COPA Ø	TRONCO Ø
3.00 - 6.00 m	2.00 - 4.00 m	0.10 m

### USOS



PAISAJÍSTICOS



COMUNES

### OBSERVACIONES

- Puede soportar heladas de corta duración una vez establecida.

### BIODIVERSIDAD

- Atrae polinizadores.
- Se utiliza como cultivo trampa para el control de larvas en campos agrícolas.
- Esta especie tiene una relación simbiótica con ciertas bacterias del suelo que fijan Nitrógeno atmosférico.

### TABLA CROMÁTICA

Periodo Comp.	INVIERNO			PRIMAVERA			VERANO			OTOÑO			%
	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	
Hojas													100%
													75%
													50%
													25%
Corteza													100%
													75%
													50%
													25%
Flores													100%
													75%
													50%
													25%
Frutos													100%
													75%
													50%
													25%
Semillas													



M



## Carnegiea gigantea

Nombre común: Sahuaro

Common name: Saguaro

Familia: Cactaceae

Distribución: Desierto Sonorense.

Hábitat: Matorral desértico, arroyos y laderas.

### DATOS GENERALES

FORMA	HOJA	ASOLEAMIENTO	RIEGO
RAÍZ	TALLO	MANTENIMIENTO	CRECIMIENTO

### MEDIDAS (DESARROLLADO)

ALTURA	COPA Ø	TALLO Ø
16.00 m	3 m	0.75 m

### USOS



PAISAJÍSTICOS



COMUNES

### OBSERVACIONES

- Esta especie llega a ser abundante en el matorral desértico del Estado de Sonora.
- Alcanzan hasta 16 metros de altura y sus flores las producen en el ápice de los tallos.

### BIODIVERSIDAD

- Proporciona hábitat de nidificación para aves y pequeños mamíferos.
- Su fruto es alimento para muchas especies de mamíferos como coyotes, roedores y lagomorfos, así como para lagartijas y aves.

### TABLA CROMÁTICA

Periodo Comp.	INVIERNO			PRIMAVERA			VERANO			OTOÑO			%
	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	
Hojas/ Espina													50%
Corteza													50%
Flores													100%
Frutos													75%
													50%
													25%
Semillas													100%
													75%
													50%
													25%



## Penstemon parryi

**Nombre común:** Campanitas

**Common name:** Parry's beardtueue

Familia: Scrophulariaceae

Distribución: Desierto Sonorense, sureste de Arizona (EE.UU.) y Sonora.

Hábitat: Cauces, laderas y cañones.

### DATOS GENERALES



### MEDIDAS (DESARROLLADO)

ALTURA	COPA Ø	TALLO Ø
0.30 - 1.20 m	0.30 - 1.50 m	0.005 m

### USOS



### OBSERVACIONES

- Se desarrolla en suelos arenosos, secos y bien drenados.

### BIODIVERSIDAD

- Tiene valor especial para abejas nativas.
- Es polinizada por colibríes e insectos de lengua larga.
- Fuente de néctar para la mariposa *Battus philenor*.

### TABLA CROMÁTICA

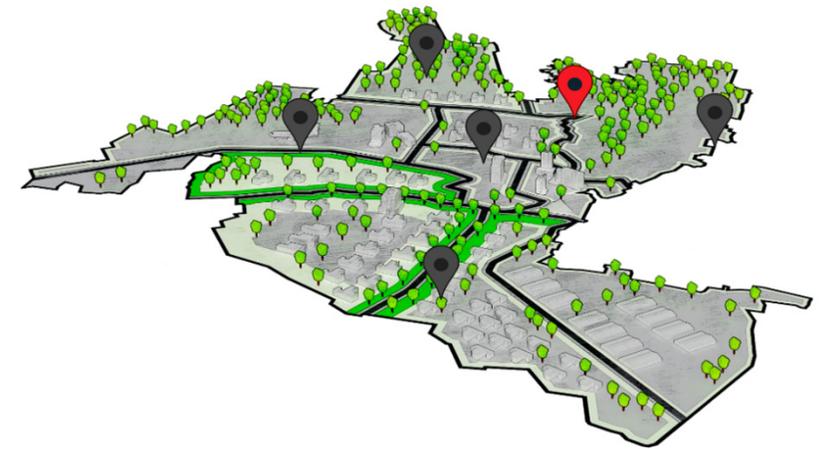
Periodo Comp.	INVIERNO			PRIMAVERA			VERANO			OTOÑO			%
	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	
Hojas													100%
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													25%
Tallos													100%
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Flores													100%
													75%
													50%
													25%
Frutos													100%
													75%
													50%
													25%
Semillas													100%
													75%
													50%
													25%

# Examples of GI In Hermosillo





## Demonstrative project Micro-basin



**Bld. José María Morelos,  
Hermosillo, Sonora, México**



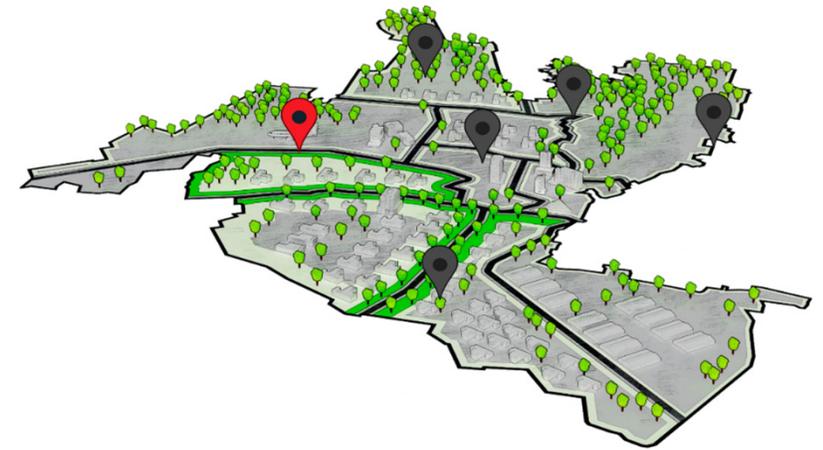
## Demonstrative project Rain Garden



**Centro de Rehabilitación y  
Educación Especial (CREE),  
Hermosillo, Sonora, México.**



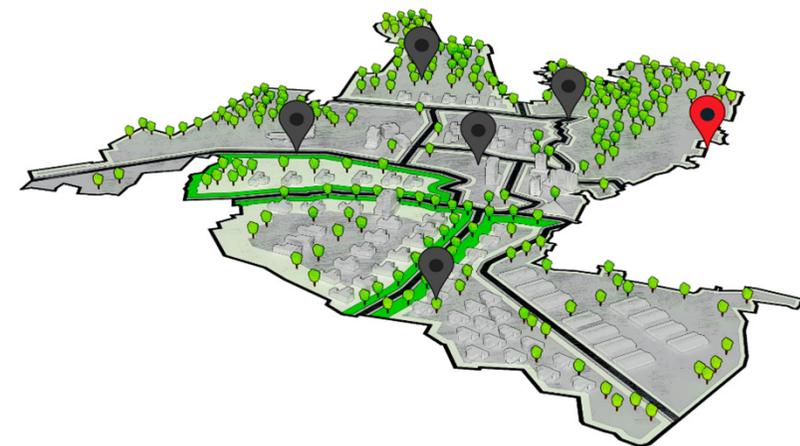
**Demonstrative project**  
**Rain Garden**



**Bulevar García Morales,  
Hermosillo, Sonora, México**



**Demonstrative project**  
Strip line restoration “Adopt a Boulevard”



**CAFFENIO**  
Bulevar Enrique Mazón,  
Hermosillo, Sonora, México



**Demonstrative project**  
**Micro-basin “Adopt a Boulevard”**



**Bulevar García Morales,  
Hermosillo, Sonora, México**



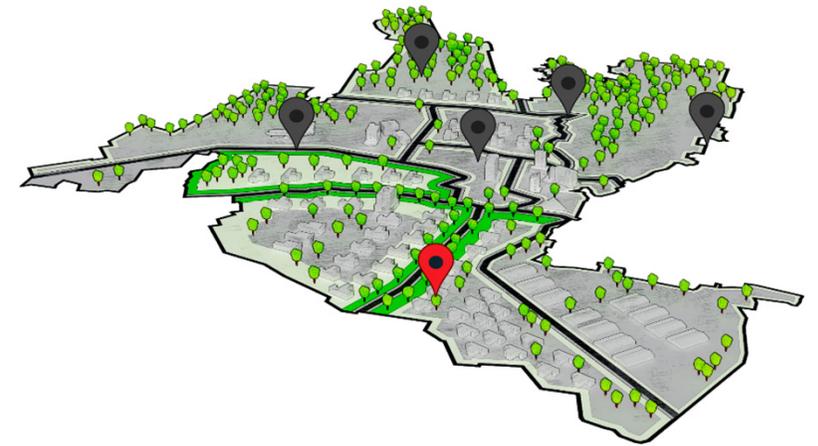
**Demonstrative project**  
**Micro-basin**



**Bulevar García Morales,  
Hermosillo, Sonora, México**



**Demonstrative project**  
**GI macro-intervention**



**Parque Altares , Hermosillo,  
Sonora, México**



**Demonstrative project**  
**GI macro-intervention**



**Parque Pueblitos,  
Hermosillo, Sonora, México**

# Candidate interventions for IURC exchange

Macro-Scale GI interventions





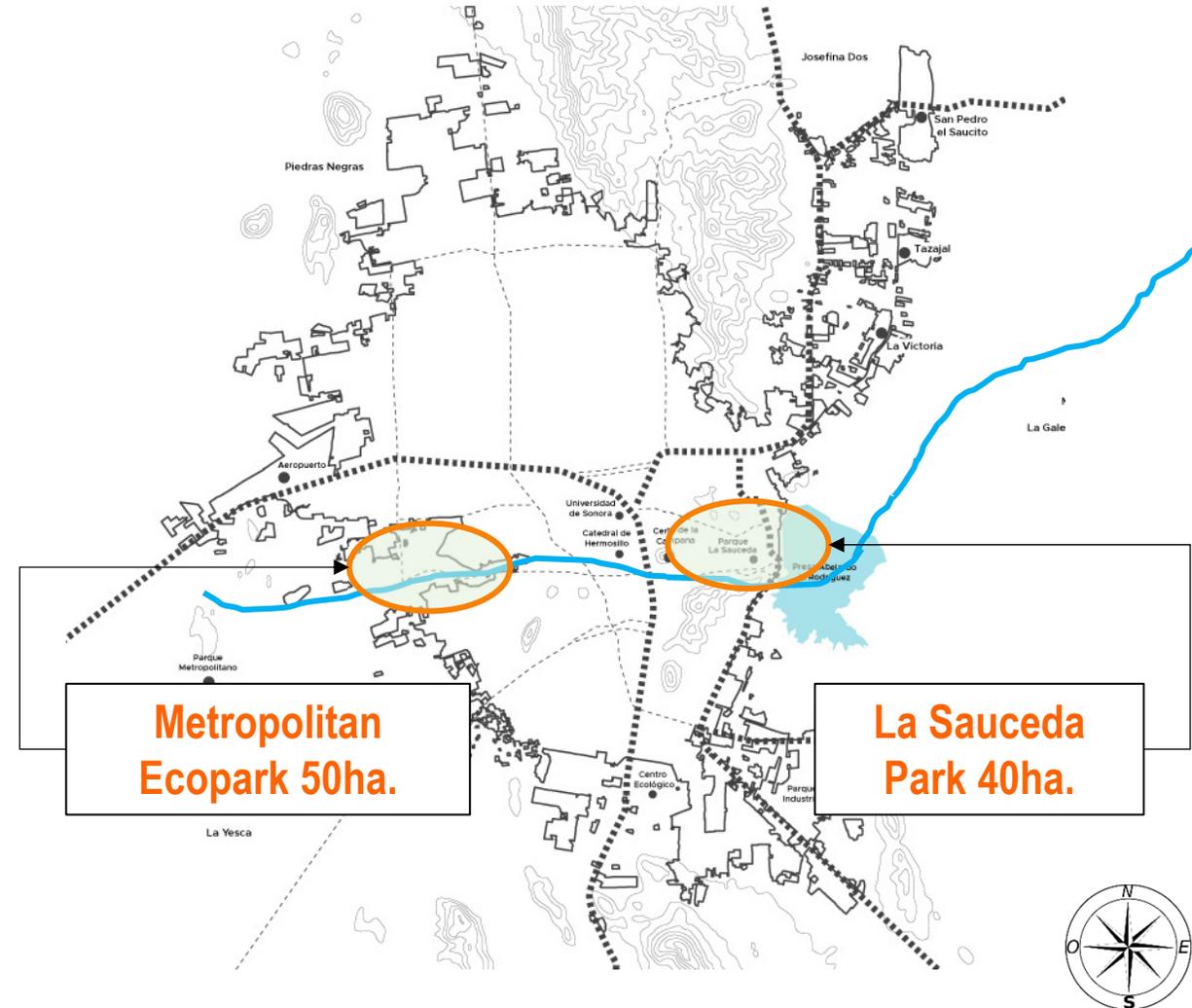
# Hermosillo is currently working on two macro projects for the intervention of public space

## Green Infrastructure in Hermosillo

### Macro-scale projects

### Objectives

- Developing Green infrastructure.
- Developing Blue infrastructure.
- Provide value to both locations as part of the biological corridor of the “Río Sonora”.
- Increasing green areas.
- Creating space for social and recreational activities.
- Improve nature’s services, such as the infiltration of water into the subsoil and carbon sequestration.





# La Saucedá Park is located at the confluence of two rivers: Río Sonora and Río San Miguel <sup>(1/4)</sup>

## Green Infrastructure in Hermosillo

Macro-scale projects, La Saucedá Park

Built in the 1990s, this park was operated for more than a decade, but due to increased water stress and after the conclusion of its operating concession, the site was abandoned.

### Features

- Area of 40 ha.
- Rescue of existing infrastructure.
- The wetland is fed with rejection water from the water purification plant.
- Urban forest.
- Urban regeneration interventions
  - Mobility, culture, sports equipment.
  - Wetland friendly landscaping, “TURENSCAPE”.



La Saucedá Park, circa 1994



# La Saucedá Park is located at the confluence of two rivers: Río Sonora and Río San Miguel (2/4)

## Green Infrastructure in Hermosillo

Macro-scale projects, La Saucedá Park



La Saucedá Park abandoned, circa 2016



Fire at La Saucedá Park, circa 2017



# La Sauceda Park is located at the confluence of two rivers: Río Sonora and Río San Miguel <sup>(3/4)</sup>

## Green Infrastructure in Hermosillo

Macro-scale projects, La Sauceda Park



La Sauceda Park, current state



La Sauceda Urban Park, concept



# La Saucedá Park is located at the confluence of two rivers: Río Sonora and Río San Miguel (4/4)

## Green Infrastructure in Hermosillo

Macro-scale projects, La Saucedá Park



La Saucedá Park, current state



La Saucedá Urban Park, concept



# La Saucedá Urban Park features 22 major interventions

## La Saucedá Urban Park

### Intervention list

1. La Saucedá wetland.
2. Picnic areas.
3. Urban garden.
4. Interactive farm (pet farm).
5. Children's playground area.
6. Sonora botanical garden.
7. Visitor center.
8. Recreational area.
9. Outdoor theater.
10. Wetland springs.
11. Main square.
12. Skate park.
13. Children's events area.
14. Gastronomic areas.
15. Cultural theater.
16. BMX area and canopy.
17. Interpretative garden.
18. Administrative office.
19. Wetland care center.
20. Dog park.
21. Jogging track and areas for physical activation.
22. East and west accesses.

# La Sauceda Urban Park





# The Metropolitan ECOPARK is a Natural Protected Area for remediation

## Green Infrastructure in Hermosillo

Macro-scale projects, Metropolitan ECOPARK

The Ecopark & The Jagüeyes lagoon system projects aim to promote the eco-restoration of an old stone material extraction site. Both projects have received an historical investment of over (USD) \$ 3 million.

### Features

- Area of 50 ha. (total).
- “Los Jagüeyes” Lagoon System:
  - Artificial reservoir that occupies 8 hectares.
  - Fed by a purple line 7,000 m<sup>3</sup> per day (80 L./S).
  - Fully paved access road (including 3 bridges).
- Sports equipment (cycling, basketball, exercising).
- Administrative office.



Metropolitan Ecopark, during its development stage



# The ECOPARK requires greater efforts to reach its maximum potential from the environmental and social perspective

## Green Infrastructure in Hermosillo

Macro-scale projects, Metropolitan ECOPARK

### **Vision**

- Since its inception, the project has boosted plant cover and diversity, regional and migratory waterfowl has establish along other terrestrial animals, transforming the site into a location for nesting, which is generating environmental services and promoting outdoor activities like bird watching and ornithology.
- The development of the Metropolitan ECOPARK includes the construction and equipment of recreational & sports space, as well as creating meeting points for social engagement and the promotion of sustainable development.



Metropolitan Ecopark, restoration of flora and fauna



# The Metropolitan ECOPARK features 24 major interventions

## Metropolitan ECOPARK

### Intervention list

1. Soccer field.
2. Basketball court.
3. Baseball field.
4. Jogging track
5. Cycling track.
6. Mountain biking trail.
7. Parking lot.
8. Equipment for water activities.
9. Exercise machines.
10. Walking trails.
11. Pentathlon park.
12. Community square.
13. Food-trucks.
14. Canine park.
15. Palapas.
16. Recreational dock.
17. Lookout.
18. Childish games.
19. Public toilets.
20. Aerators.
21. Afforestation with native plants.
22. Nursery.
23. Bird watching tower.
24. Urban gardens.





**Thank you!**



H. AYUNTAMIENTO DE  
**HERMOSILLO**  
IMPLAN