Keeping the Green Green

Maintaining Plant Health and Trimming Guidance

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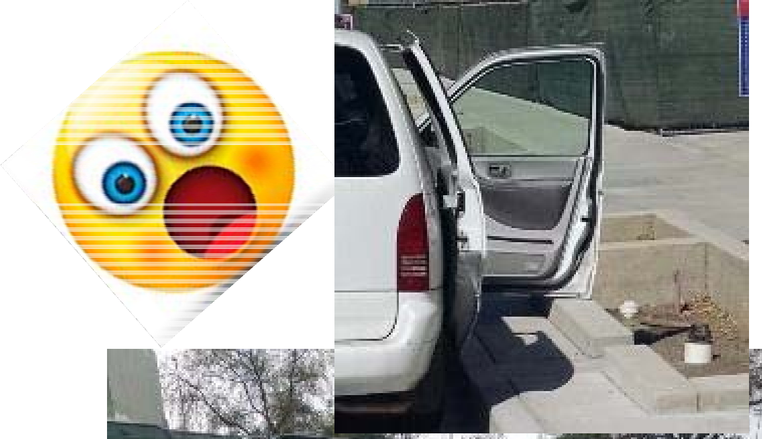
CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

The Run Down...

- Bioretention **within the public right-of-way**
  - Location, location, location!
  - What do they look like?
- Healthy plants start with good design
  - Plant selection & appropriate spacing
- The general needs of plants
  - Moisture, nutrients, and care
- Winning plants, and what to expect of them
  - A focus on forbs (herbaceous perennials) and graminoids (grasses)
- Conclusion
- Questions/Discussion

Location, location, location!



Heavy traffic

High speeds

(>35 mph)

Excess trash & sediment

Multiple accidents

- **Loss of trees and plants**
- **Excess pollutant intrusions**
- **Costly facility repairs**

Is this appropriate for habitat?

Heavy traffic

Low speeds

(< 30 mph)

Heavy parking

High pedestrian use (including dog walking)

Use of facility as “park bench”

High trash, sediment, and dog waste

Illegal dumping

Bioretention within the public right-of-way

Generally speaking:

- Designed with a simple palette limited to no more than 3 plant species per treatment
- Align plants in rows for ease of maintenance
- Select plants with limited need for trimming or pruning

A simple plant palette (3 or less species)

Maintenance Frequency: Monthly

- Low traffic area
- Low pedestrian activity
- Single species
- Blends with natural area
- Plants set back from edge of concrete (spray irrigation, too!)
- Easy clean-up and plant care
- Irrigation checked monthly
- After six years, plants were dug up, divided, and replanted: **60% survival of replant**

Maintenance Frequency: Twice Monthly

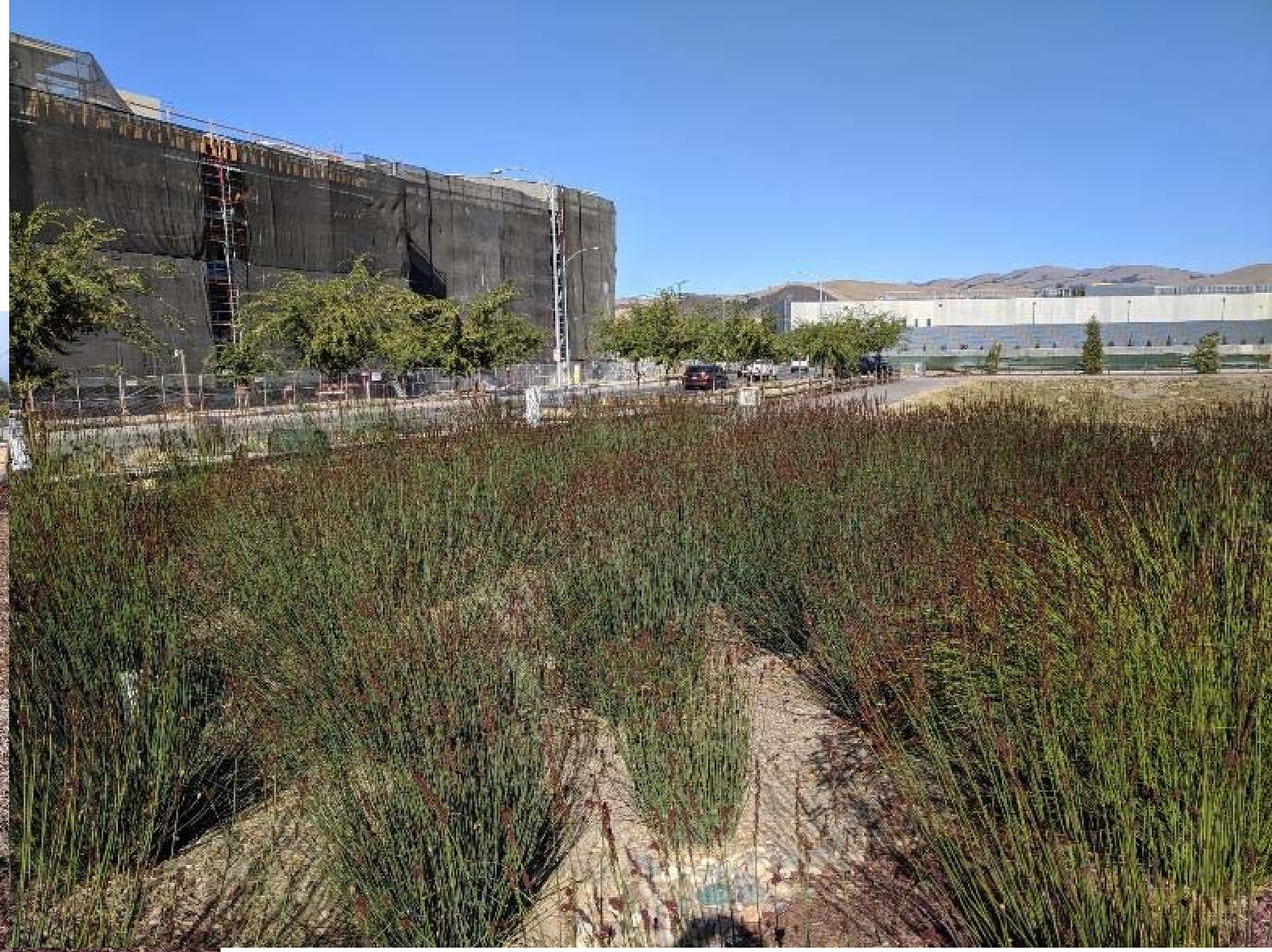
- Low traffic (cul-de-sac)
- Low pedestrian
- High long-term parking
- Five plant species
- Plants quickly crowded each other, causing greater maintenance
- Drip irrigation set on surface (under mulch)
- Challenging location
  - Adjacent properties are poorly maintained
  - Abandoned vehicles are frequent
  - Homelessness
- Maintenance cycle: twice a month (should be weekly due to location)

A bit about plant spacing…

Crowding = Frequent pruning

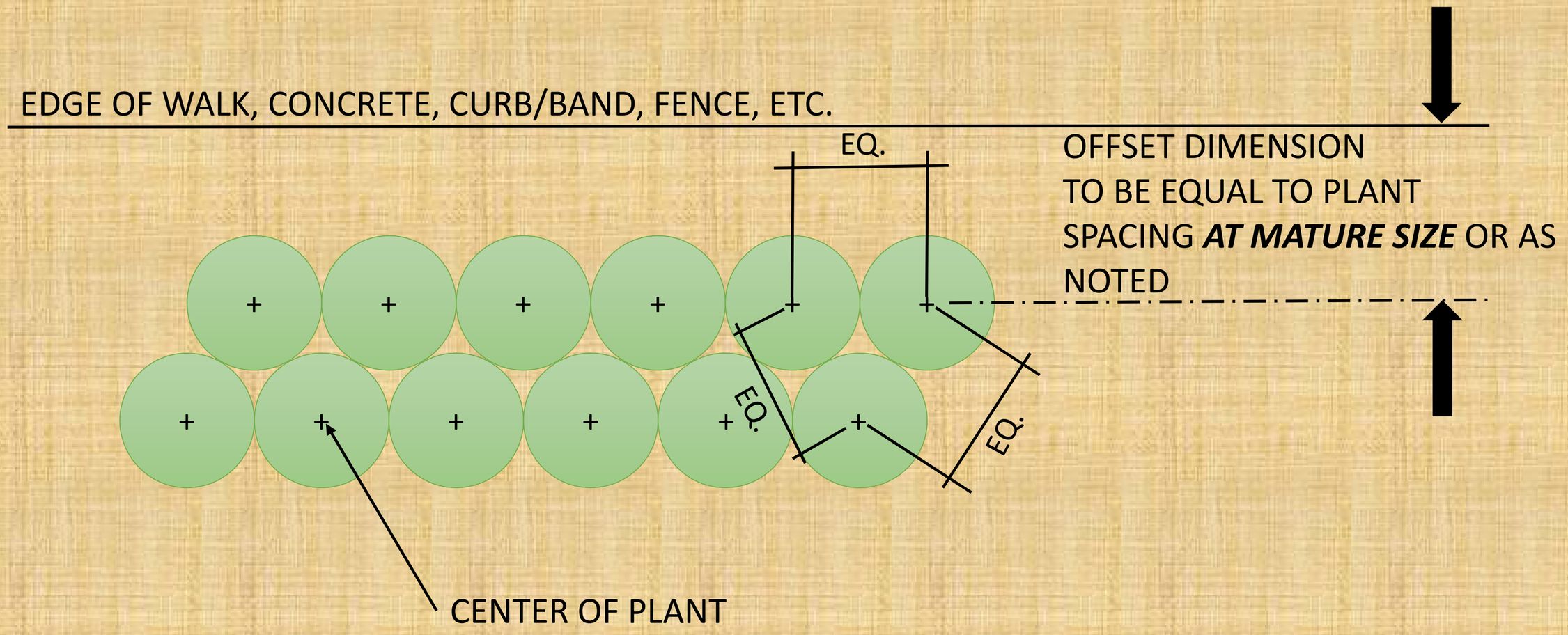
Maintenance Frequency: Twice Monthly

Appropriate spacing



Growth within two years

City of San José, Shrub Spacing Detail



NOTES:

1. SEE PLANTING PLAN SHEETS FOR PLANT SPACING.
2. PLANTING OF TREES AND SHRUBS IS IN A NARROW RANDOM PATTERN AND ARE NOT TO BE INSTALLED WITHOUT THE ENGINEER'S AND DISTRICT ARBORIST'S APPROVAL. THE DISTANCE A SHRUB TO BE PLANTED FROM A FENCE IS EQUAL TO THE DIAMETER OF THE MATURE PLANT.

Mostly appropriate spacing

Plant stress is more likely to occur with under watering than overwatering in bioretention soil mix.

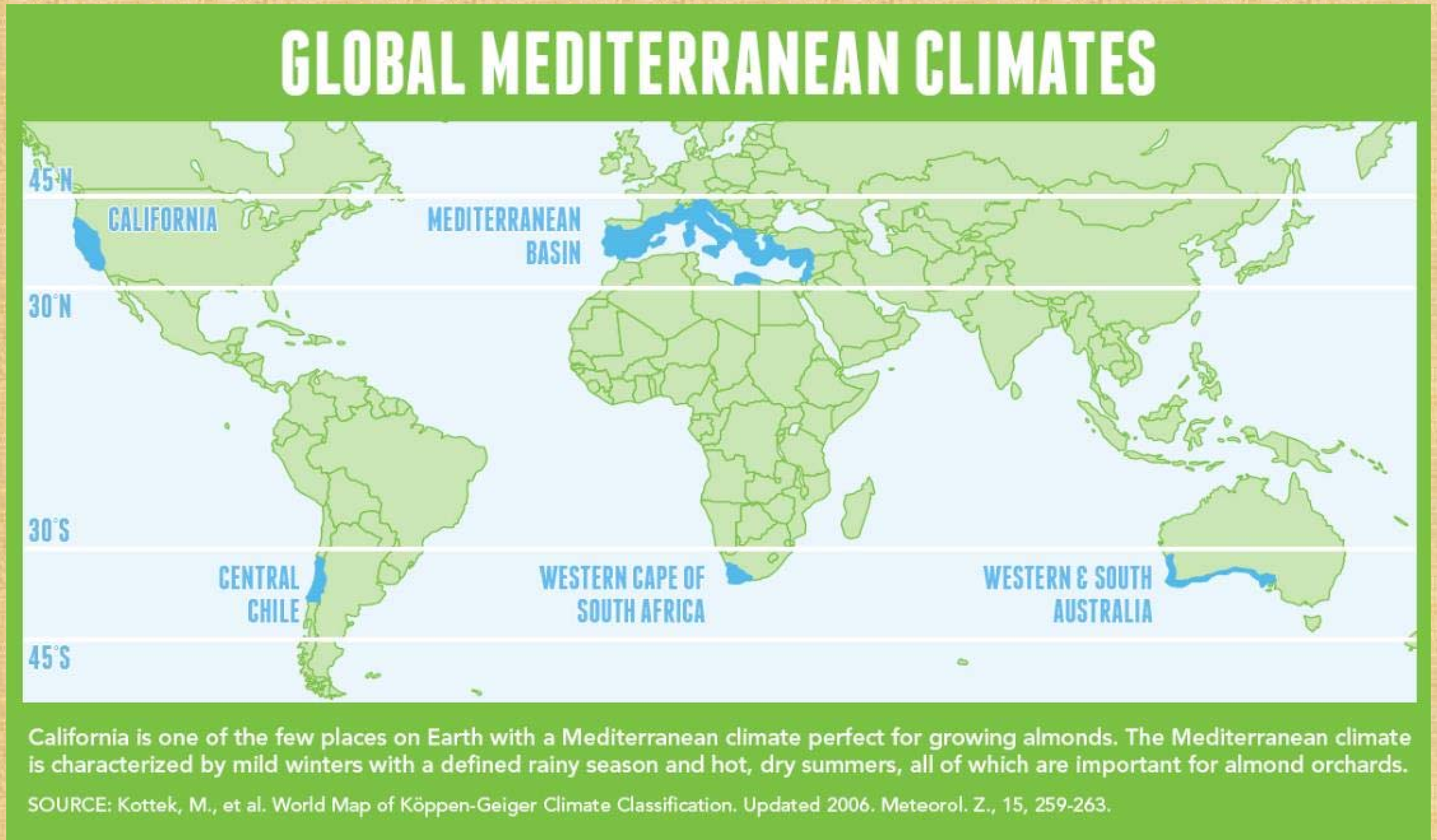
- If irrigation is shut off (malfunctioned, schedule altered, or vandalized), plants may begin to show signs of stress within one week.
- Overwatering is unlikely in sandy soil.
- “Drought tolerant” does not mean no supplemental water required.

What do we do to sustain plant health?

- Monitor the irrigation system throughout dry periods, including winter
- Maintain mulch layer all year:
  - Extends irrigation cycles by keeping the soil more moist
  - Reduces weed competition
  - Minimizes soil erosion and scouring that could expose plant roots
  - Provides nutrients to plants (no fertilizer necessary)

Lawn to Garden

A word about where we live: Mediterranean



Winning Plants, Their Care, and What to Expect from Them

Chondropetalum tectorum

Cape rush

Origin: South Africa

Evergreen perennial

Height & Width: 3’ to 4’ H. & spreading

Care: Remove old/dead leaves only. If entire plant needs reinvigorating, cut back entire plant in spring to small mound (will be slow to recover). If plant is too big, lift plant, divide root ball, and plant (may be slow to recover).

Village Nurseries

Winning Plants, Their Care, and What to Expect from Them

Juncus patens

rush

Origin: California & Oregon

Evergreen perennial

Height & Width: 2’ and spreading

Care: Remove old/dead leaves only by way of dethatching by hand with rubber gloves. If entire plant needs reinvigorating, cut back entire plant in late winter (will be slow to recover). If plant is too big, lift plant, divide root ball, and plant (may be slow to recover).

Pinterest

Winning Plants, Their Care, and What to Expect from Them

Lomandra hystrix ‘Katie Belles’

mat rush

Origin: Australia

Evergreen perennial

Height & Width: 4’ to 6’ and spreading (other cultivars are smaller)

Care: Remove old/dead leaves. If plant is too big, lift plant, divide root ball, and plant (may be slow to recover).

PlantRight

Winning Plants, Their Care, and What to Expect from Them

Achillea ‘Moonshine’

yarrow

Origin: Europe, Western Asia

Evergreen perennial

Height & Width: 2’ when in bloom & spreading

Care: Deadhead spent flowers, divide clumps as necessary.

Winning Plants, Their Care, and What to Expect from Them

Festuca californica

California fescue

Origin: Northern California to Oregon

Perennial, evergreen grass

Height & Width: 2’ high x 2’ wide

Care: Deadhead spent flowers; dethatch with rubber gloves; divide larger plants in fall; greener with more water

Pinterest

Life span of clumping or rhizomatous plants

In Memoriam…

- ***Deschampsia caespitosa***, or tufted hair grass: Intolerant of extended dry periods
- ***Iris douglasiana***, or Douglas iris: Intolerant of competitive plants; does not appear to handle disturbances
- ***Leymus triticoides***, or Lagunita wild rye: Aggressive spreading habit when well hydrated, crowding out other species and causing frequent trimming, however does not tolerate dry periods
- **“Biofiltration Sod”**: The public mistakes it for lawn; difficult to maintain in highly constricted spaces.

Wrap up…

- Location, location, location!
  - Bioretention within public rights-of-way should be evaluated for their location to determine 1) maintenance budget , 2) vehicle/pedestrian levels of service, 3) frequency of maintenance, and 4) if the location can support habitat
- Keep the plant palette simple, unless location and budget allows for higher diversity and maintenance.
- Proper plant spacing reduces maintenance.
- “Drought tolerant” does not mean no supplemental watering (plants are most vulnerable if irrigation breaks).
- Well maintained mulch will extend moisture, suppress weeds, and provide nutrients.
- Plants adapted to Mediterranean climates are well suited for site conditions.

A follow-up question: We continue to focus on forbs and graminoids, but what opportunities are there to utilize shrubs and subshrubs that could sustain longer periods of drought?

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