FDOT TRANSPORTATION SYMPOSIUM 2019

Planning for Trees and Tree Maintenance on FDOT Roadways

Darryl Richard, District Landscape Architect

FDOT TRANSPORTATION SYMPOSIUM

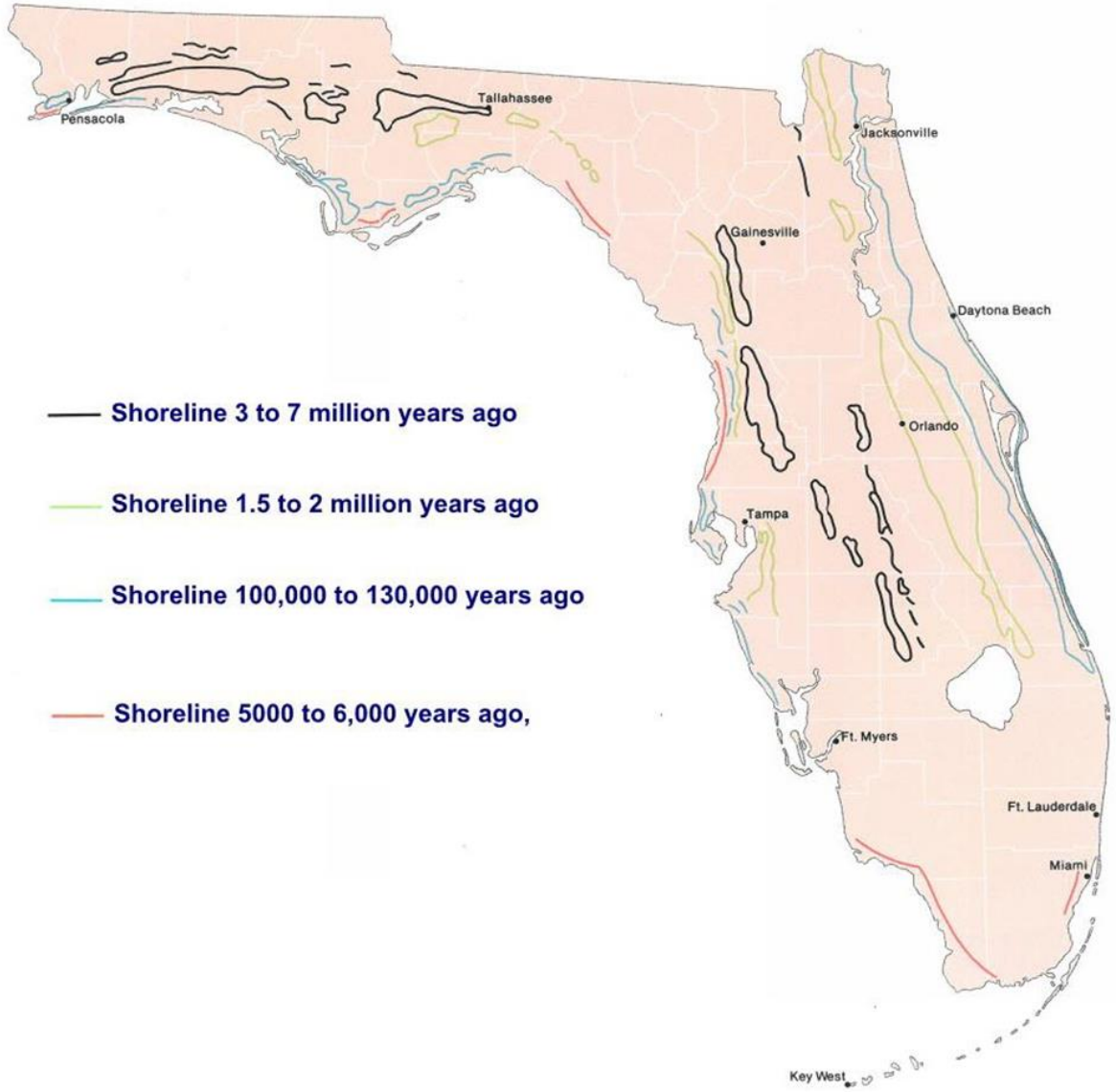
FDOT TRANSPORTATION SYMPOSIUM

FDOT TRANSPORTATION SYMPOSIUM

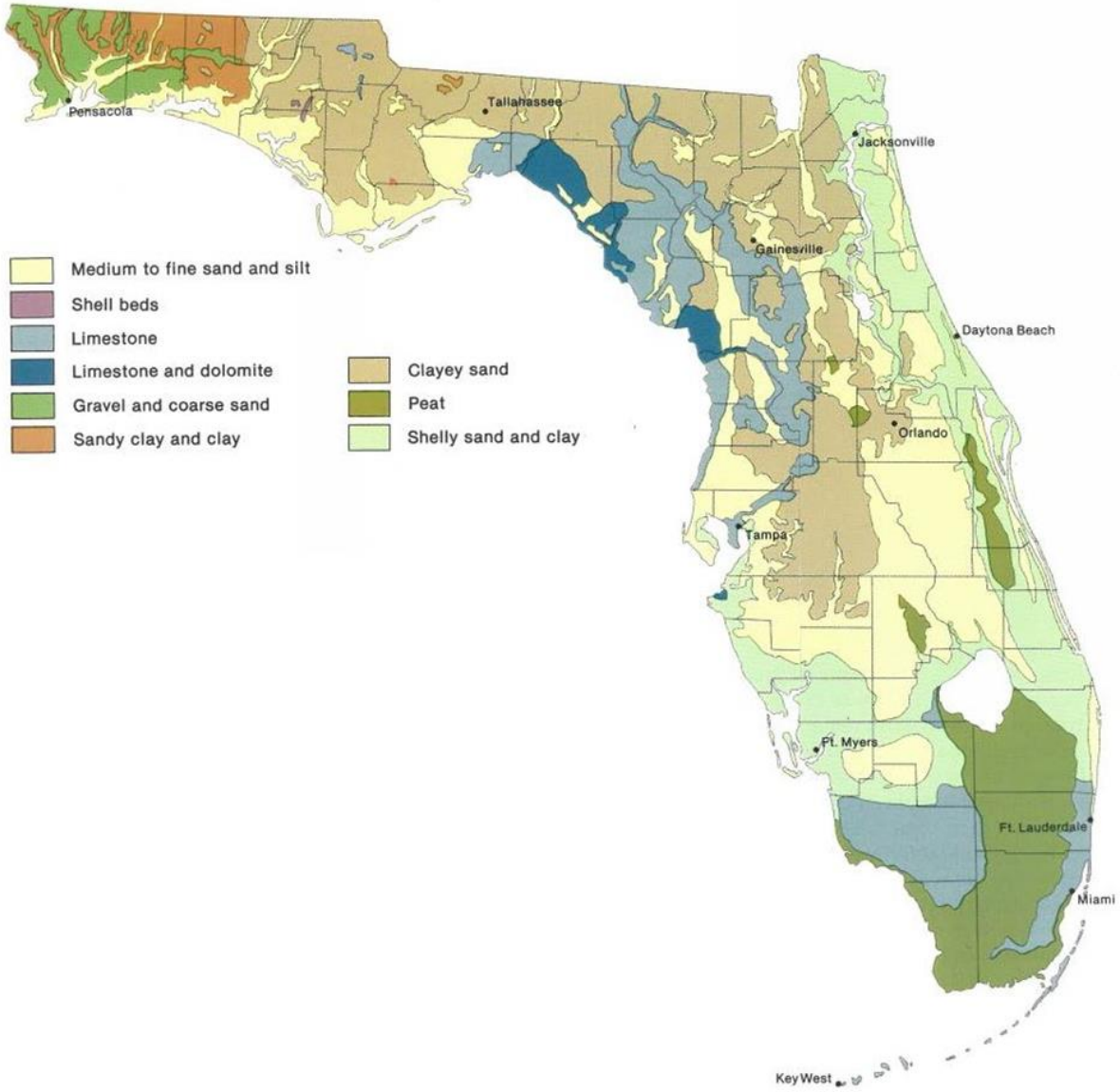
FDOT TRANSPORTATION SYMPOSIUM

“The Earth and myself
are of one mind.”
Joseph (Chief) 1840 – 1904; Nez Perce Native Indian

Ancient Shorelines

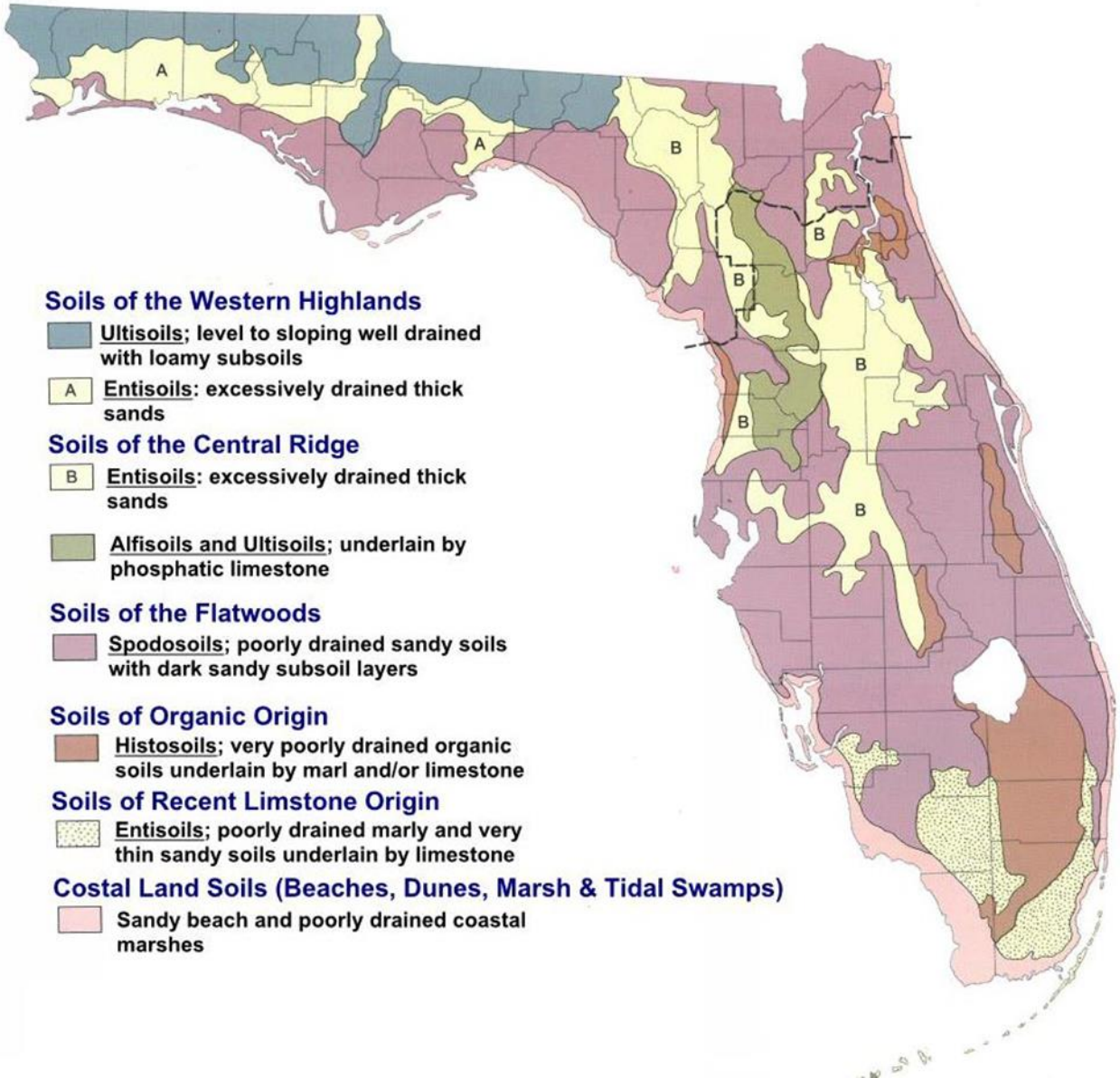


Environmental Geology



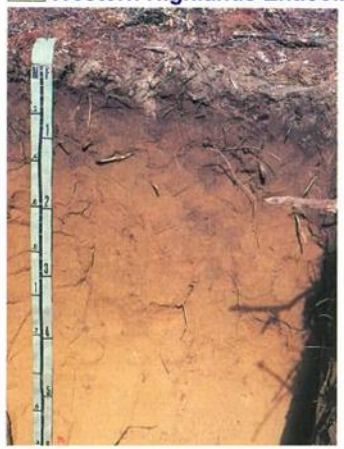
FDOT TRANSPORTATION SYMPOSIUM

Florida Soils

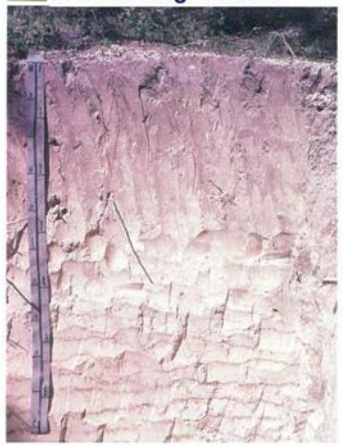


Western Highlands Ultisoils

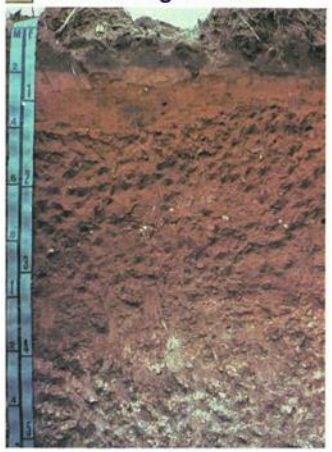
A Western Highlands Entisoil



B Central Ridge Entisoil



Central Ridge Alfisoil



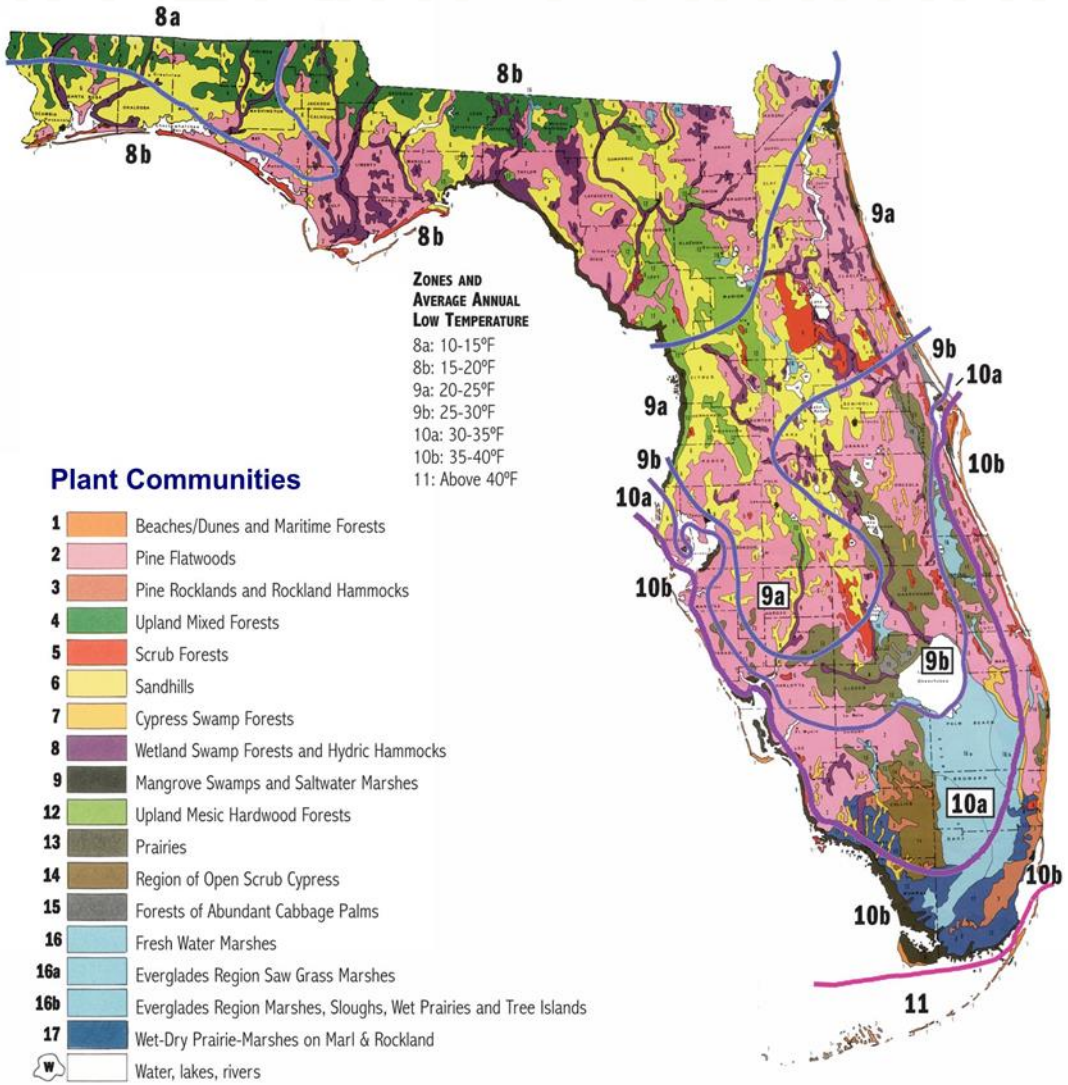
Flatwoods Spodosoil

Histosoil

Entisoils of Recent Limestone Origin

FDOT TRANSPORTATION SYMPOSIUM

Native Plant Communities



FDOT TRANSPORTATION SYMPOSIUM

Upland Hardwood Forest

Southern Magnolia (*Magnolia grandiflora*)

Florida maple (*Acer saccharum*)

Sweetgum (*Liquidambar styraciflua*)

Florida maple (Acer saccharum)

Live oak (Quercus virginiana)

Loblolly pine (*Pinus taeda*)

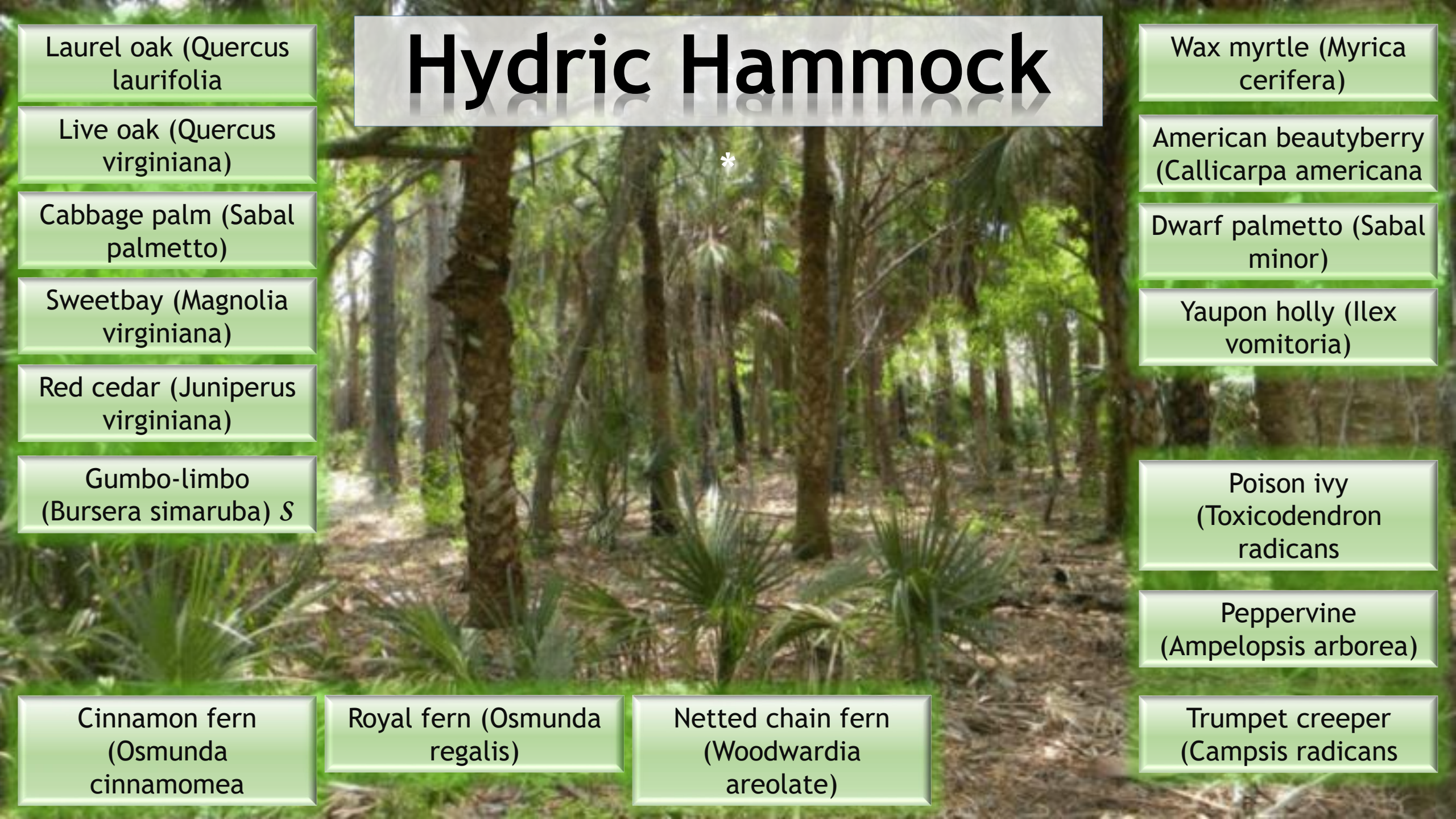
American holly (*Ilex opaca*)

Eastern redbud (*Cercis canadensis*)

Virginia creeper (Parthenocissus quinquefolia)

Trilliums (*Trillium spp.)*

Hydric Hammock



Laurel oak (Quercus laurifolia

Live oak (Quercus virginiana)

Cabbage palm (Sabal palmetto)

Sweetbay (Magnolia virginiana)

Red cedar (Juniperus virginiana)

Gumbo-limbo (Bursera simaruba) *S*

Wax myrtle (Myrica cerifera)

American beautyberry (Callicarpa americana

Dwarf palmetto (Sabal minor)

Yaupon holly (Ilex vomitoria)

Poison ivy (Toxicodendron radicans

Peppervine (Ampelopsis arborea)

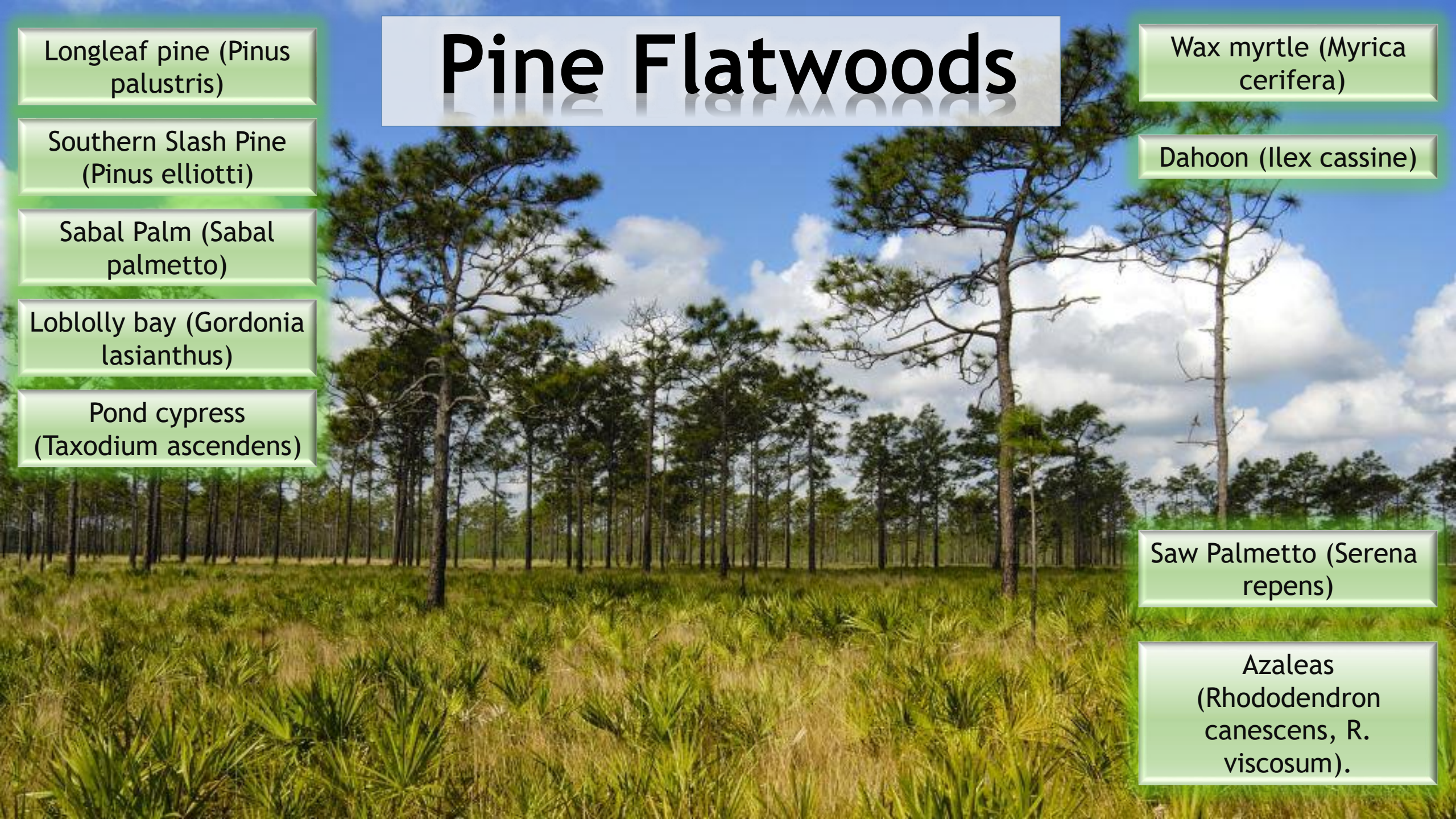
Cinnamon fern (Osmunda cinnamomea

Royal fern (Osmunda regalis)

Netted chain fern (Woodwardia areolate)

Trumpet creeper (Campsis radicans

Pine Flatwoods



Longleaf pine (Pinus palustris)

Southern Slash Pine (Pinus elliotti)

Sabal Palm (Sabal palmetto)

Loblolly bay (Gordonia lasianthus)

Pond cypress (Taxodium ascendens)

Wax myrtle (Myrica cerifera)

Dahoon (Ilex cassine)

Saw Palmetto (Serena repens)

Azaleas (Rhododendron canescens, R. viscosum).

Diagram for group plantings

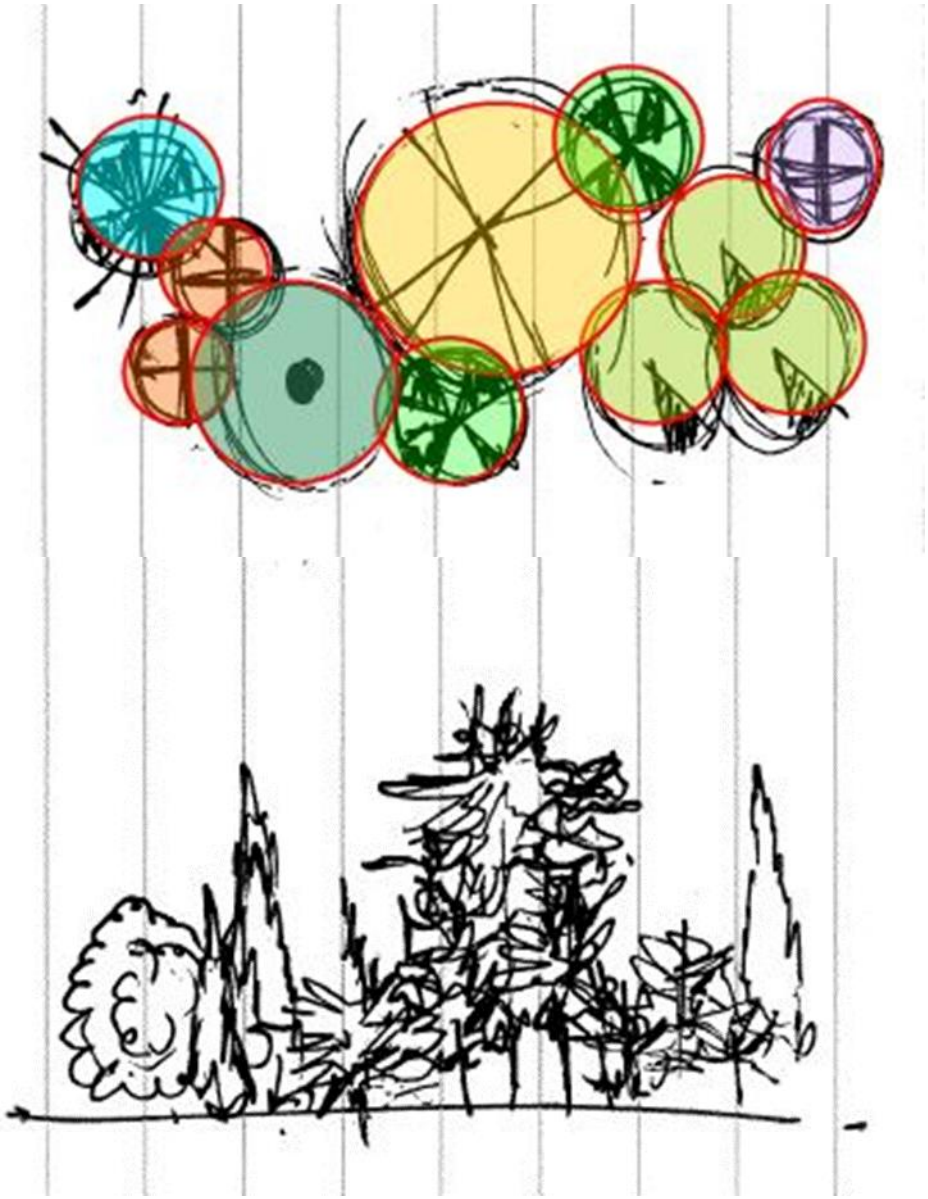
Large Trees

Understory Trees

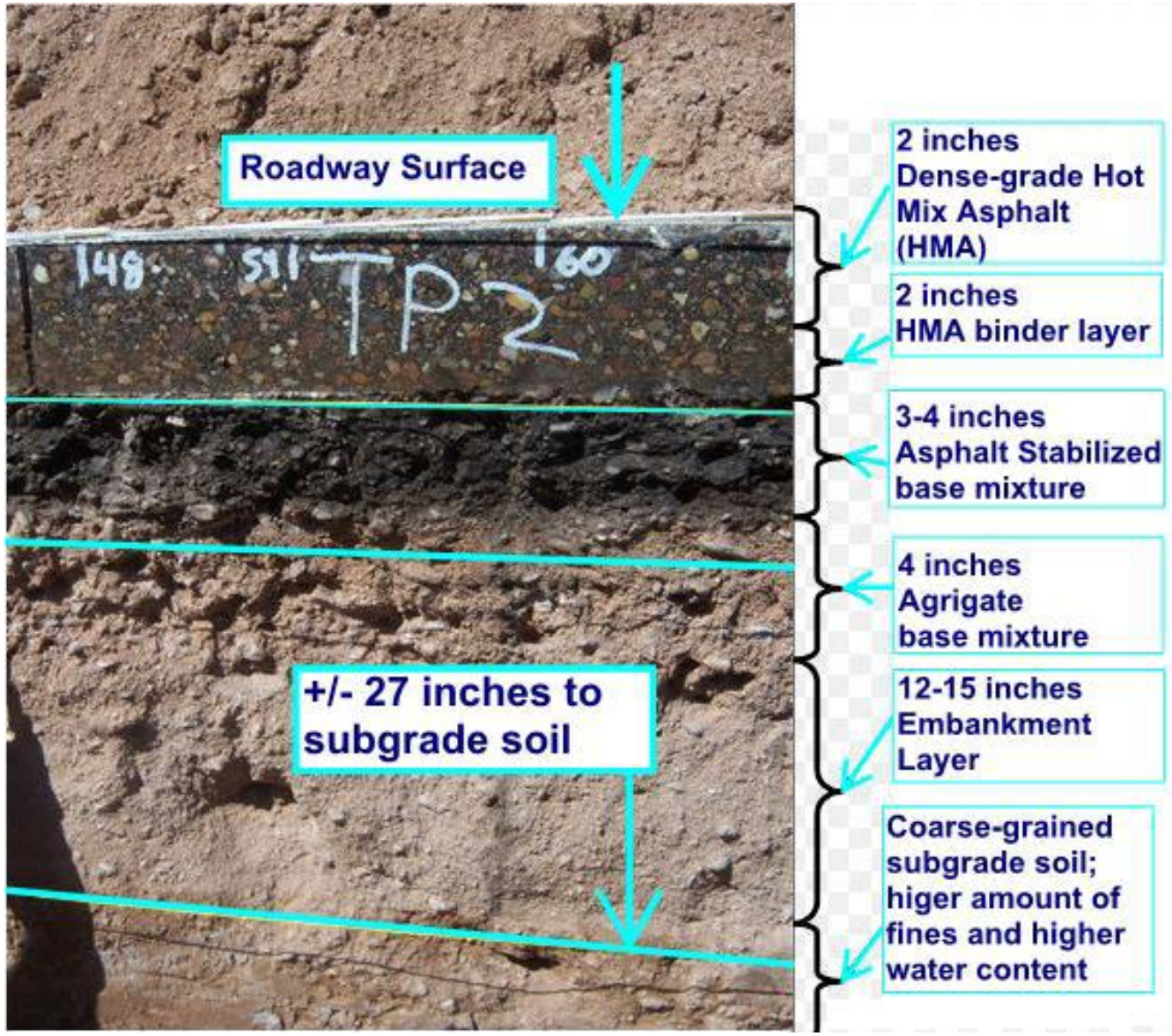
Large Shrubs

Small Shrubs, Grasses, & Ground Covers

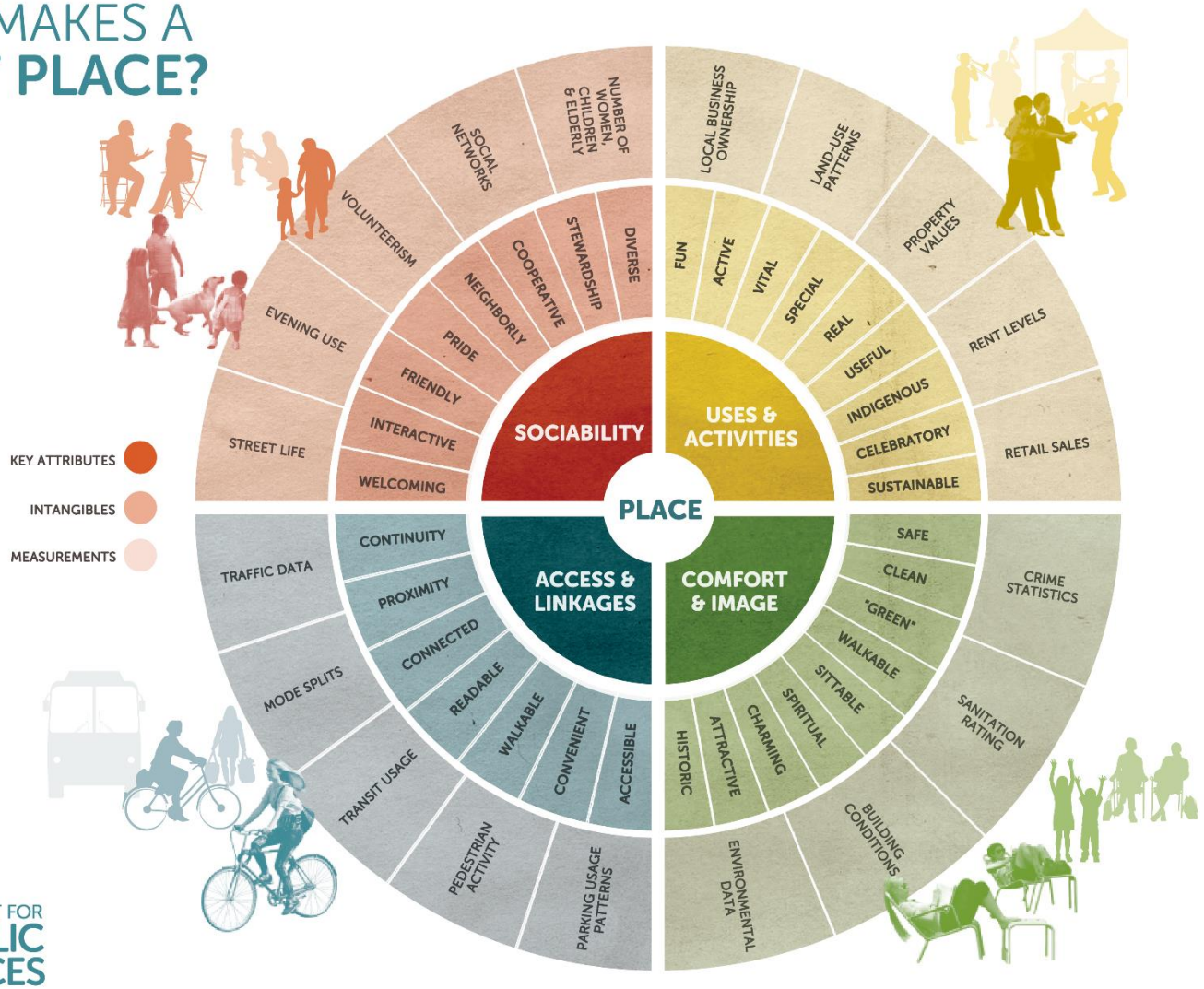
Medium Size Trees



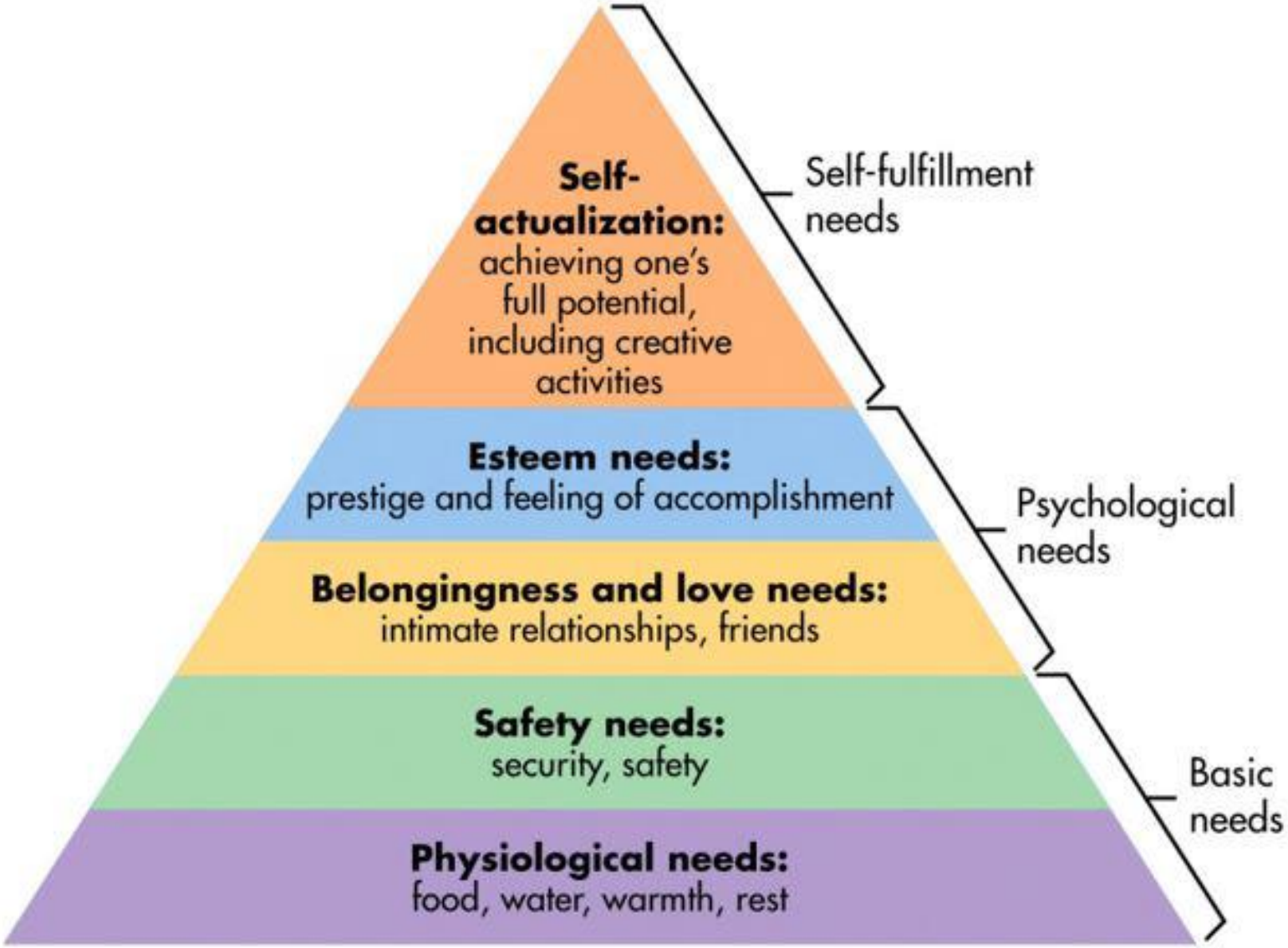
FDOT TRANSPORTATION SYMPOSIUM


Roadway Surface
148
511
TP2
160
+/- 27 inches to subgrade soil
2 inches Dense-grade Hot Mix Asphalt (HMA)
2 inches HMA binder layer
3-4 inches Asphalt Stabilized base mixture
4 inches Agrigate base mixture
12-15 inches Embankment Layer
Coarse-grained subgrade soil; higer amount of fines and higher water content

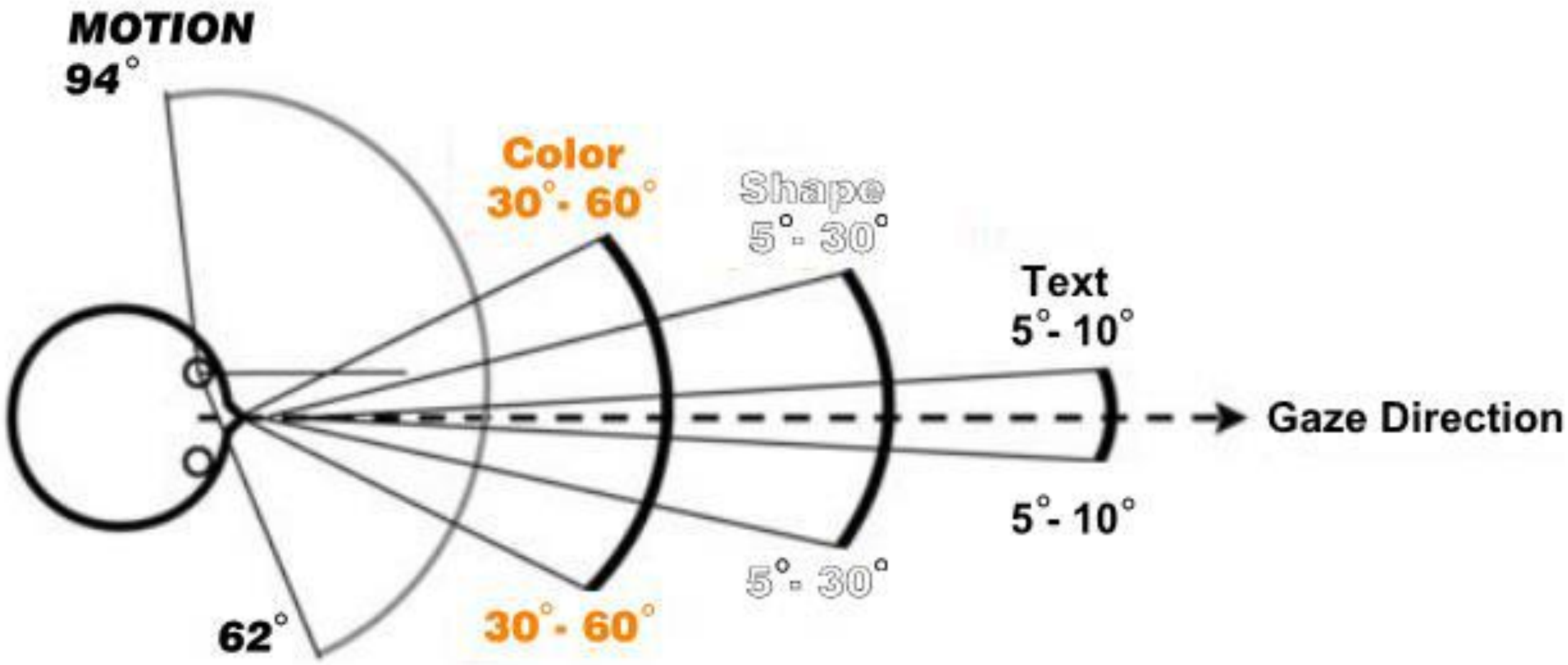
WHAT MAKES A **GREAT PLACE?**



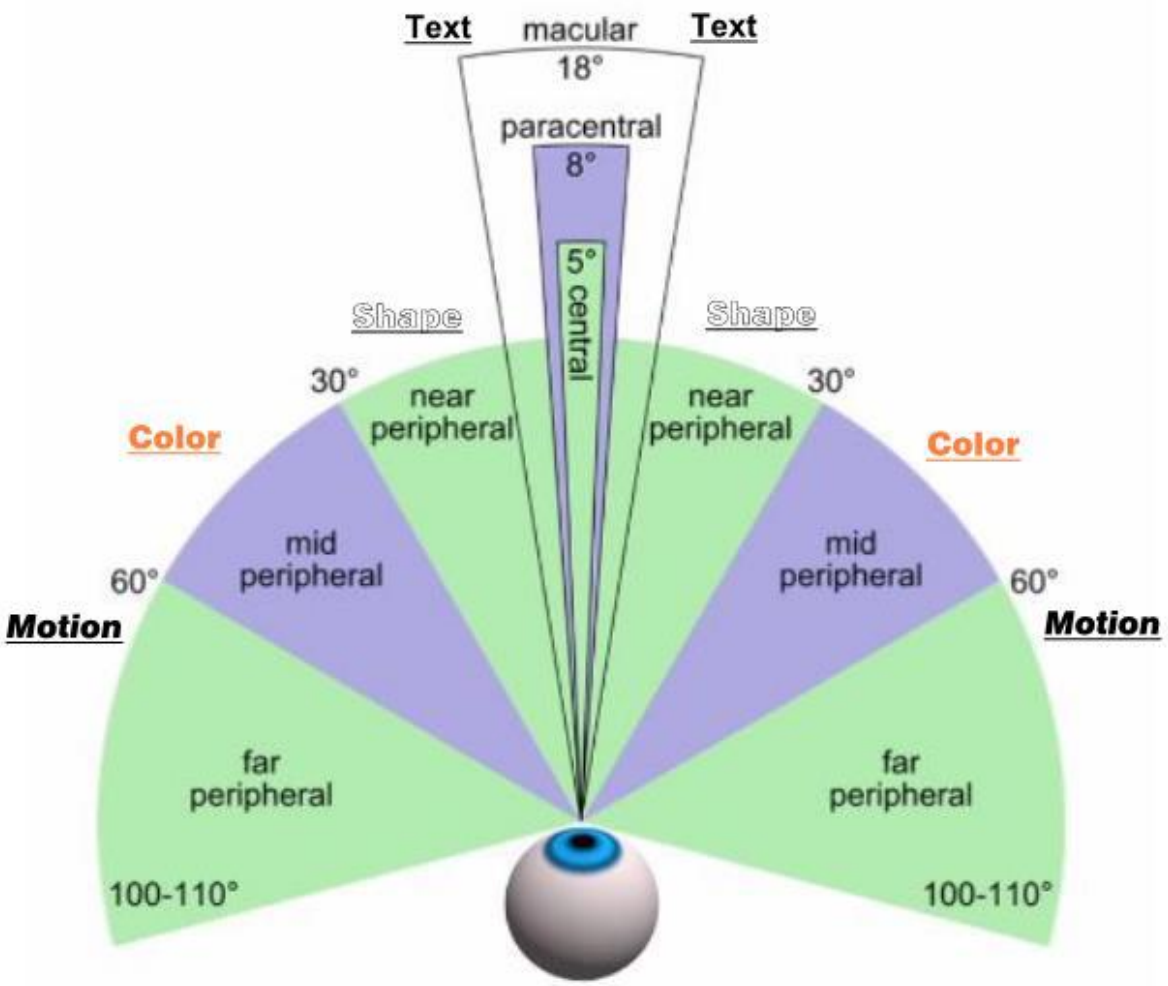
PROJECT FOR PUBLIC SPACES


Self-actualization:
achieving one's full potential, including creative activities
Esteem needs:
prestige and feeling of accomplishment
Belongingness and love needs:
intimate relationships, friends
Safety needs:
security, safety
Physiological needs:
food, water, warmth, rest
Self-fulfillment needs
Psychological needs
Basic needs

Vertical Field of Vision



Horizontal Field of Vision

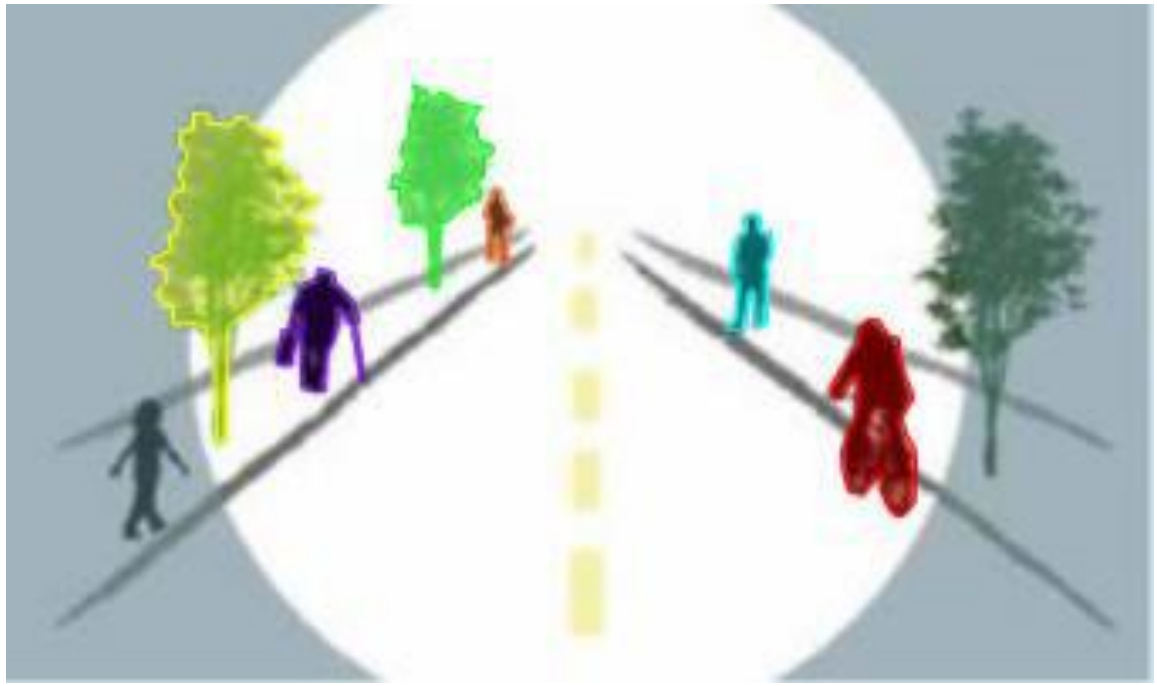


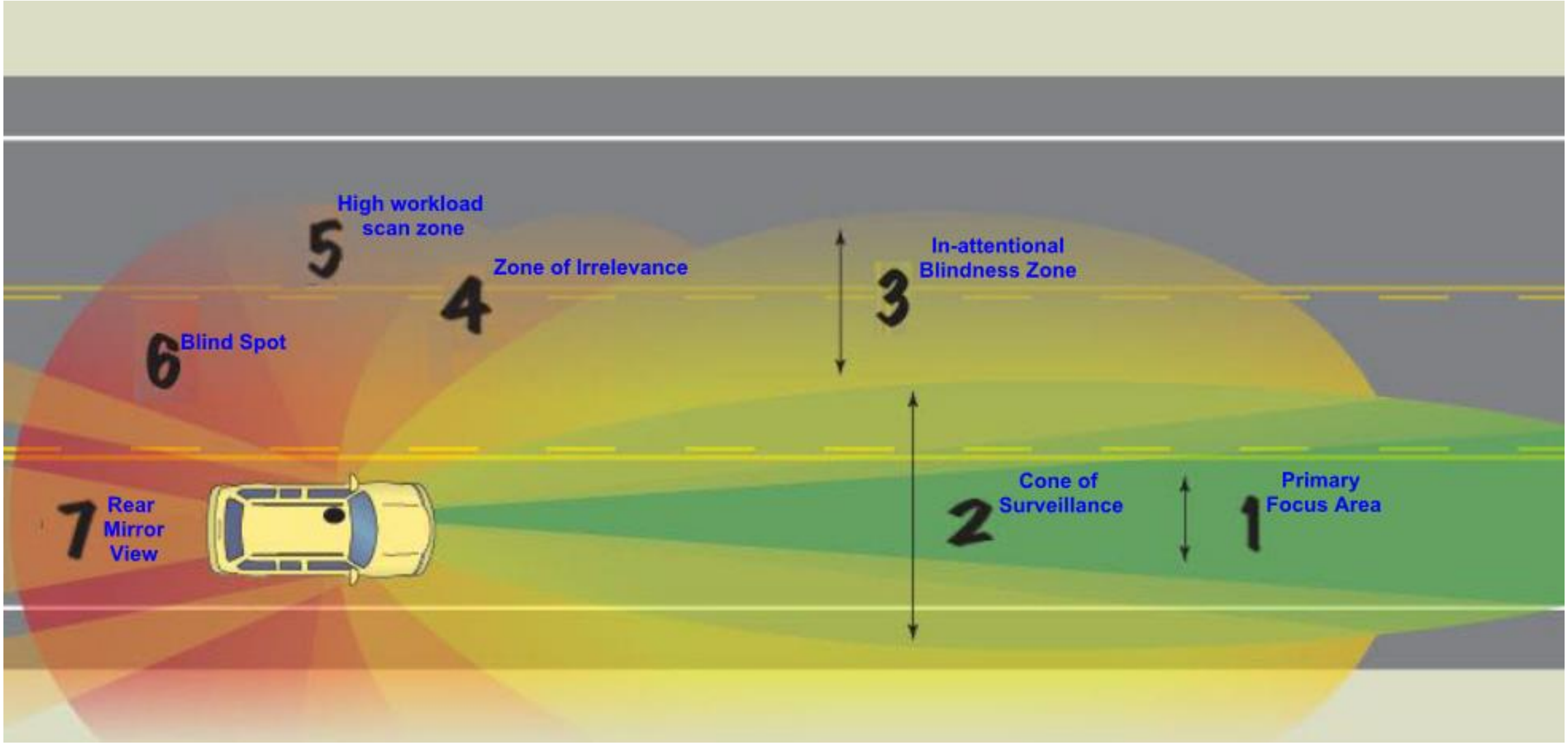
15 mph

30 mph

40 mph

50 mph



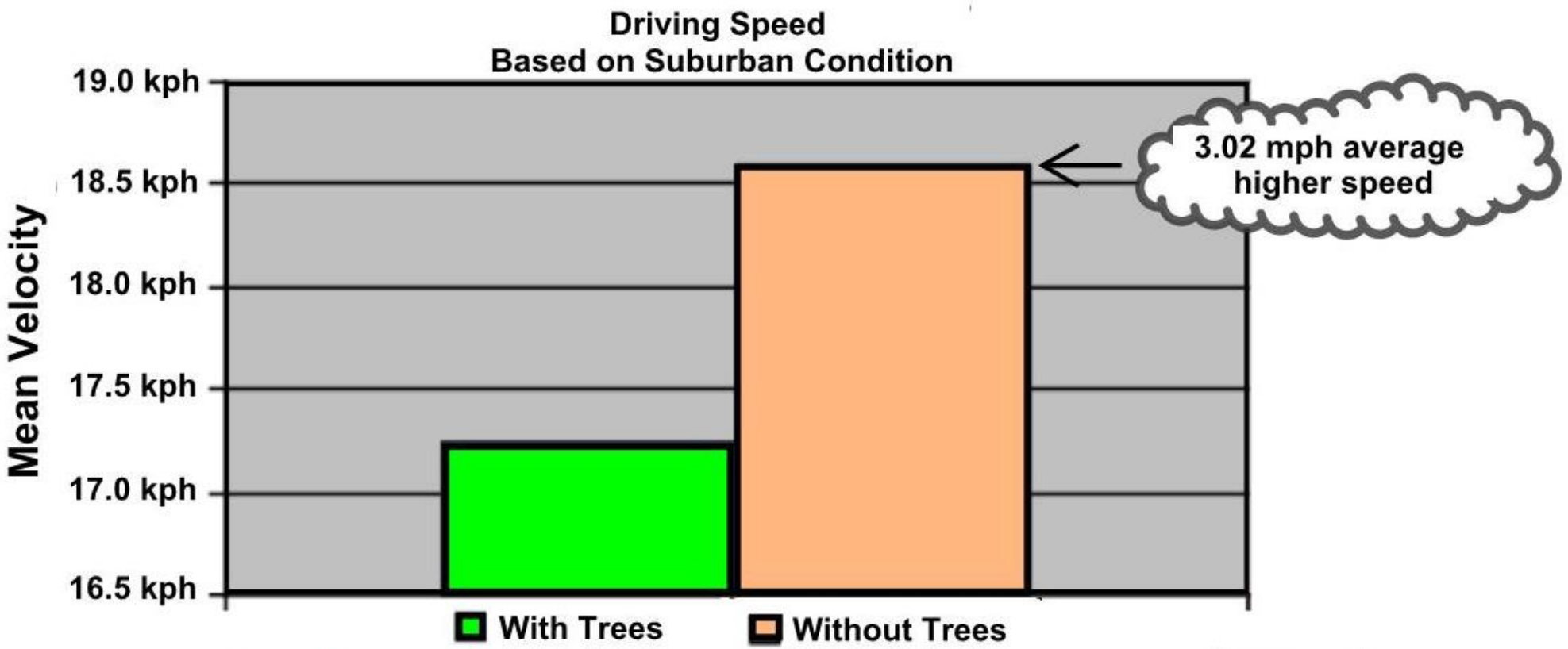

High workload
scan zone
5
Zone of Irrelevance
4
In-attentional
Blindness Zone
3
6
Blind Spot
7
Rear
Mirror
View
2
Cone of
Surveillance
1
Primary
Focus Area

Elements that affect driver perception of speed:

* Shape or “Form”
* Line
* Color and Texture
* Movement
* Scale (human scale)

Cultural Elements that affect driver behavior:

* Cultural ‘attractions’
* Learned Associations or Constructs
* Biological / Psychological needs

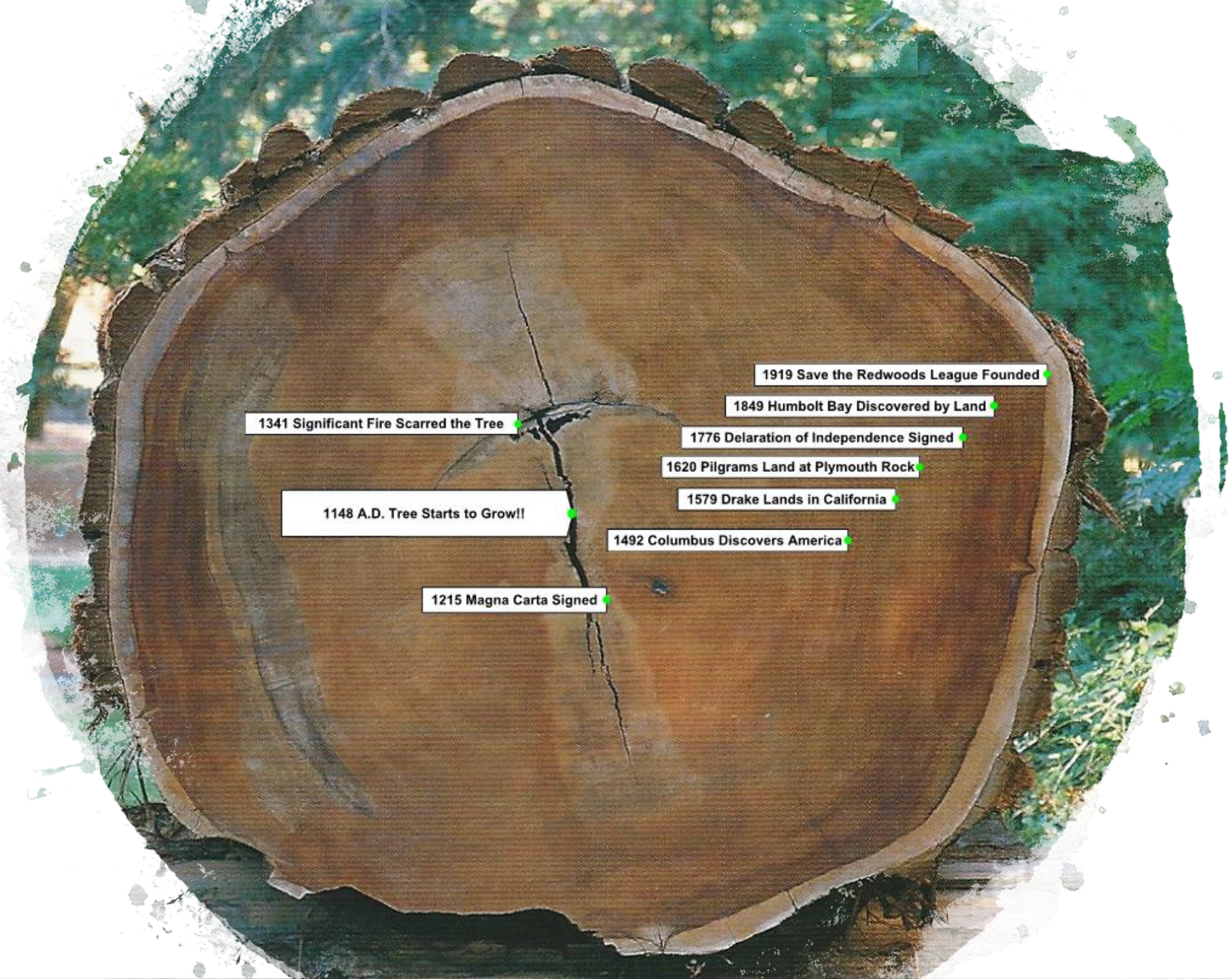

Driving Speed
Based on Suburban Condition
Mean Velocity
19.0 kph
18.5 kph
18.0 kph
17.5 kph
17.0 kph
16.5 kph
3.02 mph average higher speed
With Trees
Without Trees

"Commerce Zone"
Frontage Zone
Clear Path
Landscape "Green Zone"
Street Furniture Zone
"Cycle Zone"
Buffer Zone
Roadway
Green

RTA
ST. CHARLES
3
937
Please Have Exact Fare
Or RTA Pass Ready

MODERN
LIVING

BRIARPATCH
restaurant & ice cream parlor


1919 Save the Redwoods League Founded
1849 Humbolt Bay Discovered by Land
1341 Significant Fire Scarred the Tree
1776 Delaration of Independence Signed
1620 Pilgrams Land at Plymouth Rock
1579 Drake Lands in California
1148 A.D. Tree Starts to Grow!!
1492 Columbus Discovers America
1215 Magna Carta Signed

Our Next **Steps**

- *"Plan"* for trees
- *"Protect"* Existing Trees
- *"Consider"* New Trees
- "Plant a Tree" with a friend
- *"Visit a forest trail"*

FDOT TRANSPORTATION SYMPOSIUM

Q