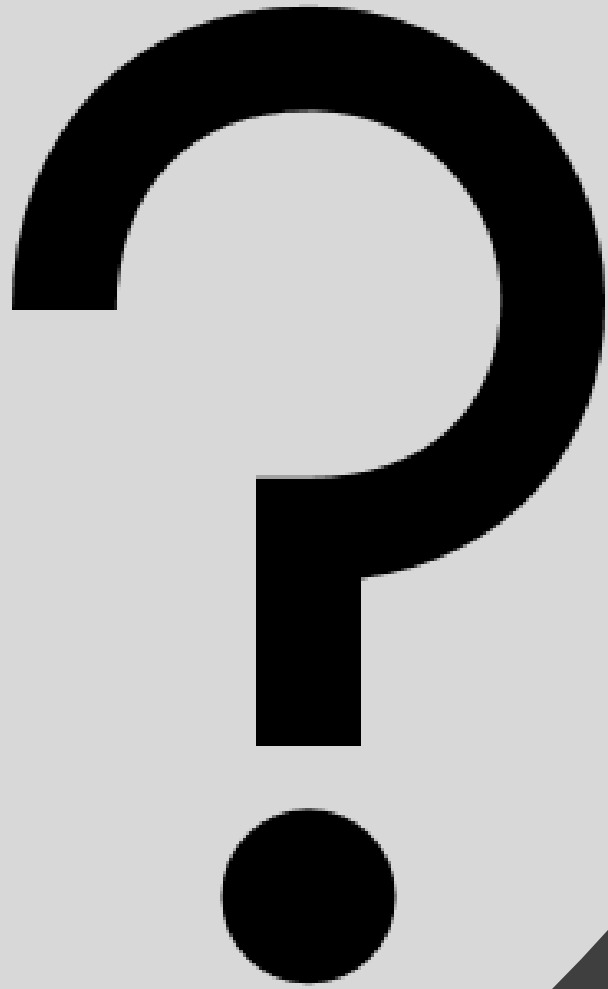




Center for Urban Resilience



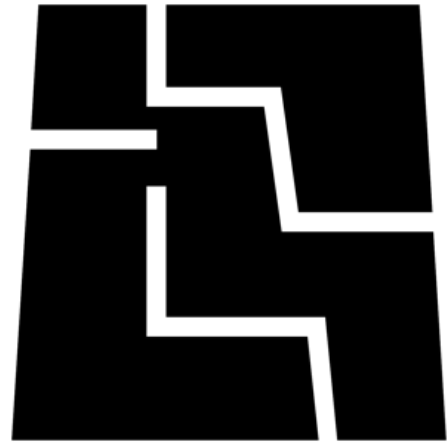


So What?
Actionable Tree
Intelligence –
How do we use
it

How do we get more canopy?



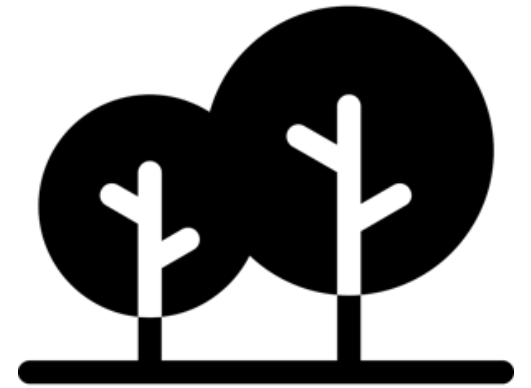
**Assess every
5-10 years**



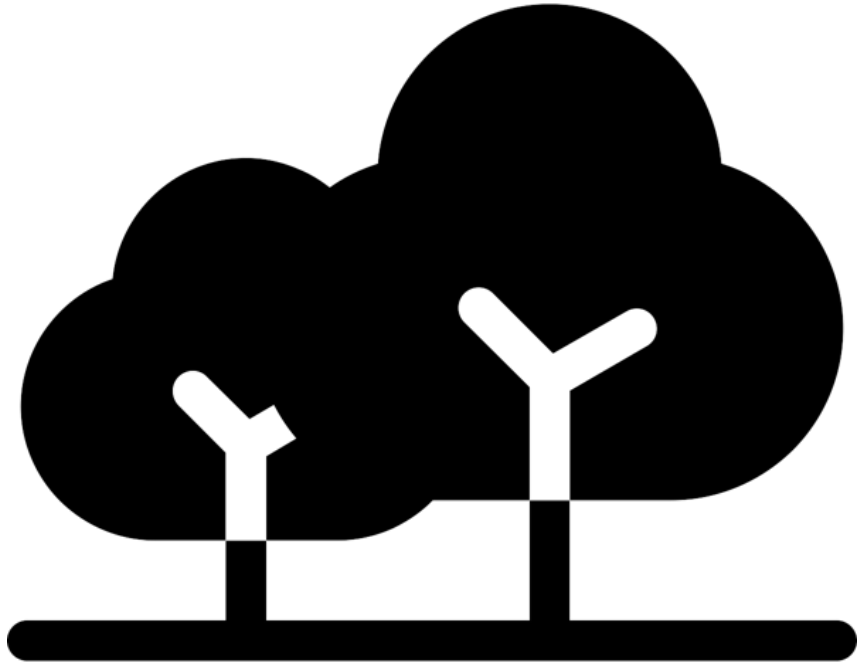
**Decisions are
made at the
parcel**



**Tree loss is an
event**



**Preserve
what you
have, gain is
a process**



Tree Preservation:
What are the
triggers?

Preservation triggers

- Ownership
 - Public, All
- Size
 - Above certain size D or C
- Status
 - Heritage, Street, Protected, etc.
- Activity
 - Development
 - Removal
 - Pruning

Not mutually exclusive – may occur in combination



LA City + County Tree Preservation

LA City

- Ownership
 - Any/All
- Size
 - => 4" DBH
- Status
 - Protected (certain natives; oak+)
- Activity
 - Relocate or remove
- Mitigation
 - 1" trees = \$ to removed tree(s)
 - TBD fee-in-lieu



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LA County

- Ownership
 - Any/All
- Size
 - => 8" DBH
- Status
 - Protected (oak)
- Activity
 - Damage/destroy/remove/prune
- Mitigation
 - Two 1" trees
 - \$2,700 fee-in-lieu



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Development-related (ANSI A300-Part 5)

- Existing conditions
 - Forest stand size, type
 - Protected tree size, type, location
 - Size of parcel
 - Land use/zoning
 - Forest/tree cover pre-construction
- Tree preservation plan
 - Limit of Disturbance
 - Critical Root Zones
 - Trees to be removed
 - Trees to be protected
 - Stress reduction measures
 - Trees and forest to be mitigated

[illegible][illegible]

CROWN DRIP LINE OR OTHER LIMIT OF TREE PROTECTION AREA.
SEE TREE PRESERVATION PLAN FOR FENCE ALIGNMENT.

TREE PROTECTION FENCE: HIGH DENSITY POLYETHYLENE FENCING WITH 3' X 1.5" OPENINGS; GREEN OR ORANGE. STEEL POSTS INSTALLED AT @ O.C.

2" x 6" METAL POSTS OR APPROX. EQUAL

5" THICK WOOD MULET

MAINTAIN EXIST. GRADE WITH THE TREE PROTECTION FENCE UNLESS OTHERWISE INDICATED ON THE PLANS.

0.5' X 1.1' SIGN LAMINATED IN PLASTIC SPACED EVERY 50' ALONG THE FENCE.

8" DBH
FENCE
ALIGNMENT

NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
2. IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.
3. NO TREEMING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
4. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.

SPRINKLER TREE TABLE

Tree ID	Species/Genus	Common Name	Height (m)	DBH (cm)	Age (years)	Health	Notes
1	Quercus robur	Common Oak	15	10	100	Good	
2	Quercus petraea	Common Oak	15	10	100	Good	
3	Quercus agrifolia	Common Oak	15	10	100	Good	
4	Quercus ilex	Common Oak	15	10	100	Good	
5	Quercus pubescens	Common Oak	15	10	100	Good	
6	Quercus robur	Common Oak	15	10	100	Good	
7	Quercus petraea	Common Oak	15	10	100	Good	
8	Quercus agrifolia	Common Oak	15	10	100	Good	
9	Quercus ilex	Common Oak	15	10	100	Good	
10	Quercus pubescens	Common Oak	15	10	100	Good	
11	Quercus robur	Common Oak	15	10	100	Good	
12	Quercus petraea	Common Oak	15	10	100	Good	
13	Quercus agrifolia	Common Oak	15	10	100	Good	
14	Quercus ilex	Common Oak	15	10	100	Good	
15	Quercus pubescens	Common Oak	15	10	100	Good	
16	Quercus robur	Common Oak	15	10	100	Good	
17	Quercus petraea	Common Oak	15	10	100	Good	
18	Quercus agrifolia	Common Oak	15	10	100	Good	
19	Quercus ilex	Common Oak	15	10	100	Good	
20	Quercus pubescens	Common Oak	15	10	100	Good	
21	Quercus robur	Common Oak	15	10	100	Good	
22	Quercus petraea	Common Oak	15	10	100	Good	
23	Quercus agrifolia	Common Oak	15	10	100	Good	
24	Quercus ilex	Common Oak	15	10	100	Good	
25	Quercus pubescens	Common Oak	15	10	100	Good	
26	Quercus robur	Common Oak	15	10	100	Good	
27	Quercus petraea	Common Oak	15	10	100	Good	
28	Quercus agrifolia	Common Oak	15	10	100	Good	
29	Quercus ilex	Common Oak	15	10	100	Good	
30	Quercus pubescens	Common Oak	15	10	100	Good	
31	Quercus robur	Common Oak	15	10	100	Good	
32	Quercus petraea	Common Oak	15	10	100	Good	
33	Quercus agrifolia	Common Oak	15	10	100	Good	
34	Quercus ilex	Common Oak	15	10	100	Good	
35	Quercus pubescens	Common Oak	15	10	100	Good	
36	Quercus robur	Common Oak	15	10	100	Good	
37	Quercus petraea	Common Oak	15	10	100	Good	
38	Quercus agrifolia	Common Oak	15	10	100	Good	
39	Quercus ilex	Common Oak	15	10	100	Good	
40	Quercus pubescens	Common Oak	15	10	100	Good	
41	Quercus robur	Common Oak	15	10	100	Good	
42	Quercus petraea	Common Oak	15	10	100	Good	
43	Quercus agrifolia	Common Oak	15	10	100	Good	
44	Quercus ilex	Common Oak	15	10	100	Good	
45	Quercus pubescens	Common Oak	15	10	100	Good	
46	Quercus robur	Common Oak	15	10	100	Good	
47	Quercus petraea	Common Oak	15	10	100	Good	
48	Quercus agrifolia	Common Oak	15	10	100	Good	
49	Quercus ilex	Common Oak	15	10	100	Good	
50	Quercus pubescens	Common Oak	15	10	100	Good	
51	Quercus robur	Common Oak	15	10	100	Good	
52	Quercus petraea	Common Oak	15	10	100	Good	
53	Quercus agrifolia	Common Oak	15	10	100	Good	
54	Quercus ilex	Common Oak	15	10	100	Good	
55	Quercus pubescens	Common Oak	15	10	100	Good	
56	Quercus robur	Common Oak	15	10	100	Good	
57	Quercus petraea	Common Oak	15	10	100	Good	
58	Quercus agrifolia	Common Oak	15	10	100	Good	
59	Quercus ilex	Common Oak	15	10	100	Good	
60	Quercus pubescens	Common Oak	15	10	100	Good	
61	Quercus robur	Common Oak	15	10	100	Good	
62	Quercus petraea	Common Oak	15	10	100	Good	
63	Quercus agrifolia	Common Oak	15	10	100	Good	
64	Quercus ilex	Common Oak	15	10	100	Good	
65	Quercus pubescens	Common Oak	15	10	100	Good	
66	Quercus robur	Common Oak	15	10	100	Good	
67	Quercus petraea						

A TREE PROTECTION
1:81" = 1' 0"

NOTES:

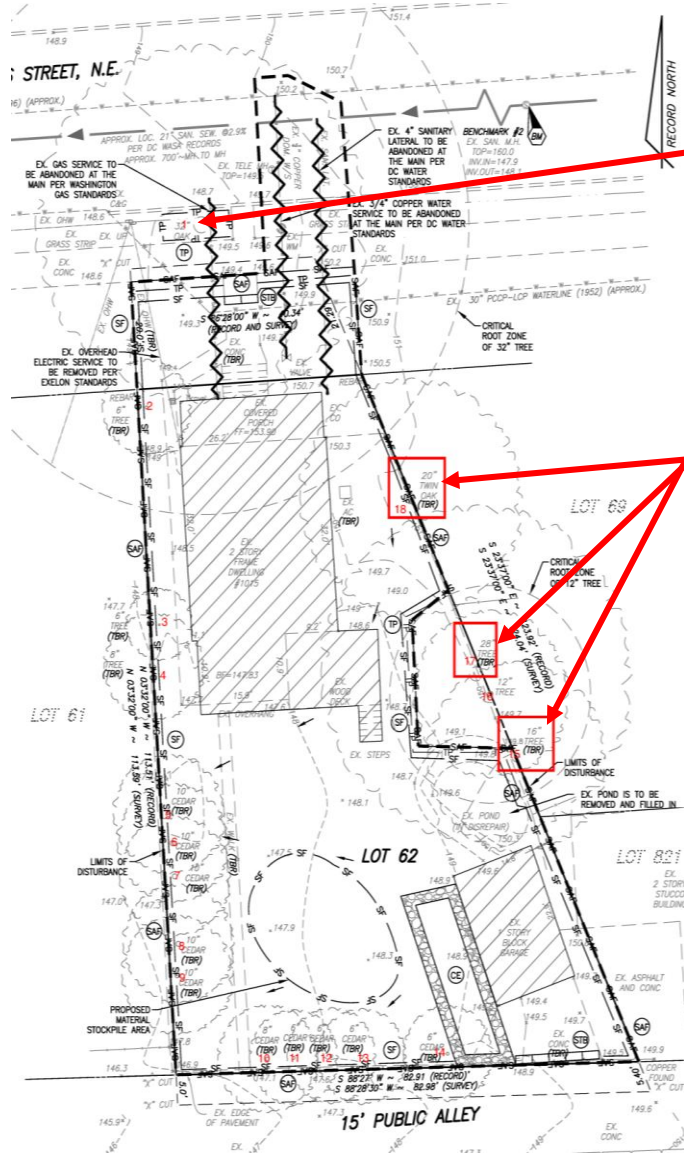
1. COMPLETE ALL INSTALLATION UNDER THE DIRECTION OF A CERTIFIED ARBORIST
2. USE BOARDING WITH 1 1/2\"
3. PROTECT THE TRUNK FROM DAMAGE DUE TO THE STRAPS WITH ADDITIONAL, FOAM AND/OR AS NEEDED

B TRUNK PROTECTION DETAIL
NOT TO SCALE

NOTES:

1. RETENTION AREAS SHALL BE SET AS PART OF THE REVIEW PROCESS
2. BOUNDARIES OF RETENTION AREAS SHOULD BE STAKED AND FLAGGED PRIOR TO CONSTRUCTION
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED
4. ROOTS SHALL BE CAREFULLY CUT USING APPROPRIATE TOOLS OR OTHER ACCEPTABLE METHODS
5. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL, REMOVED OR OTHER ORGANIC SOIL

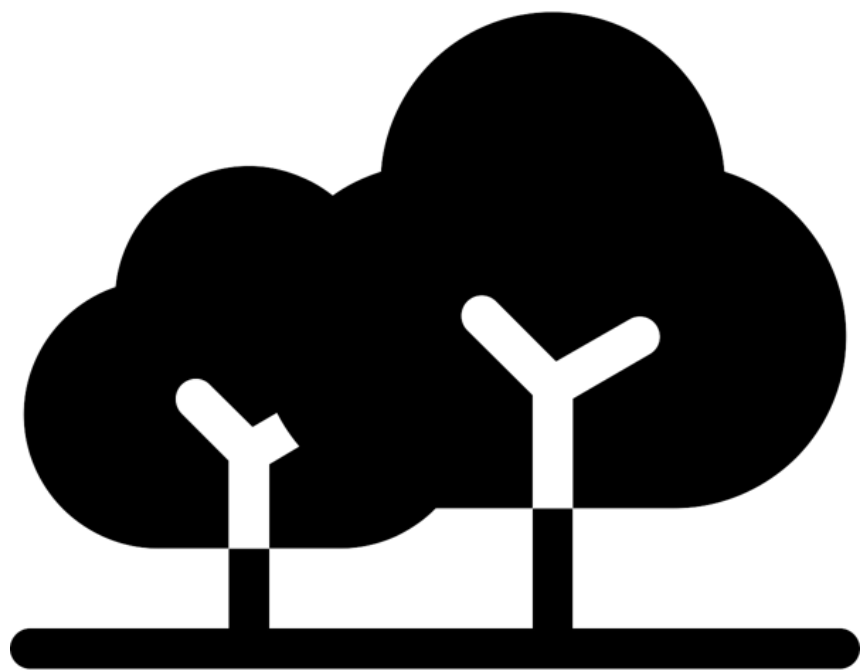
C ROOT PRUNING WITH FENCE
NOT TO SCALE



Tree#	Type	Species	Action	Notes	Probability	Consequences	Risk
1	Heritage	Pin oak	Preserve	Street tree	Unlikely	Severe	Low
15	Special	American elm	Preserve	On adjacent property	Somewhat likely	Severe	Moderate
17	Special	American elm	Preserve	Co-owned	Somewhat likely	Severe	Moderate
18	Special	Silver maple	Remove	Co-owned	Likely	Severe	High

Risk mitigation and residual risk reported on below

Tree#	Type	Species	Action	Notes	Post-mitigation probability	Post-mitigation consequences	Post-mitigation risk
1	Heritage	Pin oak	Preserve	Street tree	Unlikely	Severe	Low
15	Special	American elm	Preserve	On adjacent property	Unlikely	Severe	Low
17	Special	American elm	Preserve	Co-owned	Unlikely	Severe	Low
18	Special	Silver maple	Remove	Removed. Permit obtained.	N/A	N/A	N/A



How many trees
should there be
on an acre?

Reforestation / Afforestation

- Maryland Forest Conservation Act
 - Seedlings/whips - 700 tpa, 8 x 8
- Fairfax County, VA
 - Seedlings - 10-15 per 1,000 ft²
- CAL FIRE Forest Stewardship Program
 - Seedlings - 680 tpa, 8 x 8 or 300 tpa, 12 x 12
- If regulated, perform to compliance requirement
- If no compliance requirement, go to state forestry agency for technical assistance



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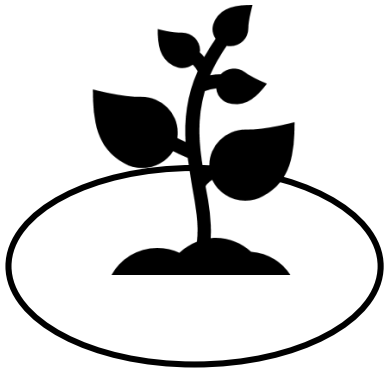
Urban planting

- Maryland Forest Conservation Act
 - 1" trees - 200 tpa
 - 2" trees - 100 tpa
- Fairfax County, VA
 - 1" – 3" trees - Dependent on credit provided in projected 10-year Tree Canopy Table
- Chesapeake Bay Program Urban Tree Canopy BMP Expert Panel
 - 300 tpa - Assumes 10-year growth, 2.5% - 5% mortality

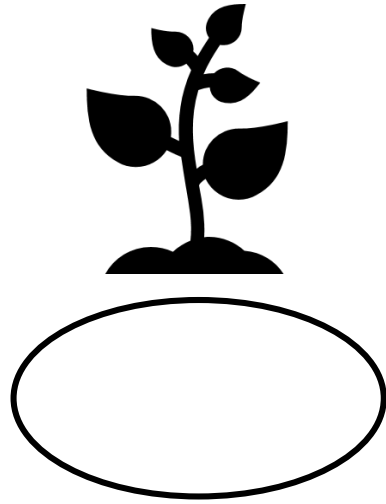


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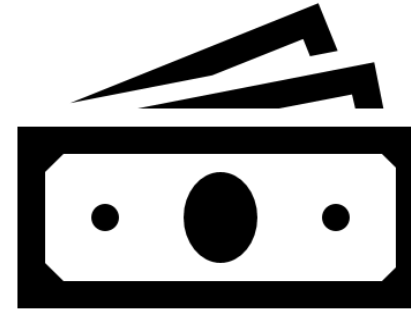
Mitigation



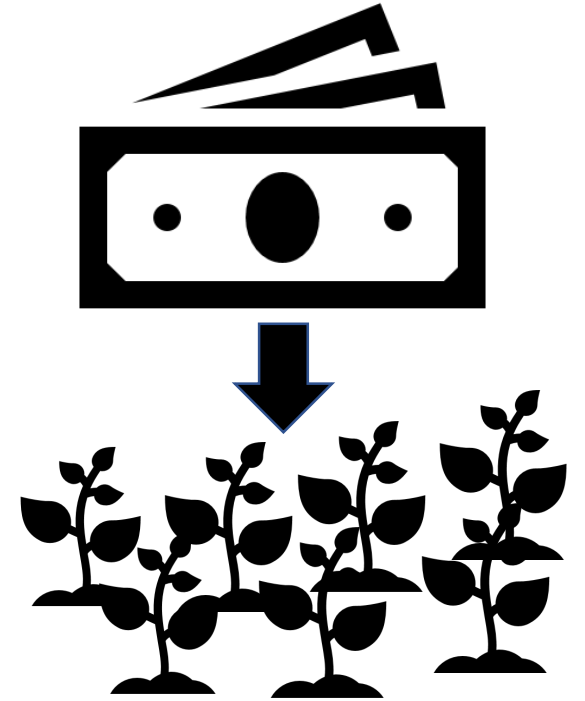
Plant on site



Plant off site



**Fee-in-Lieu
payment**



**Mitigation
bank
purchase**

NEXT STEPS

- What additional analyses would be useful?
- How do we operationalize the data?
- Regional tree preservation consortium?
- Market segment outreach strategy?
- Use Los Angeles STEW-MAP to engage the network?
- Advocate for URBAN FIA Los Angeles?