



The Garden Club of America
GCA CASEY TREES
Casey Trees Endowment Fund

Testimony Before DC Zoning Commission
RE: Forest Hills Tree and Slope Overlay Proposal
September 5th, 2002

The GCA Casey Trees Endowment Fund is a new nonprofit organization established in May 2001 with a mission to restore the tree canopy of Washington, DC. Our major project to date has been the comprehensive inventory of DC's street trees. But we have also looked more comprehensively at DC's tree canopy cover, particularly through our sponsorship of analyses conducted by the national nonprofit American Forests (see attached).

I would like to focus my testimony on the major conclusions of the American Forests analysis of canopy loss in our city, and in Ward 3 in particular. Ward 3 has more trees than any other ward of the city and accounts for approximately 26% of the trees in our city. That said, Ward 3 lost 52% of its "forested" areas during the 1973-1997 period. Given that we have already lost over 43% of our canopy cover since 1973 and have less than 22% tree canopy cover in our city as a whole, preserving the tree canopy of Ward 3 is an important part of restoring our city-wide tree canopy cover.

And while the causes of canopy loss are varied, the American Forests analysis confirms that the most devastating loss has been on private land and not on public lands (street trees, parks, etc.). Ward 3 lost 62% of its forested areas on private lands between 1973 and 1997 while on public land it lost only 39% of its forested areas over the same period. The accusation that canopy loss is primarily due to neglect of our public space trees is patently wrong: canopy loss has been rather due to tree-unfriendly development on private land.

It is time that we as a city take more seriously the enormous costs associated with our lack of protections for trees on both private and public land. For example, we estimate that, given the estimated \$1.3 billion cost to construct combined sewer overflow mitigation tunnels—or a cost of over \$10/cu ft, our tree canopy cost has cost us over \$300 million in storm water retention benefits in the CSO region alone (over \$400 million city-wide—please find our calculations attached). This very real public cost will soon be borne by all of the private property owners of D.C.—but not by the developers who did little to preserve trees and incorporate other low-impact development measures to control the storm water entering into both our combined and separated sewage systems.

Tree preservation—both through direct protections and protection of root space in the form of setbacks and other easements—are a relatively inexpensive way to improve not only the livability of the immediate neighborhood under consideration, but help preserve the air and water quality for our city as a whole. Thank you for your consideration.

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Calculation of Infrastructure Equivalent Value of DC Trees Lost from 1973-present

Storm water value controlled by current trees (AF 2002 report**):		68,763,823	cu ft
Tree cover in 1973*:	37%		
Tree cover in 1997* (probably worse now):	21%		
Multiplier to adjust current storm water calc. To 1973:	37/21 =	1.76	or 76% above current level of tree cover
Estimated value when tree canopy larger by:	1.76	121,155,307	
Storm water control benefit lost		52,391,484	cu ft
Cost Per Cu Ft Peak Storm Water Control:	40% at \$5***	104,782,968	non-csc
	60% at \$10***	<u>314,348,905</u>	cso area
Total storm water infrastructure cost of tree loss in DC:		<u>419,131,874</u>	

** February 2002, "Urban Ecosystems Analysis for the Washington, DC Metropolitan Area", American Forests

* (Undated, approx. 1999), "Urban Ecosystems Analysis: The District of Columbia," American Forests

*** Preliminary storm water control infrastructure cost estimates as analyzed by NRDC.

SUMMARY OF CANOPY CHANGE

**WASHINGTON D.C.
1973-1997**

Summary of Canopy Change (1973-1997) for all Washington DC City Council Wards

		Acres of Canopy 1973	Acres of Canopy 1997	Acres of Change 1973 - 1997	Percent Change 1973 - 1997
Total of Private Areas:	< 20% Canopy	8,392	13,209	4,817	57%
	20% - 30% Canopy	465	944	479	103%
	30% - 40% Canopy	666	1,196	530	80%
	40% - 50% Canopy	1,301	1,569	267	21%
	50% - 100% Canopy	8,207	1,994	-6,213	-76%
Total of Public Areas:	< 20% Canopy	9,855	13,955	4,099	42%
	20% - 30% Canopy	498	738	240	48%
	30% - 40% Canopy	732	843	110	15%
	40% - 50% Canopy	1,191	1,100	-91	-8%
	50% - 100% Canopy	7,862	3,633	-4,229	-54%
Washington DC Total:	< 20% Canopy	18,247	27,163	8,916	49%
	20% - 30% Canopy	963	1,682	719	75%
	30% - 40% Canopy	1,398	2,038	640	46%
	40% - 50% Canopy	2,493	2,668	176	7%
	50% - 100% Canopy	16,069	5,628	-10,441	-65%

This report is a summary of an analysis by American Forests (www.AmericanForests.org) of the urban forest decline in the Washington DC area from 1973 to 1997. The analysis was conducted using Landsat MSS and TM imagery. Each pixel represents about two acres in the case of the 1973 canopy estimate, and about 0.22 acres for the 1997 estimate. Because of the difference in pixel resolution between the two image sources, comparisons of characteristics from one to the other may result in unequal values such as a variability of the total areas calculated.

The percent tree canopy coverage for each pixel was calculated using multispectral imagery analysis and the pixels were then categorized according to the estimated canopy coverage within each pixel. The areas reported here represent the total number of acres in each category of canopy coverage. The results were tabulated by ward and by areas of public and private ownership within each ward and are summarized above. Private areas are all portions of Washington DC zoned residential, commercial or industrial. Public areas are those areas designated as federal or military zones, as well as streets, sidewalks and park areas. Further distinction of privately-owned versus publicly-owned properties must be conducted by city agencies with access to such information.

According to the data used for this analysis, most of the tree loss is on private property. It seems clear that while the city needs to increase the tree cover on public property, private property owners have even more work to do.

Canopy Change (1973-1997) for Washington DC City Council Ward 1

		Acres of Canopy 1973	Acres of Canopy 1997	Acres of Change 1973 - 1997	Percent Change 1973 - 1997	Percent of Total Change in Ward
Ward 1 Private	< 20% Canopy	599	889	290	48%	60%
	20% - 30% Canopy	15	17	1	9%	86%
	30% - 40% Canopy	42	17	-24	-58%	60%
	40% - 50% Canopy	116	11	-106	-91%	65%
	50% - 100% Canopy	128	19	-108	-85%	40%
Ward 1 Public	< 20% Canopy	469	663	194	41%	40%
	20% - 30% Canopy	21	21	0	1%	14%
	30% - 40% Canopy	36	20	-16	-45%	40%
	40% - 50% Canopy	88	30	-58	-66%	35%
	50% - 100% Canopy	264	100	-164	-62%	60%
Ward 1 Totals	< 20% Canopy	1,068	1,552	484	45%	
	20% - 30% Canopy	36	38	2	5%	
	30% - 40% Canopy	78	37	-41	-52%	
	40% - 50% Canopy	205	41	-164	-80%	
	50% - 100% Canopy	392	120	-272	-69%	

Canopy Change (1973-1997) for Washington DC City Council Ward 2

		Acres of Canopy 1973	Acres of Canopy 1997	Acres of Change 1973 - 1997	Percent Change 1973 - 1997	Percent of Total Change in Ward
Ward 2 Private	< 20% Canopy	1,031	1,323	293	28%	27%
	20% - 30% Canopy	38	30	-7	-20%	8,399%
	30% - 40% Canopy	89	35	-54	-61%	41%
	40% - 50% Canopy	104	45	-59	-57%	38%
	50% - 100% Canopy	319	70	-248	-78%	31%
Ward 2 Public	< 20% Canopy	1,877	2,656	779	42%	73%
	20% - 30% Canopy	60	68	7	12%	-8,299%
	30% - 40% Canopy	126	50	-76	-60%	59%
	40% - 50% Canopy	159	62	-97	-61%	62%
	50% - 100% Canopy	658	118	-541	-82%	69%
Ward 2 Totals	< 20% Canopy	2,908	3,979	1,072	37%	
	20% - 30% Canopy	98	98	0	-%	
	30% - 40% Canopy	215	85	-130	-60%	
	40% - 50% Canopy	263	107	-156	-59%	
	50% - 100% Canopy	977	188	-789	-81%	

Canopy Change (1973-1997) for Washington DC City Council Ward 3

		Acres of Canopy 1973	Acres of Canopy 1997	Acres of Change 1973 - 1997	Percent Change 1973 - 1997	Percent of Total Change in Ward
Ward 3 Private	< 20% Canopy	656	1,512	856	131%	65%
	20% - 30% Canopy	55	227	172	316%	71%
	30% - 40% Canopy	110	323	213	194%	68%
	40% - 50% Canopy	177	591	413	233%	74%
	50% - 100% Canopy	2,714	1,027	-1,687	-62%	69%
Ward 3 Public	< 20% Canopy	524	981	457	87%	35%
	20% - 30% Canopy	43	112	69	159%	29%
	30% - 40% Canopy	84	186	102	121%	32%
	40% - 50% Canopy	147	296	149	101%	26%
	50% - 100% Canopy	1,919	1,175	-743	-39%	31%
Ward 3 Totals	< 20% Canopy	1,180	2,493	1,313	111%	
	20% - 30% Canopy	98	339	241	247%	
	30% - 40% Canopy	194	509	315	162%	
	40% - 50% Canopy	324	887	562	173%	
	50% - 100% Canopy	4,632	2,202	-2,430	-52%	

Canopy Change (1973-1997) for Washington DC City Council Ward 4

		Acres of Canopy 1973	Acres of Canopy 1997	Acres of Change 1973 - 1997	Percent Change 1973 - 1997	Percent of Total Change in Ward
Ward 4 Private	< 20% Canopy	914	1,898	983	108%	63%
	20% - 30% Canopy	50	163	113	227%	75%
	30% - 40% Canopy	91	216	125	138%	75%
	40% - 50% Canopy	197	319	123	62%	81%
	50% - 100% Canopy	1,780	411	-1,369	-77%	67%
Ward 4 Public	< 20% Canopy	580	1,156	577	99%	37%
	20% - 30% Canopy	71	108	37	51%	25%
	30% - 40% Canopy	93	134	41	44%	25%
	40% - 50% Canopy	142	172	30	21%	19%
	50% - 100% Canopy	1,833	1,167	-665	-36%	33%
Ward 4 Totals	< 20% Canopy	1,494	3,054	1,560	104%	
	20% - 30% Canopy	121	271	149	123%	
	30% - 40% Canopy	184	350	166	90%	
	40% - 50% Canopy	339	491	152	45%	
	50% - 100% Canopy	3,613	1,578	-2,035	-56%	

Canopy Change (1973-1997) for Washington DC City Council Ward 5

		Acres of Canopy 1973	Acres of Canopy 1997	Acres of Change 1973 - 1997	Percent Change 1973 - 1997	Percent of Total Change in Ward
Ward 5 Private	< 20% Canopy	1,619	2,857	1,238	76%	57%
	20% - 30% Canopy	94	129	35	38%	58%
	30% - 40% Canopy	108	120	11	10%	-122%
	40% - 50% Canopy	206	100	-106	-52%	55%
	50% - 100% Canopy	1,293	112	-1,181	-91%	58%
Ward 5 Public	< 20% Canopy	1,700	2,636	936	55%	43%
	20% - 30% Canopy	83	109	26	31%	42%
	30% - 40% Canopy	123	102	-20	-17%	222%
	40% - 50% Canopy	202	115	-86	-43%	45%
	50% - 100% Canopy	1,092	252	-840	-77%	42%
Ward 5 Totals	< 20% Canopy	3,320	5,494	2,174	65%	
	20% - 30% Canopy	177	239	61	34%	
	30% - 40% Canopy	231	222	-9	-4%	
	40% - 50% Canopy	408	215	-193	-47%	
	50% - 100% Canopy	2,385	364	-2,021	-85%	

Canopy Change (1973-1997) for Washington DC City Council Ward 6

		Acres of Canopy 1973	Acres of Canopy 1997	Acres of Change 1973 - 1997	Percent Change 1973 - 1997	Percent of Total Change in Ward
Ward 6 Private	< 20% Canopy	1,031	1,473	442	43%	54%
	20% - 30% Canopy	35	48	12	35%	141%
	30% - 40% Canopy	63	19	-43	-69%	48%
	40% - 50% Canopy	189	10	-178	-94%	57%
	50% - 100% Canopy	201	1	-199	-99%	49%
Ward 6 Public	< 20% Canopy	1,455	1,825	370	25%	46%
	20% - 30% Canopy	54	50	-4	-7%	-41%
	30% - 40% Canopy	74	27	-47	-64%	52%
	40% - 50% Canopy	151	15	-136	-90%	43%
	50% - 100% Canopy	215	6	-209	-97%	51%
Ward 6 Totals	< 20% Canopy	2,486	3,298	812	33%	
	20% - 30% Canopy	89	98	9	10%	
	30% - 40% Canopy	136	46	-90	-66%	
	40% - 50% Canopy	340	25	-314	-93%	
	50% - 100% Canopy	416	8	-408	-98%	

Canopy Change (1973-1997) for Washington DC City Council Ward 7

		Acres of Canopy 1973	Acres of Canopy 1997	Acres of Change 1973 - 1997	Percent Change 1973 - 1997	Percent of Total Change in Ward
Ward 7 Private	< 20% Canopy	1,376	1,679	303	22%	56%
	20% - 30% Canopy	100	194	94	94%	69%
	30% - 40% Canopy	93	303	210	225%	71%
	40% - 50% Canopy	165	344	180	109%	67%
	50% - 100% Canopy	1,057	259	-798	-76%	64%
Ward 7 Public	< 20% Canopy	1,201	1,443	242	20%	44%
	20% - 30% Canopy	80	122	41	51%	31%
	30% - 40% Canopy	88	173	84	96%	29%
	40% - 50% Canopy	133	222	89	66%	33%
	50% - 100% Canopy	1,019	564	-455	-45%	36%
Ward 7 Totals	< 20% Canopy	2,577	3,121	544	21%	
	20% - 30% Canopy	180	315	135	75%	
	30% - 40% Canopy	181	476	294	162%	
	40% - 50% Canopy	298	566	268	90%	
	50% - 100% Canopy	2,076	823	-1,253	-60%	

Canopy Change (1973-1997) for Washington DC City Council Ward 8

		Acres of Canopy 1973	Acres of Canopy 1997	Acres of Change 1973 - 1997	Percent Change 1973 - 1997	Percent of Total Change in Ward
Ward 8 Private	< 20% Canopy	1,166	1,578	412	35%	43%
	20% - 30% Canopy	79	137	58	74%	48%
	30% - 40% Canopy	70	162	92	132%	68%
	40% - 50% Canopy	147	147	1	-%	3%
	50% - 100% Canopy	716	95	-621	-87%	50%
Ward 8 Public	< 20% Canopy	2,050	2,594	545	27%	57%
	20% - 30% Canopy	84	148	64	75%	52%
	30% - 40% Canopy	108	151	44	40%	32%
	40% - 50% Canopy	169	189	19	11%	97%
	50% - 100% Canopy	862	250	-612	-71%	50%
Ward 8 Totals	< 20% Canopy	3,215	4,172	957	30%	
	20% - 30% Canopy	163	285	122	75%	
	30% - 40% Canopy	177	313	135	76%	
	40% - 50% Canopy	316	336	20	6%	
	50% - 100% Canopy	1,578	345	-1,233	-78%	