Appendix H Green Block Cost Calculation

## Typical Residential Block with Green Infrastructure to Capture 0.5-inch of Runoff

## Option 1

crete in Pa	rking Lanes					Opt	Option 1							
	Right-of-			Storage Volume	Storage Volume		Volume	e Depth reqd for parking	Open Graded Aggregat				Green	Gre
Road	Way	Road	Drainage	Needed,	Needed,	Control type for	e Reqd,	ft each	Cost (per	Cost (per	Concrete unit	unit cost (per	component	cor
removed	Width (Ft)	Width (Ft)	Area (Ac)	Ac-Ft	CF	1/2" runoff	CF	side), Ft	SF)	SF)	cost (per SF)	LF)	total cost	adj
Full width	60	24	0.48	0.02		-	2188	0.52	\$ 0.49	\$ 0.62	\$ 8.00	\$ 6.50	\$ 42,817	\$
	Road removed	Right-of- Road Way removed Width (Ft)	Road Way Road removed Width (Ft) Width (Ft)	Right-of- Road Way Road Drainage removed Width (Ft) Width (Ft) Area (Ac)	Right-of- Road Way Road Drainage Needed, removed Width (Ft) Width (Ft) Area (Ac) Ac-Ft	Right-of- Road Way Road Drainage Needed, Needed, removed Width (Ft) Width (Ft) Area (Ac) Ac-Ft CF	Right-of- RoadRoadDrainageStorage VolumeStorage VolumeControl type for 1/2" runoffRoadWayRoadDrainageNeeded, Area (Ac)Needed, Ac-FtCer1/2" runoffPerv. Conc., 6' on	Right-of- Road Way Road Drainage Needed, Needed, Control type for e Reqd, removed Width (Ft) Width (Ft) Area (Ac) Ac-Ft CF Perv. Conc., 6' on	RoadRight-of- WayRoadDrainage Area (Ac)Storage Needed, Ac-FtStorage Needed, CFControl type for 1/2" runoffAggregat e Reqd, CFRoadWidth (Ft)Width (Ft)Area (Ac)Ac-FtCFPerv. Conc., 6' onVolume	RoadRoadDrainageNeeded, Ac-FtControl type for LControl type for LRoadAggregat ParkingAggregat AggregatRoadWayRoadDrainageNeeded, Ac-FtCF1/2" runoffCFStorage CFStorage CFStorage Perv. Conc., 6' onStorage 	RoadWayRoadDrainageNeeded,Needed,Control type forControl type forReach,AggregatAggregatExcavatiremovedWidth (Ft)Width (Ft)Area (Ac)Ac-FtCF1/2" runoffCFside), FtSF)SF)	Road removedRoad Width (Ft)Drainage Area (Ac)Storage 	Right-of- removedRoadDrainageStorage Needed, Ac-FtStorage CFControl type for 1/2" runoffAggregat e Reqd, CFAggregat e Reqd, SF)Excavati for Cost (per SF)10-inch 6-inch underdrain cost (per cost (per SF)RoadWayRoadDrainage Ac-FtNeeded, Ac-FtControl type for 1/2" runoffReqd, CFSF)SF)SF)SF)	Road removedRoad Width (Ft)Drainage Area (Ac)Storage Needed, Ac-FtStorage Needed, CFControl type for 1/2" runoffAggregat e Reqd, CFAggregat oparking Aggregat e Reqd, CFAggregat oparking e Reqd, CFAggregat oparking e Reqd, CFAggregat oparking e Reqd, CFAggregat oparking e Reqd, CFAggregat oparking e Reqd, Cost (per SF)Excavati oparking on Unit Cost (per SF)10-inch oparking oparking Concrete unit unit cost (per cost (per SF)6-inch underdrain oparking Concrete unit unit cost (per cost (per SF)6-inch underdrain cost (per cost (per Cost (per SF)10-inch Pervious cost (per Cost (per SF)6-inch underdrain cost (per cost (per Cost (per SF)10-inch Pervious cost (per Cost (per SF)6-inch underdrain cost (per cost (per Cost (per SF)10-inch Pervious Cost (per Cost (per SF)6-inch underdrain cost (per cost (per Cost (per SF)6-inch underdrain total cost

Use a min. of 8 inches of aggregate depth. The Green Component Adjusted Cost is the additional cost per block for "Green" as part of a road reconstruction project.

Option 2																		
Bioretention Curb Extensions (nodes)							Option 2	Option 2										
					Storage	Storage			Open Graded Aggregat						6-inch	Overflow Catch		Green
		Right-of-			Volume	Volume		Bioreten	e Unit	on Unit	Unit	Vegetation		Curb and	underdrain	Basin and Pipe	Green	component
Block length	Road	Way	Road	Drainage	Needed,	Needed,	Control type for	tion	Cost (per	Cost (per	Cost (per	Unit Cost	Mulch Unit	Gutter Unit	unit cost (per	Unit Cost (per	component	adjusted
(Ft)	removed	Width (Ft)	Width (Ft)	Area (Ac)	Ac-Ft	CF	1/2" runoff	Reqd, SF	SF)	SF)	SF)	(per SF)	Cost (per SF)	Cost (per LF)	LF)	EA)	total cost	cost
							<b>Bioretention Curb</b>											
350	Full width	60	24	0.48	0.02	875	Extensions	438	\$ 2.22	\$ 0.83	\$ 2.22	\$ 5.00	\$ 0.42	\$ 12.00	\$ 6.50	\$ 2,500	\$ 11,538	\$ 7,886
													The Green Co	mponent Adiu	sted Cost is th	e additional cost	per block for "Gr	een" as part

The Green Component Adjusted Cost is the additional cost per block for of a road reconstruction project.

Notes:

Assume 0.5-inch of runoff.

The green component adjusted cost for pervious concrete is the green infrastructure practice cost less what would have typically been spent on traditional concrete pavement (~\$5/SF), 8-inch aggregate base (\$8.50/SY), and 18 inches of excavation (\$10/CY).

Cross-section design for bioretention: 6 inches of ponding, 1.5 feet of engineered soil (20% void), 3 feet of aggregate (40% void). 1 SF of bioretention = 2 CF of storage Assume the bioretention practice is 5 feet wide from existing curb toward center of road.

The area of bioretention (438 SF) is equivalent to a curb extension approximately 5 feet wide by 44 feet long per side of the street. This could be designed as one unit or multiple smaller units at the corners and mid-block. The green component adjusted cost for bioretention is the green infrastructure practice cost less what would have typically been spent on traditional concrete pavement (~\$5/SF), 8-inch aggregate base (\$8.50/SY), 18 inches of excavation (\$10/CY) and concrete curb and gutter (\$12/LF).

Aggregate void space is assumed to be 40% of total aggregate volume.



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