

## appendix H - expanded site specific action plan

This is an expanded version of the Programmatic Action Plan Tables 5.10 to 5.15 in Chapter 5 Section 5.2. In addition to the information included in Section 5.2, these tables also include location, goals and objectives addressed, priority, lead implementor, supporting implementor, time frame, projected cost, and status.

Table H1 City of Zion Expanded Site Specific Action Plan

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		1.0.1	Zion				<i>Preserve Category 1 and 2 green infrastructure open space areas to connect the North and South units of Illinois Beach State Park, enhance recreational opportunities, and expand and restore important rare habitat. Decommission and remove the power plant and associated structures. Acreage count includes private / utility owned land within the area. It is assumed that restoration would address the potential pollutant loading hotspots identified as Critical Subbasins #15 and #74.</i>	C1, C2, C3, E1, E2	1	3		L	382	acres	1	IDNR/Utility	Zion	0
	X	2.0.3	Zion				<i>Manage / minimize runoff impacts of commercial land uses along Sheridan Road, particularly at Sheridan and 33rd St and Sheridan and 27th, 28th, and 29th along the stream. Cost estimate assumes 8400 lf of Sheridan Road frontage treated with improved, 10' swales (approximately 2 acres) as a proxy for on-site source control BMPs.</i>	E1, E2, E7, E9, G1	1	3		S	2	acre	1	Zion	Owner Developer	0
X		2.0.6	Zion			DB01	<i>Stabilize / regrade shoreline using bioengineering practices and plant banks and a surrounding buffer with native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup; address algae / nutrient loads and turbidity / sedimentation by naturalizing the basin; remove excess debris.</i>	E1, E2, E9	2	2		S-M	1100	lf	1	Owner		0

Table H1 City of Zion Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	2.0.7	Zion			DB41	Stabilize / regrade shoreline using bioengineering practices and plant banks and a surrounding buffer with native vegetation; address turbidity / sedimentation by naturalizing the basin; remove excess debris. This is depressional area #54.	E1, E2, E9	2	2		S-M	2000	lf	1	Zion Park District		0
	X	2.0.8	Zion			DB42	Stabilize / regrade shoreline using bioengineering practices and plant banks and a surrounding buffer with native vegetation; address algae / nutrient loads by naturalizing the basin; remove excess debris.	E1, E2, E9	2	2		S-M	2100	lf	1	Zion Park District		0
	X	2.0.9	Zion			DB44	Address algae / nutrient loads by naturalizing the basin.	E1, E2, E9	2	1		S-M	1	ea	1	Owner	Zion	0
X		2.28.1	Zion				Restore stream channel and improve instream habitat by installing pools and riffles.	A1, A10, C3	3	3		S	2700	lf	1	Zion Park District		0
X	X	2.28.2	Zion				<i>Restore and manage the channel, native riparian buffers, and ravine woodland system, particularly the reach running through Ophir Park west of Sheridan Road, and Carmel Park east of Sheridan Road. Management practices include controlling invasive species, planting native species, and managing vegetation such as through prescribed burning.</i>	A1, A3, A5, A6, A10, C3, E2, E4	1	2		S	2700	lf	2	Zion Park District		0
X	X	2.28.3	Zion				<i>Stabilize and reduce downcutting of the incised channel through Ophir Park, and install a naturalized riparian buffer. Cost estimate assumes stabilization of streambanks with Moderate erosion problem.</i>	A6, A10, A11, B1, B4, C3, E1	1	2		S	750	lf	2	Zion Park District		0

Table H1 City of Zion Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	2.28.4	Zion				Manage the culvert outflow at the upstream end of the reach for energy dissipation and pollutant removal, possibly with a settling basin or small constructed wetland.	A10, A11, B4	2	3		S	1	ea	1	Zion Park District		0
X		2.28.5	Zion				<i>Stabilize Moderate streambank erosion along the entire reach using bioengineering stabilization measures, which will help reduce the instream silt / sedimentation load within this reach.</i>	A1, A3, A8, C3, E1	1	3		M	2700	lf	2	Zion Park District, Owner		0
X		2.28.6	Zion	249	411		Remove debris, tires, and logs using American Fisheries Society guidelines.	A10, A11, B4	2	2		S	1	ea	1	Owner	SMC	0
X		2.28.7	Zion	254	417		Remove debris obstructing flow using American Fisheries Society guidelines.	A10, A11, B4	2	2		S	1	ea	1	Owner	SMC	0
X		2.28.8	Zion	No #	421		Remove concrete debris and remove or repair failed headwall and outfall pipe.	A10, A11, B4	2	3		S-M	1	ea	1	Zion Park District	Zion	0
X		2.28.9	Zion	258	422, 424		<i>Stabilize major erosion, bank slumping / blowout, and headwall failure at upstream end of the reach near the culvert. Use bioengineering stabilization measures if possible, and more structural measures if necessary. Cost estimate reflects stabilization of severe erosion problem.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Zion Park District	Zion	0
X		2.28.10	Zion	252	414	PD190	<i>Stabilize 4 foot diameter plunge pool erosion below outfall. If feasible use bioengineering measures, though rip rap and structural measures may be necessary.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Zion Park District	Zion	0
X		2.28.11	Zion	257	420	PD193	<i>Stabilize bank erosion caused by stormwater outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Zion Park District	Zion	0

Table H1 City of Zion Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		2.28.12	Zion	253	415	HS 154-158	Inspect and, if necessary, repair five culverts under trail, which may be crushed and/or failing.	A10, A11, B4	3	3		S	5	ea	1	Zion Park District	Zion	0
X	X	3a.0.3	Zion				Preserve approximately 21 acres of wetland and stream corridor open and partially open Category 1 green infrastructure areas and greenways within the headwaters of the 27th St tributary. Target areas are located (1) southwest of 25th St and Galilee, (2) south of Jethro and 26th Street, (3) west of 26th and Lewis, (4) southeast of 26th and Lewis, (5) northwest of 29th and Lewis.	A6, B1, C2, C3, G2, G4	1	3		L	21	acre	1	Zion Park District, Zion, Owner		0
	X	3a.0.7	Zion				Manage the golf course grounds and detention / water features in Shiloh Park, in the northeast corner of the SMU for water quality and habitat benefits, including installation of a 5 foot riparian buffer along shoreline / banks of water features.	B1, C3, E1, E2, E4, E9, G2, G4	2	1		S	2300	lf	1	Zion Park District		0
		3a.0.8	Zion				FPAI site 20-13 experiences local drainage problems due to runoff from the west. Retrofit David Park and the school property west of the problem area with detention or infiltration practices to reduce runoff rate and volume.	B4	2	3		S	NA	NA	NA	Zion	SMC	H
X		3a.0.9	Zion			DB02	Stabilize / regrade shoreline using bioengineering practices and plant banks and a minimum 5 ft buffer with native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup; address turbidity / sedimentation by naturalizing the basin.	E1, E2, E9	2	2		S-M	350	lf	1	HOA	Zion	0

Table H1 City of Zion Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
		3a.0.10	Zion			DB04	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
	X	3a.0.11	Zion			DB05	Retrofit as wet / wetland basin; plant banks and a minimum 5 ft surrounding buffer with native vegetation.	E1, E2, E9	2	2		S-M	300	lf	1	HOA		0
	X	3a.0.12	Zion			DB06	Retrofit as wet / wetland basin; plant banks and a minimum 5 ft surrounding buffer with native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup; remove excess debris.	E1, E2, E9	2	2		S-M	400	lf	1	HOA		0
	X	3a.0.13	Zion			DB07	Retrofit as wet / wetland basin; plant banks and a minimum 5 ft surrounding buffer with native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup; retrofit bottom concrete channel.	E1, E2, E9	2	2		S-M	400	lf	1	HOA		0
	X	3a.0.14	Zion			DB08	Plant banks and a minimum 5 ft surrounding buffer with native vegetation; remove excess debris.	E1, E2, E9	2	1		S-M	700	lf	1	HOA		0
	X	3a.0.15	Zion			DB37	Stabilize / regrade shoreline using bioengineering practices and native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup; address algae / nutrient loads by naturalizing the basin; remove excess debris.	E1, E2, E9	2	2		S-M	760	lf	1	Zion Park District	Zion	0
	X	3a.0.16	Zion			DB38	Stabilize / regrade shoreline and plant banks and a minimum 5 ft surrounding buffer with native vegetation; address turbidity / sedimentation.	E1, E2, E9	2	2		S-M	800	lf	1	Zion Park District		0
	X	3a.0.17	Zion			DB39	Plant banks and a minimum 5 ft surrounding buffer with native vegetation; address turbidity / sedimentation by naturalizing the basin.	E1, E2, E9	2	1		S-M	1400	lf	1	Zion Park District		0

Table H1 City of Zion Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X	X	3a.27.1	Zion				Restore and manage the native riparian buffer plant communities along this reach within Sharon Park by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning. A wider, partially forested buffer may be appropriate in the lower parts of the reach.	A6, A10, B1, C3, E1	2	2		S	2000	lf	2	Zion Park District		0
X		3a.27.2	Zion				Address High streambank erosion along entire reach using bioengineering stabilization measures, some of which may threaten buried sewer lines.	A1, A3, A8, C3, E1	1	3		M	2000	lf	2	Zion Park District		0
X		3a.27.3	Zion	237	397		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Zion Park District	SMC	0
X		3a.27.4	Zion	238	398		<i>Remediate significant erosion and slumping on left bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Zion Park District		0
X		3a.27.5	Zion	239	399		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Zion Park District	SMC	0
X		3a.27.6	Zion	241	401	PD181	<i>Stabilize significant erosion and exposure of manhole and sewer infrastructure using bioengineering stabilization measures and other hardscape solutions to ensure protection of the infrastructure elements. Length difficult to determine from photo; assume 100 lf for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Zion	NSSD?, Zion Park District	0

Table H1 City of Zion Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3a.27.7	Zion	242	402	PD182	<i>Stabilize erosion creating open channel at discharge point using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Zion	Owner (Bd. Of Edu.)	0
X		3a.27.8	Zion	244	405		<i>Remediate significant erosion and slumping on left bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 150 lf for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	150	lf	1	Zion Park District		0
X		3a.27.9	Zion	235	394	PD178	<i>Stabilize erosion at outfall that is creating an open channel using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Zion Park District	Zion	0
X		3a.27.10	Zion	236	395	PD179	<i>Stabilize major erosion, headwall, and outfall pipe failure using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Zion Park District	Zion	0
X		3a.27.11	Zion	240	400	PD180	<i>Stabilize minor channel erosion using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Zion Park District		0
X	X	3c.22.1	Zion				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.	A6, A10, B1, C3, E1	2	2		S	1200	lf	2	Owner		0
X		3c.22.2	Zion	196	346		Remove debris obstructing flow using American Fisheries Society guidelines.	A10, A11, B4	2	2		S	1	ea	1	Zion	SMC	0



Table H2 Village of Beach Park Expanded Site Specific Action Plan

Pollutant prevention	Pollutant reduction	ID# (SMU reach.ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		1.0.3	Beach Park				Preserve and restore open and partially open green infrastructure bounded by North Ave, York House Road, Sheridan Road, and residential areas to the north (spanning SMUs #1, #3b, and #3c) for natural resource restoration and management and recreation. Preserving two corridors (19 acres) east of Sheridan Road would connect this piece to the larger Illinois Beach State Park system. The area also contains storage area #30 and potential storage area #27, which may help reduce flooding in the area of FPAI 20-02 along Coolidge Ave.	B1, C1, C2, C3, G2, G4	1	3		L	99	acres	1	Owner	Beach Park	0
		1.0.8	Beach Park				Monitor IDOT-recorded flooding location at Sheridan and York House Road for further problems.	B4, F7	3	1		S	1	ea	1	IDOT	SMC	L
		1.0.9	Beach Park				Monitor IDOT-recorded flooding locations at Sheridan and Beach Road for further problems.	B4, F7	3	1		S	1	ea	1	IDOT	SMC	0
X		1.0.14	Beach Park				Install filtration and infiltration BMPs for existing commercial properties along Sheridan Road. Cost estimate reflects 10' wide swale improvements (as a proxy for lot level / source control BMPs) along 1500 lf of Sheridan Road frontage.	E1, E2, E7, E9, G1	2	3		S	0.3	acres	1	Beach Park	Owner Developer	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	1.0.15	Beach Park				Improve any swale and other surface stormwater drainage systems within the developed areas of the western part of this SMU, which is mostly unsewered, and install stormwater filtration and infiltration BMPs. Details reflect 54,000 lf (approximately 12.5 acre) of 10 foot wide drainage swale improvements / lot level / source control BMPs on each side of roads within this part of the SMU.	E1, E2, E7, E9, G1	1	3		S	12.5	acres	1	Beach Park		0
		1.0.23	Beach Park			DB230	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
		1.0.24	Beach Park			DB233	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
		1.0.27	Beach Park			DB240	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
		2.0.5	Beach Park				Monitor past IDOT-recorded flooding at Sheridan and Wadsworth for further problems and remediate if flooding continues. B4,	F7	3	1		S	1	ea	1	IDOT		0
X		3a.25.4	Beach Park	221	373		Remove debris obstructing flow using American Fisheries Society guidelines.	A10, A11, B4	2	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X	X	3a.26.1	Beach Park				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning. A wider, partially forested buffer is appropriate in the lower parts of the reach.	A6, A10, B1, C3, E1	2	2		S	2000	lf	2	Owner		0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3a.26.2	Beach Park				Restore stream channel and improve instream habitat by installing & enhancing pools and riffles.	A1, A10, C3	3	3		S	2000	lf	1	Owner	Beach Park, BPDD	0
X		3a.26.3	Beach Park				<i>Address Moderate streambank erosion along entire reach using bioengineering stabilization measures, which may help reduce the silt and sediment load.</i>	A1, A3, A8, C3, E1	1	3		M	2000	lf	2	Owner	Beach Park, BPDD	0
X		3a.26.4	Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	2000	lf	2	Owner		0
		3a.26.5	Beach Park	231	386		Remove chain link fence placed across stream channel.	A1, A10, B4	2	1		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3a.26.6	Beach Park	232	390		<i>Remediate significant erosion using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0
X		3a.26.7	Beach Park	230	384	HS146	Investigate and remediate collapsed pedestrian bridge in the stream channel.	A10, A11	2	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3b.0.2	Beach Park				Consider daylighting and restoring as much of the Wilson Avenue Tributary (not inventoried) as possible through the residential areas. Daylighting and restoration should address concerns about the tank cars and transite pipes that are reported to transmit the flow below ground in this location.	A1, A6, C3, G2	3	3		L	4000	lf	1	Beach Park	Owner	0
X		3b.0.3	Beach Park				Buffer the Wilson Avenue Tributary from encroachment by preserving open Category 2 green infrastructure areas.	B1, C1, C2, C3, G2, G4	1	3		L	3	acres	1	Owner	Beach Park	M

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X	X	3b.0.5	Beach Park				Restore and manage the wetlands within the open and partially open Category 1 Green Infrastructure areas just north of Lyons Woods Forest Preserve; reconnect these wetlands to the Lyons Woods system.	B1, C1, C2, C3, E1, E2, G2	3	3		L	7	acres	1	Owner	SMC	M
		3b.0.8	Beach Park				FPAI site 20-04, in the Village of Beach Park, experiences sewer backup into homes due to an inadequate drainage system. Investigate whether the remedial measure, a large pipe and ditch installed as part of the Monarch Point development to the north, fixed the problem. If not, remedial action should be taken, which may include working with the open areas identified on the SMU map to relieve drainage issues.	B2, B3	2	3		S	9	acres	1	Beach Park	SMC	H
		3b.0.9	Beach Park				FPAI site 20-05, in the Village of Beach Park, experiences road, home, and backyard flooding due to inadequate conveyance capacity of the open ditch and culvert, particularly the culvert under Yorkhouse Road. Remedial action may include retrofit / restoration of open green infrastructure areas to help absorb / store flood water.	B1, B2, B4	2	3		S	14	acres	1	Beach Park	SMC	H
X		3b.0.10	Beach Park				The area where BL13, BL14, and BL15 come together is in need of a stream restoration plan to remediate the buildup of debris, concrete lined channels, underground culverts and railroad tank cars, yard waste in the stream channel, and other impacts from nearby residential areas.	A1, A6, A10, A11, C3, E5, E9, G2	1	3		S	400	lf	1	Beach Park SMC Owner		0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	3b.0.11	Beach Park			DB62	Stabilize / regrade shoreline using bioengineering practices and plant banks and a surrounding buffer with native vegetation; address turbidity / sedimentation by naturalizing the basin.	E1, E2, E9	2	2		S-M	800	lf	1	Waukegan Park District		0
	X	3b.0.13	Beach Park			DB64	Retrofit as wet / wetland basin; plant banks and a surrounding buffer with native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup.	E1, E2, E9	2	2		S-M	500	lf	1	Owner HOA		0
	X	3b.0.14	Beach Park			DB65	Retrofit as wet / wetland basin; plant banks and a surrounding buffer with native vegetation.	E1, E2, E9	2	2		S-M	500	lf	1	HOA		0
		3b.0.17	Beach Park			DB113	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
		3b.0.18	Beach Park			DB114	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
		3b.0.19	Beach Park			DB208	Plant banks with native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup; remove excess debris.	E1, E2, E9	2	1		S-M	650	lf	1	HOA		0
		3b.0.20	Beach Park			DB209	Convert to wet or wetland basin; plant banks and a surrounding buffer with native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup.	E1, E2, E9	2	2		S-M	850	lf	1	HOA		0
		3b.0.21	Beach Park			DB232	Plant banks and a surrounding buffer with native vegetation; remove excess debris.	E1, E2, E9	2	1		S-M	1200	lf	1	Owner		0
X		3b.12.1	Beach Park				<i>Restore stream channel and improve instream habitat by installing and enhancing pools and riffles.</i>	A1, A10, C3	1	3		S	1900	lf	1	Owner	Beach Park, BPDD	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3b.12.2	Beach Park				<i>Address High streambank erosion along entire reach using bioengineering stabilization measures, which may help reduce the instream silt / sedimentation load.</i>	A1, A3, A8, C3, E1	1	3		M	1900	lf	2	Owner	Beach Park, BPDD	0
X	X	3b.12.3	Beach Park				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	1900	lf	2	Owner		0
		3b.12.4	Beach Park				<i>Investigate / inspect failed / broken concrete dam along west of Cheney / North Ave. for impact on stream, and remove impacting dam elements if found to have a negative impact.</i>	A1, A2, A11, C3	3	1		S-L	1	ea	1	Owner	Beach Park, BPDD	0
X		3b.12.5	Beach Park	71	179		<i>Stabilize typical 1-2 foot erosion on right bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0
X		3b.12.6	Beach Park	72	180		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3b.12.7	Beach Park	73	181		<i>Stabilize significant erosion and slumping of right bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0
X		3b.12.8	Beach Park	76	185	HS65	<i>Remove debris and sediment from culvert under Beach Road.</i>	A10, A11, C3, E1, E7, E8, F7	1	3		S	1	ea	1	Owner	Beach Park, BPDD	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3b.12.9	Beach Park	74	182	PD77	<i>Remediate erosion of open point discharge channel draining to the creek using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3b.12.10	Beach Park	75	183	PD78	<i>Remediate erosion of open point discharge channel draining to the creek using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3b.13.1	Beach Park				Manage and restore the wooded ravine along reach BL13. Assumes an area 2500 lf by 150 ft in width for cost estimating purposes.	A6, A7, A10	3	2		S	8.5	acre	1	Owner	Beach Park	0
X		3b.13.2	Beach Park				<i>Restore stream channel and improve instream habitat by installing and enhancing pools and riffles and removing numerous debris jams according to the American Fisheries Society guidelines.</i>	A1, A10, C3	1	3		S	3000	lf	1	Owner	Beach Park, BPDD	0
X		3b.13.3	Beach Park				<i>Address High streambank erosion along entire reach using bioengineering stabilization measures, which may help reduce the instream silt / sedimentation load.</i>	A1, A3, A8, C3, E1	1	3		M	3000	lf	2	Owner	Beach Park, BPDD	0
X	X	3b.13.4	Beach Park				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	3000	lf	2	Owner	Beach Park SMC	0
X		3b.13.5	Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	3000	lf	2	Owner	Beach Park SMC	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	3b.13.6	Beach Park				Inspect footbridges and armored / concrete-lined banks and remediate if found to be negatively impacting the stream.	A1, A10, A11	3	3		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3b.13.7	Beach Park				<i>Restore channel reach near Wilson Avenue by installing pool and riffle structures and stabilizing streambanks.</i>	A1, A6, A9, A10, C3, E5, G2	1	3		M	200	lf	1	Owner	Beach Park BPDD	0
	X	3b.13.8	Beach Park				Remove concrete debris dumping / fill just upstream of Beach Rd culvert from property / operation at Tewes and Beach.	A10, A11, B4	2	2		S	1	ea	1	Beach Park	Beach Park, BPDD	0
X		3b.13.9	Beach Park	78	188		<i>Remediate significant erosion and slumping of right bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park BPDD	0
		3b.13.10	Beach Park	85	195		<i>Inspect and assess fencing across channel and rock wall armoring and remove if found to impair the conveyance of water.</i>	A1, A10, A11	1	1		S	1	ea	1	Owner	Beach Park BPDD	0
X		3b.13.11	Beach Park	87-88	197-198		<i>Remove concrete from channel and restore stream channel by stabilizing streambanks and installing habitat features such as pools and riffles and rootwads. Assumes 150 lf of stream channel needs attention for cost estimation purposes.</i>	A10, A11, B4	1	3		S	150	lf	1	Owner	Beach Park BPDD	0
X		3b.13.12	Beach Park	96	206		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park BPDD	0
X		3b.13.13	Beach Park	77	186	HS66	<i>Remove debris and sediment from culvert under Beach Road.</i>	A10, A11, C3, E1, E7, E8, F7	1	3		S	1	ea	1	Owner	Beach Park BPDD	0



Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3b.13.14	Beach Park	90	200	HS73	<i>Address failed concrete wall armoring and major erosion behind the armoring by removing the concrete and using bioengineering stabilization measures. Assumes 100lf of stream channel needs attention for cost estimation purposes.</i>	A1, A3, A11	1	3		S-M	100	lf	1	Owner	Beach Park BPDD	0
X		3b.13.15	Beach Park	100	210	HS78-79	<i>Repair or replace broken concrete and corrugated metal pipe culvert and remove debris obstructing flow.</i>	A1, A3, A11, C3	1	3		S-M	1	ea	1	Owner	Beach Park BPDD	0
X		3b.13.16	Beach Park	77	187	PD81	<i>Stabilize erosion at and below outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park BPDD	0
X		3b.13.17	Beach Park	79	189	PD82	<i>Repair failed clay outfall pipe and address erosion around outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park BPDD	0
X	X	3b.14.1	Beach Park				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	500	lf	2	Owner	Beach Park BPDD	0
X		3b.14.2	Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	500	lf	2	Owner	Beach Park BPDD	0
X	X	3b.14.3	Beach Park	102	212-213		<i>Conduct major channel restoration by removing debris and restoring a natural channel to this concrete-lined drainage ditch.</i>	A1, A10, A11, C3	1	3		S	50	lf	1	Owner	Beach Park BPDD	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3b.15.10	Beach Park	109	222	PD97	<i>Stabilize erosion around plastic drain pipe outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	1		S-M	1	ea	1	Owner	Beach Park BPDD	0
X		3b.15.11	Beach Park	110	224	PD98	<i>Stabilize erosion around plastic drain pipe outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	1		S-M	1	ea	1	Owner	Beach Park BPDD, Waukegan	0
X		3b.15.12	Beach Park	114	234	PD104 & 105	<i>Remove debris at the outfall discharge points.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park BPDD, Waukegan	0
X		3b.17.1	Beach Park				Restore stream channel and improve instream habitat by enhancing pools and riffles.	A1, A10, C3	3	3		S	2400	lf	1	Owner	Beach Park BPDD	0
X		3b.17.2	Beach Park				Address Moderate streambank erosion along entire reach using bioengineering stabilization measures.	A1, A3, A8, C3, E1	1	3		M	2400	lf	2	Owner	Beach Park BPDD	0
X	X	3b.17.3	Beach Park				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.	A6, A10, B1, C3, E1	2	2		S	2400	lf	2	Owner		0
X		3b.17.4	Beach Park				Inspect footbridges and armored / concrete-lined banks along this reach for impacts on the stream corridor and remediate if necessary.	A1, A10, A11, C3	3	3		S	1	ea	1	Owner	Beach Park BPDD	0
X		3b.17.5	Beach Park	135	264		Remove broken concrete slab streambank armoring and restore channel to natural channel condition. Length difficult to determine from photo; assume 50 lf and 1 side of stream for cost estimation purposes.	A1, A10, A11, C3	2	3		S	50	lf	1	Owner	Beach Park BPDD	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3b.17.6	Beach Park	139-141	272-276		Restore a minimum 5 foot wide, deep-rooted native plant buffer to the stream edge within the golf course.	A6, C3	2	1		S	600	lf	2	Waukegan Park District		M
X		3b.17.7	Beach Park	146	281		Remove debris at outfall.	A10, A11, B4	2	2		S	1	ea	1	Owner	Beach Park BPDD	0
X		3b.17.8	Beach Park	146	282		Stabilize significant erosion and bank slumping using bioengineering stabilization measures. Length difficult to determine from photo; assume 50 lf and 1 side of stream for cost estimation purposes.	A1, A3, A7, C3, E1	1	3		M	50	lf	1	Owner	Beach Park BPDD	0
X		3b.17.9	Beach Park	134	261-262	HS95	Remove debris blocking culvert and repair, remediate, and/or stabilize the exposed culvert.	A10, A11, B4	2	3		S-M	1	ea	1	Owner	Beach Park BPDD	0
X		3b.17.10	Beach Park	138	270	HS99	Stabilize erosion undermining the culvert, preferably using bioengineering stabilization measures but also using more structural measures if necessary.	A1, A3, A5, A8, A11, C3, E1	2	3		S-M	1	ea	1	Waukegan Park District	Beach Park BPDD	0
		3c.0.9	Beach Park				FPAI site 20-02, in the Village of Beach Park, experiences flooding due to inadequate outlets and poor drainage. There is a backyard drainage ditch between Beach and Howard, Sheridan and Geraghty (depressional storage #49) and extending along Coolidge Rd to the north (depressional storage #50) that are likely part of the cause of flooding. Investigate whether the new storm sewer along Coolidge Avenue has eliminated flooding in this location. If flooding persists, additional solutions may include improvement of drainage overland flow paths and installation of additional storm sewer capacity to alleviate the problem.	B4, F7	3	1		S	NA	NA	NA	Beach Park		L

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
		3c.0.10	Beach Park				Monitor past IDOT-recorded flooding locations at Sheridan and Wadsworth, Sheridan and Talmadge / Michigan, and Sheridan and Beach Rd. to determine whether flooding is still occurring at these sites. If so, develop and implement flood mitigation strategies.	B4, F7	3	1		S	1	ea	1		IDOT	0
	X	3c.0.14	Beach Park			DB53	Stabilize / regrade shoreline and plant banks and a surrounding buffer with native vegetation.	E1, E2, E9	2	2		S-M	650	lf	1	Owner		0
	X	3c.0.15	Beach Park			DB54	Stabilize / regrade shoreline using bioengineering practices and plant banks and a surrounding buffer with native vegetation; address algae / nutrient loads and turbidity / sedimentation by naturalizing the basin.	E1, E2, E9	2	2		S-M	600	lf	1	Owner		0
	X	3c.0.16	Beach Park			DB61	Retrofit as wet / wetland basin; stabilize / regrade shoreline and plant banks and a surrounding buffer with native vegetation.	E1, E2, E9	2	2		S-M	300	lf	1	Owner		0
		3c.0.18	Beach Park			DB212	Plant banks and a surrounding buffer with native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup.	E1, E2, E9	2	1		S-M	375	lf	1	Owner		0
X		3c.7.3	Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	1800	lf	2	Owner, Bull Creek Stakeholder Assn.		0
	X	3c.7.4	Beach Park				Assess side slope seeps for restoration potential. Restore if possible. C3		1	3		S	2	acre	1	Owner, SMC		0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.7.5	Beach Park				Remove massive debris jam approximately 300' downstream of Sheridan Road and stabilize channel.	A10, A11, B4	2	3		S	1	ea	1	Beach Park, Bull Creek Stakeholder Assn., SMC		0
X		3c.8.1	Beach Park				<i>Address High streambank erosion along entire reach, some threatening homes and property, using bioengineering stabilization measures.</i>	A1, A3, A8, C3, E1	1	3		M	2000	lf	2	Owner	Beach Park, BPDD	0
X	X	3c.8.2	Beach Park				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.	A6, A10, B1, C3, E1	2	2		S	2000	lf	2	Owner		0
X		3c.8.3	Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	2000	lf	2	Owner		0
X		3c.8.4	Beach Park				<i>Repair broken cement outfall pipe and stabilize surrounding erosion using bioengineering stabilization measures. Location is approximately 300' upstream of Sheridan Rd.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Beach Park	Beach Park, BPDD	0
X		3c.8.5	Beach Park				<i>Stabilize streambank erosion across from the sewer / manhole stabilization project along the reach near the Garaghty / California intersection. Length of problem is unknown; assume 50 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	50	lf	1	Owner	Beach Park, BPDD, NSSD, USACE, 0	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.8.6	Beach Park	18	114	PD50	<i>Stabilize minor channel erosion and downcutting of channel outfall using bioengineering stabilization measures and energy dissipation measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.8.7	Beach Park	19	115	PD51	<i>Stabilize major erosion behind headwall and below outfall preferably using bioengineering stabilization measures but may also require more structural measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.8.8	Beach Park	20	116	PD52	<i>Stabilize moderate channel erosion and downcutting using bioengineering stabilization measures and, if necessary, check dams.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.8.9	Beach Park	21	117		<i>Address major erosion and slumping on left bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 50 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	50	lf	1	Owner	Beach Park, BPDD	
X		3c.8.10	Beach Park	22	118		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.8.11	Beach Park	23	119		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.8.12	Beach Park	24	120		<i>Monitor sewer manhole, which rises 6 feet above stream elevation, for leakage and infiltration problems.</i>	F7	1	1		S	1	ea	1	NSSD		0
X		3c.8.13	Beach Park	25	122	PD53	<i>Stabilize major erosion and slumping of ravine bank using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.8.14	Beach Park	26	123		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park, BPDD	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.9.1	Beach Park				<i>Restore stream channel and improve instream habitat by installing and enhancing pools and riffles and installing boulders, large rocks, and / or rootwads.</i>	A1, A10, C3	1	3		S	2500	lf	1	Owner	Beach Park, BPDD	0
X		3c.9.2	Beach Park				<i>Stabilize High streambank erosion along entire reach using bioengineering stabilization measures.</i>	A1, A3, A8, C3, E1	1	3		M	2500	lf	2	Owner	Beach Park, BPDD	0
X	X	3c.9.3	Beach Park				<i>Restore the native riparian buffer (manage native riparian plant communities within this reach: control invasive species, plant native species, thin shrub layer to allow more understory growth, and manage vegetation such as through prescribed burning.)</i>	A6, A10, B1, C3, E1	1	2		S	2500	lf	2	Owner		0
X		3c.9.4	Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	2500	lf	2	Owner		0
X		3c.9.5	Beach Park	30	127		<i>Stabilize major erosion with slumping on the left bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 50 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	50	lf	1	Owner	Beach Park, BPDD	0
X		3c.9.6	Beach Park	31	128		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.9.7	Beach Park	33	130		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.9.8	Beach Park	35	132	PD55	<i>Remove debris around plastic outfall pipe.</i>	A10, A11, B4	1	2		S-M	1	ea	1	Owner	Beach Park, BPDD	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.9.9	Beach Park	437	134		<i>Stabilize major erosion on the left bank using bioengineering stabilization measures.</i>	A1, A10, A11, C3	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0
X		3c.9.10	Beach Park	43	140		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.9.11	Beach Park	44	141		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.9.12	Beach Park	45	142		<i>Stabilize major erosion and slumping of the left bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1, E5	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0
X		3c.10.1	Beach Park				<i>Stabilize High streambank erosion along entire reach using bioengineering stabilization measures, which may help reduce the silt / sediment accumulation within this reach.</i>	A1, A3, A8, C3, E1	1	3		M	800	lf	2	Owner	Beach Park, BPDD	0
X	X	3c.10.2	Beach Park				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	800	lf	2	Owner		0
X		3c.10.3	Beach Park	48	148		<i>Stabilize major erosion and slumping using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0



Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.10.4	Beach Park	49	149	PD64	<i>Stabilize erosion around capped outfall pipe using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.11.1	Beach Park				<i>Stabilize High streambank erosion along entire reach using bioengineering stabilization measures.</i>	A1, A3, A8, C3, E1	1	3		M	2500	lf	2	Owner	Beach Park, BPDD	0
X	X	3c.11.2	Beach Park				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	2500	lf	2	Owner		0
	X	3c.11.3	Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	2500	lf	2	Owner	Beach Park	0
X		3c.11.4	Beach Park	51	152	HS55	<i>Remove debris obstructing culverts.</i>	A10, A11, B4	2	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.11.5	Beach Park	52	154	PD67	<i>Remove debris from outfall channel and assess armoring for impact on stream; if negative impact is found, remove armoring and stabilize with bioengineering approach.</i>	A10, A11, B4	2	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.11.6	Beach Park	53	156		<i>Stabilize major erosion and slumping using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0
X		3c.11.7	Beach Park	54	157		<i>Repair / remediate erosion below outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.11.8	Beach Park	55	158		Remove debris obstructing flow using American Fisheries Society guidelines.	A10, A11, B4	2	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.11.9	Beach Park	55	160		<i>Stabilize major erosion occurring behind armoring on the left bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0
X		3c.11.10	Beach Park	62	166		<i>Assess wood armoring / retention wall for stability and feasibility of bioengineered approach to bank stabilization. Assumes 100lf of stream channel, both sides for cost estimation purposes.</i>	A1, A3, C3	1	3		M	100	lf	2	Owner	Beach Park, BPDD	0
X		3c.19.1	Beach Park				<i>Stabilize Moderate streambank erosion along entire reach using bioengineering stabilization measures.</i>	A1, A3, A8, C3, E1	1	3		M	1900	lf	2	Owner	Beach Park, BPDD	0
X	X	3c.19.2	Beach Park				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	1900	lf	2	Owner		0
X		3c.19.3	Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	1900	lf	2	Owner	Beach Park	0
X		3c.19.4	Beach Park	157	298		Remove debris obstructing flow using American Fisheries Society guidelines.	A10, A11, B4	2	2		S	1	ea	1	Owner	Beach Park, BPDD	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.19.5	Beach Park	160	302		<i>Stabilize significant erosion and slumping on the left bank using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0
X		3c.19.6	Beach Park	163	308	PD142	<i>Stabilize channel erosion and downcutting of discharge channel using bioengineering stabilization measures and check dams or other grade stabilization measures if necessary.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.19.7	Beach Park	164	309	PD143	<i>Stabilize channel erosion and downcutting of discharge channel using bioengineering stabilization measures and check dams if necessary.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.20.1	Beach Park				<i>Restore stream channel and improve instream habitat by installing and enhancing pools and riffles.</i>	A1, A10, C3	3	3		S	3600	lf	1	Owner	Beach Park, BPDD	0
X		3c.20.2	Beach Park				<i>Stabilize Moderate streambank erosion along entire reach using bioengineering stabilization measures.</i>	A1, A3, A8, C3, E1	1	3		M	3600	lf	2	Owner	Beach Park, BPDD	0
X	X	3c.20.3	Beach Park				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	2	2		S	3600	lf	2	Owner		0
X		3c.20.4	Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	3600	lf	2	Owner		0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.20.5	Beach Park	167	312		<i>Stabilize significant erosion and slumping using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park, BPDD	0
X		3c.20.6	Beach Park	168	313	HS116	<i>Stabilize significant erosion and attempted stabilization debris around culvert using bioengineering stabilization measures</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.20.7	Beach Park	171	316		Remove debris obstructing flow using American Fisheries Society guidelines.	A10, A11, B4	2	2		S	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.20.8	Beach Park	173	319	PD147	<i>Stabilize channel erosion and downcutting of discharge channel using bioengineering stabilization measures and check dams if necessary.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.20.9	Beach Park	175	321	HS121	<i>Stabilize erosion around culvert using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.20.10	Beach Park	175	322	PD148	<i>Stabilize erosion around plastic drain pipe outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	1		S-M	1	ea	1	Owner	Beach Park, BPDD	0
X		3c.20.11	Beach Park	178	325	PD151	Repair or remediate cracked concrete armoring at outfall.	A1, A3, A5, A8, A11, C3, E1	2	3		M	10	lf	1	Owner	Beach Park, BPDD	0
X	X	3c.24.1	Beach Park				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.	A6, A10, B1, C3, E1	2	2		S	2000	lf	2	Owner	Beach Park, BPDD	0
X		3c.24.2	Beach Park	217	369		Remove debris including tires.	A10, A11, B4	2	2		S	1	ea	1	Owner	Beach Park, BPDD	0

Table H2 Village of Beach Park Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		4.0.1	Beach Park				Preserve and restore the ravine within the open Category 1 green infrastructure area between Ganster Road and Sheridan Road, just east of Lyons Woods Forest Preserve.	B1, C1, C2, C3, G2, G4	1	3		L	10	acres	1	Owner	Beach Park	M
		4.0.6	Beach Park				Expand / enlarge detention basins #28, #75, and #76 to reduce IDOT-recorded flooding locations along Sheridan Road north of Blanchard.	B4, F7	2	1		S	1	ea	1	DOT		0
		4.0.9	Beach Park			DB228	Inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup; address algae / nutrients by naturalizing the basin; remove excess debris.	E1, E2, E9	2	2		S-M	650	lf	1	FPD		0
X		4.05.3	Beach Park	298	472		Remove debris / bricks in channel.	A10, A11, B4	2	3		S	1	ea	1	Owner	Beach Park, BPDD	0
X		4.05.4	Beach Park	299	473		<i>Stabilize bank erosion using bioengineering stabilization measures. Length difficult to determine from photo; assume 50 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A8, C3, E1	1	2		M	50	lf	1	Owner	Beach Park, BPDD	0

Table H3 City of Waukegan Expanded Site Specific Action Plan

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		1.0.7	Waukegan				Preserve and restore the green infrastructure areas in the southwest corner of the SMU, east of the Union Pacific rails and west of industrial land uses (Midwest Generation, North Shore Sanitary District, and Outboard Marine Corporation). This area has been identified by the City of Waukegan for restoration as the 'Waukegan Moorlands'.	B1, C1, C2, C3, G2, G4	1	3		S	52	acres	1	Waukegan	Owner	0
	X	1.0.10	Waukegan				Investigate the wetlands adjacent to the Johns Manville lagoons for restoration and remediation potential and as a possible water quality improvement facility for water runoff from nearby industrial sites. Cost reflects standard wetland restoration and management rather than clean up and remediation.	B1, C3, C5, E1, E2, G4	3	3		S	35	acres	1	IDNR		0
X	X	1.1.1	Waukegan				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	2000	lf	2	Owner, Utility, C&NW RR	Waukegan	0
X		1.1.3	Waukegan				<i>Restore stream channel and instream habitat by reducing / remediating channelization, possibly through a meandering and other restoration projects such as installing boulders, large rocks, and / or rootwads.</i>	A1, A10, C3	1	3		S	2000	lf	1	Owner/Utility	Waukegan	0
	X	1.1.5	Waukegan	260	426	HS01 & 02	Inspect and remediate culvert, which is nearly full of water in the inventory photo and may be sediment filled.	A10, A11, C3, E1, E7, E8, F7	3	3		S	1	ea	1	C&NW RR	SMC	0

Table H3 City of Waukegan Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	1.1.6	Waukegan	261	428	HS03 & 04	Inspect and remediate culvert, which is nearly full of water in the inventory photo and may be sediment filled.	A10, A11, C3, E1, E7, E8, F7	3	3		S	1	ea	1	C&NW RR	SMC	0
	X	3b.0.12	Waukegan			DB63	Address algae / nutrient loads by naturalizing the basin.	E1, E2, E9	2	1		S-M		lf	1	Owner		0
		3b.0.15	Waukegan			DB70	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
	X	3b.0.16	Waukegan			DB72	Retrofit as wet / wetland basin; plant banks and a surrounding buffer with native vegetation.	E1, E2, E9	2	2		S-M	400	lf	1	HOA		0
X		3b.16.5	Waukegan				<i>Stabilize the eroding, 4 foot deep cut channel within the turf grass landscape at the upstream end of BL16, just downstream of the Beach Rd. culvert.</i>	A1, A3, A6, C3, G2	1	3		S	300	lf	2	Owner		0
X		3b.16.6	Waukegan				<i>Repair or replace the steel Beach Road culvert that is eroding around the edges and beneath, possibly due in part to the additional plastic drain pipe.</i>	A3, A11	1	3		S-M	1	ea	1	Waukegan		0
	X	3c.0.3	Waukegan				For Waukegan Airport property, implement the spill prevention and response plan and reduce the use of salt and/or deicers. Install filtration and infiltration BMPs to capture and treat runoff from airport landscapes, particularly impervious surfaces such as runways and fueling areas, before being discharged to the stream system of Bull Creek.	E1, E2, E5, E10	2	3		S	A/R	-	-	Waukegan Port District		0
	X	3c.0.17	Waukegan			DB71	Retrofit as wet / wetland basin; plant banks and a surrounding buffer with native vegetation.	E1, E2, E9	2	2		S-M	1300	lf	1	Owner		0

Table H3 City of Waukegan Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	4.0.5	Waukegan				Improve swale and other surface stormwater drainage systems within the developed areas of the SMU, particularly those residential areas off Miraflores and Montesano, with lot level stormwater filtration and infiltration BMPs. Details reflect 28,000 lf (approximately 6.5 acre) of 10 foot wide drainage swale improvements / lot level / source control BMPs on each side of all roads.	E1, E2, E7, E9, G1	1	3		S	6.5	acres	1	Waukegan, Owner		0
		4.0.7	Waukegan			DB75	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
		4.0.8	Waukegan			DB76	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
X		4.05.5	Waukegan	294	466	PD33	<i>Stabilize and strengthen the incised discharge channel.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Waukegan	0
X		5.0.1	Waukegan				Preserve the ravine within the 7-acre open Category 1 green infrastructure area between Circle Court and the Amstutz Expressway.	A6, B1, C2, C3, G2, G4	1	3		L	7	acre	1	Owner/Utility		M



Table H3 City of Waukegan Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	5.0.2	Waukegan				Preserve and restore wetland complexes where these resource remain, including those along the entire length of reach BL04 and those adjacent to Lake County Gardens (depressional storage areas #22 and #23). Wetland / depressional area #23, bordered by Pine, Lorraine, Wilson, and the McClory Bike Trail, contains some elements of a decent quality wetland indicative of good restoration potential. Two additional potential restoration areas are the small park between Butrick and Yeoman and the upstream drainage corridor north of and paralleling Rice St.	A6, B1, C2, C3, G2, G4	1	3		S-L	65	acre	1	Waukegan, Owner, Utility		0
X		5.0.3	Waukegan				Preserve the wetlands / stream corridor within Category 1 and 2 open green infrastructure areas between Rice and MacArthur, west of Lewis Avenue, and the area between Pine, Wilson, and the McClory bike path.	A6, B1, C2, C3, G2, G4	1	3		L	34	acre	1			0
X		5.0.4	Waukegan				<i>Install filtration BMPs for commercial and institutional uses along Greenwood Avenue and at the York House Rd / Lewis Ave intersection to help reduce pollutant loading in potential pollution hotspot subbasins S13, S14, S43, and S73. Details reflect 10,000 lf (approximately 2.5 acre) of 10 foot wide drainage swale improvements / lot level / source control BMPs on along the road frontage.</i>	E1, E2, E7, E9, G1	1	3		S	2.5	acres	1	Waukegan, Owner		0

Table H3 City of Waukegan Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	5.0.5	Waukegan				<i>Install lot level filtration and infiltration BMPs, to help reduce pollutant loading in potential pollution hotspot subbasins S13, S14, S39, S43, and S73. Details reflect 228,000 lf (approximately 52 acre) of 10 foot wide drainage swale improvements / lot level / source control BMPs on each side of all roads.</i>	E1, E2, E7, E9, G1	1	3		S	52	acres	1	Waukegan		0
	X	5.0.6	Waukegan			DB66	Stabilize / regrade shoreline using bioengineering practices and plant banks and a surrounding buffer with native vegetation.	E1, E2, E9	2	2		S-M	1500	lf	1	Golf Course		0
	X	5.0.7	Waukegan			DB67	Stabilize / regrade shoreline using bioengineering practices and plant banks and surrounding buffer with native vegetation; inspect and remediate inlet / outlet problems by removing clogging and/or debris buildup; address turbidity / sedimentation by naturalizing the basin; remove excess debris.	E1, E2, E9	2	2		S-M	900	lf	1	Golf Course		0
	X	5.0.8	Waukegan			DB68	Stabilize / regrade shoreline using bioengineering practices and plant banks and a surrounding buffer with native vegetation.	E1, E2, E9	2	2		S-M	600	lf	1	Golf Course		0
	X	5.0.9	Waukegan			DB73	Retrofit as wet / wetland basin; stabilize / regrade shoreline using bioengineering practices and plant banks and surrounding buffer with native vegetation.	E1, E2, E9	2	2		S-M	900	lf	1	Waukegan, Owner		0

Table H3 City of Waukegan Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	5.0.10	Waukegan			DB74	<i>Retrofit as wet / wetland basin; stabilize / regrade shoreline using bioengineering practices and plant banks and a surrounding buffer with native vegetation; address algae / nutrient loads and address turbidity / sedimentation by naturalizing the basin. This may reduce pollutant loading within potential pollutant loading hotspot S39.</i>	E1, E2, E9	2	2		S-M	750	lf	1	Owner		0
		5.0.11	Waukegan			DB203	<i>Inventory detention basin and identify resolutions to any noted functional problems. his may reduce pollutant loading within potential pollutant loading hotspot S14.</i>	-	3	1		S-M	1	ea	1	SMC		0
X	X	5.2.1	Waukegan				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning. Restoration and management of Bowen Park and the residential areas along Miraflores is important to enhance the habitat quality of this reach.	A6, A10, B1, C3, E1	2	2		S	4000	lf	2	State of IL/ Waukegan Park District, Owner, Utility		0
X		5.2.2	Waukegan				Reduce impacts of surrounding golf course and park property such as landscape waste dumping, turf grass stream edges. Filter and infiltrate runoff from parking lots, such as those within Bowen Park, with BMPs. Details reflect installation of lot level BMPs.	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	2	1		S	2000	lf	2	State of IL/ Waukegan Park District, Owner		0

Table H3 City of Waukegan Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		5.2.3	Waukegan				Reduce impacts of residential homes along Miraflores: cease yard waste dumping, replace mown turf grass to the edge of the stream with a minimum 10 foot native vegetation buffer, infiltrate runoff discharge from roof or footing drains with rain gardens or rain barrels, and naturalize the stream channel by replacing poured concrete and rip rap with bioengineering stabilization measures.	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	2	1		S	2000	lf	2	Owner		0
X		5.2.4	Waukegan				Gully erosion occurring in the ravines of Bowen Park should be remediated through ravine woodland restoration and management along reach BL02. Assumes 4000 lf of stream reach by 500' width. Costs reflect woodland restoration; load reduction reflects Moderate erosion stabilization. A6,	A10	1	2		S	46	acre	1	State of IL/ Waukegan Park District, Owner		0
X		5.2.5	Waukegan				Stabilize erosion around the Sheridan Road culvert and replace the broken stormsewer that is discharging to the opposite streambank.	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Waukegan		0
X		5.2.6	Waukegan	267	436		Remove debris obstructing flow using American Fisheries Society guidelines.	A10, A11, B4	2	2		S	1	ea	1	Waukegan	Waukegan Park District, SMC, Owner	0
X		5.2.7	Waukegan	270	439		Remove debris obstructing flow using American Fisheries Society guidelines.	A10, A11, B4	2	2		S	1	ea	1	Waukegan	Waukegan Park District, SMC	0
X		5.2.8	Waukegan	272	441		Stabilize typical 2-4 foot bank erosion using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.	A1, A3, A8, C3, E1	2	3		M	100	lf	1		Waukegan Park District, SMC	0

Table H3 City of Waukegan Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		5.2.9	Waukegan	269	438	PD4	Stabilize minor erosion of open discharge channel using bioengineering stabilization measures.	A1, A3, A5, A8, A11, C3, E1	3	3		S-M	1	ea	1	Waukegan Park District		0
X		5.2.10	Waukegan	274	443	PD6	Stabilize significant erosion below outfall using bioengineering stabilization measures.	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Waukegan, Waukegan Park District		0
X		5.2.11	Waukegan	277	446	PD9	Stabilize minor channel erosion below concrete lined channel outfall. Consider removing concrete and stabilizing channel with more habitat-appropriate measures.	A1, A3, A5, A8, A11, C3, E1	3	3		S-M	1	ea	1	Waukegan		0
X		5.2.12	Waukegan	279	449	PD10	Install energy dissipation measures to address the eroding plunge pool created by discharge from the elevated outfall.	A1, A3, A5, A8, A11, C3, E1	1	1		S-M	1	ea	1	Waukegan		0
X	X	5.3.1	Waukegan				<i>Restore a 5 foot wide native riparian buffer and replace turf grass lawn edges to native riparian plant communities as is feasible within the golf course.</i>	A6, A10, B1, C3, E1	1	2		S	3000	lf	2	Owner		0
		5.3.2	Waukegan				Glen Flora Country Club: replace or remediate online detention, armored dams and wiers with more habitat appropriate structures that allow fish passage. A1,	A2	3	3		L	3	ea	1	Owner		
X		5.3.3	Waukegan	379	74		<i>Stabilize erosion undercutting the concrete-lined channel outfall / dam; if feasible, remove concrete and replace with bioengineered channel stabilization measure.</i>	A1, A2, A3, A5, A10, A11	1	3		S-M	20	lf	1	Owner		0
X		5.4.1	Waukegan				Restore stream channel and improve instream habitat by reducing channelization, such as through a re-meandering project.	A1, A10, C3	3	3		S	7000	lf	1	Waukegan, Lake County DOT		0

Table H3 City of Waukegan Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X	X	5.4.2	Waukegan				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, and managing vegetation such as through prescribed burning.	A4, A10, B1, C3, E1	1	2		S	7000	lf	2	Waukegan, Lake County DOT		0
		5.4.3	Waukegan				Implement the mitigation plan for FPAI site 20-06, in the City of Waukegan, Lake County Gardens subdivision. There also may be opportunities to increase the detention and/or drainage capacity of the drainage system in this area, particularly within the community park to the north. However, improvement of the wetlands to increase their storage capacity may also be an option.	B1, B2, B3, B4	2	3		S	145	acres	1	Waukegan		H
X		5.4.4	Waukegan				Restore the upper end of this reach, a fairly undefined channel that is choked with cattails, through invasive species removal and management.	A1, A6, C3	3	2		S	2200	lf	1	Waukegan, Owner		0
X	X	6.0.1	Waukegan				<i>Manage and restore the wooded ravine, wetland, and depression area #3 that lies between the Amstutz and Sheridan Road for storage. Load reduction details reflect impact of restored wetland.</i>	A6, A7, A10, G4	1	3		S	14	acre	1	Owner	Waukegan	0
X		6.0.3	Waukegan				Open and partially open Category 1 green infrastructure areas between the waste water treatment plant and the Union Pacific tracks should be restored and integrated into the planned Waukegan Moorlands area to the north. Details reflect natural area restoration.	C2, C3	1	3		L	28	acre	1	Waukegan, Owner		0

Table H3 City of Waukegan Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	6.0.4	Waukegan				<i>Install filtration BMPs for commercial, industrial, and institutional uses in the eastern and southwestern portions of the SMU to help improve water quality in potential pollutant loading hotspot S10, S11, and S75. Details reflect approximately 15,000 lf (approximately 3.5 acre) of 10 foot wide drainage swale improvements / lot level / source control BMPs on along the road frontages of these land uses.</i>	E1, E2, E7, E9, G1	1	3		S	3.5	acre	1	Waukegan	Owner	0
	X	6.0.5	Waukegan				<i>This SMU is primarily sewer but undetained. Install source controls and lot level filtration and infiltration BMPs, including detention basin improvements, which may help address pollutant loading in potential pollutant loading hotspot S10, S11, and S75. Details reflect 96,000 lf (approximately 22 acre) of 10 foot wide drainage swale improvements / lot level / source control BMPs on each side of all roads.</i>	E1, E2, E7, E9, G1	1	3		S	22	acre	1	Waukegan, Owner		0

Table H4 Illinois Department of Natural Resources Expanded Site Specific Action Plan

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	1.0.2	IDNR				Develop and implement habitat restoration and management plans for Illinois Beach State Park, including all wetlands, waterways, beach ridge, dune and swale systems, and T&E species habitat.	A8, C3, C4, C5, C6, E1, E7, G4	1	3		S	1548	acres	1	IDNR	-	0
		1.0.5	IDNR				Restore hydrologic connectivity of Dead River to Lake Michigan and remove those created to carry wastewater to the lake. Assumes that 4 hydrologic connections need to be restored or removed.	C3, C6, G4	3	3		S	4	ea	1	IDNR		0
		1.0.16	IDNR			DB55	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
	X	1.0.17	IDNR			DB56	Stabilize / regrade shoreline using bioengineering practices and address algae / nutrient loads by naturalizing the basin.	E1, E2, E9	2	2		S-M	1100	lf	1	IDNR		0
	X	1.0.18	IDNR			DB58	Address algae / nutrient loads by naturalizing the basin.	E1, E2, E9	2	1		S-M	1	ea	1	IDNR		0
	X	1.0.19	IDNR			DB59	Address algae / nutrient loads by naturalizing the basin.	E1, E2, E9	2	1		S-M	1	ea	1	IDNR		0
	X	1.0.20	IDNR			DB60	Address algae / nutrient loads by naturalizing the basin.	E1, E2, E9	2	1		S-M	1	ea	1	IDNR		0
		1.0.21	IDNR			DB206	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
		1.0.22	IDNR			DB207	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
		1.0.25	IDNR			DB234	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0
		1.0.26	IDNR			DB239	Inventory detention basin and identify resolutions to any noted functional problems.	-	3	1		S-M	1	ea	1	SMC		0



Table H5 Lake County Expanded Site Specific Action Plan

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	3a.0.6	Lake County				Depressional storage area #78, within the Thunderhawk Golf Club Forest Preserve, may be able to be expanded to provide additional storage if needed, and may also be retrofitted / restored to improve runoff quality from the golf course, provided that runoff can be directed into this area, treated, and then discharged to a receiving water body. Costs reflect restoration of this wet / hydric area.	B1, C1, C2, C3, E1, E2, E4, E9, G2, G4	2	3		S-L	4.5	acre	1	FPD		0
	X	3a.0.18	Lake County			DB45	Stabilize / regrade shoreline using bioengineering practices; address algae / nutrient loads by naturalizing the basin.	E1, E2, E9	2	2		S-M	1200	lf	1	FPD		0
	X	3c.0.11	Lake County			DB46	Stabilize / regrade shoreline using bioengineering practices; address algae / nutrient loads by naturalizing the basin.	E1, E2, E9	2	2		S-M	1000	lf	1	FPD		0
	X	3c.0.12	Lake County			DB47	Stabilize / regrade shoreline using bioengineering practices.	E1, E2, E9	2	2		S-M	2000	lf	1	FPD		0
	X	3c.0.13	Lake County			DB50	Stabilize / regrade shoreline using bioengineering practices; address algae / nutrient loads by naturalizing the basin.	E1, E2, E9	2	2		S-M	650	lf	1	FPD		0
X	X	3c.23.1	Lake County				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.	A6, A10, B1, C3, E1	2	2		S	3600	lf	2	FPD		0

Table H5 Lake County Expanded Site Specific Action Plan (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		4.0.3	Lake County				Manage and restore the natural resources, including ADID wetland #1831, in the northeastern corner of Lyons Woods Forest Preserve. The southern portion of depressional storage area #28 is within the Forest Preserve boundary and may be used to relieve past IDOT-recorded flooding at Sheridan and York House Road. ADID wetland is approximately 46 acres (4000' by 500' wide) and the total area of Lyons Woods is 264 acres.	B1, C3, E1, E7, G2, G4	2	3		S-L	264	acres	1	FPD		0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		1.0.4	Waukegan, IDNR, Lake County				Remediate, cap, or otherwise contain contaminated areas, materials, waste piles, waste ponds, etc. to prevent contaminants from becoming mobilized (via air or water) and entering water resources or sensitive natural areas in Illinois Beach State Park.	C3, C5, F1, F6	1	3		S	A/R	-	-	Owner IDNR EPA	Waukegan	0
X		1.0.6	Beach Park, Waukegan				Preserve Category 1 open green infrastructure areas including a portion of depressional storage area #17 and the utility corridor that can serve as a green infrastructure connector between Illinois Beach State Park to Lyons Woods Forest Preserve.	A7, B1, C1, C2, C3, G2	1	3		L	30	acres	1	Owner/Utility	LCFPD IDNR 0	
	X	1.0.11	Zion, Waukegan, IDNR				Manage the Lake Michigan shoreline and beaches to minimize beach erosion. Details reflect 28000 lf of shoreline at an average width of 150 feet.	C3, C4, C5, E1, E6	3	3		S	96	acres	1	Zion, Waukegan, IDNR		0
	X	1.0.12	Zion, Waukegan, IDNR				Manage the Lake Michigan shoreline and beaches to minimize E. coli contamination that leads to beach closures. Details reflect 28000 lf of shoreline at an average width of 150 feet.	C3, C4, C5, E1, E6	3	3		S	96	acres	1	LCHD	Zion, Waukegan, IDNR	0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	1.0.13	Zion, Beach Park, Waukegan, IDNR				<i>Install drainage swale improvements or other lot level / source control BMPs to capture and treat runoff from commercial and industrial land uses within Critical Subbasins #15, #74, and #76, identified as potential Pollution Hot Spot Critical Areas. Cost estimate reflects the installation of swales (10' wide) or other treatment measures along perimeter of these land uses, approximately 35,000 lf of treatment area.</i>	E1, E2, E7, E9, G1	1	3		S	8	acres	1	Waukegan, Zion	Utility	0
X	X	1.1.2	Waukegan, IDNR, Lake County				<i>Restore the natural connection and habitat quality of this reach to Lake Michigan by removing the lagoons through which the reach runs and disconnecting the reach from the Dead River to the north. Since these lagoons may be a component of a remediation or clean up plan, this should be considered a long term recommendation to be implemented when the contamination issues at Johns Manville have been adequately remediated. Details reflect major channel restoration.</i>	A1, A6, A8, C3, C5, C6, E7, E9, G4	1	3		S-L	2000	lf	2	Owner	IDNR EPA Waukegan	0
X		1.1.4	Waukegan, Lake County				<i>Address potential hazardous / toxic runoff from industrial uses to the east through filter strips and other filtration and infiltration techniques installed between the reach and these land uses, or by containing and remediating runoff on site through other means. Cost estimate reflects the installation of 2000 lf of 20' wide infiltration and filtration BMPs.</i>	E1, E2, E7, E9, G1	2	3		S	0.9	acre	1	Owner EPA		0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		1.6.1	Beach Park, Lake County				Restore stream channel and improve instream habitat by installing pools and riffles and installing boulders, large rocks, and / or rootwads.	A1, A10, C3	3	3		S	2000	If	1	FPD Owner	Beach Park, BPDD	0
X	X	1.6.2	Beach Park, Lake County				Restore native riparian buffer by controlling invasive species, planting native species, thinning forest and shrub canopy, and managing vegetation such as through prescribed burning.	A6, A10, B1, C3, E1	2	2		S	2000	If	2	FPD Owner	Beach Park, BPDD	0
X		2.0.1	Zionion Beach Park				Category 1 and 2 green infrastructure areas along the western boundary of Illinois Beach State Park and bordering the Union Pacific rails to the west should be preserved as components of the green infrastructure / greenway system that includes Ophir Park, Carmel Park, and Illinois Beach State Park. These areas contain significant low lying depressional storage areas (#55, #56, and #57) that could be used for water quality improvement, wetland / hydric soil complexes, and steep slopes that are unsuitable for development.	A6, A7, B1, C1, C2, C3, G2, G4	1	3		L	61	acres	1	Owner, IDNR, Zion Park District		0
	X	2.0.2	Zion, Beach Park				<i>Convert the depressional storage complex of #55, #56, and #57 to improve water quality for Critical Subbasin #2, identified as a potential Pollutant Loading Hotspot. Assumes runoff can be directed into this area, treated, and discharged to the Illinois Beach State Park stream and wetland system. Estimated area to be converted is 7000lf by 400ft wide.</i>	B1, C1, C2, C3, E1, E2, G2, G4	1	3		L	64	acres	1	Owner, IDNR, Zion Park District		0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	2.0.4	Zion, Beach Park				<i>Reduce pollutant loading to Critical Subbasin #2, a potential pollutant loading hotspot, by improving swales and other surface stormwater drainage systems and installing stormwater filtration and infiltration BMPs to capture and treat runoff from parking lots, utilities, rooftops, storage areas, and other areas that may contribute pollutants to the stream. Cost estimate assumes 130,000. If (approximately 30 acres) of 10 foot wide drainage swale improvements as a proxy for on-site source control BMPs.</i>	E1, E2, E7, E9, G1	1	3		S	30	acre	1	Beach Park, Zion		0
X		3a.0.1	Zion, Beach Park				Manage and restore the wooded ravine along reaches BL25, BL26, and BL27. Average 5000' x 250' wide.	A6, A7, A10	3	2		M	29	acre	1	Owner	Beach Park, Zion	0
	X	3a.0.2	Zion, Beach Park				Preserve and restore wetlands along drainage channel upstream of the McClory Bike Path and the complex northwest of Lewis and 29th St., wetland #4 east of Lewis Avenue, and wetland #3 in Hermon Park (56 acres total). Regional storage area #77 and the associated wetlands (9 acres) could be restored and / or used to provide storage for this SMU if needed when the upstream area develops. Implementation details reflect wetland / hydric soils preservation and restoration.	A6, B1, C2, C3, G2, G4	1	3		S-L	65	acre	1	Zion Park District, Owner	Beach Park, Zion	0
		3a.0.4	Zion, Beach Park				Preserve and restore T&E habitat within the area bounded by Lebanon St., the McClory Bike Path, and 31st St.	A1, A10, C3	3	2		S	5.6	acre	1	Zion Park District, IDNR		0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	3a.0.5	Zion, Beach Park				<i>Improve any swale and other surface stormwater drainage systems and/or install source controls and lot level stormwater filtration and infiltration BMPs within the developed areas of the SMU. These practices may help reduce pollutant loading in potential pollution hotspot subbasins S1, S3, S4, and S48. In order to generate cost and pollutant load reduction estimates, road swales are used as a proxy for individual site BMPs. Details reflect 252,000 lf (approximately 58 acre) of 10 foot wide drainage swale improvements on both side of all roads.</i>	E1, E2, E7, E9, G1	1	3		S	61	acre	1	Beach Park, Zion	Owner Developer	0
X		3a.25.1	Zion, Beach Park				<i>Address Moderate streambank erosion along entire reach using bioengineering stabilization measures.</i>	A1, A3, A8, C3, E1	1	3		M	2000	lf	2	Owner	Beach Park, BPDD, Zion	0
X	X	3a.25.2	Zion, Beach Park				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning. A wider, partially forested buffer is appropriate in the lower parts of the reach.</i>	A6, A7, A10, B1, C3, E1	2	2		S	2000	lf	2	Owner		0
X		3a.25.3	Zion, Beach Park				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	2	1		S	2000	lf	2	Owner		0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3a.25.5	Zion, Beach Park	224	376	HS143	Inspect hydraulic structure for possible erosion problems and stabilize using bioengineering practices if needed.	A1, A3, A5, A8, A11, C3, E1	3	1		S	1	ea	1	Owner	Beach Park, BPDD, Zion	0
X	X	3a.27st.1	Zion, Beach Park				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.	A6, A10, B1, C3, E1	2	2		S	4000	lf	2	Zion Park District		0
	X	3b.0.1	Beach Park, Waukegan				Preserve and restore wetlands where these resource remain along drainage channel BL15, BL16, BL17, and along the daylight portions of the Wilson Avenue Tributary. Area is 10,000 lf by 300' wide.	A6, B1, C2, C3, G2, G4	1	3		S	69	acre	1	Beach Park Waukegan	Owner	0
X		3b.0.4	Beach Park, Waukegan				<i>Preserve greenway easements on Category 1 and 2 green infrastructure areas along BL16, which may help reduce pollution loading in potential pollution hotspot S57. Cost estimate assumes easements of 2000 lf by 100 ft wide (4.5 acres).</i>	B1, C1, C2, C3, G2, G4	1	3		L	4.5	acres	1	Owner	Beach Park Waukegan	0



Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	3b.0.6	Beach Park, Waukegan				<i>Depressional storage areas #32 and #43, currently undeveloped and containing current or former wetlands, could be enhanced to improve water quality of runoff from surrounding residential uses within this Critical Subbasin #57, identified as a potential pollutant loading hotspot. Depressional area #43 lies in an open Category 1 green infrastructure area that could be preserved for water quality improvement. Details reflect restoration and enhancement of both areas as wetlands.</i>	B1, C1, C2, C3, E1, E2, G2	1	3		L	12.5	acres	1	Owner		0
	X	3b.0.7	Beach Park, Waukegan				<i>Improve swales and other surface stormwater drainage systems and install source controls and lot level BMPs, including detention basin improvements, within the developed areas of potential pollutant loadin hotspots S57, S59, and S63. Details reflect 165,000 lf (approximately acre) of 10 foot wide drainage swale improvements / lot level / source control BMPs on each side of all roads.</i>	E1, E2, E7, E9, G1	1	3		S	38	acres	1	Beach Park Waukegan		0
X		3b.15.1	Beach Park, Waukegan				<i>Restore stream channel and improve instream habitat by enhancing pools and riffles.</i>	A1, A10, C3	3	3		S	2800	lf	1	Owner	Beach Park BPDD, Waukegan	0
X		3b.15.2	Beach Park, Waukegan				<i>Address High streambank erosion along entire reach using bioengineering stabilization measures.</i>	A1, A3, A8, C3, E1	1	3		M	2800	lf	2	Owner	Beach Park BPDD, Waukegan	0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X	X	3b.15.3	Beach Park, Waukegan				Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.	A6, A10, B1, C3, E1	2	2		S	2800	lf	2	Owner		0
X		3b.15.4	Beach Park, Waukegan				Inspect footbridges and armored / concrete-lined banks for impacts on the stream corridor and remediated if necessary.	A1, A10, A11, C3	3	3		S	1	ea	1	Owner	Beach Park BPDD, Waukegan	0
X		3b.15.5	Beach Park, Waukegan				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	2800	lf	2	Owner	Beach Park BPDD, Waukegan	0
X		3b.15.6	Beach Park, Waukegan				Inspect and, if necessary, repair the culvert under the McClory Bike Trail, which is partially collapsed. A1	1	2	3		S	1	ea	1	LCDOT		0
X		3b.15.7	Beach Park, Waukegan	116	236		<i>Remove debris obstructing flow using American Fisheries Society guidelines.</i>	A10, A11, B4	1	2		S	1	ea	1	Owner	Beach Park BPDD, Waukegan	0
X		3b.15.8	Beach Park, Waukegan	122	243		<i>Stabilize typical 4-6 foot bank erosion using bioengineering stabilization measures. Length difficult to determine from photo; assume 100 lf and 1 side of stream for cost estimation purposes.</i>	A1, A3, A5, A8, C3, E1	1	3		M	100	lf	1	Owner	Beach Park BPDD, Waukegan	0
X		3b.15.9	Beach Park, Waukegan	129	254	HS93 PD118	<i>Stabilize erosion of the Beach Road steel culvert experiencing erosion around and underneath using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Beach Park Waukegan	Beach Park BPDD, Waukegan	0
X		3b.15.13	Beach Park, Waukegan	115	235	PD106	<i>Stabilize erosion around plastic drain pipe outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	1		S-M	1	ea	1	Owner	Beach Park BPDD, Waukegan	0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3b.15.14	Beach Park, Waukegan	119	239	PD107	<i>Stabilize erosion around plastic drain pipe outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	1		S-M	1	ea	1	Owner	Beach Park BPDD, Waukegan	0
X		3b.15.15	Beach Park, Waukegan	119	240	PD108	<i>Stabilize erosion around clay drain pipe outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park BPDD, Waukegan	0
X		3b.16.1	Beach Park, Waukegan				<i>Restore stream channel and improve instream habitat by enhancing pools and riffles and installing boulders, large rocks, and / or rootwads.</i>	A1, A10, C3	1	3		S	3500	lf	1	Owner	Beach Park BPDD, Waukegan	0
X		3b.16.2	Beach Park, Waukegan				<i>Address Moderate streambank erosion along entire reach using bioengineering stabilization measures, which may help reduce the instream silt / sedimentation load.</i>	A1, A3, A8, C3, E1	1	3		M	3500	lf	2	Owner	Beach Park BPDD, Waukegan	0
X	X	3b.16.3	Beach Park, Waukegan				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	3500	lf	2	Owner		0
X		3b.16.4	Beach Park, Waukegan				<i>Install residential lot level stormwater BMPs, such as rain barrels or rain gardens, to reduce runoff discharge from roof or footing drains.</i>	A3, A5, A6, A7, A11, C3, D1, E1, E2, E5, E9	1	1		S	3500	lf	2	Owner		0
X		3b.15.16	Beach Park, Waukegan	123	244	PD110 & 111	<i>Stabilize erosion around two plastic drain pipe outfalls using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	1		S-M	2	ea	1	Owner	Beach Park BPDD	0
X		3b.15.17	Beach Park, Waukegan	127	250	PD115-116	<i>Stabilize erosion around concrete drain pipe outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Beach Park Waukegan	Beach Park BPDD	0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
	X	3b.18.1	Beach Park, Waukegan				<i>BL18 flows through and near several publicly owned, open and partially open areas on or adjacent to the Waukegan Regional Airport property southwest of the Wadsworth Rd / Lewis Ave intersection. These areas include depression storage area #34, which could be expanded and enhanced for stormwater storage and to capture and cleanse water runoff from airport property, which lies in Critical Subbasin #69, a potential pollutant loading hotspot.</i>	B1, C1, C2, C3, E1, E2, G2	1	3		L	7	acres	1	Waukegan Port District		0
X		3b.18.2	Beach Park, Waukegan				Stabilize Moderate streambank erosion along entire reach using bioengineering stabilization measures.	A1, A3, A8, C3, E1	1	3		M	700	lf	2	Waukegan Port District, Owner	Beach Park BPDD, Waukegan	0
		3b.18.3	Beach Park, Waukegan	154	292	HS111	The culvert draining Waukegan Airport is covered with wire fencing, presumably for security or to prevent animal invasion. However, investigate source and necessity, and remove if fencing impedes flow. It appears that strong flows exit the Airport property in this location. A10,	A11	3	1		S	1	ea	1	Waukegan Port District		0
X		3c.0.2	Beach Park, Zion				Manage and restore the wooded ravine along reaches BL07, BL08, BL09, BL10, BL11, BL19, BL20, BL21. Assumes 18,600 lf of stream by average 250' wide.	A6, A7, A10	1	2		S	107	acres	1	Owner	Beach Park, Zion	0
	X	3c.0.4	Beach Park, Zion				Preserve and restore wetlands along drainage channels BL21, BL22, BL23, BL24. Assumes 10,300 lf by 350' wide.	A6, B1, C2, C3, G2, G4	1	3		S	83	acres	1	Owner	Beach Park, Zion	0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.0.5	Beach Park, Zion				Preserve Category 1 green infrastructure area bounded by the McClory Bike Path, Clover, Wadsworth, and 34th St. that borders the stream channel to the north. Also preserve three separate areas through which the stream corridor runs: one along BL07 within the ravine, the second at the confluence of BL08, BL09, and BL19, and the third just upstream of this confluence along BL09.	A6, B1, C2, C3, G2, G4	1	3		S-L	11	acres	1	Owner	Beach Park, Zion	0
	X	3c.0.6	Beach Park, Zion, Waukegan				<i>Install filtration BMPs for commercial, industrial, and institutional uses along Sheridan Road, Wadsworth, and Lewis Avenue, which will help reduce pollutant loading in potential pollution hotspot subbasin #64. Details reflect 12,000 lf of road frontage along these uses to be treated with improved, 10' swales (approximately 2.75 acres.)</i>	E1, E2, E7, E9, G1	1	3		S	2.75	acres	1	Beach Park, Waukegan, Zion, Owner		0
	X	3c.0.7	Beach Park, Zion, Waukegan				<i>Install lot level filtration and infiltration BMPs within potential pollution hotspot subbasin #64. Details reflect 208,000 lf (approximately 48 acre) of 10 foot wide drainage swale improvements / lot level / source control BMPs on each side of all roads.</i>	E1, E2, E7, E9, G1	1	3		S	48	acres	1	Beach Park, Waukegan, Zion		0
X		3c.0.8	Beach Park, IDNR				Preserve the Category 1 open green infrastructure area that contains depressional storage area #45 along the west side of the Union Pacific rails.	B1, C2, G2	1	3		L	4.5	acres	1	Beach Park		0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.7.1	Beach Park, IDNR				<i>Stabilize High streambank erosion along approximately 25% of this reach not included in the previous stabilization project, some threatening homes and property, using bioengineering stabilization measures.</i>	A1, A3, A8, C3, E1	1	3		M	500	lf	2	Owner, Beach Park		0
X	X	3c.7.2	Beach Park, IDNR				<i>Manage native riparian plant communities within this reach: control invasive species, plant native species, and manage vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	1800	lf	2	Bull Creek Stakeholder Assn.		0
X		3c.21.1	Beach Park, Zion				<i>Stabilize Moderate streambank erosion along entire reach using bioengineering stabilization measures.</i>	A1, A3, A8, C3, E1	1	3		M	3500	lf	2	Owner	Beach Park, BPDD, Zion	0
X	X	3c.21.2	Beach Park, Zion				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	3500	lf	2	Owner	Beach Park, BPDD, Zion	0
X		3c.21.3	Beach Park, Zion				<i>Repair the discharge point / failed headwall approximately 200' upstream of the McClory Bike Path.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD, Zion	0
X		3c.21.4	Beach Park, Zion	184	331	PD155	<i>Stabilize channel erosion at outfall, and consider replacing rip rap control measure with bioengineering stabilization practices.</i>	A1, A3, A5, A8, A11, C3, E1	1	3		S-M	1	ea	1	Owner	Beach Park, BPDD, Zion	0
X		3c.21.5	Beach Park, Zion	185	332	PD156	<i>Stabilize erosion around plastic drain pipe outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	1		S-M	1	ea	1	Owner	Beach Park, BPDD, Zion	0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X		3c.21.6	Beach Park, Zion	192	341	PD160	<i>Stabilize erosion around plastic drain pipe outfall using bioengineering stabilization measures.</i>	A1, A3, A5, A8, A11, C3, E1	1	1		S-M	1	ea	1	Owner	Beach Park, BPDD, Zion	0
X		4.0.2	Waukegan, Beach Park				Manage and restore the woodland ravine along reach BL05. Assumes 5000' by 500' area for cost estimation purposes.	A6, A7, A10	1	2		S	58	acre	1	Owner	Beach Park Waukegan	0
X		4.0.4	Waukegan, Beach Park				Preserve and restore the wetland complex within the open, Category 1 green infrastructure area along the eastern boundary of SMU 4 west of the Union Pacific rail line. This area creates a physical land connection between Lyons Woods and Illinois Beach State Park, and would also preserve regional storage area #17.	B1, C1, C2, C3, G2, G4	1	3		S-L	37	acres	1	Owner/Utility		0
X		4.05.1	Waukegan, Beach Park				<i>Stabilize Moderate streambank erosion along entire reach using bioengineering stabilization measures, which may help reduce the silt / sediment accumulation.</i>	A1, A3, A8, C3, E1	1	3		M	3000	lf	2	Owner	Beach Park, BPDD	0
X	X	4.05.2	Waukegan, Beach Park				<i>Restore and manage the native riparian buffer plant communities along this reach by controlling invasive species, planting native species, thinning forest and shrub vegetation to allow more ground vegetation, and managing vegetation such as through prescribed burning.</i>	A6, A10, B1, C3, E1	1	2		S	3000	lf	2	Owner		0

Table H6 Expanded Site Specific Action Plan for Multiple Jurisdictions (continued)

Pollutant prevention	Pollutant reduction	ID# (SMU reach ID)	Jurisdiction	GPS Location	Photo	Structure ID	Recommendation Description (those addressing critical areas in italics)	Goal-Obj	Priority	Ease of Implementation	Status	Time frame	Quantity	Unit	# of sides	Implementation Lead	Implementation Support	Admin Effort
X	X	6.0.2	Waukegan, IDNR, Lake County				<i>Remediate, cap, or otherwise contain contaminated areas, materials, waste piles, waste ponds, etc. to prevent contaminants from becoming mobilized (via air or water) and entering water resources or sensitive natural areas in Illinois Beach State Park. This may help address potential pollutant loading hotspot S75</i>	C3, C5, F1, F6, G4	1	3		S-L	A/R	-	-	Waukegan, IDNR, EPA		0



