

## *Listening Meeting General Outline*

1. Meeting Kickoff	Town	6:00
2. Overview of the General Scope of the Study	Pare	6:10
3. Present Supporting Figures & Site Photographs	Pare	6:15
4. Open Discussion	All Attendees	6:30 – 7:30

**General Scope:** Planning Study for the Mumford River / Dark Brook watershed and river corridor with particular focus on flooding issues within the Manchaug Village area.

### *The Listening Session*

#### **a) Hydrologic and Hydraulic (H&H) Analyses of Existing Conditions (EC)**

- i. Data Collection – Completed September
- ii. Develop HydroCAD Model of Entire Watershed and Adjoining Watersheds
- iii. Develop HEC-RAS Hydraulic Model of Flooding Area of Interest
- iv. Run all storms (1-year through 1,000-year) through the Hydraulic Model
- v. Review and Refine the Model and Model Inputs as needed

#### **b) Decipher EC Model Results & Identify Strengths & Vulnerabilities**

- i. Structures Vulnerable to Flood Damage
- ii. Hydraulic Structure Performance
  - Dams
 

a) Upper Tucker Pond Dams	d) Mill Site #2 Dam
b) Manchaug Pond Dam	e) Potter Road Dam
c) Stevens Pond Dam	f) Sutton Falls Dam
  - Roadway Crossings
 

1. Putnam Hill Road (2 each)	4. Whitins Road (2 each)
2. Tucker Lane	5. Torrey Road
3. Manchaug Road (4 each)	6. Potter Road
- iii. Other
  - Beaver Dams along Dark Brook (2 for sure; possibly as many as 6 total)
  - Former Dams Partially Removed/Breached (Mill Site #1, Upstream of Putnam Hill Road)
  - River and Floodplain Performance
  - Watershed Characteristics (Land Cover and Soils)

### *The Problem Meeting*

#### **c) Develop & Evaluate Potential Alternatives**

- |                                   |                                |
|-----------------------------------|--------------------------------|
| i. Structure Floodproofing        | vi. Beaver Maintenance         |
| ii. Dam Modifications             | vii. Land Cover Preservation   |
| iii. Dam Removals                 | viii. Infiltration Improvement |
| iv. Roadway Crossing Replacements | ix. Attenuation Improvement    |
| v. River & Floodplain Restoration |                                |

### *The Solutions Meeting*

#### **d) Summary Report**

### *The Closing Meeting*

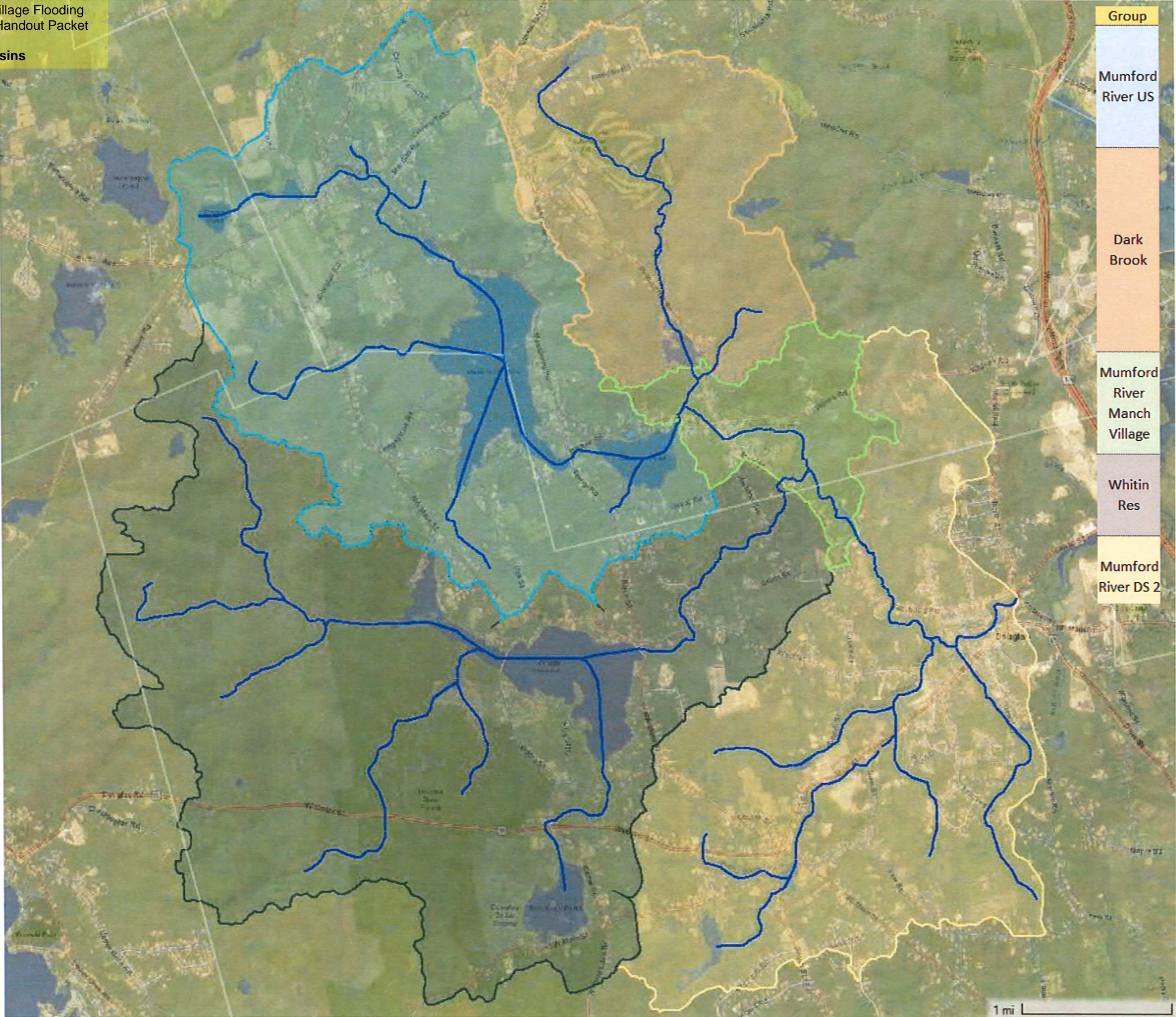






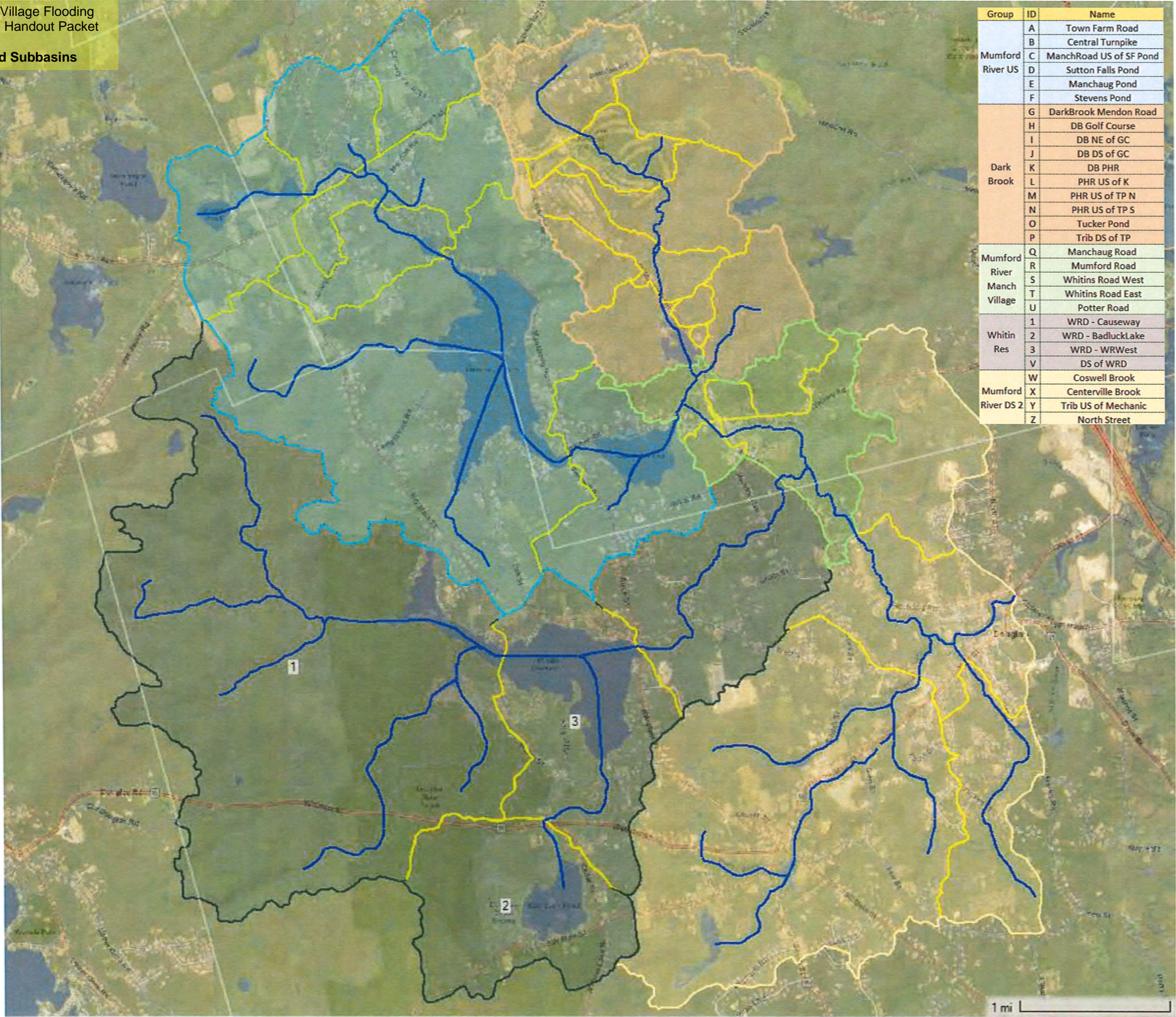






Group
Mumford River US
Dark Brook
Mumford River Manch Village
Whitin Res
Mumford River DS 2

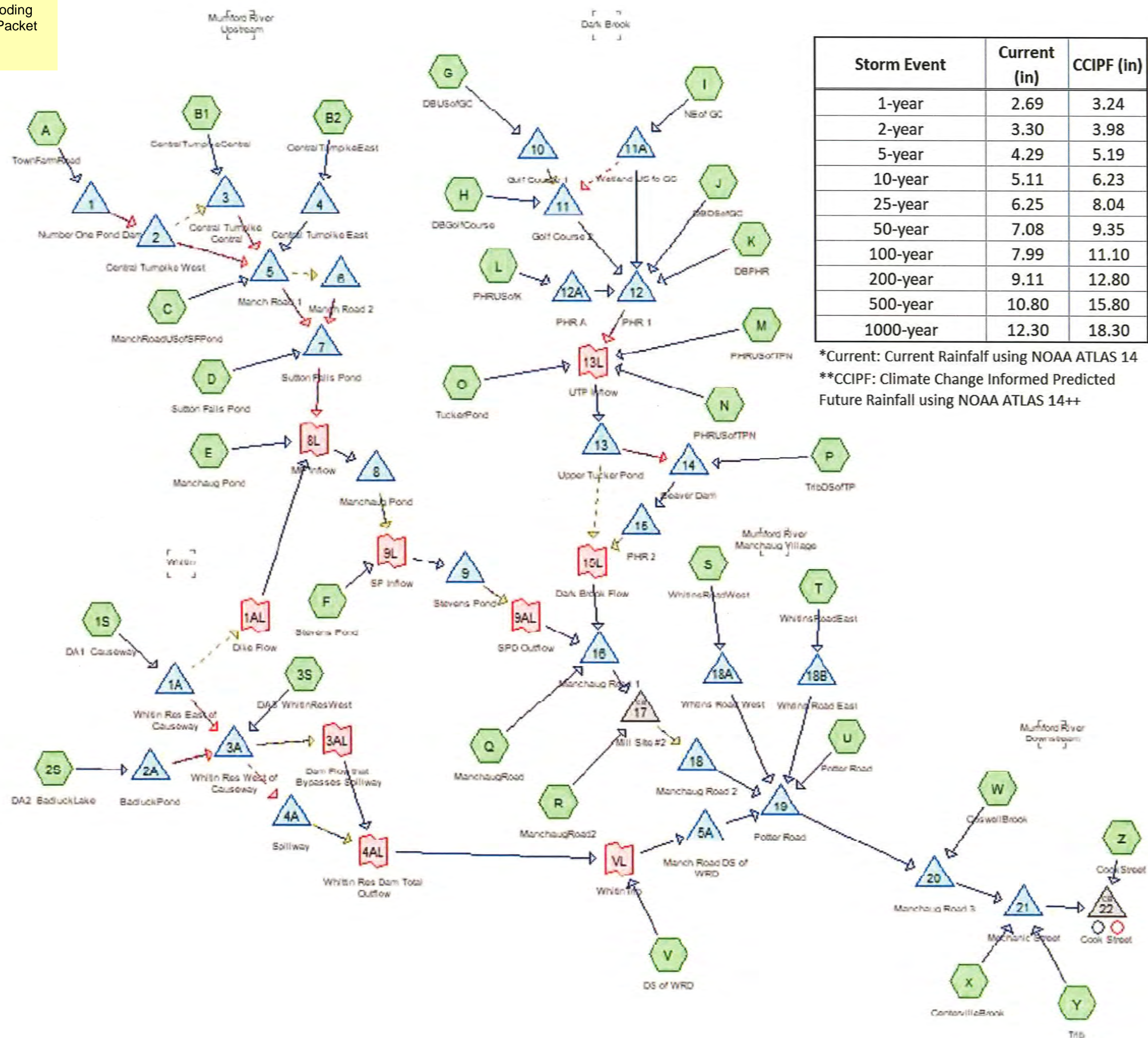




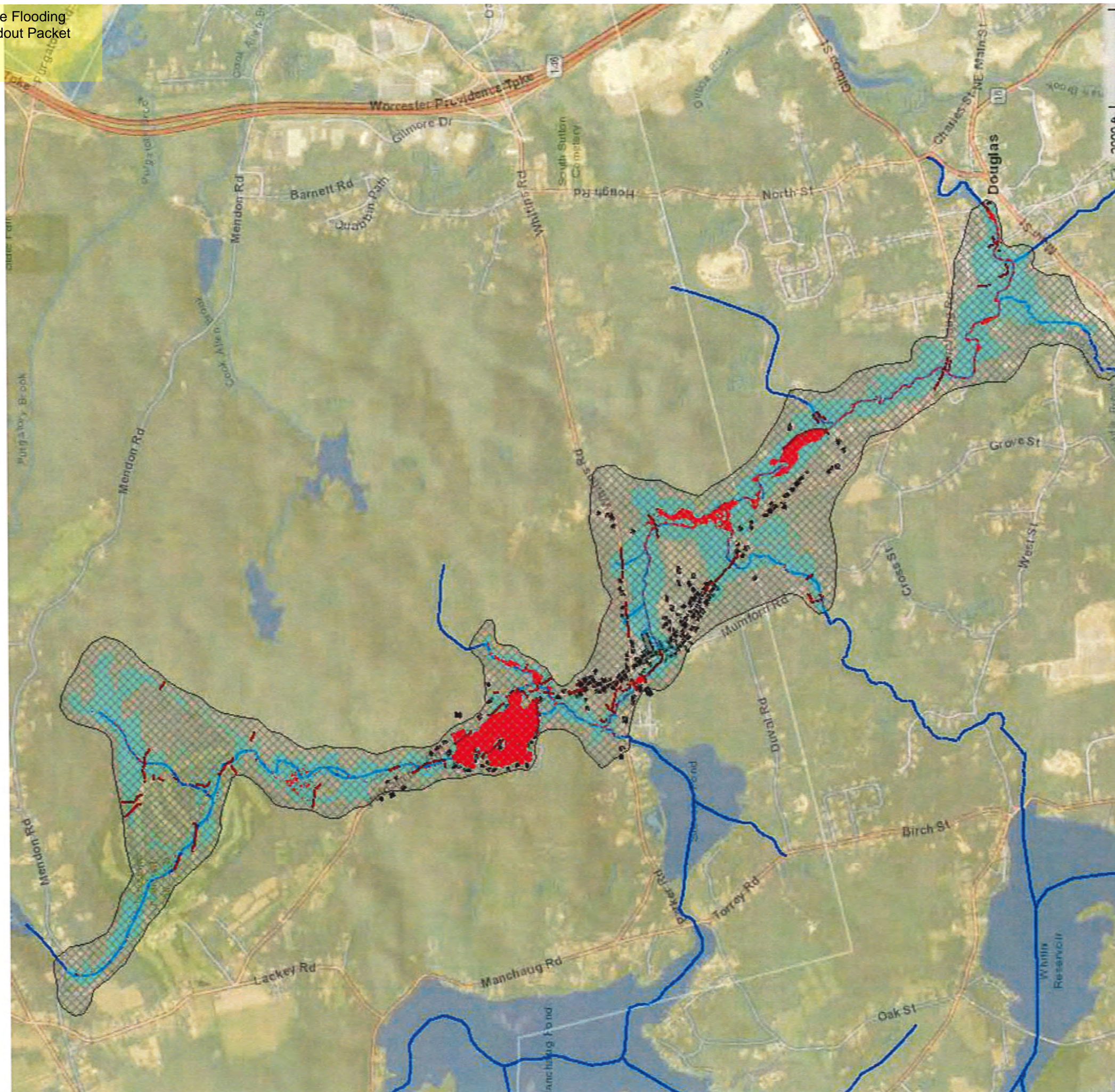


Drainage Area Parameters																			
			Size		Tc		Curve Number					Hydrologic Soil Group				Land Cover Group			
Group	ID	Name	s.m.	acres	Baseflow	Tc	LFP	CN	% Imp	Imp acres	CN*	A	B	C	D	1	2	3	4
Mumford River US	A	Town Farm Road	0.74	473	1.5	461	2700	78	9.0%	43	76	0%	0%	80%	20%	52%	32%	7%	9%
	B	Central Turnpike	0.91	582	1.8	443	4300	70	5.3%	31	68	4%	44%	29%	23%	59%	25%	11%	5%
	C	ManchRoad US of SF Pond	0.67	427	1.3	388	4500	73	4.6%	20	72	3%	27%	40%	30%	58%	24%	13%	5%
	D	Sutton Falls Pond	0.49	314	1.0	396	7700	69	8.2%	26	66	4%	52%	18%	26%	57%	26%	9%	8%
	E	Manchaug Pond	3.94	2519	7.9	750	11600	72	17.6%	443	66	2%	37%	23%	38%	68%	9%	5%	18%
	F	Stevens Pond	0.93	593	1.9	415	7300	73	18.0%	107	68	3%	19%	52%	26%	72%	6%	4%	18%
Dark Brook	G	DarkBrook Mendon Road	0.60	382	1.2	267	4000	77	10.4%	40	75	0%	8%	59%	33%	60%	21%	9%	10%
	H	DB Golf Course	0.30	193	0.6	127	2000	69	1.9%	4	68	0%	65%	7%	28%	47%	44%	7%	2%
	I	DB NE of GC	0.59	375	1.2	280	3300	70	2.0%	8	69	0%	41%	25%	34%	75%	5%	18%	2%
	J	DB DS of GC	0.48	306	1.0	280	4000	63	0.6%	2	63	0%	72%	1%	27%	89%	3%	7%	1%
	K	DB PHR	0.37	237	0.7	217	3800	73	3.5%	8	72	0%	30%	15%	55%	68%	23%	5%	4%
	L	PHR US of K	0.18	112	0.4	142	2400	67	1.4%	2	67	0%	43%	37%	20%	88%	5%	6%	1%
	M	PHR US of TP N	0.06	35	0.1	77	1800	60	1.8%	1	59	0%	82%	0%	18%	95%	1%	2%	2%
	N	PHR US of TP S	0.01	9	0.0	61	850	56	3.7%	0	55	11%	89%	0%	0%	81%	15%	0%	4%
	O	Tucker Pond	0.36	231	0.7	187	5600	69	14.3%	33	64	0%	45%	37%	18%	81%	2%	3%	14%
	P	Trib DS of TP	0.46	295	0.9	208	6200	64	0.7%	2	64	2%	57%	14%	27%	92%	0%	7%	1%
Mumford River Manch Village	Q	Manchaug Road	0.19	121	0.4	141	3200	63	7.9%	10	60	18%	58%	4%	20%	73%	9%	10%	8%
	R	Mumford Road	0.10	62	0.2	60	1500	65	11.9%	7	61	26%	29%	36%	9%	77%	12%	0%	12%
	S	Whitins Road West	0.07	45	0.1	45	1100	60	5.0%	2	58	37%	26%	9%	28%	80%	6%	9%	5%
	T	Whitins Road East	0.22	138	0.4	120	3800	59	1.3%	2	58	0%	88%	3%	9%	92%	1%	6%	1%
	U	Potter Road	0.63	405	1.3	406	6600	65	6.0%	24	63	21%	45%	21%	13%	62%	9%	23%	6%
Whitin Res	1	WRD - Causeway	6.04	3867	12.1	1235	20000	62	2.9%	112	61	2%	71%	13%	14%	86%	1%	10%	3%
	2	WRD - BadluckLake	1.35	867	2.7	294	8200	73	13.7%	119	69	2%	26%	59%	13%	66%	2%	18%	14%
	3	WRD - WRWest	1.55	992	3.1	258	10000	74	31.6%	313	63	5%	23%	30%	42%	56%	9%	4%	32%
	V	DS of WRD	1.44	920	2.9	461	6600	66	3.7%	34	65	6%	41%	47%	6%	81%	8%	8%	4%
Mumford River DS 2	W	Coswell Brook	0.89	571	1.8	660	12500	67	2.0%	11	66	4%	56%	23%	17%	74%	5%	19%	2%
	X	Centerville Brook	3.96	2537	7.9	1000	12000	61	7.1%	180	58	27%	45%	21%	7%	67%	14%	12%	7%
	Y	Trib US of Mechanic	0.79	504	1.6	500	10800	58	5.7%	29	56	39%	24%	31%	6%	74%	11%	10%	6%
	Z	North Street	1.09	696	2.2	600	9800	59	12.2%	85	54	41%	49%	10%	0%	59%	18%	11%	12%
Totals			29.39	18809	58.8				9.0%	1697		11%	40%	27%	22%	69%	13%	9%	9%
Hydrologic Soil Group										Land Cover Group									
A	High Absorption		Clean Sands & Gravels (<10% fines)							1	High Absorption		Forests, Shrubs, Grass						
B	Moderate Absorption		Silty Sands & Gravels (10-20% fines)							2	Moderate Absorption		Bare, Cultivated/Pasture						
C	Low Absorption		Sandy Silts & Silts (20-40% fines)							3	Low Absorption		Wetlands, Aquatic Beds						
D	Very Low / No Absorption		Silts & Clays (>40% fines), Bedrock, Water							4	Very Low / No Absorption		Impervious						

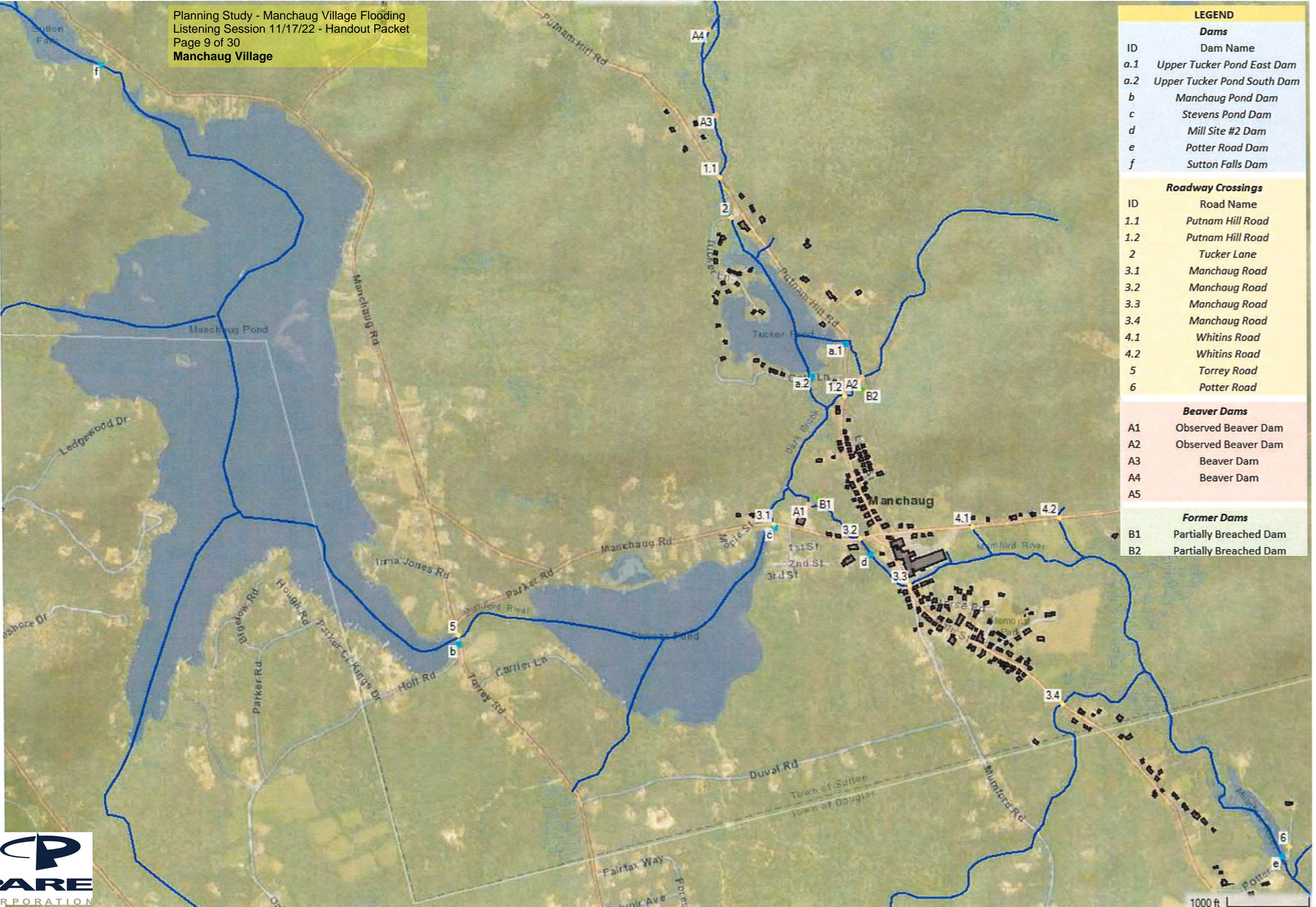












**LEGEND**

**Dams**

ID	Dam Name
a.1	Upper Tucker Pond East Dam
a.2	Upper Tucker Pond South Dam
b	Manchaug Pond Dam
c	Stevens Pond Dam
d	Mill Site #2 Dam
e	Potter Road Dam
f	Sutton Falls Dam

**Roadway Crossings**

ID	Road Name
1.1	Putnam Hill Road
1.2	Putnam Hill Road
2	Tucker Lane
3.1	Manchaug Road
3.2	Manchaug Road
3.3	Manchaug Road
3.4	Manchaug Road
4.1	Whitins Road
4.2	Whitins Road
5	Torrey Road
6	Potter Road

**Beaver Dams**

A1	Observed Beaver Dam
A2	Observed Beaver Dam
A3	Beaver Dam
A4	Beaver Dam
A5	

**Former Dams**

B1	Partially Breached Dam
B2	Partially Breached Dam





Photo No. 1.: Upper Tucker Pond East Dam spillway controls (a.1)



Photo No. 2.: Upper Tucker Pond East Dam discharge end of spillway culvert (a.1)





Photo No. 3.: Upper Tucker Pond South Dam low area at right end of dam that serves as informal auxiliary spillway (a.2)



Photo No. 4.: Upper Tucker Pond South Dam from low area looking left (a.2)





Photo No. 5.: Manchaug Pond Dam upstream face (b)



Photo No. 6.: Manchaug Pond Dam spillway controls (b)





Photo No. 7.: Stevens Pond Dam spillway controls (c)



Photo No. 8.: Stevens Pond Dam crest overview (c)





Photo No. 9.: Mill Site #2 Dam upstream face. (d)



Photo No. 10.: Mill Site #2 Dam downstream face (d)





Photo No. 11.: Potter Road Dam downstream face left (e)



Photo No. 12.: Potter Road Dam downstream face right (e)





Photo No. 13.: Sutton Falls Dam upstream face (f)



Photo No. 14.: Sutton Falls Dam downstream face (f)





Photo No. 15.: Putnam Hill Road (1.1)



Photo No. 16.: Putnam Hill Road bridge crossing looking upstream (1.1)





Photo No. 17.: Putnam Hill Road (1.2)



Photo No. 18.: Putnam Hill Road culvert crossing upstream end (1.2)





Photo No. 19.: Tucker Lane (2)



Photo No. 20.: Tucker Lane bridge overview from downstream looking upstream (2)





Photo No. 21.: Manchaug Road (3.1)



Photo No. 22.: Manchaug Road bridge (3.1)





Photo No. 23.: Manchaug Road (3.2)



Photo No. 24.: Manchaug Road bridge (3.2)





Photo No. 25.: Manchaug Road 3.3



Photo No. 26.: Manchaug Road bridge looking upstream (3.3)





Photo No. 27.: Manchaug Road culvert upstream end (3.4)



Photo No. 28.: Manchaug Road culvert discharge area / downstream channel (3.4)





Photo No. 29.: Whitins Road culvert from downstream end (4.2)



Photo No. 30.: Potter Road bridge (6)





Photo No. 31.: 3-foot high beaver dam (A1) that has formed within breached section of the former dam embankment at Mill Site #1 (B1).



Photo No. 32.: Another view of the 3-foot high beaver dam (A1) that has formed within breached section of the former dam embankment at Mill Site #1 (B1).





Photo No. 33.: View of the 6-foot high beaver dam (A2) that has formed within the breached section of a former dam embankment (B2).



Photo No. 34.: View of the impoundment created by this beaver dam; note the beaver deceiver inlet cage photo right (A2 / B2)



