

A lush forest scene with a stream and a large tree trunk in the foreground. The text is overlaid on the left side of the image.

SCDOT's Impact forecasting Tool & Advance Mitigation Planning

SCDOT Mitigation Problem Statement

- Few Mitigation Banks located in our areas of need
- No Coastal Stream Mitigation Banks
 - SCDOT preliminary forecast shows high demand in Low Country and Pee Dee
- Concern due to limited stream credits even within approved banks
- PRM not Economical option for smaller projects
 - Safety sending about 50+ projects this month

SCDOT Mitigation Bank Options

- Mitigation Banks (SCDOT)
 - Black River (Wetland) – Wetland only
 - Huspa Creek (Tidal) – No Stream
 - Hunting Creek (Stream) – Not Constructed
 - Not Constructed- Shortage of Money
 - Low Demand
 - Big Pine Tree (Wetland/ Stream) – Stream Preservation only

SCDOT Mitigation Solutions:

- **Proactive vs. Reactive**
 - Review STIP, Long Range Plan, and County Projects
 - Estimate potential stream and wetland impacts
 - ID Critical Watershed and Ecoregions based on stream and wetland impacts and forecast Credit Demand
 - Can now be Proactive on mitigation strategies for those critical watersheds/ecoregions
- **USC to develop a Forecast Tool**

USC Forecasting Tool

- Construction of a Statewide Geospatial Database
- Develop GIS-Based Wetland/Stream Mitigation Forecast Model
- Forecast Mitigation Sites in critical watersheds based on Land Use data
- Assessment of Existing State Mitigation Tools

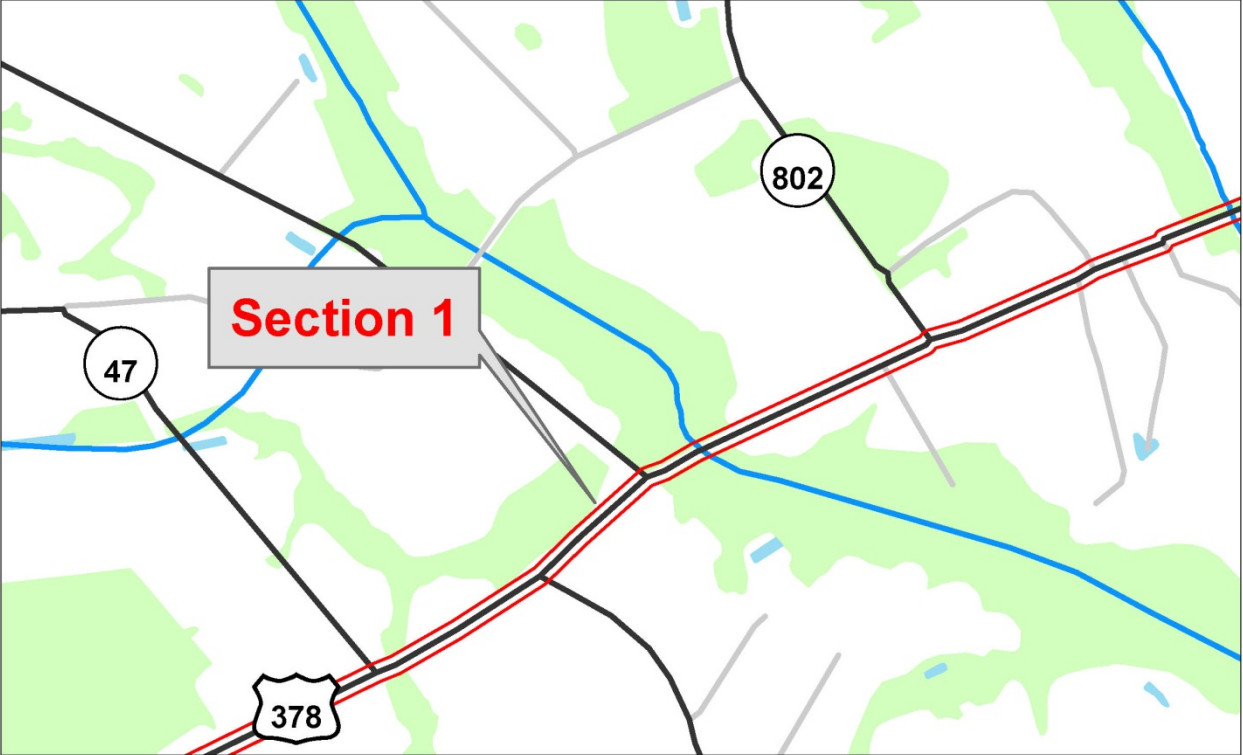
Geospatial Data

- Wetlands – National Wetlands Inventory (NWI)/ Hydric Soils/ other
- Land Cover/ Land Use
- Watersheds – 8-digit HUC
- Hydrographic Features (USGS/SCDNR/EEP)
- Ecoregions (EPA Level 3)
- LIDAR
- Existing Road/ Bridge Construction Limits

USC Forecast Model 101

- Step 1 -Projects in the STIP, COGs, MPOs, counties and other areas to be digitized – *SCDOT completed March 2013*
- Step 2 -USC to apply buffer along project corridor and jurisdictional impacts to be estimated
 - Looking at other tools to determine how to project JD areas
 - Buffers are being accurately calculated on project types
- Step 3- Demonstrate Need & Develop Priority Watersheds/Ecoregions based on Forecasted Impacts.

US 378 Widening-150ft Corridor Impacts



TOTAL IMPACTS

Stream - 842.65 LF
 Water - 0 Acres
 Wetlands - 19.96 Acres

**Section 1 - Impacts
 150' Corridor**

Stream - 157.83
 Water - 0 ac
 Wetlands - 5.02 ac

**Section 2 - Impacts
 150' Corridor**

Stream - 211.95 LF
 Water - 0 Acres
 Wetlands - 4.54 Acres

**Section 3 - Impacts
 150' Corridor**

Stream - 150.01 LF
 Water - 0 Acres
 Wetlands - 1.74 Acres

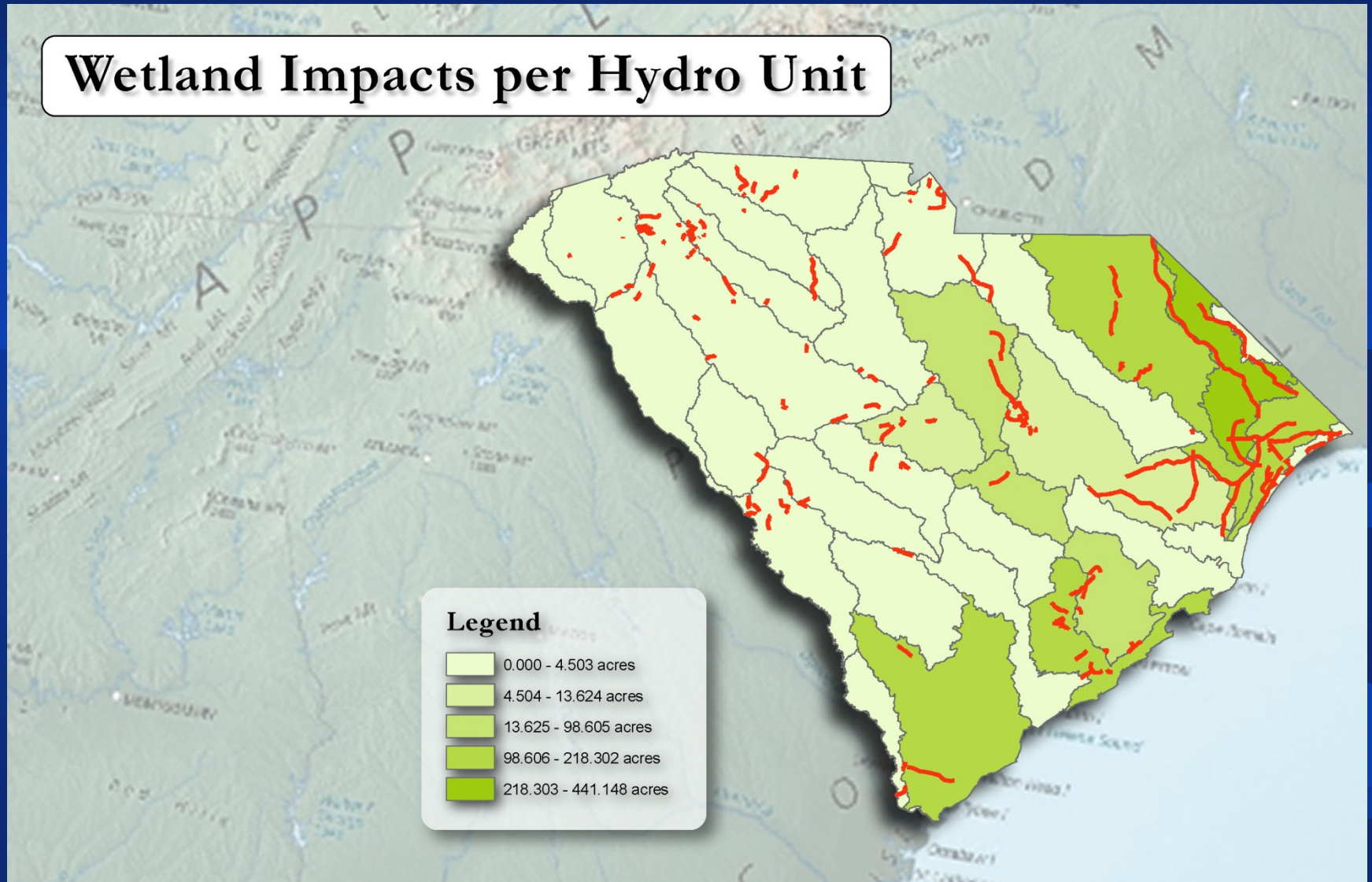
**Section 4 - Impacts
 150' Corridor**

Stream - 153.16 LF
 Water - 0 Acres
 Wetlands - 7.23 Acres

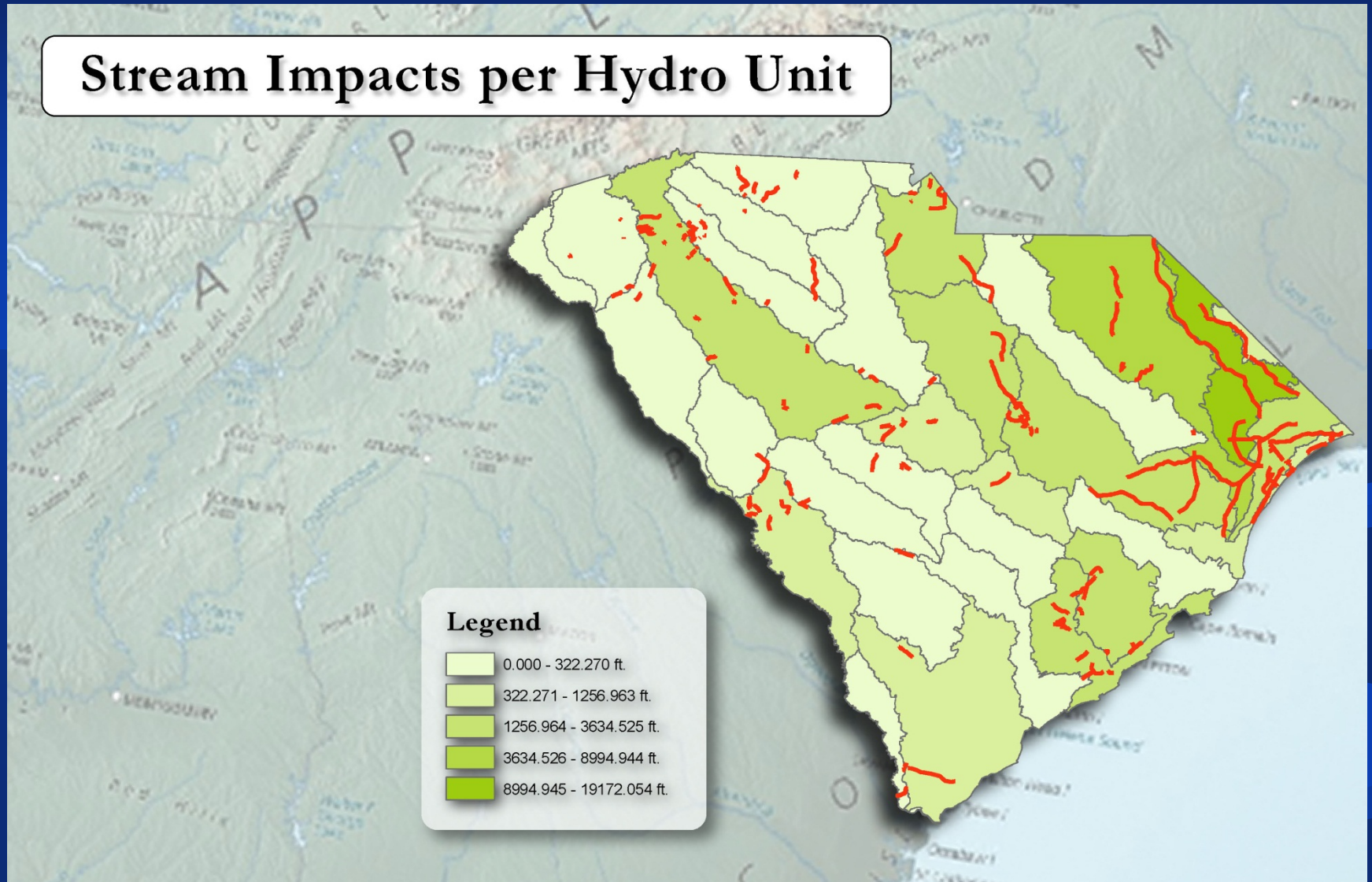
**Section 5 - Impacts
 150' Corridor**

Stream - 169.70 LF
 Water - 0 Acres
 Wetlands - 1.43 Acres

Wetland Impacts per Hydro Unit



Stream Impacts per Hydro Unit



Statewide Impacts

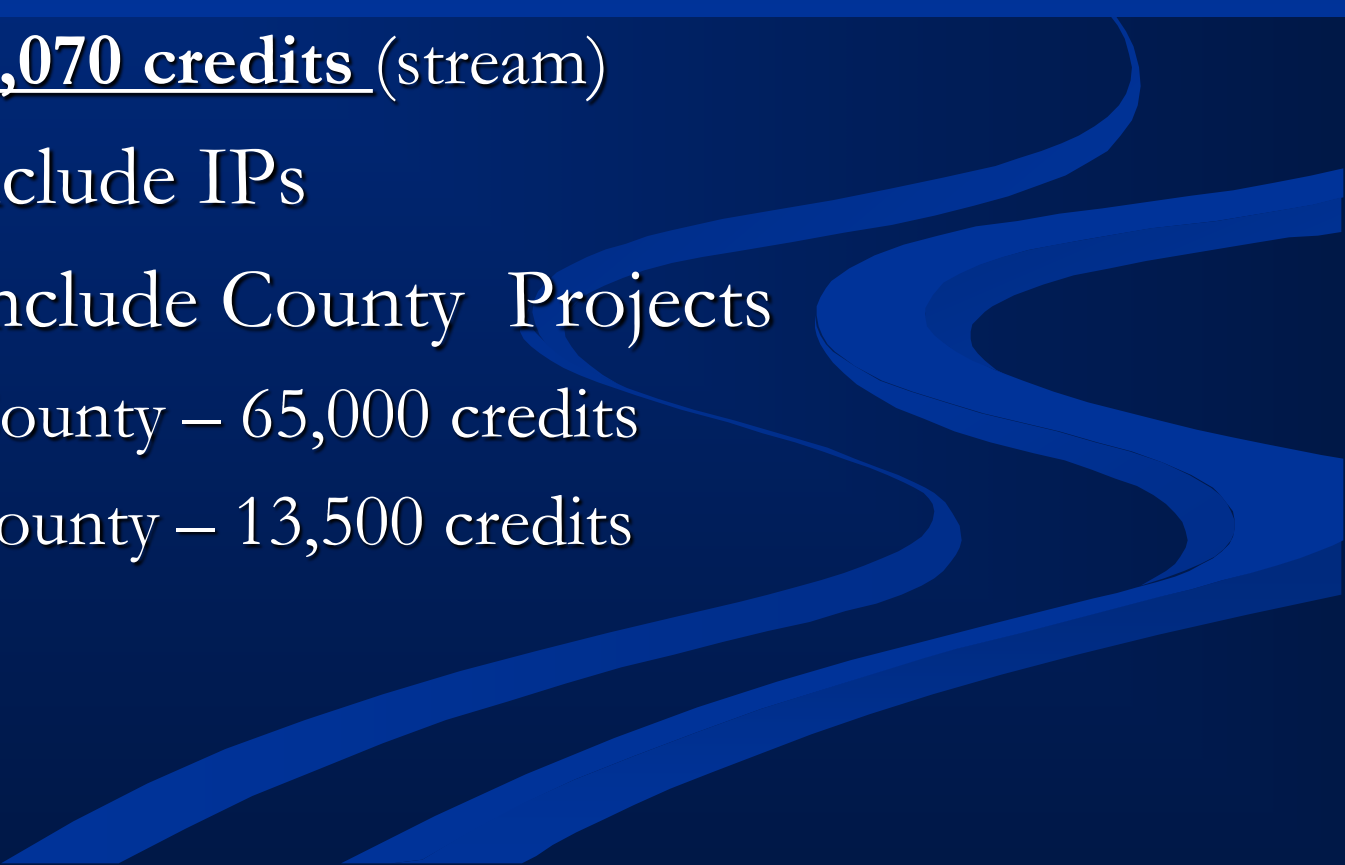


<u>HUCODES</u>	<u>ACRES</u>	<u>Stream Linear Feet</u>	<u>Wetland Acres</u>	<u>Waterbody Acres</u>	<u>Project</u>
03040104	4450.857	0.000	0.000	0.000	N
03040105	557.370	0.000	0.000	0.000	N
03040201	1487260.710	8994.944	218.302	9.106	Y
03040202	887286.261	217.365	0.344	0.000	Y
03040203	77928.368	480.259	3.312	0.121	Y
03040204	622902.294	19172.054	441.148	17.487	Y
03040205	1312755.857	3202.838	10.176	1.343	Y
03040206	380927.725	3037.143	195.309	3.312	Y
03040207	245480.677	529.461	0.813	0.000	Y
03050101	88547.206	0.000	0.000	0.000	Y
03050103	594085.815	2072.376	1.449	3.665	Y
03050104	804299.472	3634.325	65.876	1.261	Y
03050105	617641.858	272.370	0.000	0.080	Y
03050106	824692.341	0.000	0.043	0.000	Y
03050107	517389.675	104.141	0.361	0.216	Y
03050108	468253.875	322.270	0.000	0.000	Y
03050109	1615244.086	2416.698	4.503	1.194	Y
03050110	441181.546	992.512	13.624	0.000	Y
03050111	351220.767	564.242	58.032	27.752	Y
03050112	467339.608	121.046	0.023	0.000	Y
03050201	539601.287	2570.766	98.605	6.350	Y
03050202	572306.943	2635.518	134.169	32.885	Y
03050203	486243.100	50.925	0.574	0.000	Y
03050204	554923.824	165.406	0.002	0.000	Y
03050205	551788.371	0.000	0.000	0.000	Y
03050206	418388.566	0.000	0.000	0.000	N
03050207	654246.879	231.883	0.000	0.000	Y
03050208	1435486.111	1256.963	138.572	15.691	Y
03060101	594757.734	306.882	0.781	0.000	Y
03060102	217628.950	0.000	0.000	0.000	N
03060103	745140.540	55.858	0.000	0.000	Y
03060106	653691.632	595.298	0.001	0.000	Y
03060107	473485.636	0.000	0.000	0.000	Y
03060109	232646.763	0.000	0.846	0.000	Y
06010105	3.486	0.000	0.000	0.000	N

HUC/ Ecoregion (Stream)

Project	Stream Type	Priority Category	Existing Condition	Duration	Dominant Impact	Cumulative Impact	Sum of R Factors (R)	Linear Feet Impact (LL)	R X LL=
Glenns Bay Rd	0.1	0.1	0.5	0.3	2.2	0.01	3.21	305	968.0
US 17 and 48th South								0	0.0
US 701 and Pitch Landing Road	0.1	0.1	0.5	0.3	2.2	0.01	3.21	50	160.5
Burcale Rd. and Claypond Rd	0.1	0.1	0.5	0.3	2.2	0.4	3.6	534	1922.4
SC 90 and St. Josephs Rd								0	0.0
701 and Wedgefield Rd	0.8	0.1	0.5	0.3	2.2	0.1	4	120	480.0
US 17 Bypass and Inlet Square	0.8	0.1	0.5	0.3	2.2	0.4	4.3	982	4222.6
Palmetto Point Expansion	0.8	0.1	0.5	0.3	2.2	0.2	4.1	483	1980.3
US 17 Bypass Widening - Shetland to Backgate	0.8	0.1	0.5	0.3	2.2	0.1	4	120	480.0
501 Widening - Gardner Lacy to SC 31	0.8	0.1	0.5	0.3	2.2	0.2	4.1	433	1775.3
Andrews Bypass Phase II								0	0.0
SC 905 at Old Reeves Ferry Rd								0	0.0
SC 9 and SC 905								0	0.0
US 701 at Industrial Park Rd								0	0.0
US 701 at Harris Shortcut Rd.	0.1	0.1	0.5	0.3	2.2	0.01	3.21	25	80.3
Total								3052	12069.4

2013 Demonstration of Need

- 38 General Permits issued July 2012 –July 2013
 - Approx. 333 credits (wetland)
 - Approx. 11,070 credits (stream)
 - Does not Include IPs
 - Does Not Include County Projects
 - Florence County – 65,000 credits
 - Berkeley County – 13,500 credits
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Payouts To Banks 2011-2013

Bank	Date	Cost	Credits
Grove Creek	12-21-2011	\$44,040.00	352.25
Grove Creek	12-21-2011	\$126,650.00	1,490.0
Grove Creek	2-15-2012	\$298,032.00	2,838.4
Grove Creek	3-27-2012	\$9,254.70	88.14
Grove Creek	4-11-2012	\$332,746.00	2,294.8
Grove Creek	4-11-2012	\$18,236.00	182.36
Grove Creek	5-3-2013	\$85,015.00	694.0
Grove Creek	6-11-2013	\$14,900.00	372.5
Grove Creek	6-26-2013	\$15,288.00	124.8
	Total	\$944,161.70	8,437.25
Pigeon Pond	9-26-2012	\$6,500.00	1.3
	Total	\$6,500.00	1.3
Taylor's Creek	2-26-2013	\$12,050.00	96.4
	Total	\$12,050.00	96.4
Turkey Creek	5-22-2012	\$25,896.00	199.2
	Total	\$25,896.00	199.2
Turners Branch	1-24-2011	\$91,586.05	892.79
	Total	\$91,586.05	892.79
Waccamaw Wetland	7-22-2013	\$878,700.00	121.20
	Total	\$878,700.00	121.20
	Grand Totals	\$1,958,893.75	9,748.14

“The future ain't
what it used to be.”

Yogi Berra

Future Options: Partnering

- Discuss Partnering Options based off forecast
 - Partner with NGOs/ Banking Developers
 - Working with legal to ensure compliance
 - Working with FHWA for advance Mitigation monies
- Partner with Existing Banks
 - Discussion on how to set up partnerships to acquire credits and reserve for SCDOT demand.
- RFP – Full Delivery
 - If immediate need cannot be serviced by existing bank

Summary

- SCDOT hopes to remove some of the risk for Banking community
- Detailed Forecast Model – Demonstrate Credit Demand Statewide
 - Critical Watershed/ Ecoregion Identified
 - Develop mitigation strategies/ partners
 - FHWA to work with SCDOT to use project funds for mitigation

Mitigate Tomorrow's impacts in Today's dollars

SCDOT Mitigation Manager

- Mr. Tucker Creed, P.E.
 - Pre-Construction Experience
 - Berkeley County RFP

Phone: 803-737-0356

Email: CreedTS@scdot.org

Make sure you introduce yourself and card him

Questions?

