Appendix B: Dissolved Oxygen Results

All Figures presented in this Appendix are DRAFT and are subject to change.

Table of Contents

List of Figures

List of Tables

The following figure presents the scale that was used to show the dissolved oxygen results available above the standard or the natural DO in the streams that were modeled.

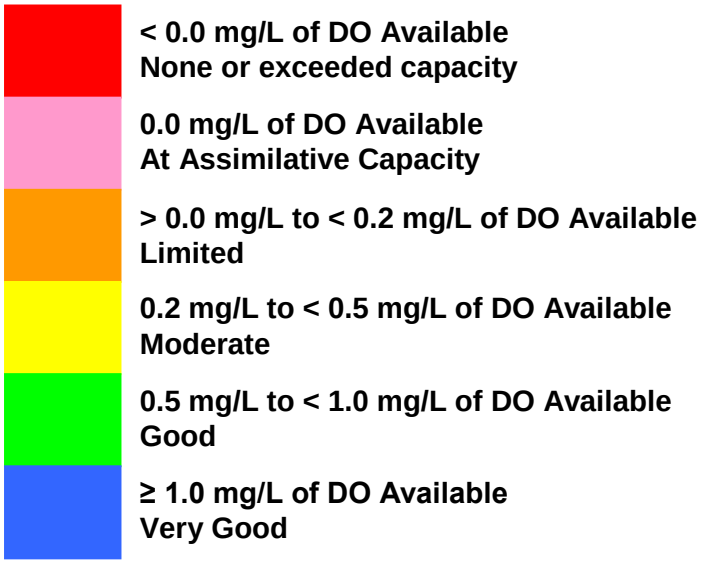

Figure B-1 Description of Dissolved Oxygen Results

B.1 Chattahoochee River Watershed

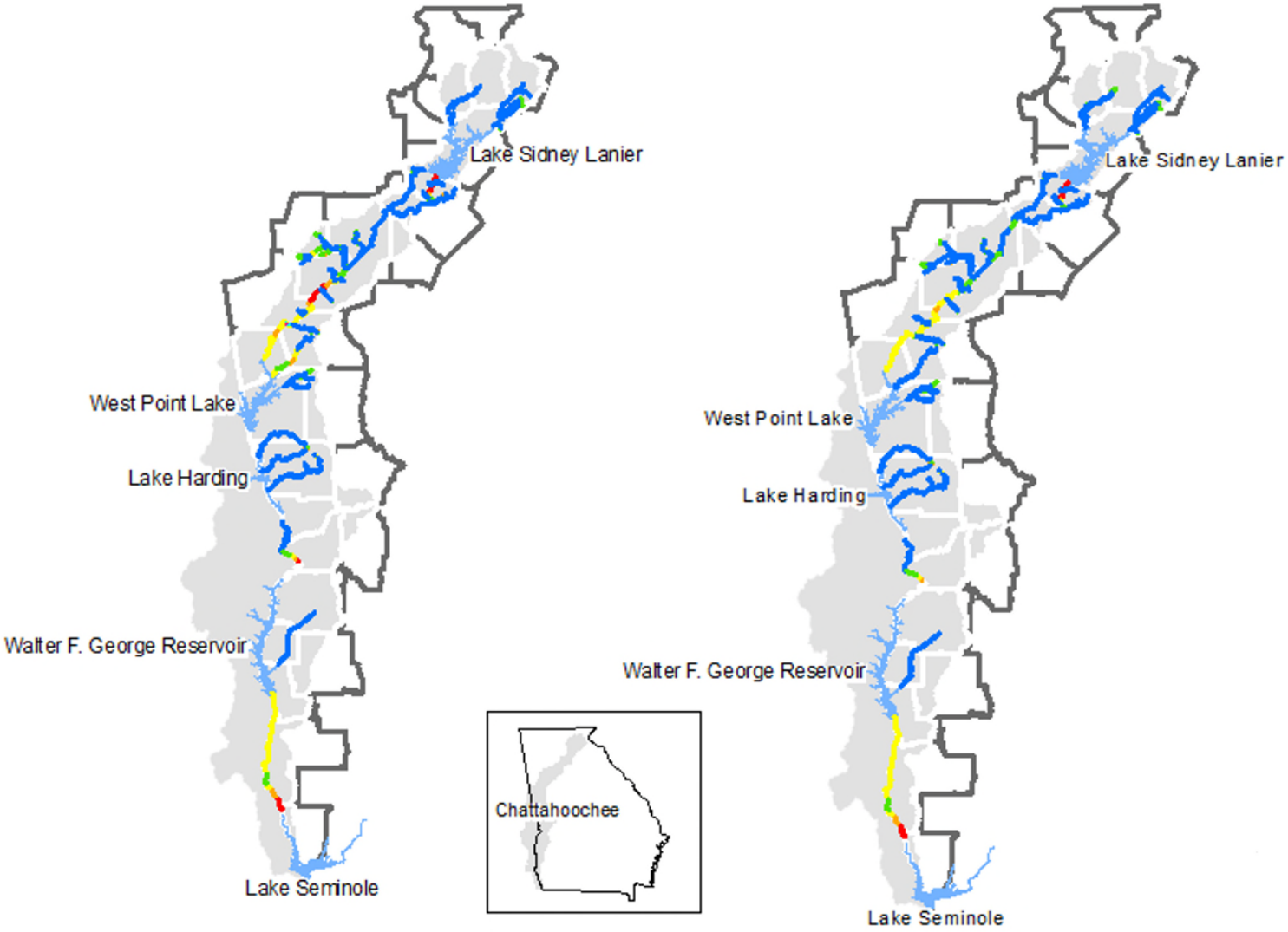

Figure B-2 Current (left) and Future (right) Results of Dissolved Oxygen Models in the Chattahoochee River Watershed

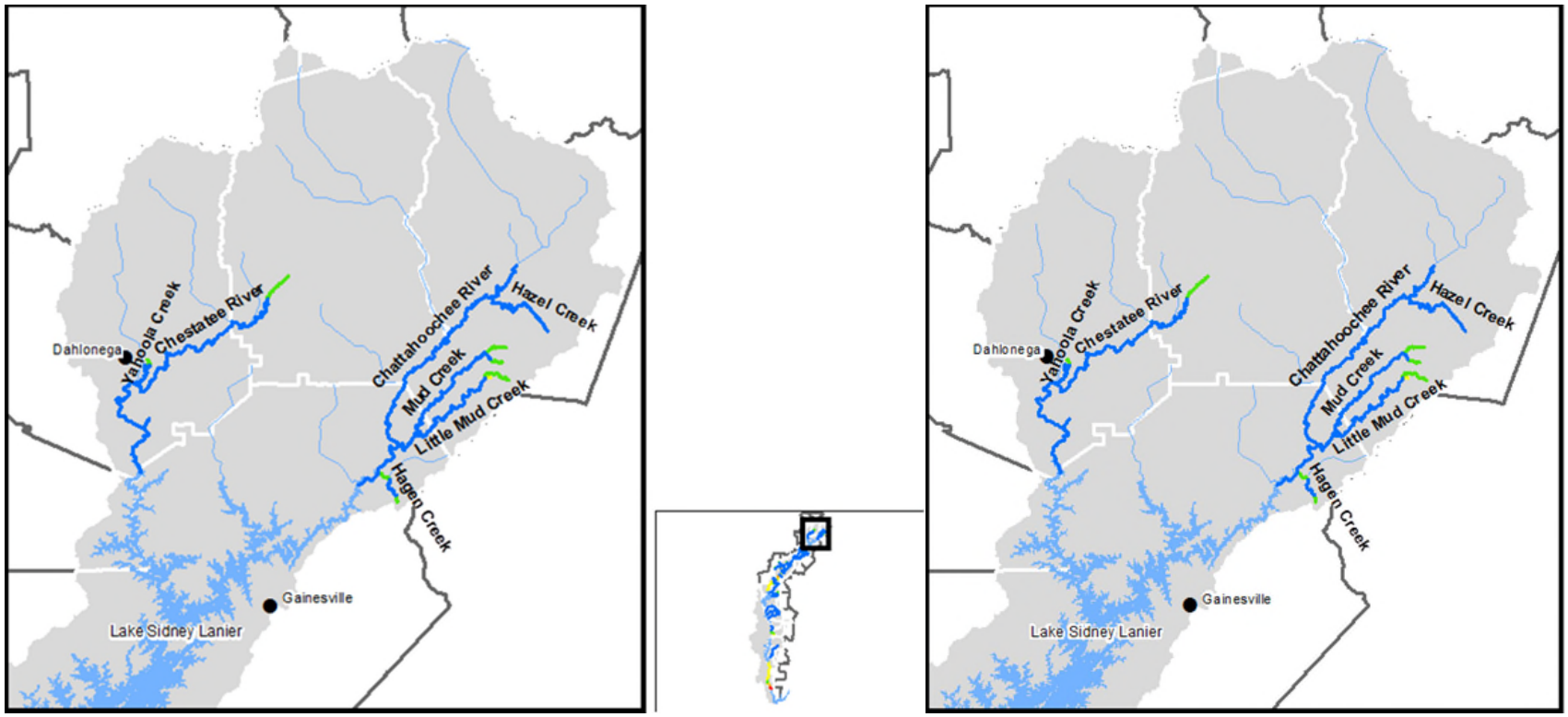

Figure B-3 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lake Lanier portion of the Chattahoochee River Watershed

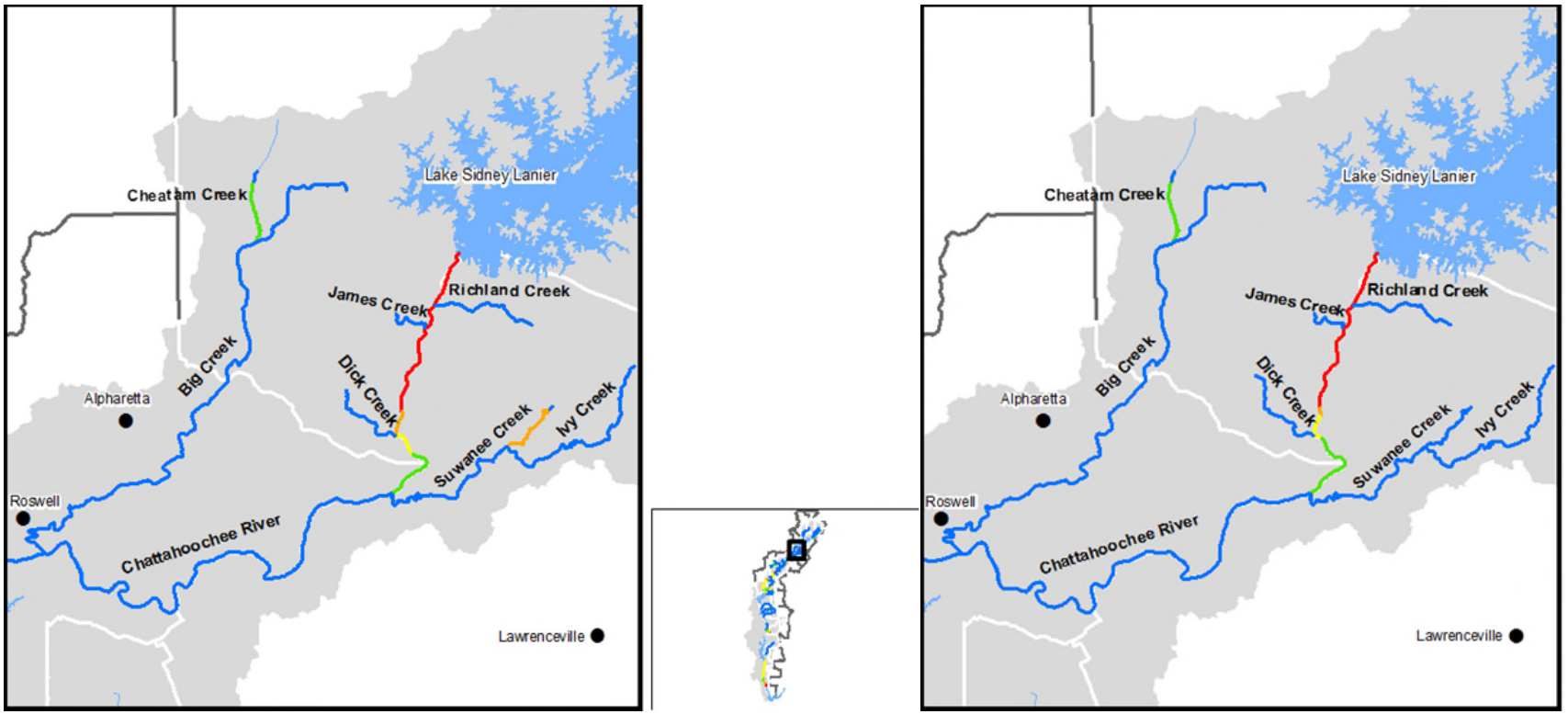

Figure B-4 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Upper Metro Atlanta Chattahoochee River Watershed

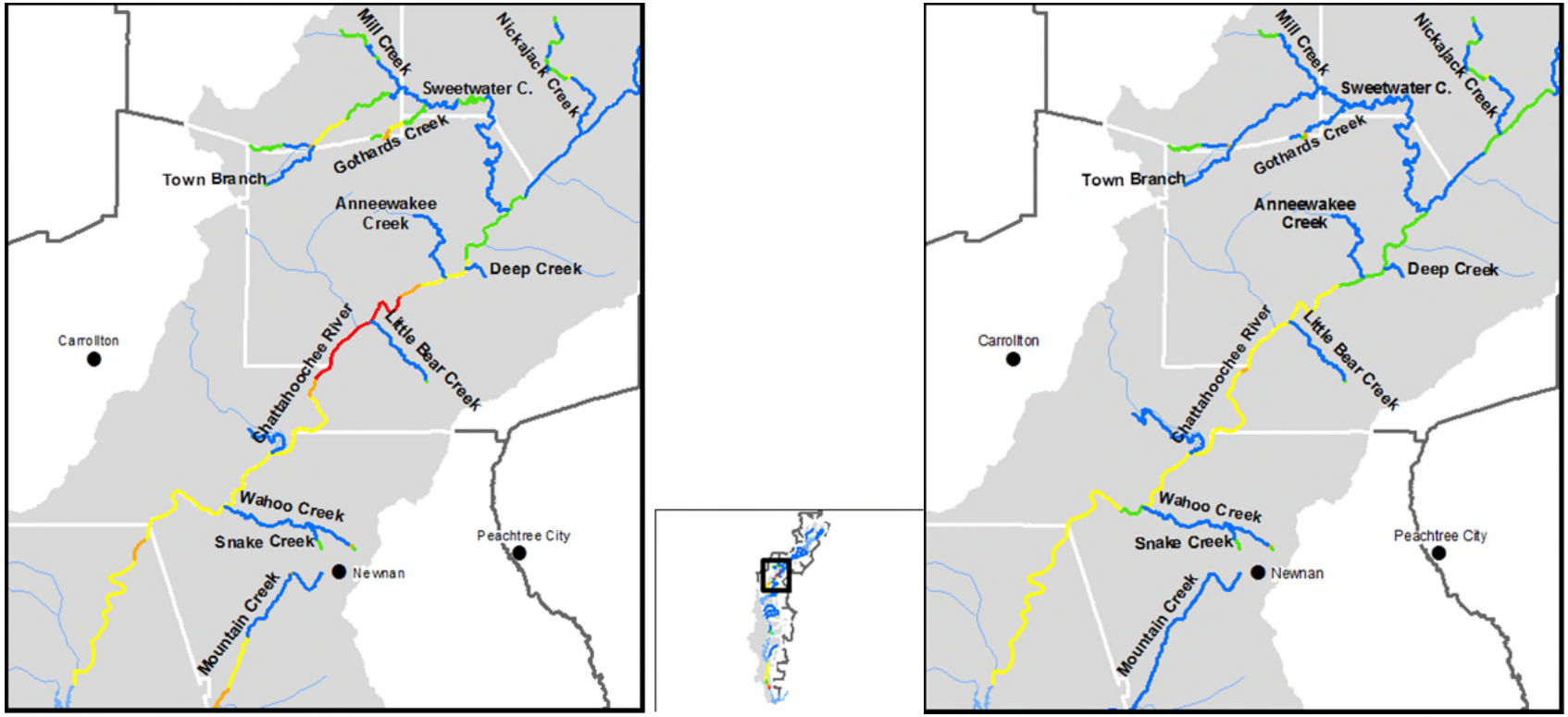

Figure B-5 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Metro Atlanta Chattahoochee River Watershed

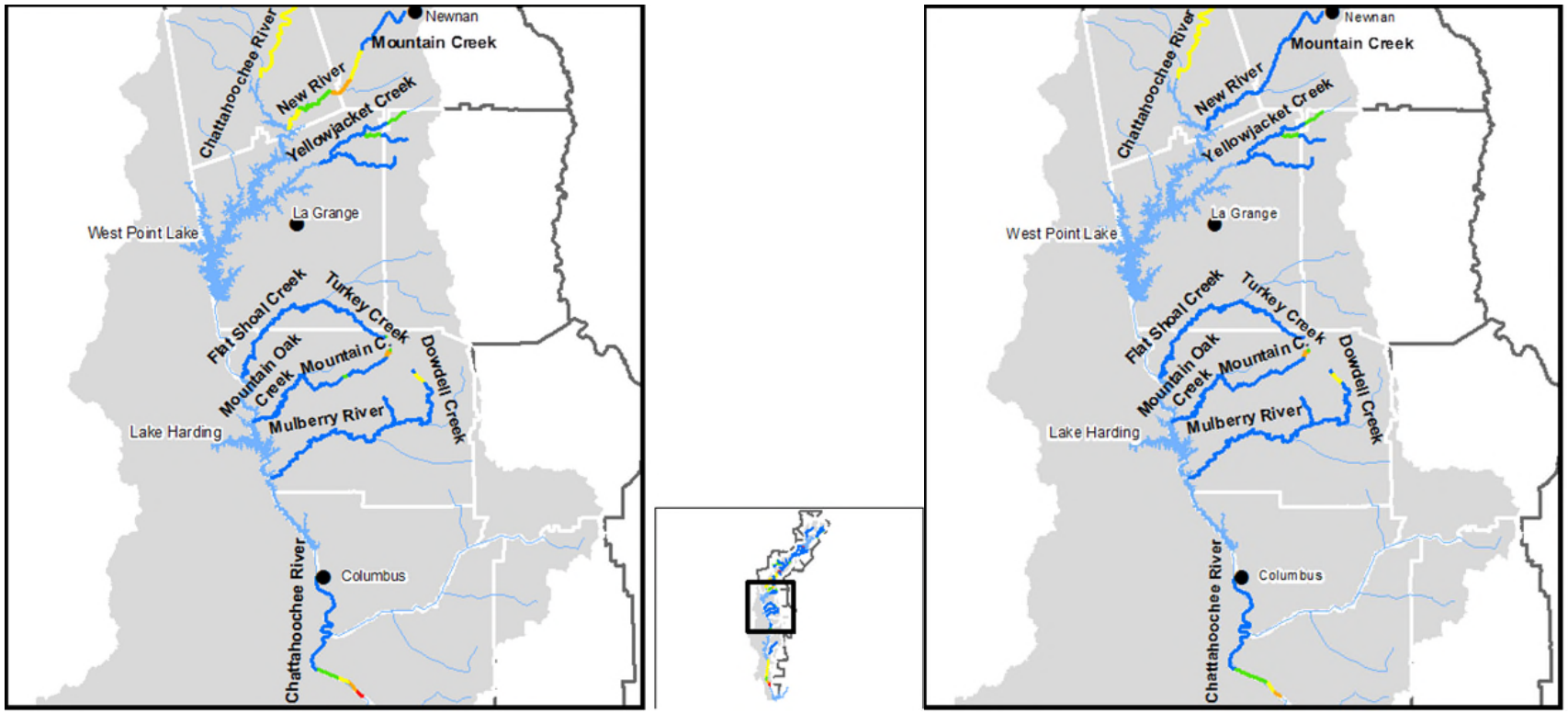

Figure B-6 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Middle Chattahoochee River Watershed

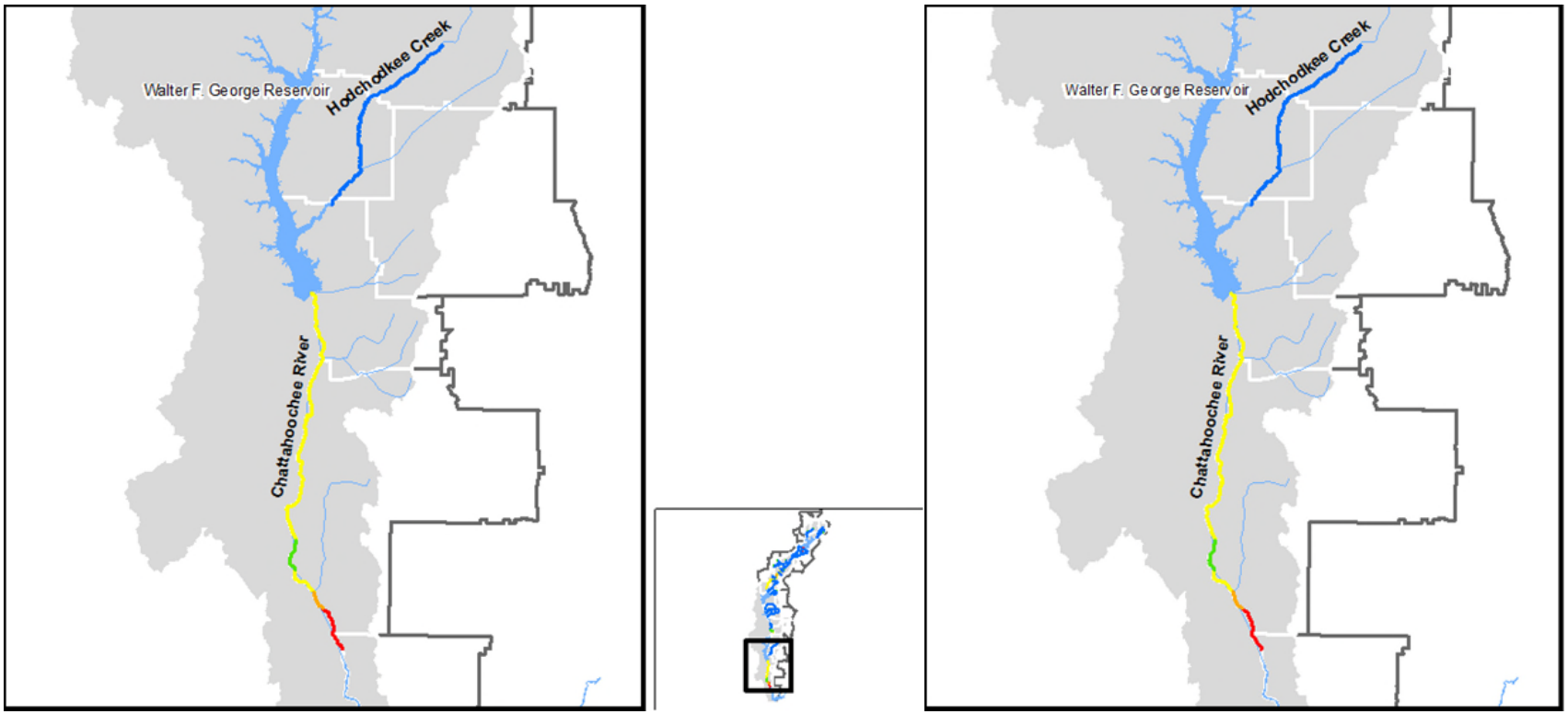

Figure B-7 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Chattahoochee River Watershed

B.2 Flint and Ochlockonee River Watersheds

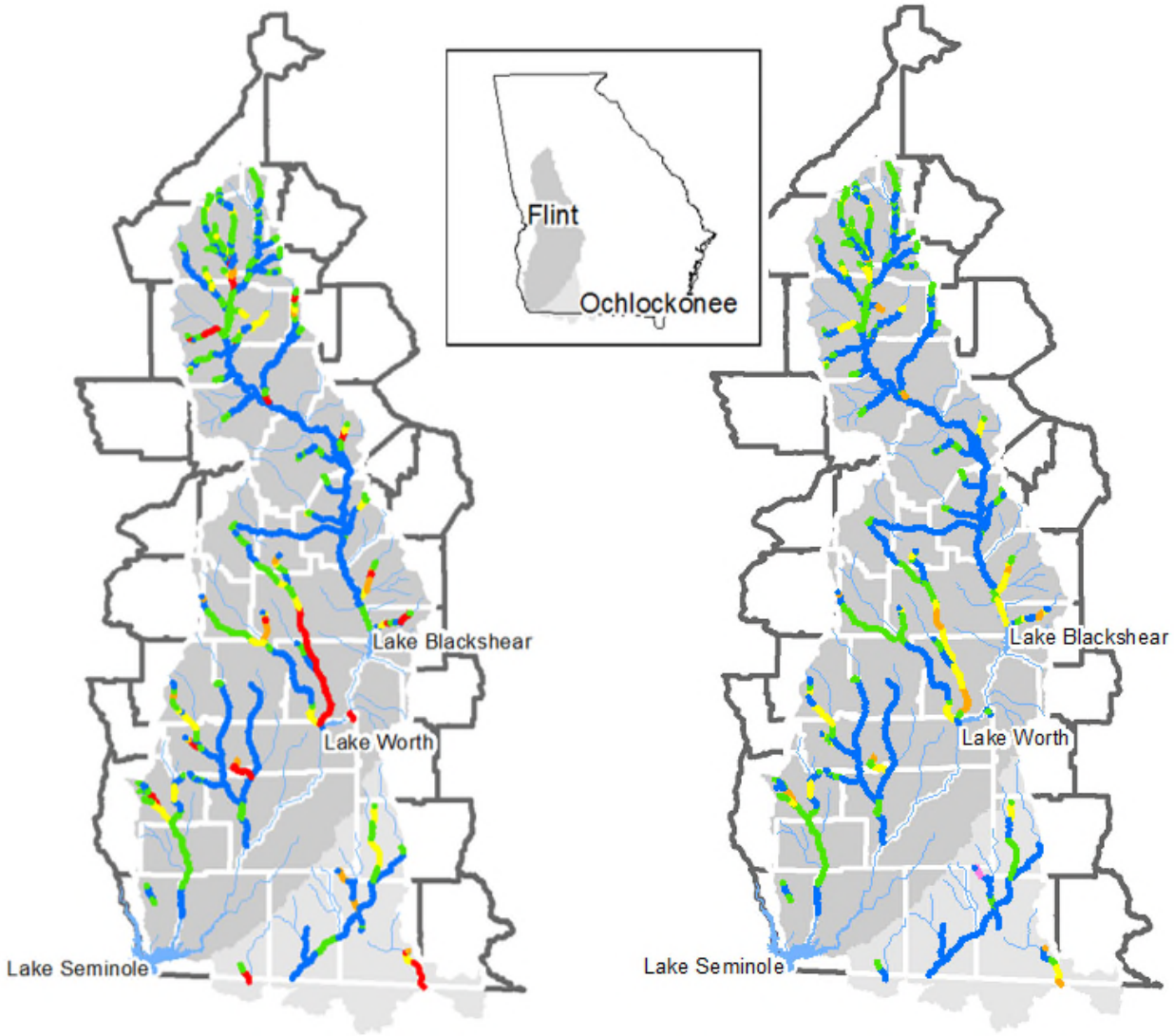

Figure B-8 Current (left) and Future (right) Results of Dissolved Oxygen Models in the Flint and Ochlockonee River Watersheds

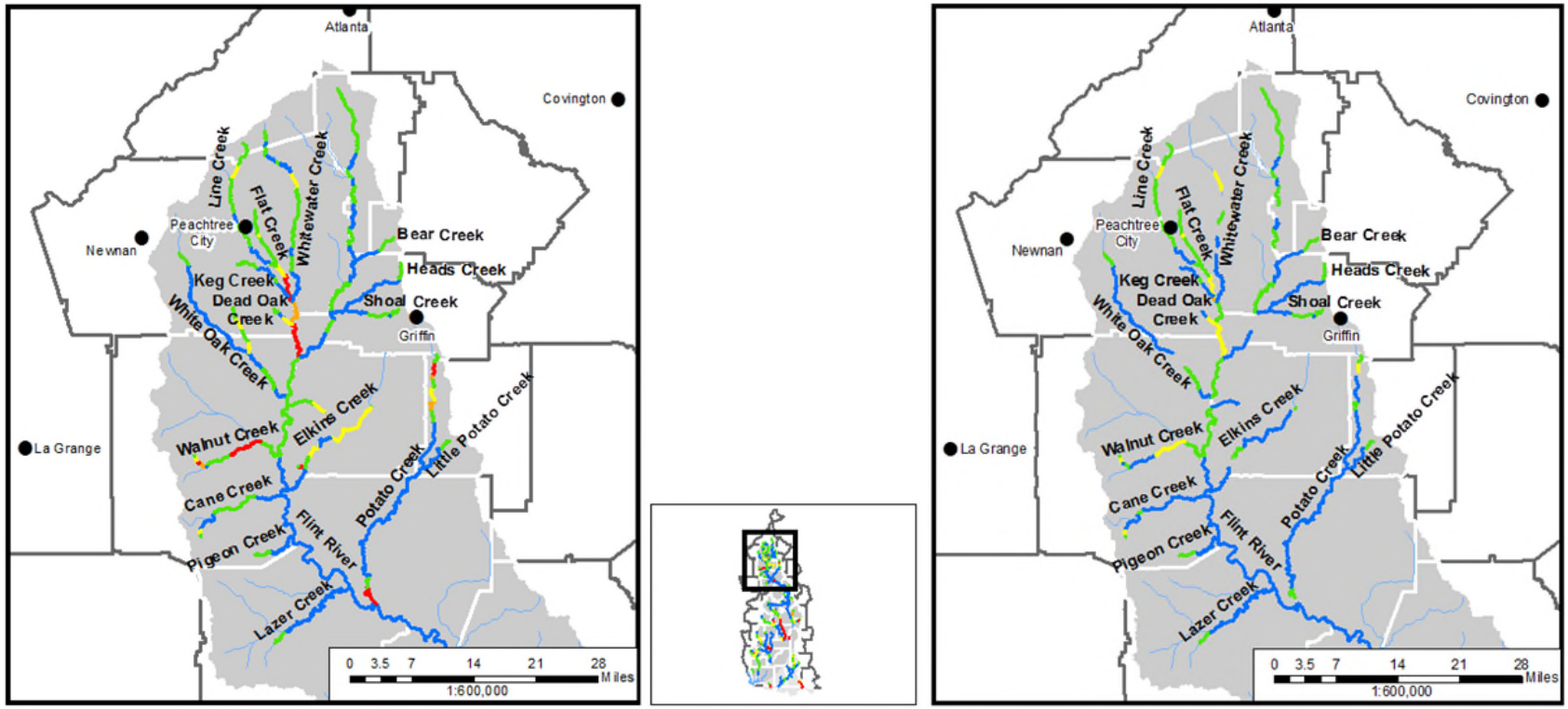

Figure B-9 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Upper Flint River Watershed

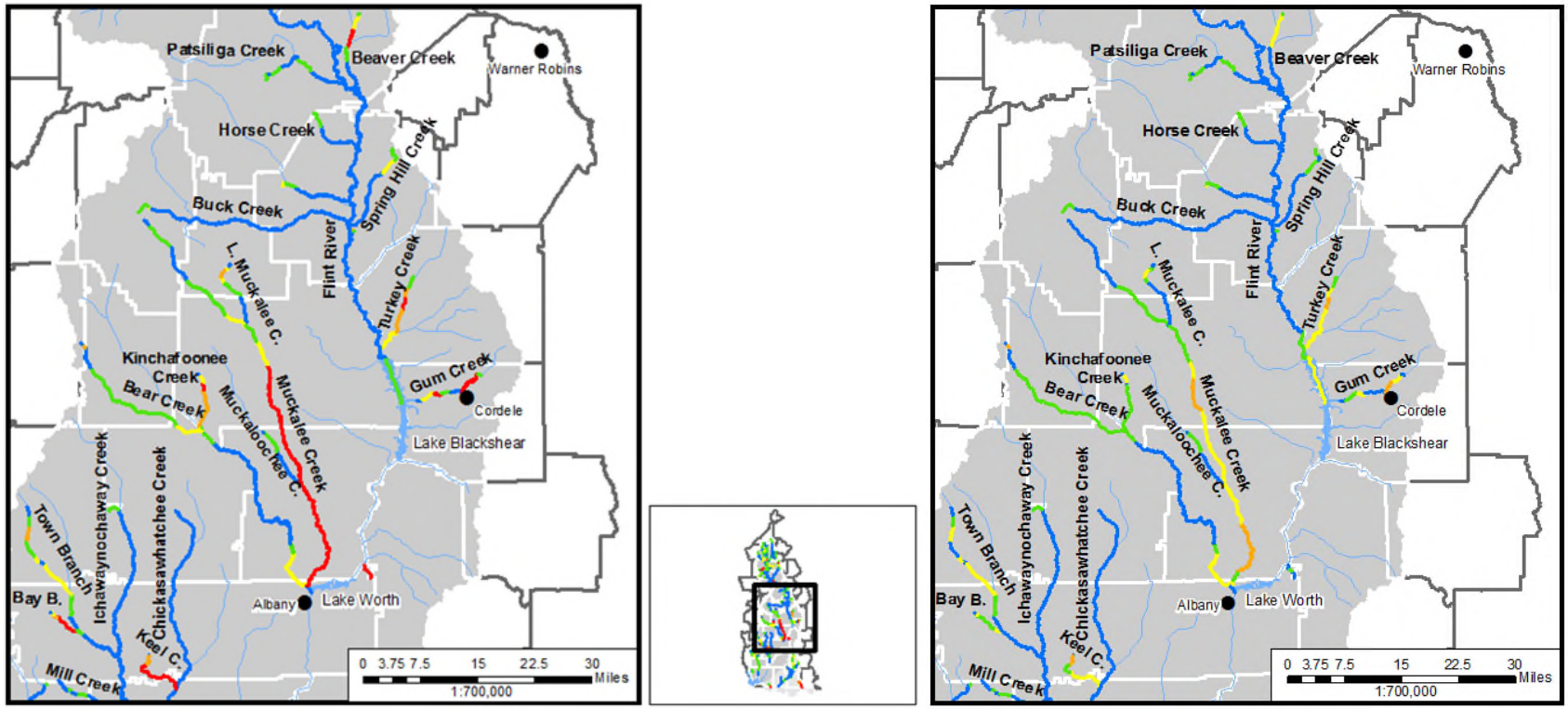

Figure B-10 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Middle Flint River Watershed

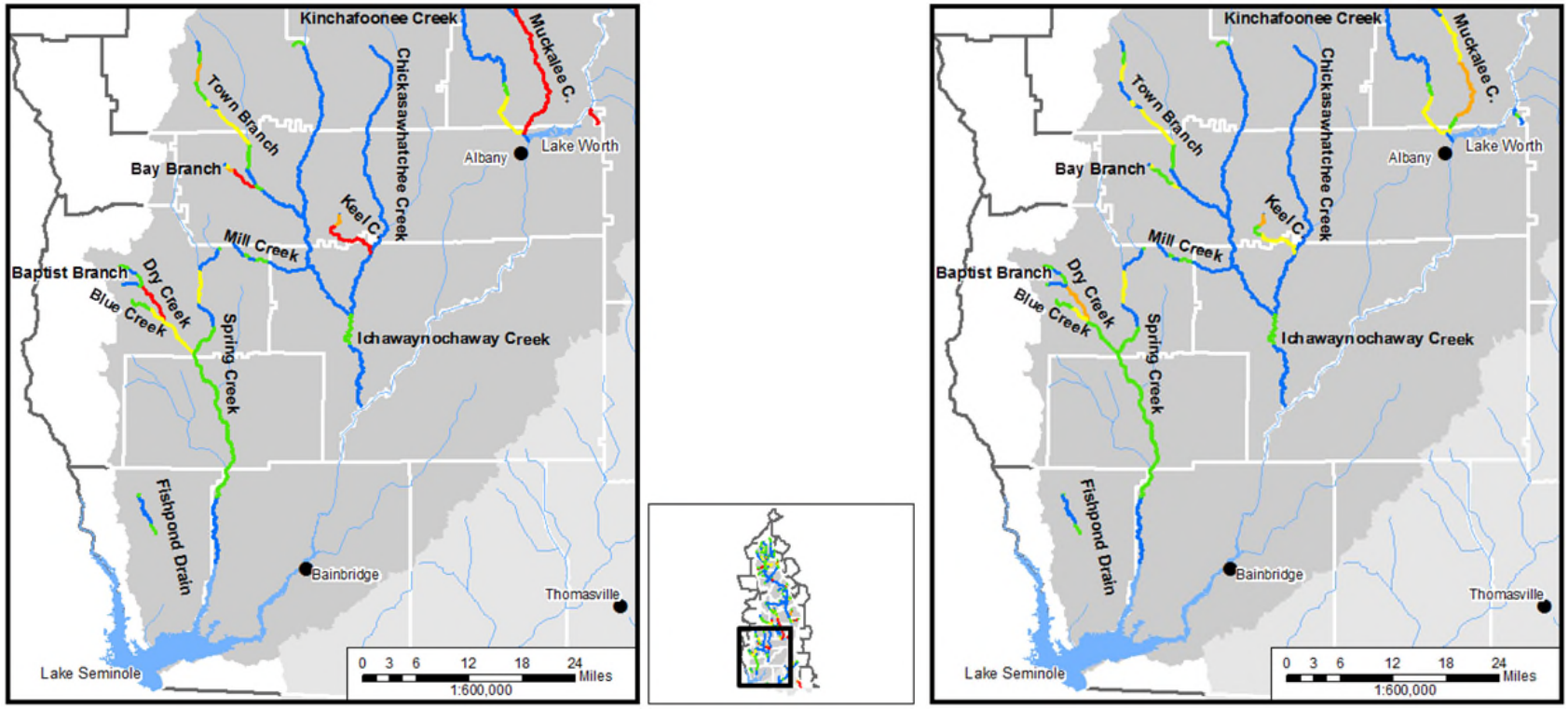

Figure B-11 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Flint River Watershed

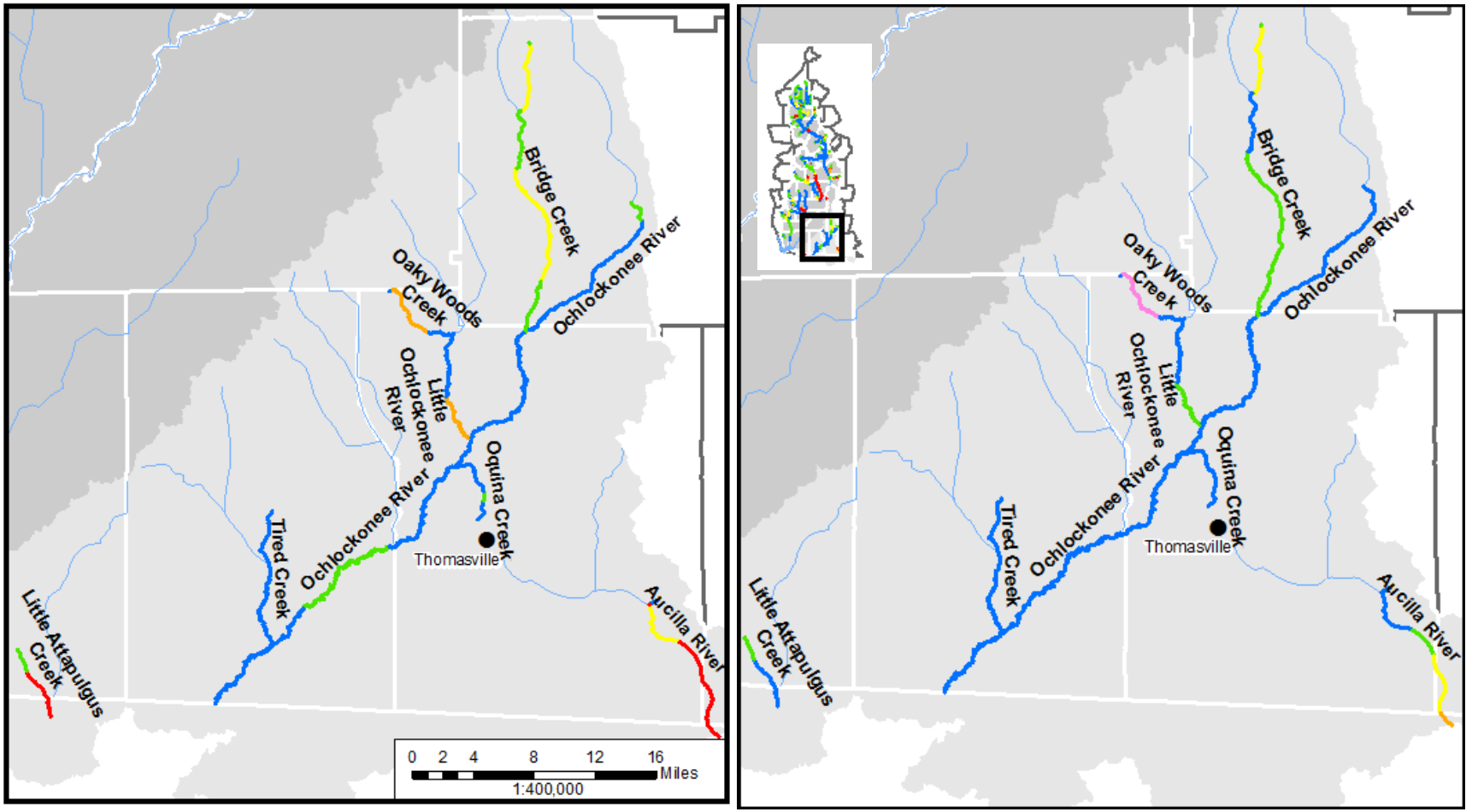

Figure B-12 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Ochlockonee River Watershed

B.3 Coosa, Tennessee, and Tallapoosa River Watersheds

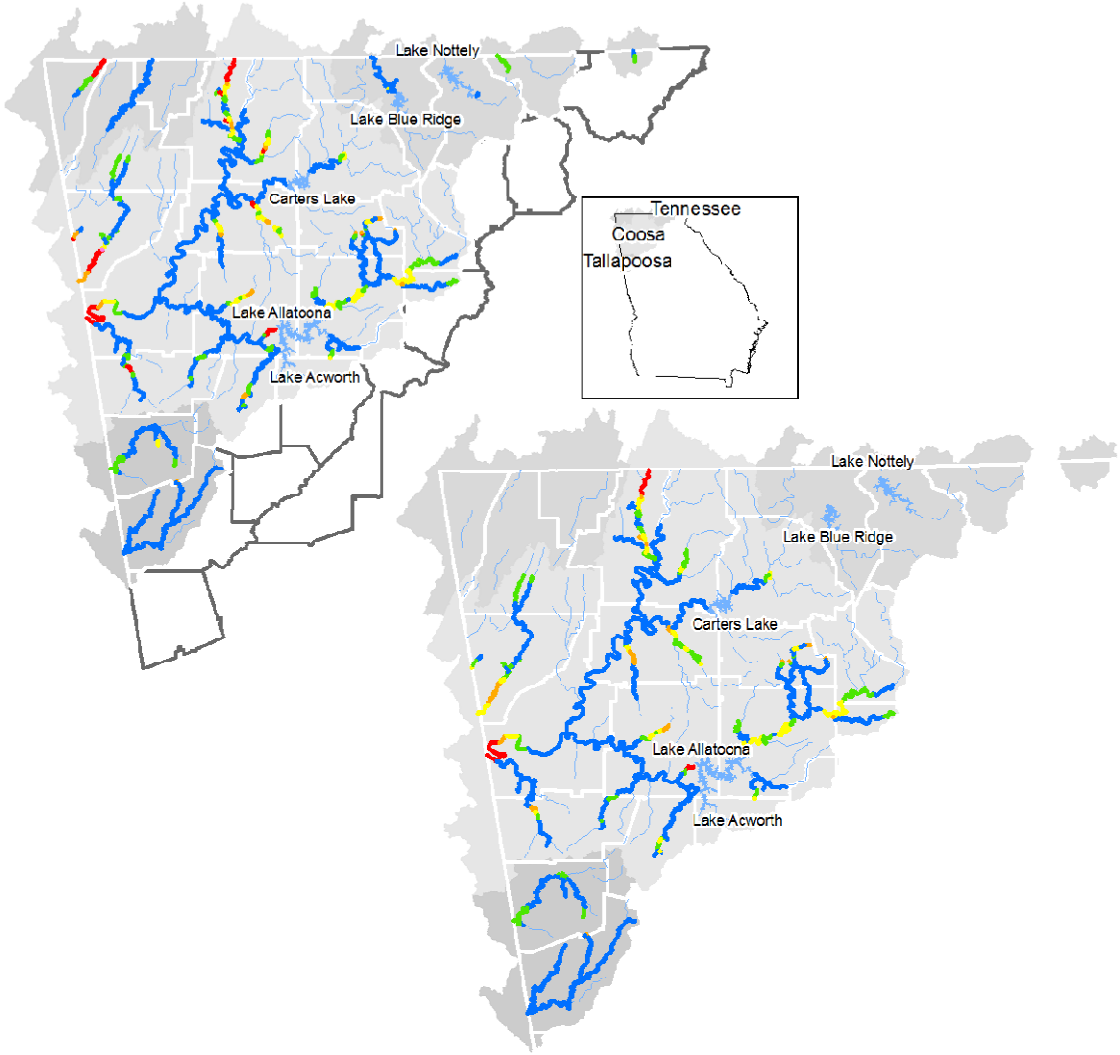

Figure B-13 Current (left) and Future (right) Results of Dissolved Oxygen Models in the Coosa, Tennessee, and Tallapoosa River Watersheds

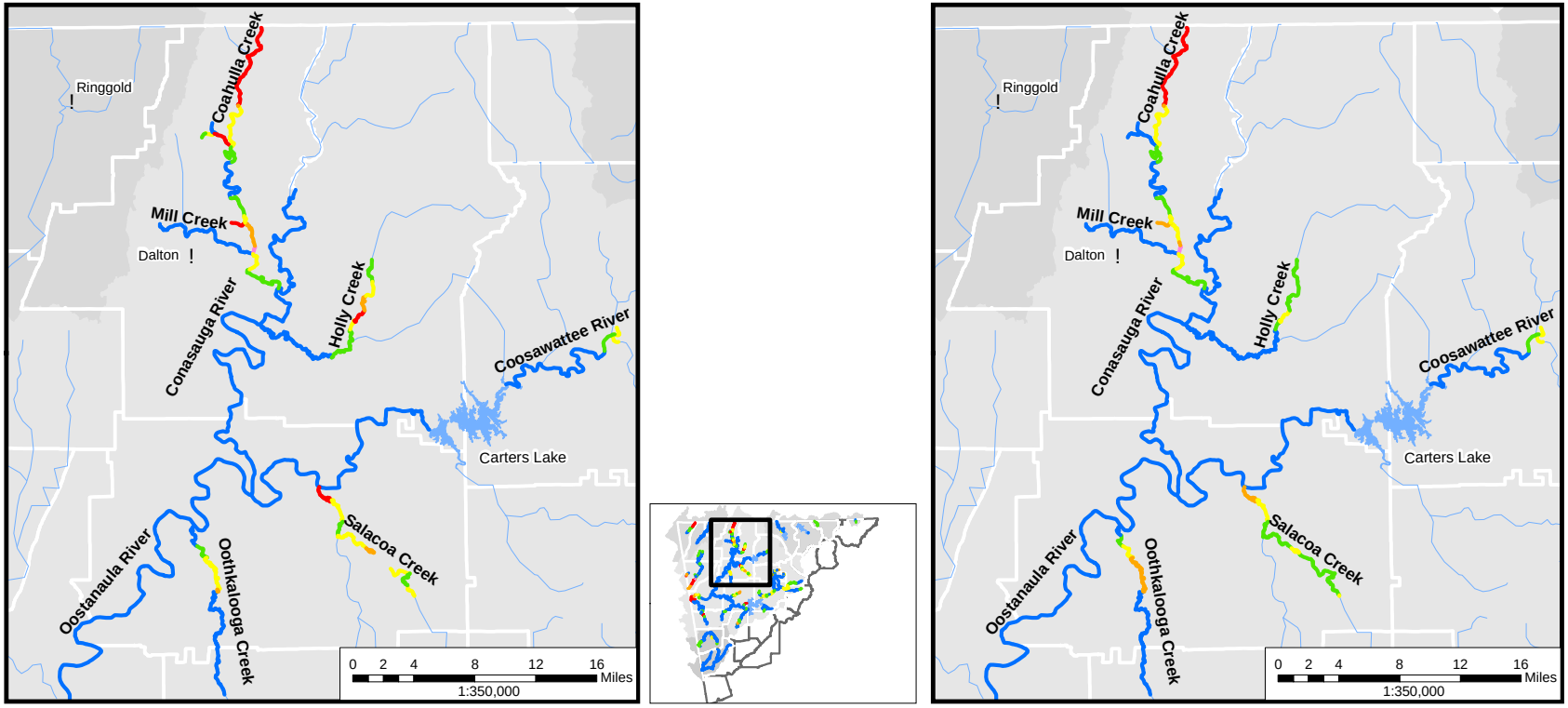

Figure B-14 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Oostanaula River and upstream watersheds of the Coosa River Watershed

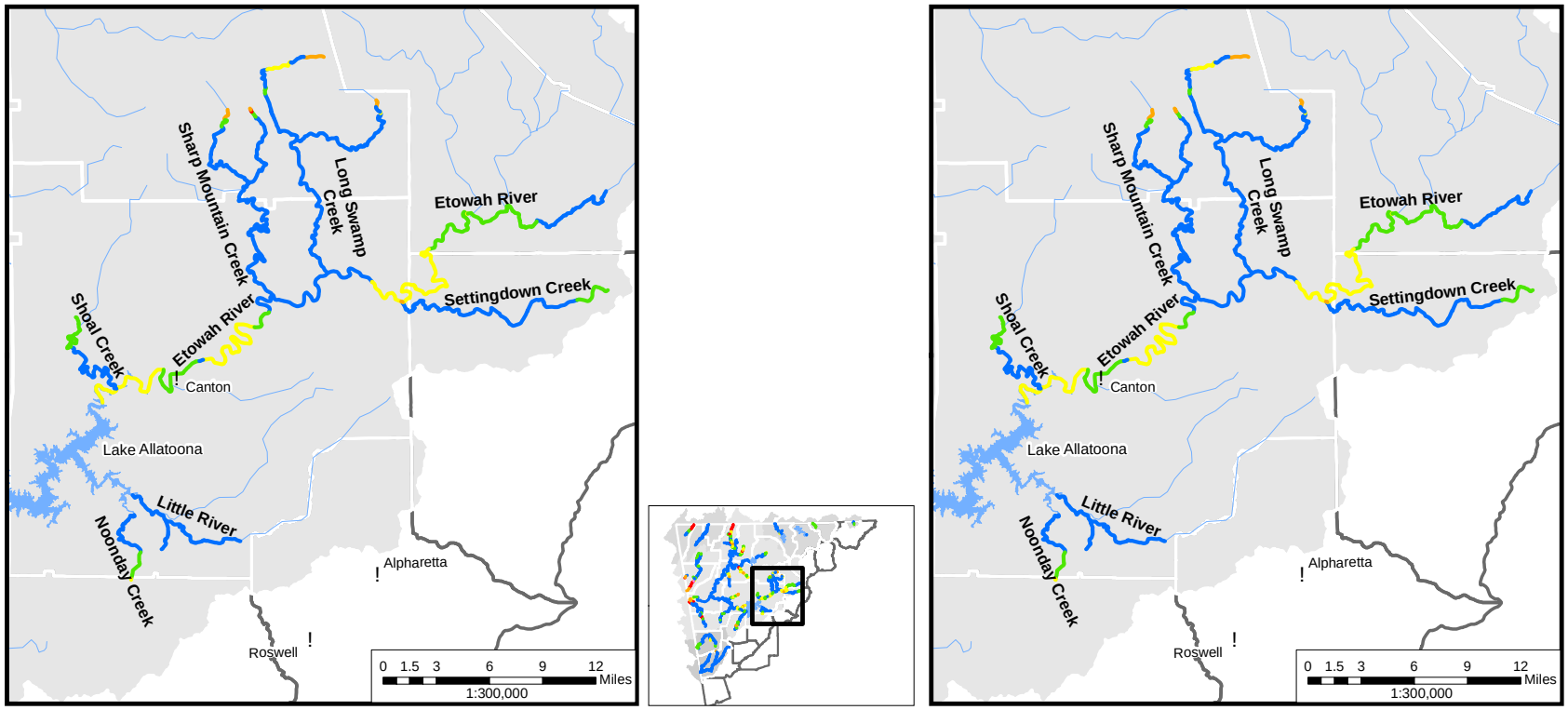

Figure B-15 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lake Allatoona Watershed portion of the Coosa River Watershed

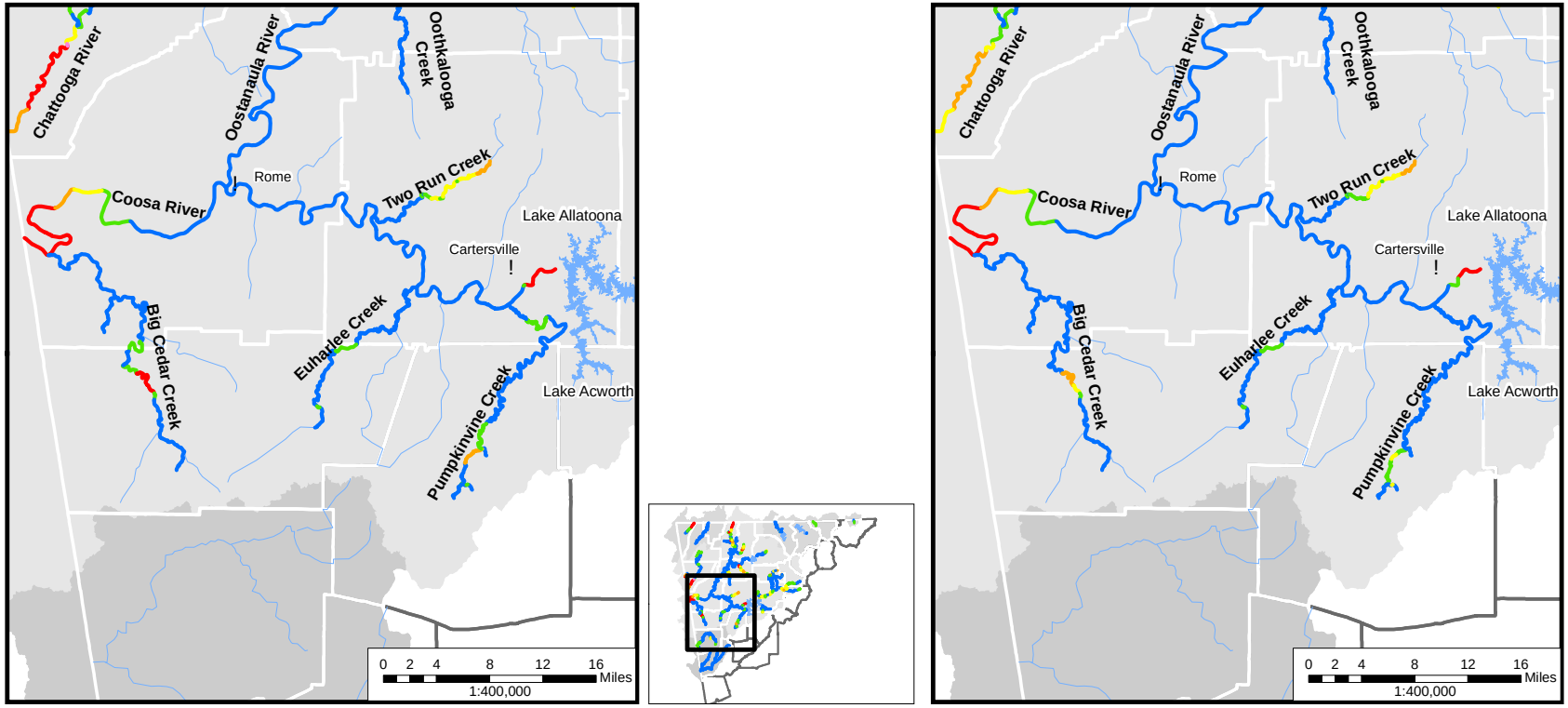

Figure B-16 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Coosa River Watershed

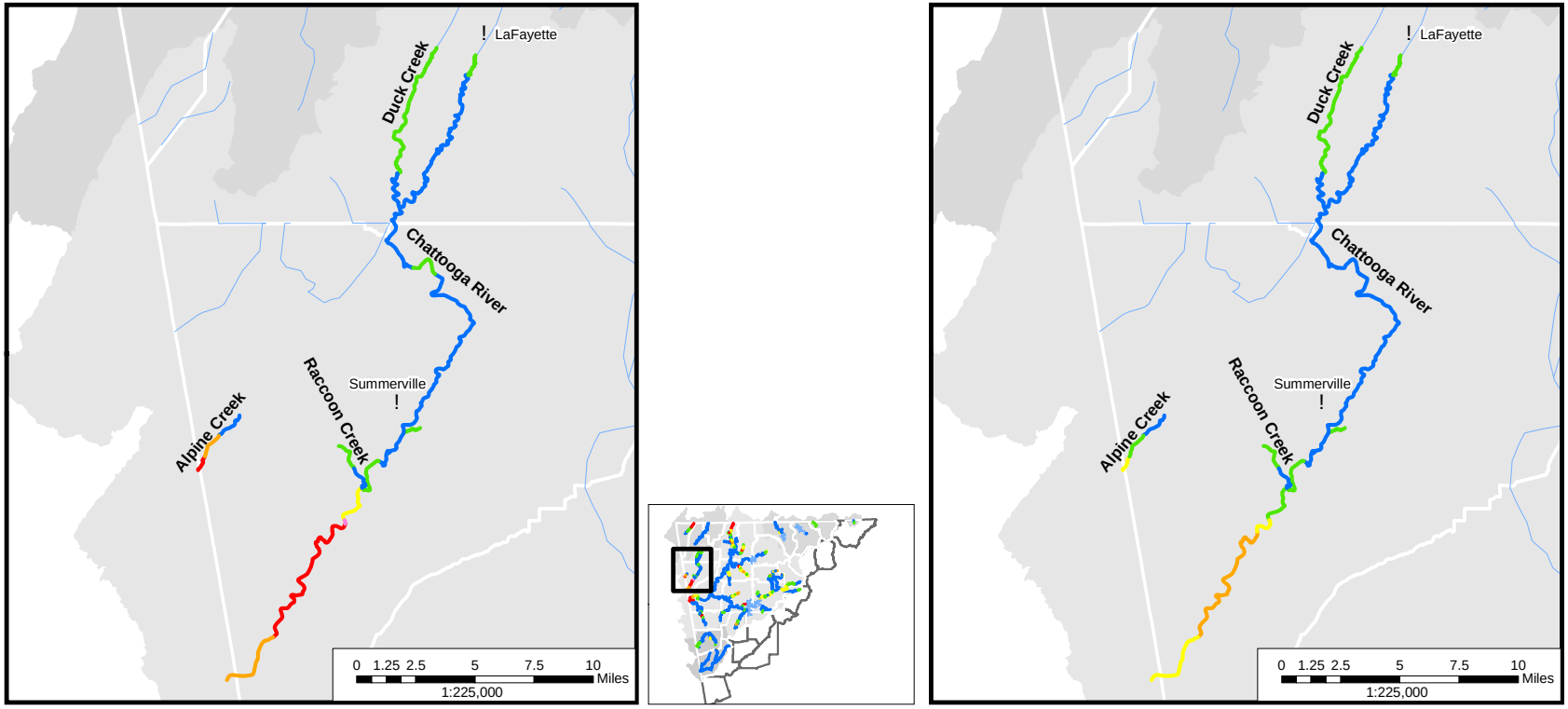

Figure B-17 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Chattooga River Watershed

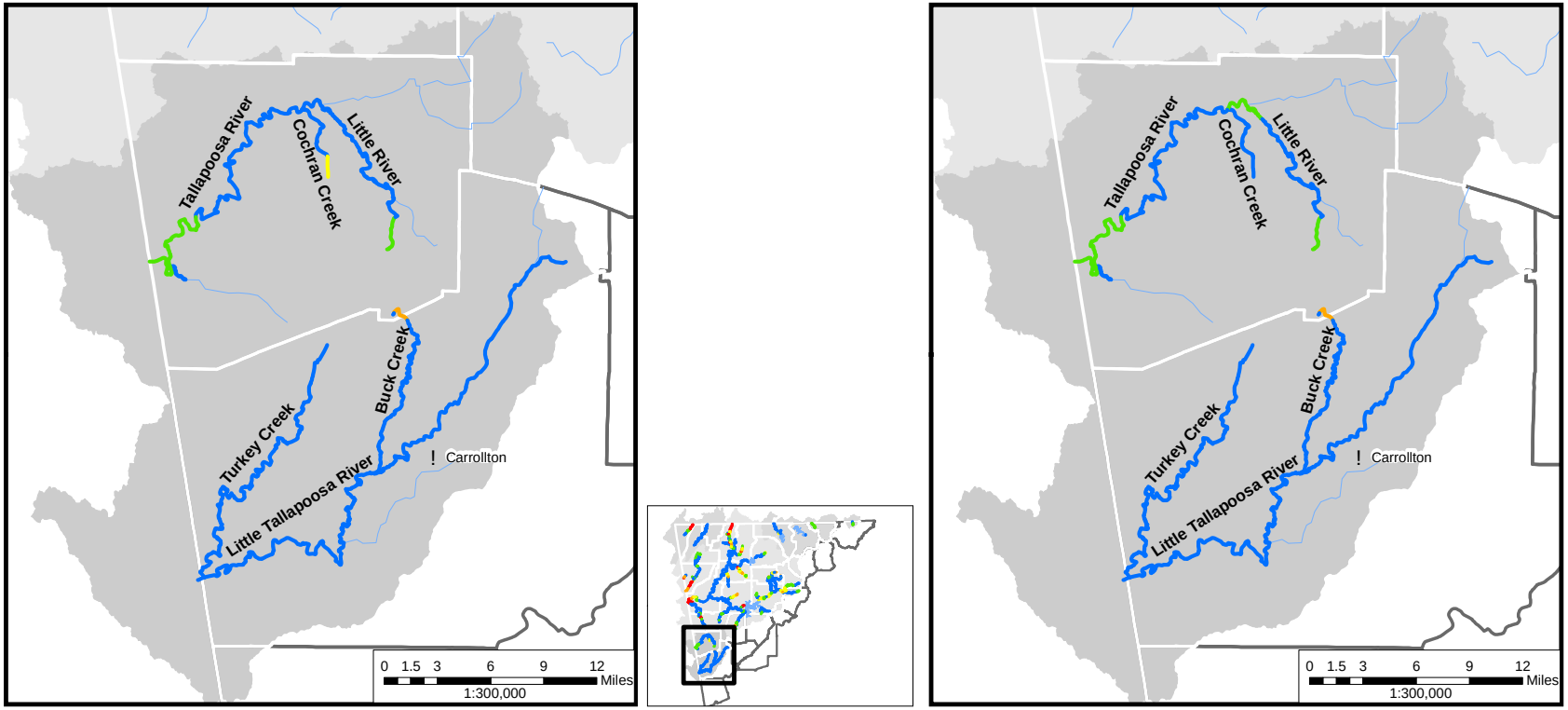

Figure B-18 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Tallapoosa River Watershed

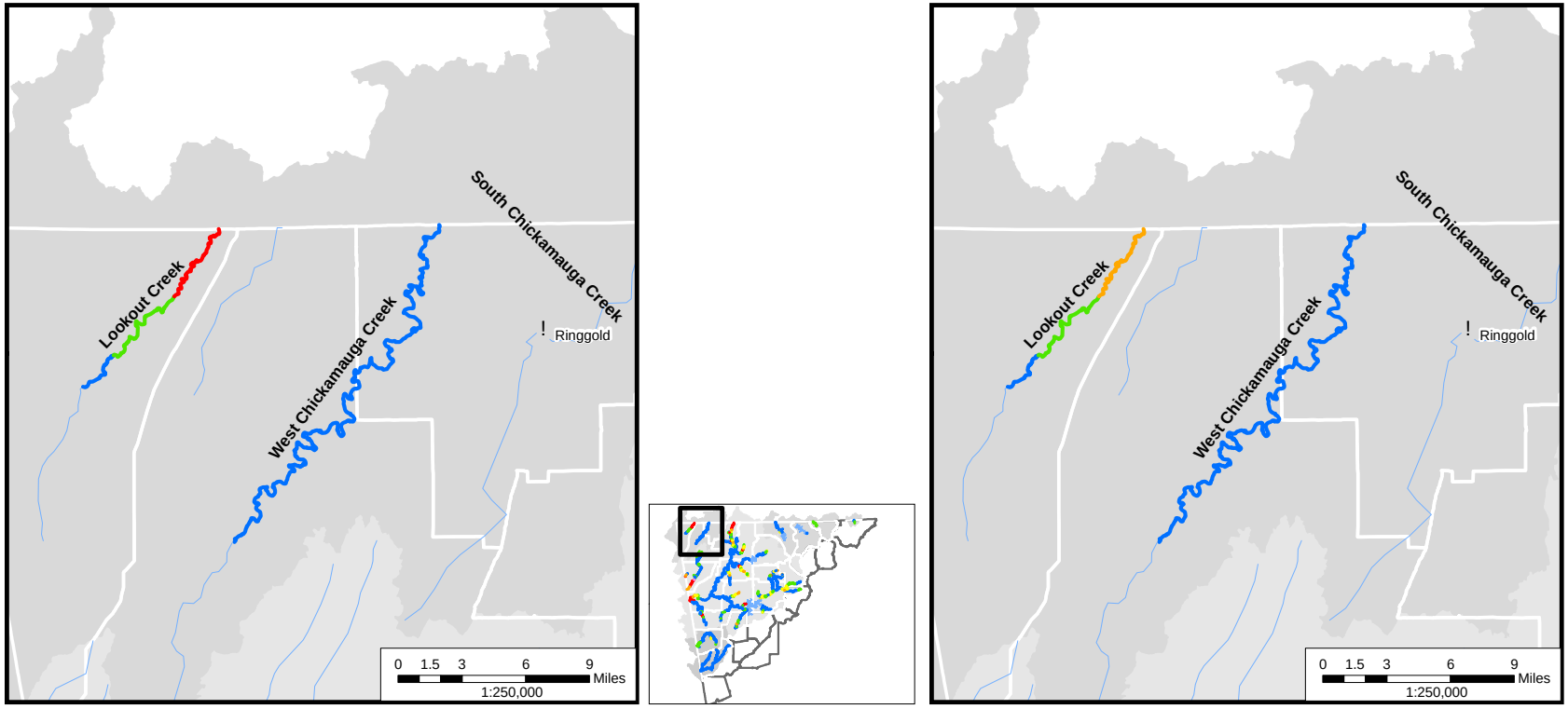

Figure B-19 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Chickamuga River Watershed portion of the Tenneessee River Watershed

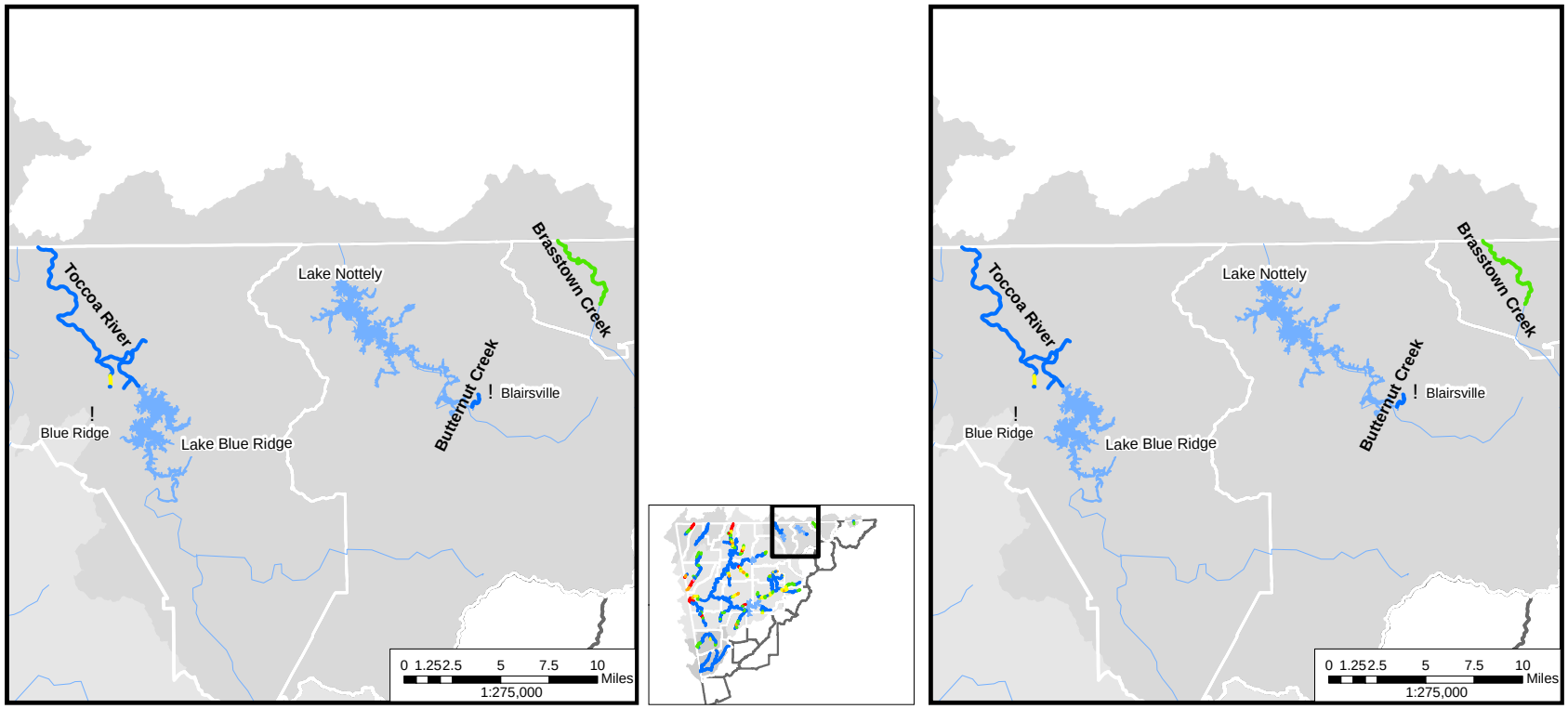

Figure B-20 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Nottely River Watershed portion of the Tennessee River Watershed

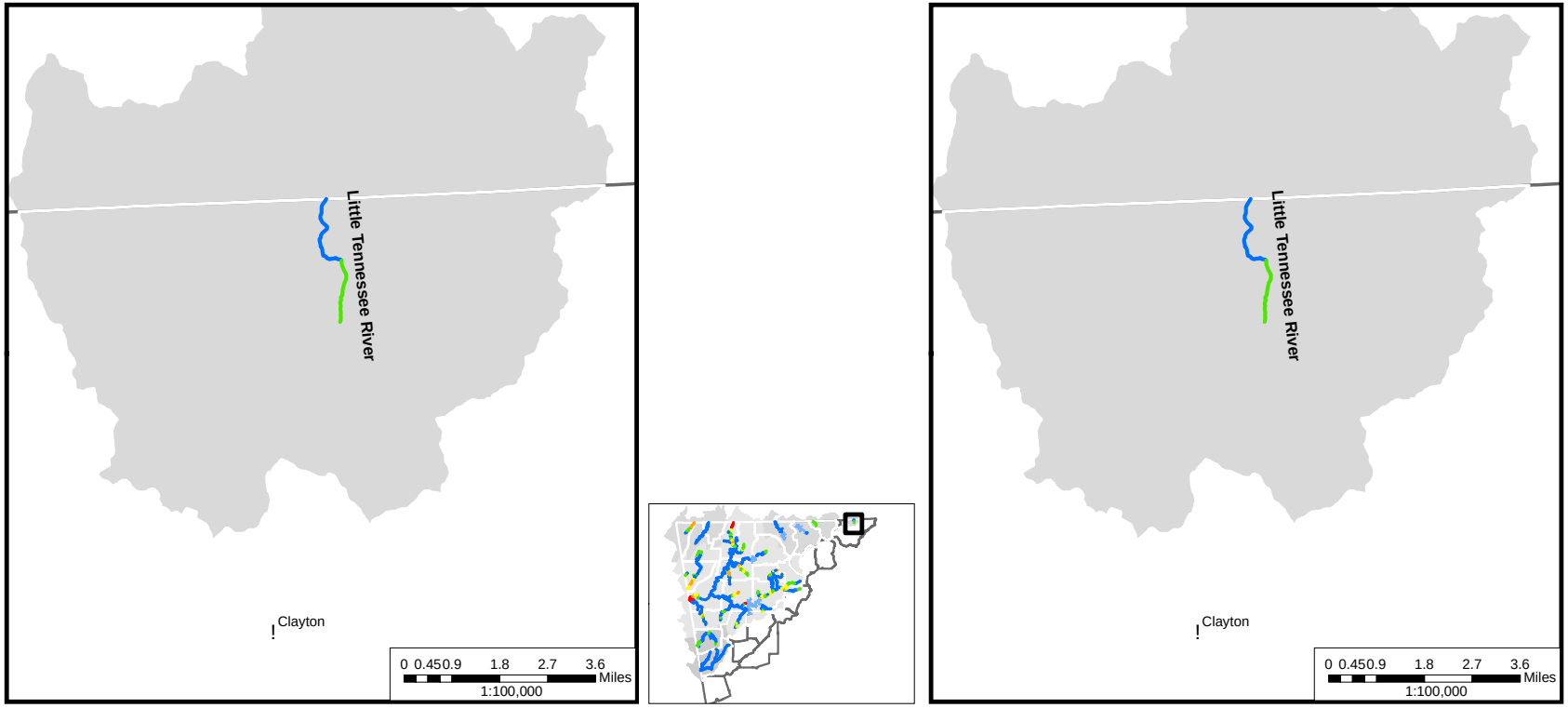

Figure B-21 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Little Tennessee River Watershed portion of the Tennessee River Watershed

B.4 Savannah and Ogeechee River Watersheds

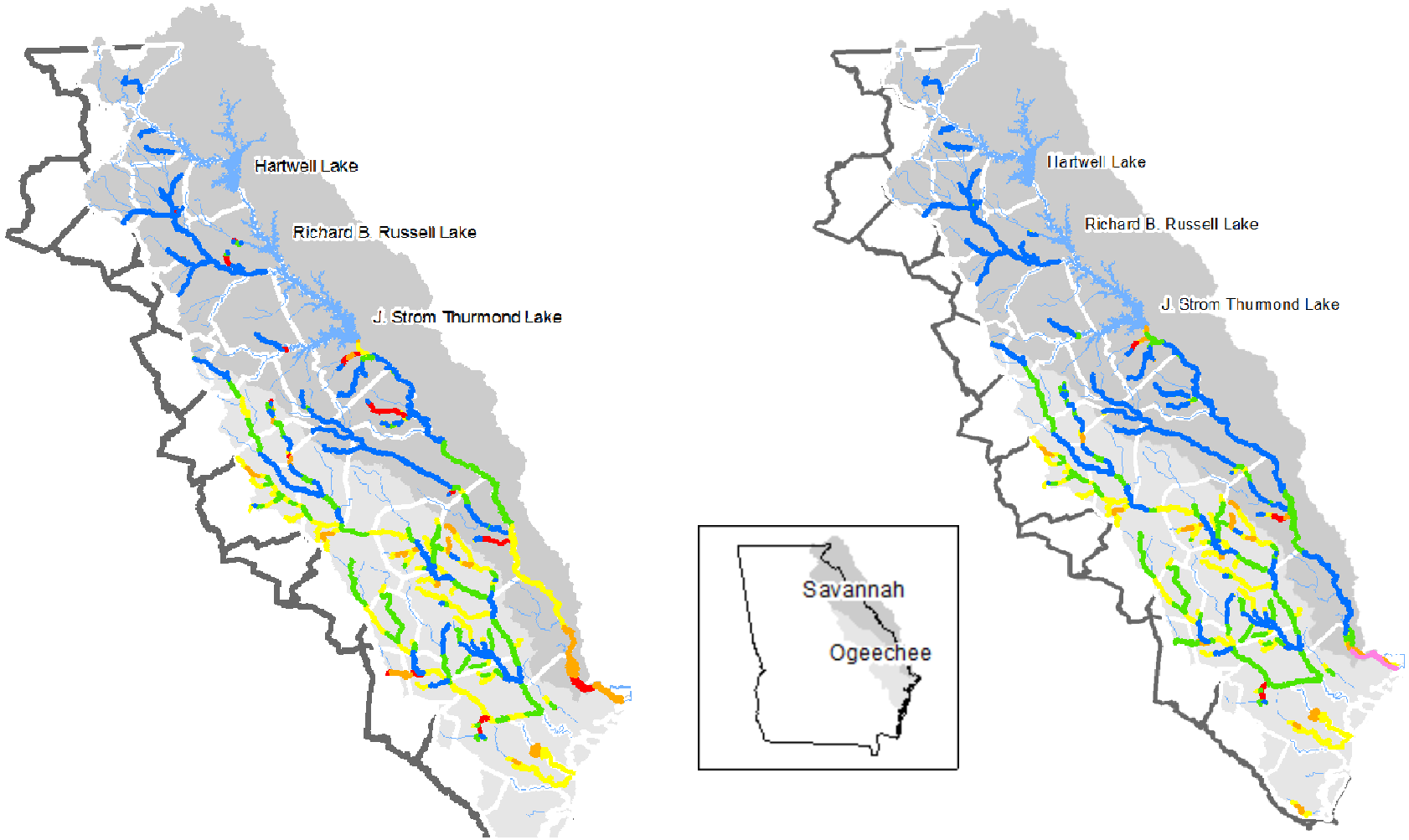

Figure B-22 Current (left) and Future (right) Results of Dissolved Oxygen Models in the Savannah and Ogeechee River Watersheds

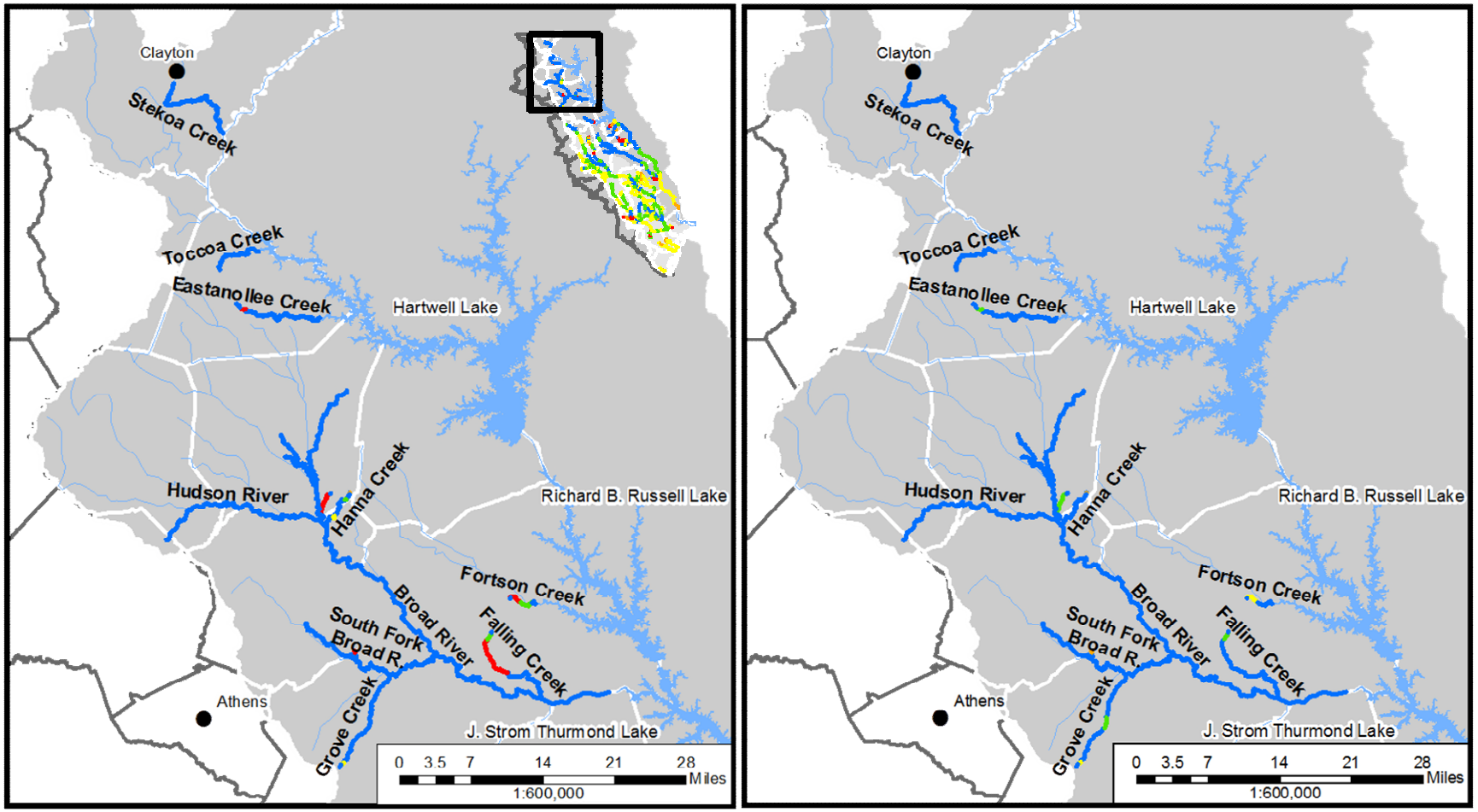

Figure B-23 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Upper Savannah River Watershed

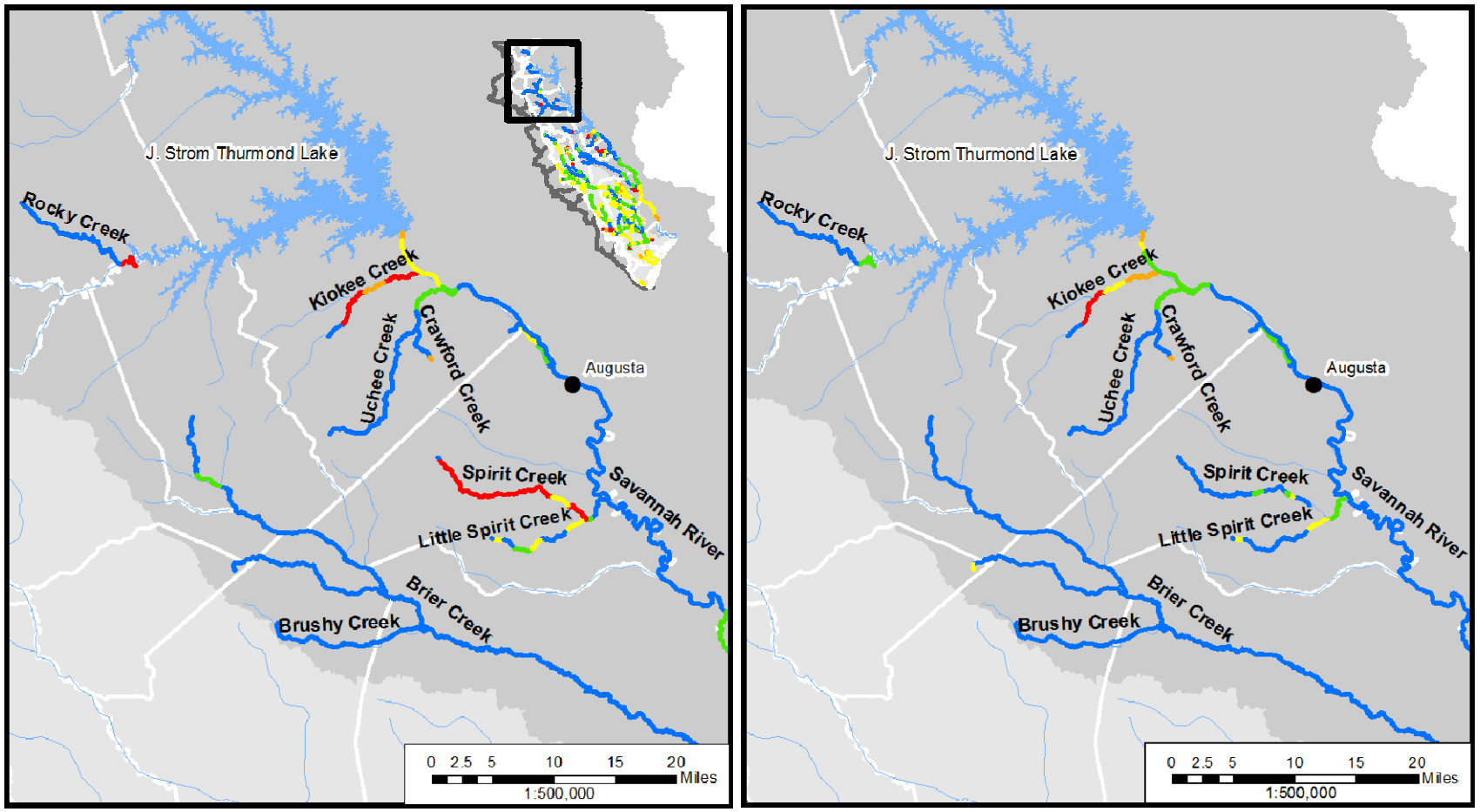

Figure B-24 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Middle Savannah River Watershed

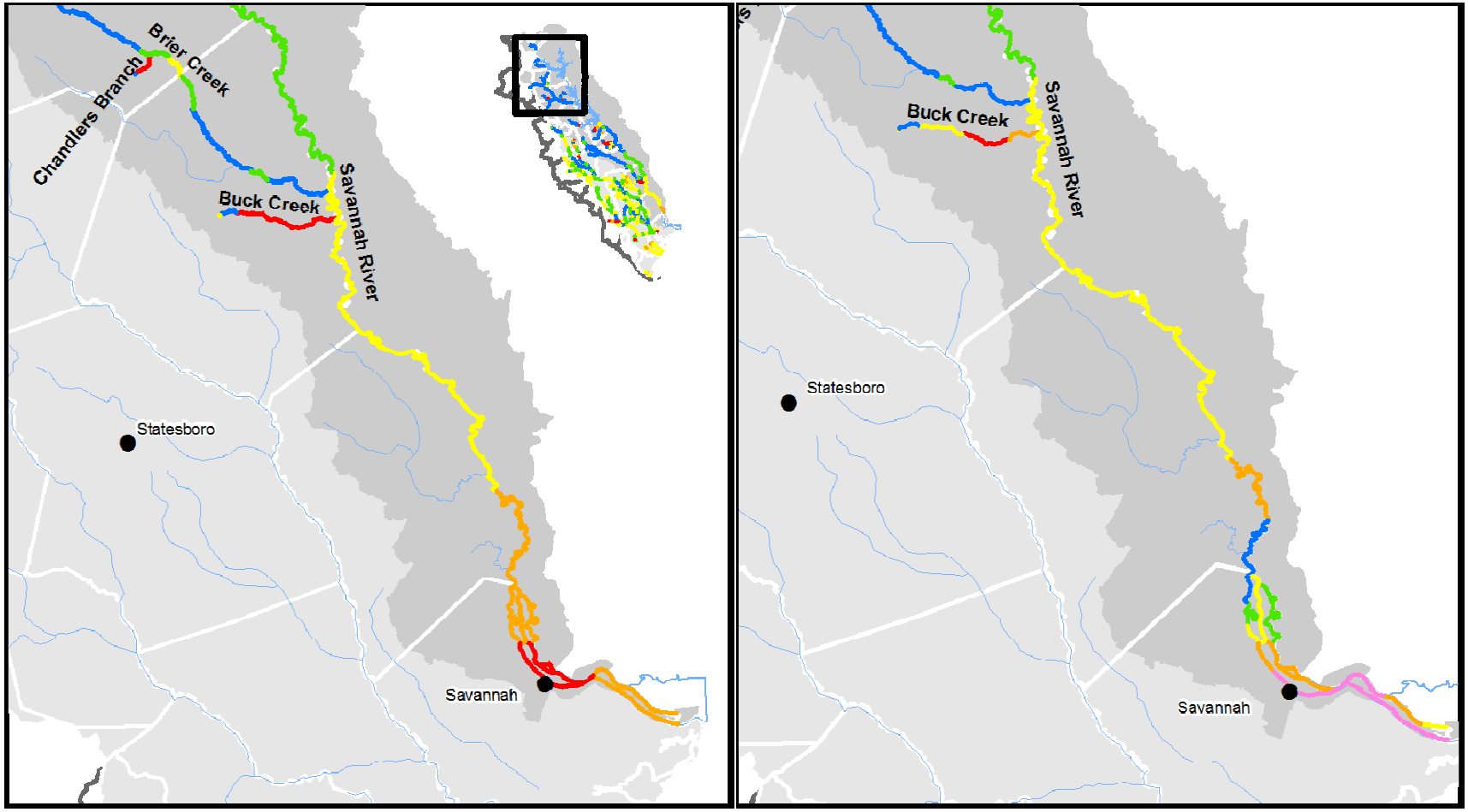

Figure B-25 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Savannah River Watershed

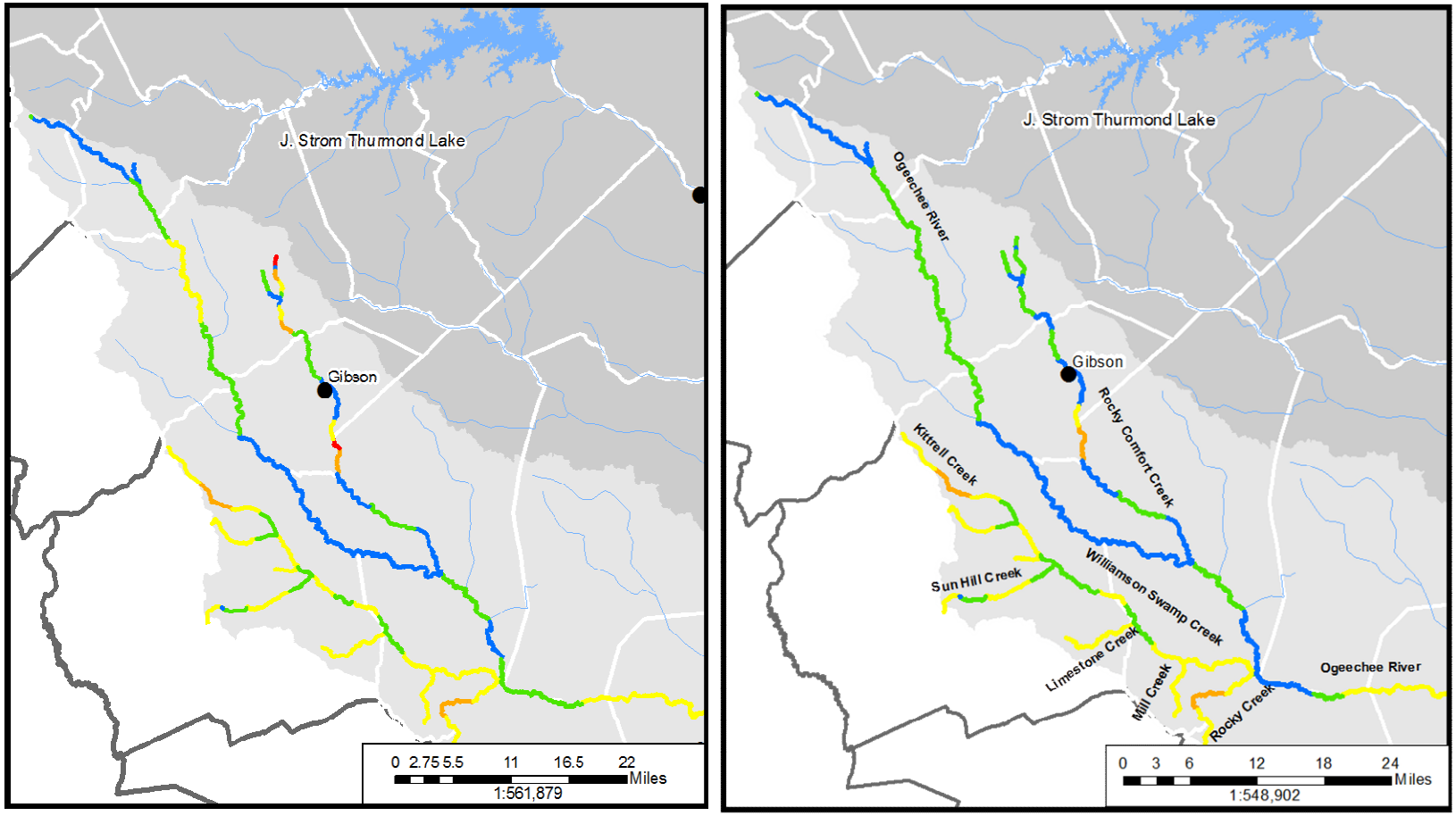

Figure B-26 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Upper Ogeechee River Watershed

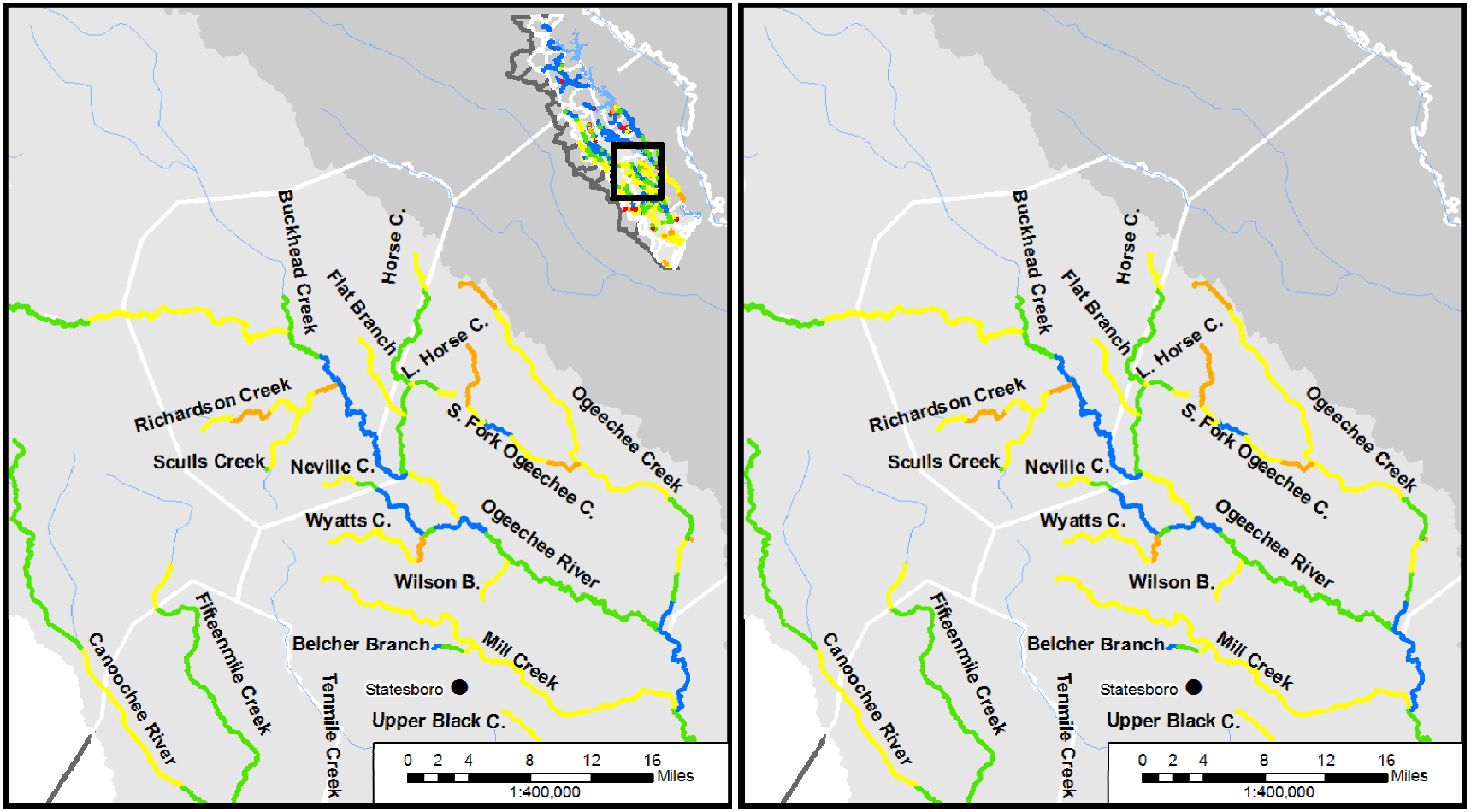

Figure B-27 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Middle Ogeechee River Watershed

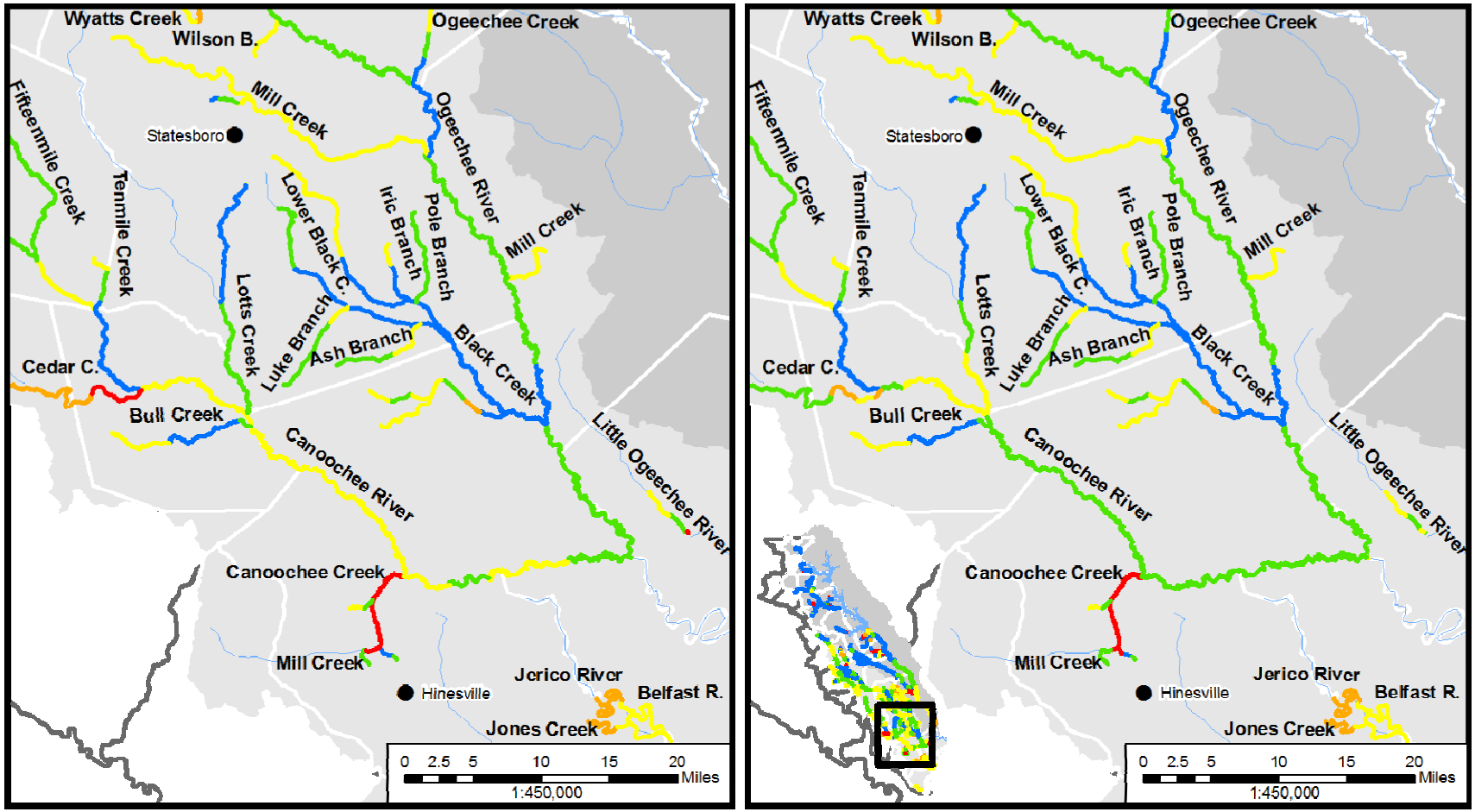

Figure B-28 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Ogeechee River Watershed

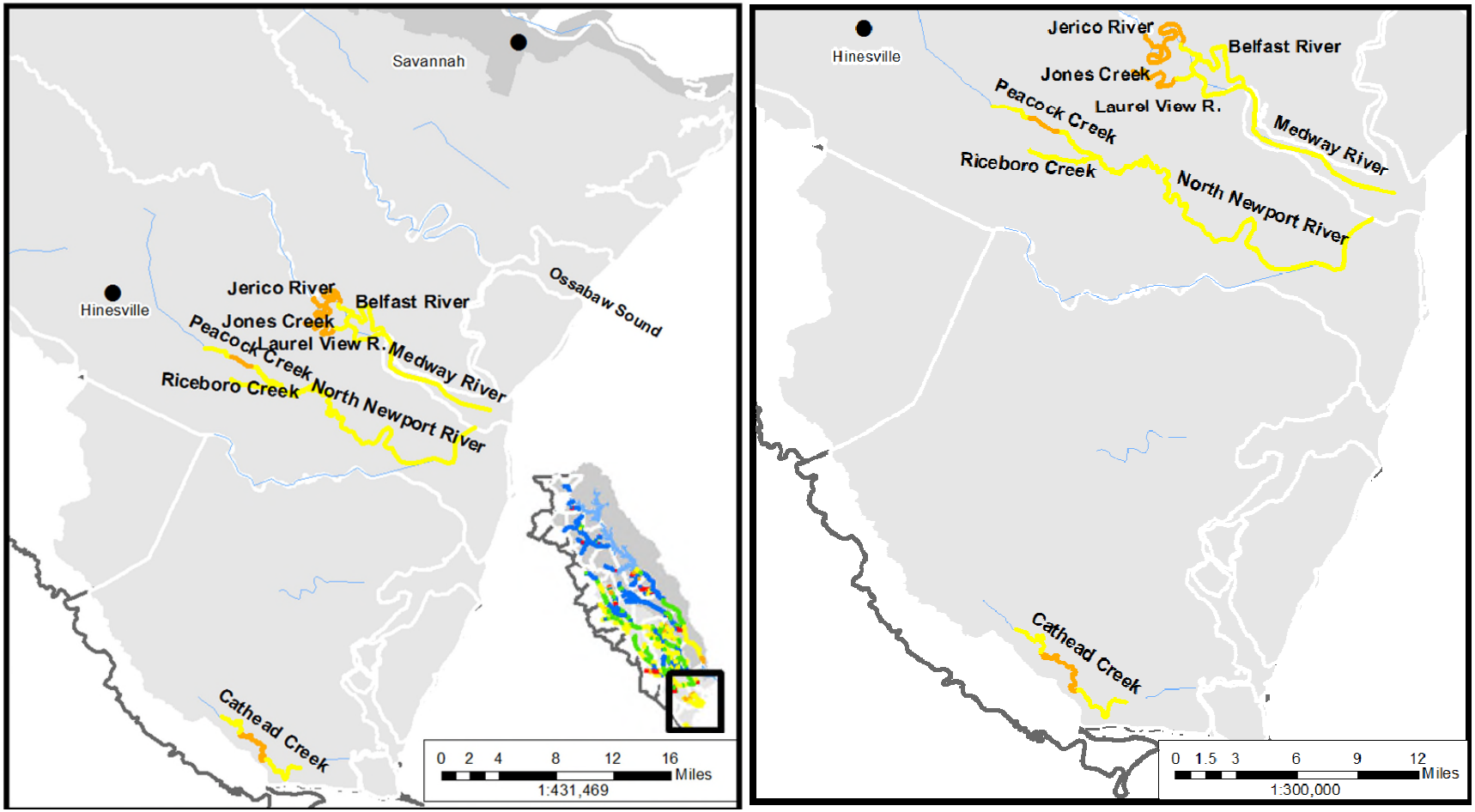

Figure B-29 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Ogeechee River Estuary

B.5 Oconee, Ocmulgee, and Altamaha River Watersheds

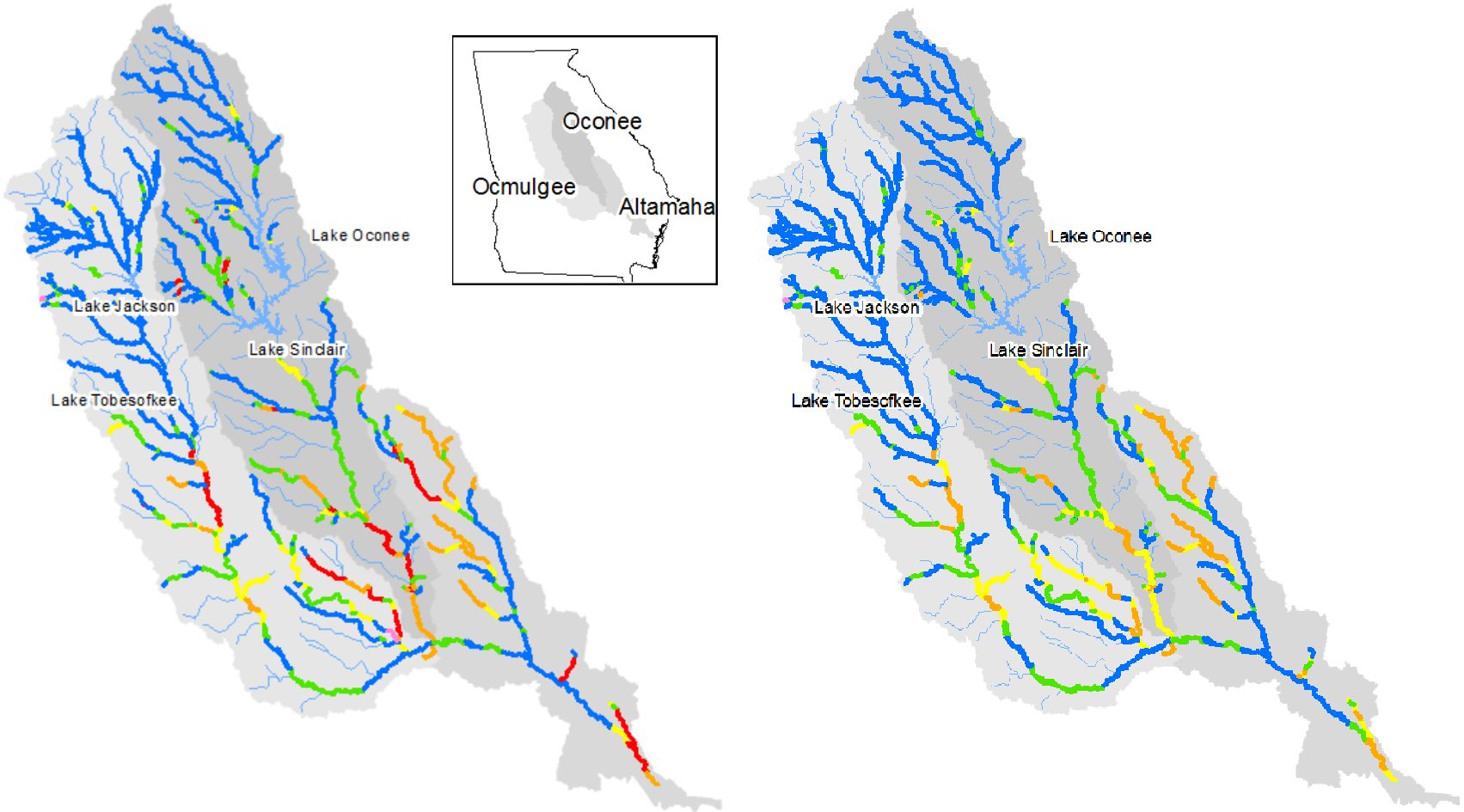

Figure B-30 Current (left) and Future (right) Results of Dissolved Oxygen Models in the Oconee, Ocmulgee, and Altamaha River Watersheds

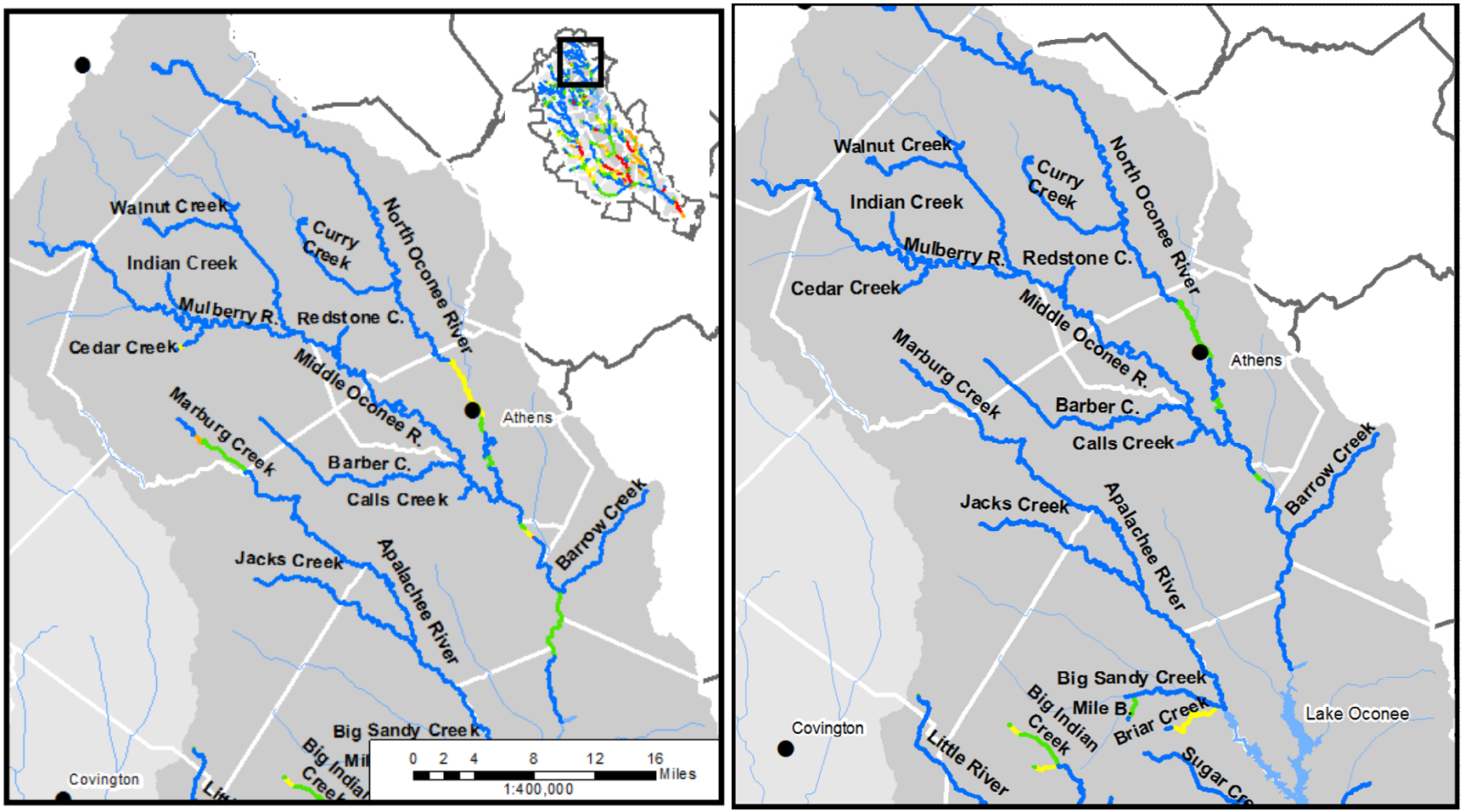

Figure B-31 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Upper Oconee River Watershed

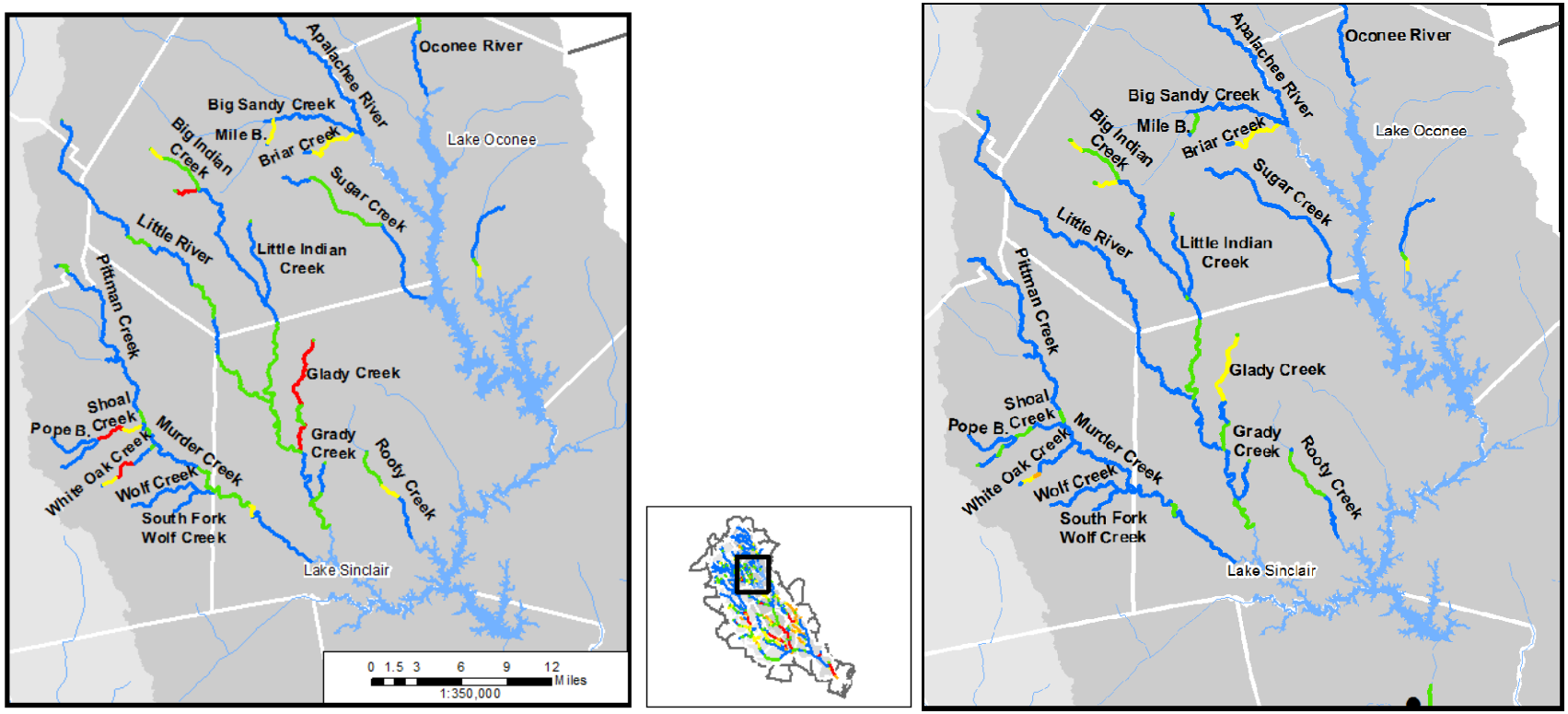

Figure B-32 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Middle Oconee River Watershed

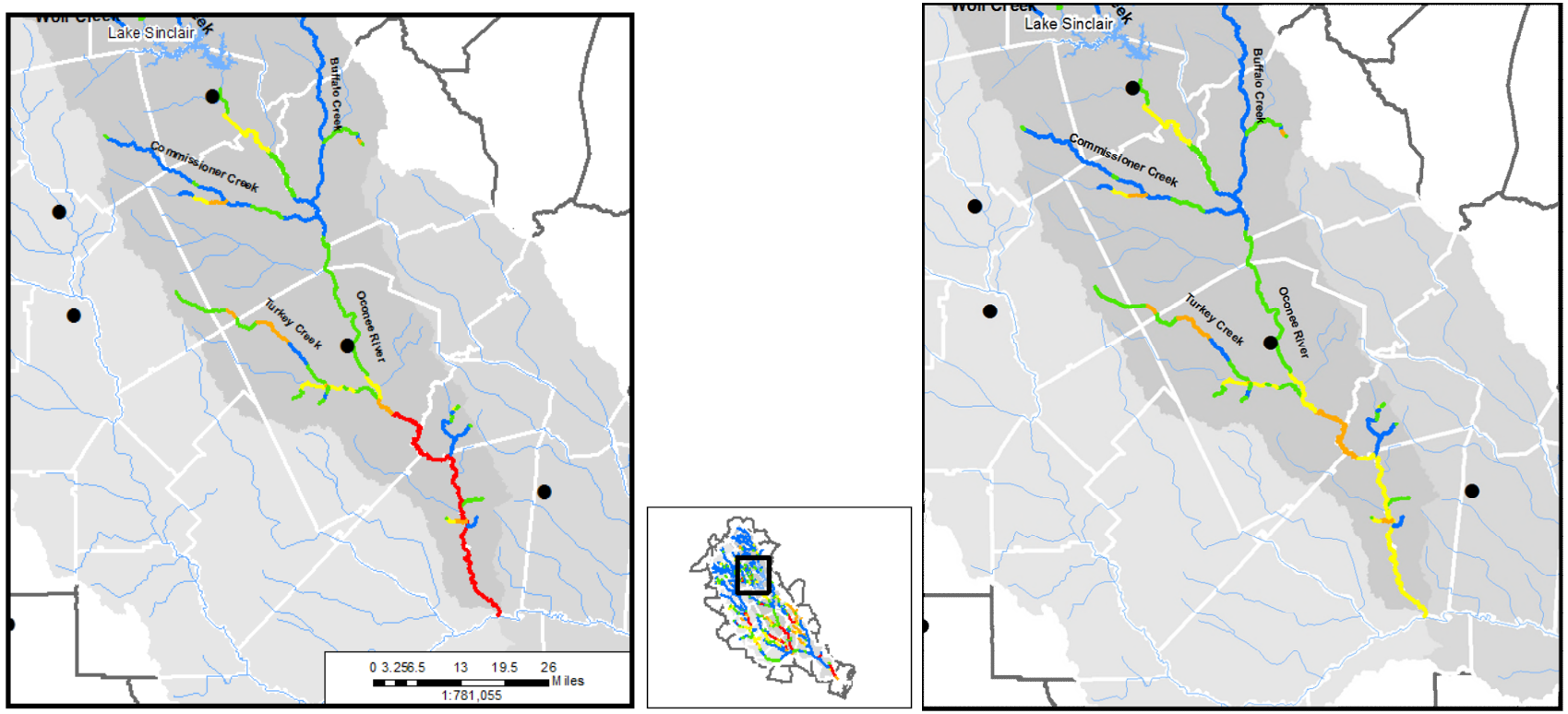

Figure B-33 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Oconee River Watershed

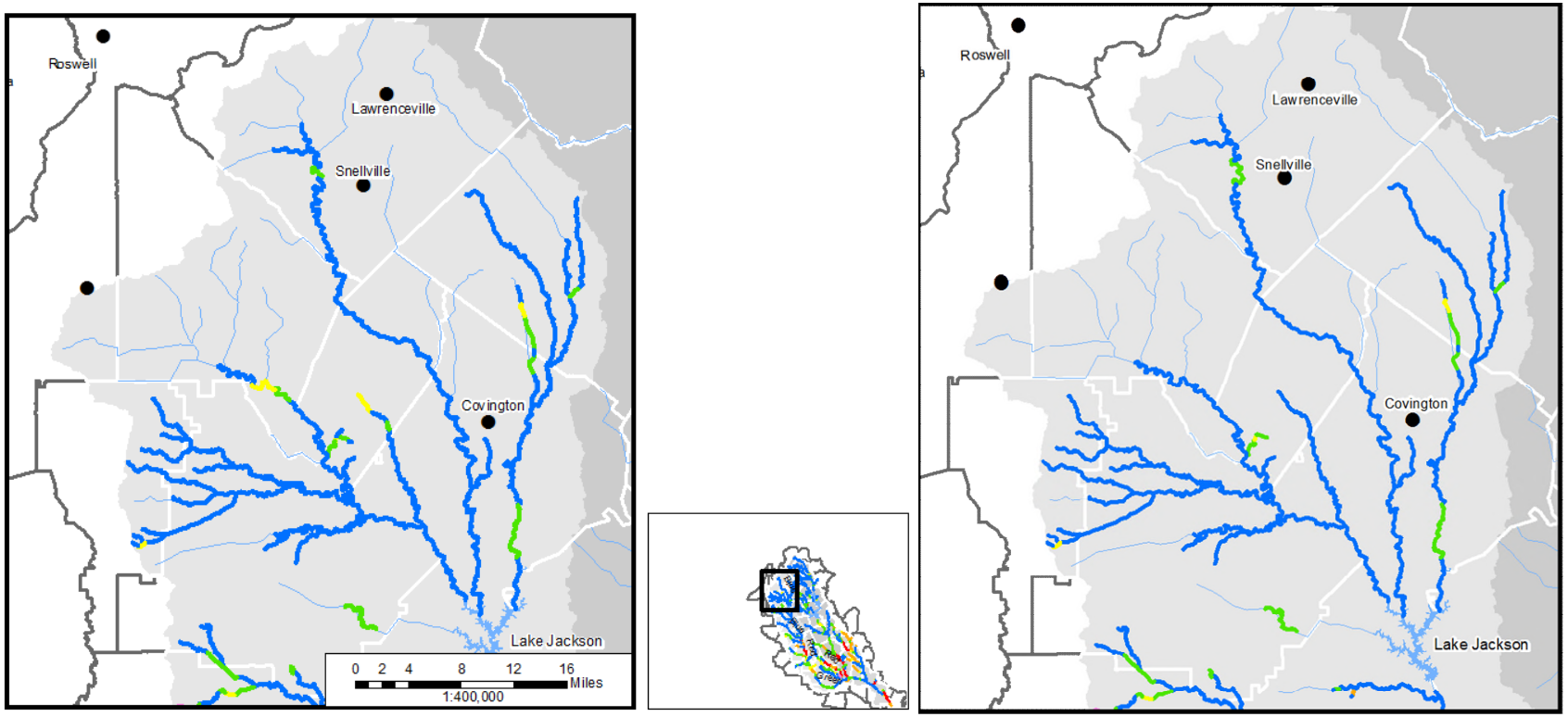

Figure B-34 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Upper Ocmulgee River Watershed

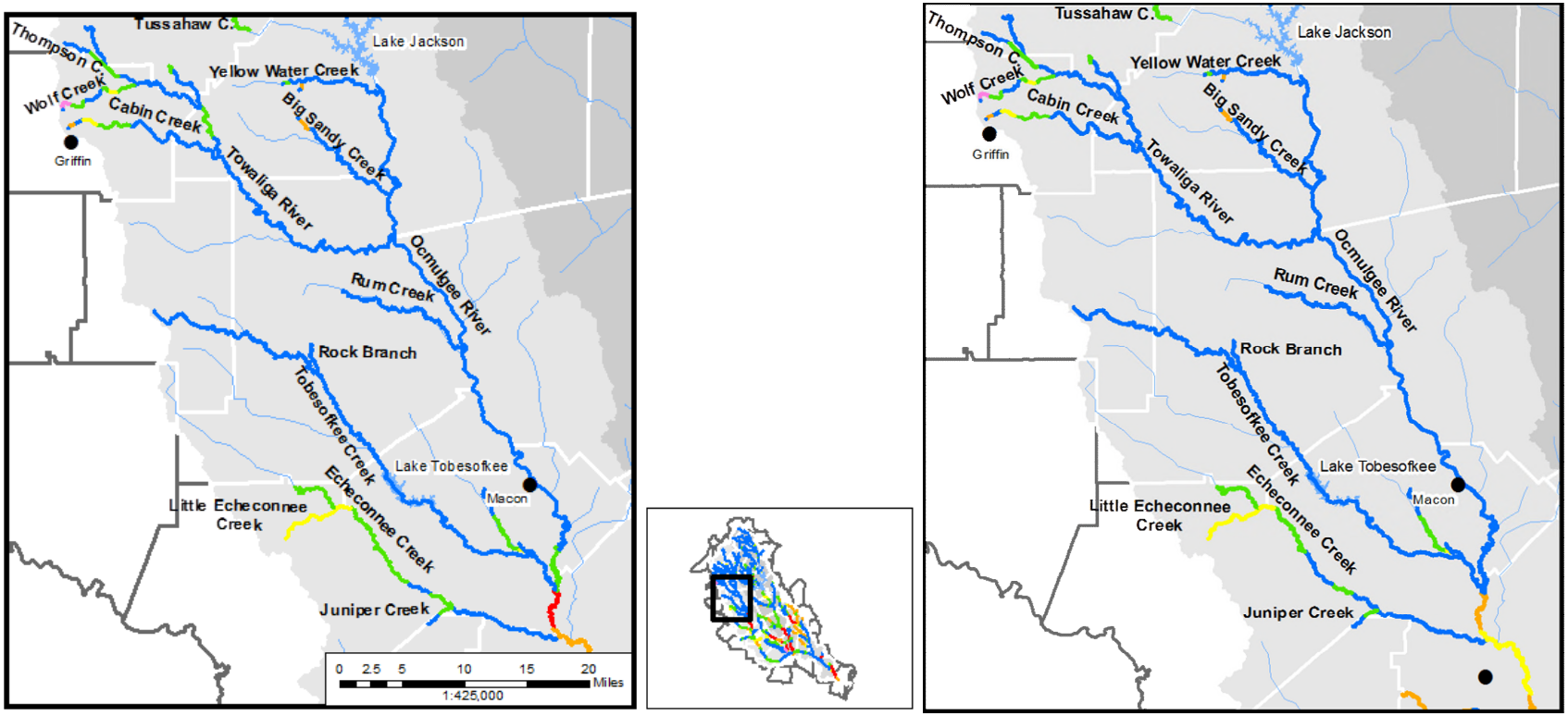

Figure B-35 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Middle Ocmulgee River Watershed

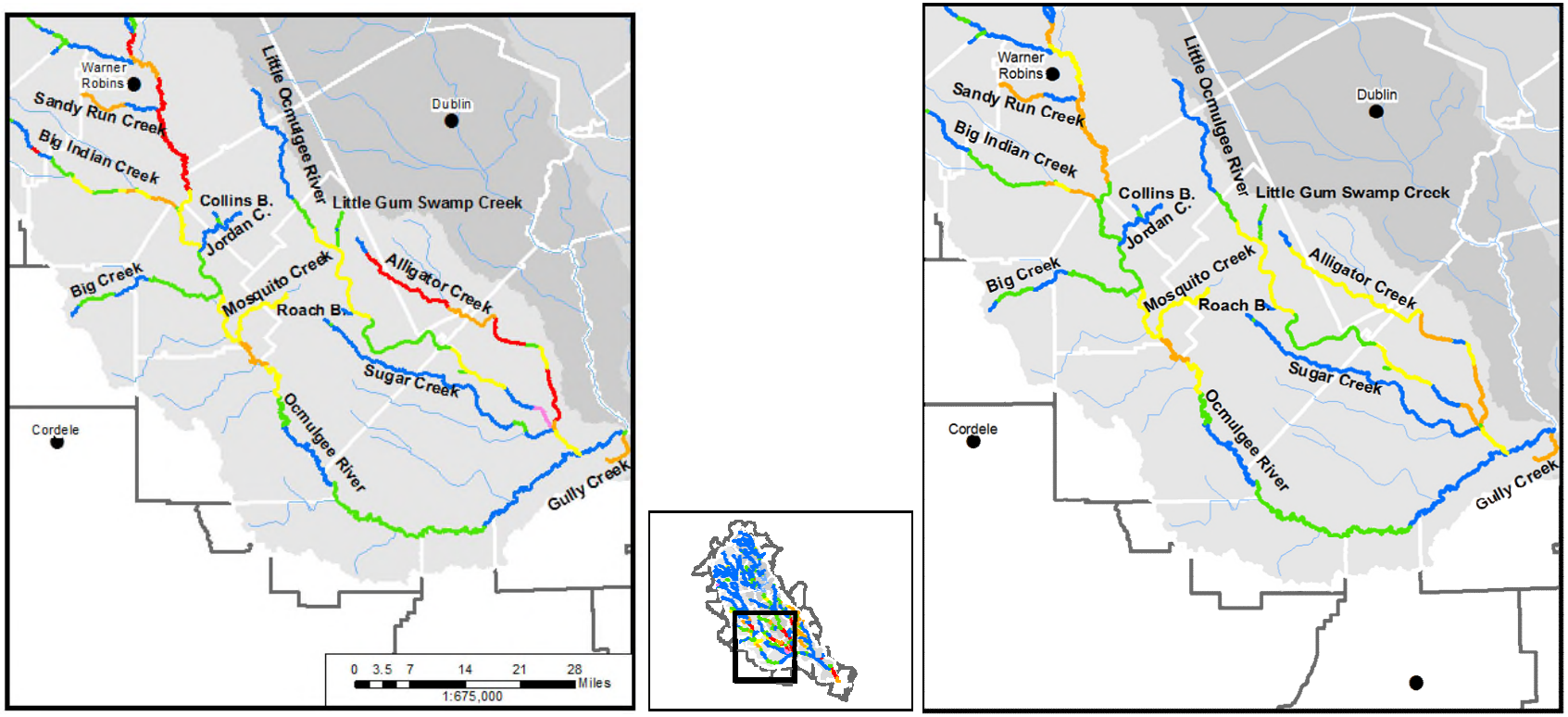

Figure B-36 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Ocmulgee River Watershed

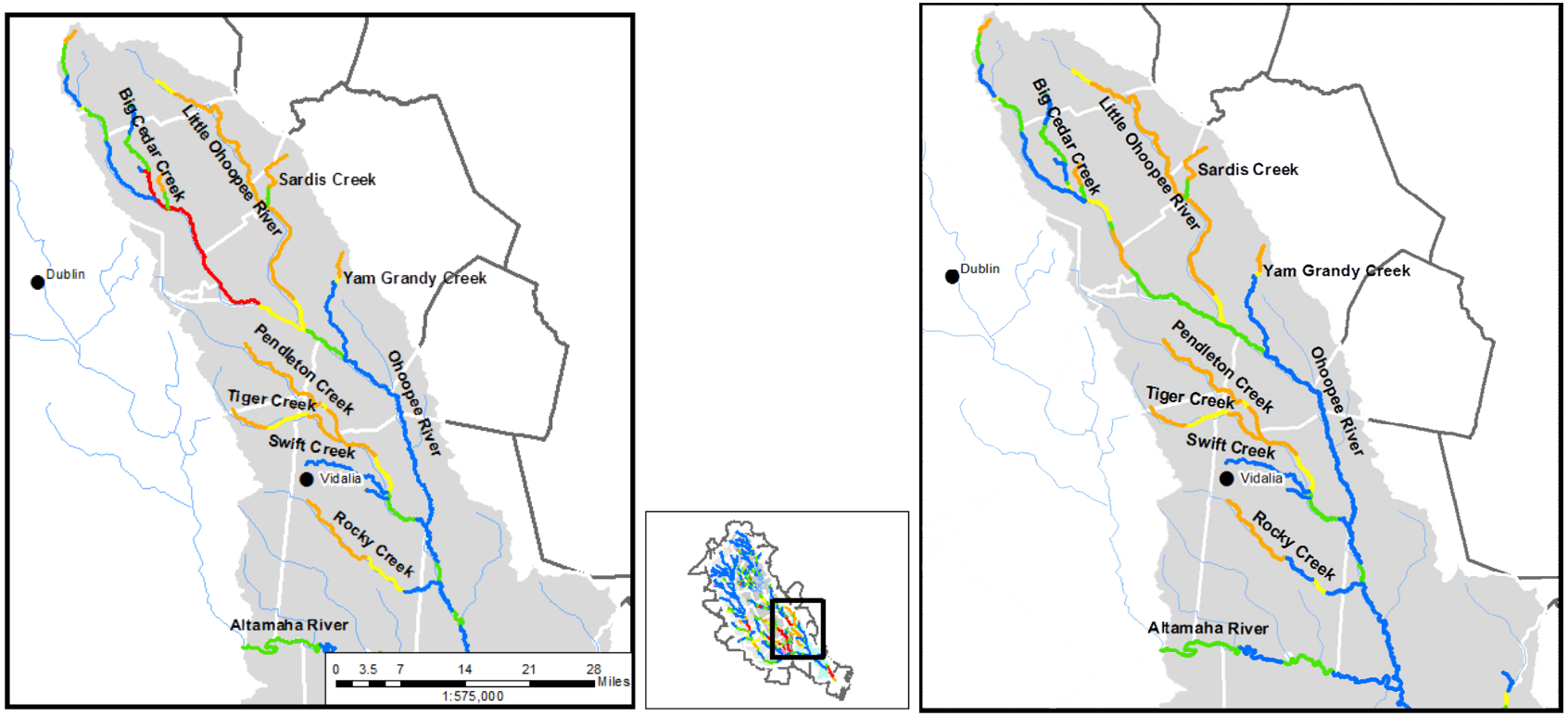

Figure B-37 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Ohoopee River Watershed portion of the Altamaha River Watershed

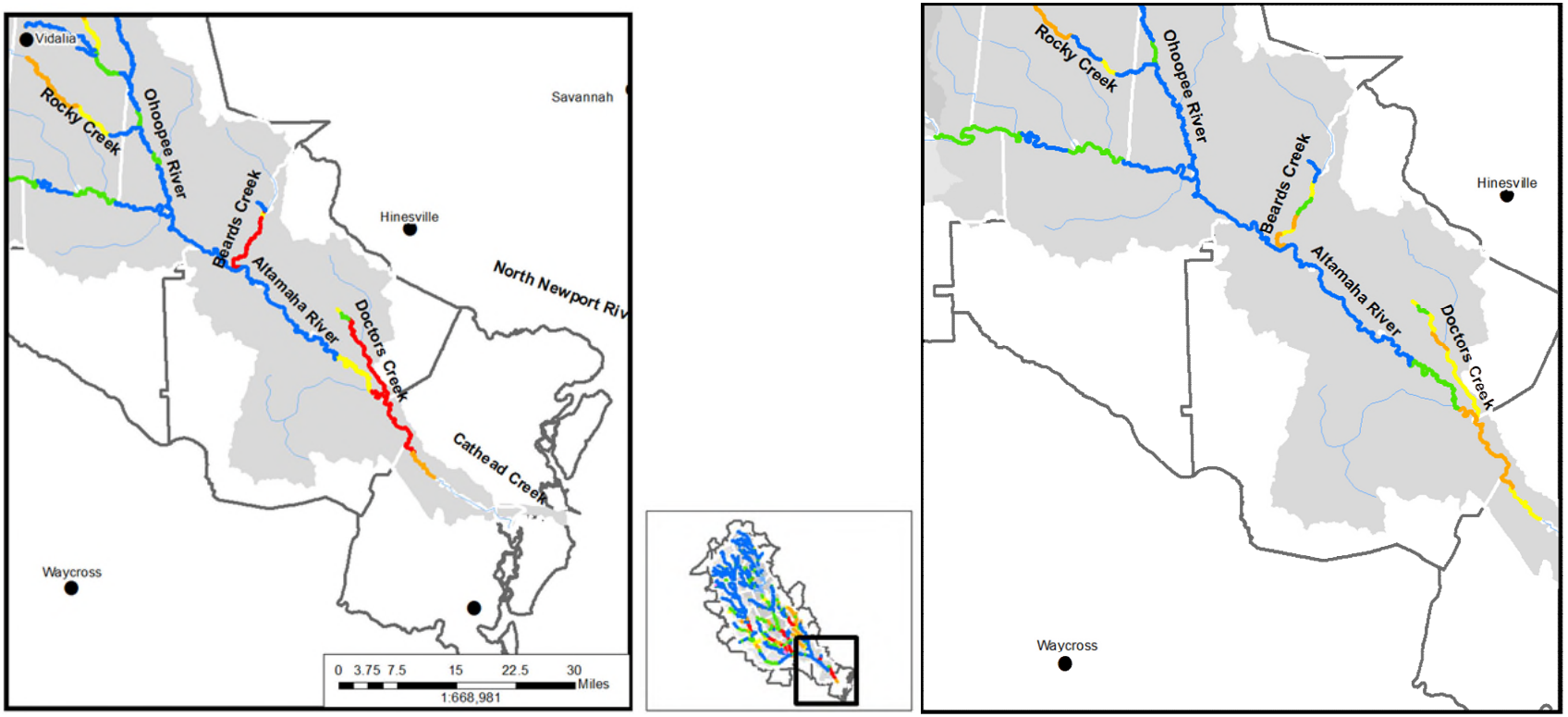

Figure B-38 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Altamaha River Watershed

B.6 Suwannee, Satilla, and St. Mary's River Watersheds

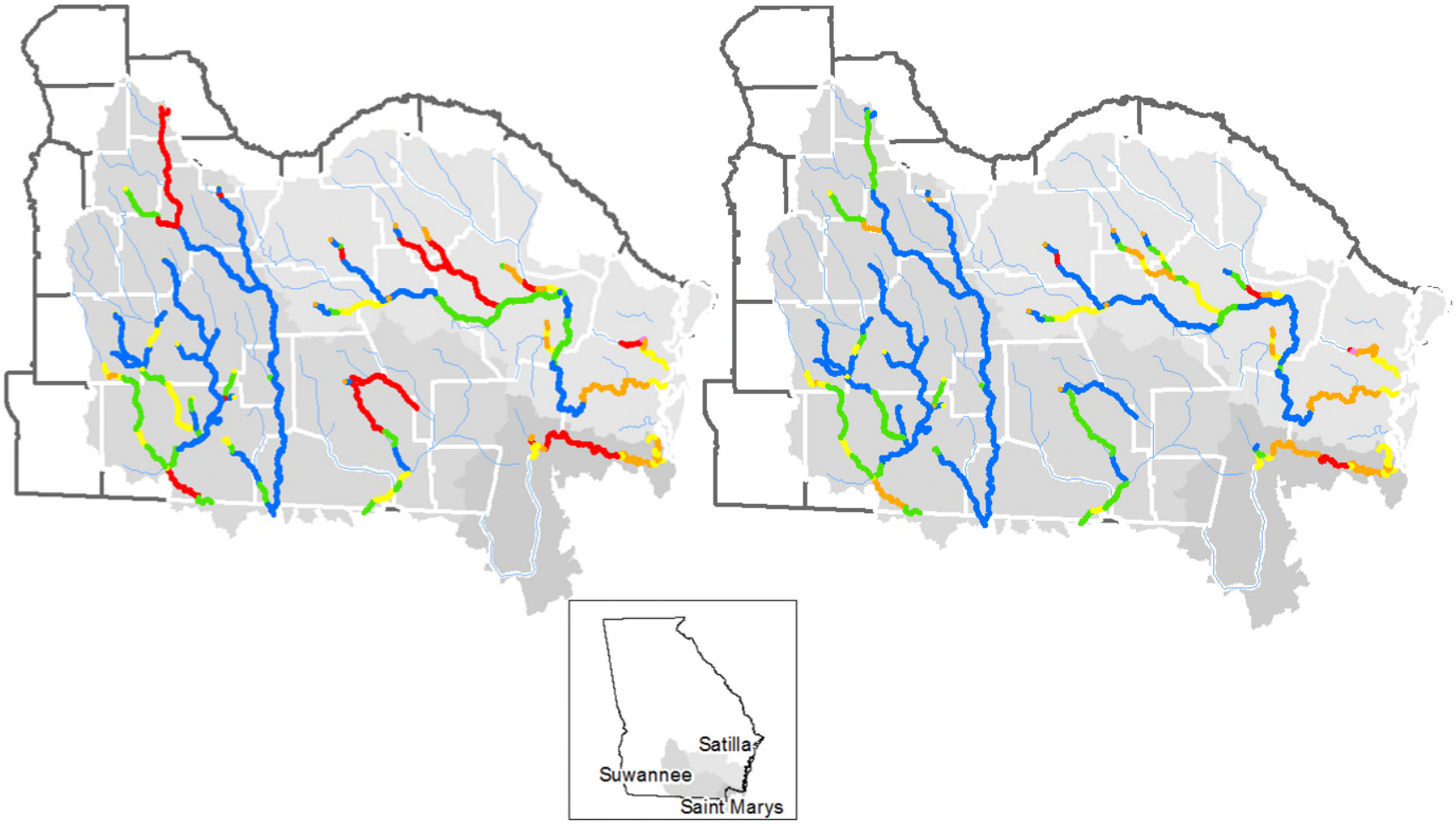

Figure B-39 Current (left) and Future (right) Results of Dissolved Oxygen Models in the Suwannee, Satilla, and St. Mary's River Watersheds

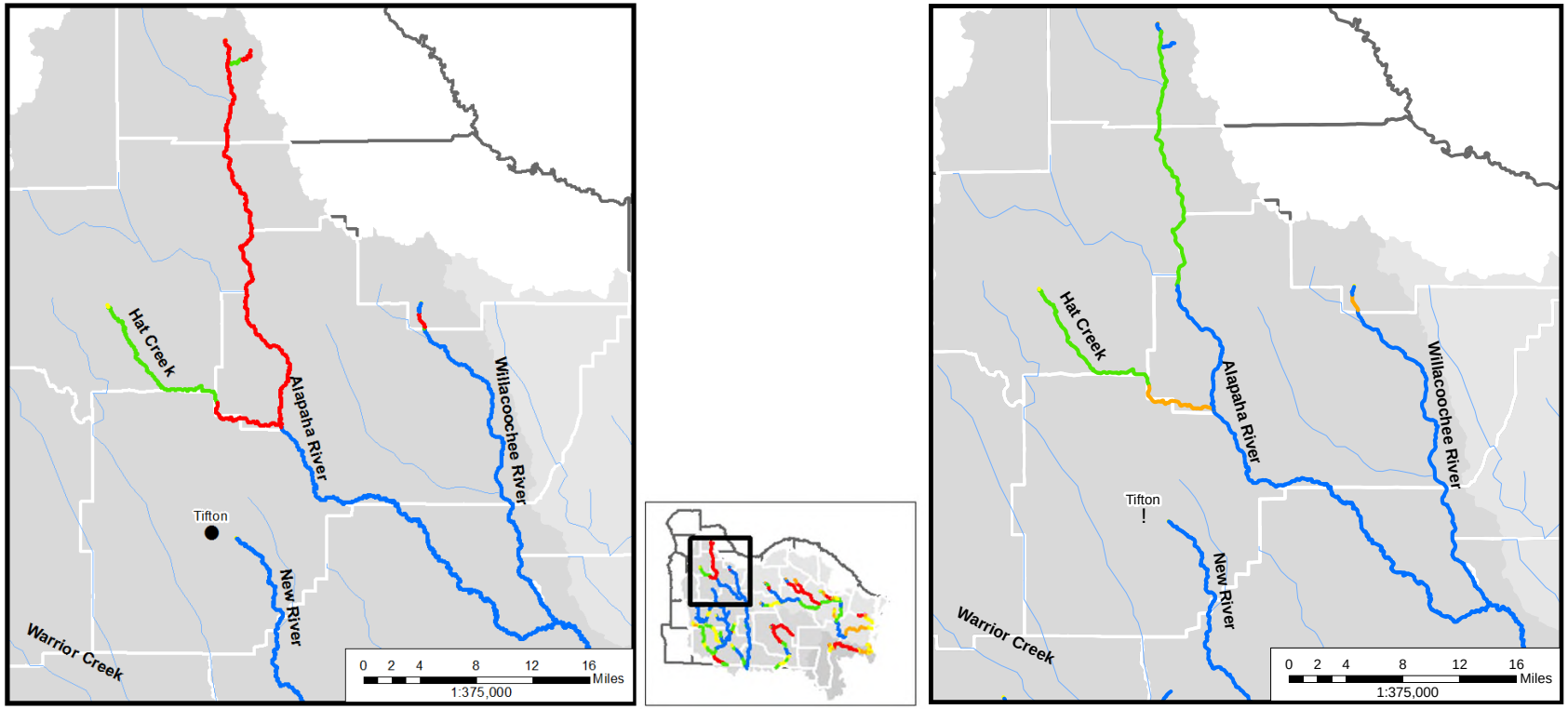

Figure B-40 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Upper Suwannee River Watershed

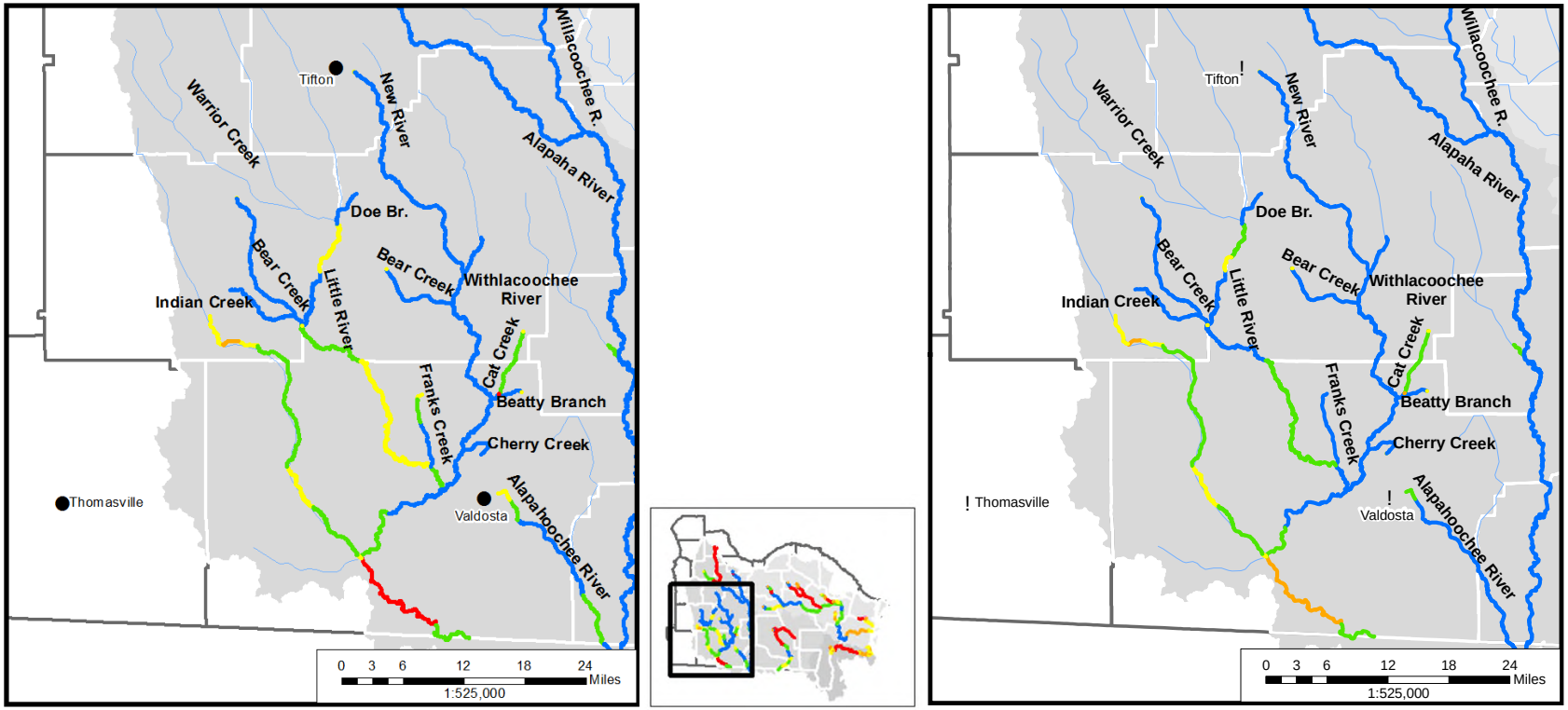

Figure B-41 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Suwannee River West Watershed

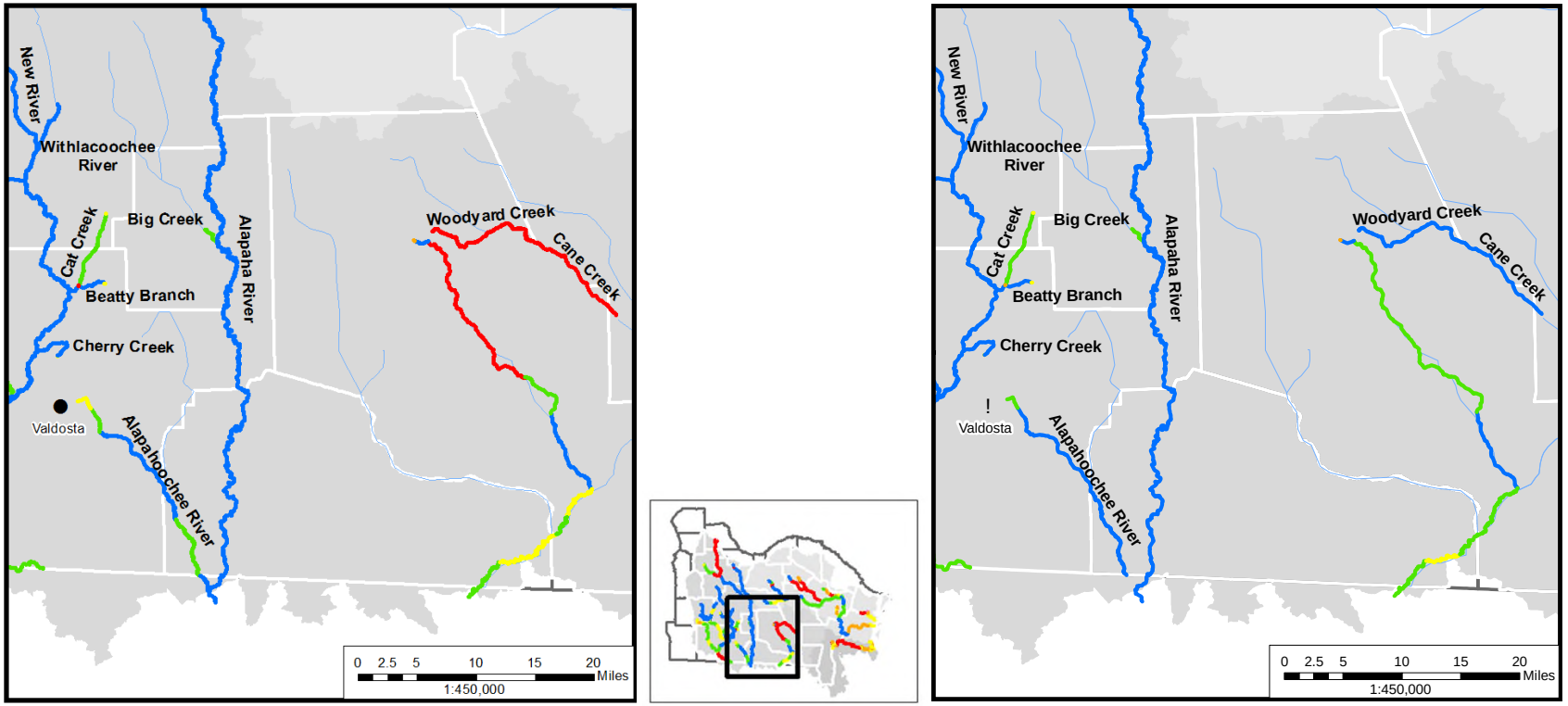

Figure B-42 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Lower Suwannee River East Watershed

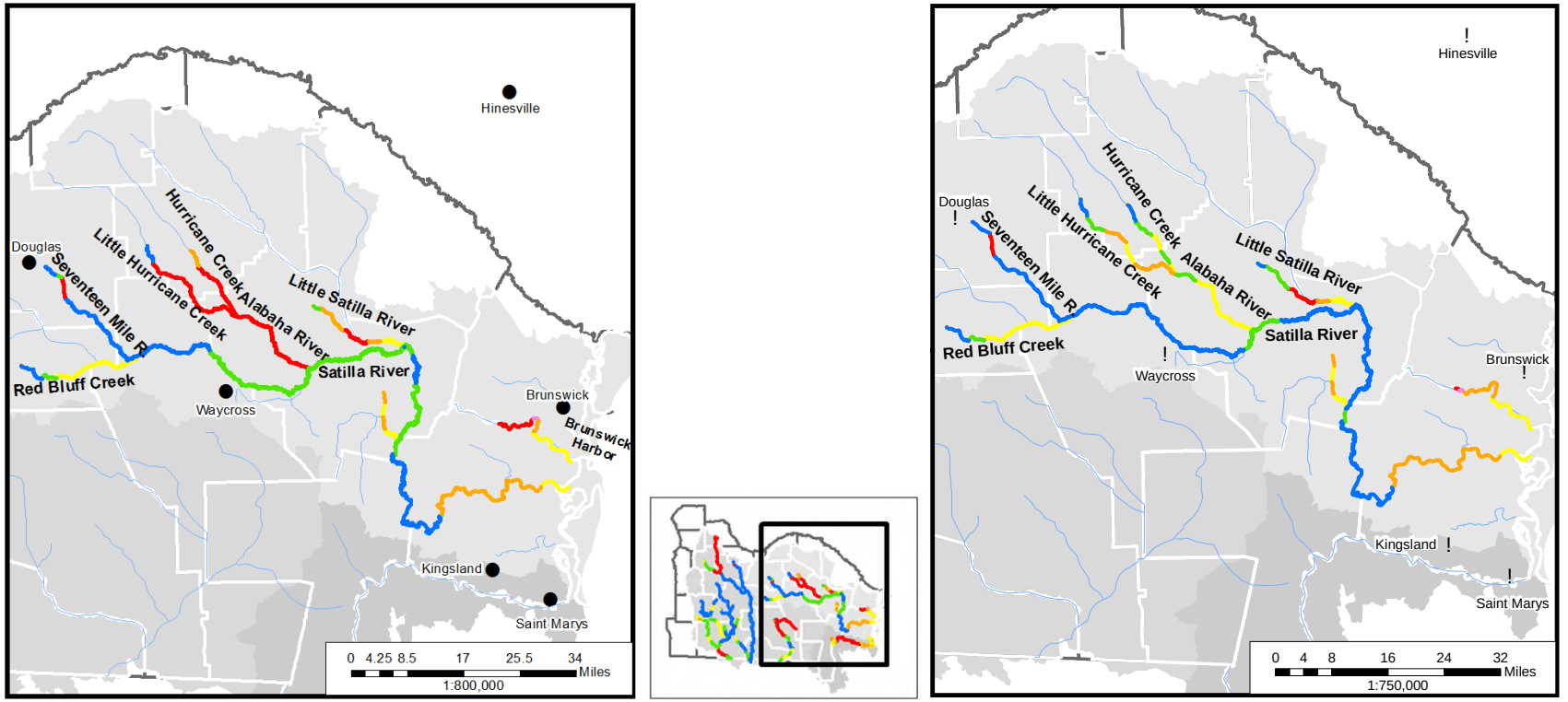

Figure B-43 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the Satilla River Watershed

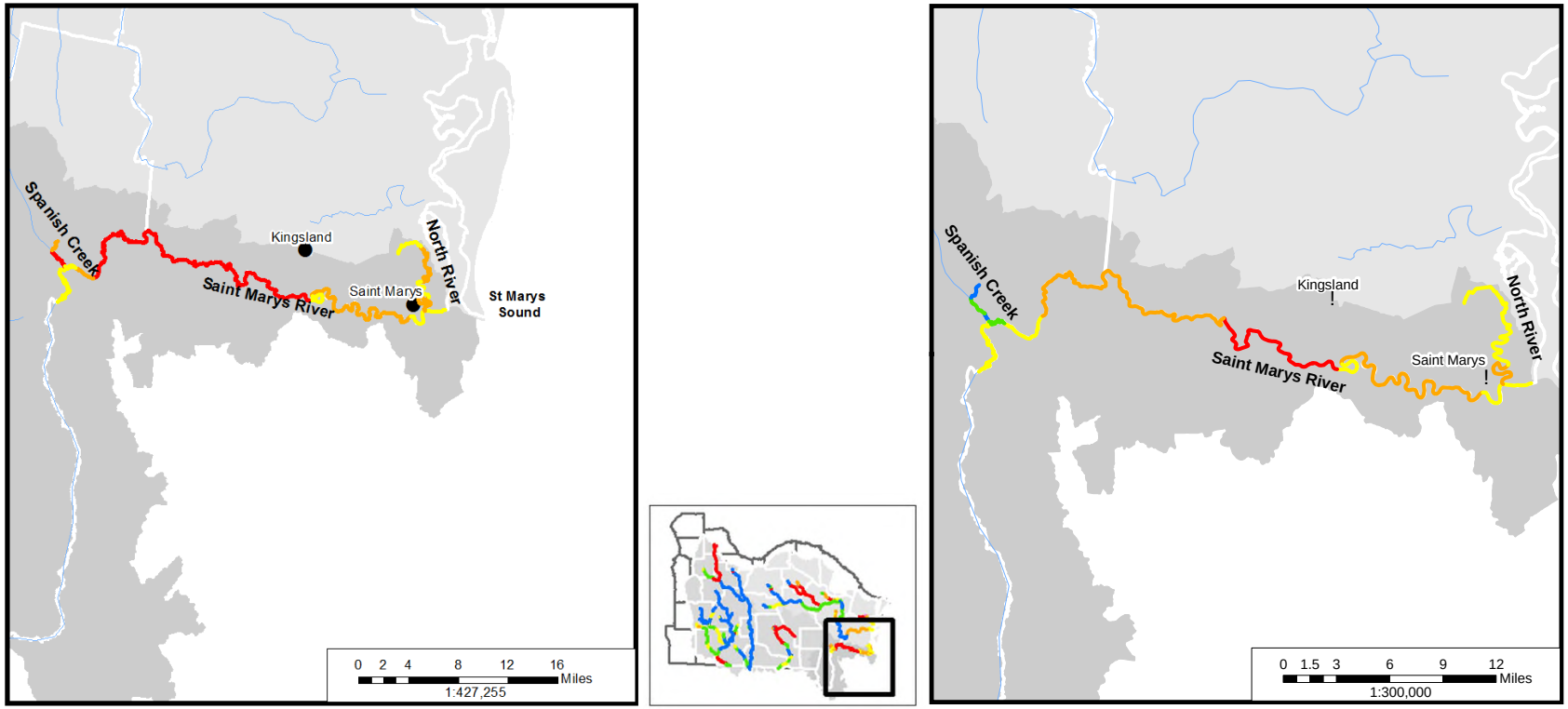

Figure B-44 Current (left) and Future (right) Detailed Results of Dissolved Oxygen Models in the St. Mary's River Watershed

B.7 Estuaries

The figures to follow illustrate the assimilative capacity for estuarine dissolved oxygen based on the difference of a natural condition (hydric soils) run compared with the Current Permit and Future Permit scenario. Table B-1 through Table B-5 also define the number of cells per estuary where no assimilative capacity is available for each scenario (Current Permit and Future Permit).

The lowest available assimilative capacity, with respect to concentration, in the Ossabaw Sound occurs in 2010 under future permit conditions; the lowest available assimilative capacity for current conditions also occurs in 2010 (a representative normal weather year). The lowest available assimilative capacity in the Ossabaw Sound is -0.690 mg/L under future permit conditions and -0.440 mg/L under current permit conditions.

The lowest available assimilative capacity, with respect to concentration, in the Altamaha Sound occurs in a representative normal weather year, 2007, under current permit conditions. The lowest available assimilative capacity is -0.37 mg/L.

The lowest available assimilative capacity, with respect to concentration, in the Brunswick Harbor Sound, -0.34 mg/L, occurs in a representative dry weather year, 2003, under current permit conditions.

The lowest available assimilative capacity, with respect to concentration, in the St. Andrews Sound, -1.426 mg/L, occurs in a representative wet weather year, 2009, under current permit conditions.

The lowest available assimilative capacity, with respect to concentration, in the St. Mary's Sound occurs in 2006 under future permit conditions; the lowest available assimilative capacity for current conditions occurs in 2003. The lowest available assimilative capacity in the St. Mary's Sound is -0.117 mg/L under future permit conditions and -0.108 mg/L under current permit conditions. Conditions in both 2003 and 2006 represent dry weather years.

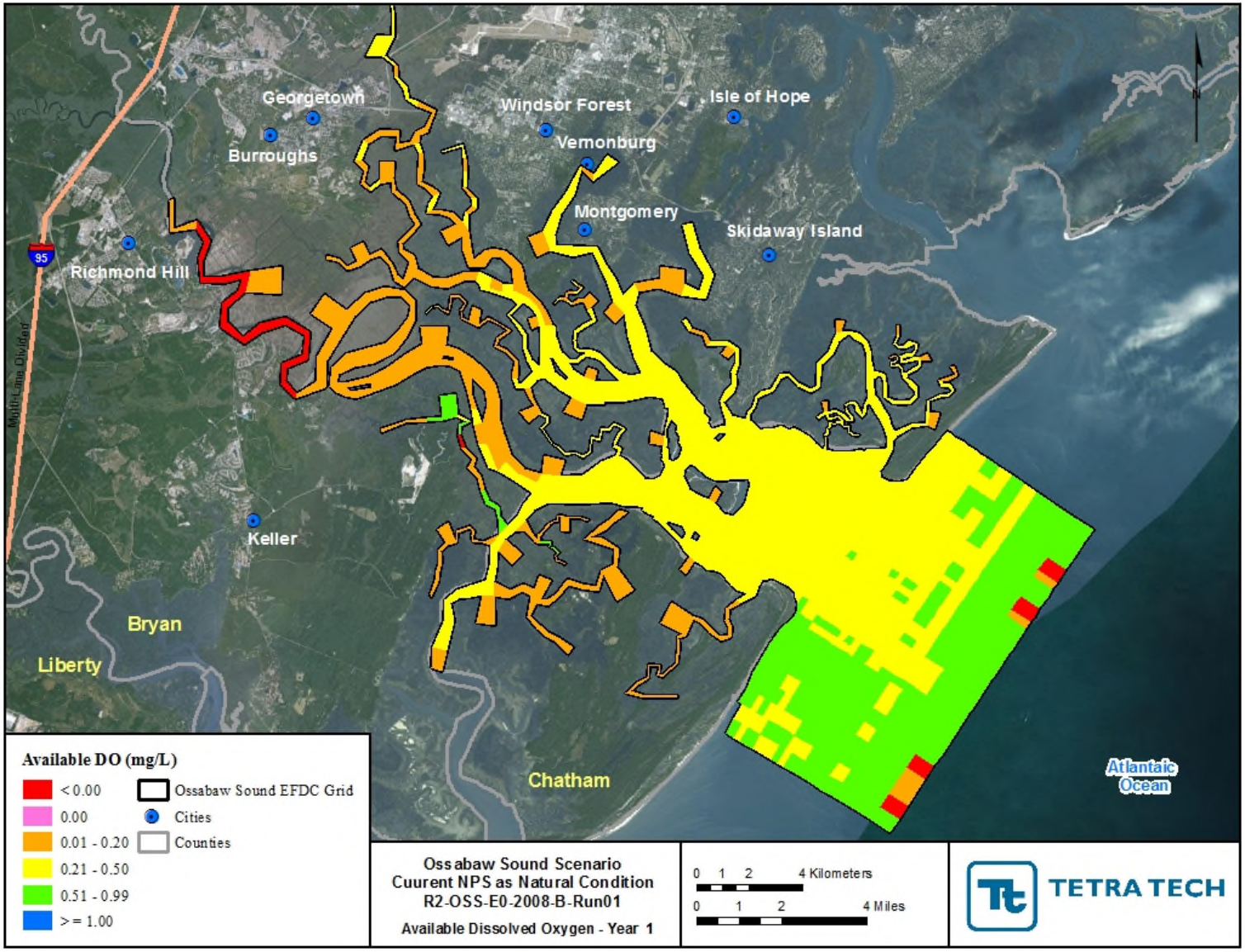

Figure B-45 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2001

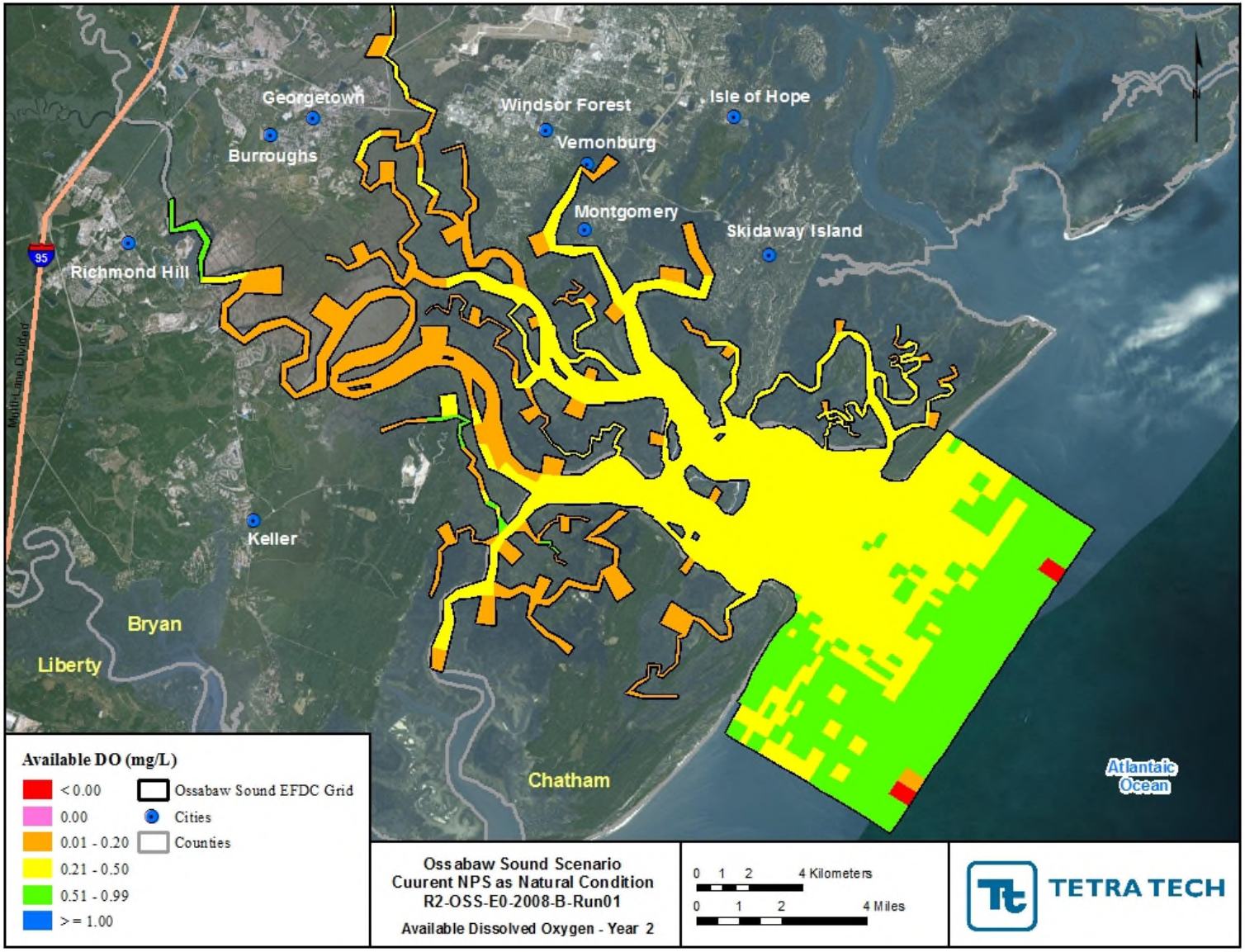

Figure B-46 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2002

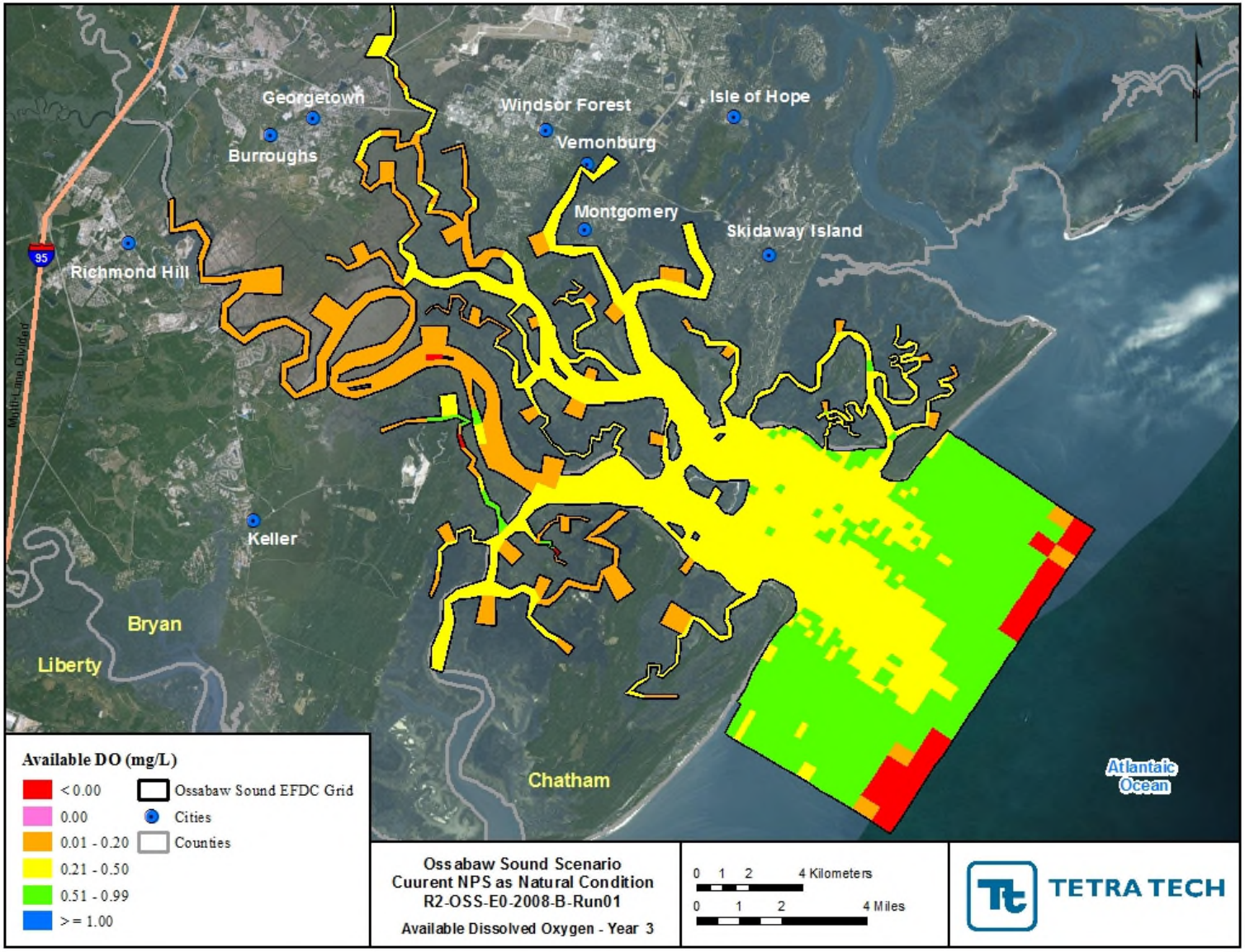

Figure B-47 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2003

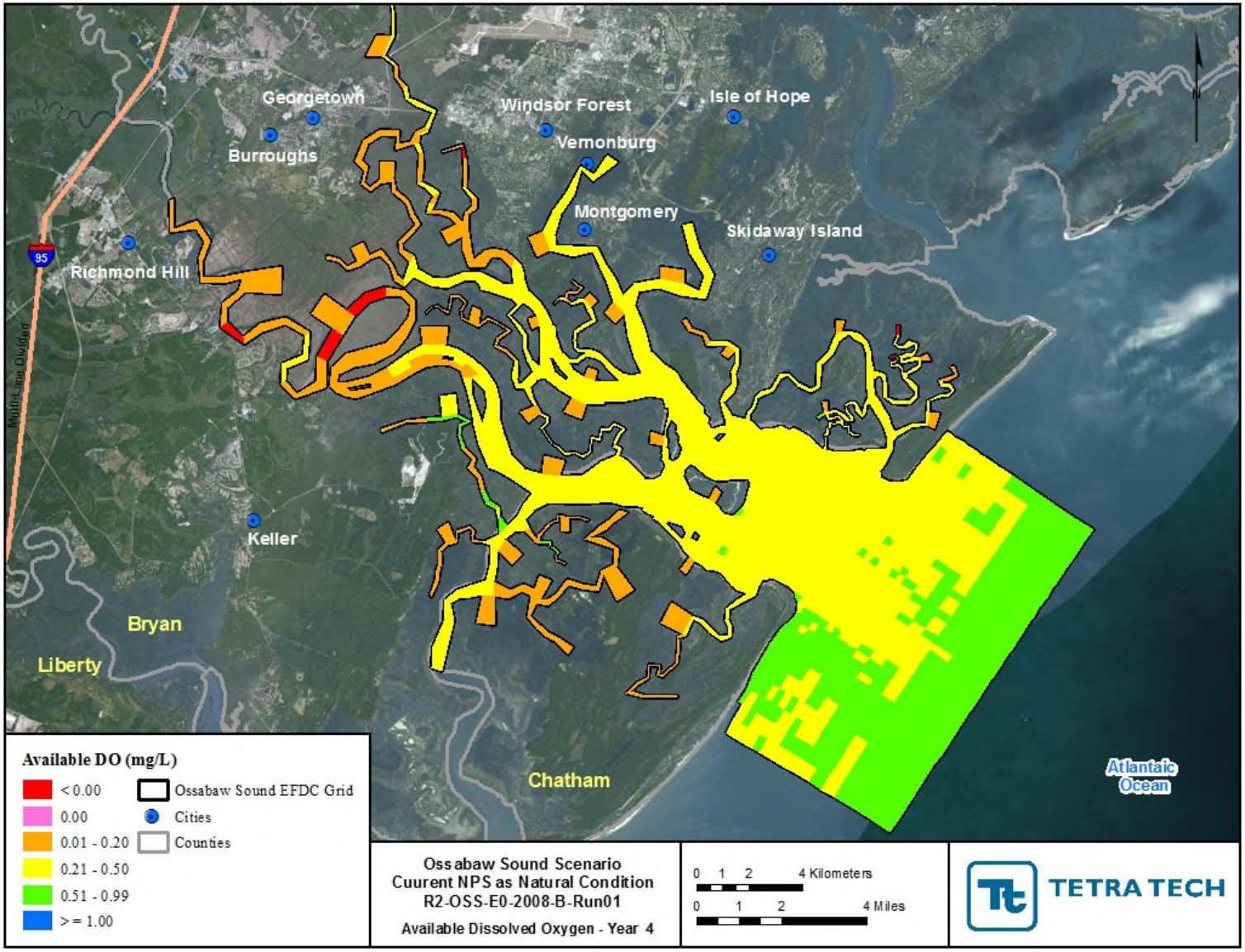

Figure B-48 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2004

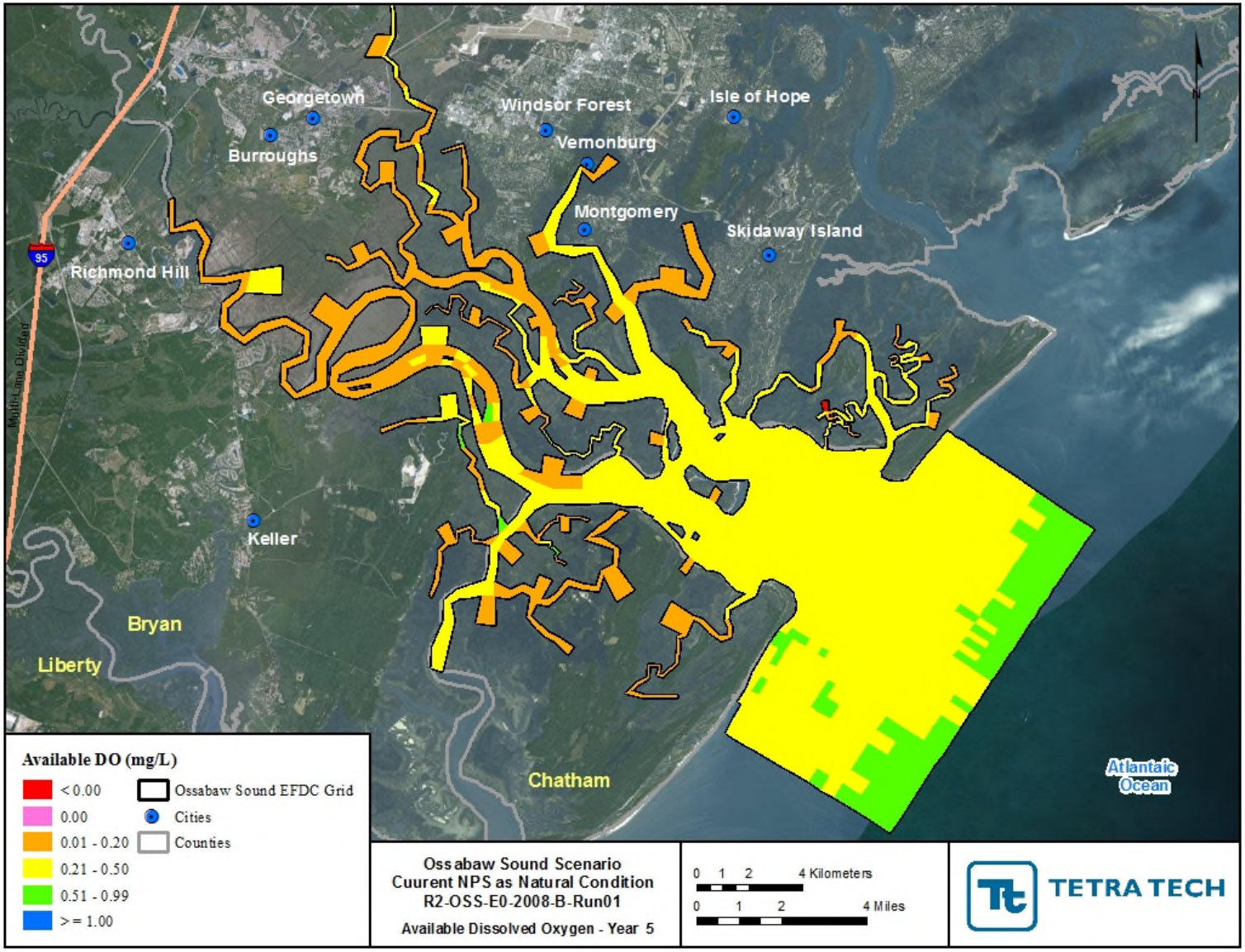

Figure B-49 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2005

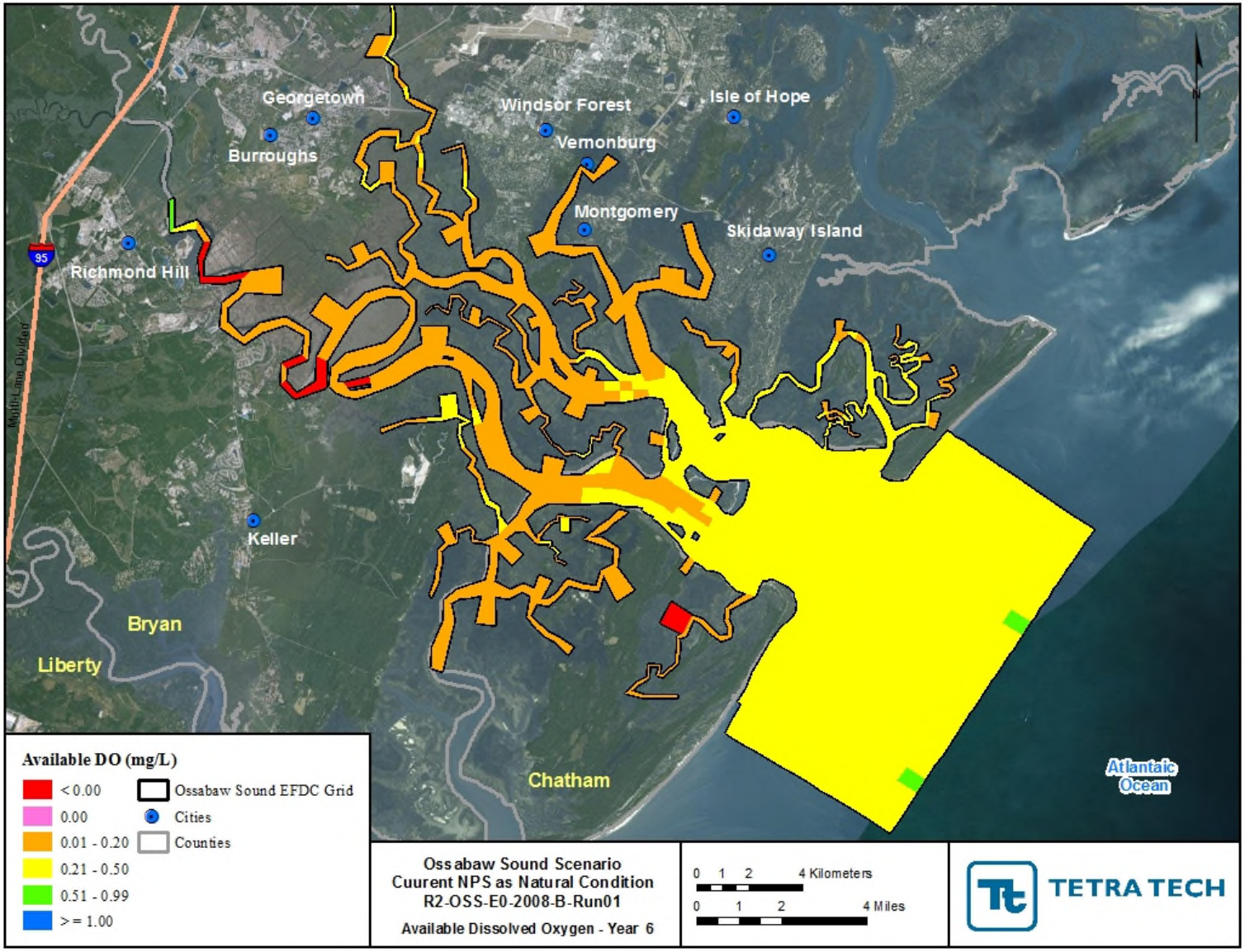

Figure B-50 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2006

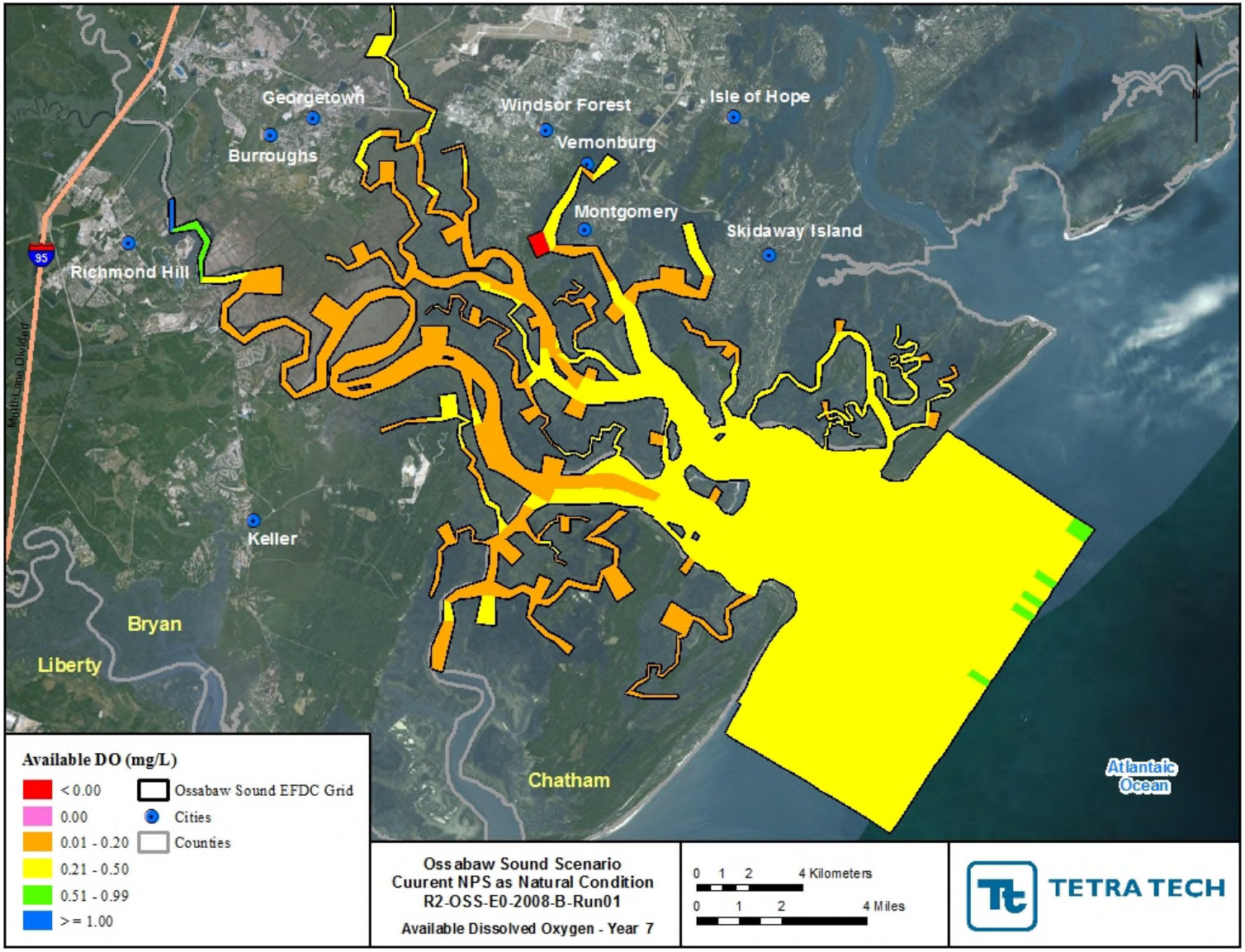

Figure B-51 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2007

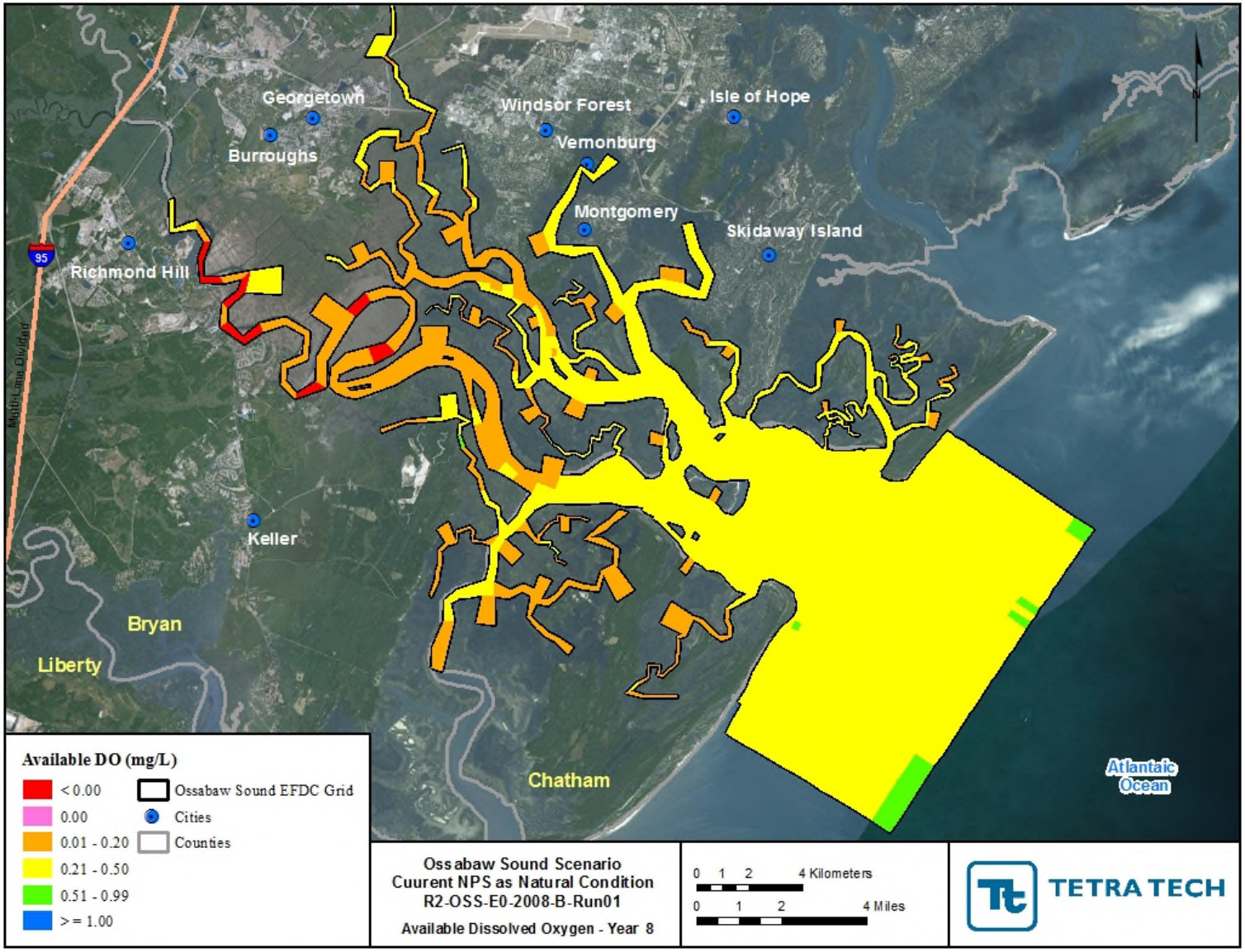

Figure B-52 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2008

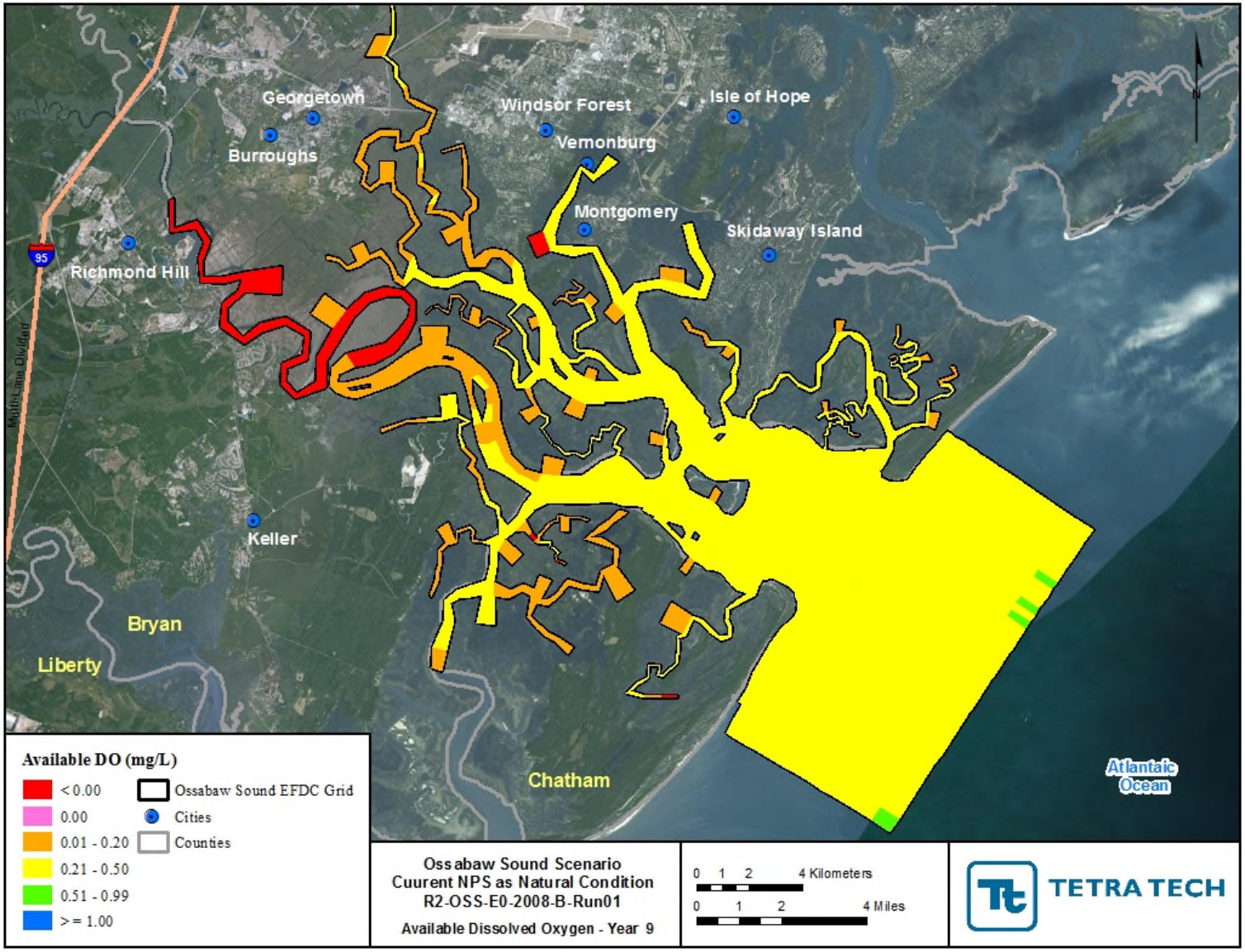

Figure B-53 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2009

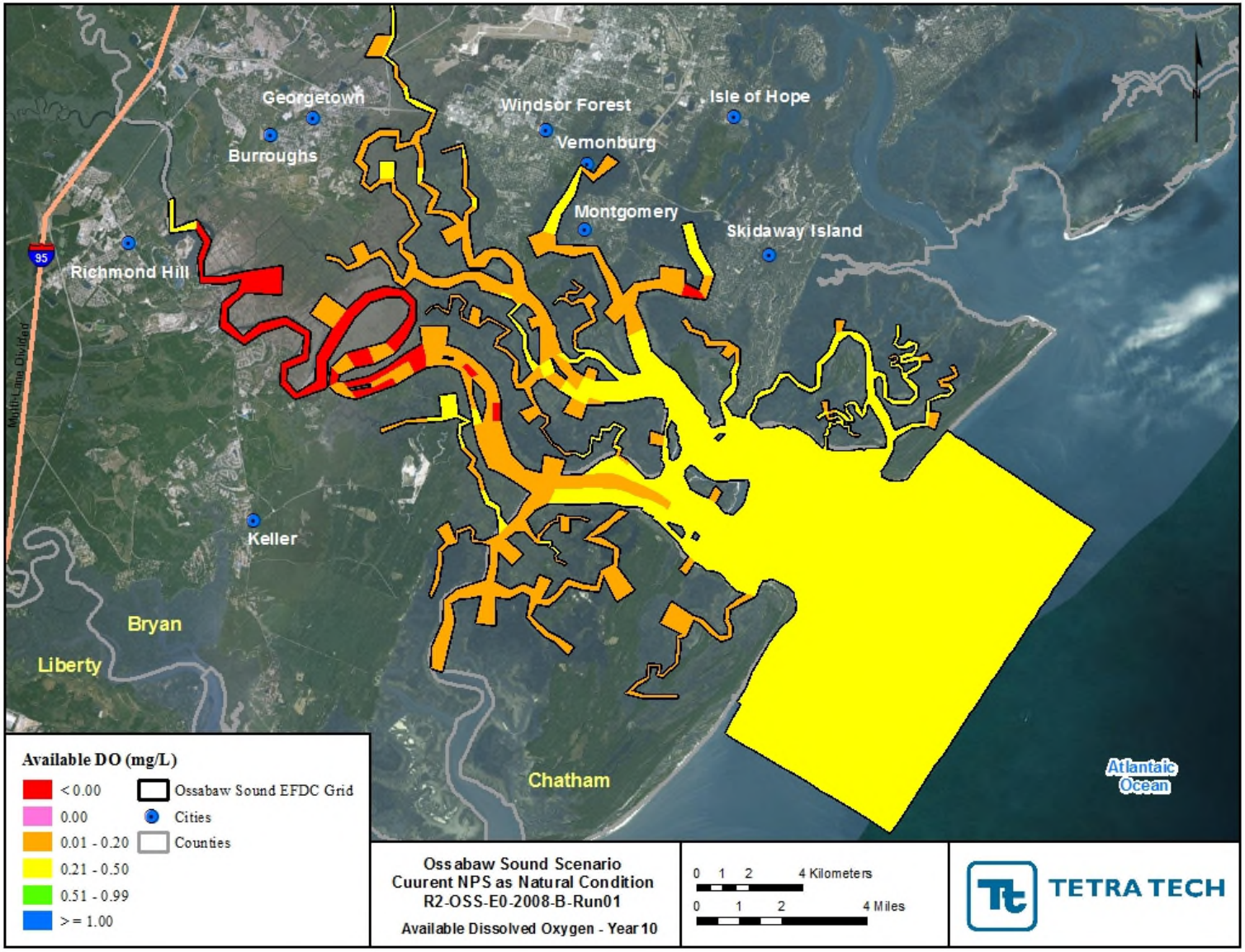

Figure B-54 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2010

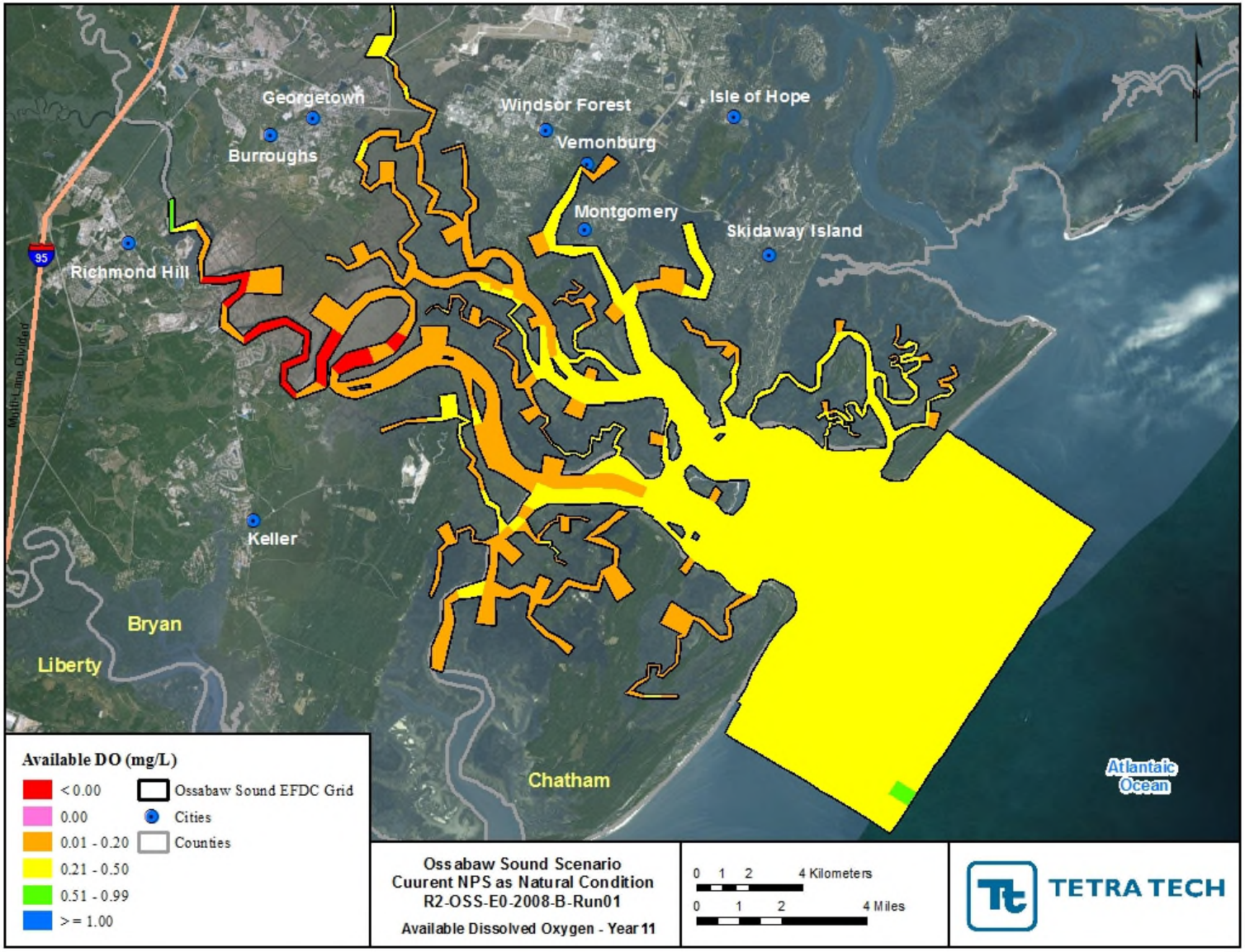

Figure B-55 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2011

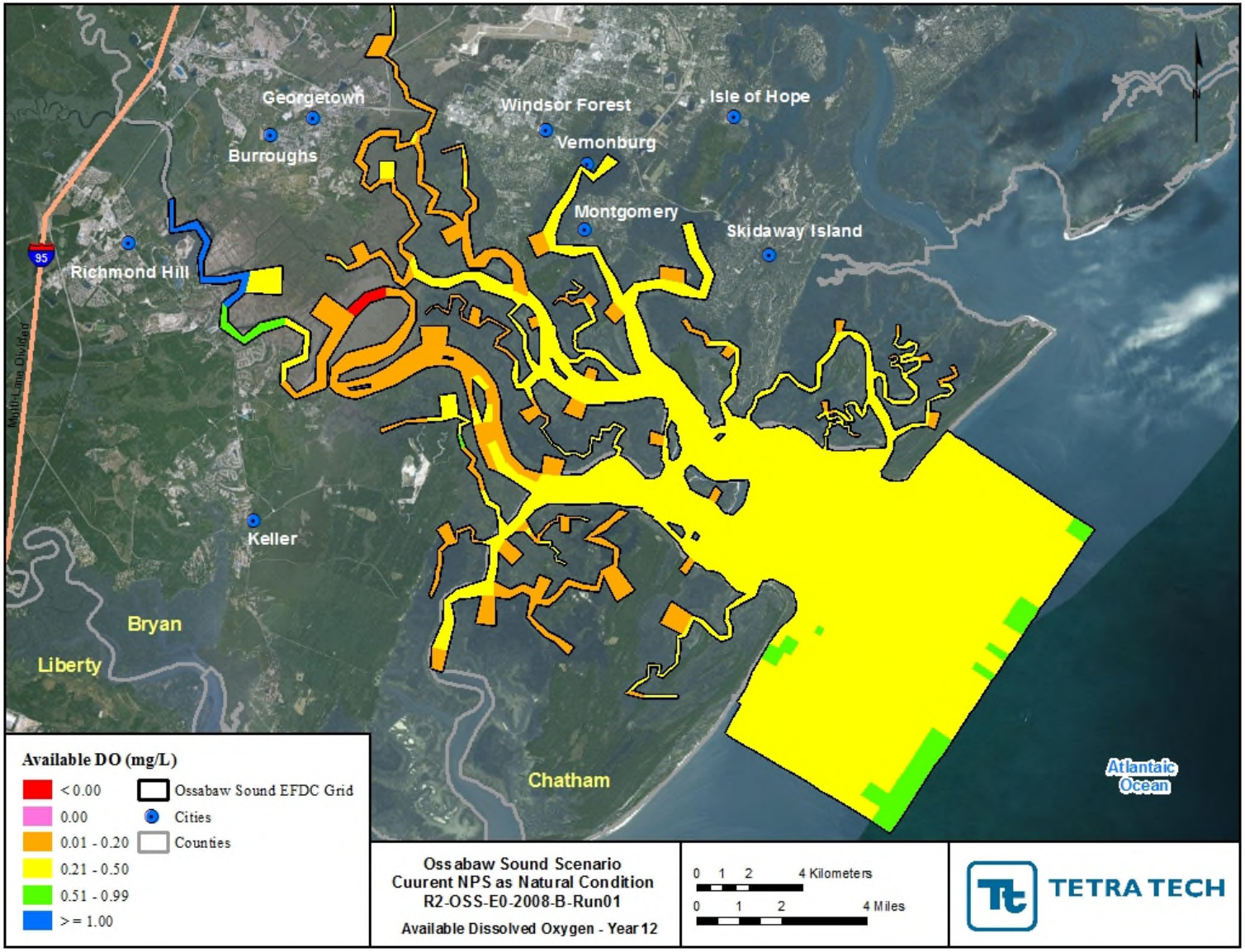

Figure B-56 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Current Permit): 2012

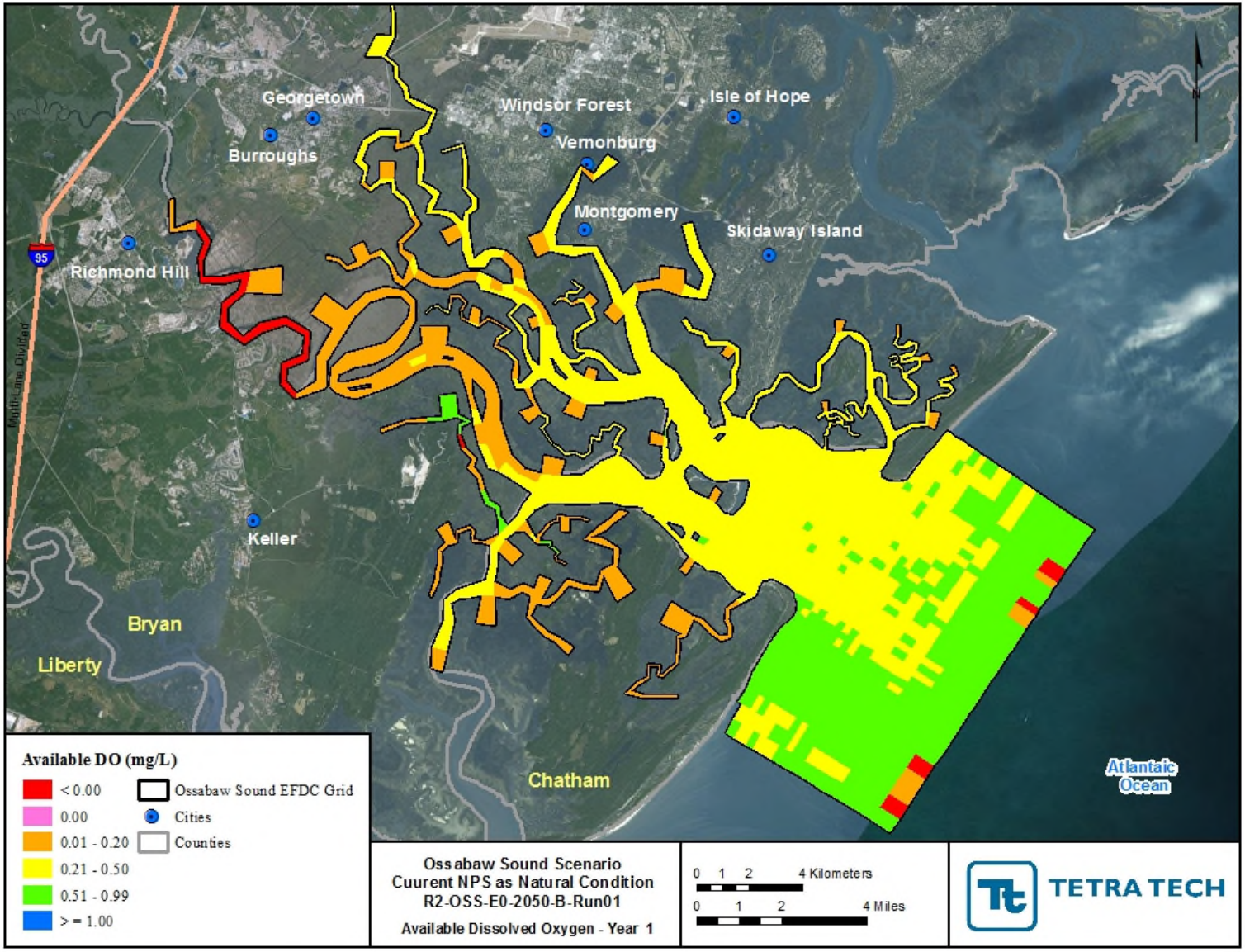

Figure B-57 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2001

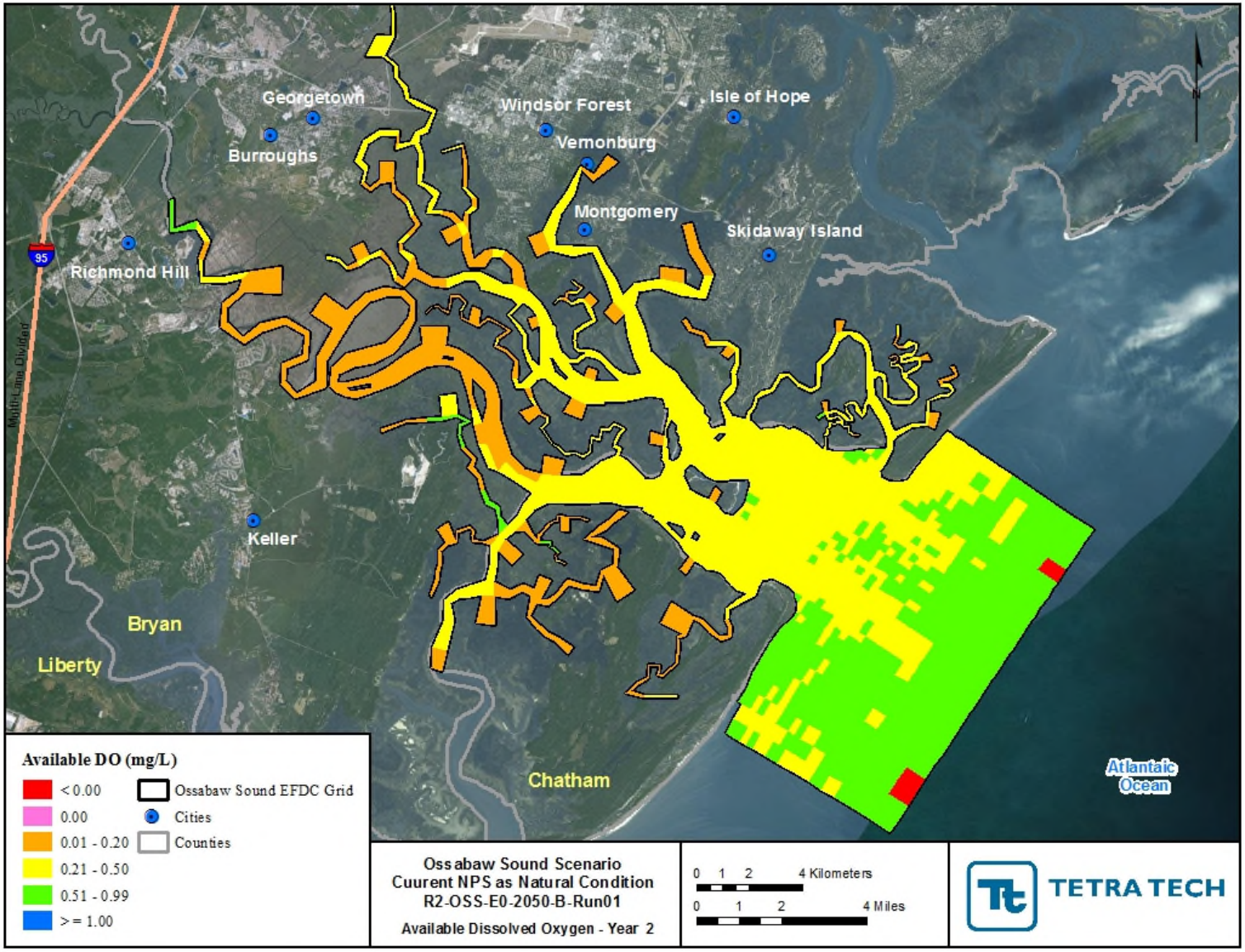

Figure B-58 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2002

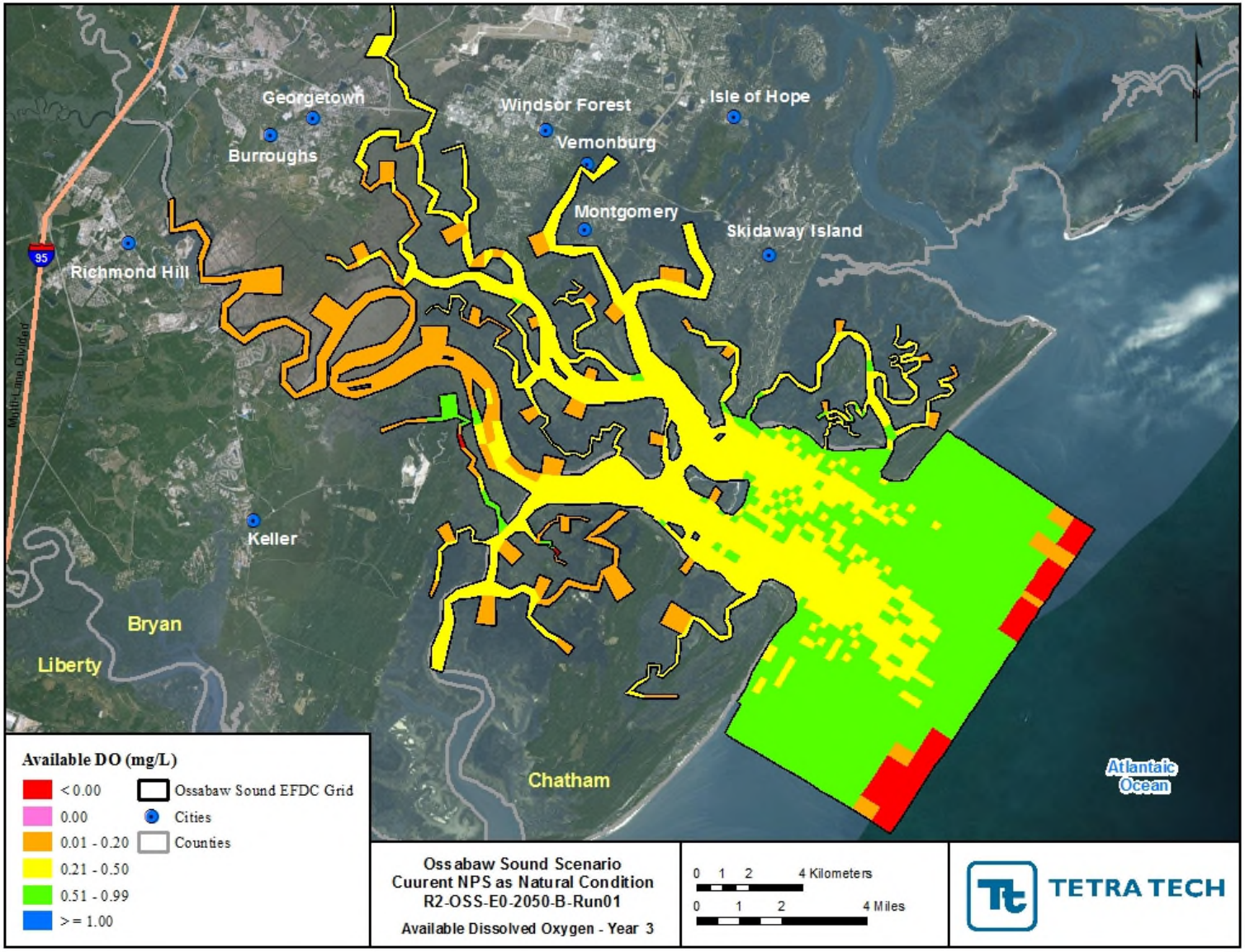

Figure B-59 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2003

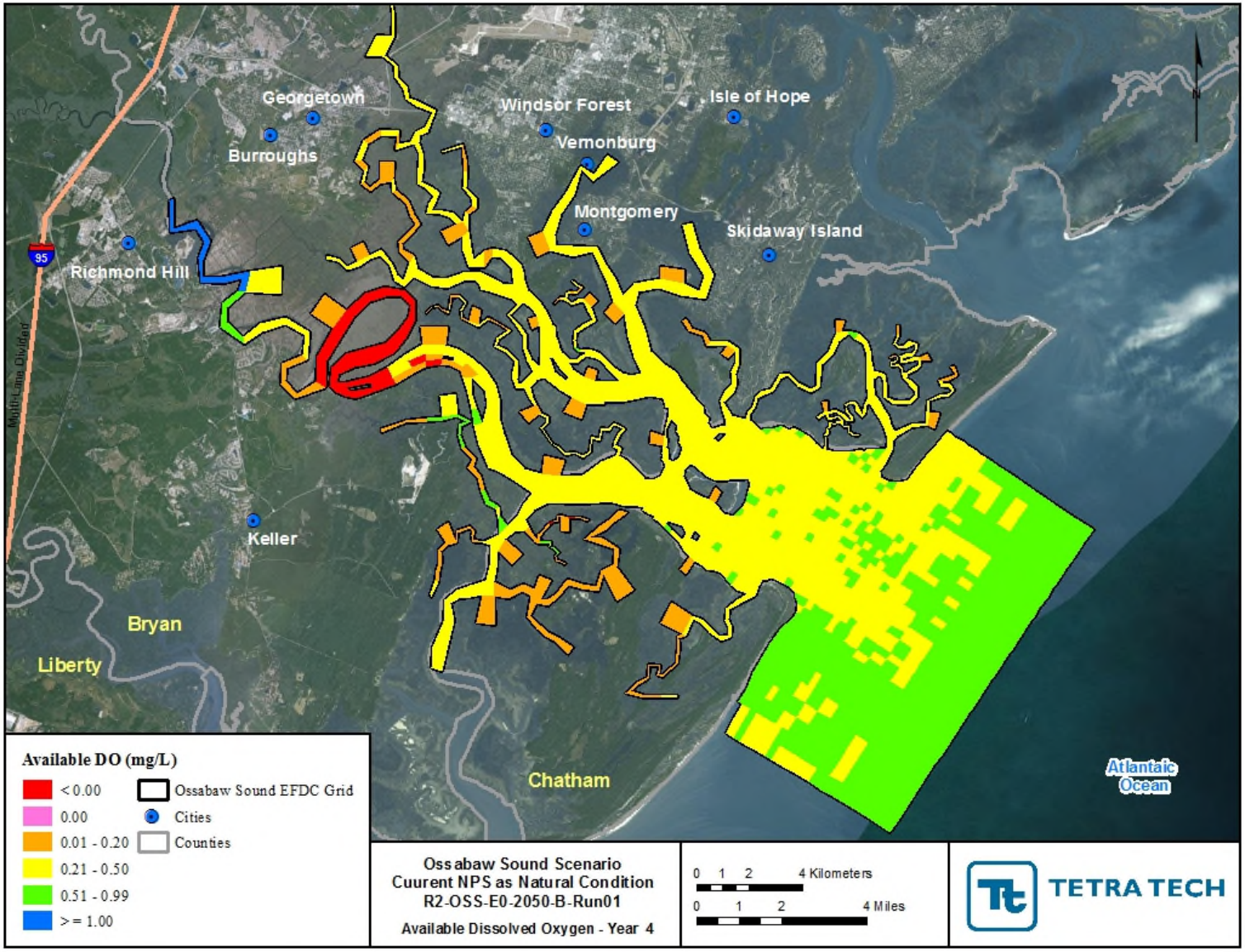

Figure B-60 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2004

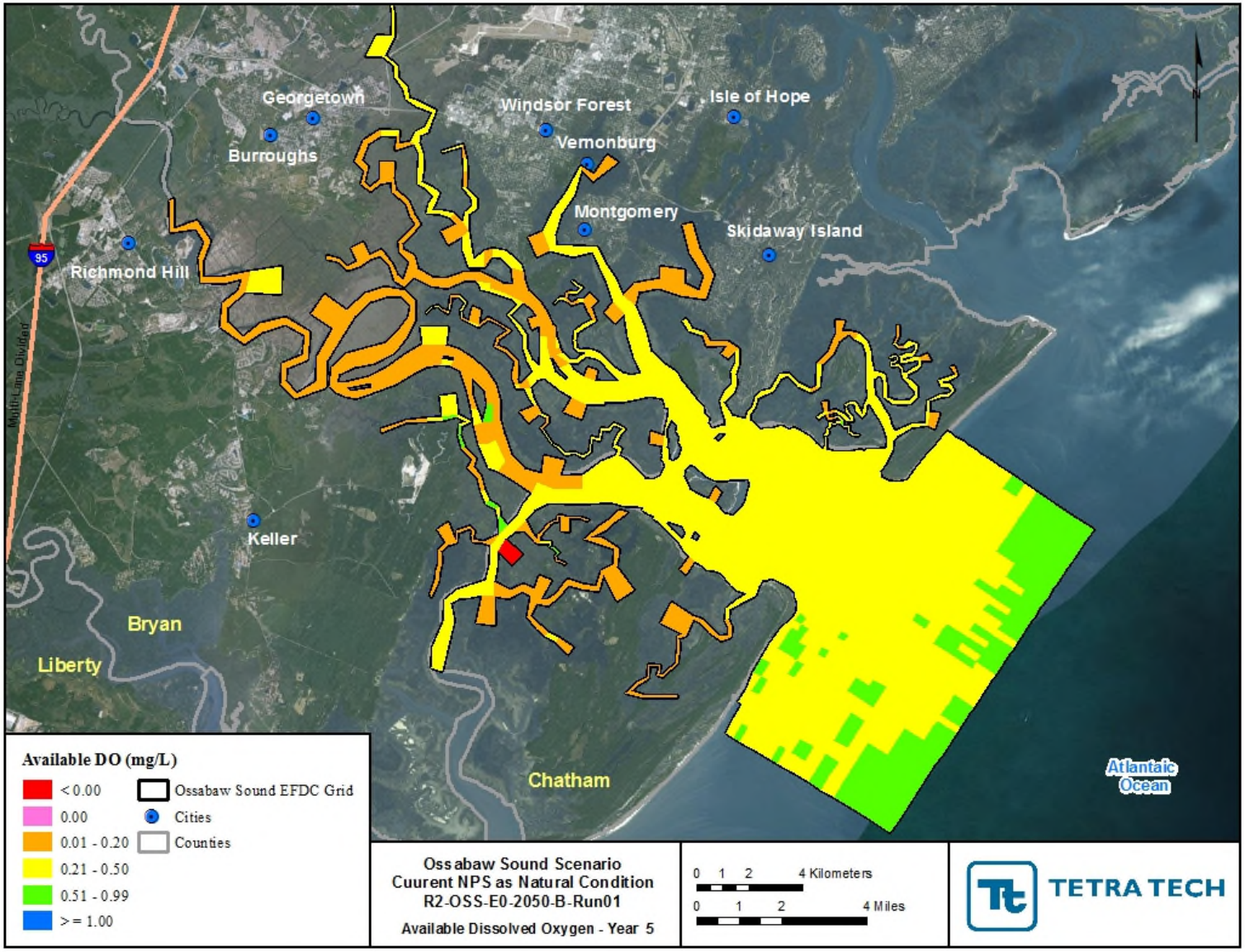

Figure B-61 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2005

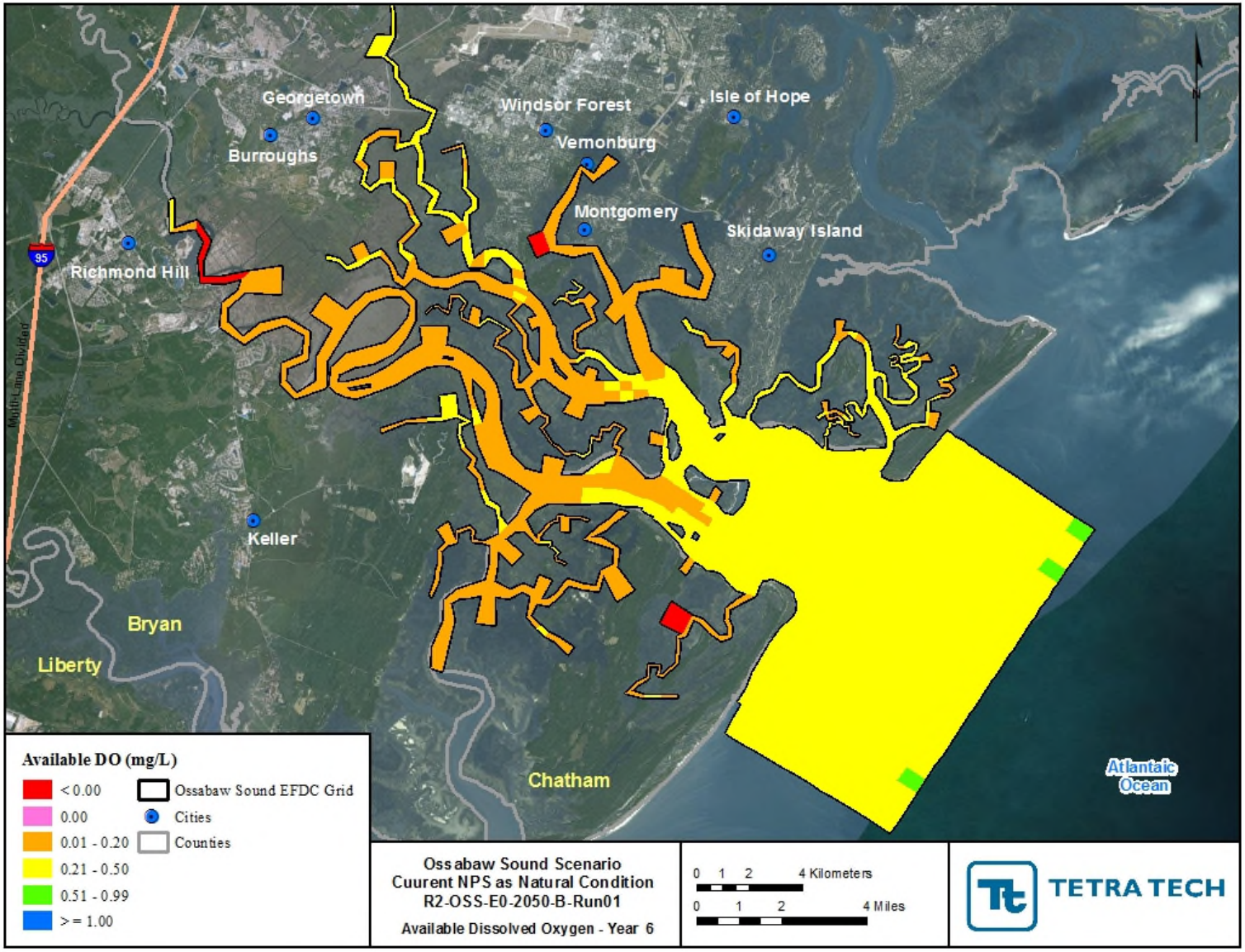

Figure B-62 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2006

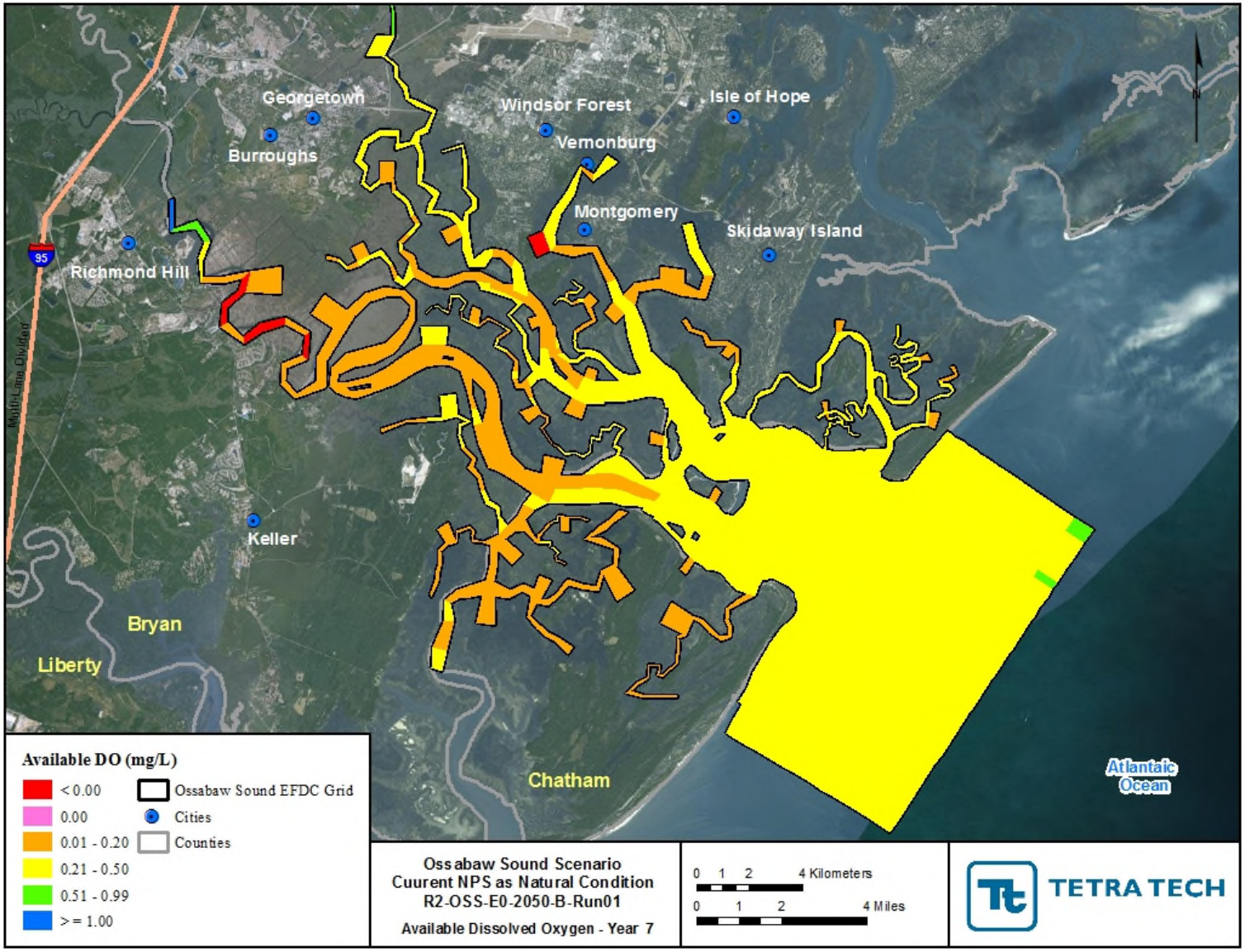

Figure B-63 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2007

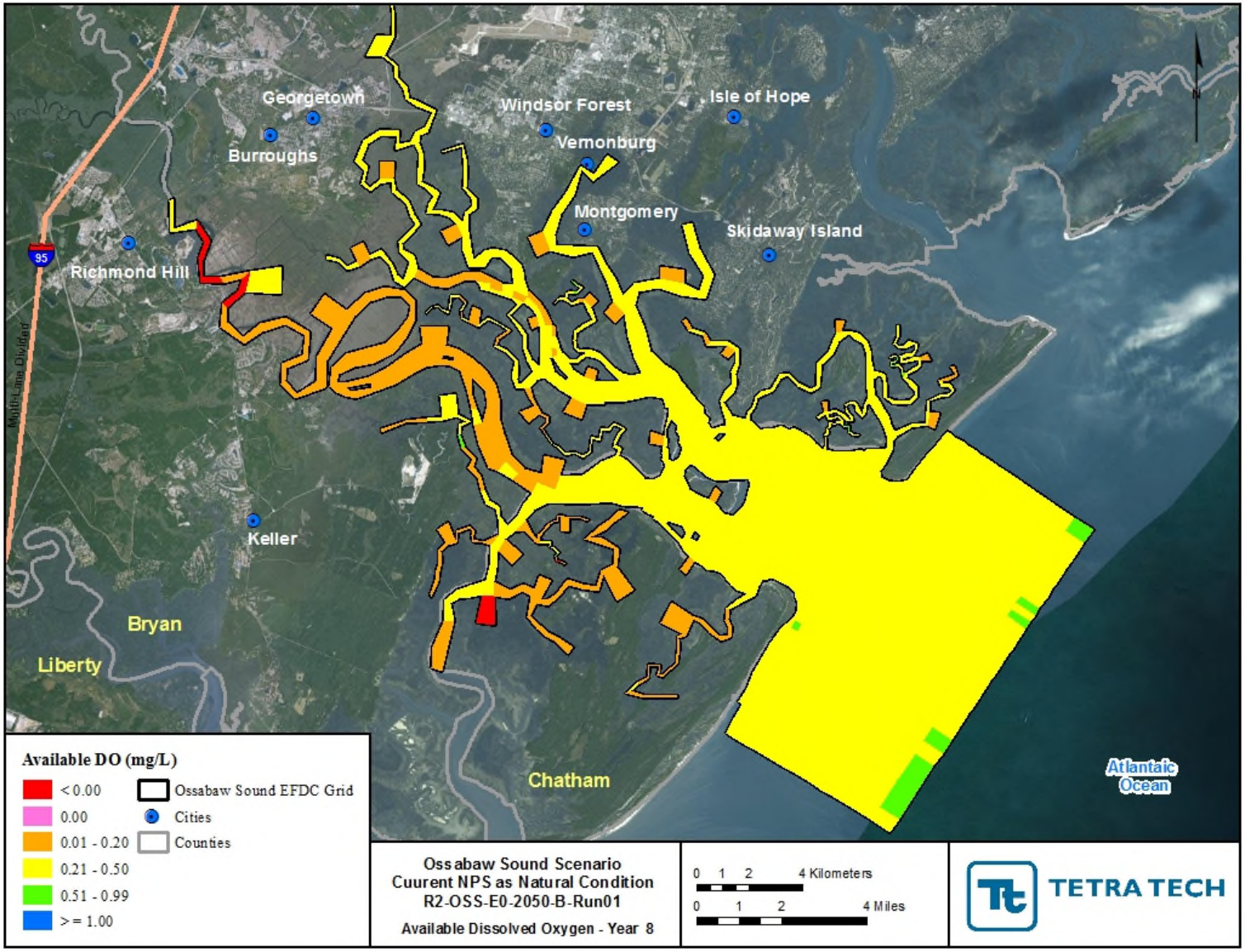

Figure B-64 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2008

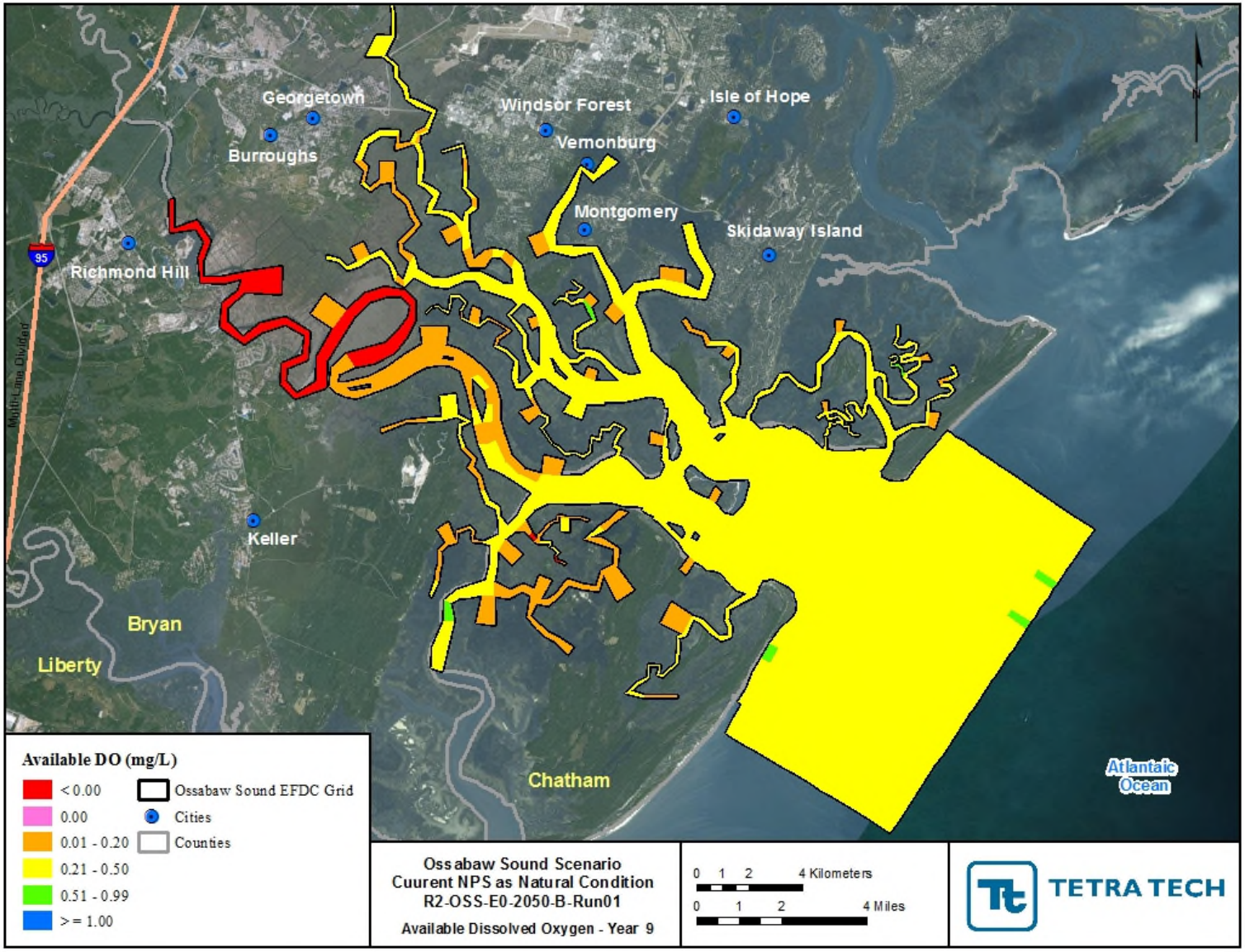

Figure B-65 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2009

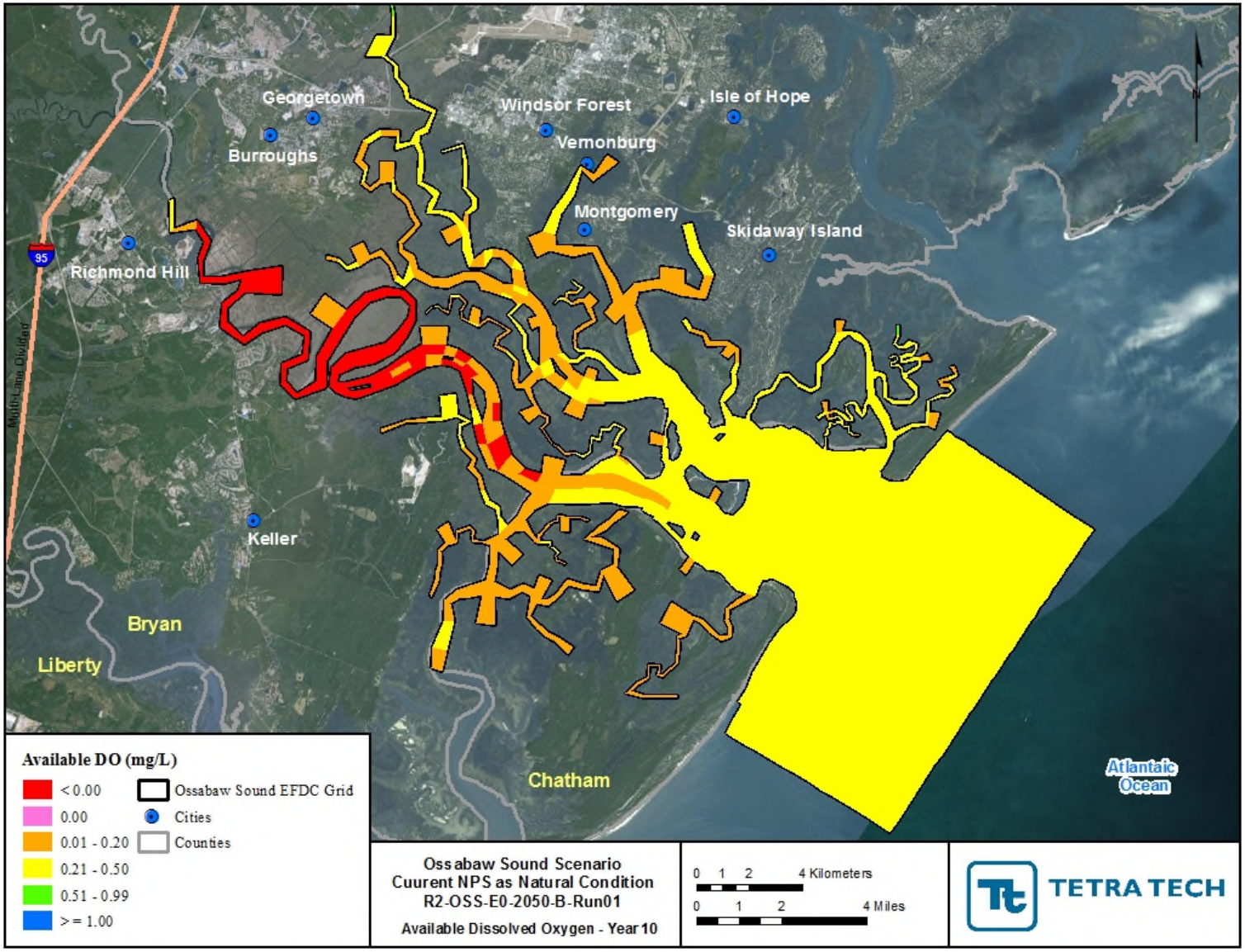

Figure B-66 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2010

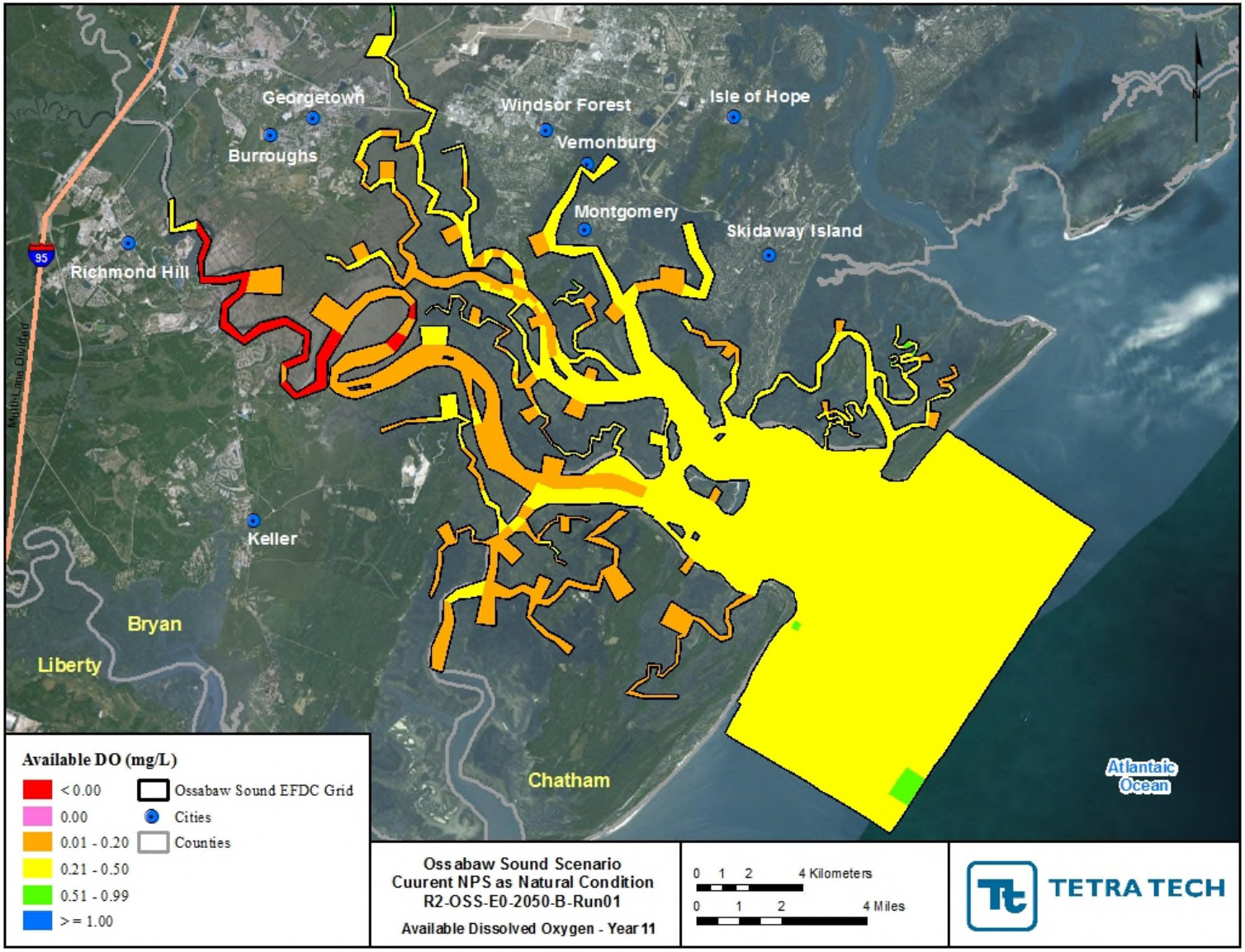

Figure B-67 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2011

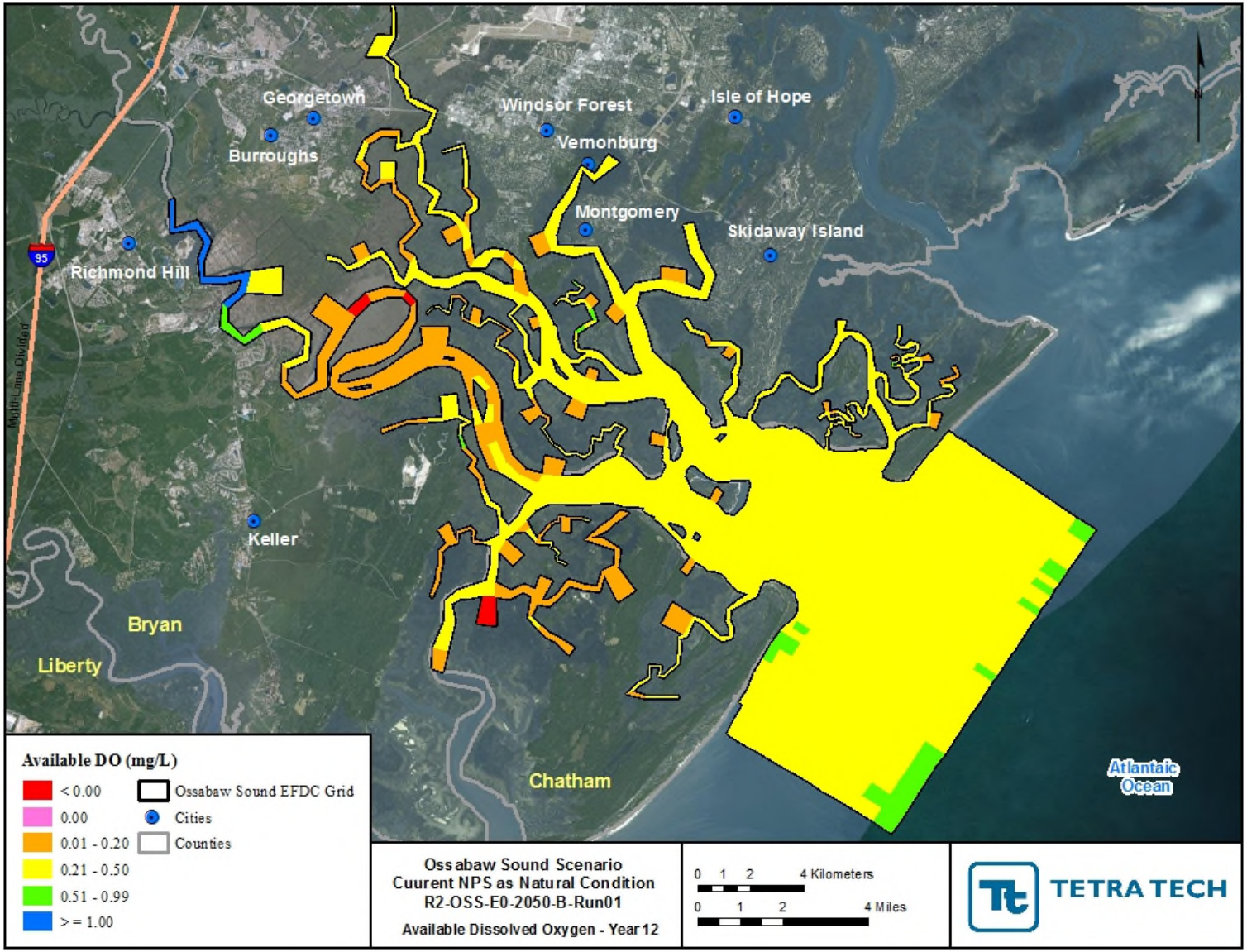

Figure B-68 Available Assimilative Capacity of Dissolved Oxygen in Ossabaw Sound (Future Permit): 2012

Table B-1 Number of cells in Ossabaw Sound with 0 mg/L of Assimilative Capacity

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Current Permit	21	2	24	8	1	10	1	10	36	41	16	2
Future Permit	20	3	21	27	1	7	7	9	35	58	20	3

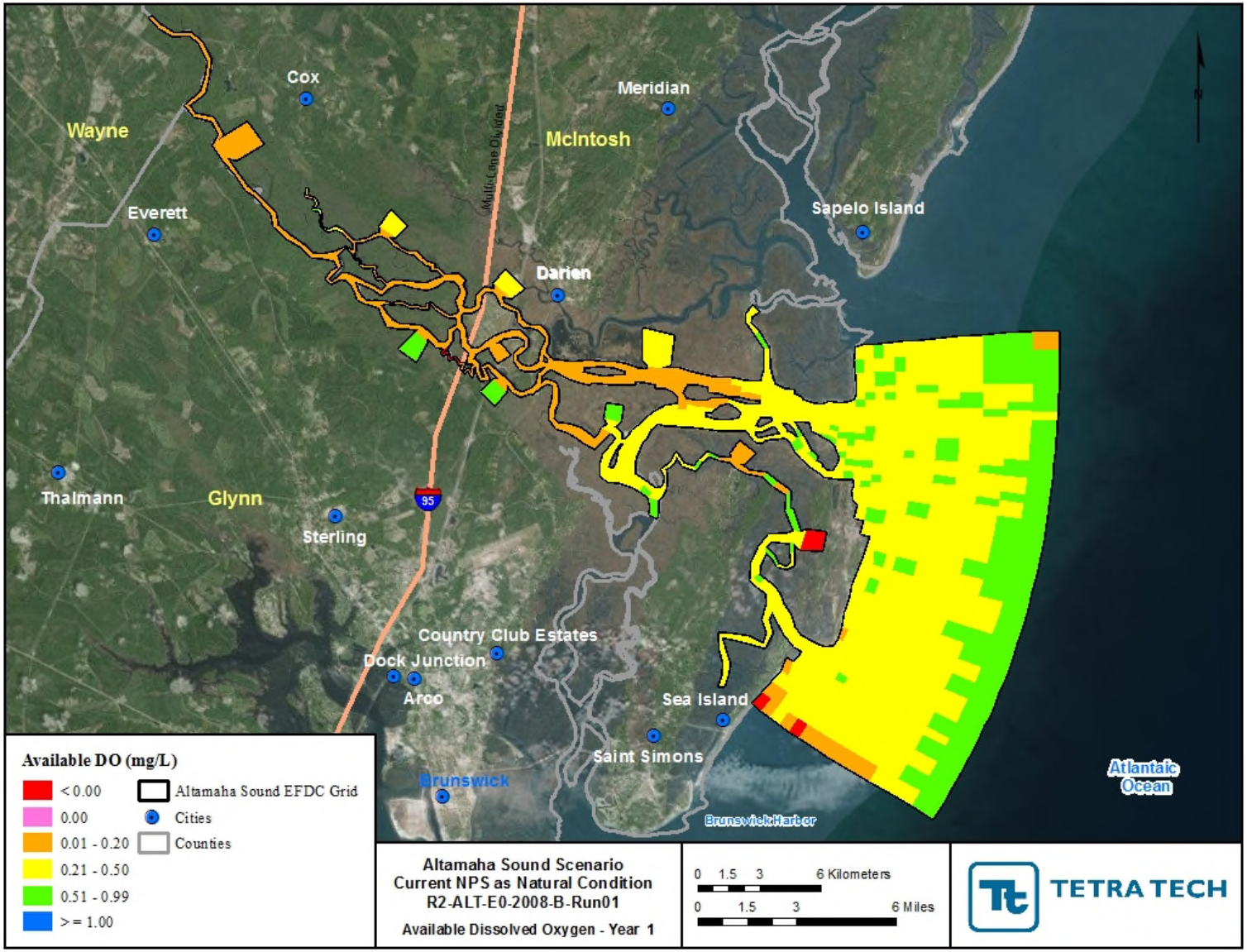

Figure B-69 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2001

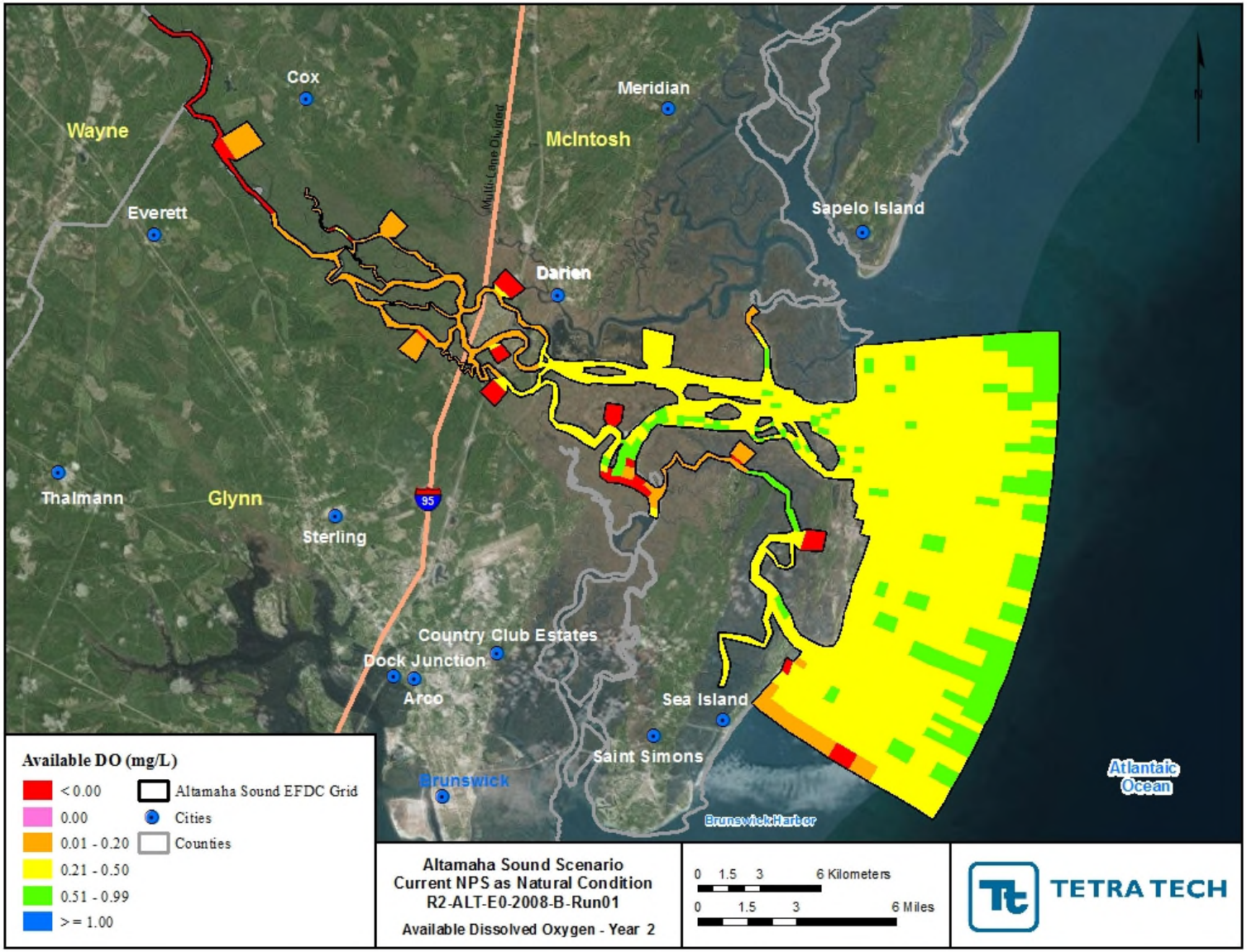

Figure B-70 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2002

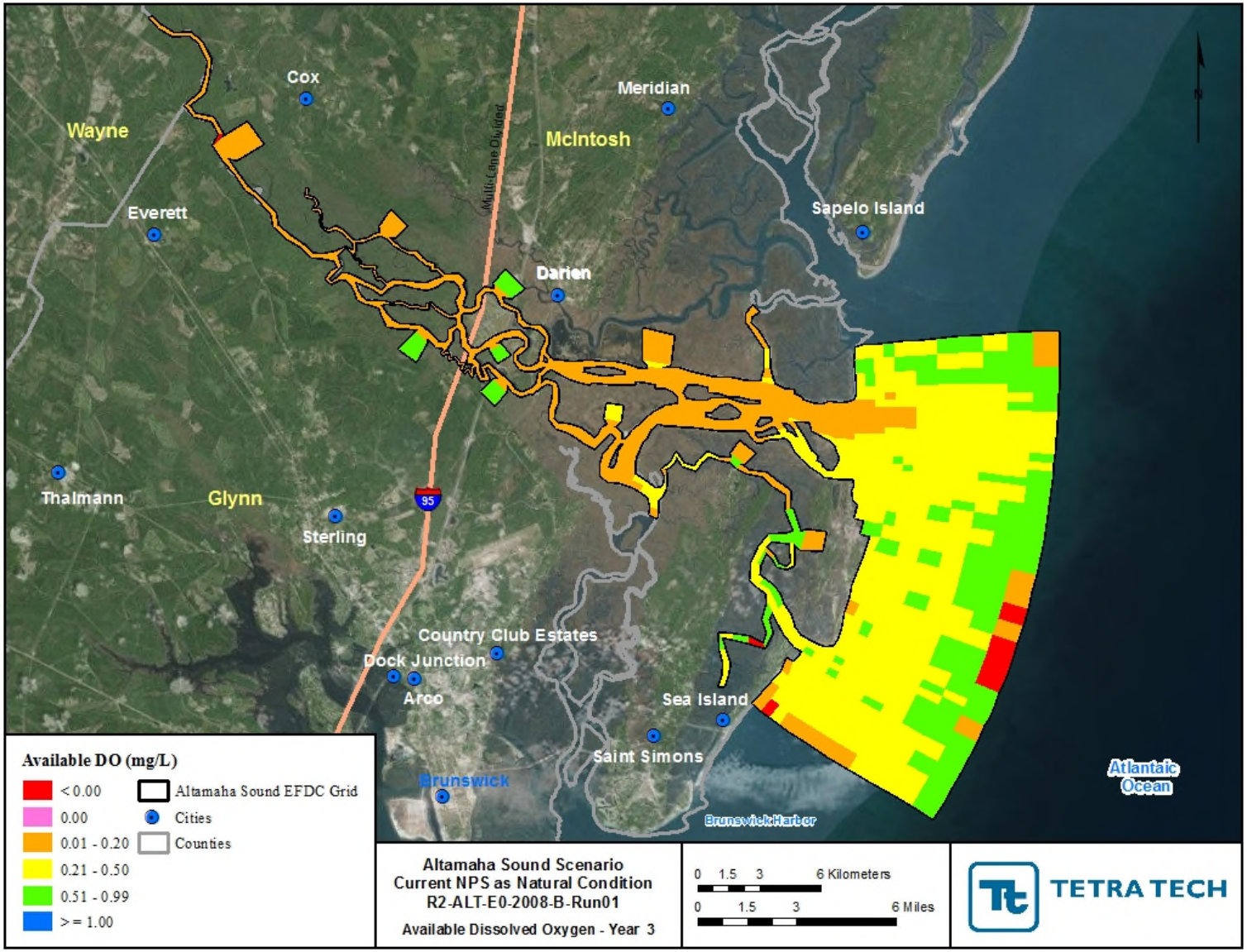

Figure B-71 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2003

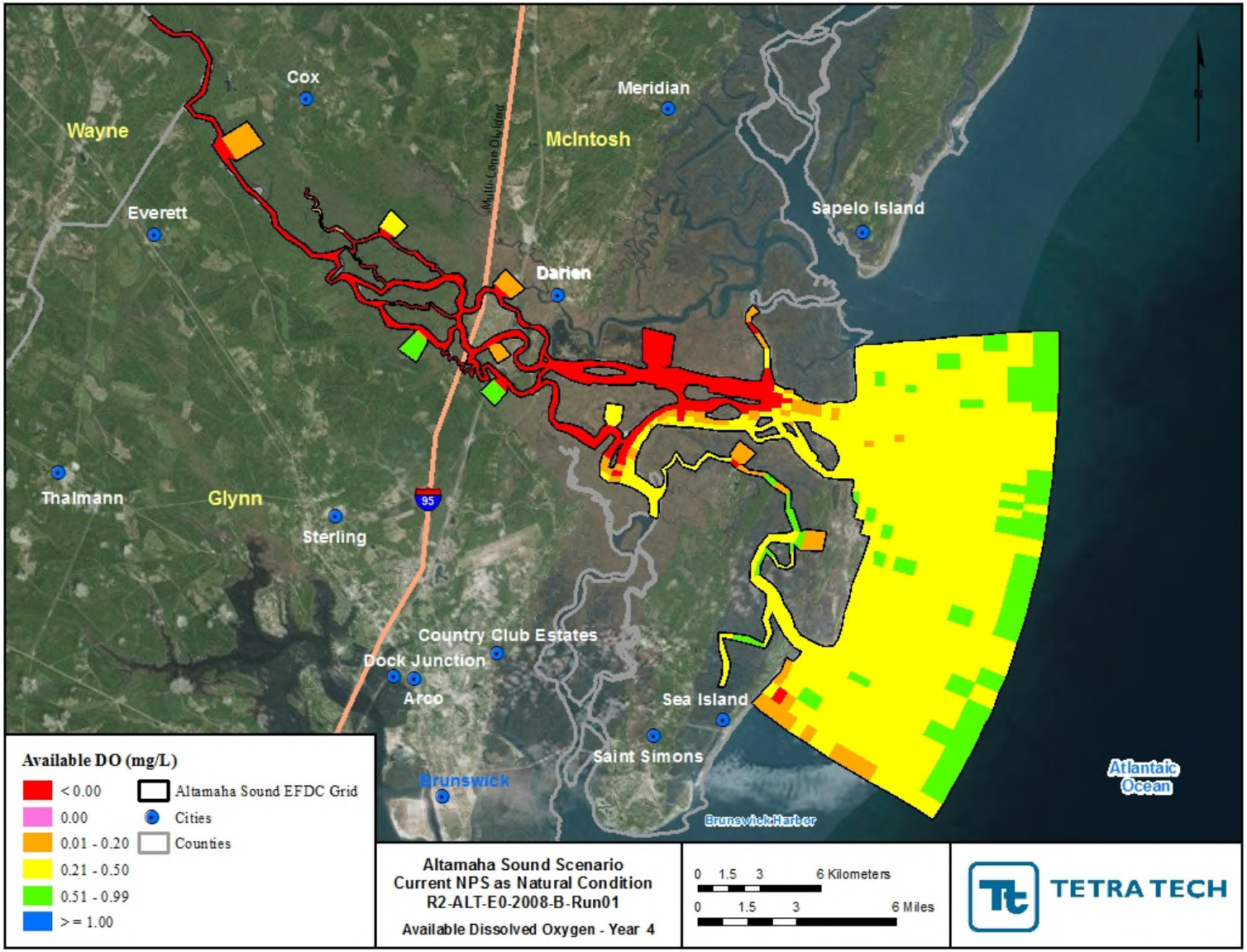

Figure B-72 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2004

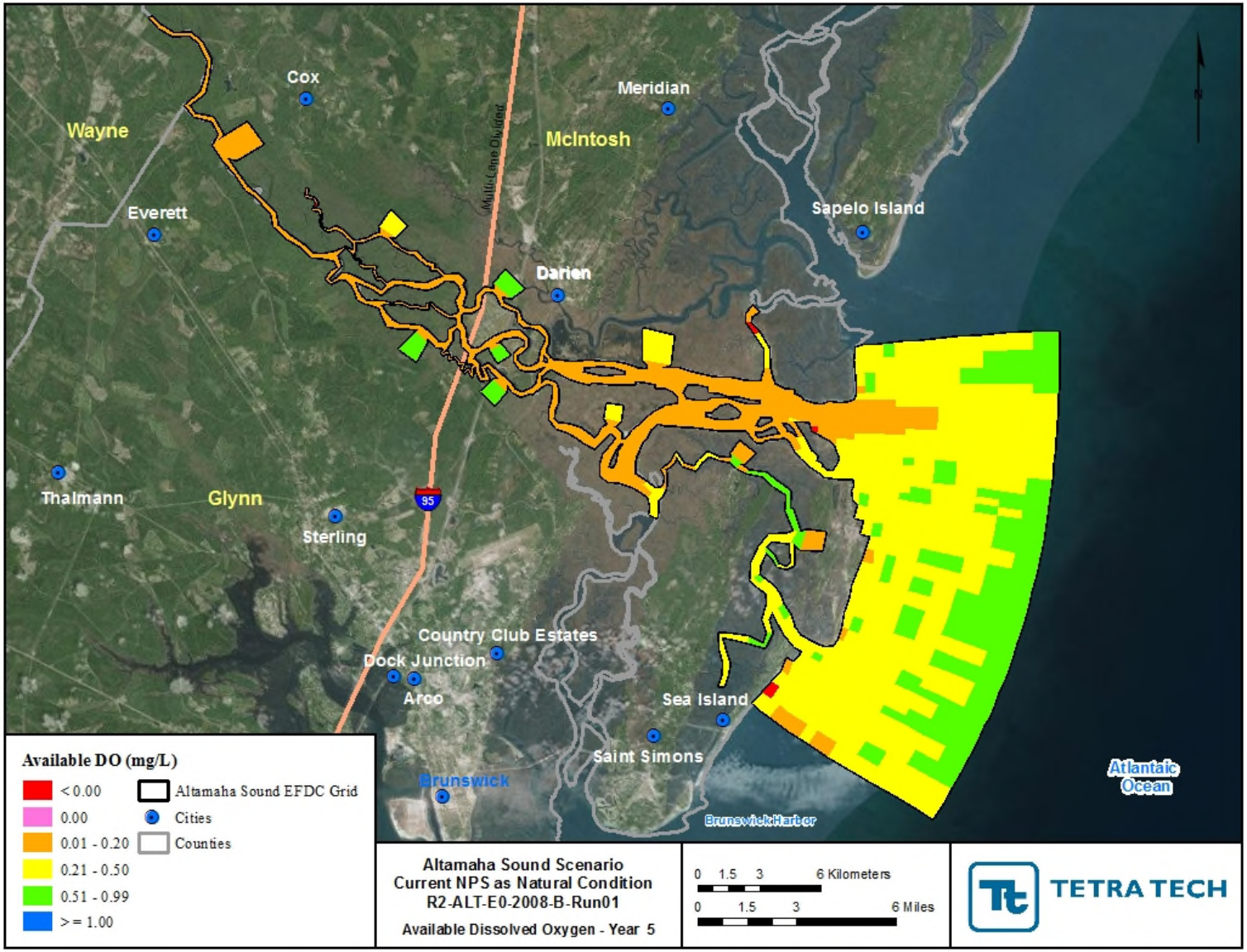

Figure B-73 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2005

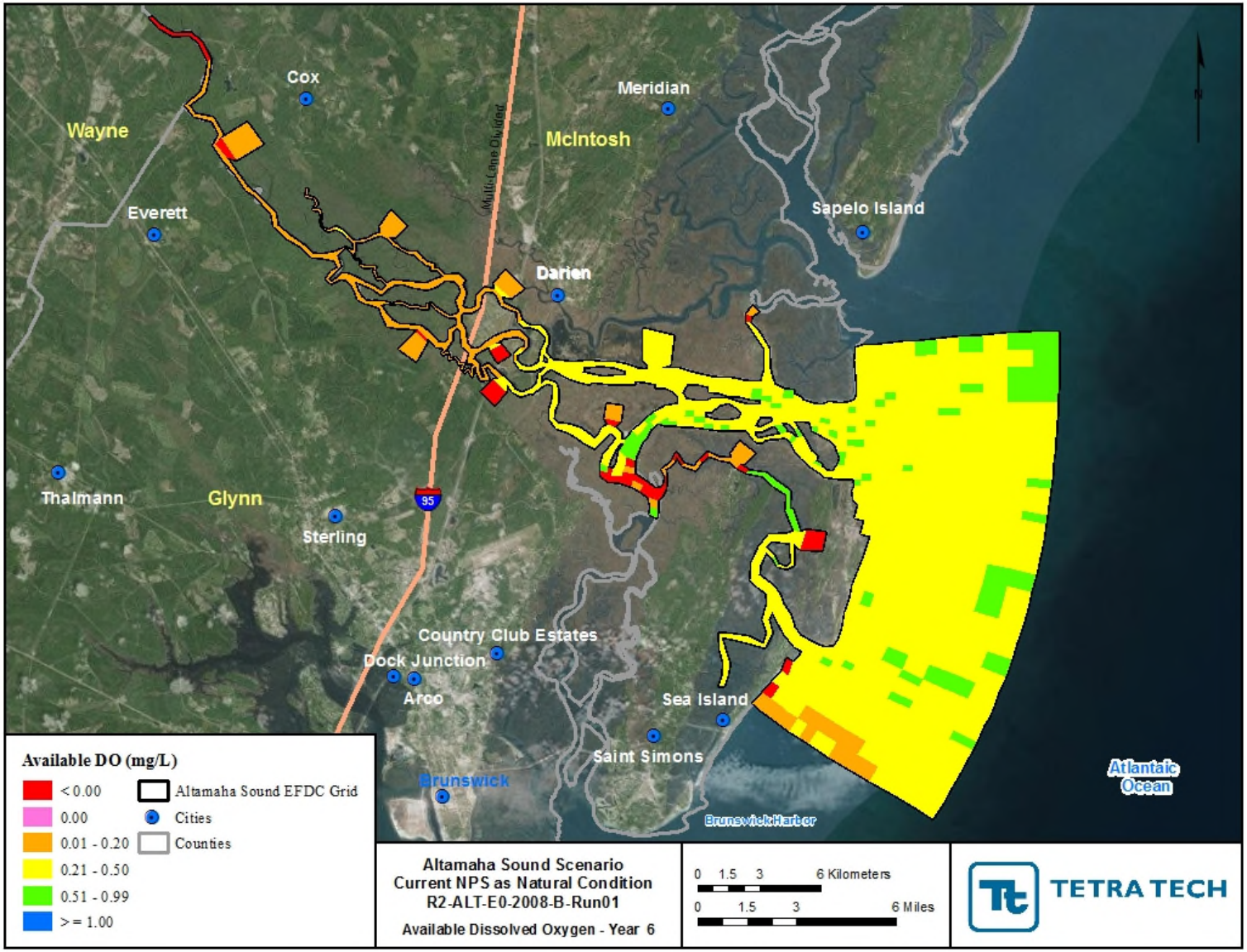

Figure B-74 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2006

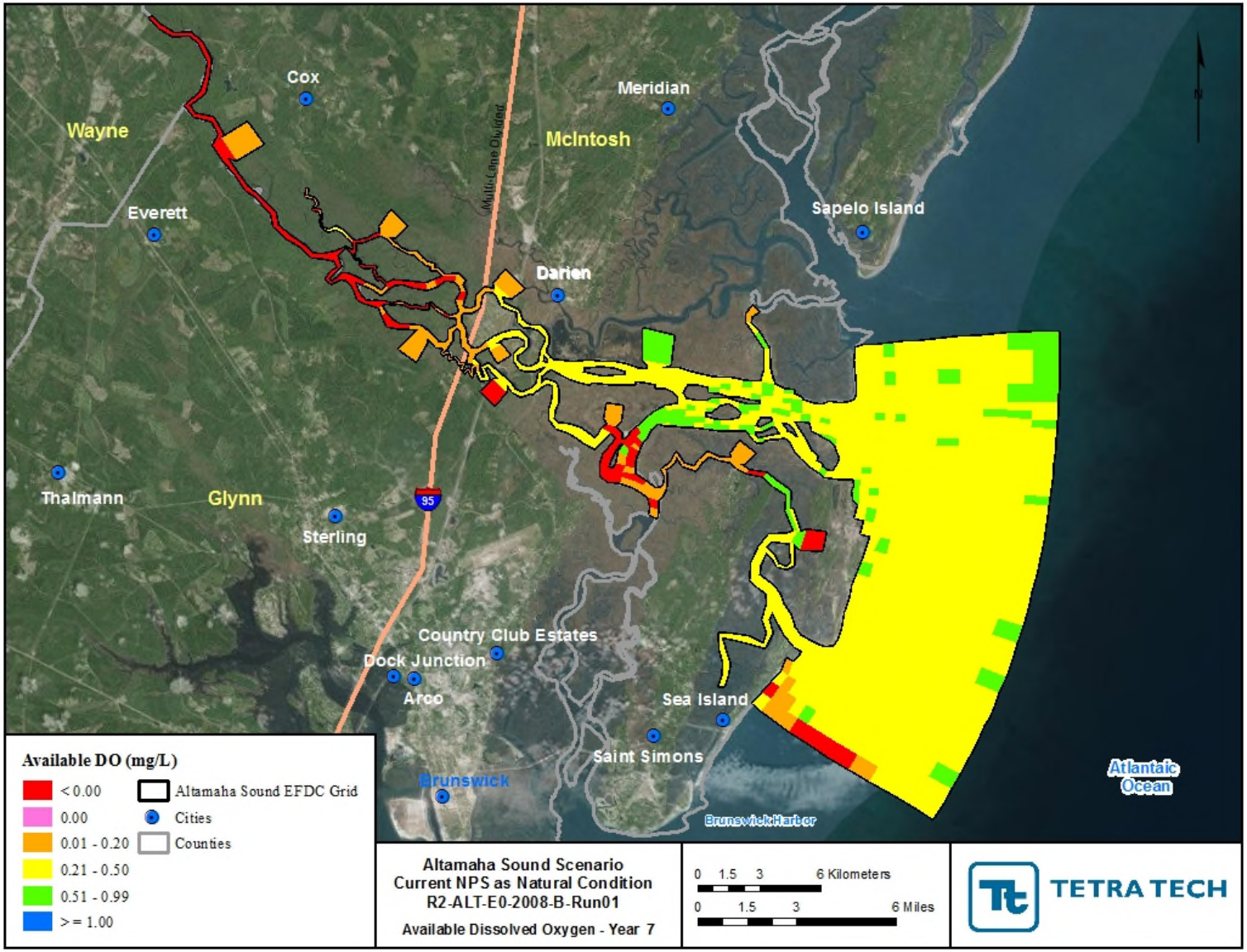

Figure B-75 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2007

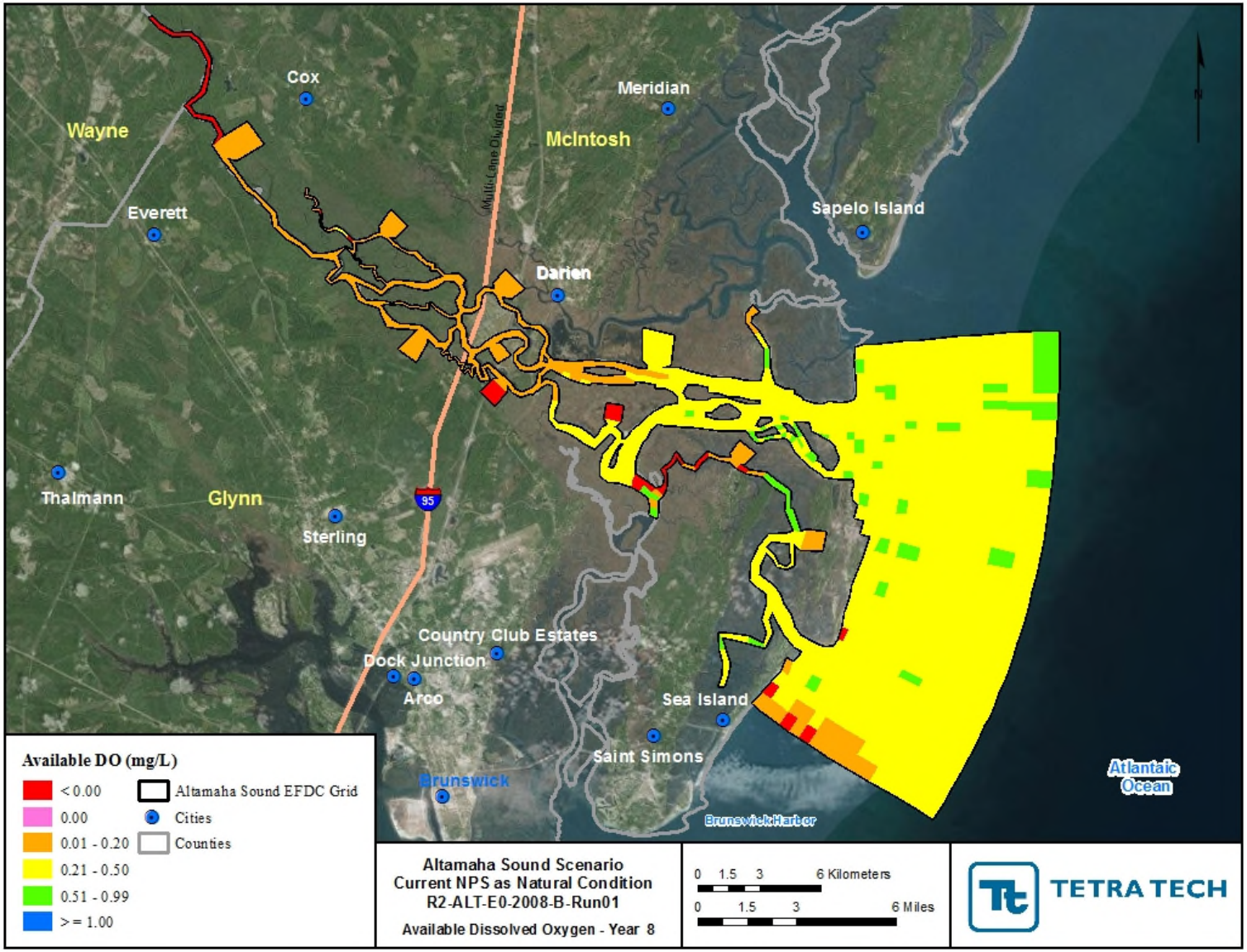

Figure B-76 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2008

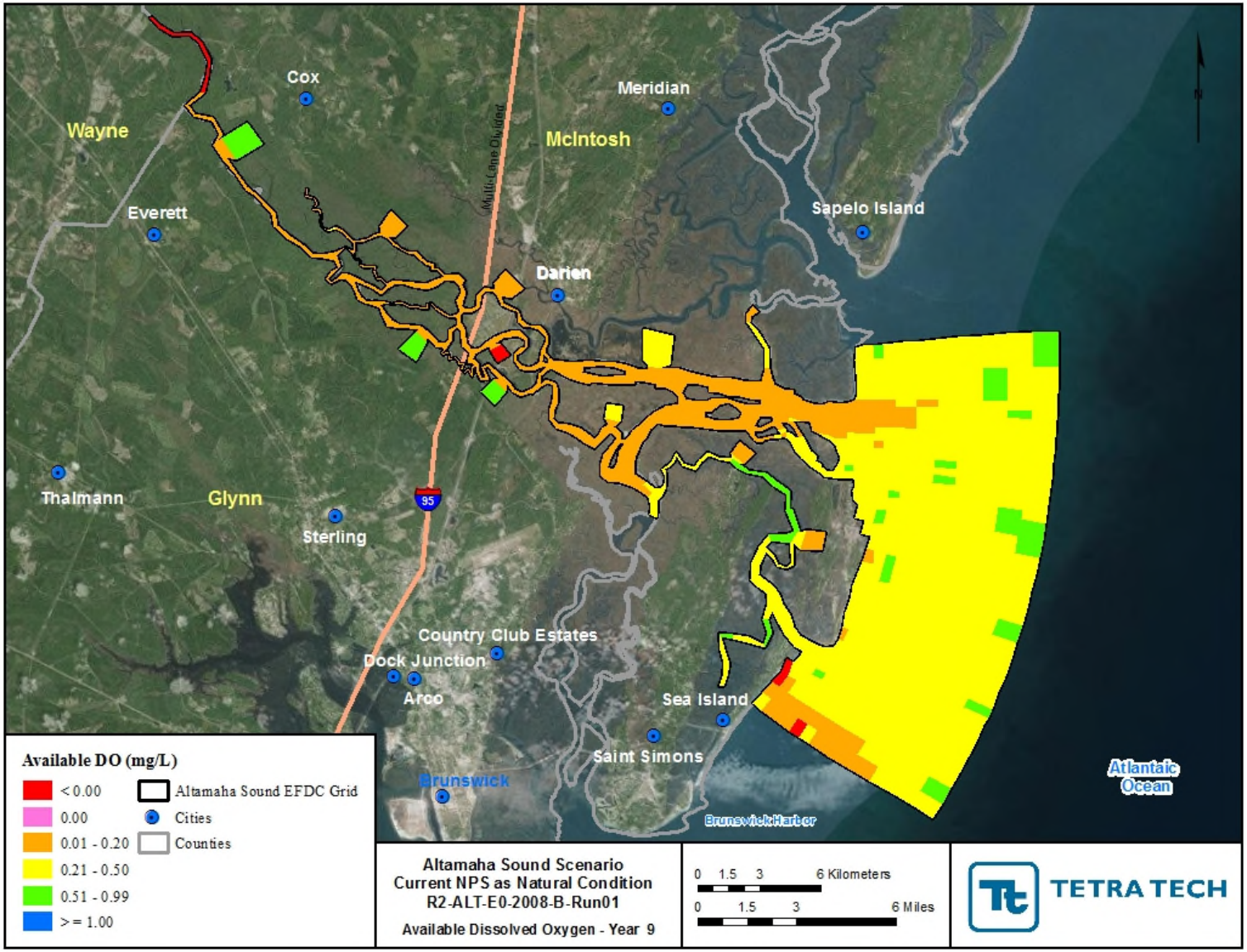

Figure B-77 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2009

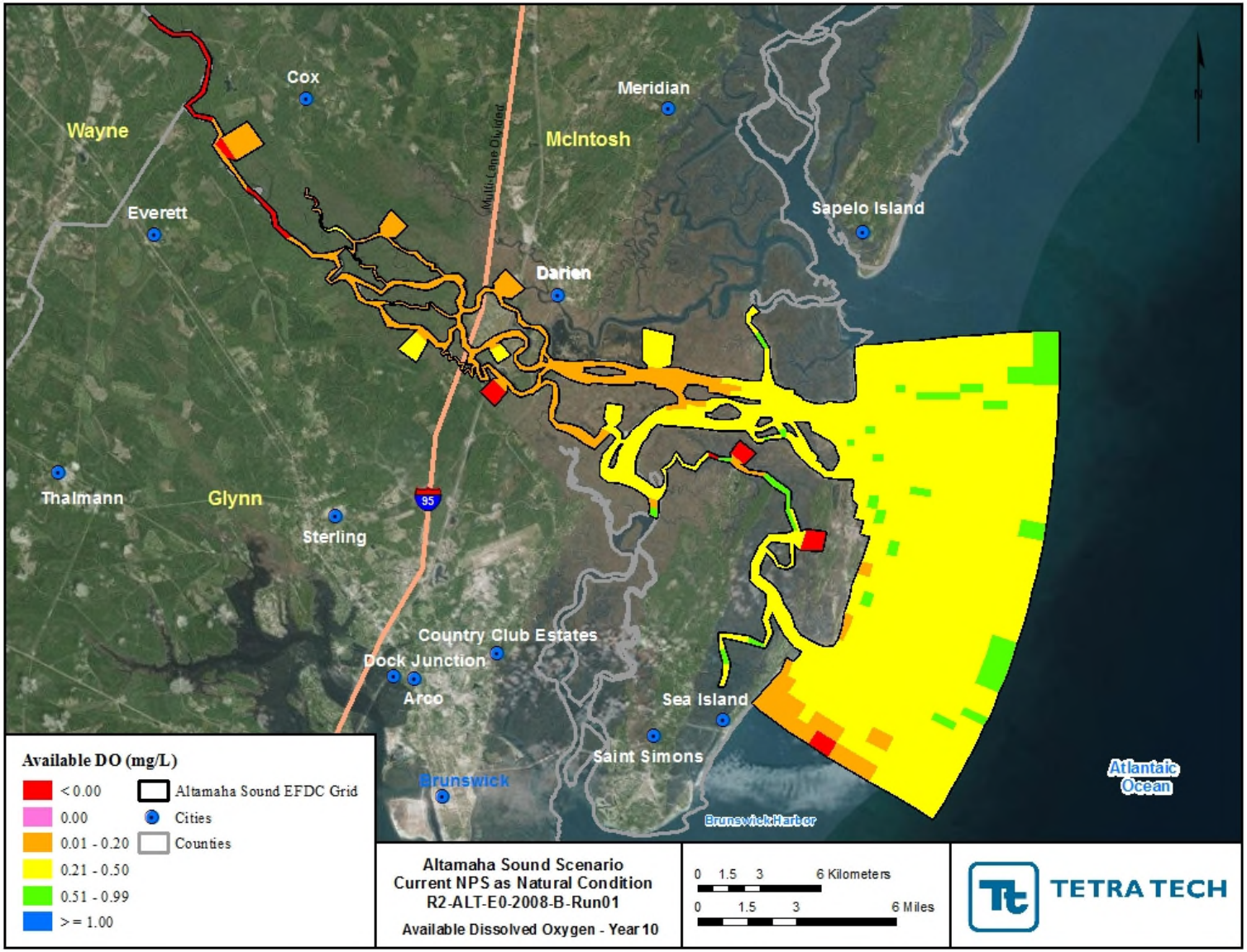

Figure B-78 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2010

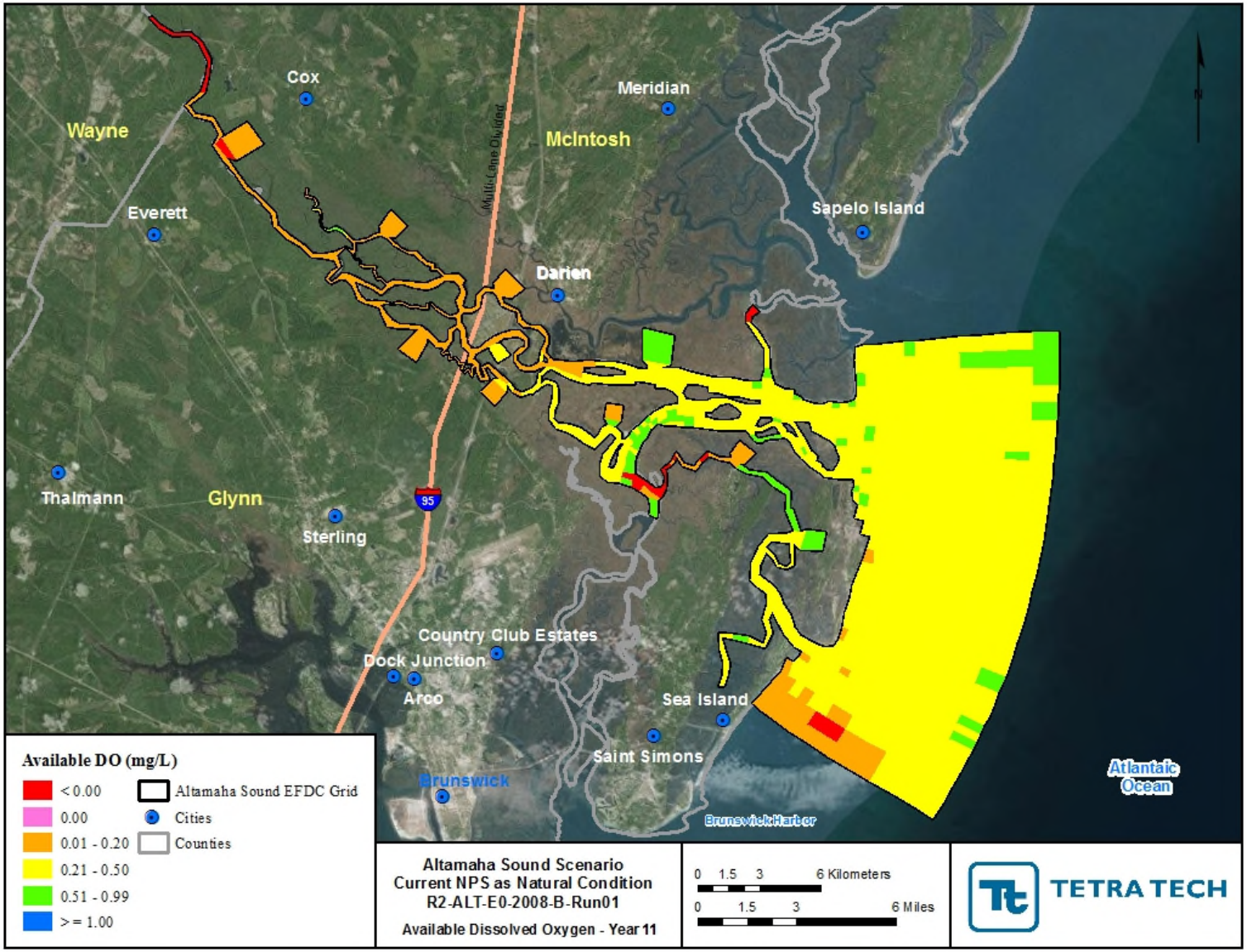

Figure B-79 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2011

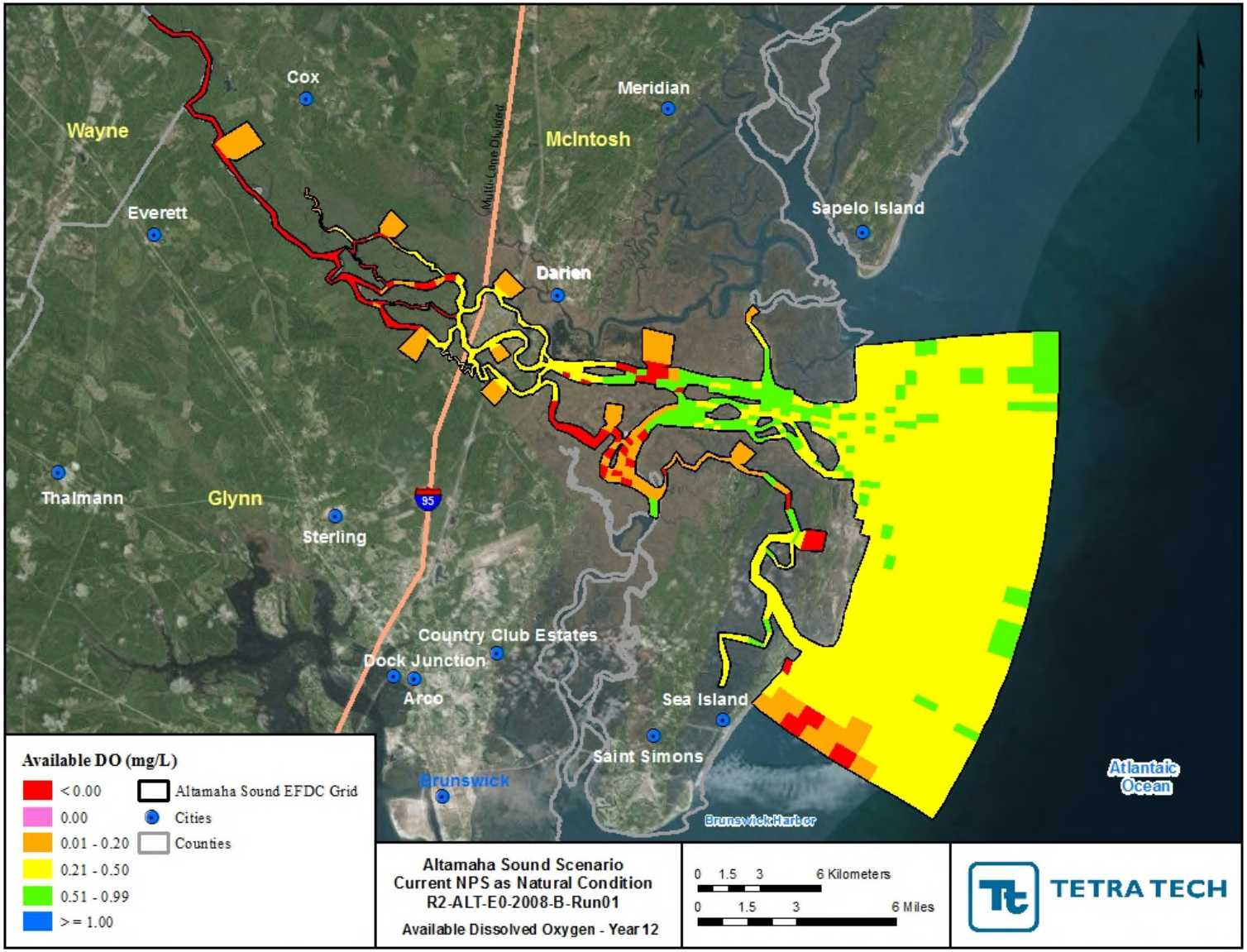

Figure B-80 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Current Permit): 2012

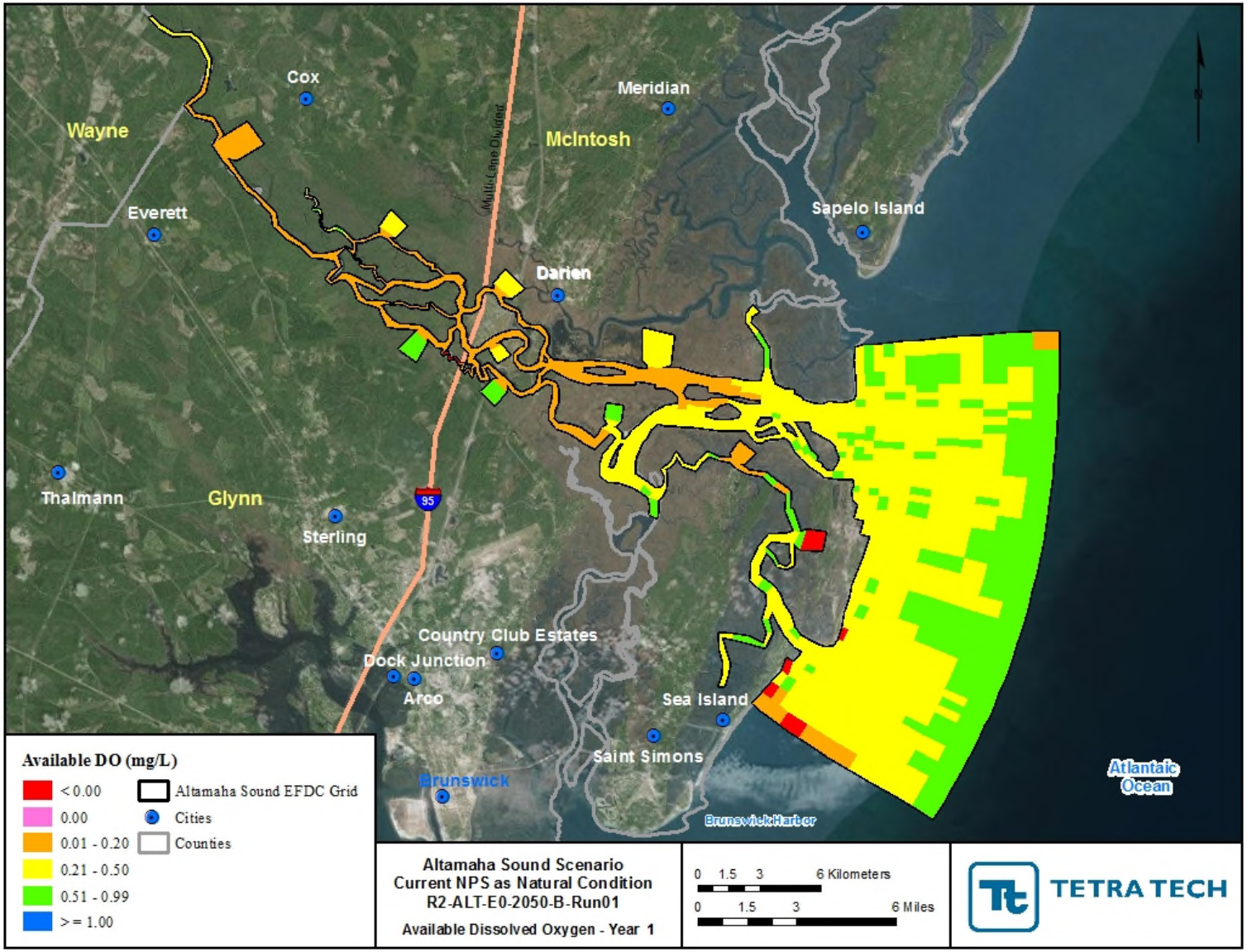

Figure B-81 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2001

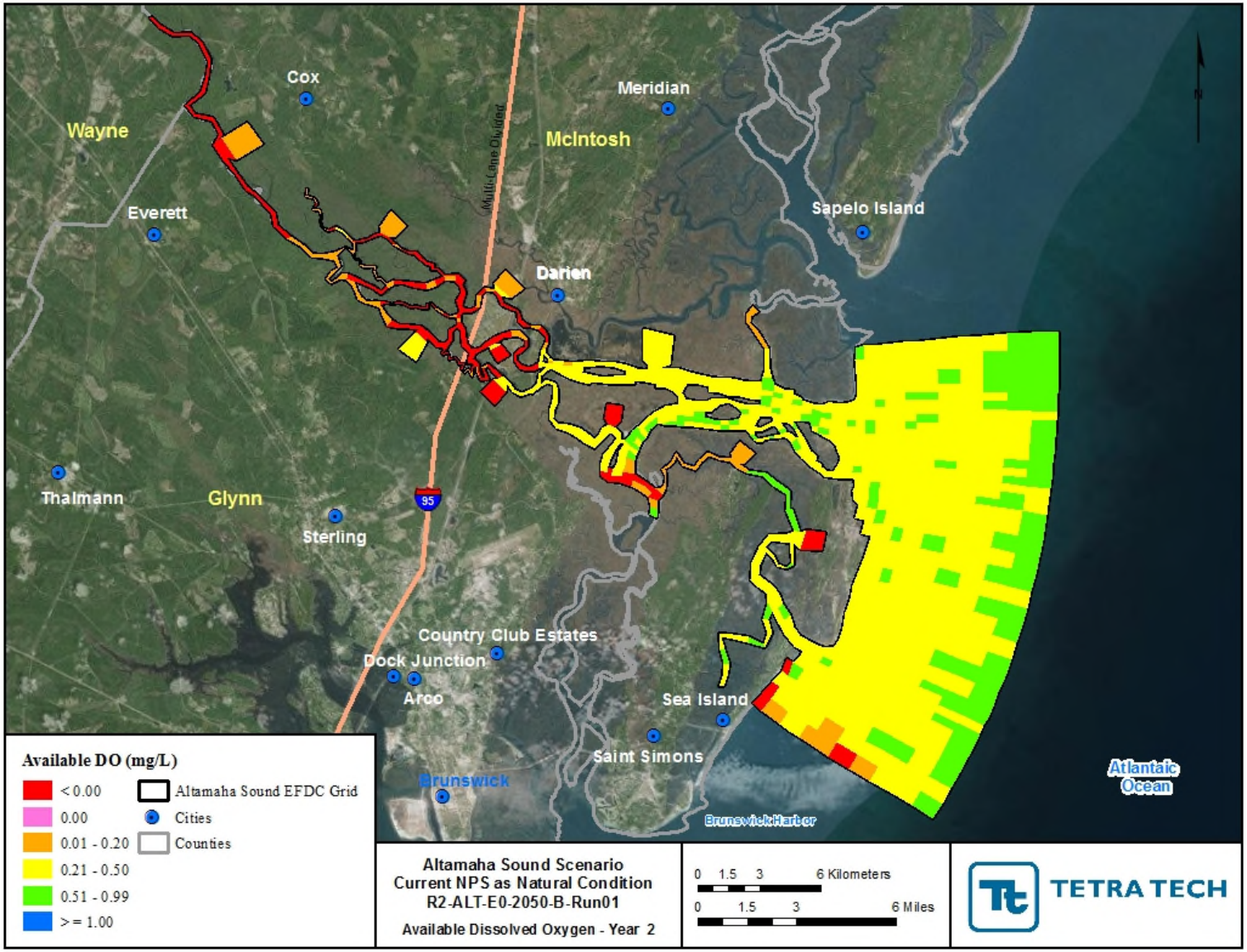

Figure B-82 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2002

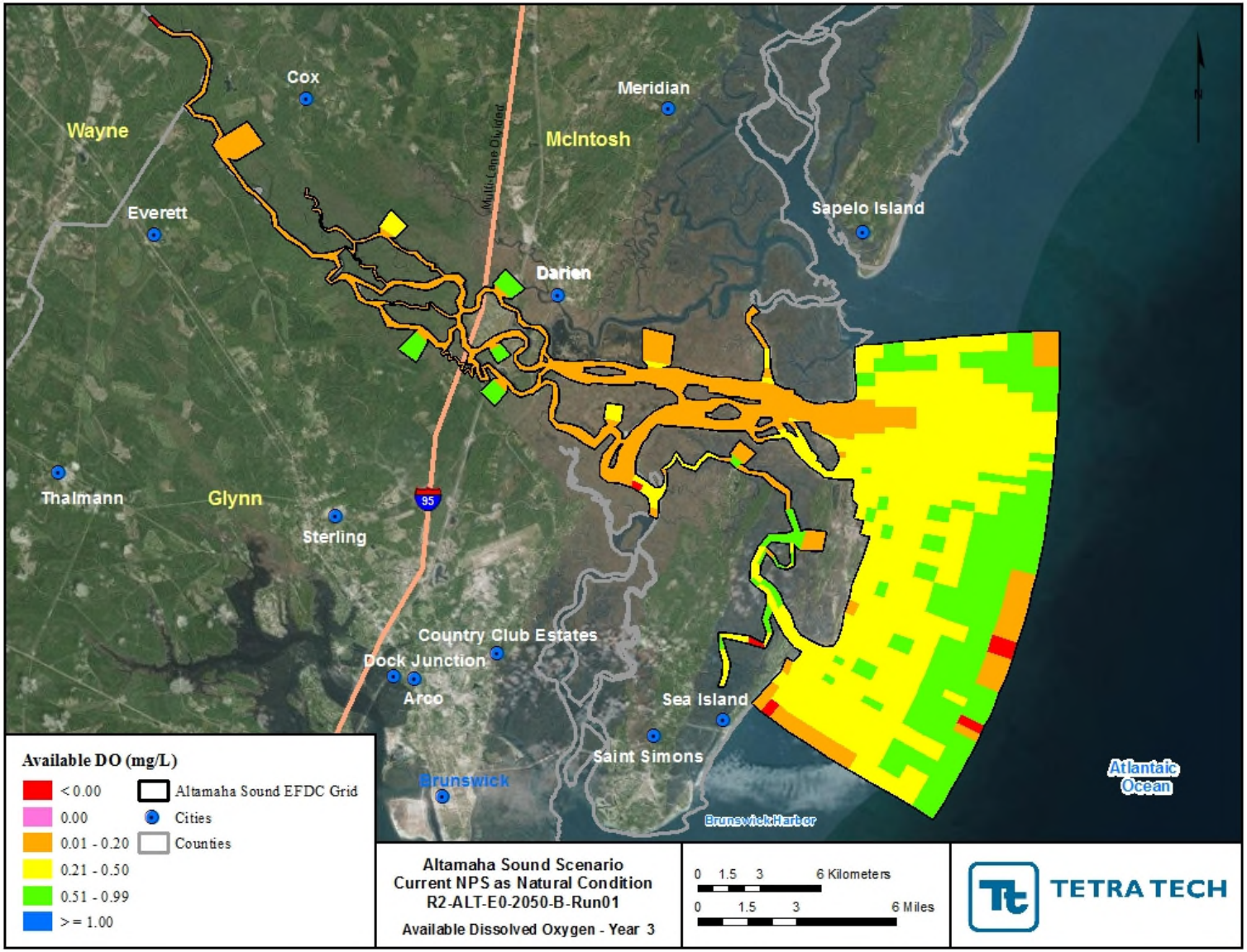

Figure B-83 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2003

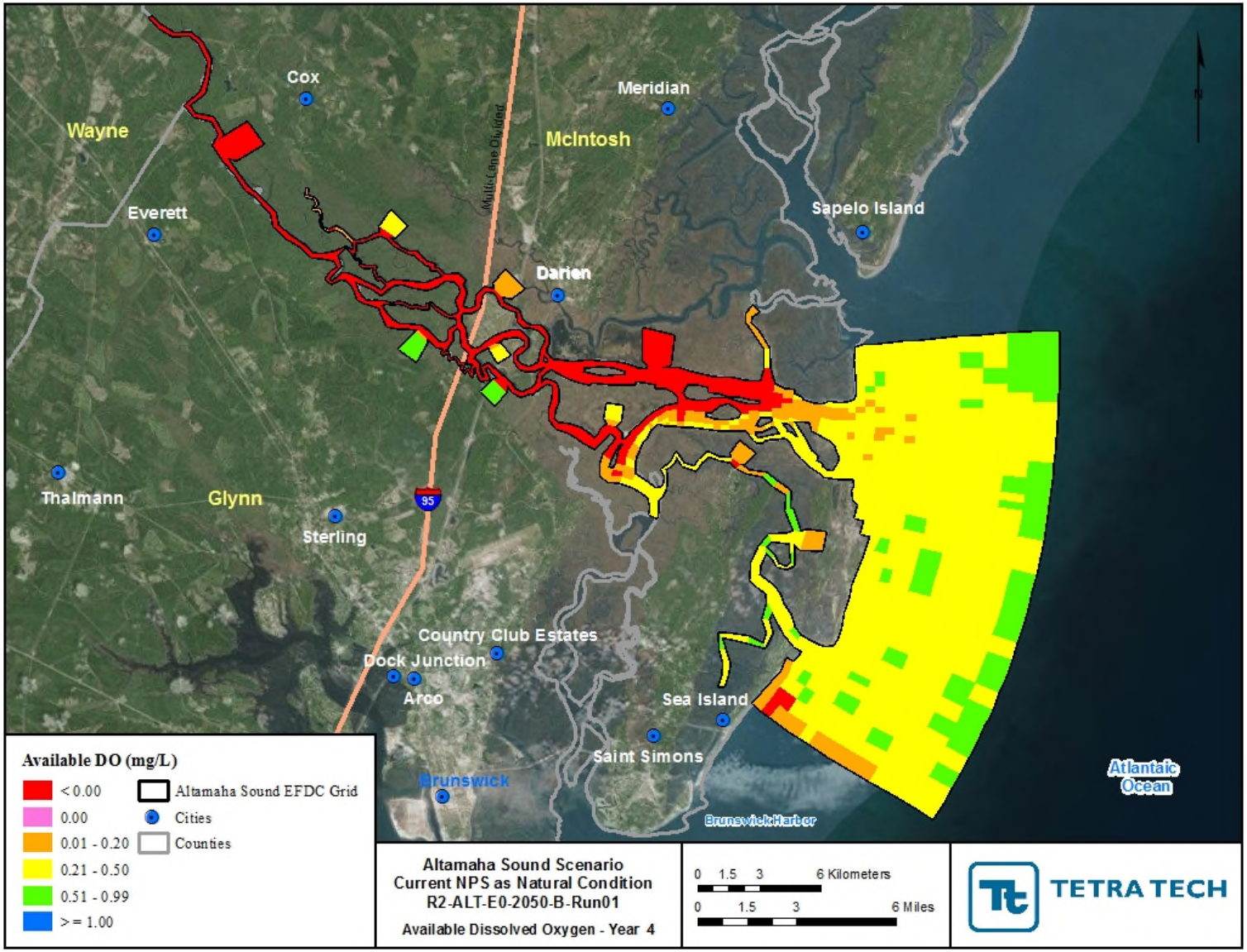

Figure B-84 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2004

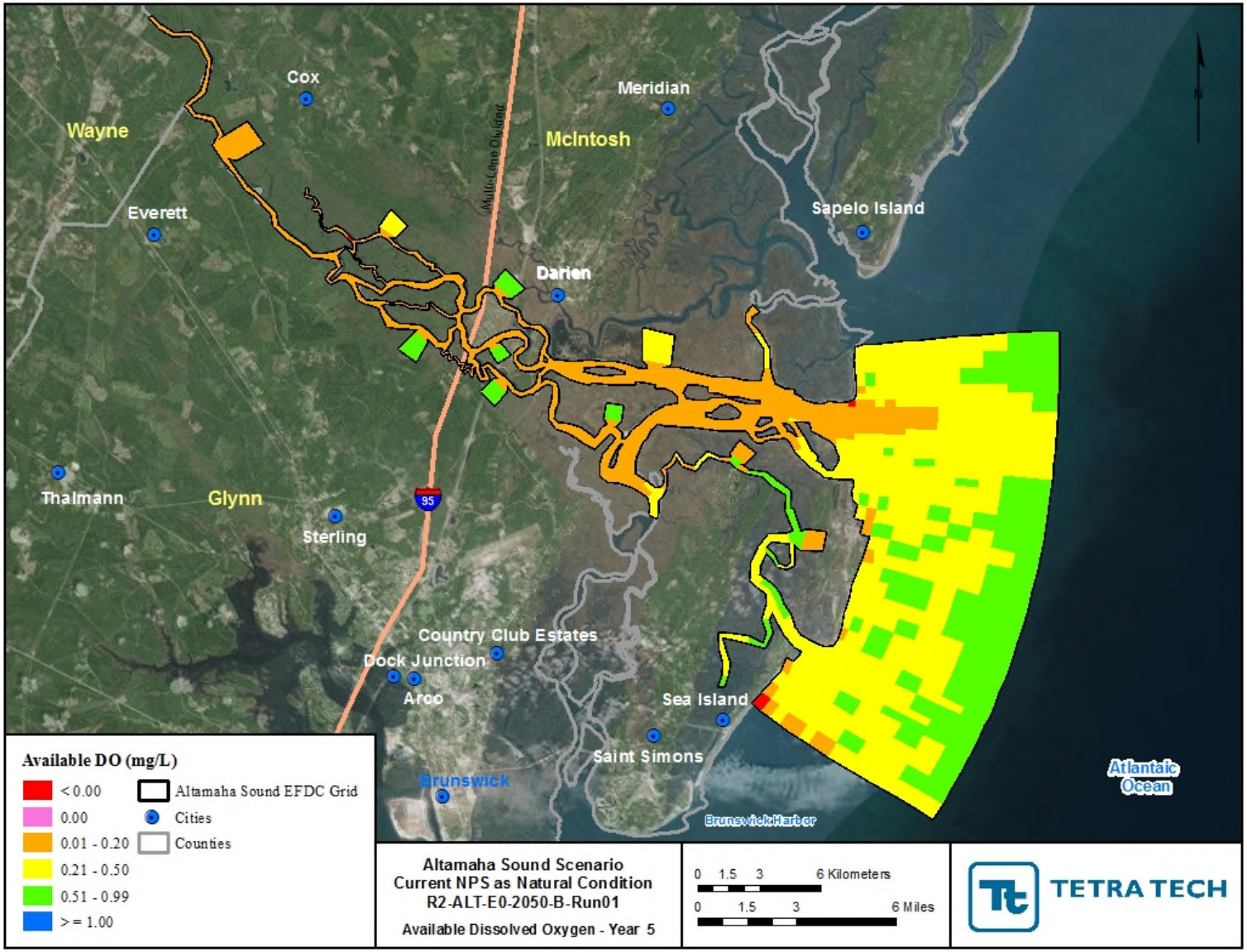

Figure B-85 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2005

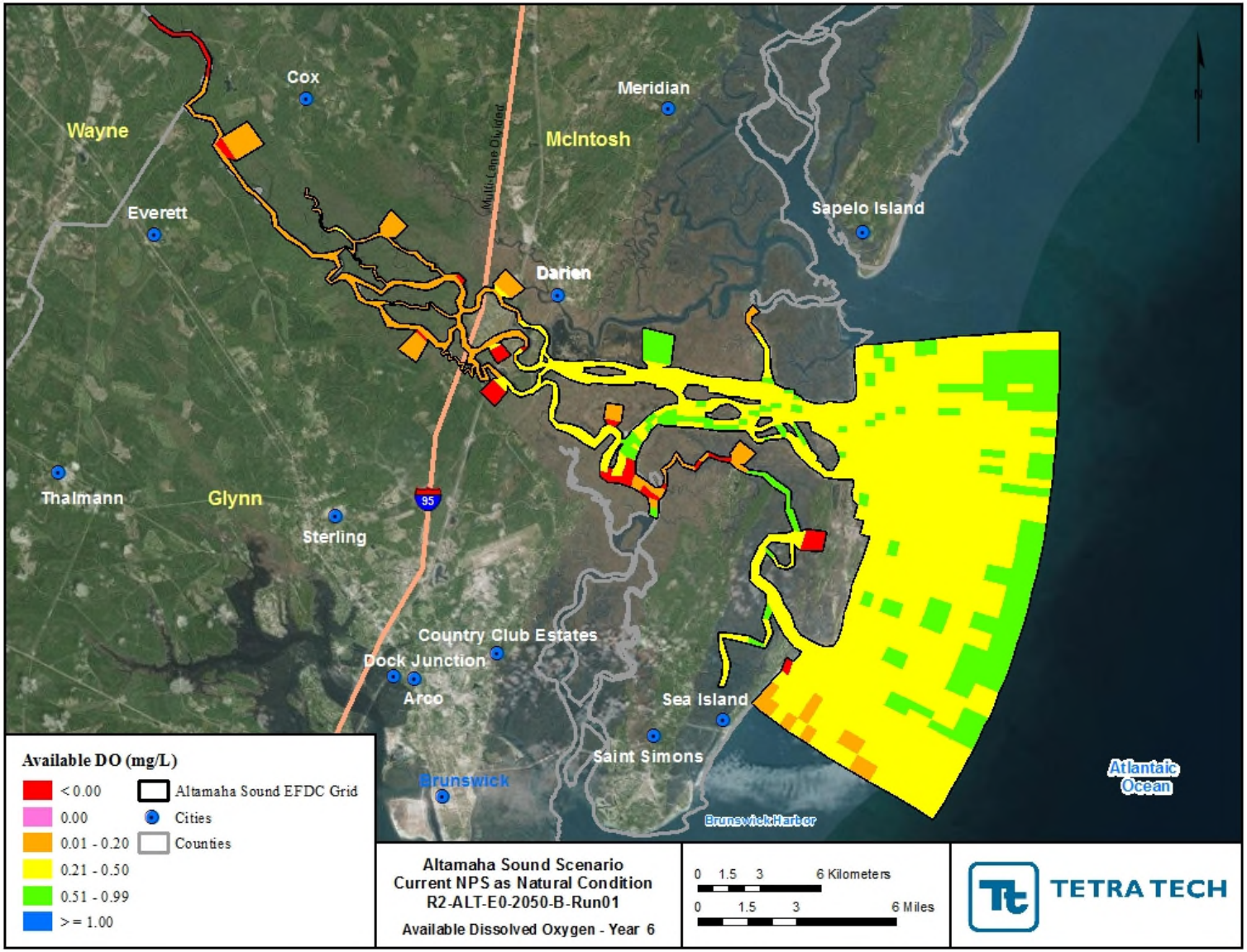

Figure B-86 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2006

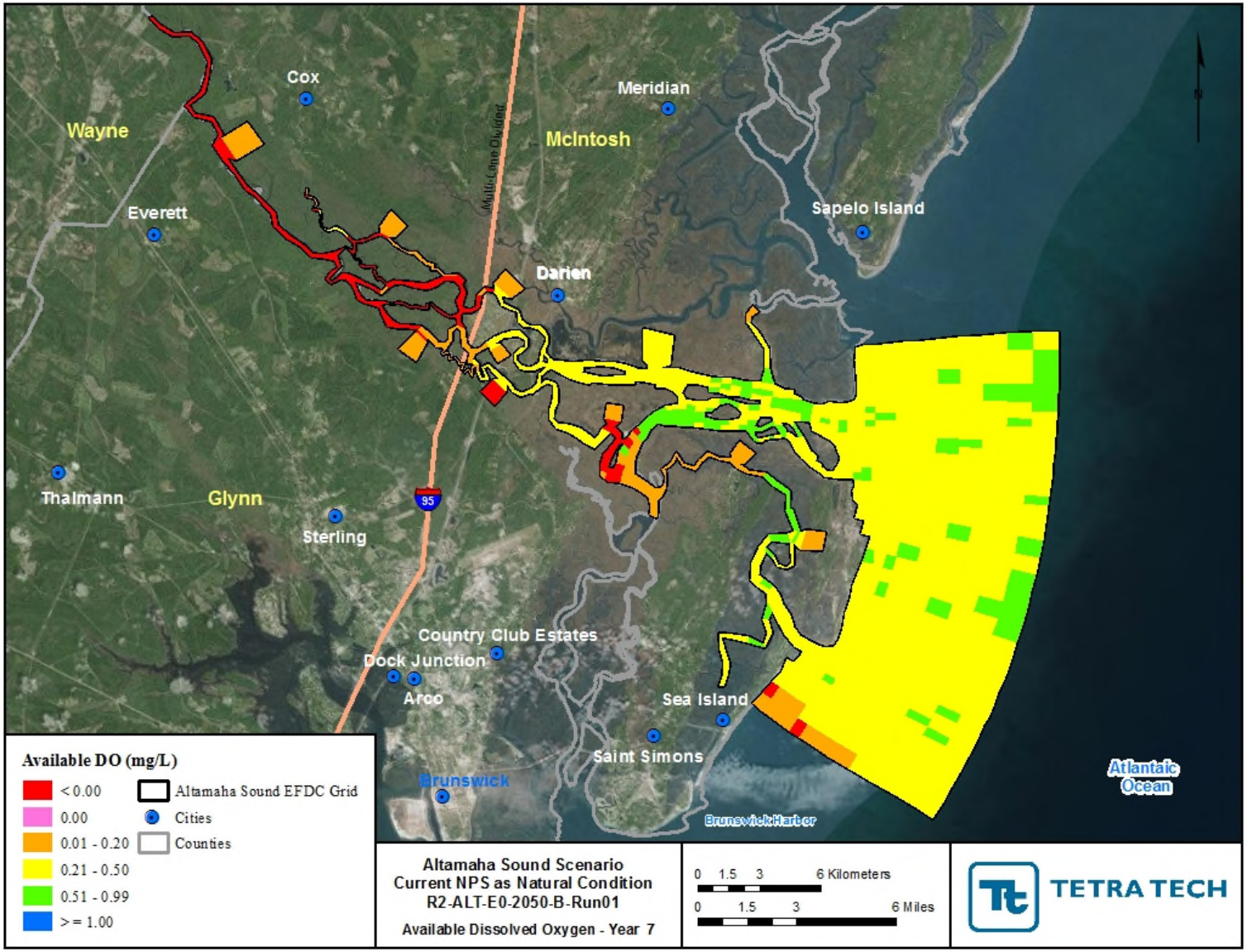

Figure B-87 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2007

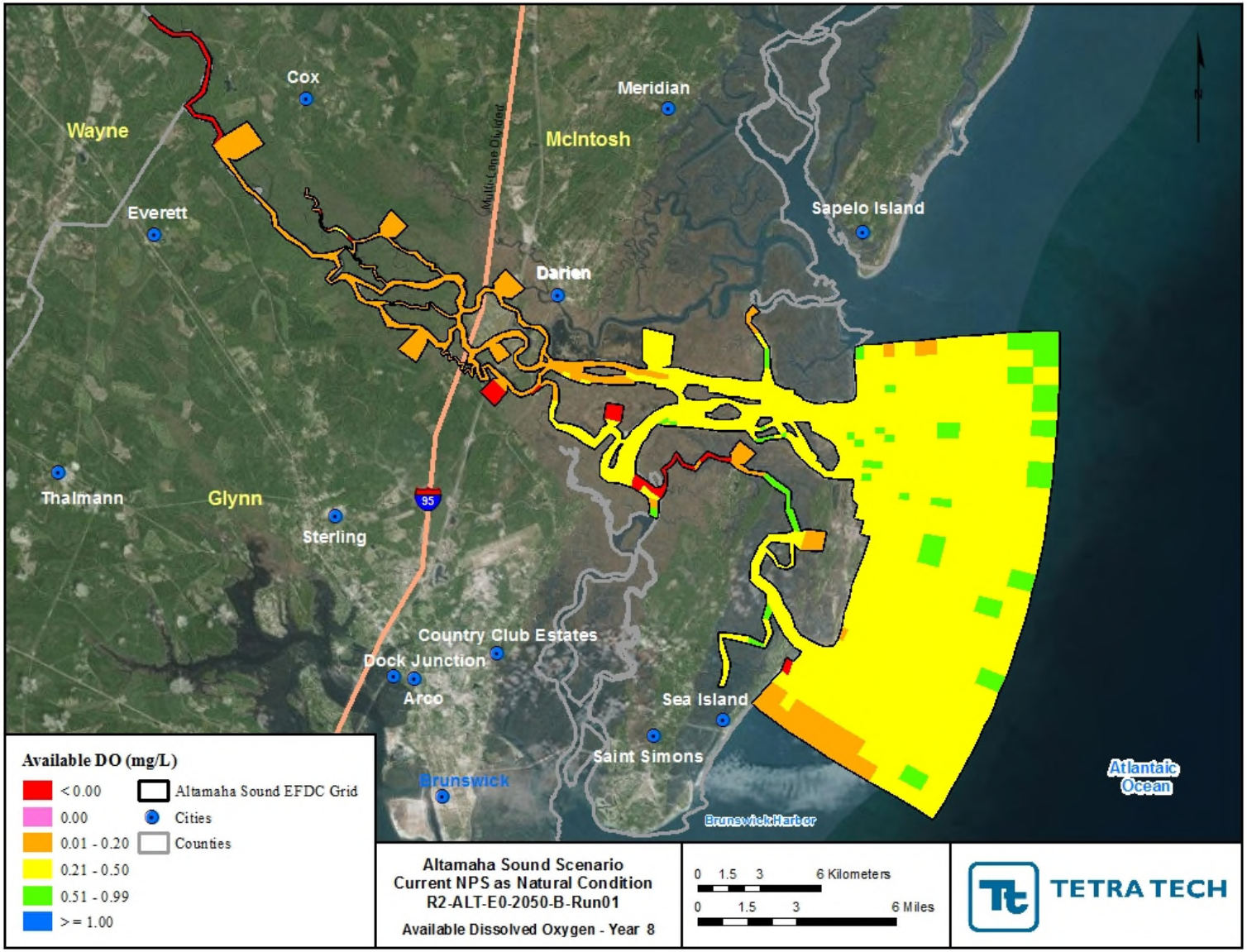

Figure B-88 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2008

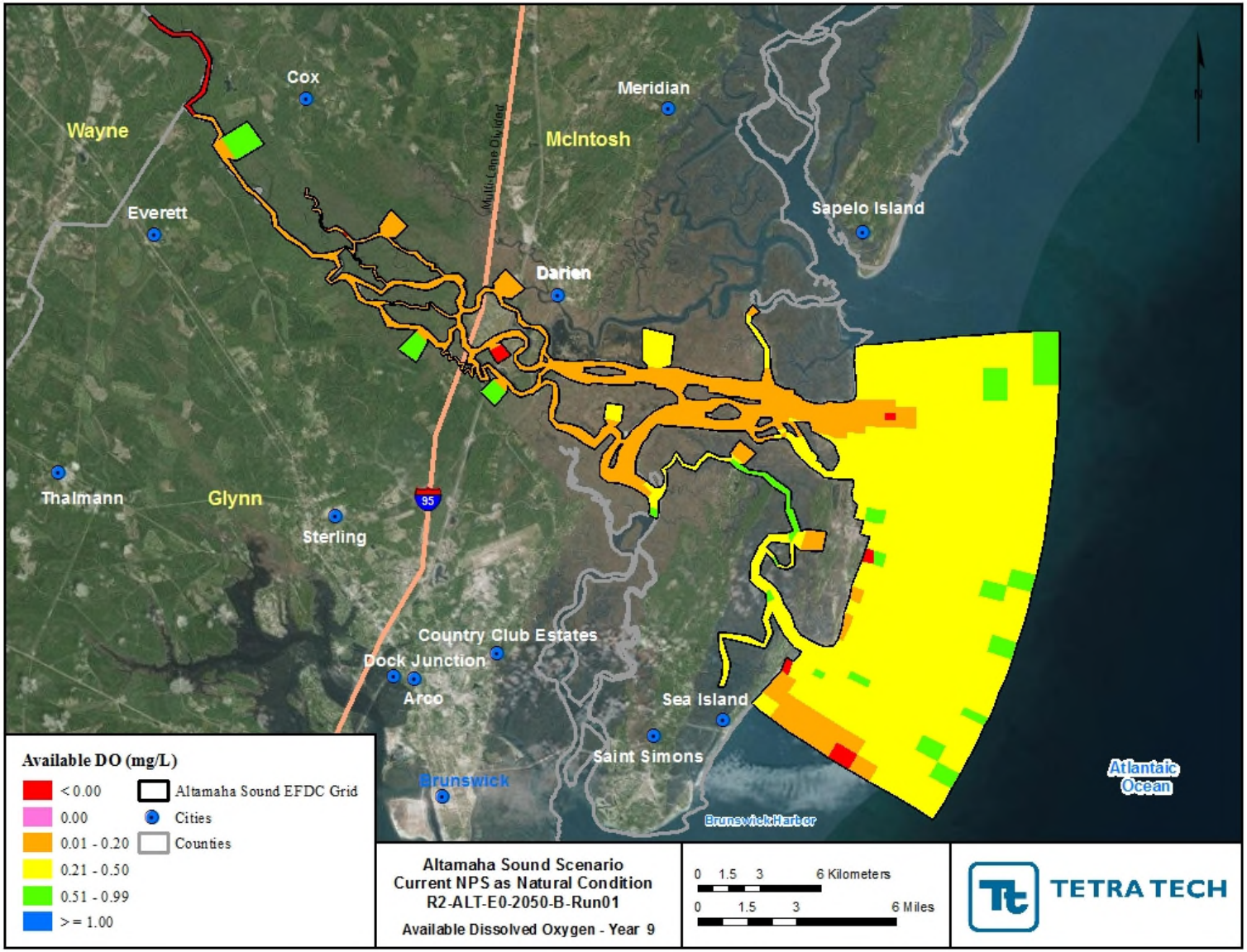

Figure B-89 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2009

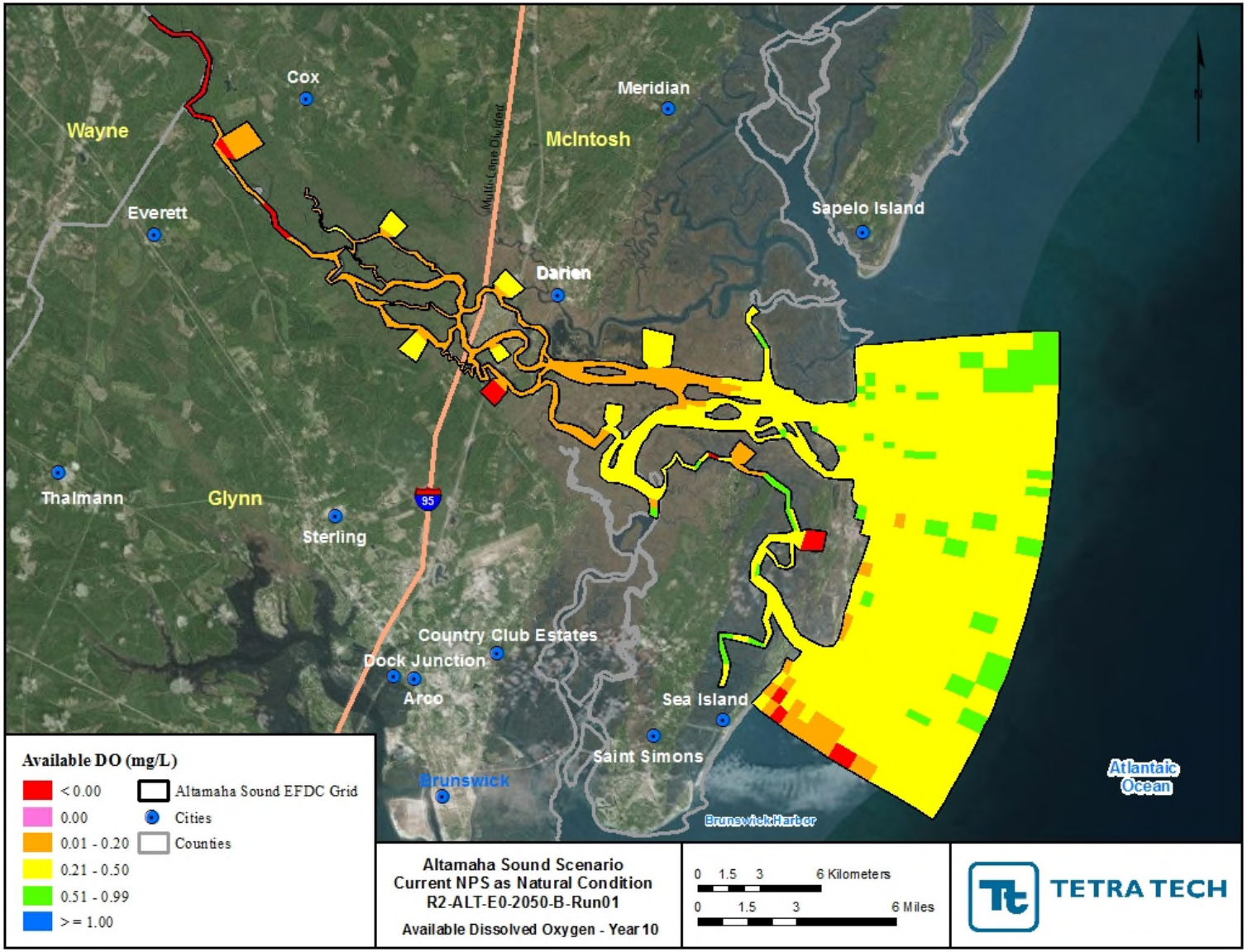

Figure B-90 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2010

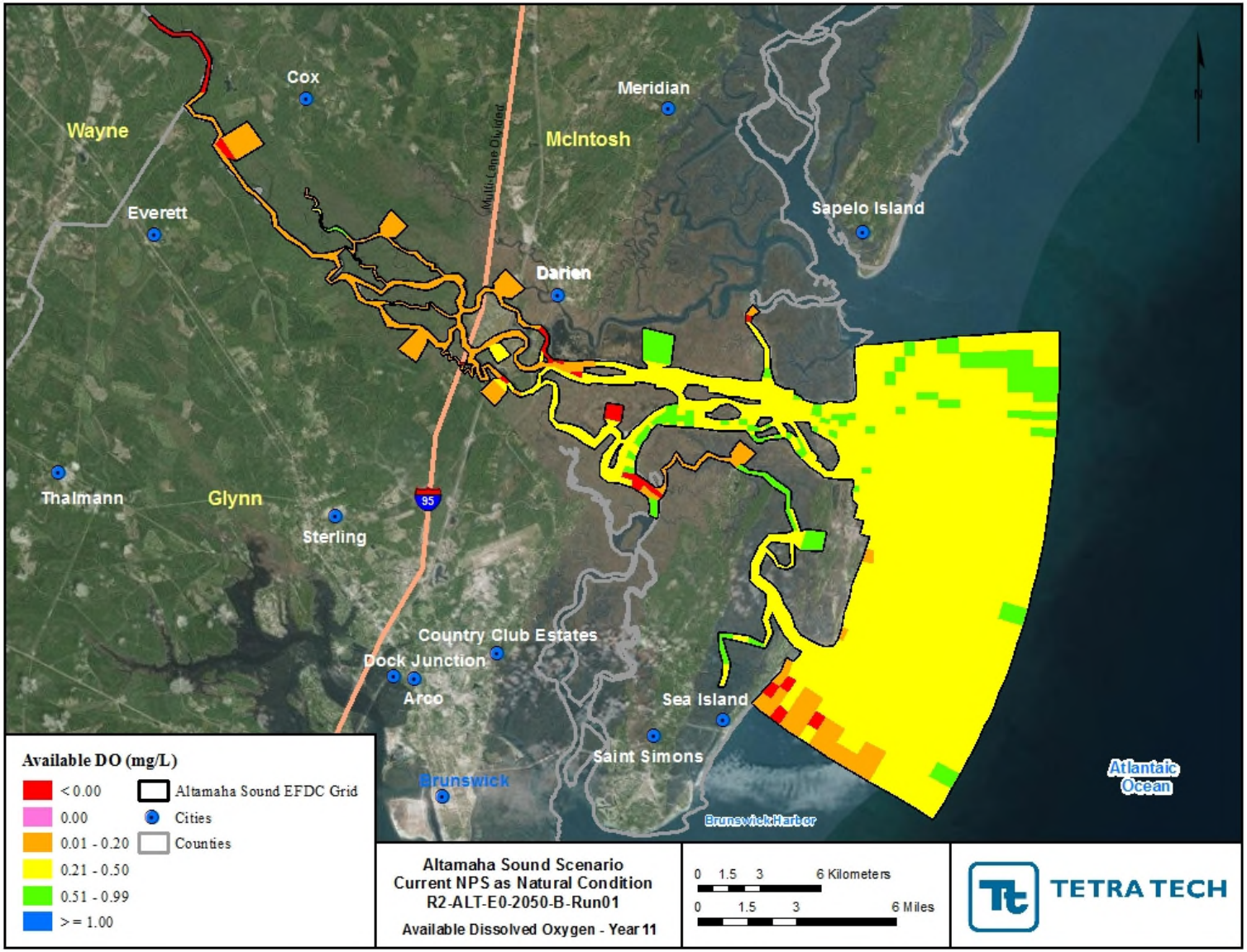

Figure B-91 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2011

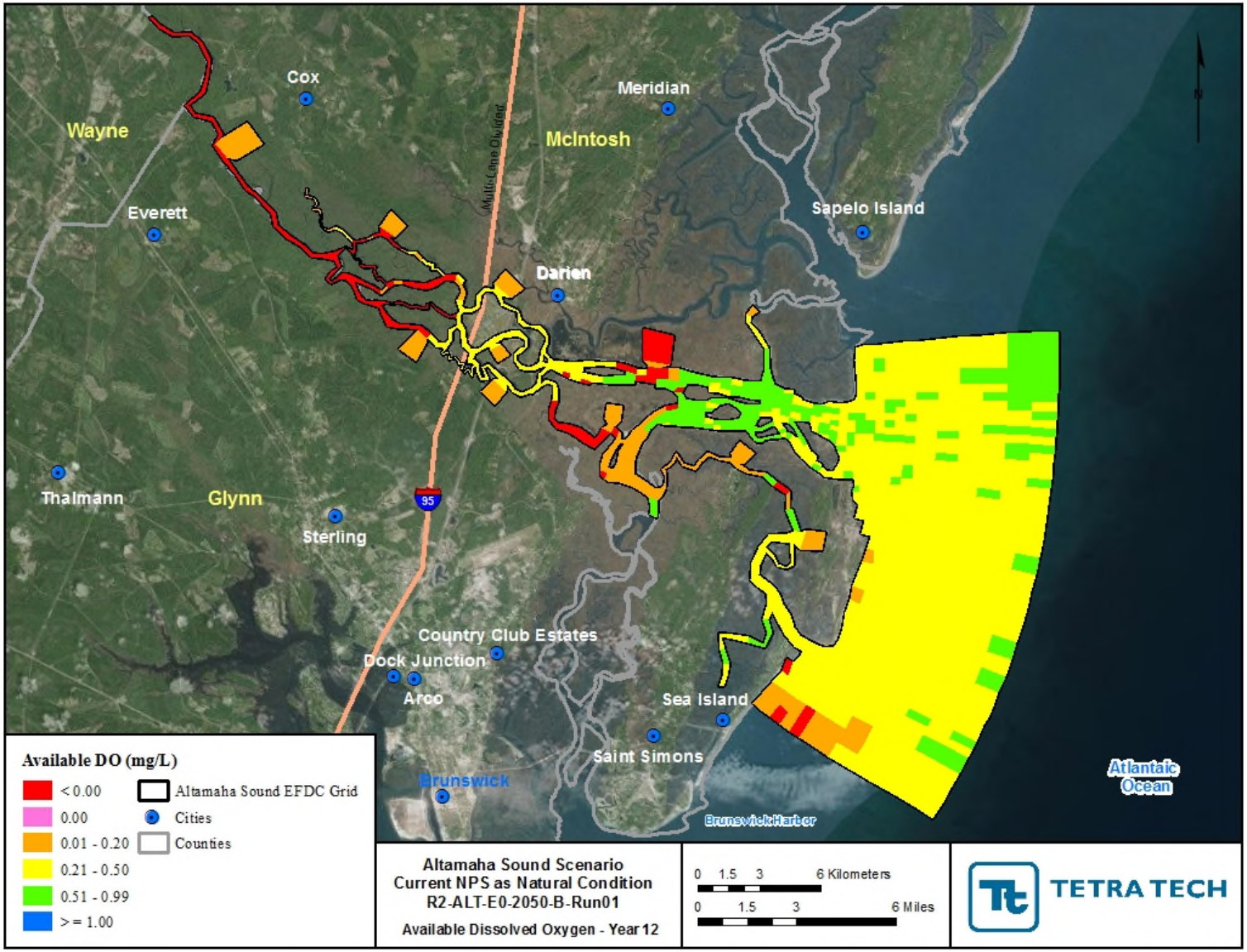

Figure B-92 Available Assimilative Capacity of Dissolved Oxygen in Altamaha Sound (Future Permit): 2012

Table B-2 Number of cells in Altamaha Sound with 0 mg/L of Assimilative Capacity

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Current Permit	11	41	7	343	5	33	118	34	12	22	25	127
Future Permit	13	156	6	338	4	29	130	35	18	20	33	123

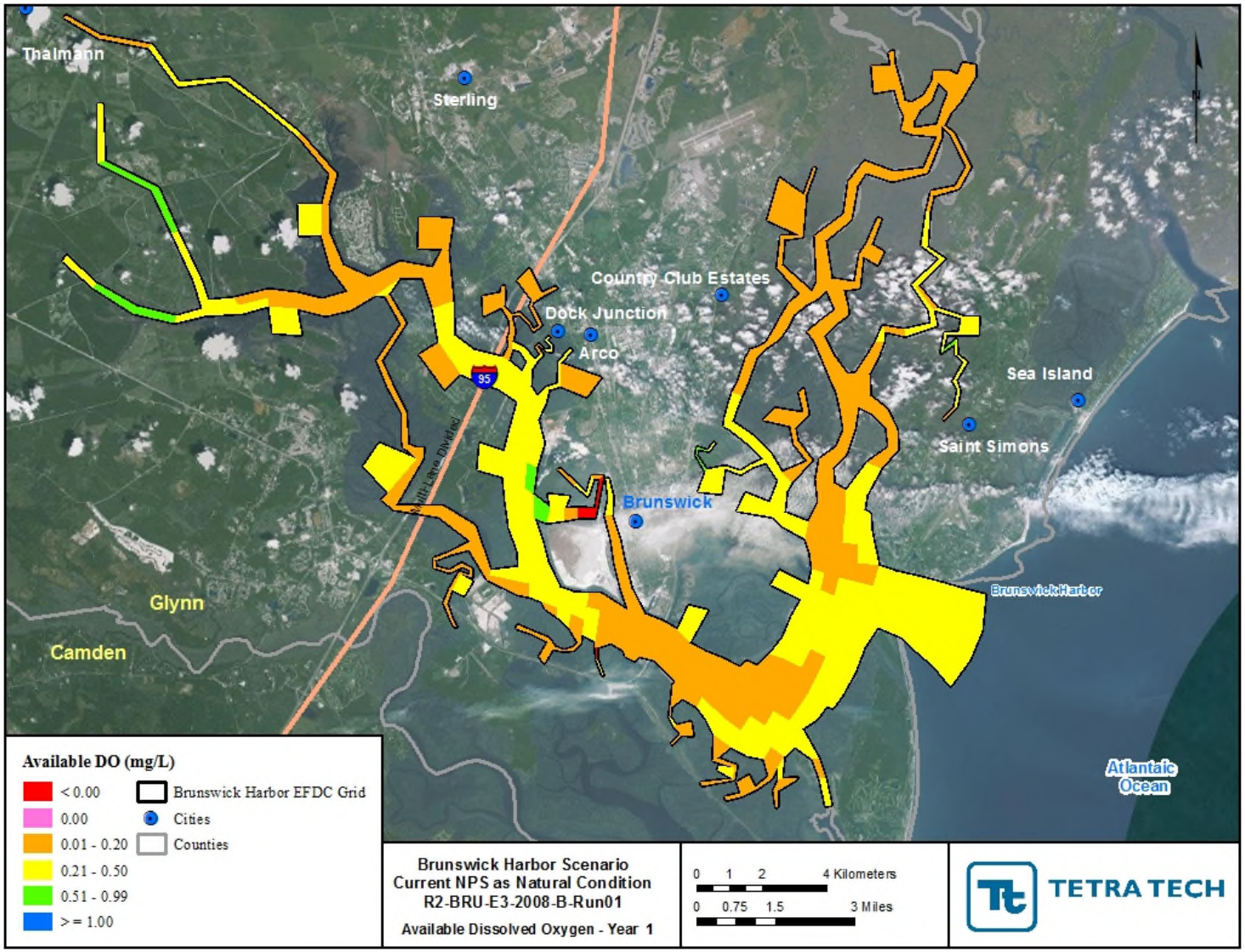

Figure B-93 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2001

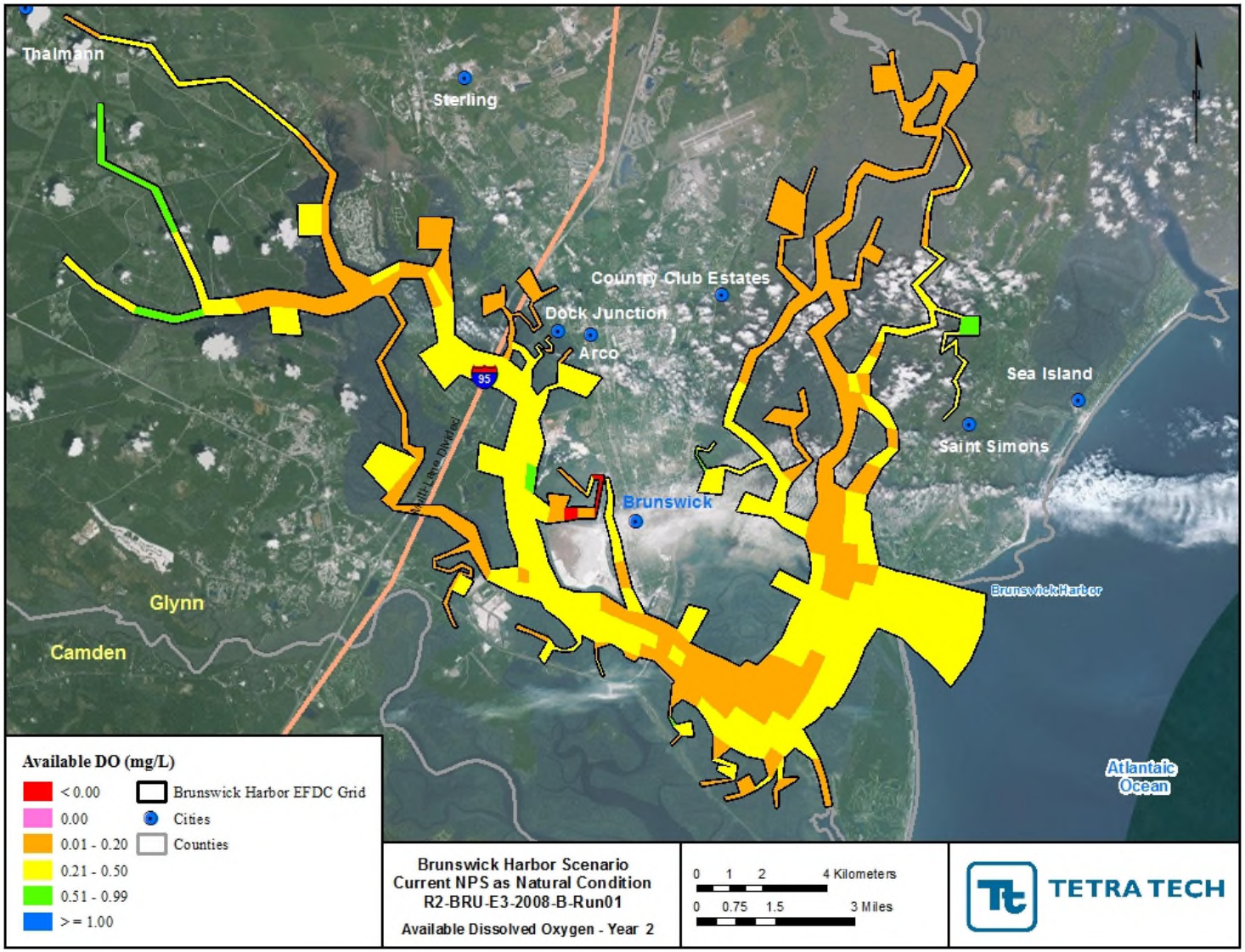

Figure B-94 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2002

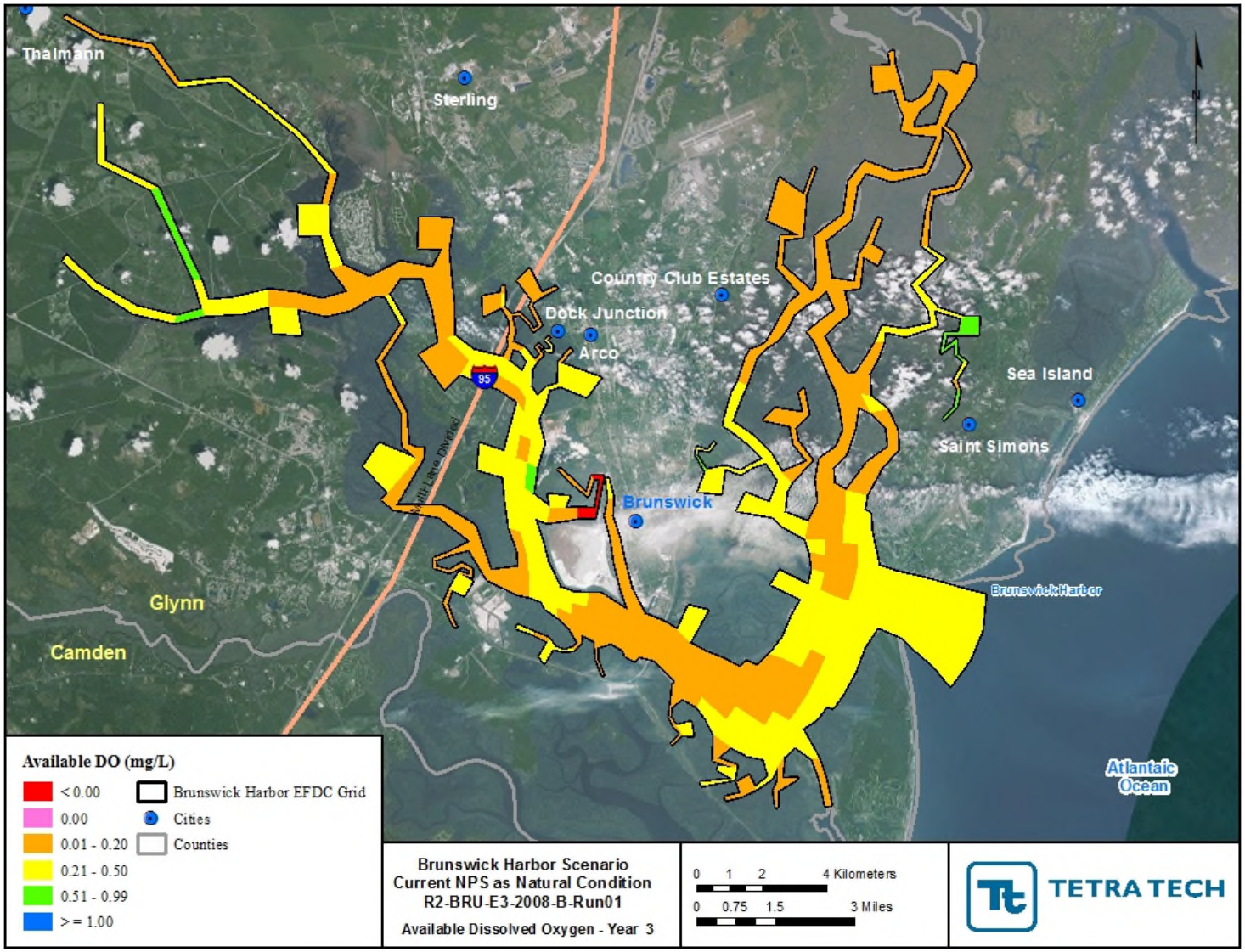

Figure B-95 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2003

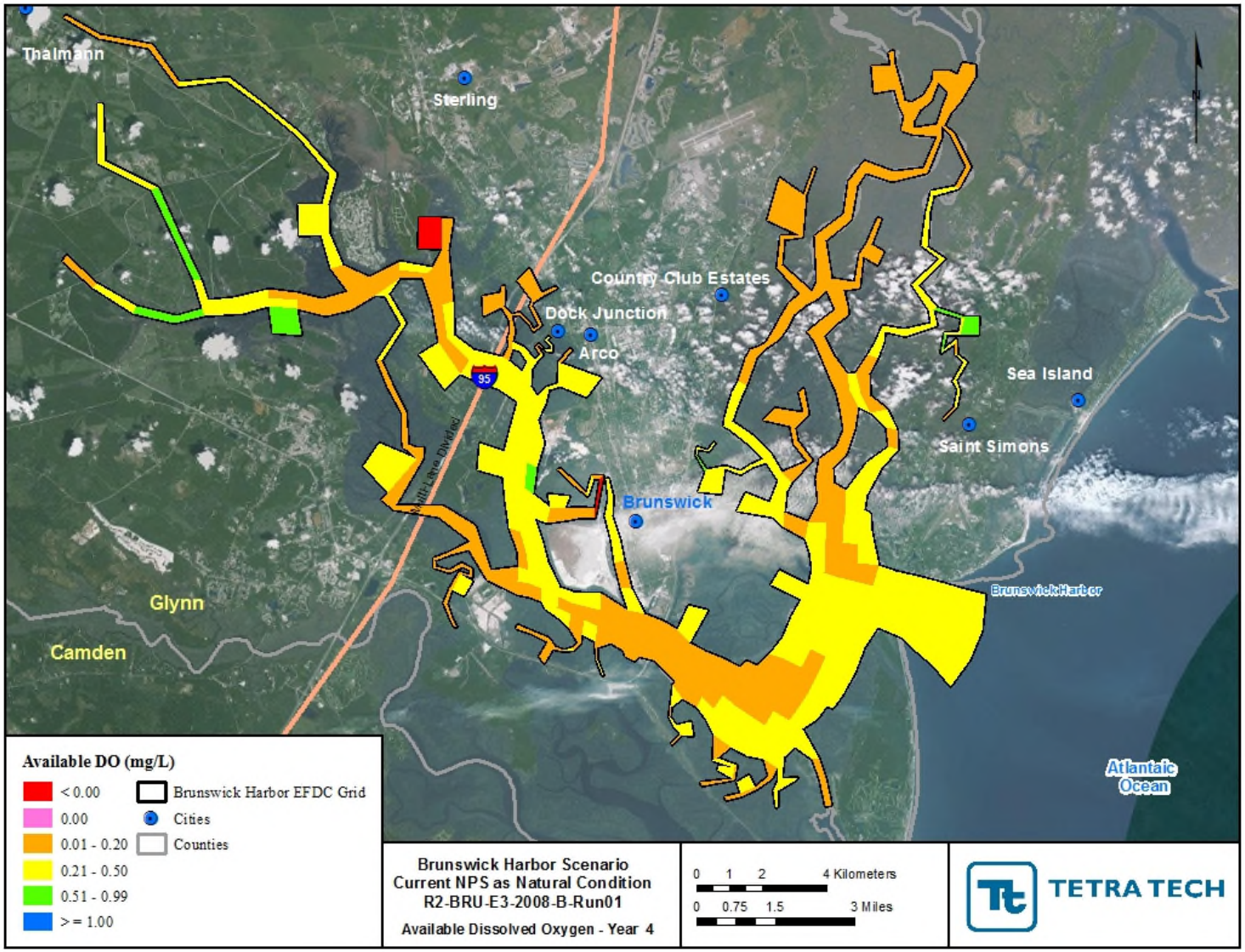

Figure B-96 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2004

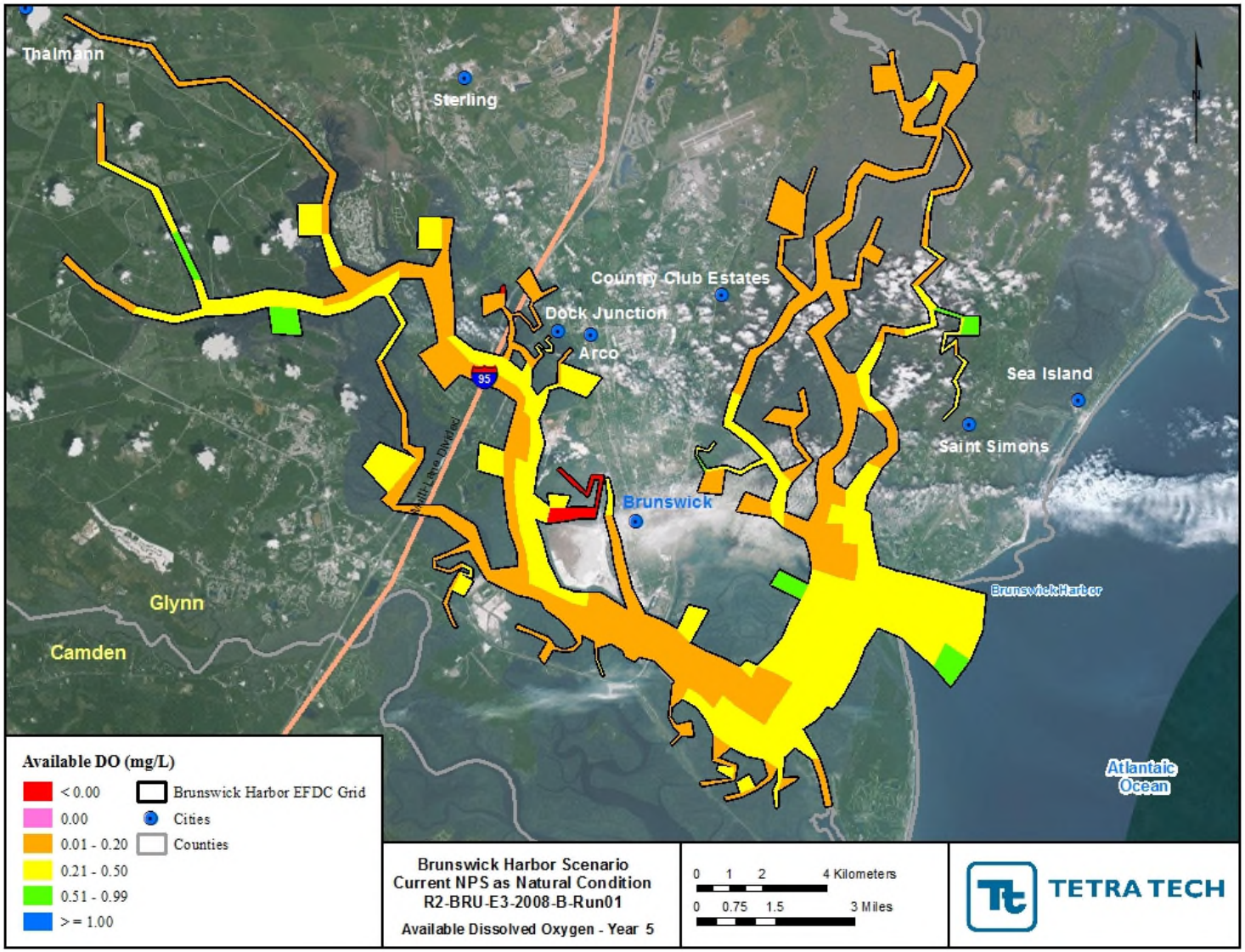

Figure B-97 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2005

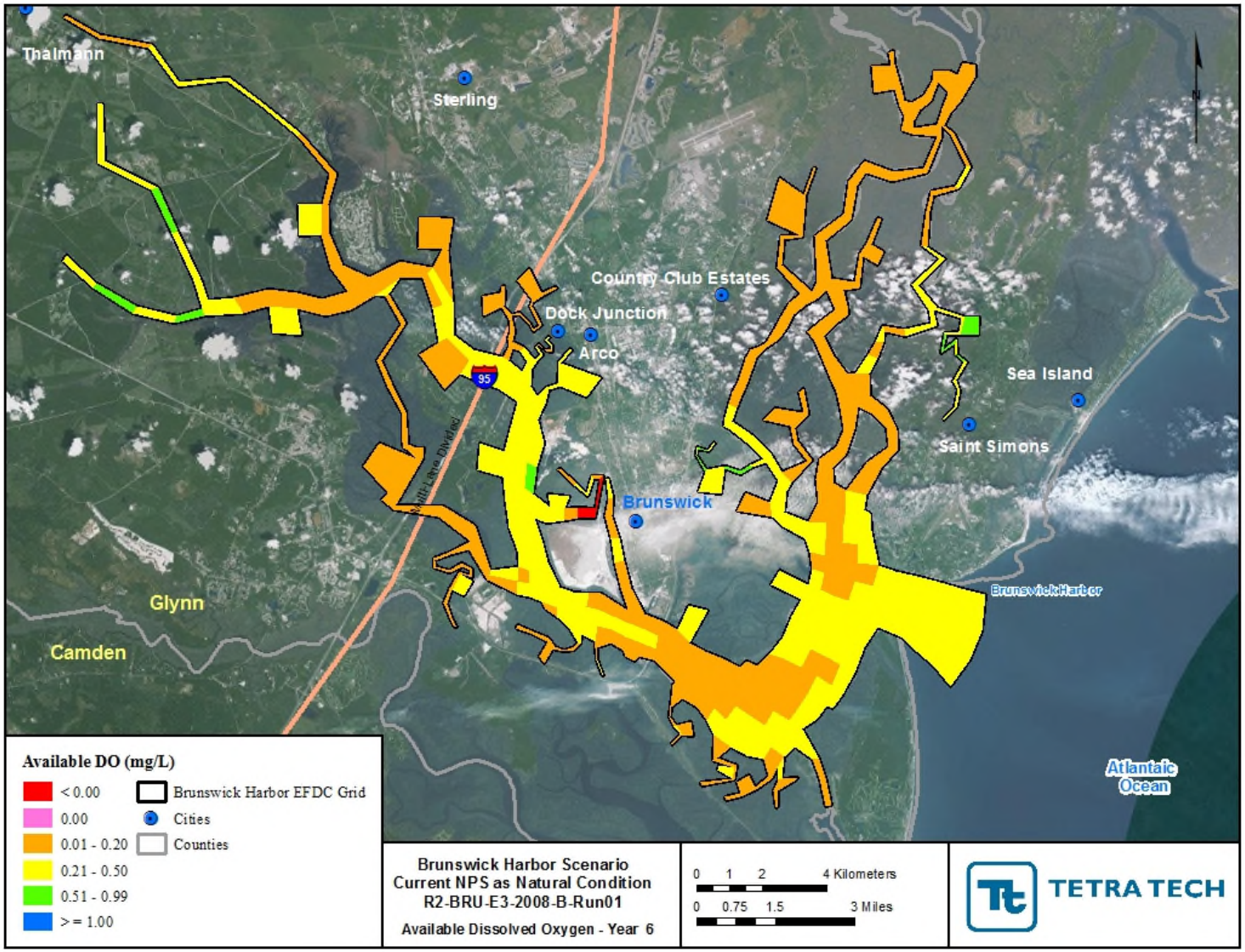

Figure B-98 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2006

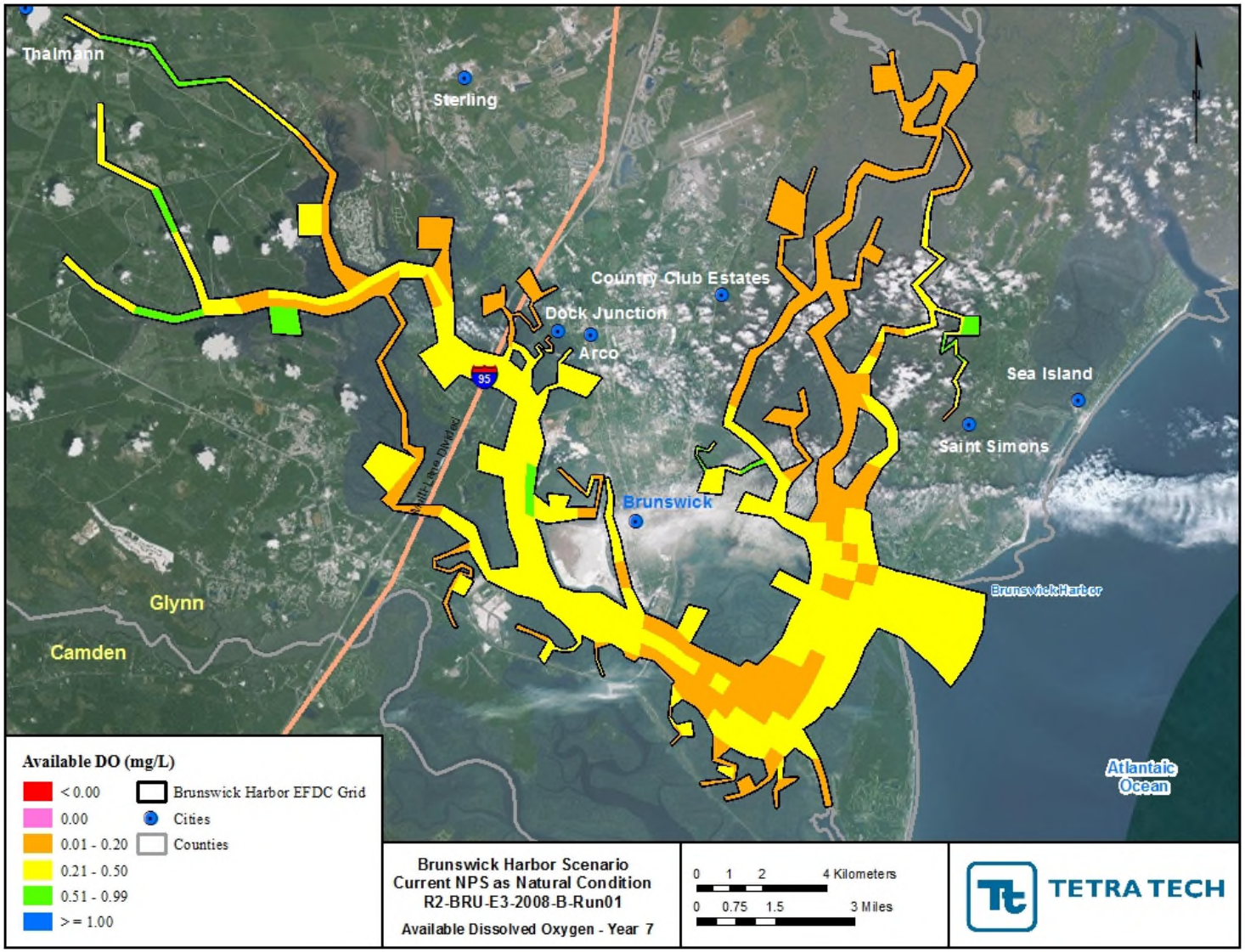

Figure B-99 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2007

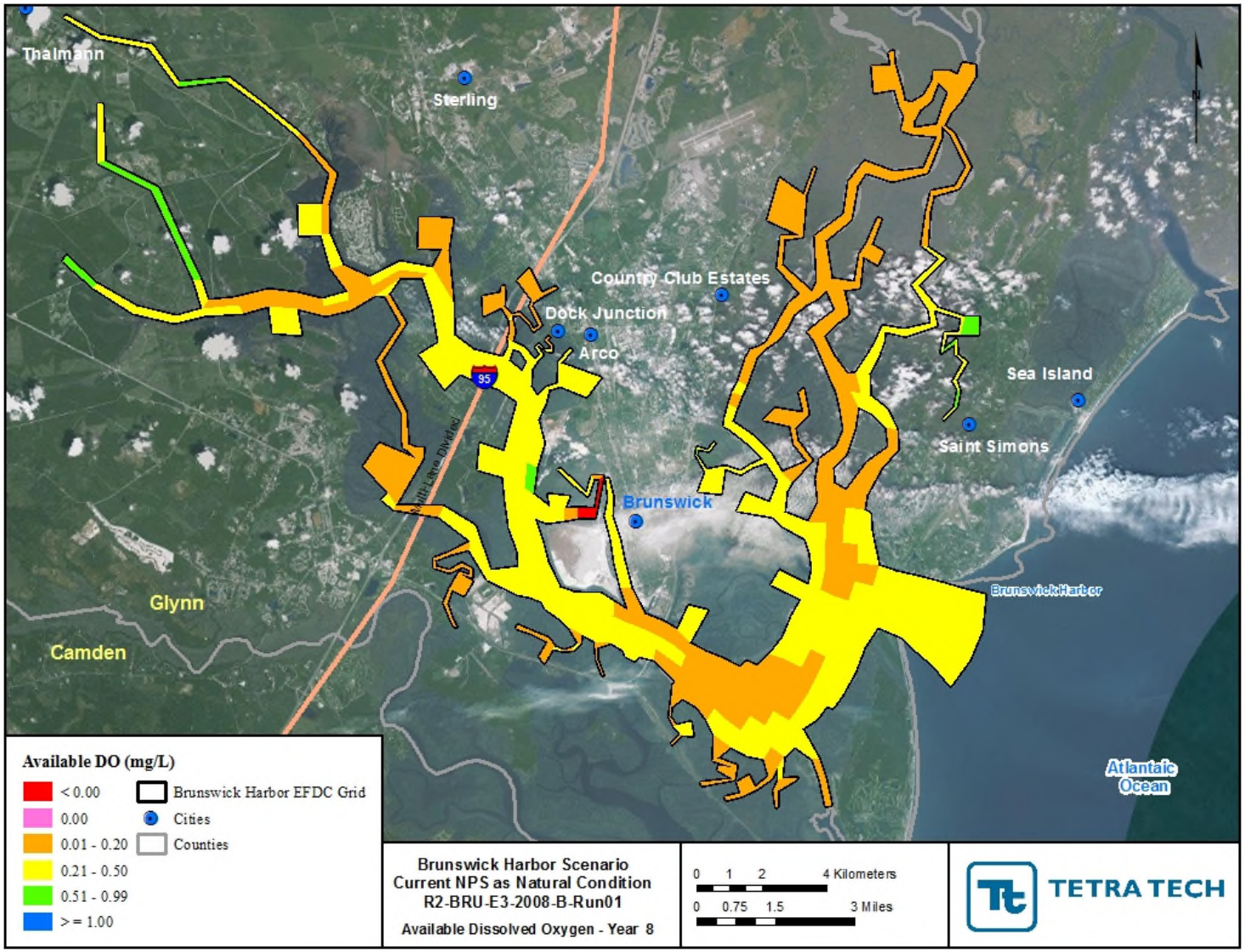

Figure B-100 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2008

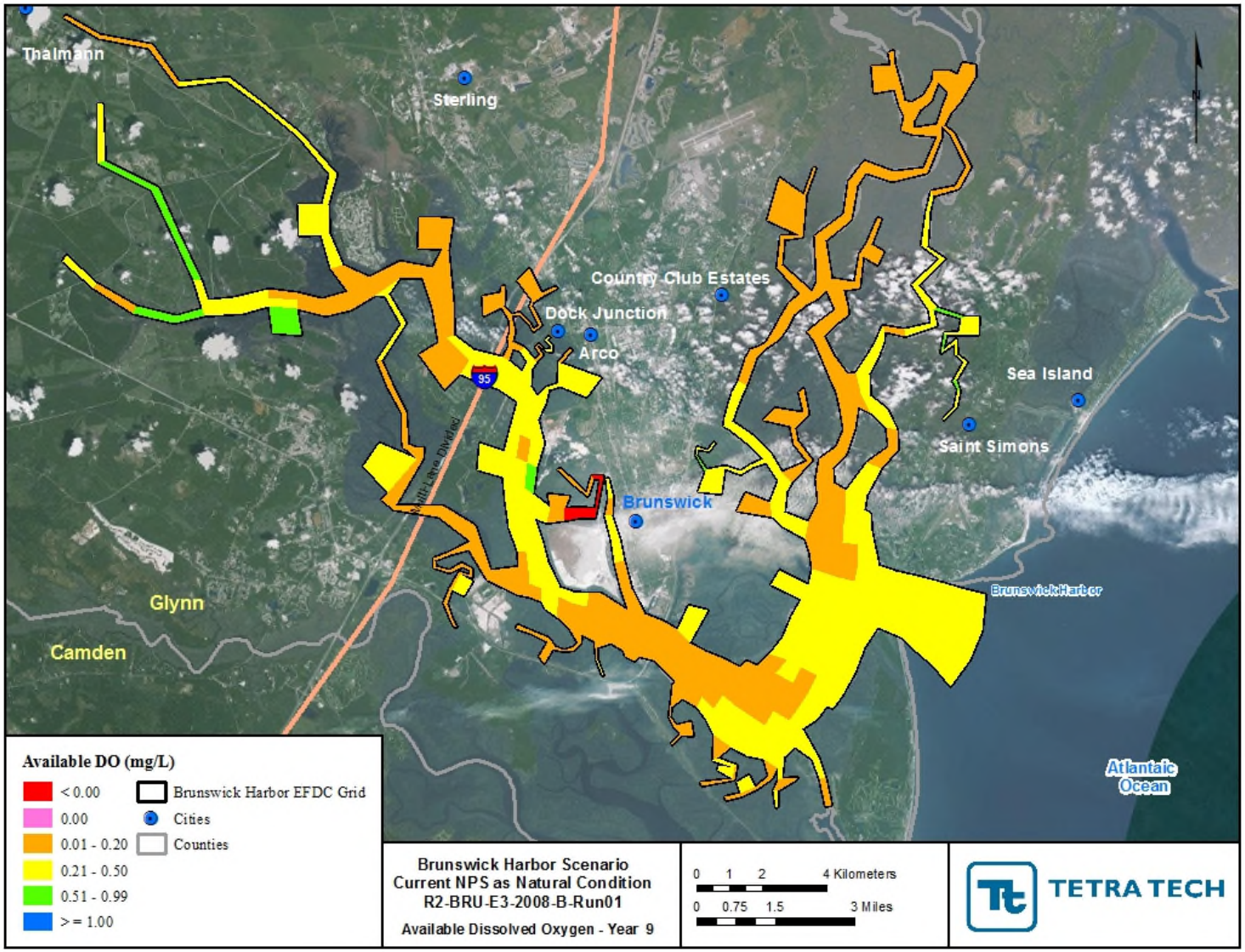

Figure B-101 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2009

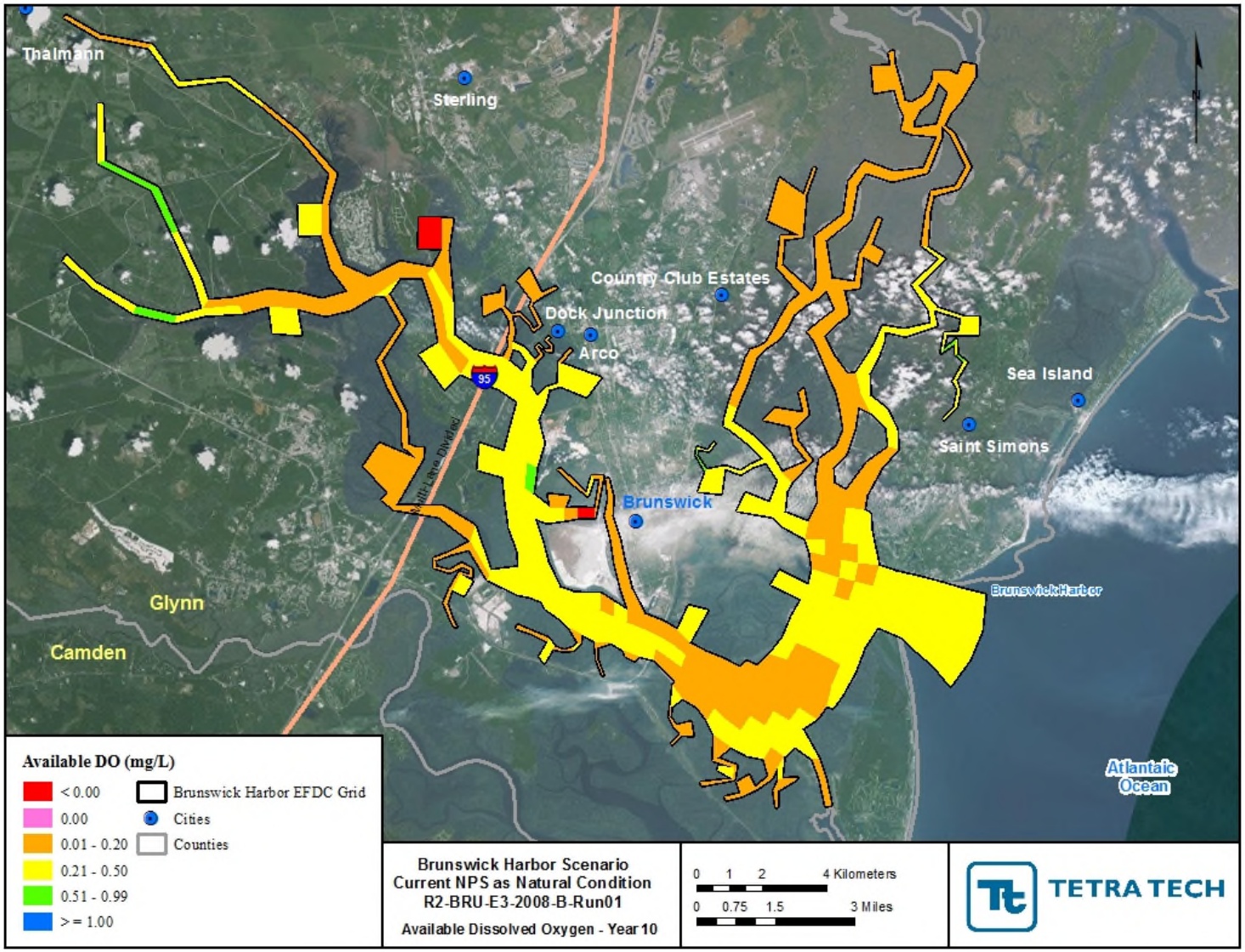

Figure B-102 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2010

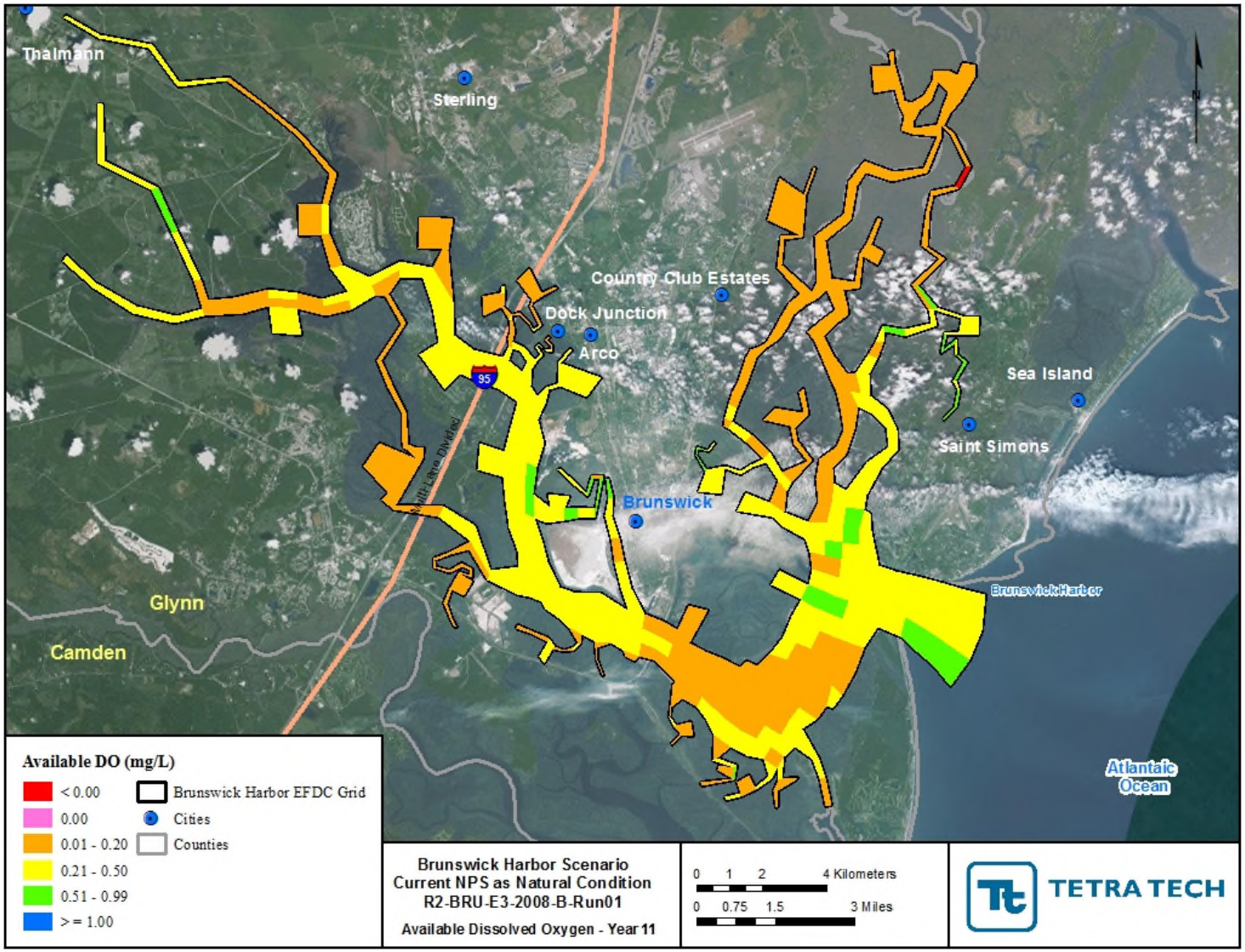

Figure B-103 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2011

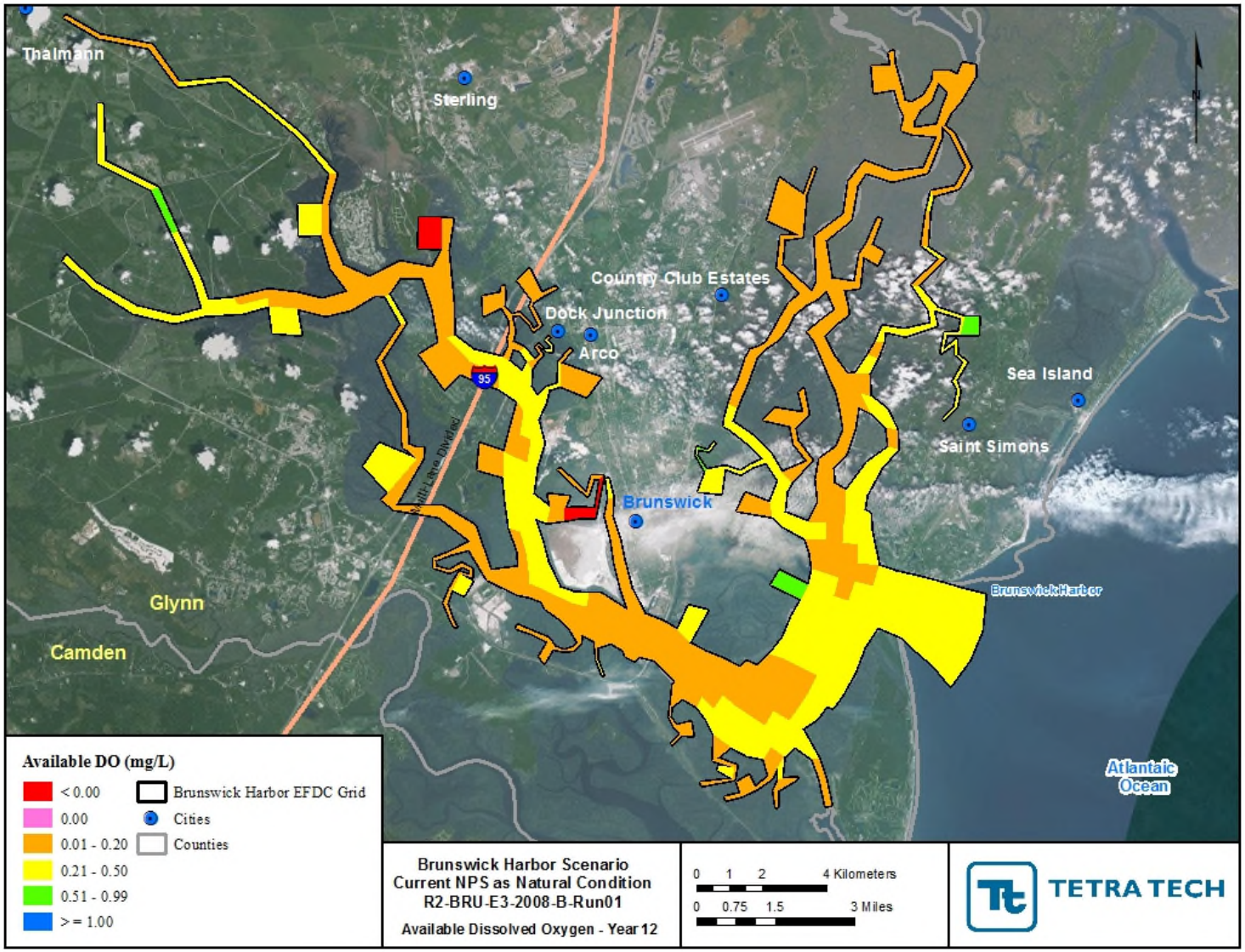

Figure B-104 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Current Permit): 2012

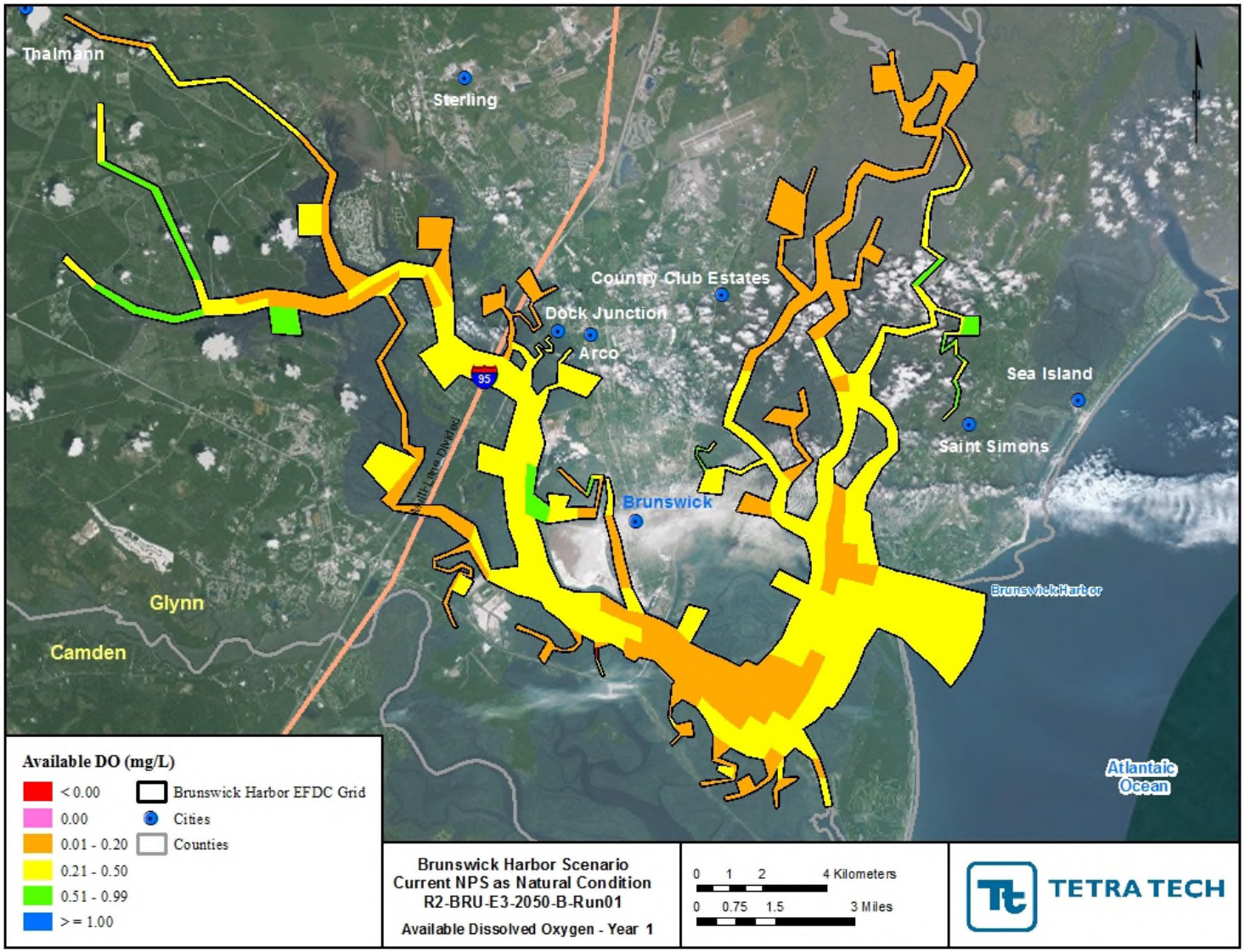

Figure B-105 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2001

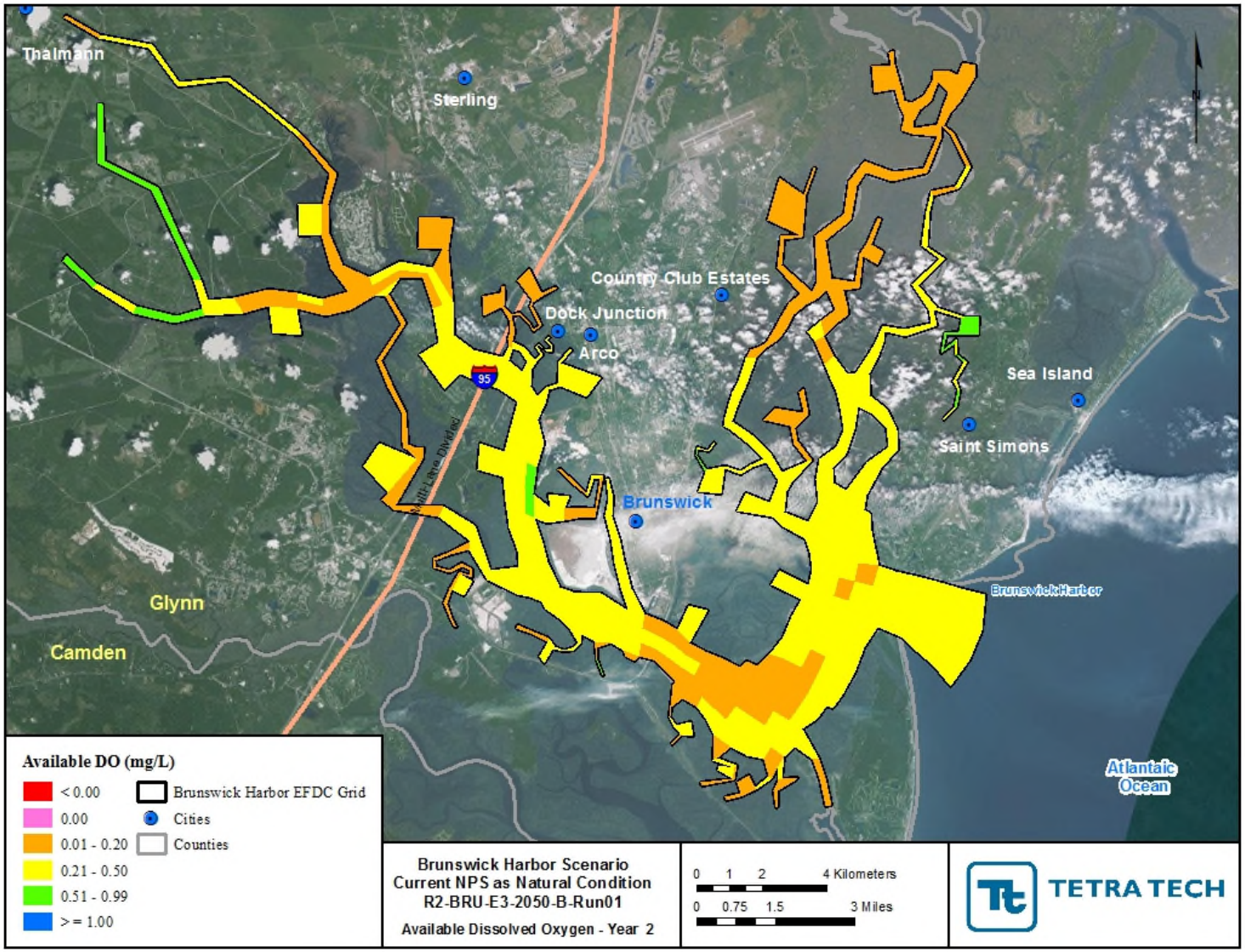

Figure B-106 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2002

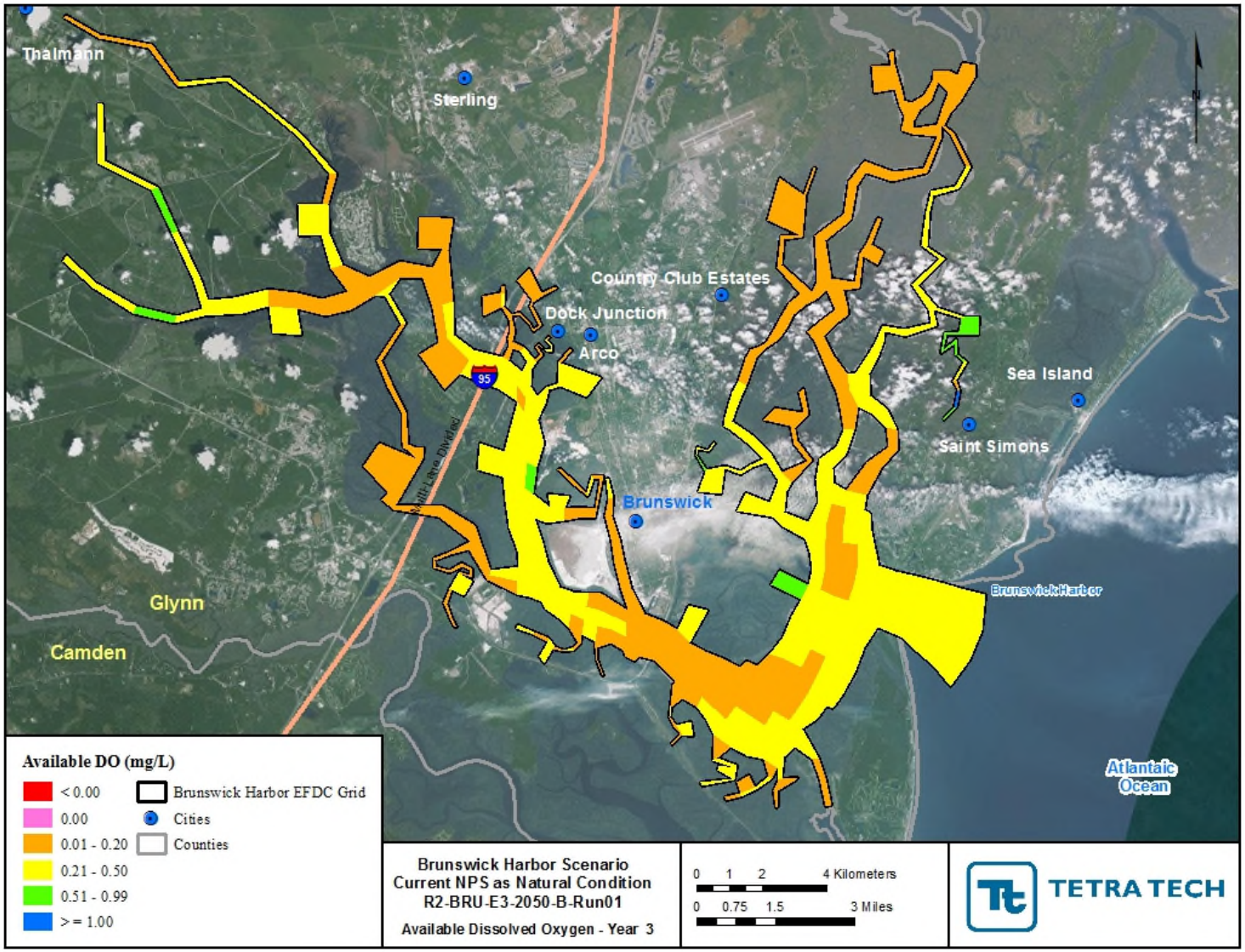

Figure B-107 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2003

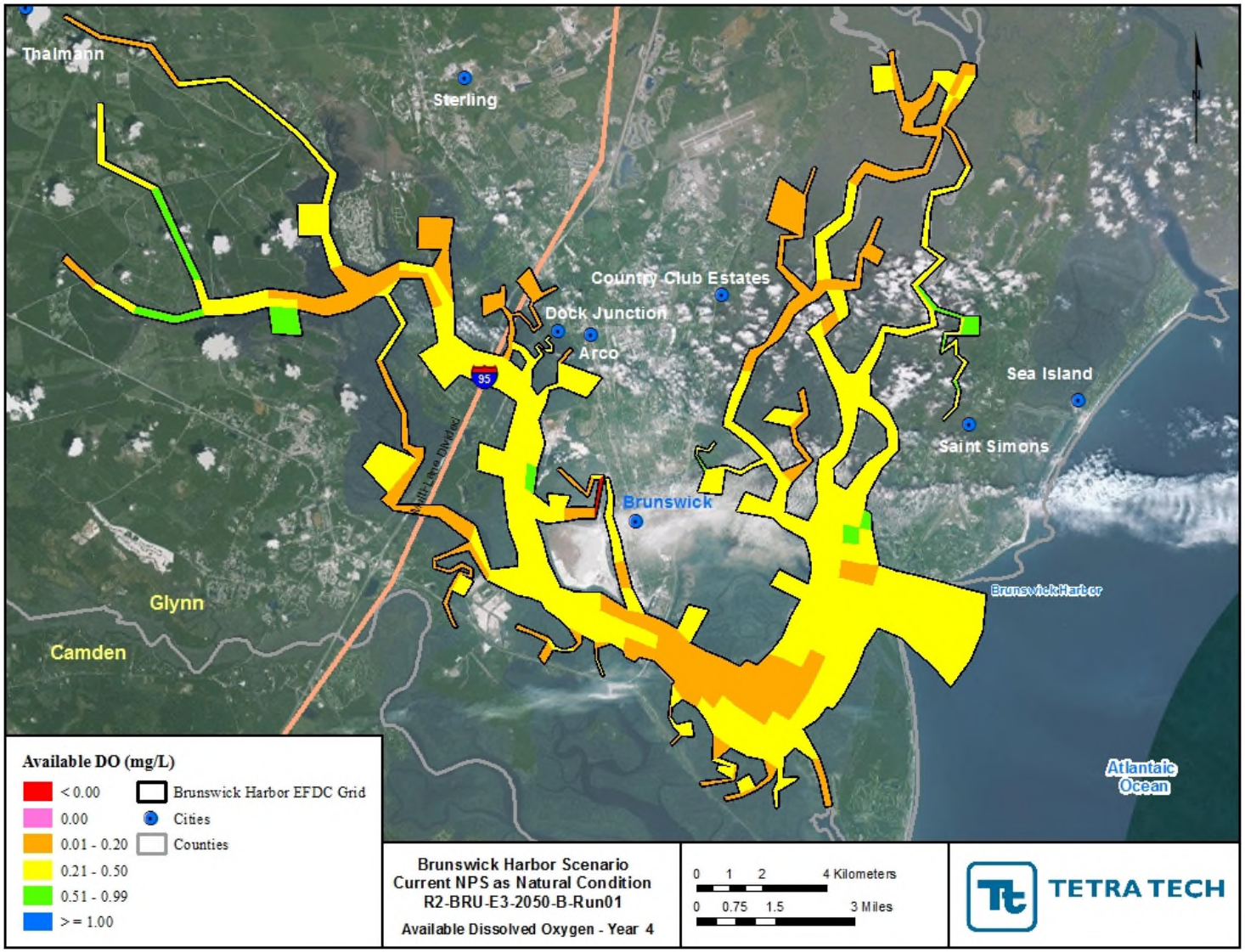

Figure B-108 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2004

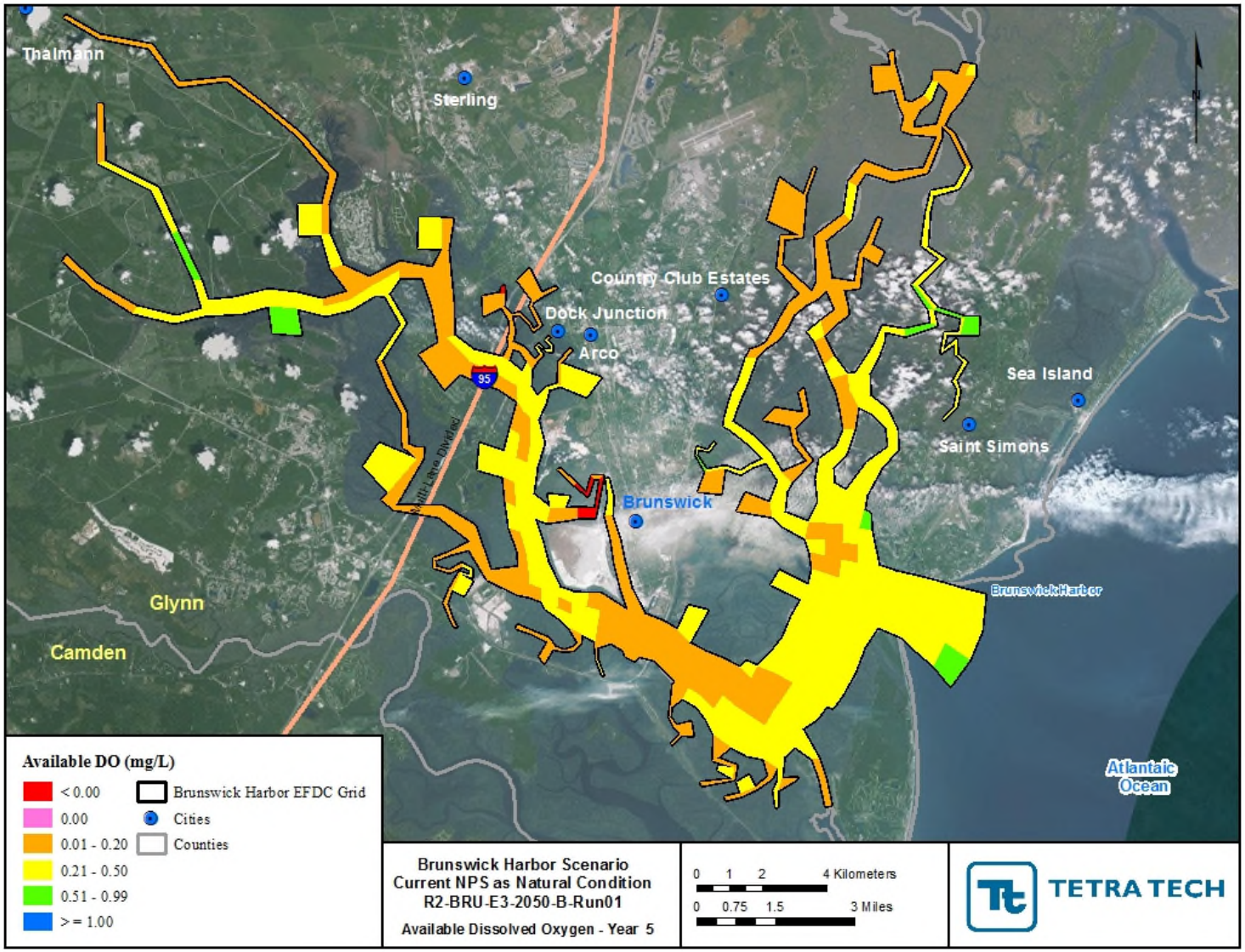

Figure B-109 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2005

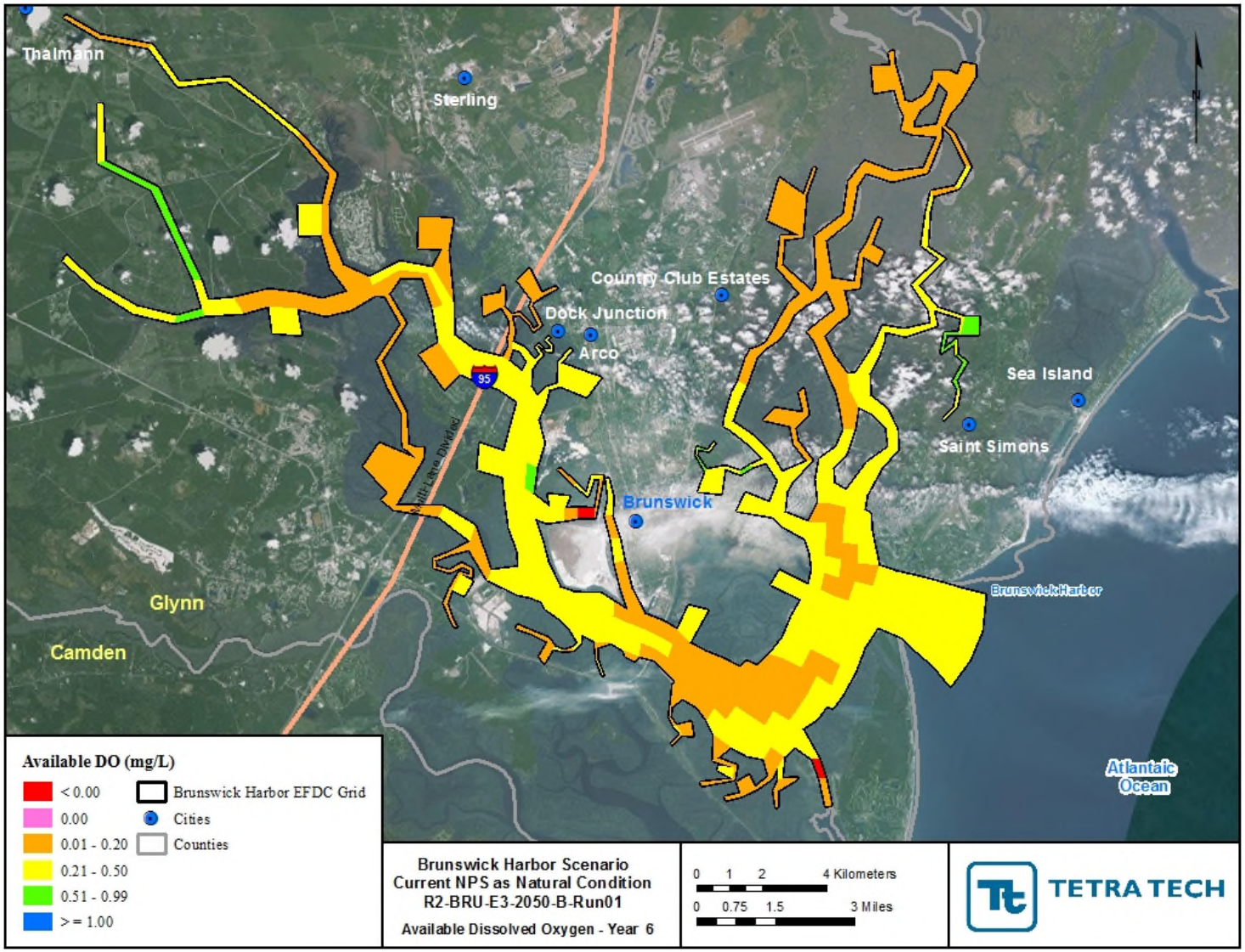

Figure B-110 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2006

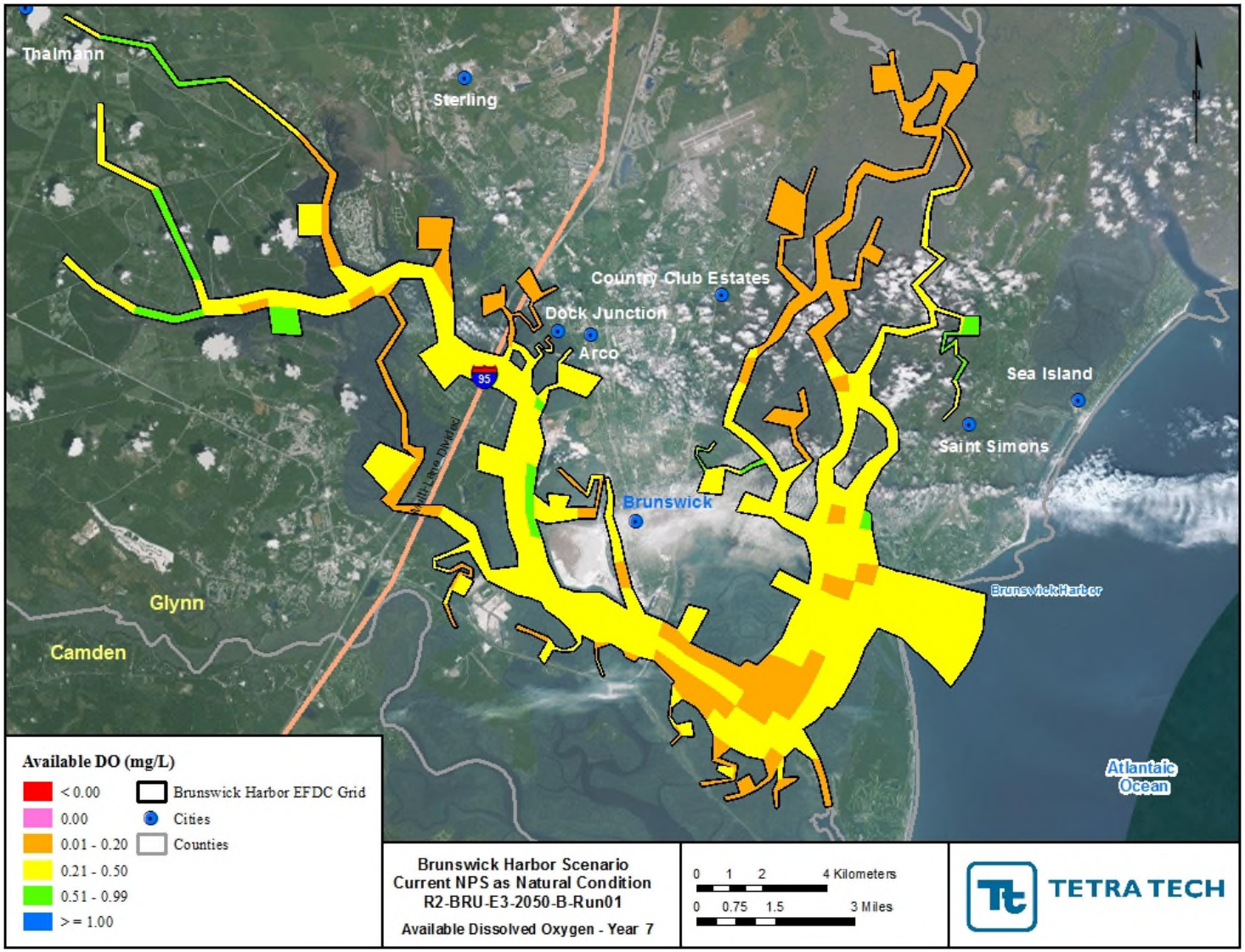

Figure B-111 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2007

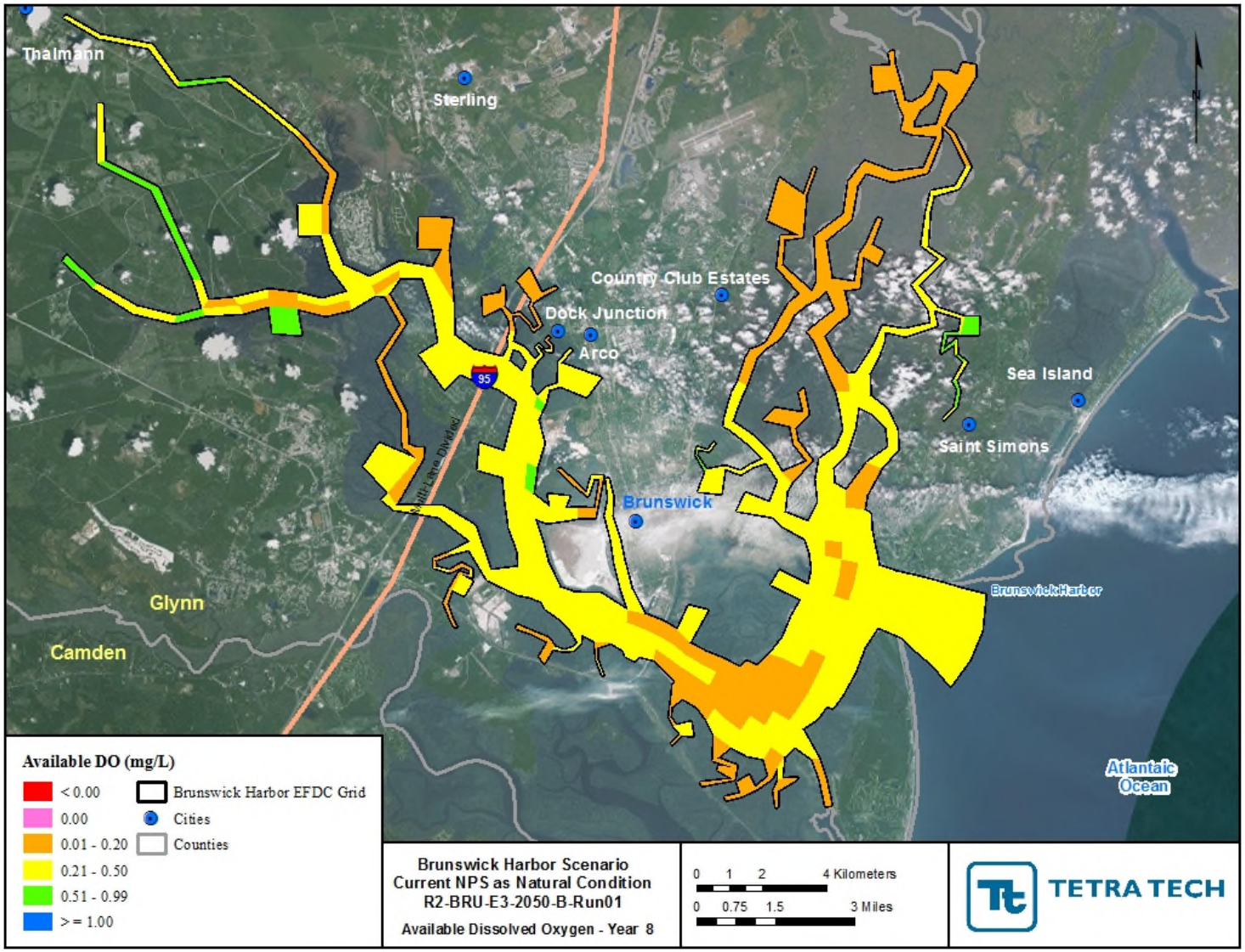

Figure B-112 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2008

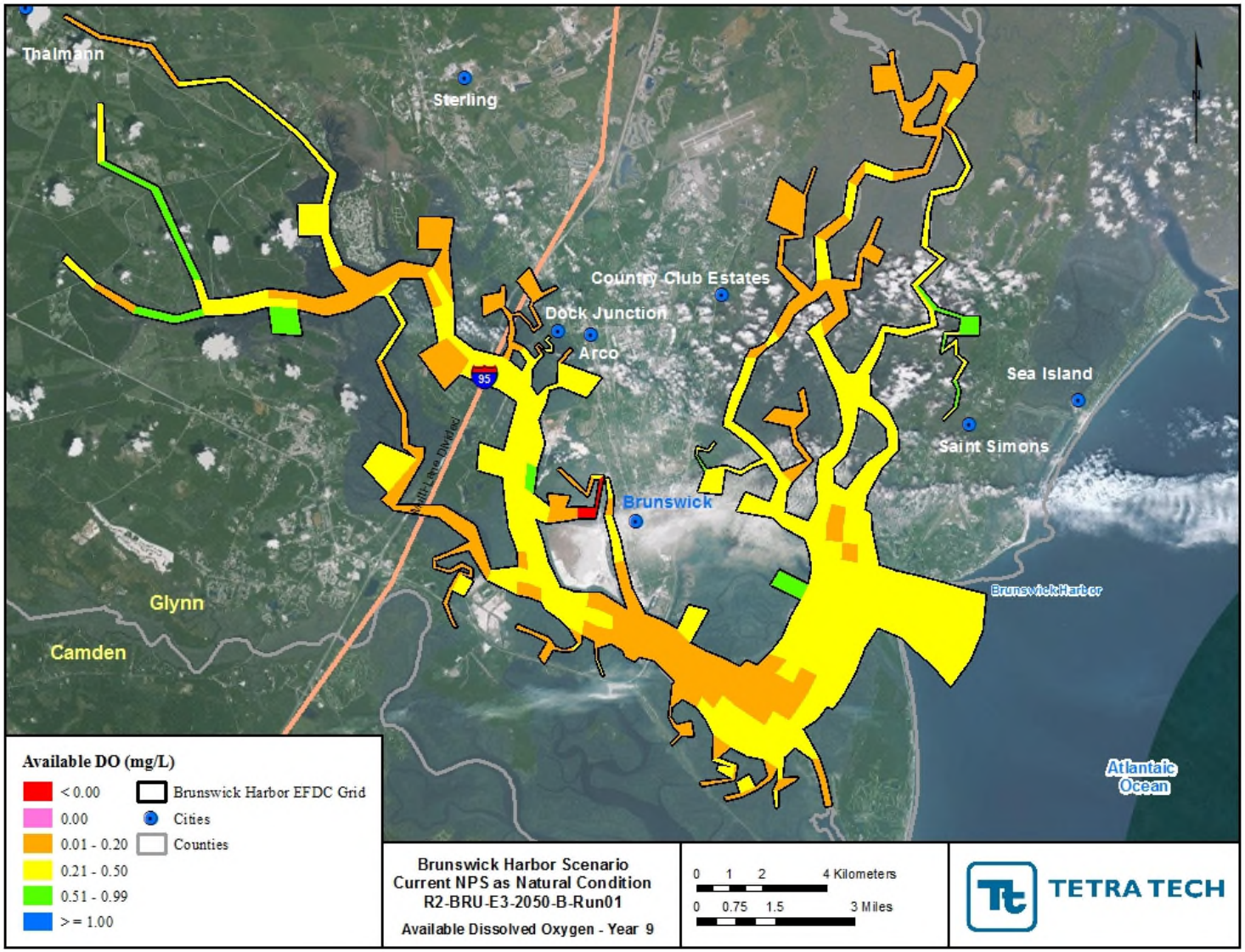

Figure B-113 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2009

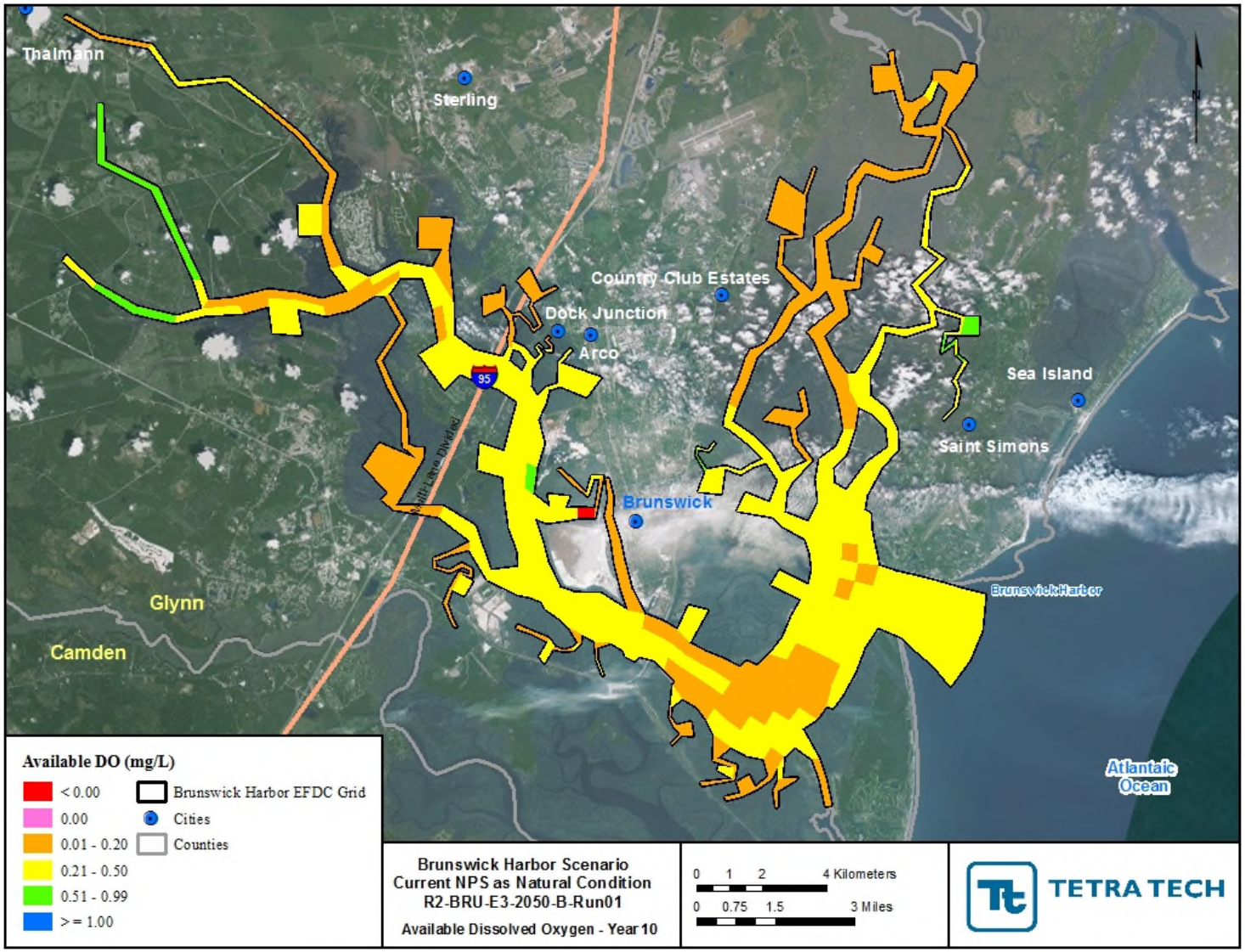

Figure B-114 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2010

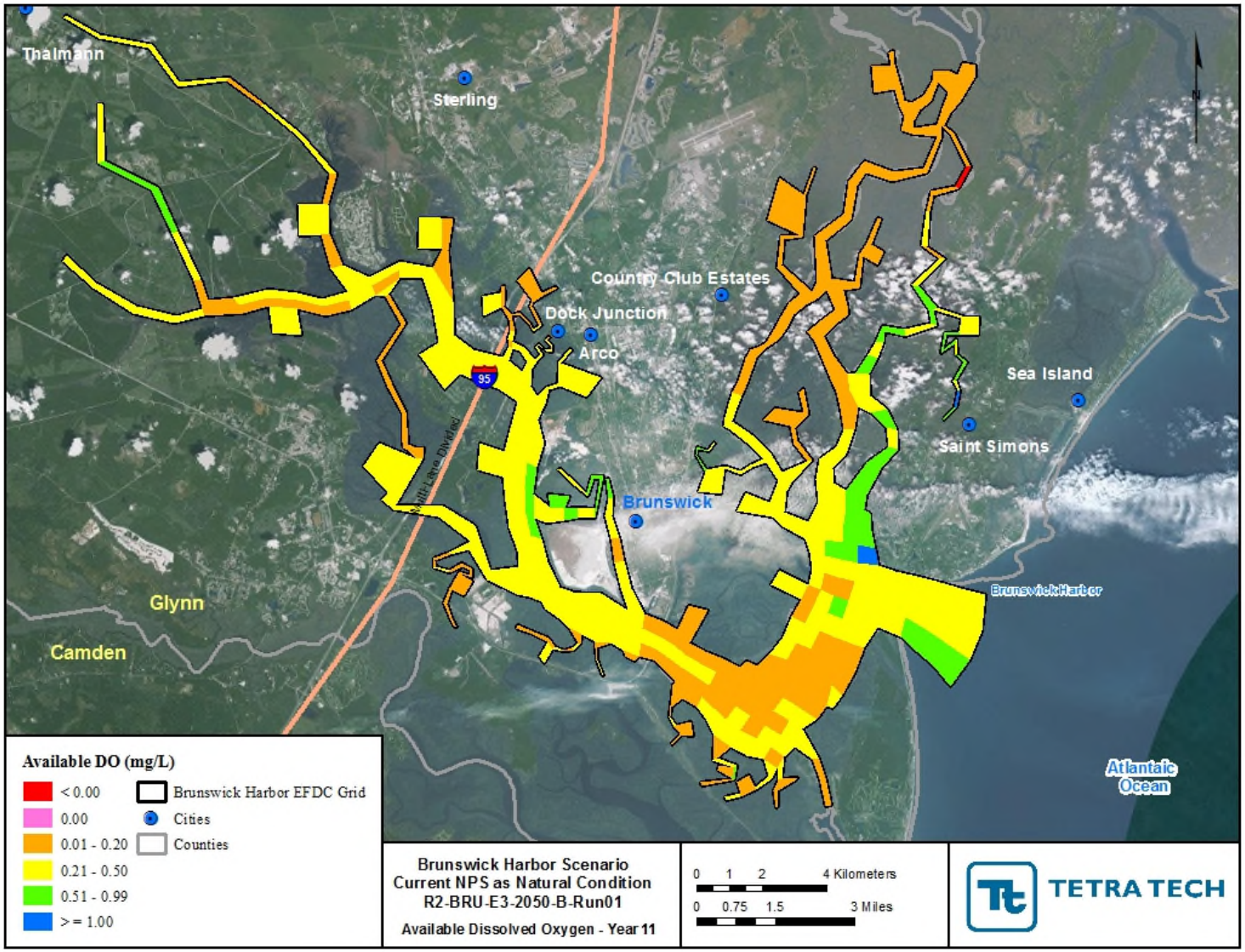

Figure B-115 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2011

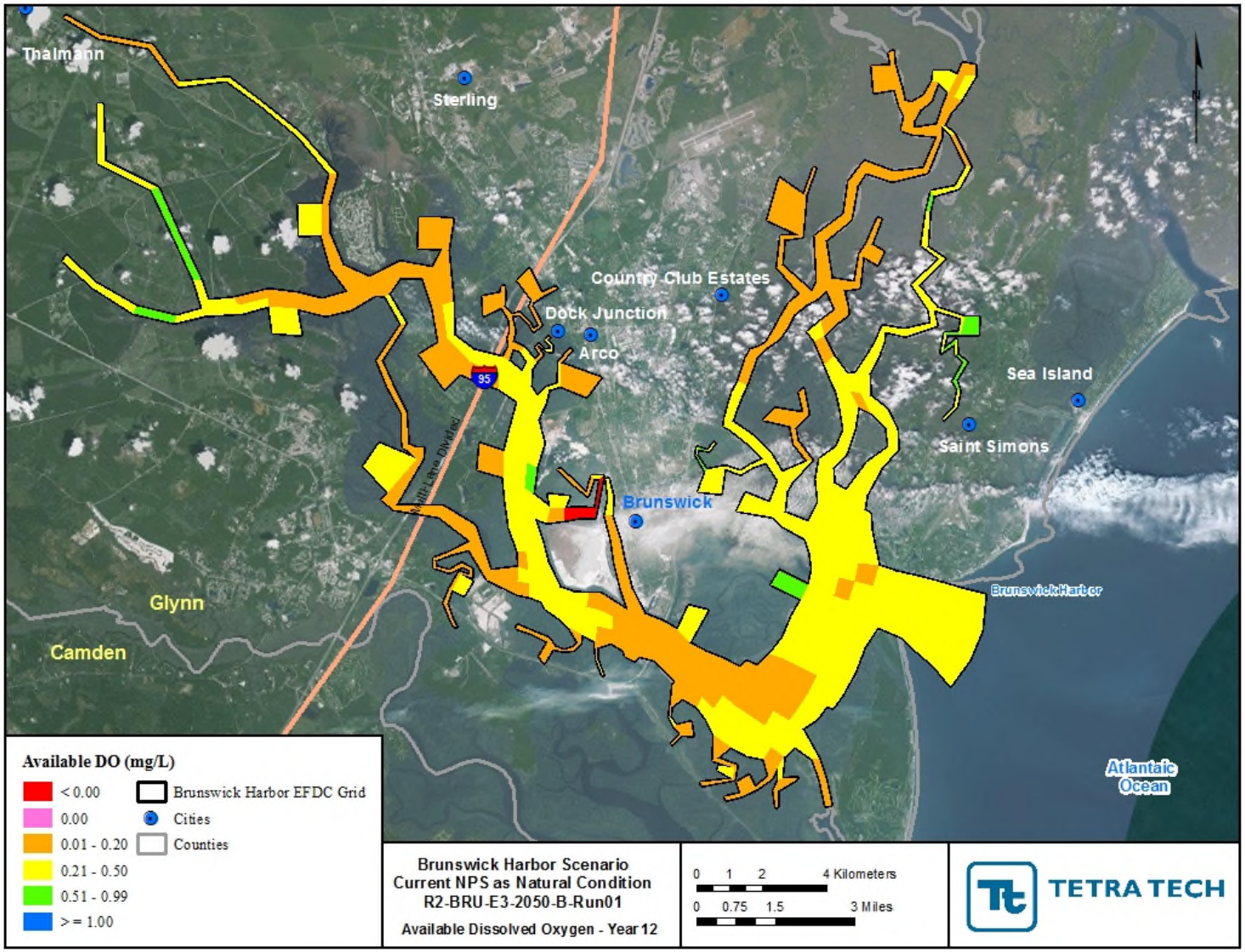

Figure B-116 Available Assimilative Capacity of Dissolved Oxygen in Brunswick Harbor Sound (Future Permit): 2012

Table B-3 Number of cells in Brunswick Harbor Sound with 0 mg/L of Assimilative Capacity

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Current Permit	3	3	3	2	9	2	0	2	4	2	1	4
Future Permit	1	0	0	1	5	2	0	0	2	1	1	3

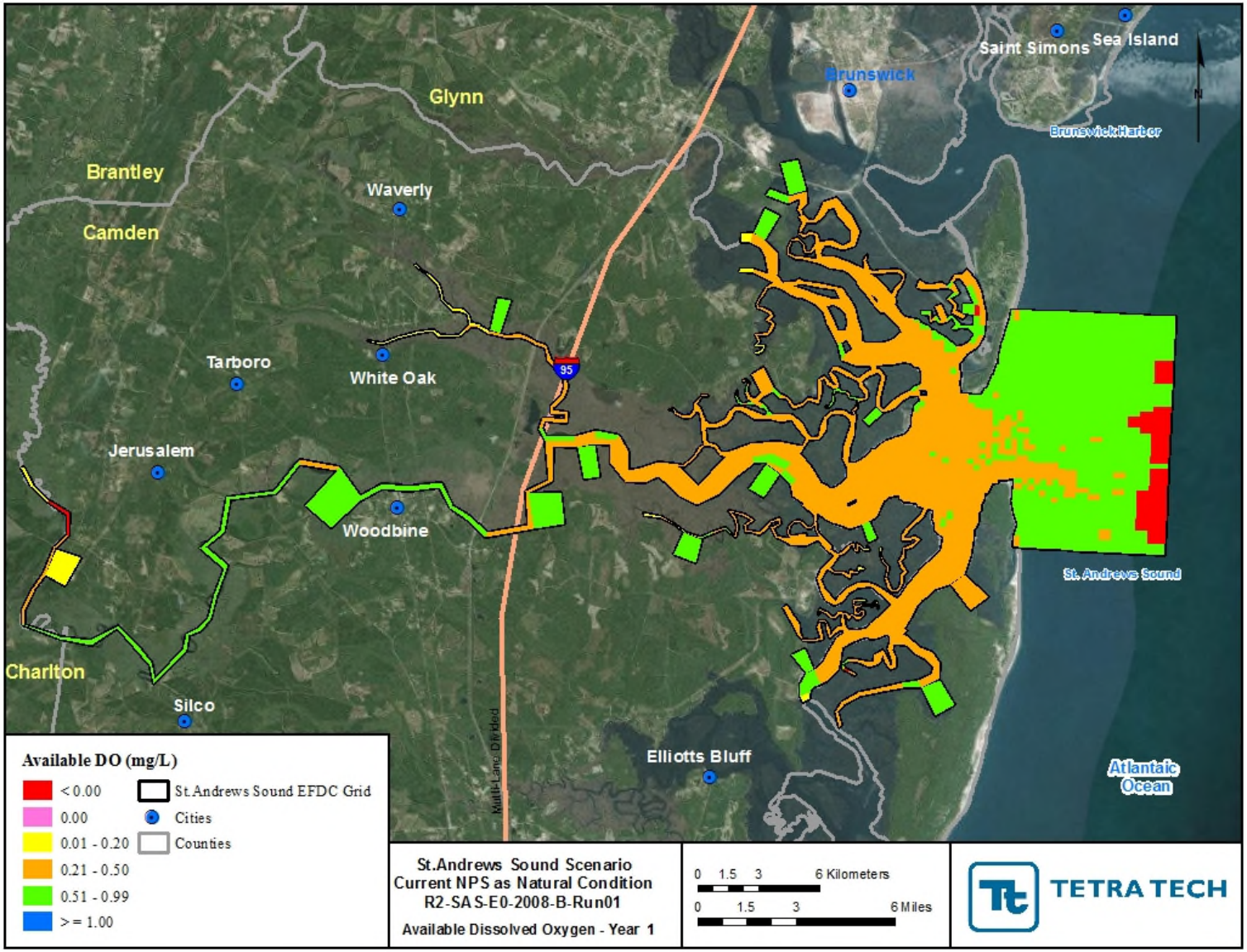

Figure B-117 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2001

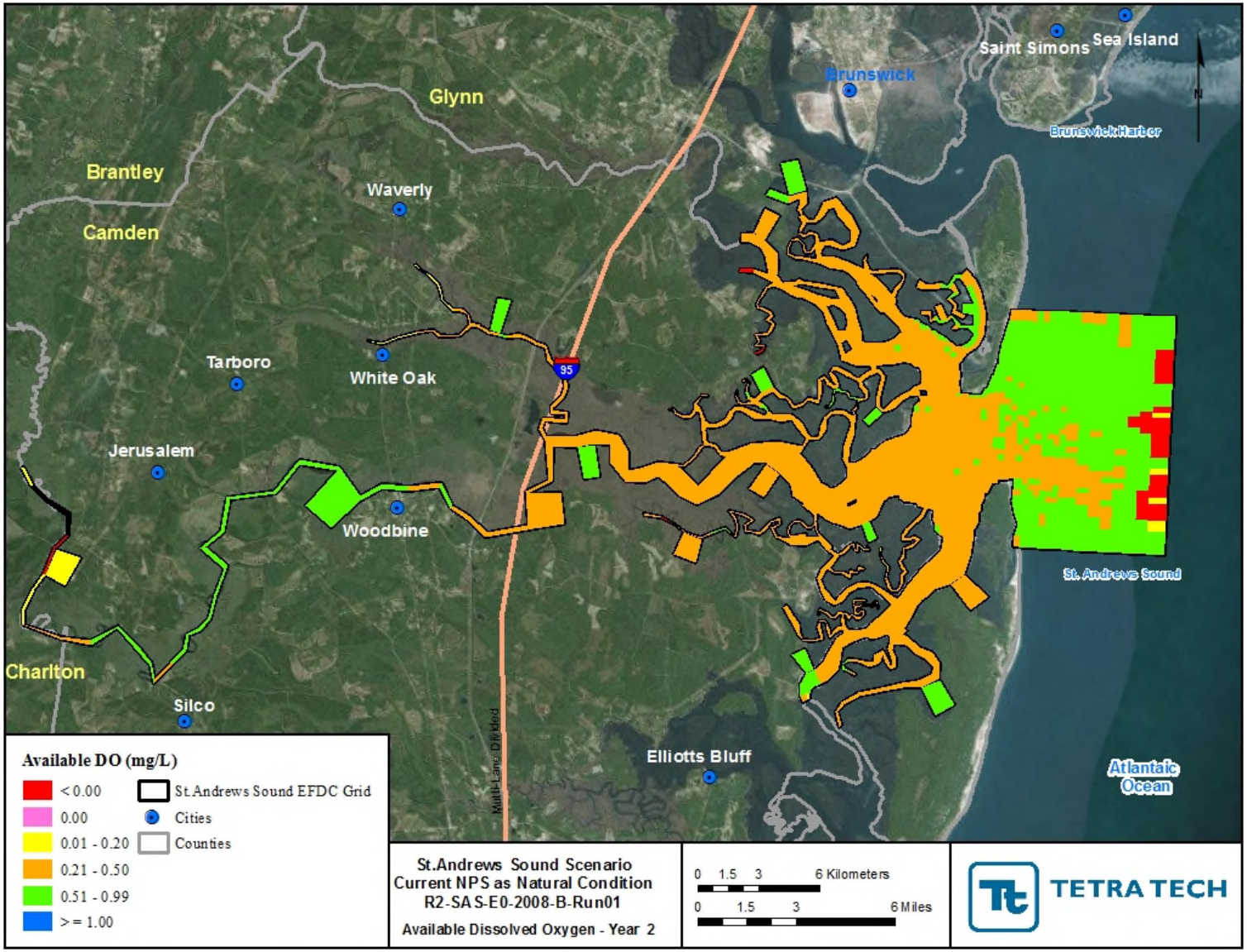

Figure B-118 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2002

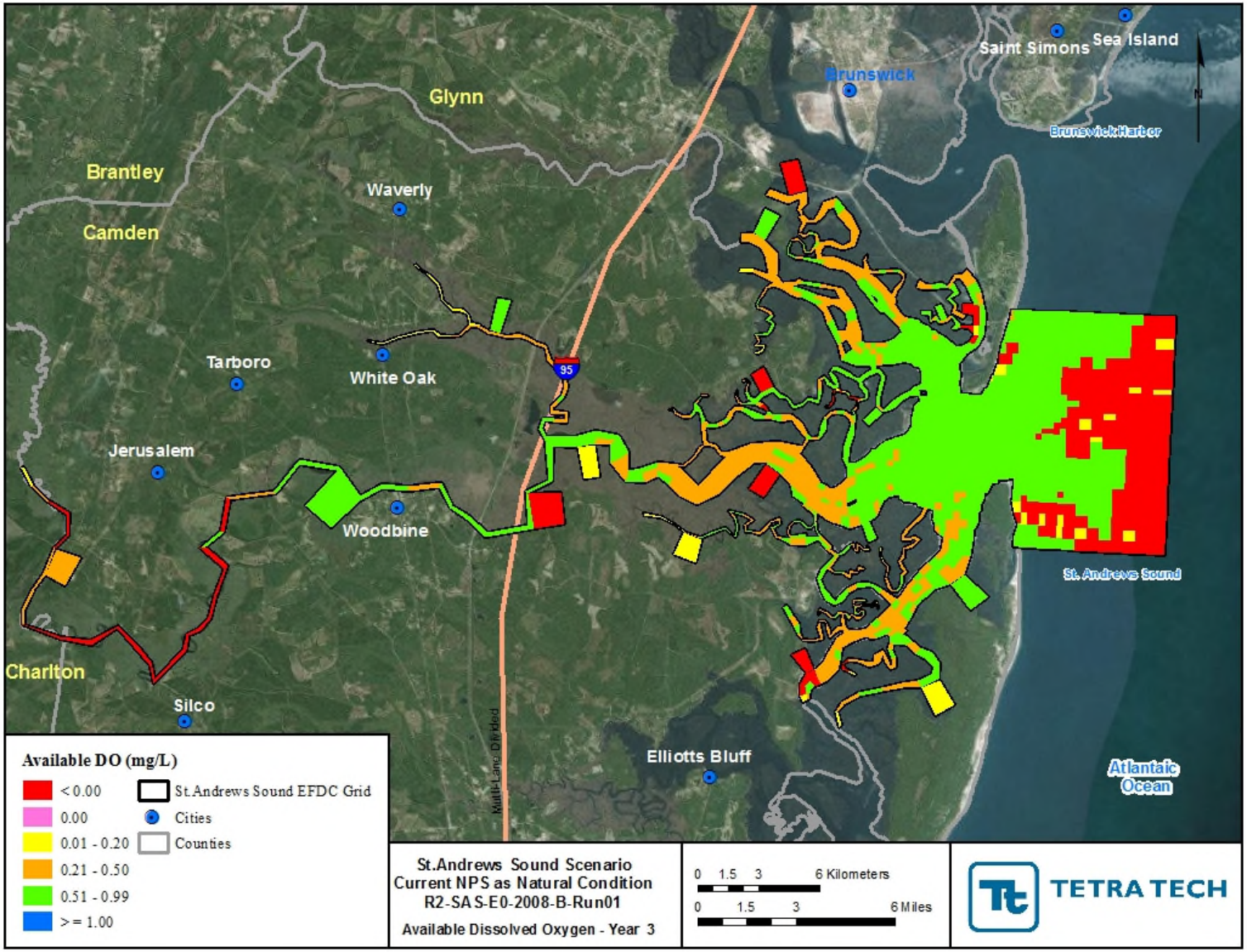

Figure B-119 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2003

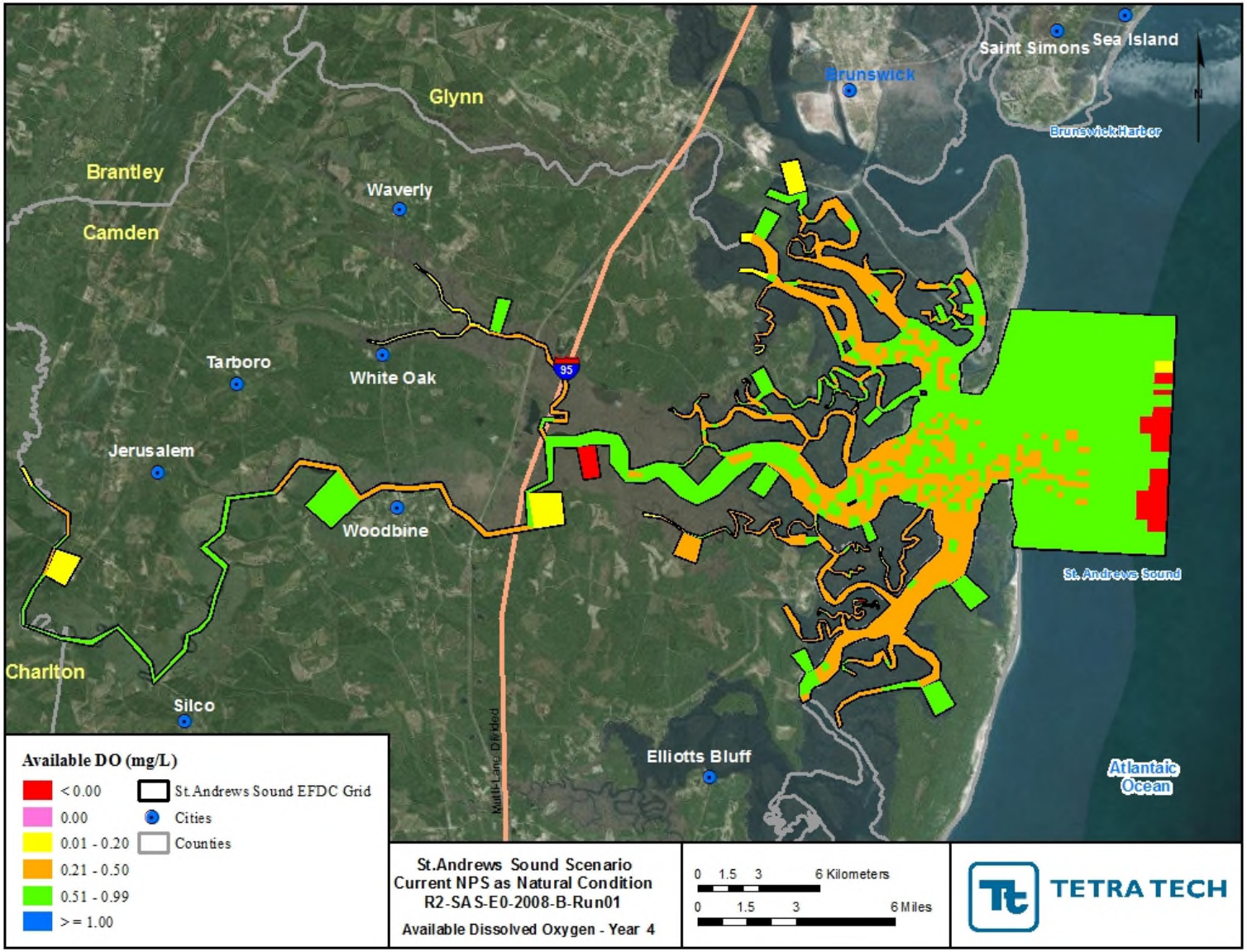

Figure B-120 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2004

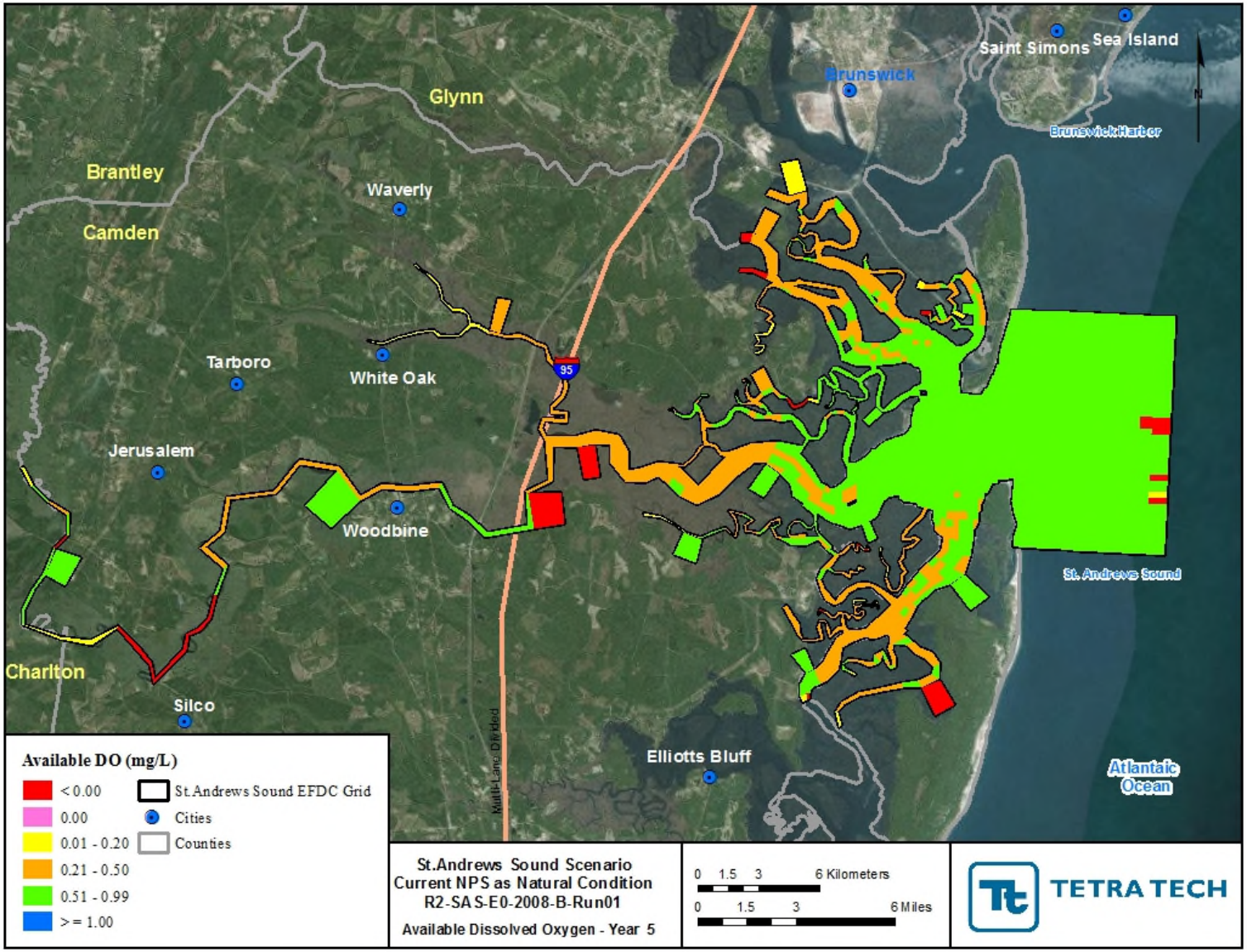

Figure B-121 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2005

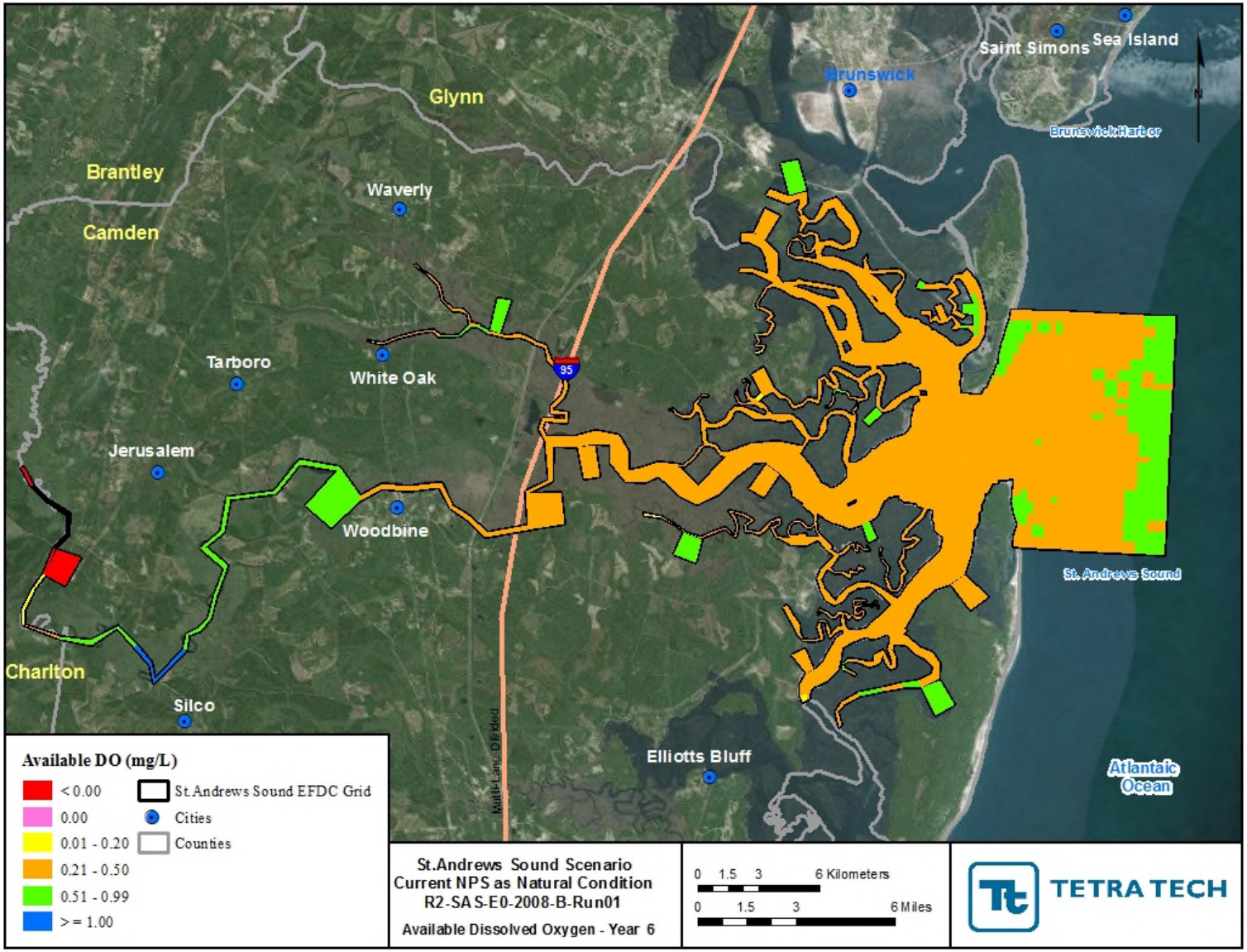

Figure B-122 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2006

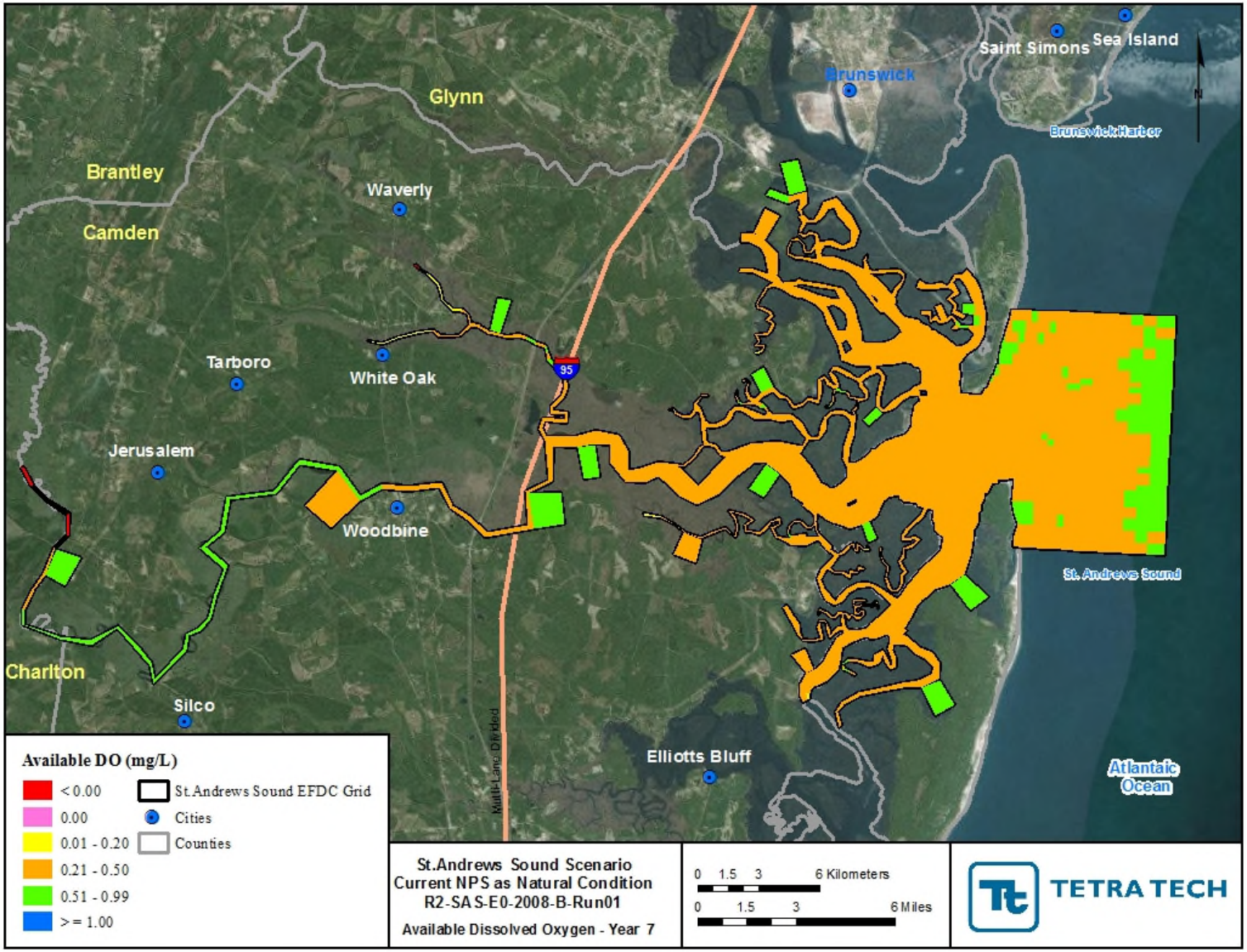

Figure B-123 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2007

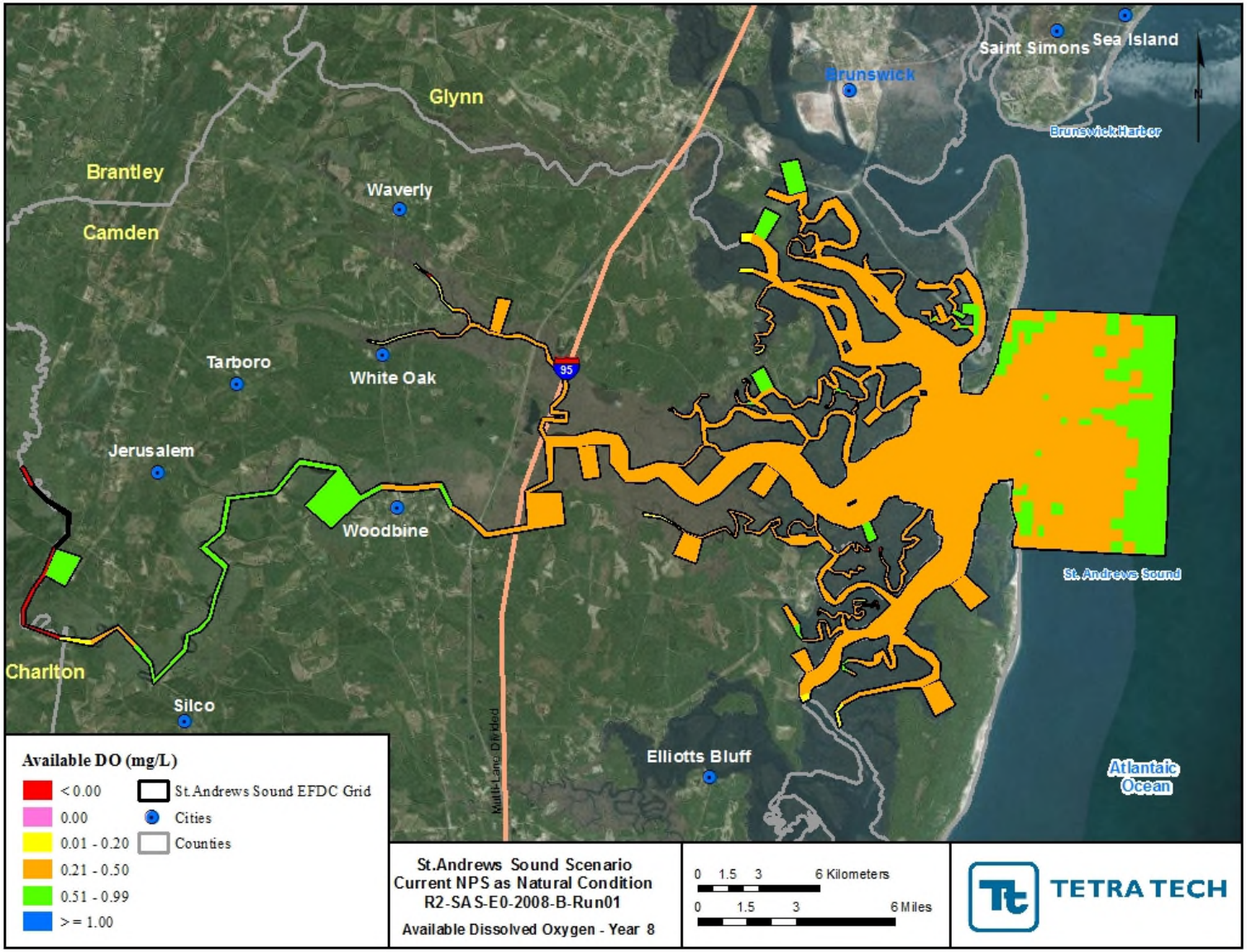

Figure B-124 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2008

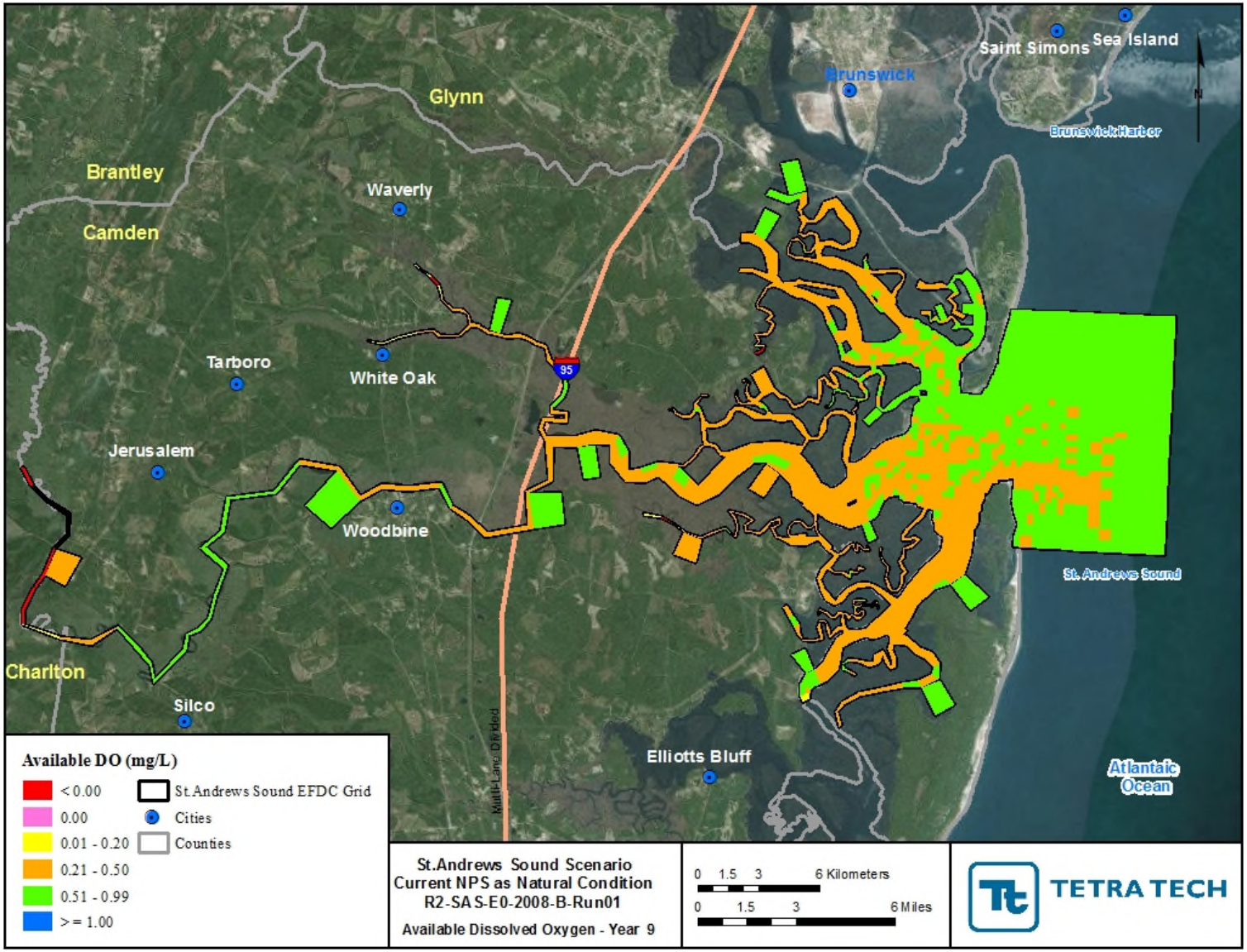

Figure B-125 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2009

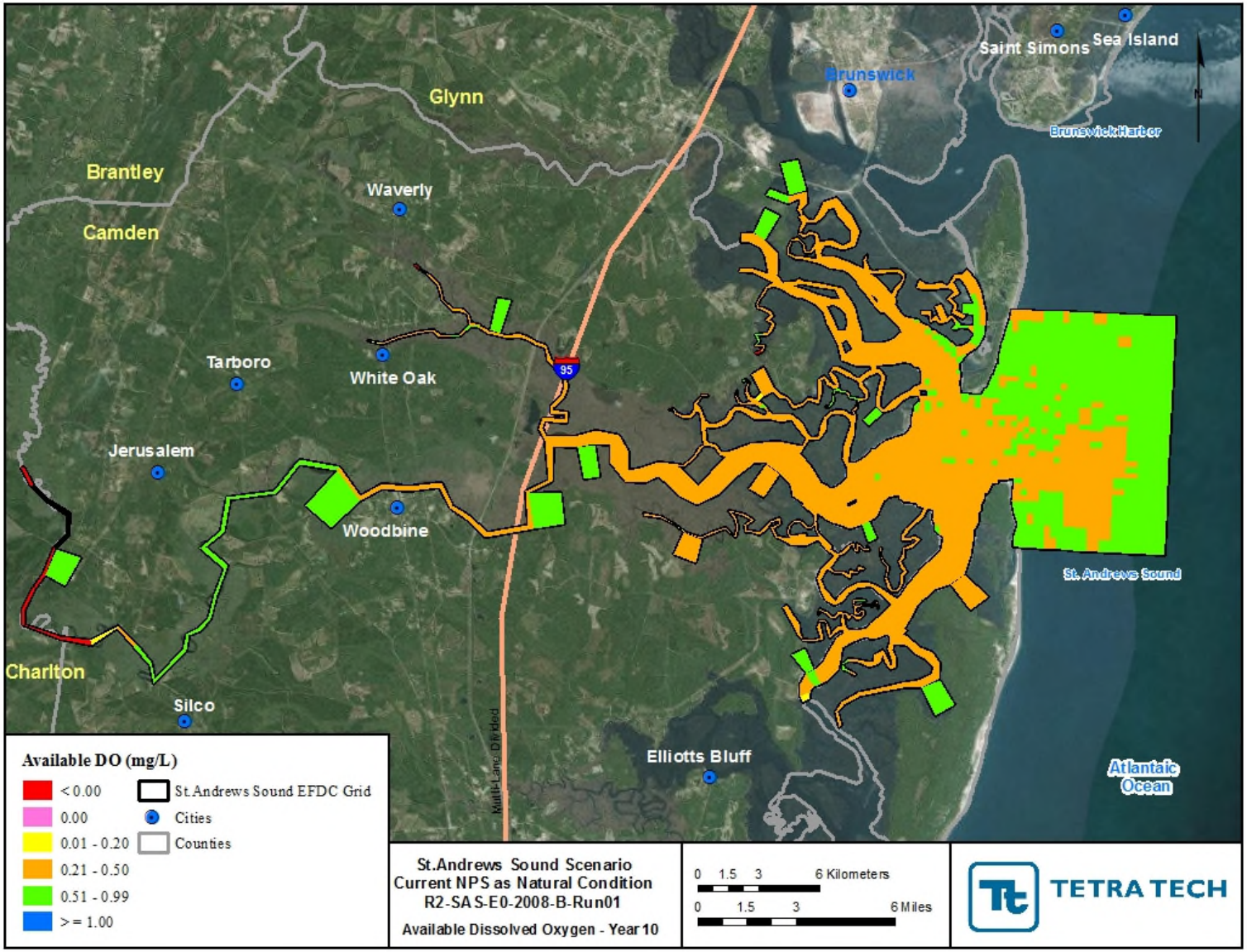

Figure B-126 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2010

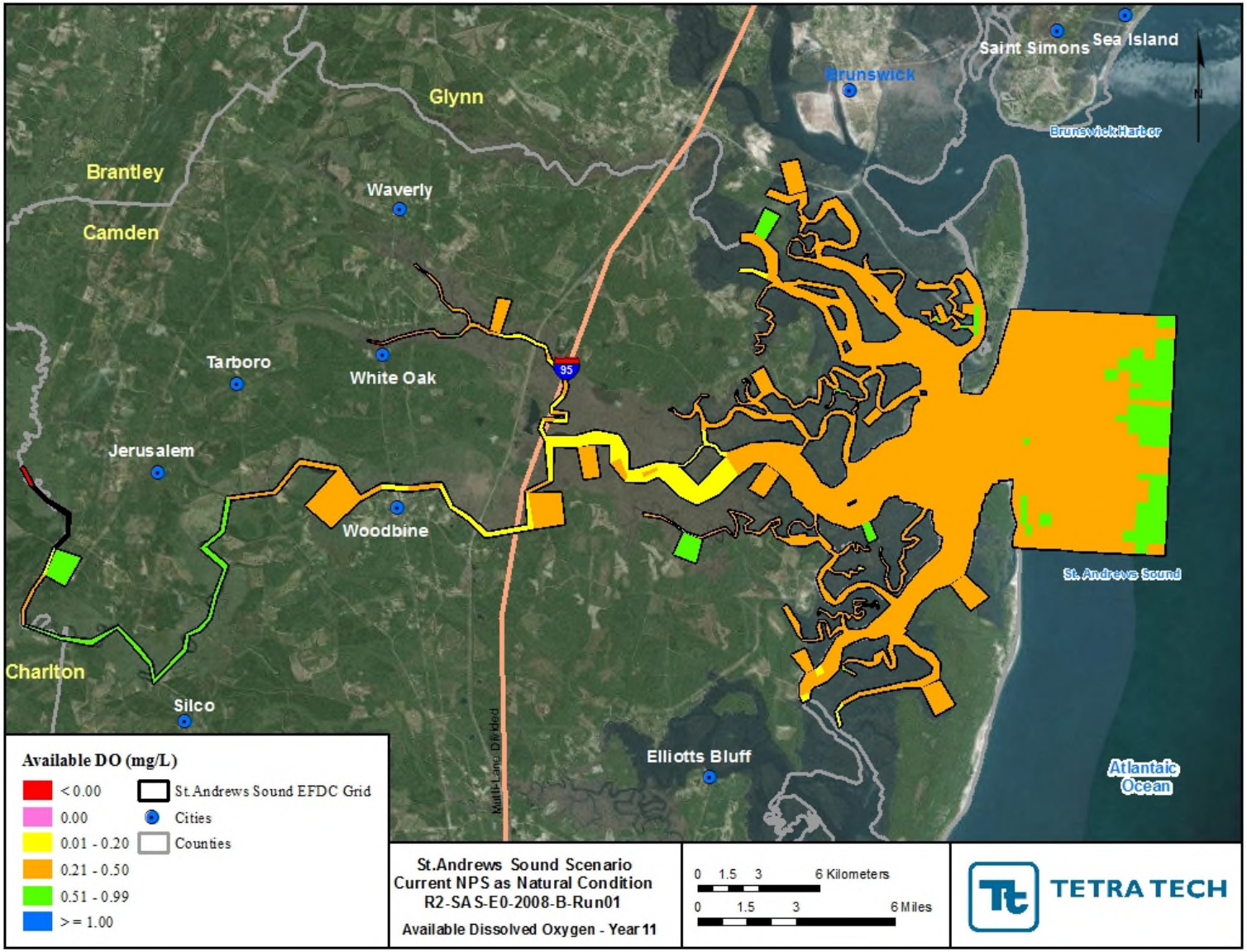

Figure B-127 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2011

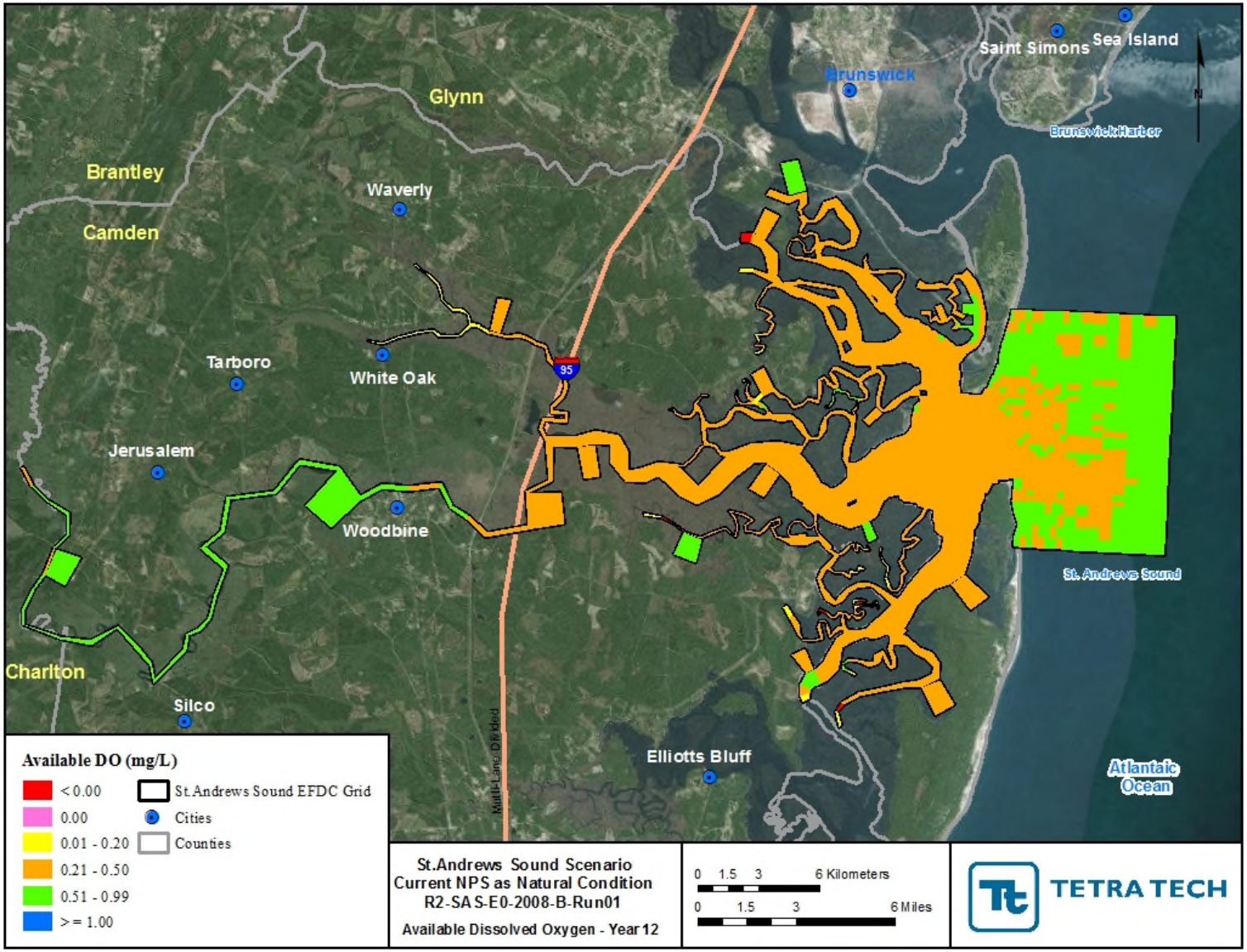

Figure B-128 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Current Permit): 2012

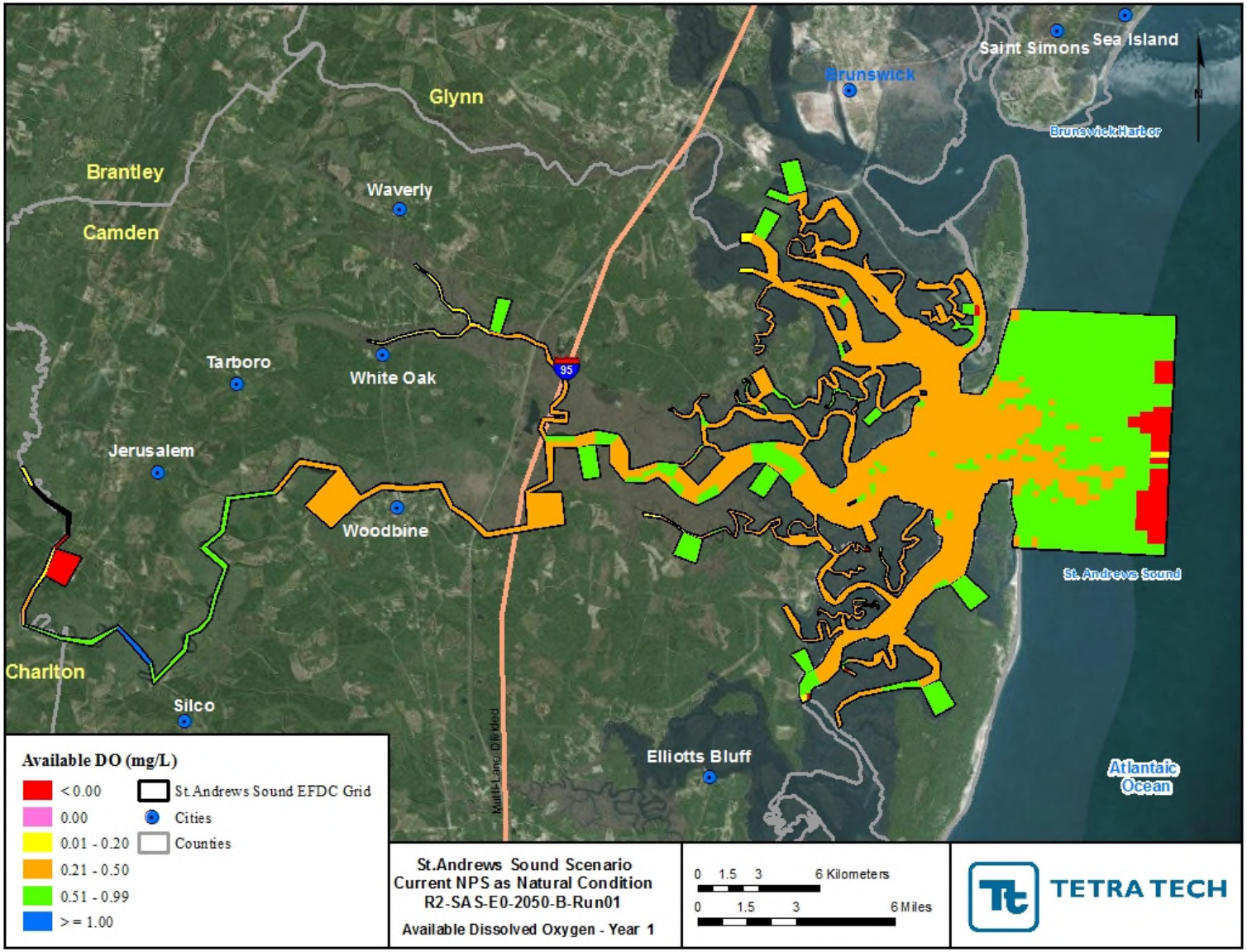

Figure B-129 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2001

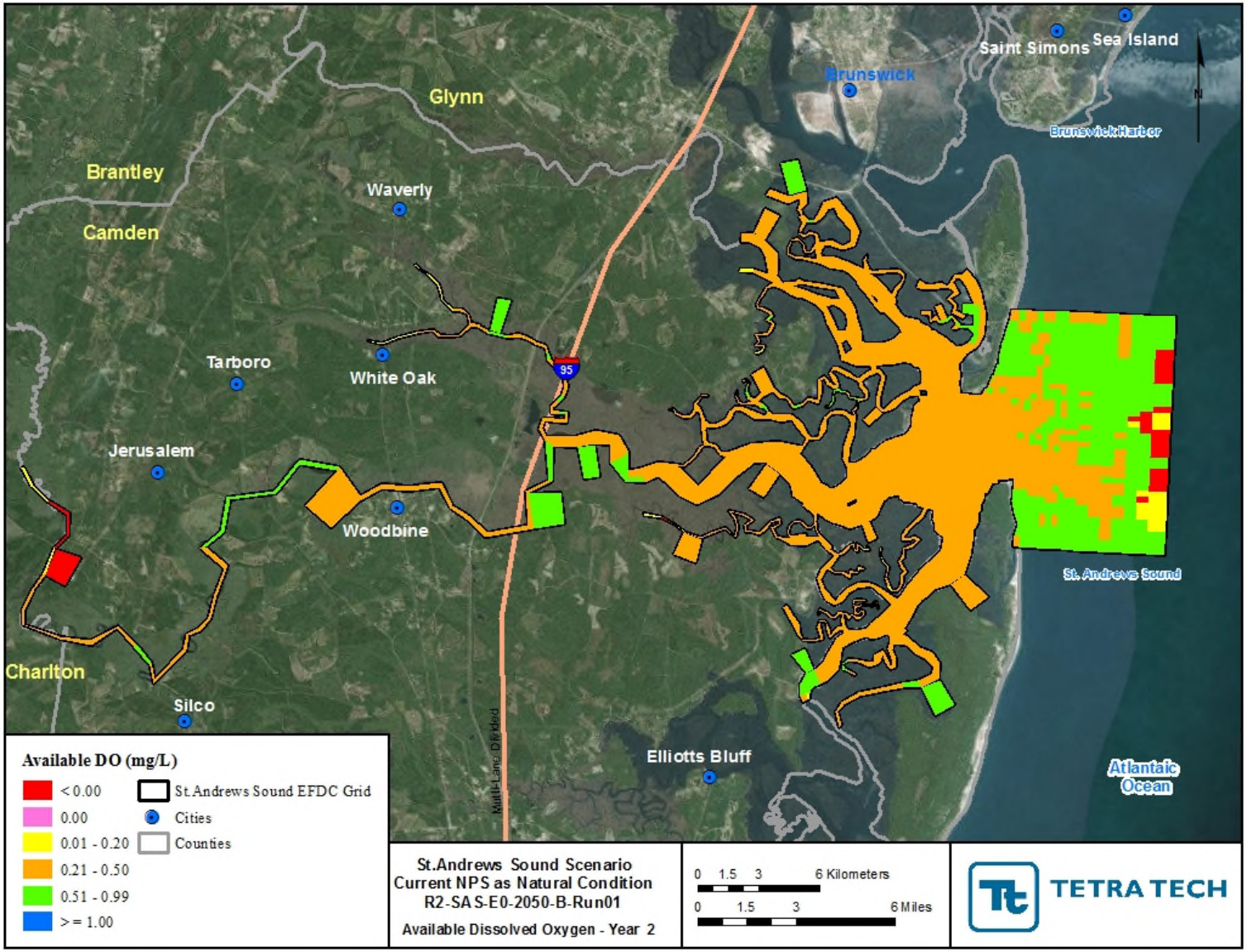

Figure B-130 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2002

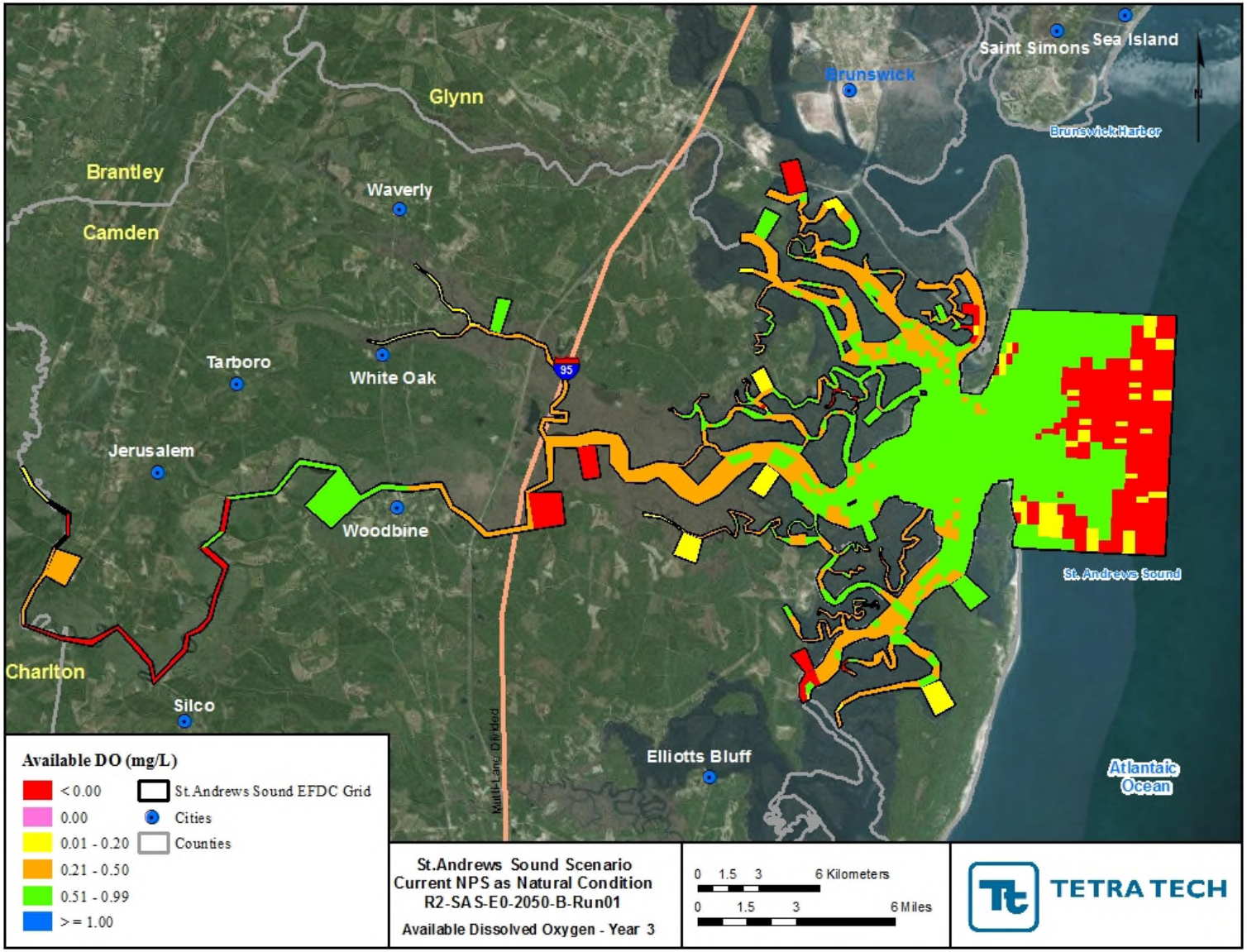

Figure B-131 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2003

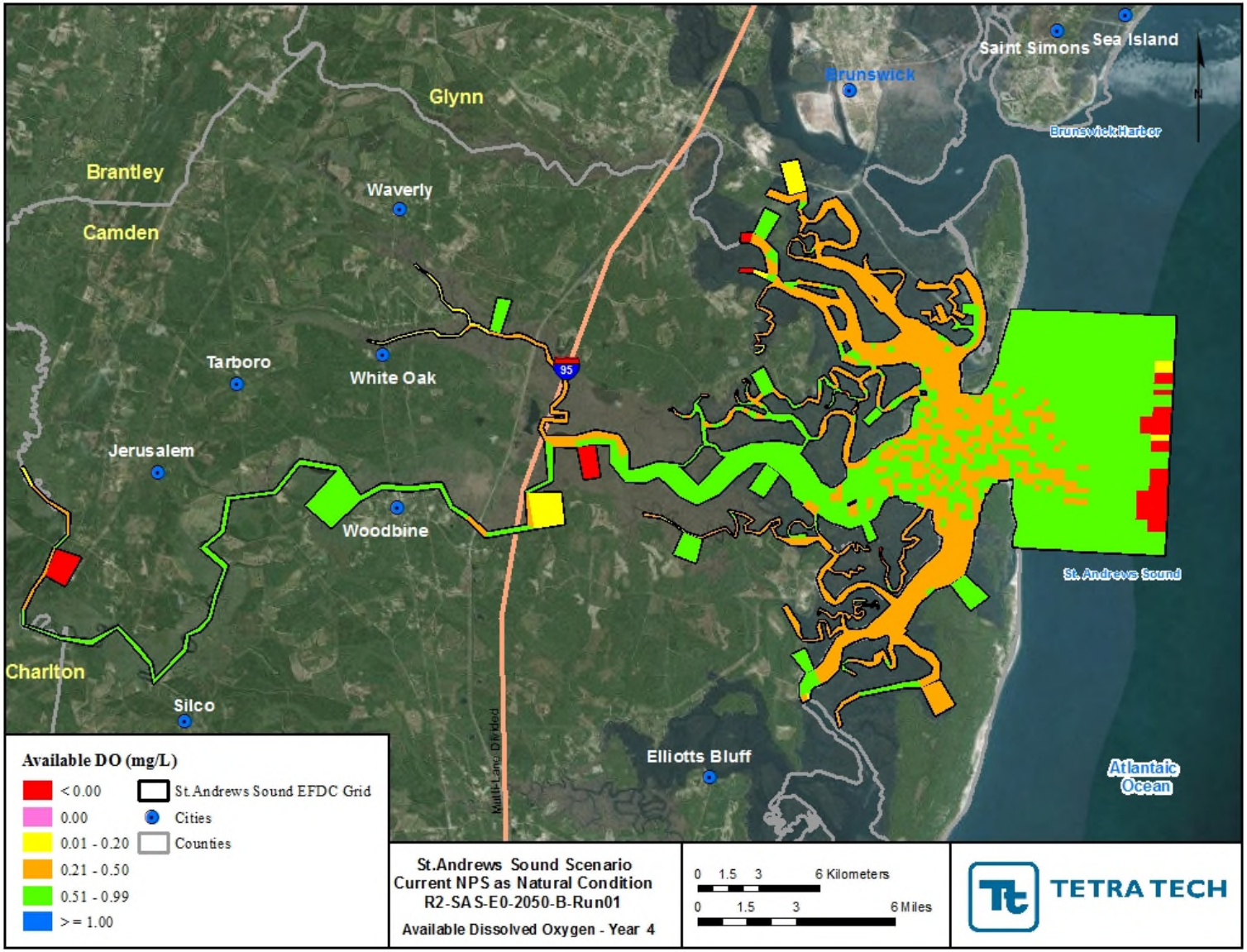

Figure B-132 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2004

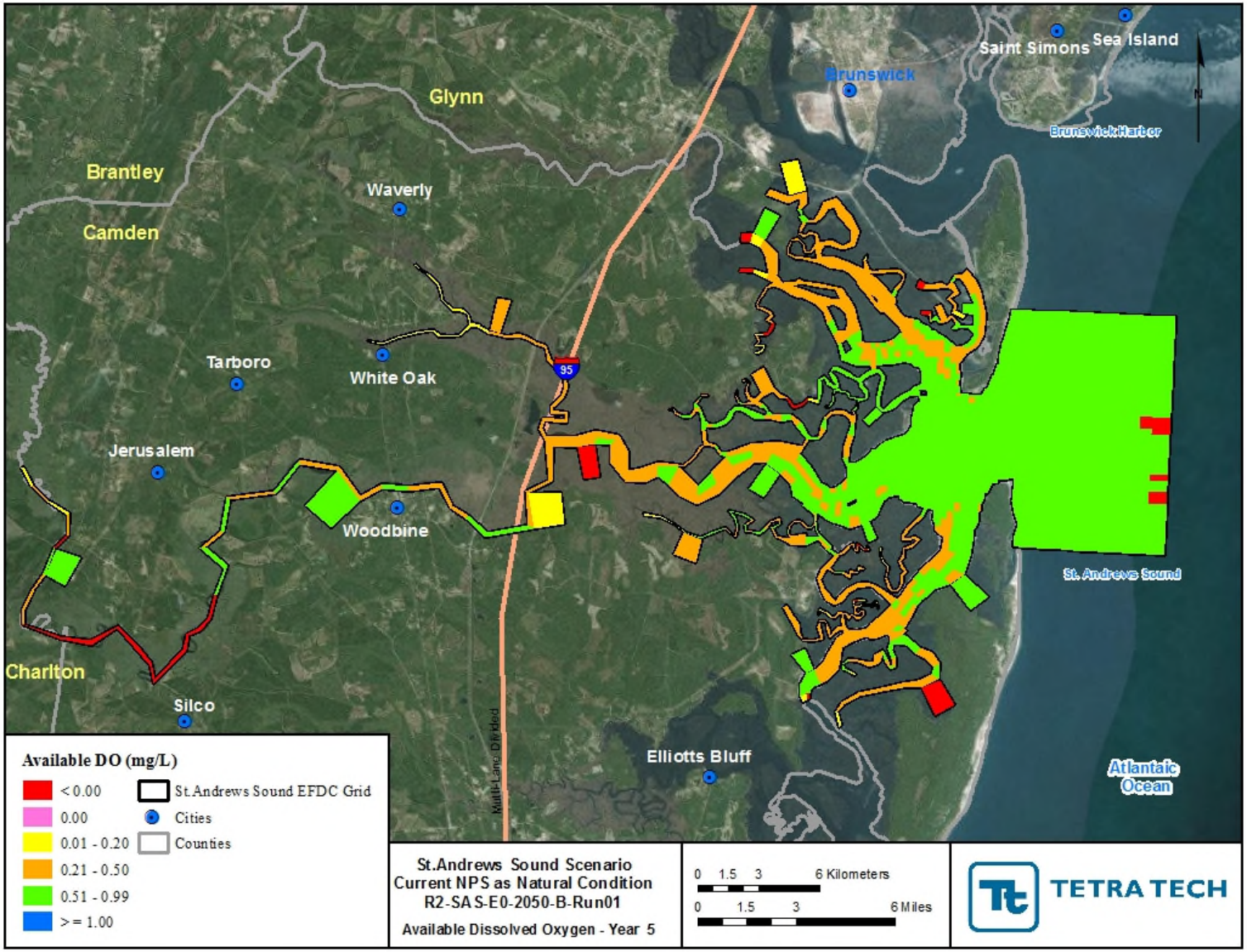

Figure B-133 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2005

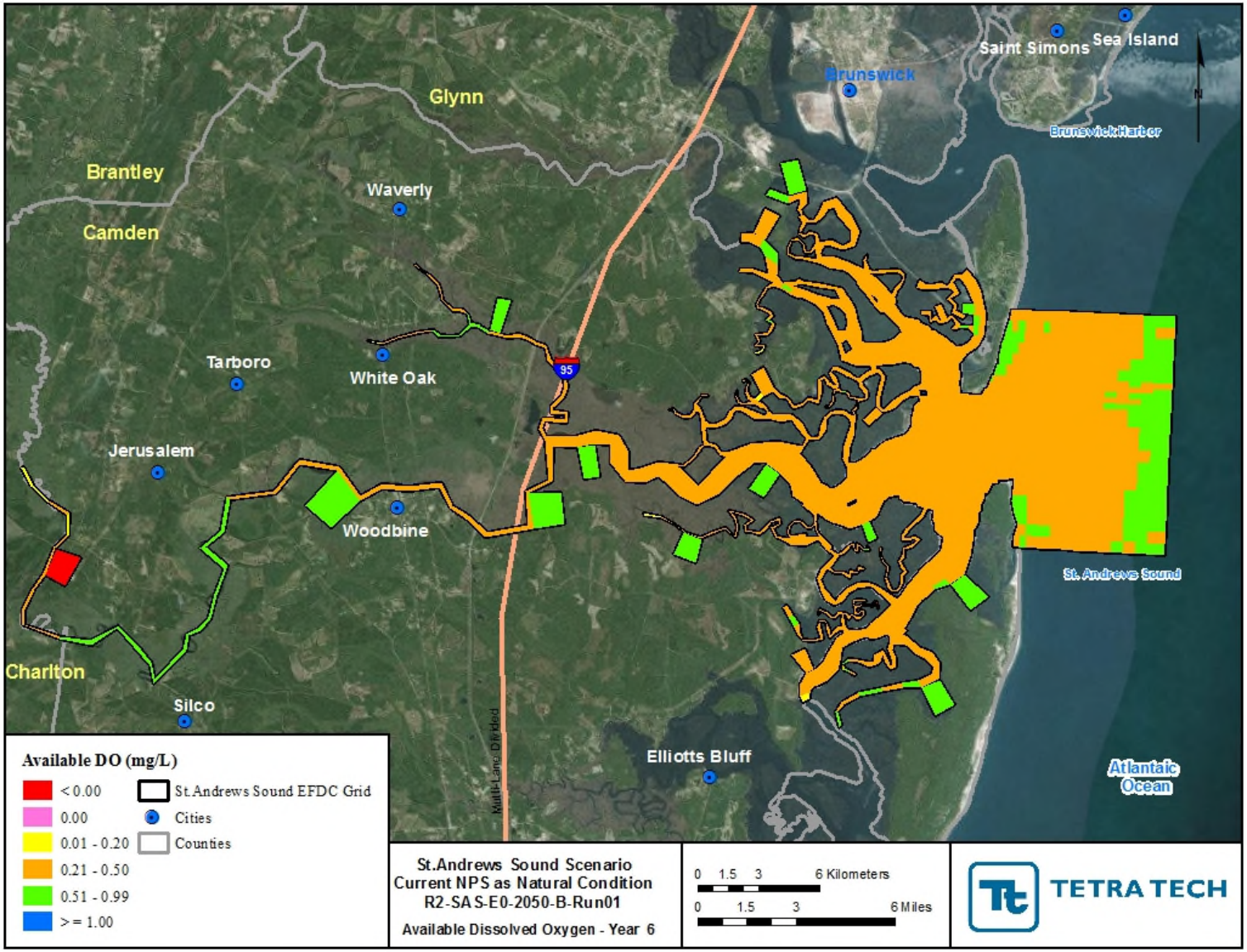

Figure B-134 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2006

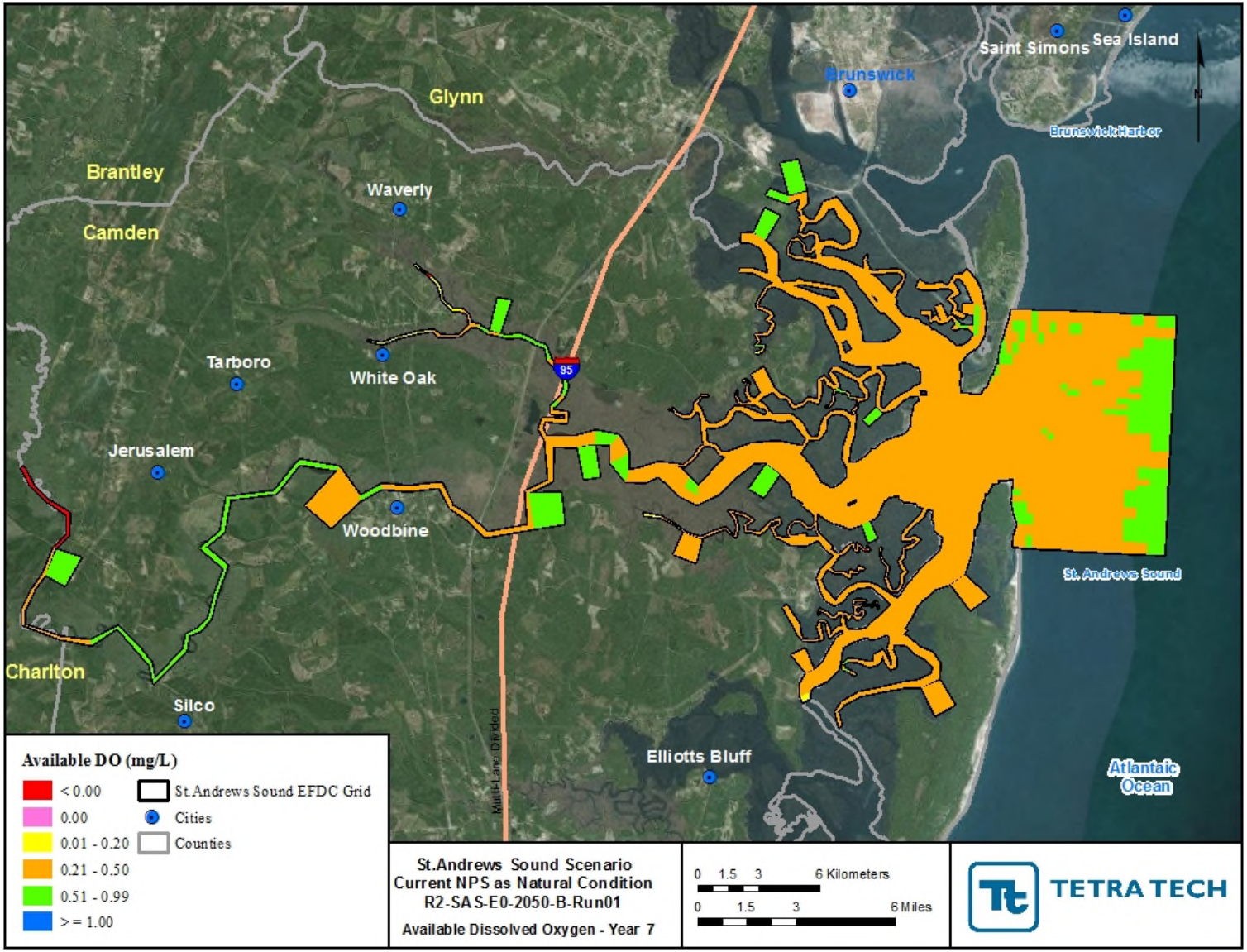

Figure B-135 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2007

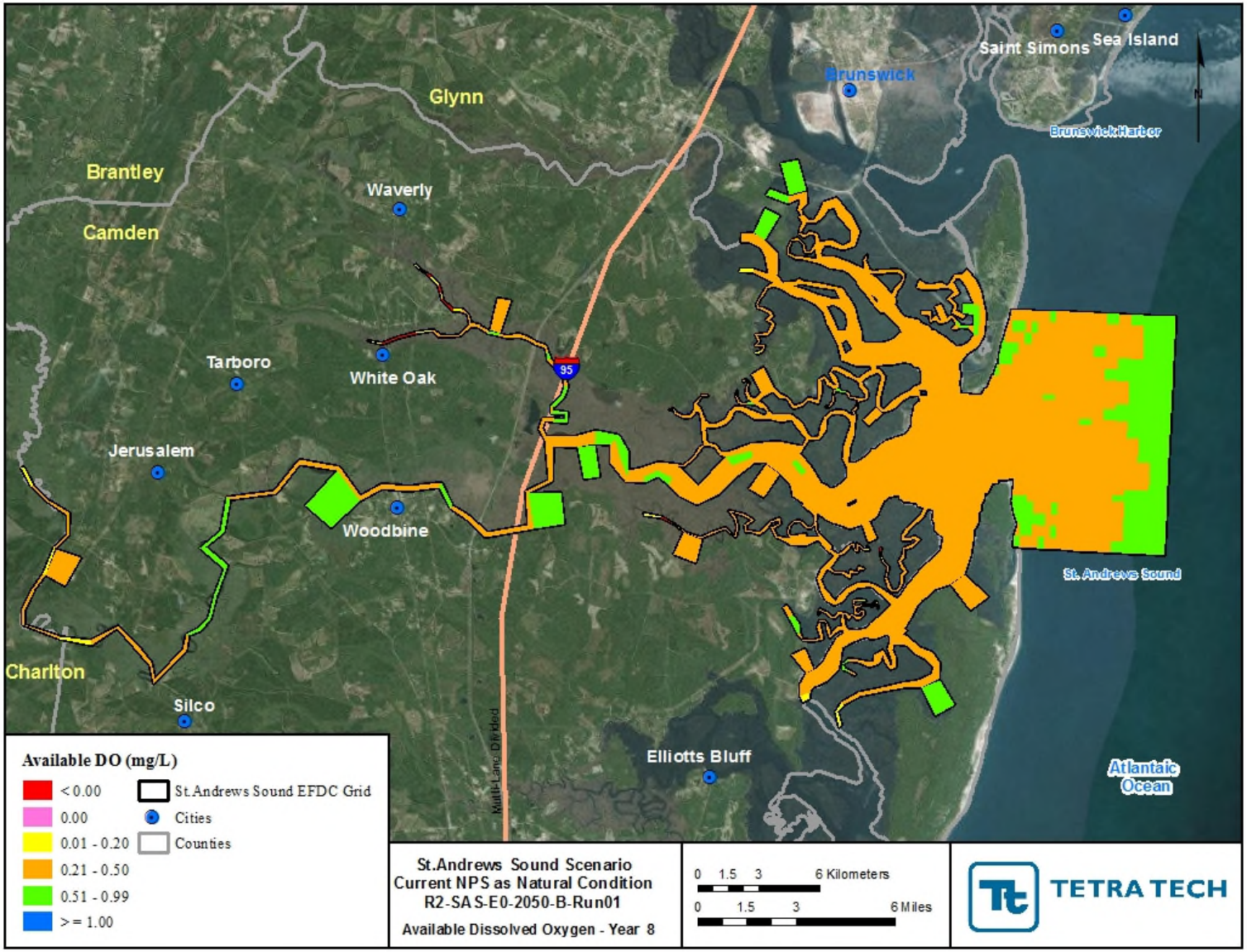

Figure B-136 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2008

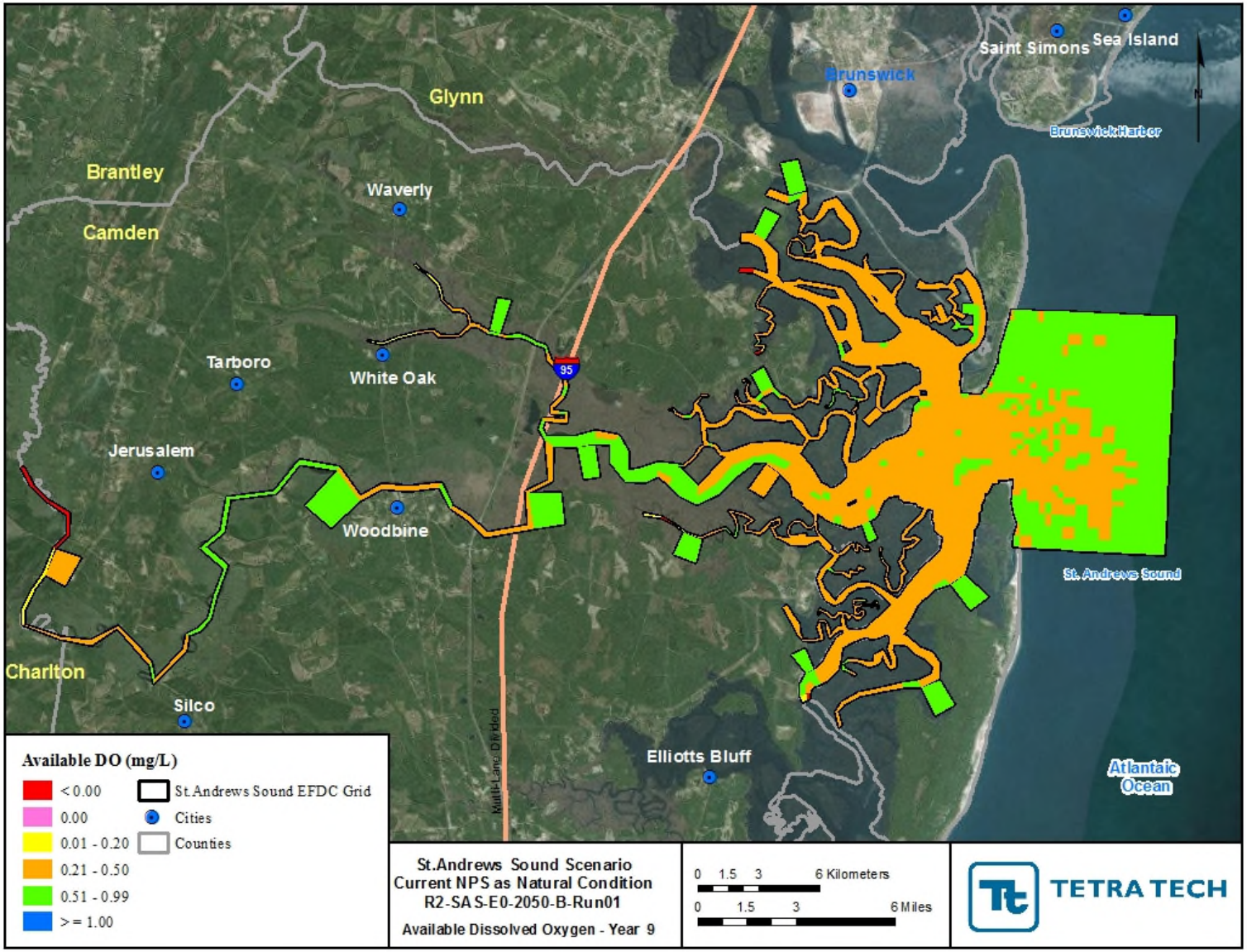

Figure B-137 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2009

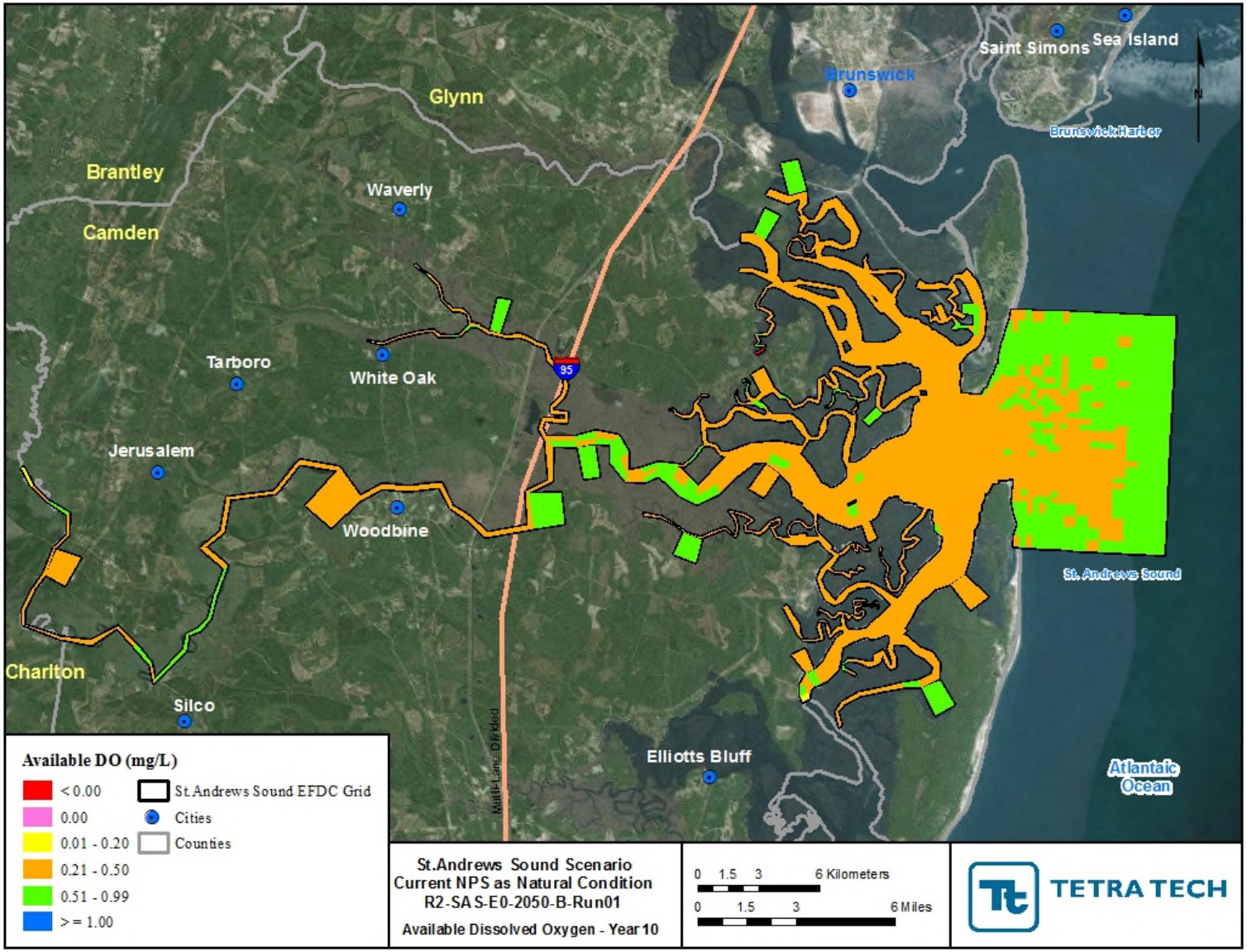

Figure B-138 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2010

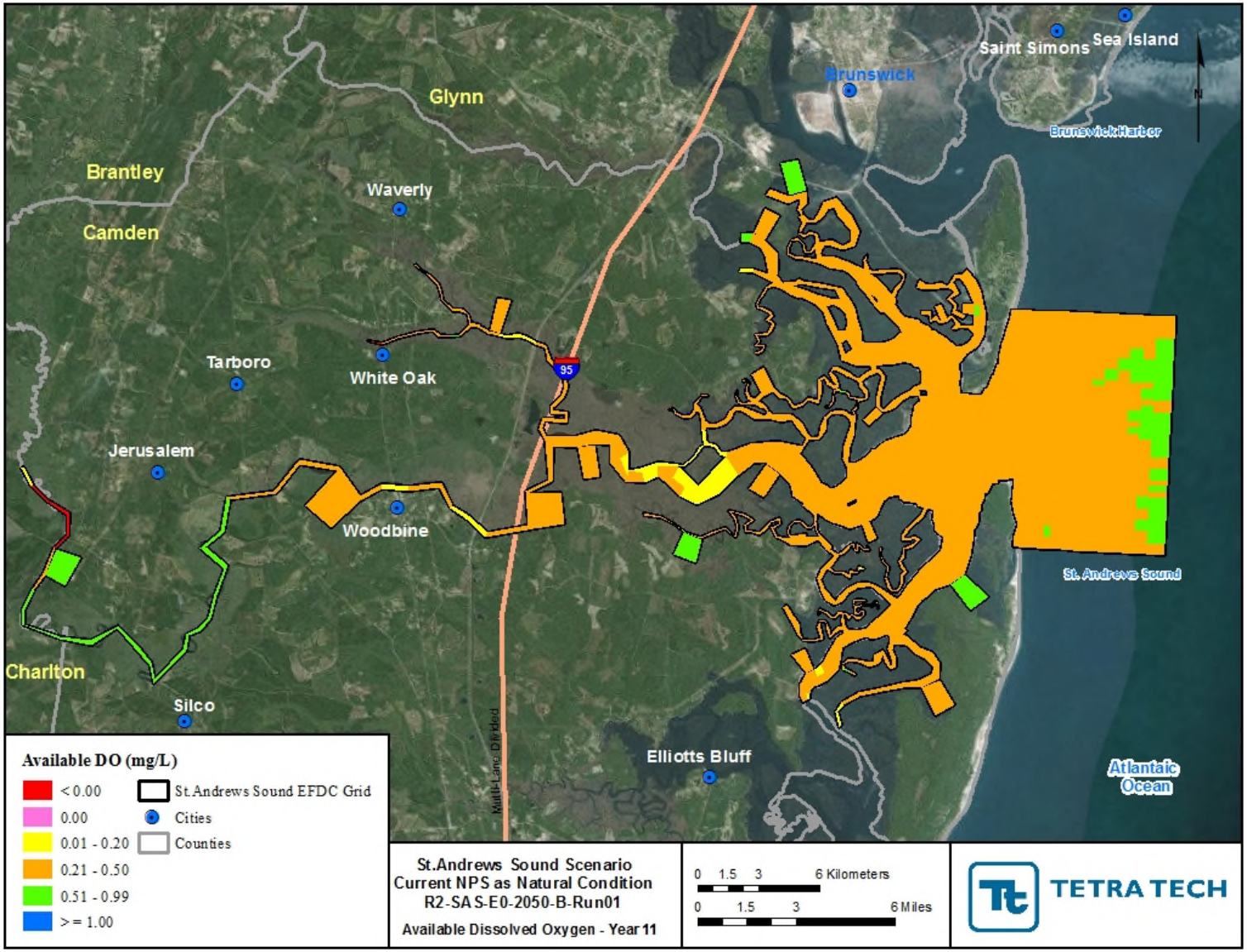

Figure B-139 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2011

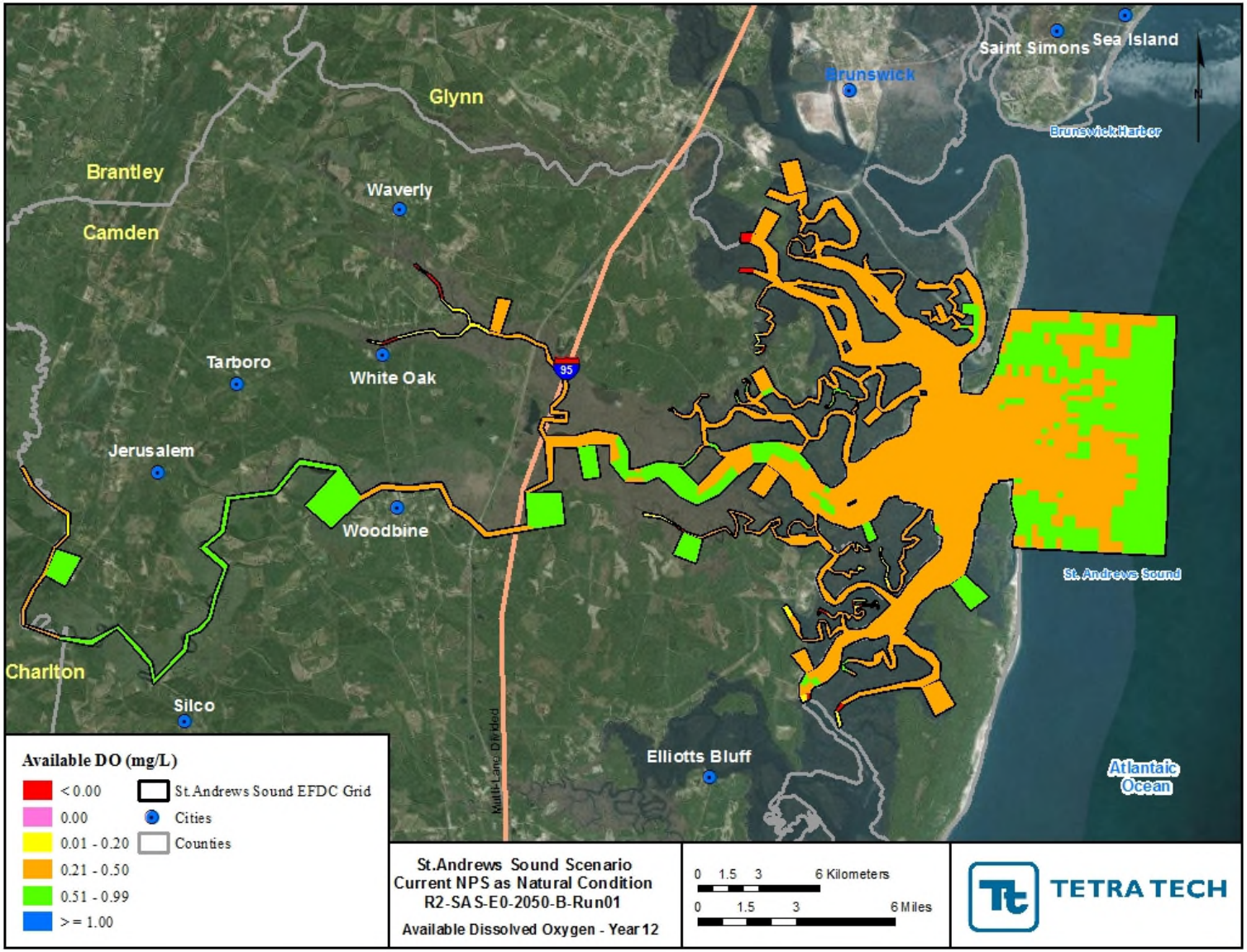

Figure B-140 Available Assimilative Capacity of Dissolved Oxygen in St. Andrews Sound (Future Permit): 2012

Table B-4 Number of cells in St. Andrews Sound with 0 mg/L of Assimilative Capacity

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Current Permit	37	37	227	31	34	9	7	14	14	13	6	13
Future Permit	42	26	206	34	39	2	7	10	9	2	5	21

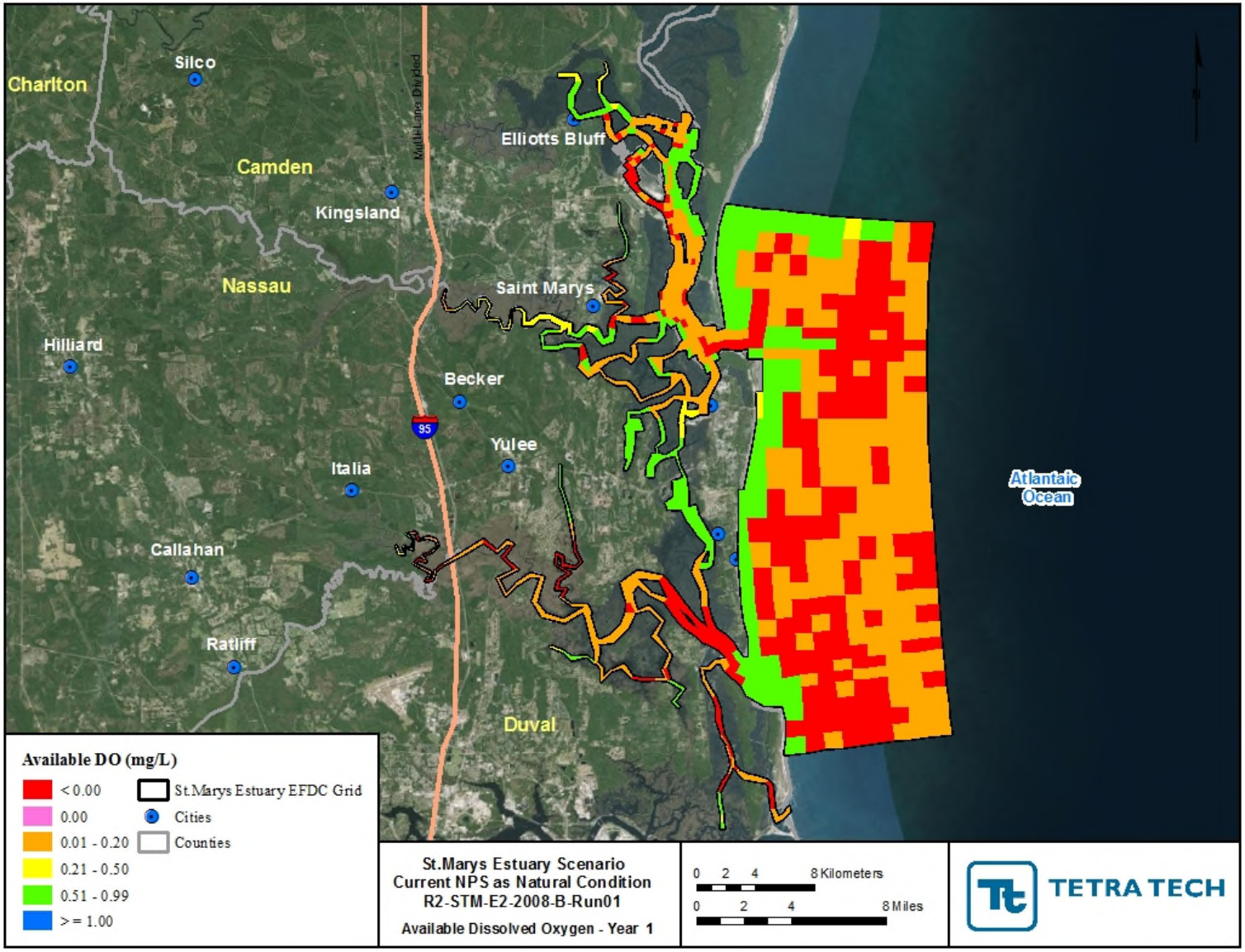

Figure B-141 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Current Permit): 2001

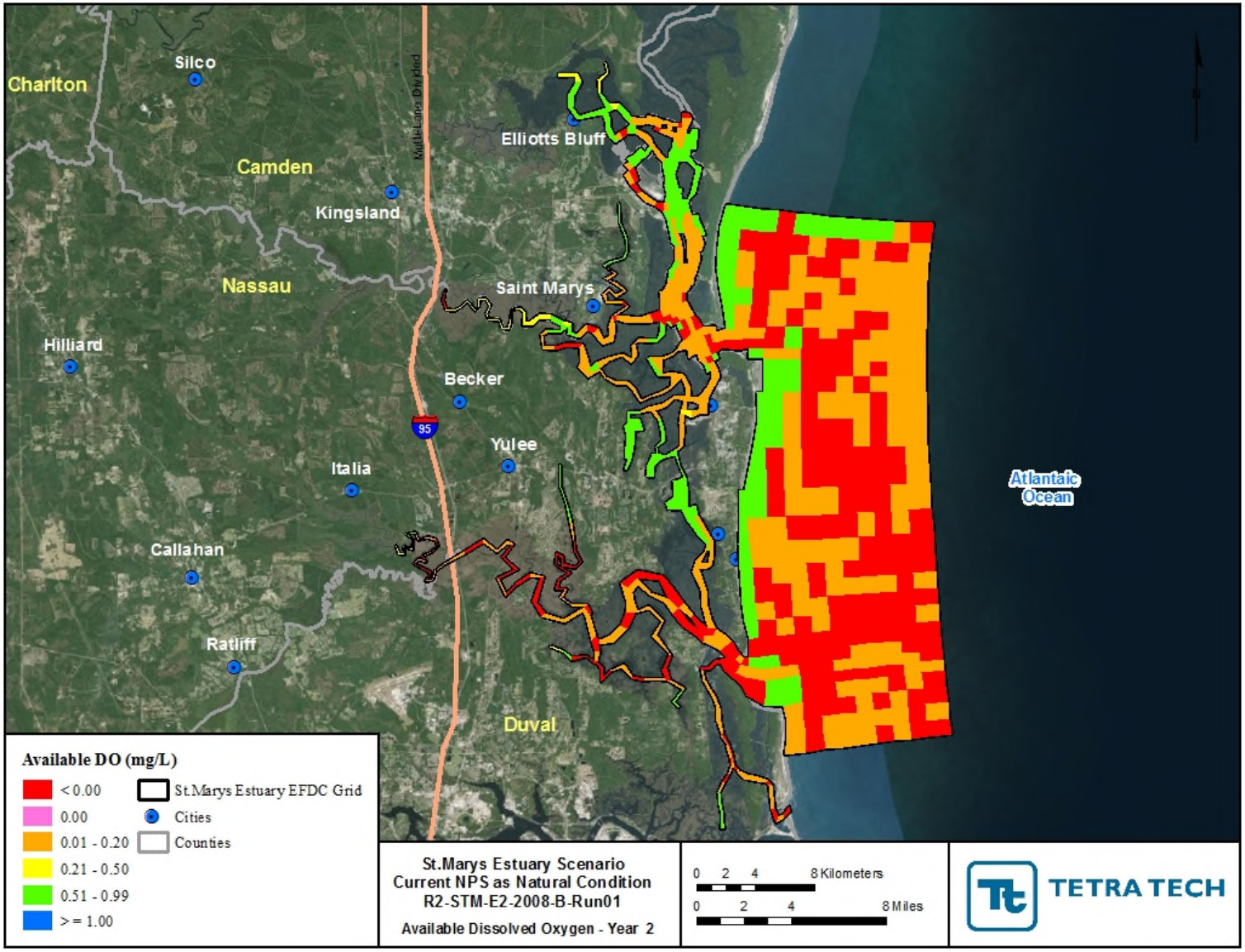

Figure B-142 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Current Permit): 2002

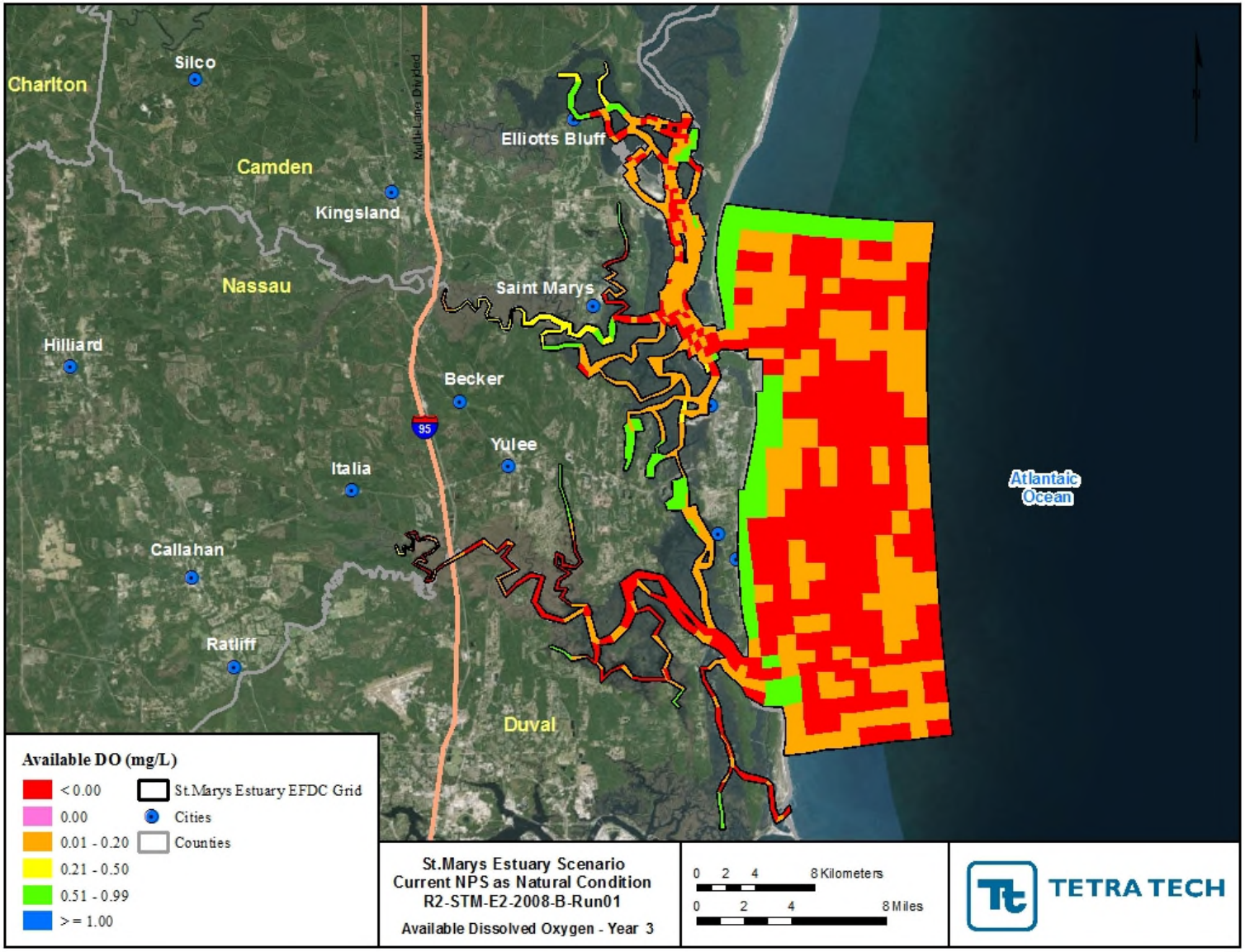

Figure B-143 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Current Permit): 2003

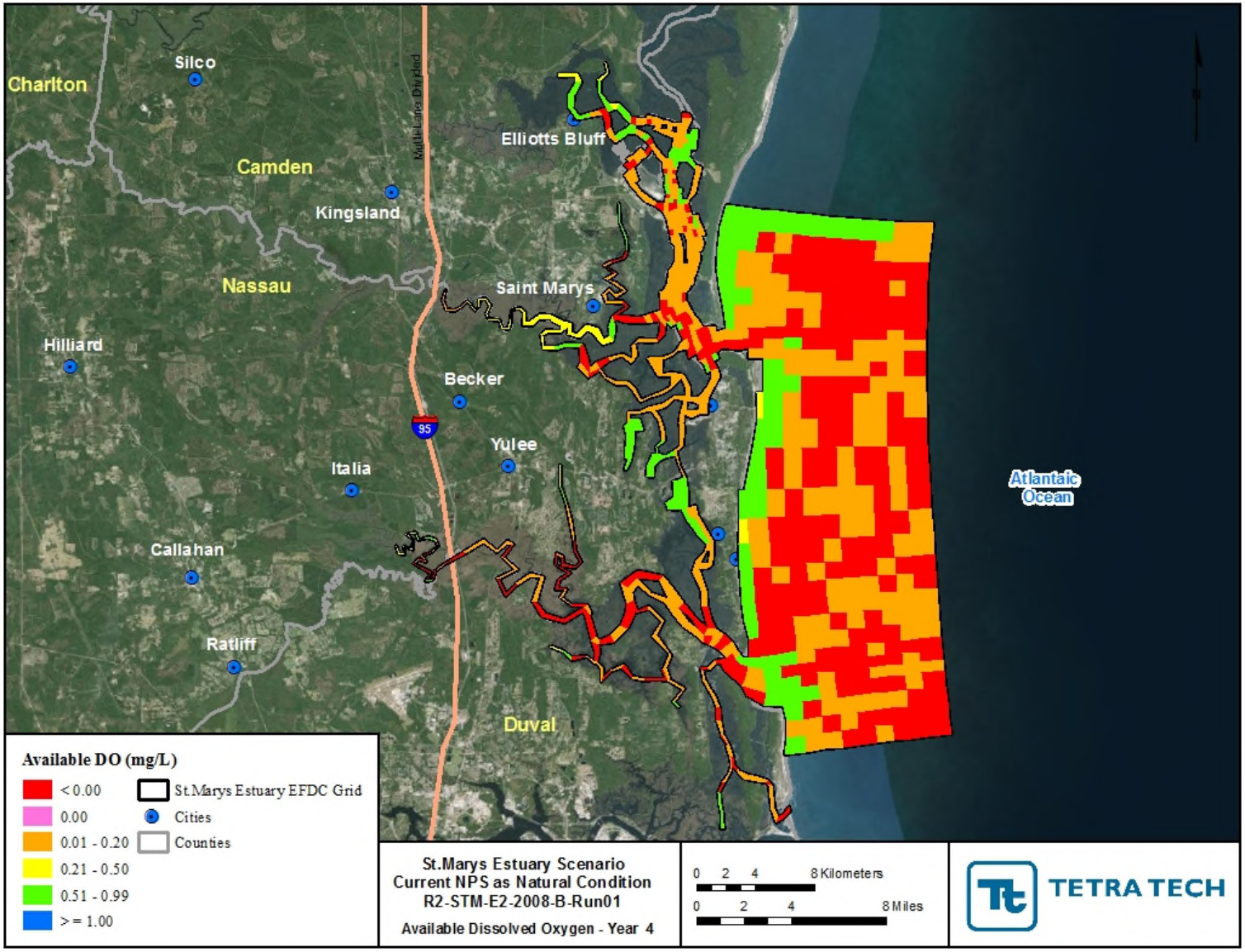

Figure B-144 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Current Permit): 2004

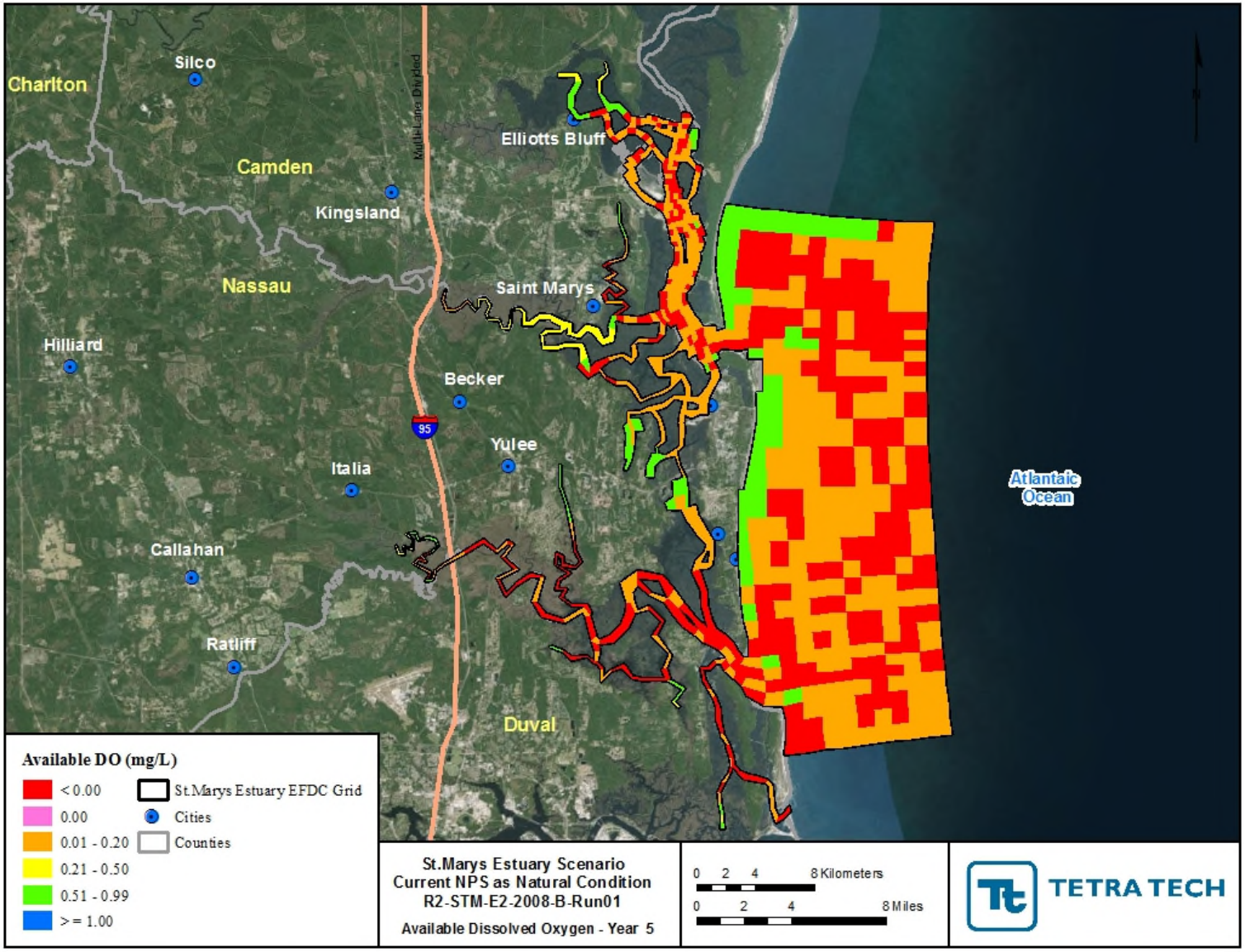

Figure B-145 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Current Permit): 2005

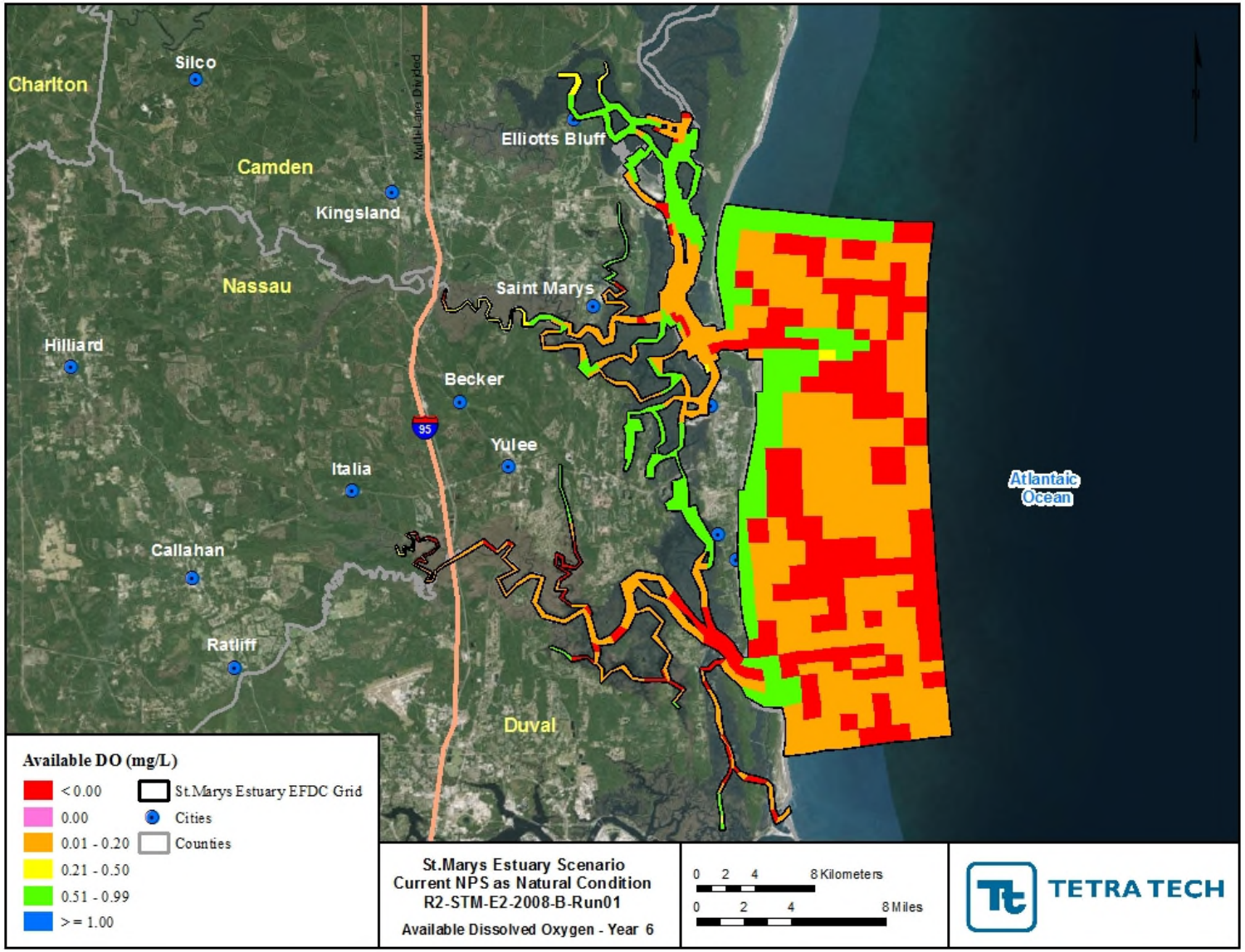

Figure B-146 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Current Permit): 2006

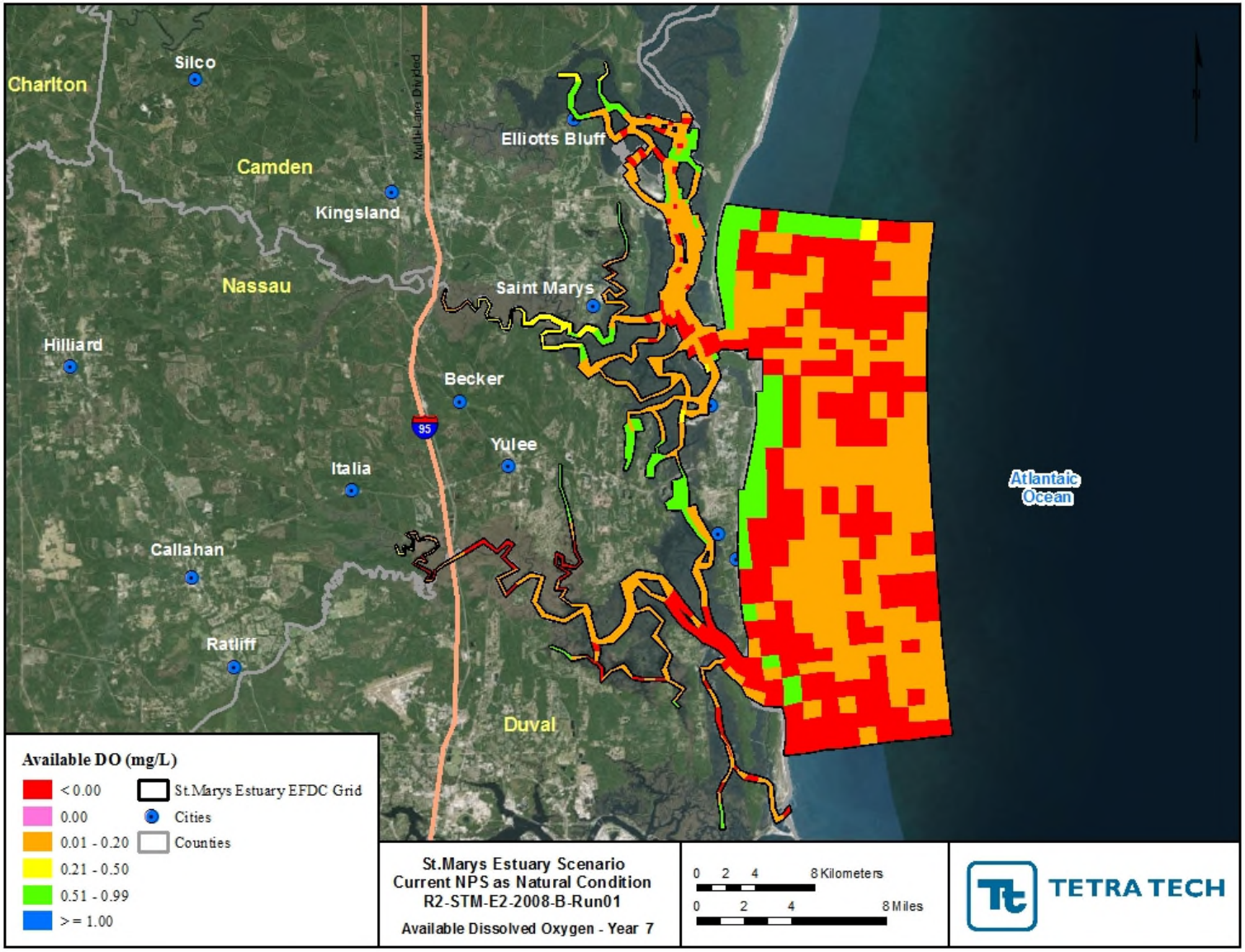

Figure B-147 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Current Permit): 2007

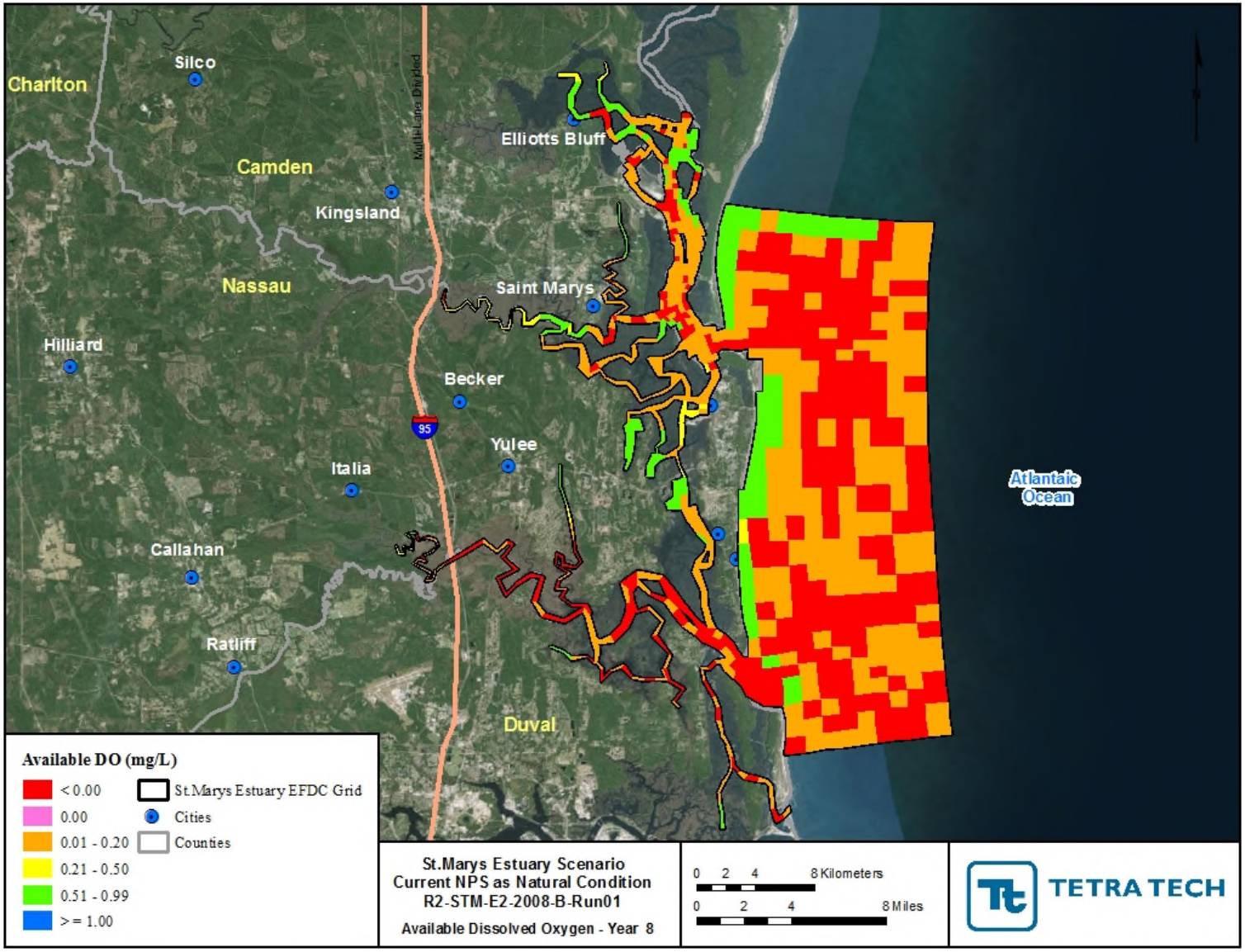

Figure B-148 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Current Permit): 2008

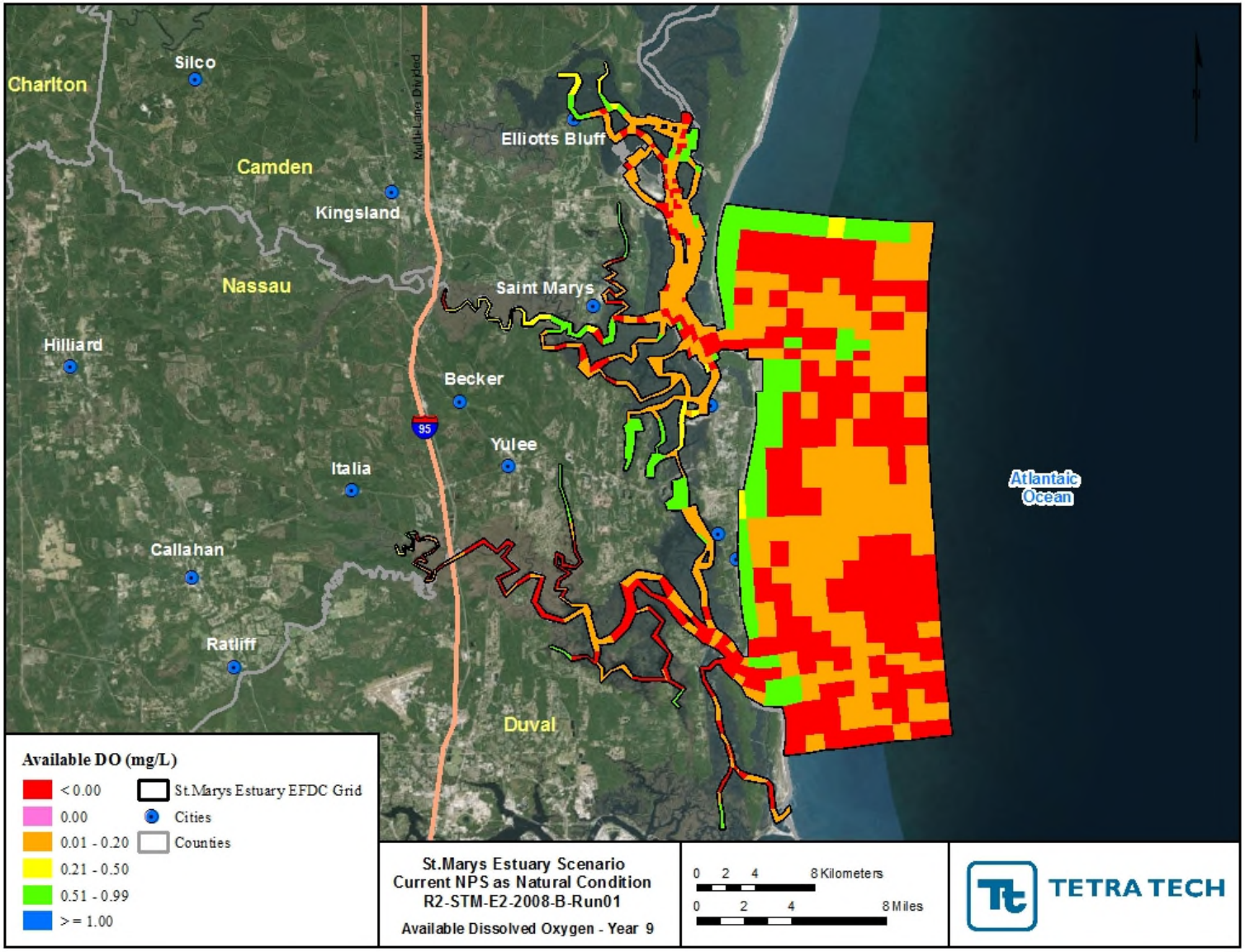

Figure B-149 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Current Permit): 2009

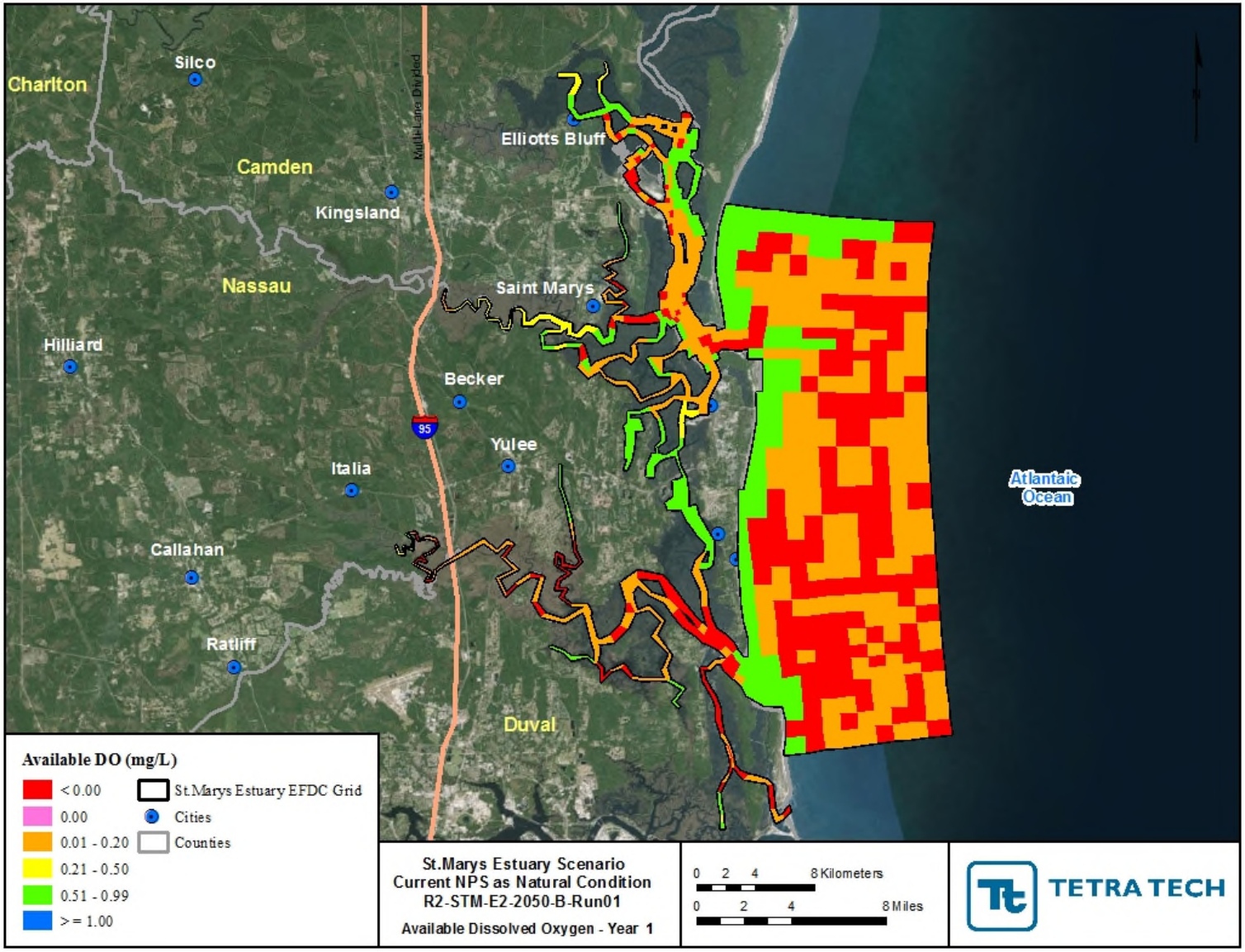

Figure B-150 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Future Permit): 2001

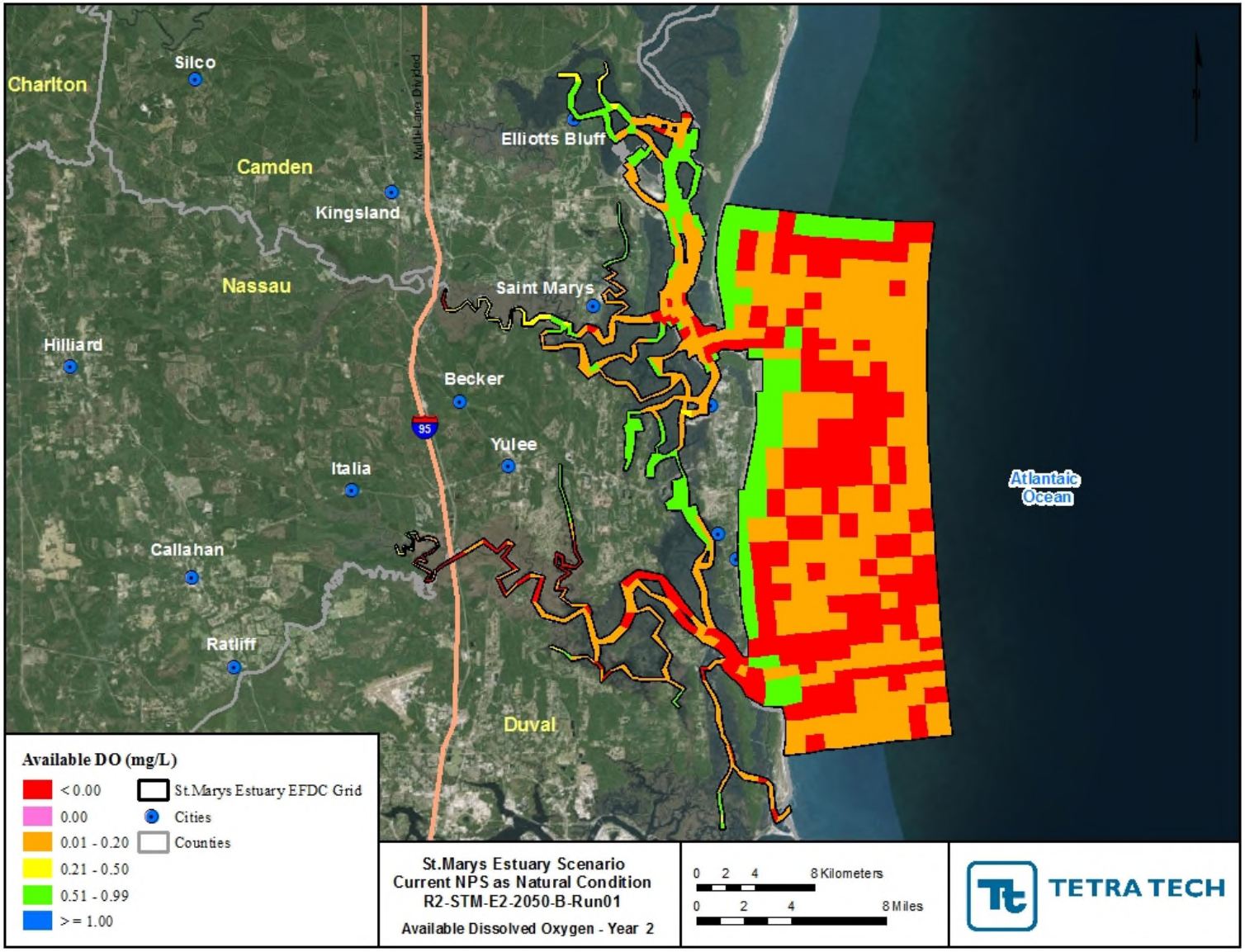

Figure B-151 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Future Permit): 2002

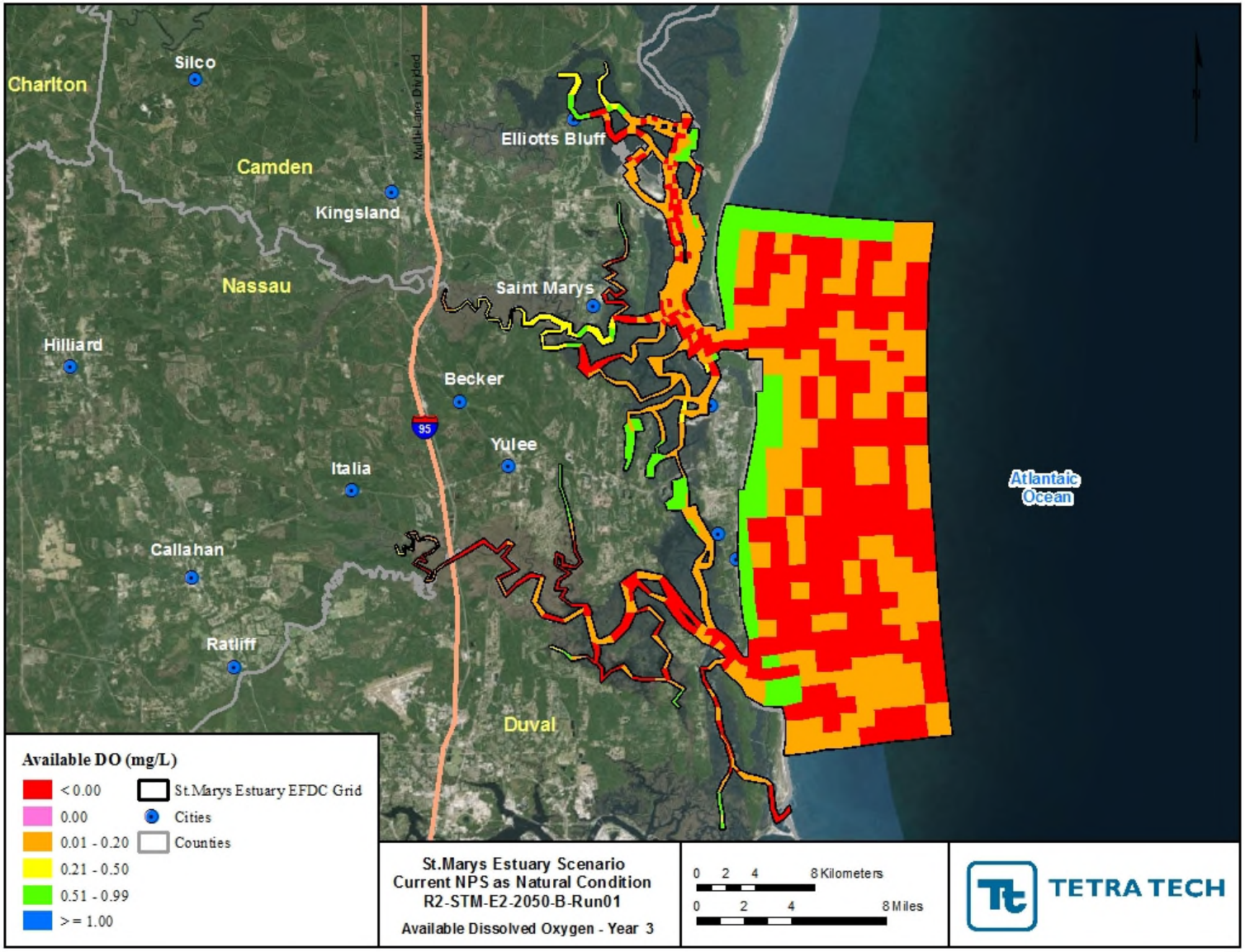

Figure B-152 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Future Permit): 2003

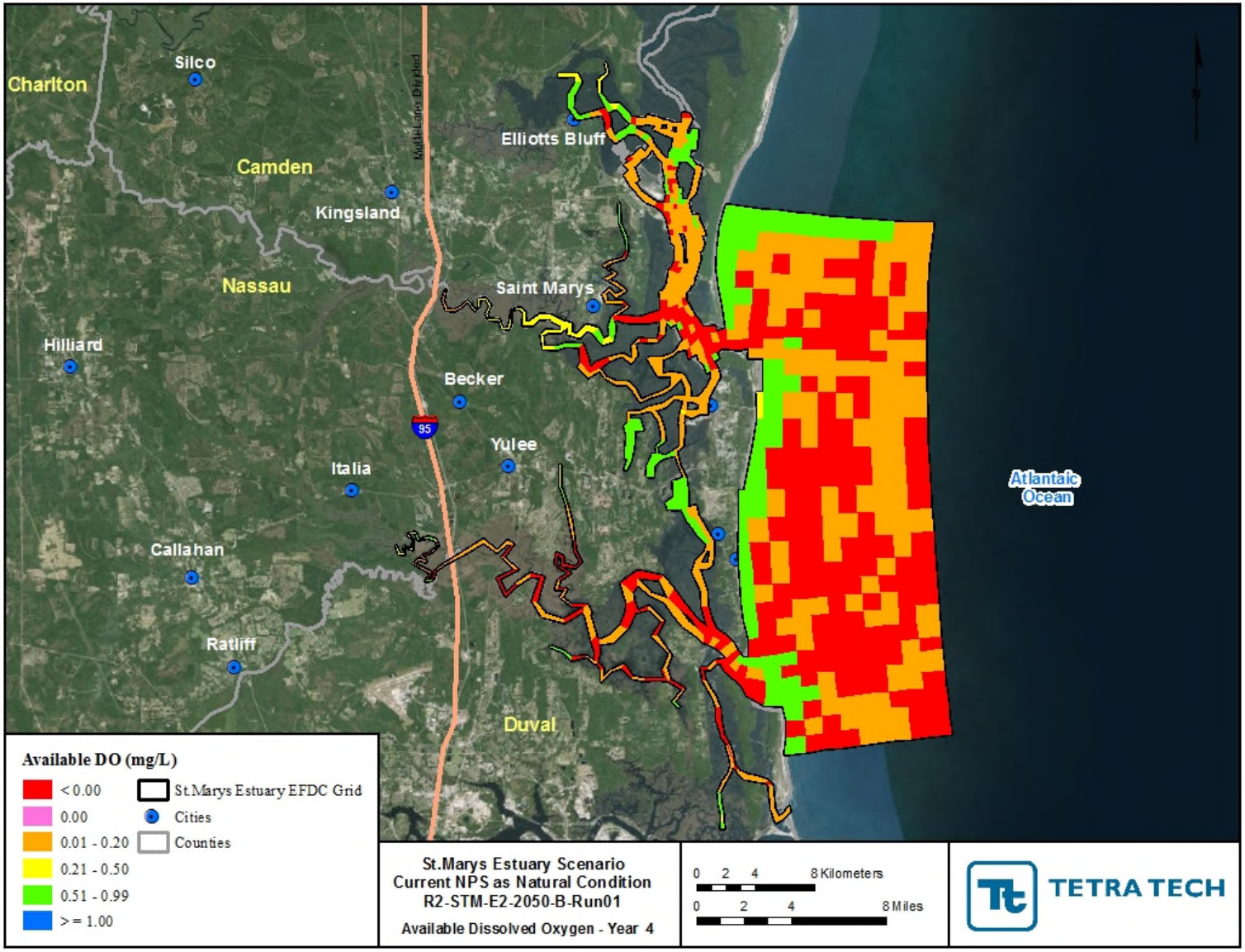

Figure B-153 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Future Permit): 2004

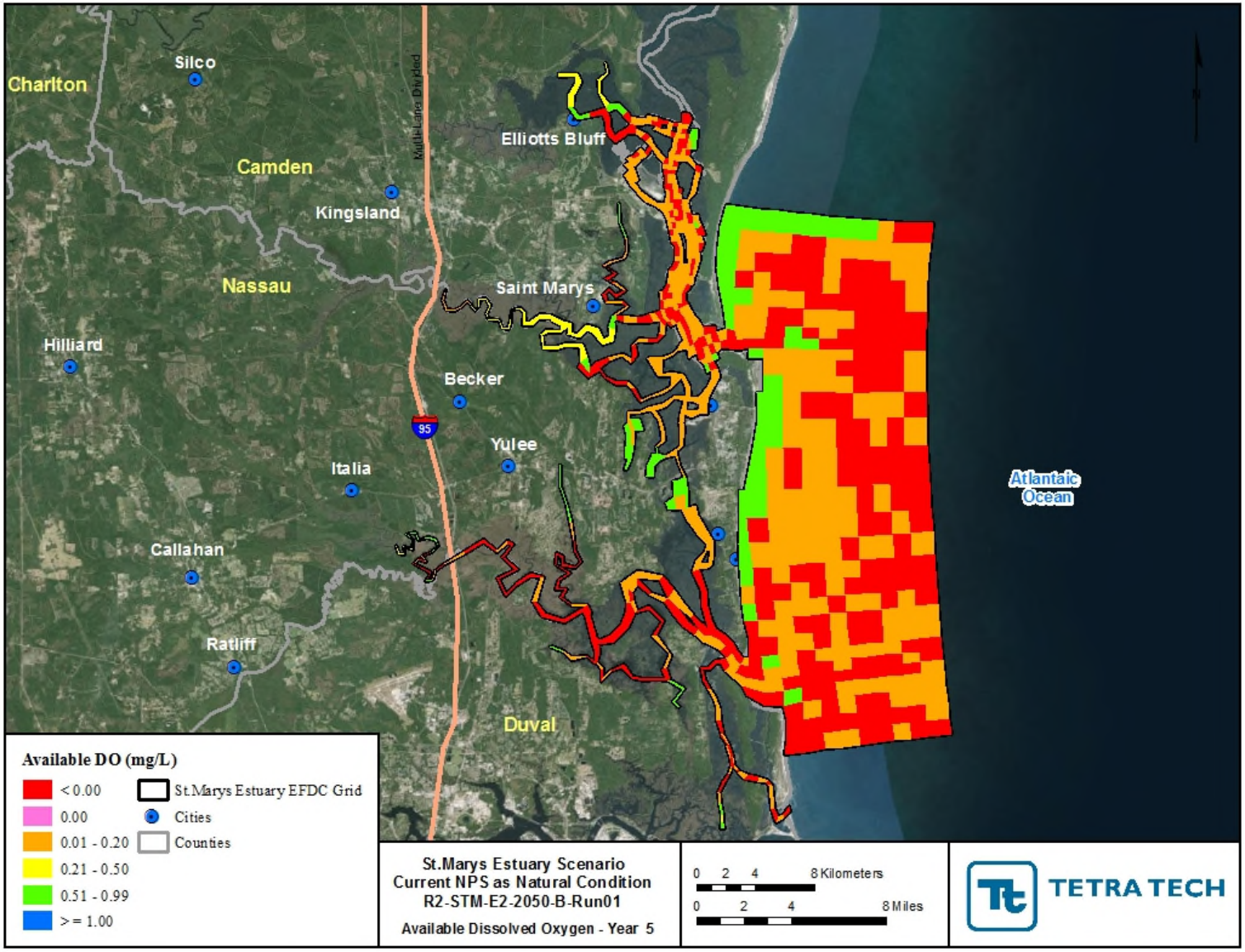

Figure B-154 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Future Permit): 2005

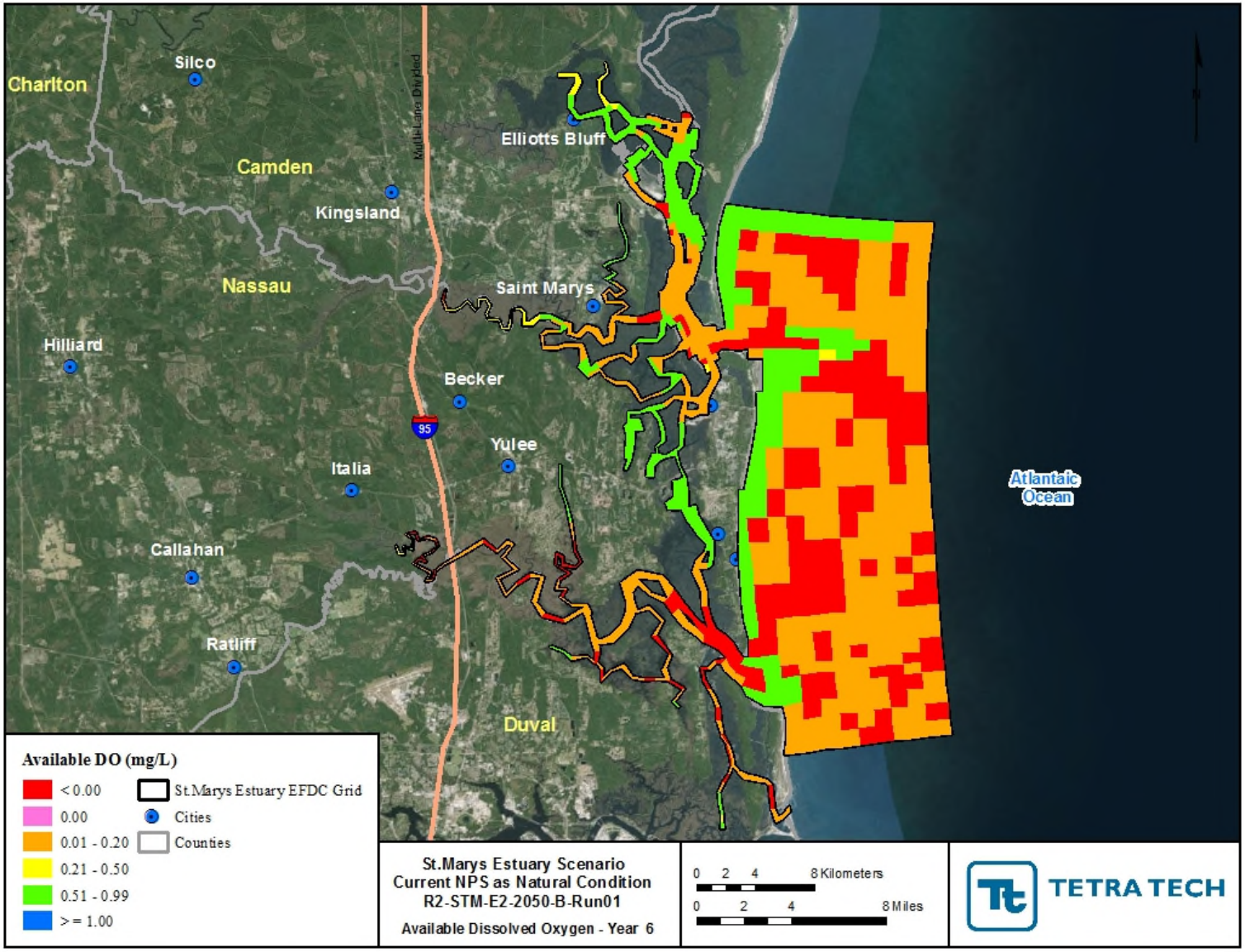

Figure B-155 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Future Permit): 2006

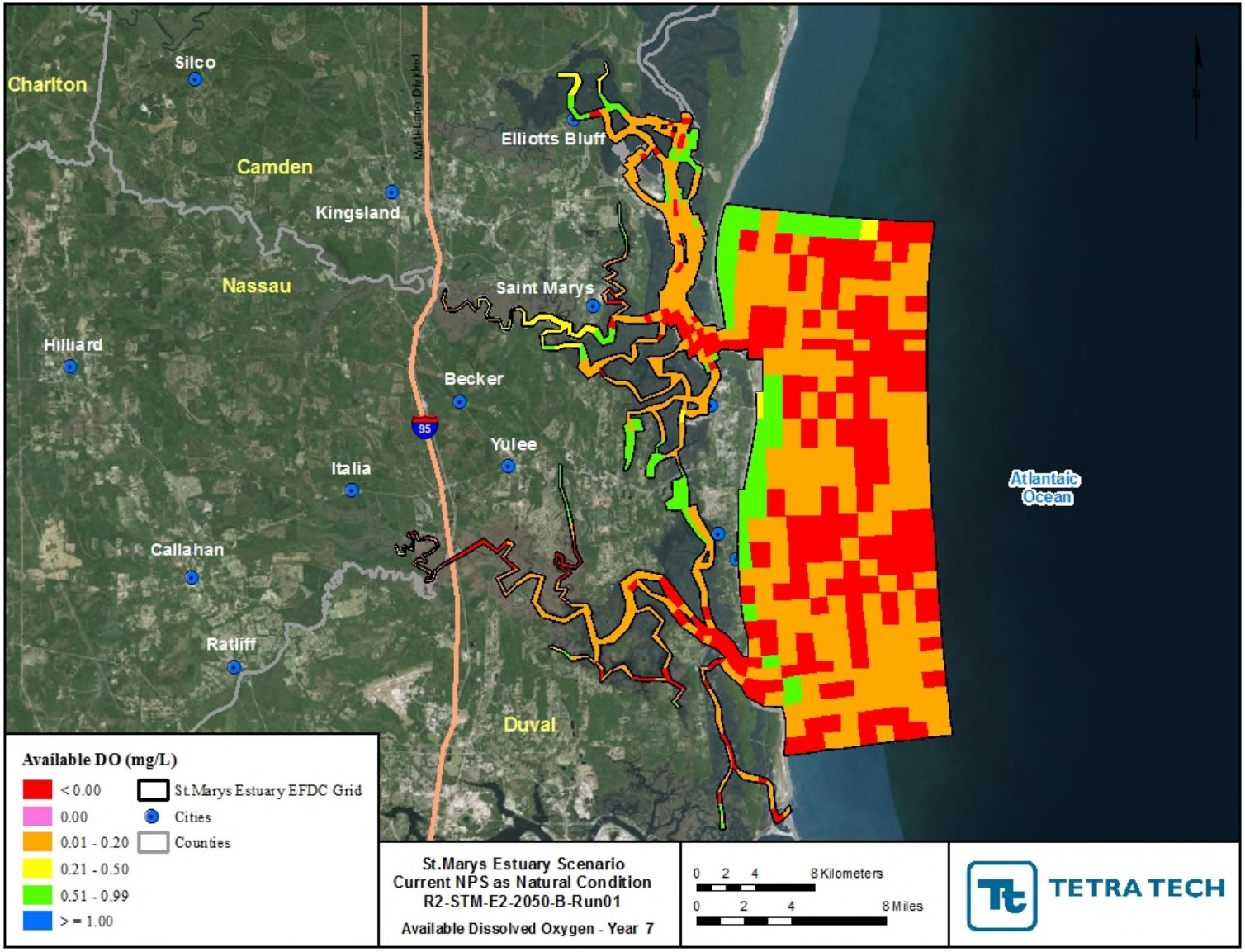

Figure B-156 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Future Permit): 2007

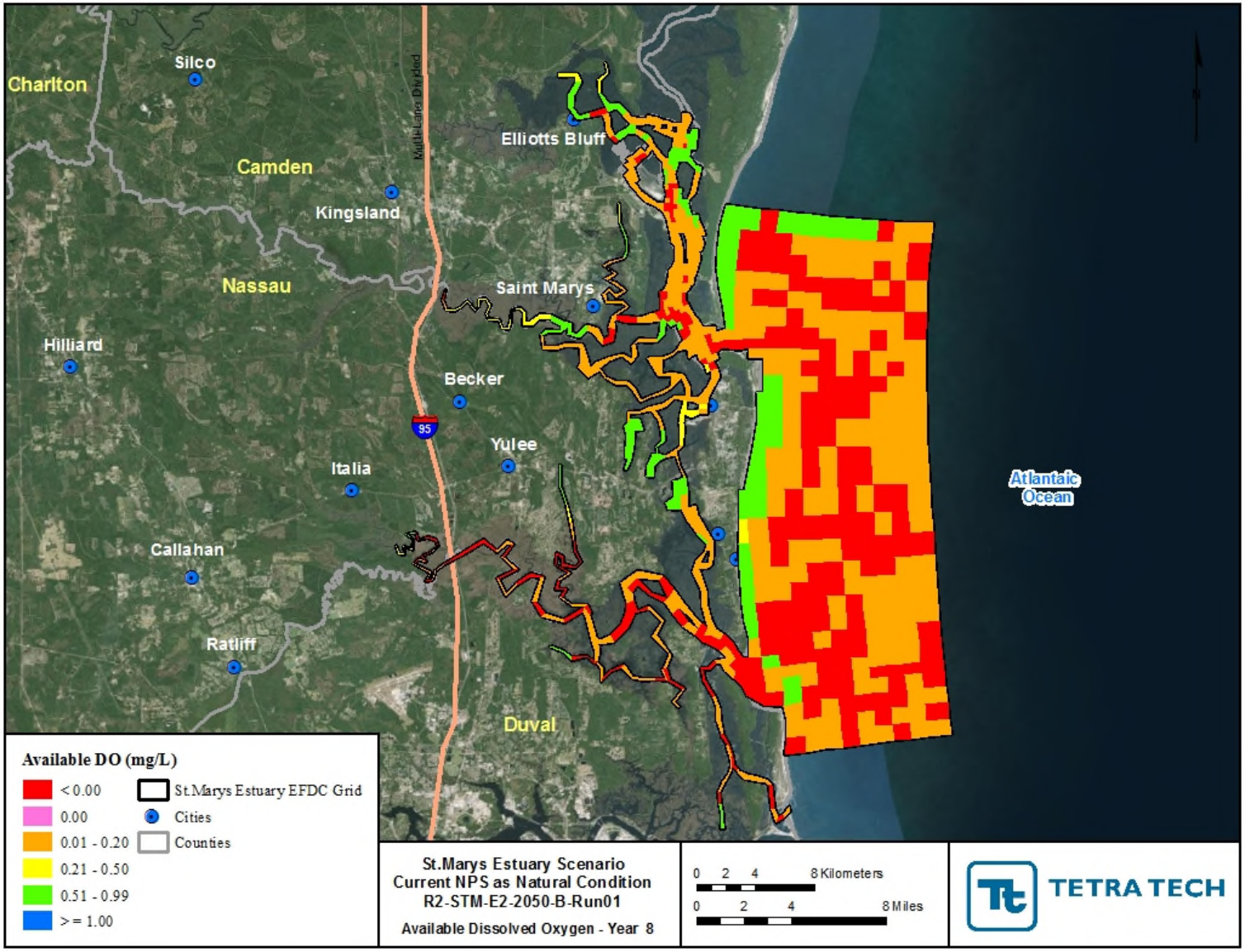

Figure B-157 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Future Permit): 2008

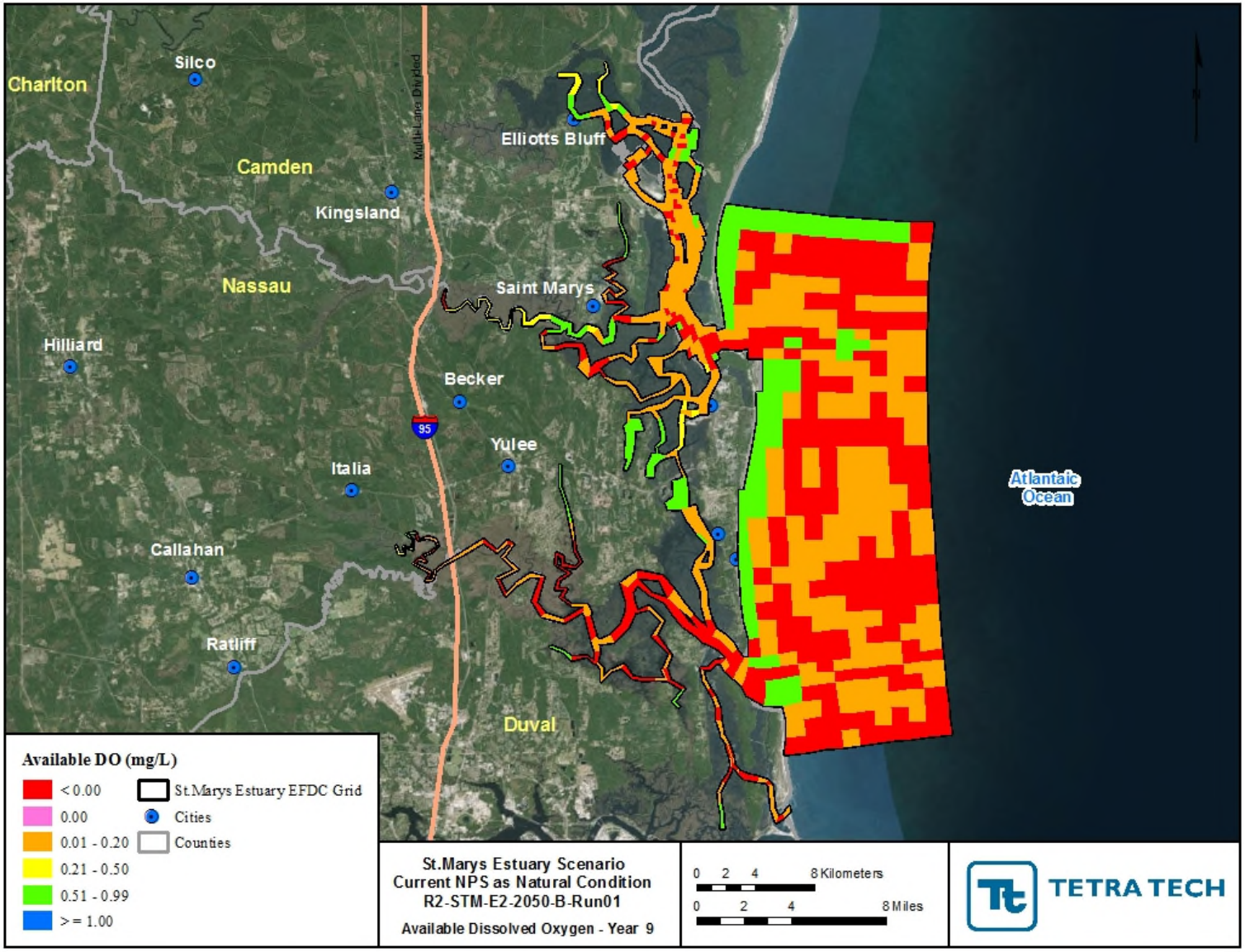

Figure B-158 Available Assimilative Capacity of Dissolved Oxygen in St. Mary's Sound (Future Permit): 2009

Table B-5 Number of cells in St. Mary's Sound with 0 mg/L of Assimilative Capacity

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Current Permit	240	239	360	285	344	192	253	297	305
Future Permit	237	209	344	288	362	184	230	260	303